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PJBS

ISSN 1028-8880

Pakistan Journal of Biological Sciences

ANSInet
Asian Network for Scientific Information
308 Lasani Town, Sargodha Road, Faisalabad - Pakistan

Pakistan Journal of Biological Sciences 7 (10): 1827-1830, 2004
ISSN 1028-8880

Atlanto-Mediterranean Originated Decapod Crustaceans in the Turkish Seas

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Abstract: Observations on the decapod fauna of Turkey were started in 1965. More recently, the results of all studies to date have been reviewed by Kocatas and Katagan (2003) and a total of 177 decapod species of Atlanto-Mediterranean origin have been identified from the Turkish Seas.

Key words: Decapod crustaceans, Atlanto-Mediterranean, origin, Turkey

INTRODUCTION

The carcinological studies on decapod fauna of the Turkish seas have been carried out since 1965 and up to date, a total of 228 decapod species were reported from the Turkish coasts. Decapod crustaceans are particularly well adapted for long distance migration and occupation of new localities[1]. The actual decapod crustacean faunal composition of the Turkish seas is a product of different ecological and hydrological characteristics of the neighboring Atlantic Ocean, western, central Mediterranean sea and the Red sea. The migrations occurring via Suez and Gibraltar Straits are changing the fauna of the Turkish Seas. As a result, the Turkish seas have favoured speciation in many decapod species.

MATERIAL AND METHODS

The scientific studies on the decapod fauna of Turkey behgan in the Aegean sea in 1965 and were extended to the Black sea, the Turkish Starits System and the Mediterranean sea with R/V "K. Piri Reis" and "Hippocampüs". Samples were collected by hand, dredge, beam-trawl, otter-trawl, mid-water trawl and grab. The nomenclature for the species follows ERMS (2003).

RESULTS

Table 1 shows that most of species reported in the Turkish coasts are Atlanto-Mediterranean migrants. Atlanto-Mediterranean decapod fauna constitutes approximately 76.31% of the Turkish fauna. First Atlanto-Mediterranean originated decapod species in the Turkish seas is the shrimp *Pontonia pinnophylax* (Otto, 1821) recorded by Hasselquist[2] from İzmir Bay (Eastern Aegean sea).

Recently, the list of decapod crustaceans of the Turkish seas was given by Kocataş and Katağan[3] and it includes a total of 170 Atlanto-Mediterranean originated, i.e., 54 Natantia, 15 Macrura Reptantia, 31 Anomura, 70 Brachyura were reported. During the period in that this paper was being published, an Anomuran species, *Albunea carabus* (Linnaeus, 1758) were recorded from the Turkish Mediterranean coasts by Katağan and Çevik[4]. More recently, Ateş *et al.*[5] reported 5 new decapod species i.e., the caridean shrimp *Processa macrodactyla*, the thalassinid *Callianassa subterranea*, the brachyuran crabs *Ebalia tumefacta*, *Liocarcinus maculatus*, *Palicus caronii* for the Turkish seas. Lastly, Katağan *et al.*[6] recorded the caridean shrimp *Balssia gasti* (Balss, 1921) in the Aegean sea.

Table 1: Distribution of the decapod crustaceans Atlanto-Mediterranean originated in the Turkish seas. BC: The Black sea, TSS: The Turkish Straits System, AS: The Aegean sea, MS: The Mediterranean sea

	BS	TSS	AS	MS
Natantia				
Acantephyra pelagica (Risso, 1816)			+	
Aegaeon cataphractus (Olivi, 1792)		+	+	+
Aegaeon lacazei (Gourret, 1887)			+	
Alpheus dentipes (Guérin-Méneville, 1832)	+	+	+	+
Alpheus glaber (Olivi, 1792)		+	+	+
Alpheus macrocheles (Hailstone, 1835)		+	+	+
Aristaeomorpha foliacea (Risso, 1827)			+	+
Aristeus antennarius (Risso, 1816)				+
Ascidonia flavomaculata Heller, 1864		+		

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Table 1: Continued

	BS	TSS	AS	MS
Athanas amazone (Holthuis, 1951)			+	
Athanas nitescens (Leach, 1814)	+	+	+	+
Balssia gasti (Balss, 1921)			+	
Brachycarpus biunguiculatus (Lucas, 1846)				+
Chlorotocus crassicornis (A. Costa, 1871)		+	+	+
Crangon crangon (Linnaeus, 1758)	+	+	+	+
Eualus cranchii (Leach, 1817)		+	+	+
Eualus occulatus (Lebour, 1936)			+	
Gennadas elegans (Smith, 1882)		+		
Gnathophyllum elegans (Risso, 1816)			+	
Hippolyte inermis (Leach, 1815)		+	+	+
Lysmata seticaudata (Risso, 1816)	+	+	+	+
Lucifer typus H. Milne (Edwards, 1837)			+	
Melicertus kerathurus (Forskål, 1775)		+	+	+
Palaemon adspersus (Rathke, 1837)	+	+	+	+
Palaemon elegans (Rathke, 1837)	+	+	+	+
Palaemon longirostris longirostris H. Milne (Edwards, 1837)		+	+	+
Palaemon serratus (Pennant, 1777)	+	+	+	+
Palaemon xiphias (Risso, 1816)		+	+	+
Pandalina brevirostris (Rathke, 1843)		+	+	+
Pandalina profunda (Holthuis, 1946)		+		
Parapenaeus longirostris (Lucas, 1846)		+	+	+
Pasiphaea sivado (Risso, 1816)		+	+	+
Pasiphaea multidentata (Esmark, 1866)			+	+
Periclimenes scriptus (Risso, 1822)		+		
Philocheras bispinosus bispinosus (Hailstone, 1835)			+	
Philocheras fasciatus (Risso, 1816)			+	
Philocheras sculptus (Bell, 1847)			+	
Philocheras trispinosus (Hailstone, 1835)		+	+	
Plesionika acanthonotus (Smith, 1882)			+	
Plesionika edwardsii (Brandt, 1851)			+	+
Plesionika heterocarpus (A. Costa, 1871)		+	+	+
Plesionika martia martia (A. Milne Edwards, 1883)			+	
Pontonia pinnophylax (Otto, 1821)			+	+
Pontophilus spinosus (Leach, 1815)			+	
Processa canaliculata Leach, 1815		+	+	+
Processa elegantula (Nouvel and Holthuis, 1957)			+	+
Processa macrodactyla (Holthuis, 1952)			+	
Processa modica (Williamson and Rochanaburanon, 1979)			+	+
Processa nouveli nouveli (Al-Adhub and Williamson, 1975)		+	+	+
Sergestes arcticus (Kröyer, 1855)		+	+	
Sergia robusta (Smith, 1882)		+	+	
Sicyonia carinata (Brünnich, 1768)			+	+
Solenocera membranacea (Risso, 1816)		+	+	+
Stenopus spinosus (Risso, 1827)			+	+
Synalpheus tumidomanus (Paulson, 1875)			+	+
Typton spongicola (O.G. Costa, 1844)		+	+	
Macrura Reptantia				
Callianassa subterranea (Montagu, 1808)			+	
Callianassa turuncata (Giard and Bonnier, 1890)				+
Calocaris macandreae (Bell, 1846)		+	+	
Gourretia denticulata (Lutze, 1837)			+	
Homarus gammarus (Linneaus, 1758)		+	+	
Jaxea nocturna (Nardo, 1847)		+	+	
Nephrops norvegicus (Linnaeus, 1758)		+	+	
Palinurus elephas (J. C. Fabricius, 1787)		+	+	
Pestarella tyrrhena (Petagna, 1792)			+	+
Polycheles typhlops typhlops (Heller, 1862)		+	+	+
Scyllarides latus (Latreille, 1803)			+	+
Scyllarus arctus (Linnaeus, 1758)		+	+	+
Scyllarus pygmaeus (Bate, 1888)			+	+
Upogebia deltaura (Leach, 1815)			+	
Upogebia pusilla (Petagna, 1792)	+	+	+	+
Upogebia tipica (Nardo, 1869)			+	+

Table 1: Continued

	BS	TSS	AS	MS
Anomura				
Albunea carabus (Linnaeus, 1758)				+
Anapagurus bicorniger (A.M. Edwards and Bouvier, 1892)		+	+	
Anapagurus chiroacanthus (Liljeborg, 1856)			+	
Anapagurus laevis (Bell, 1846)			+	
Anapagurus petiti (Dechancé and Forest, 1962)			+	
Calcinus tubularis (Linnaeus, 1767)			+	+
Cestopagurus timidus (P. Roux, 1830)		+	+	+
Clibanarius erythropus (Latreille, 1818)	+	+	+	+
Dardanus arrosor (Herbst, 1796)		+	+	
Dardanus calidus (Risso, 1827)			+	
Diogenes pugilator (P. Roux, 1829)	+	+	+	+
Galathea bolivari Zariquiey (Alvarez, 1950)			+	+
Galathea cenarroi (Zariquiey Alvarez, 1968)			+	
Galathea dispersa (Bate, 1859)			+	+
Galathea intermedia intermedia (Liljeborg, 1851)		+	+	+
Galathea nexa (Embleton, 1834)		+	+	+
Galathea squamifera (Leach, 1814)		+	+	+
Galathea strigosa (Linnaeus, 1767)		+		
Munida intermedia A. (Milne Edwards and Bouvier, 1899)			+	
Munida rutllanti Zariquiey (Alvarez, 1952)			+	
Munida rugosa (J. C. Fabricius, 1775)		+		
Munida tenuimana (G. O. Sars, 1872)		+	+	
Paguristes eremita (Linnaeus, 1767)		+	+	+
Pagurus alatus (J.C. Fabricius, 1775)			+	
Pagurus anachoretus (Risso, 1827)		+	+	+
Pagurus chevreuxi (Bouvier, 1896)			+	
Pagurus cuanensis (Bell, 1845)		+	+	+
Pagurus excavatus (Herbst, 1791)		+	+	+
Pagurus forbesii (Bell, 1845)		+	+	+
Pagurus prideaux (Leach, 1815)			+	
Pisidia longicornis (Linnaeus, 1767)		+		
Porcellana platycheles (Pennant, 1777)		+	+	+
Brachyura				
Acanthonyx lunulatus (Risso, 1816)		+	+	+
Achaeus cranchii (Leach, 1817)		+	+	+
Achaeus gracilis (O. G. Costa, 1839)			+	+
Atelecyclus rotundatus (Olivi, 1792)		+	+	
Bathynectes longipes (Risso, 1816)		+		
Bathynectes maravigna (Prestandrea, 1839)			+	
Brachynotus sexdentatus (Risso, 1827)	+	+	+	+
Callinectes sapidus (Rathbun, 1896)				+
Carcinus aestuarii (Nardo, 1847)	+	+	+	+
Dorhynchus thomsoni (Thomson, 1873)			+	
Dromia personata (Linnaeus, 1758)		+	+	+
Ebalia cranchii (Leach, 1817)		+	+	
Ebalia deshayesi (Lucas, 1846)			+	
Ebalia granulosa (H. Milne Edwards, 1837)			+	
Ebalia nux (A. Milne Edwards, 1883)			+	
Ebalia tuberosa (Pennant, 1777)		+	+	
Ebalia tumefacta (Montagu, 1908)			+	
Eriphia verrucosa (Forskål, 1775)	+	+	+	+
Ethusa mascarone (Herbst, 1785)			+	+
Eurynome aspera (Pennant, 1777)		+	+	
Geryon longipes (A. Milne Edwards, 1882)		+	+	+
Goneplax rhomboides (Linnaeus, 1758)		+	+	+
Herbstia condyliata (J. C. Fabricius, 1787)		+		
Homola barbata (J. C. Fabricius, 1793)			+	+
Ilia nucleus (Linnaeus, 1758)		+	+	
Inachus aguiarii (De Brito Capello, 1876)			+	
Inachus communissimus Rizza, 1839			+	+
Inachus dorsettensis (Pennant, 1777)		+	+	+
Inachus leptochirus (Leach, 1817)		+	+	+
Inachus thoracicus (P. Roux, 1830)		+	+	
Latreillia elegans elegans (P. Roux, 1830)			+	
Liocarcinus navigator (Herbst, 1794) subsp. *rondeleti*			+	
Liocarcinus corrugatus (Pennant, 1777)		+	+	+

Table 1: Continued

	BS	TSS	AS	MS
Liocarcinus depurator (Linnaeus, 1758)	+	+	+	+
Liocarcinus marmoreus (Leach, 1918)	+	+	+	+
Liocarcinus maculatus (Risso, 1827)			+	
Liocarcinus pusillus (Leach, 1815)			+	
Liocarcinus vernalis (Risso, 1816)	+	+	+	+
Liocarcinus zariquieyi (Gordon, 1968)				+
Macropipus tuberculatus (P. Roux, 1830)			+	
Macropodia linerasi (Forest and Zariquiey Alvarez, 1964)			+	+
Macropodia longipes (A.Milne Edwards and Bouvier, 1899)			+	+
Macropodia rostrata (Linnaeus, 1761)		+	+	+
Macropodia tenuirostris (Leach, 1814)			+	
Maja crispata (Risso, 1827)		+	+	+
Maja goltziana (d'Oliveira, 1888)			+	+
Maja squinado (Herbst, 1788)		+	+	+
Medorippe lanata (Linnaeus, 1767)		+	+	+
Microcassiope minor (Dana, 1852)			+	+
Monodaeus couchii (Couch, 1851)		+	+	
Nepinnotheres pinnotheres (Linnaeus, 1758)		+	+	
Ocypode cursor (Linnaeus, 1758)			+	+
Pachygrapsus marmoratus (J. C. Fabricius, 1787)	+	+	+	+
Pachygrapsus maurus (Lucas, 1846)				+
Pachygrapsus transversus (Gibbes, 1850)				+
Palicus caronii (P. Roux, 1830)			+	
Paractea monodi Guinot, 1969				+
Parthenope macrochelos (Herbst, 1790)		+	+	+
Parthenope massena (P. Roux, 1830)		+	+	
Pilumnus hirtellus (Linnaeus, 1761)	+	+	+	+
Pilumnus spinifer (H. Milne Edwards, 1834)		+	+	+
Pinnotheres pisum (Linnaeus, 1767)		+	+	
Pirimela denticulata (Montagu, 1808)		+	+	+
Pisa armata (Latreille, 1803)		+	+	+
Pisa nodipes (Leach, 1815)		+	+	+
Pisa tetraodon (Pennant, 1777)		+	+	+
Portumnus latipes (Pennant, 1777)	+	+	+	+
Portunus hastatus (Linnaeus, 1767)			+	+
Sirpus zariquieyi (Gordon, 1953)	+	+	+	+
Xaiva biguttata (Risso, 1816)				+
Xantho hydrophilus (Herbst, 1790)		+	+	+
Xantho pilipes (A. Milne Edwards, 1867)		+	+	
Xantho poressa (Olivi, 1792)	+	+	+	+

Finally, with the addition of 7 new species cited, the number of known Atlanto-Mediterranean originated decapod in the Turkish seas reached to 177, i.e., 56 Natantia, 16 Macrura Reptantia, 32 Anomura and 73 Brachyura.

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