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## A CHECK LIST ON FRESHWATER PRAWNS WITH SPECIAL REFERENCE TO GENUS *MACROBRACHIUM* BATE, 1868 (DECAPODA: PALAEMONIDAE) IN TAMIL NADU, INDIA

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### ABSTRACT

Species of the freshwater prawn genus *Macrobrachium* are distributed throughout the tropical and subtropical zones of the world. Many species are of regional or local fishery important however only half a dozen species of genus *Macrobrachium* are of major economic value in India. A detailed analysis on the availability of information pertaining to the knowledge on freshwater prawns (*Macrobrachium* spp.) of Tamil Nadu are found in most inland freshwater areas such as lakes, rivers, swamps, irrigation channels, canals, ponds as well as estuarine areas. The present paper concludes that there are 24 species of freshwater prawns in Tamil Nadu, India.

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### INTRODUCTION

Freshwater prawns are of large and growing importance in India and are undoubtedly one of the major contributors to aquaculture production (Raju et al., 2009). Freshwater prawn culture is growing rapidly day by day in India, due to its risk-free culture operations backed up by a good and steady international price which tend to prevail all along (Saravanan, 2003). The food resources of the land are not increasing in proportion to the growth of population and hence the aquatic medium affords the next frontier for exploitation. Moreover, there is an acute shortage of protein food in the form of aquatic food which is the best answer to this problem. Prawns form a major source of quality protein after fish and it plays an important role in the aquatic ecosystems by recycling dead organic matter (Raghunathan and Valarmathi, 2005). The freshwater *Macrobrachium* prawns currently offers a good potential for large scale commercial aquaculture primarily because established techniques are available for larval rearing (Venkataramani et al., 2002). Freshwater prawn farming has the potential to revolution the rural aquaculture, considerable employment and income could

be generated, there by bringing prosperity to rural poor people (Parameshwaran, 1994). Prawns comprise about 2,500 species throughout the world and are commercially important organisms fetching huge foreign exchange to the country. Freshwater prawns belonging to the genus *Macrobrachium* are distributed throughout tropical and subtropical zones of the world and in India more than 50 species have been reported (Jayachandran and Indira, 2010). Tamil Nadu is estimated that about 1,58,100 Ha. of freshwater bodies in the form of tanks, ponds, lakes, rivers, reservoirs, etc., are available in the state so many *Macrobrachium* species available in Tamil Nadu water bodies.

#### Genus *Macrobrachium*

Henderson and Matthai (1910) reported the distribution of *Macrobrachium* including 3 new species from Southern India, namely *Macrobrachium sulcatum* (Henderson and Matthai) from Cochin, *Macrobrachium nobilii* (Henderson and Matthai) from Walajabad, *M. dubius* (Henderson and Matthai) from Walajabad, Saidapet and other localities in Chengalput district. Other species reported are *M. rosenbergii* (De Man) (= *Palaemoncarcinus* (Fabricius), *M. malcolmsonii* (Edwards), *M. idae* (Heller), *M. scabriculum* (Heller), *M. dolichodactylus* (Hilgendorf) and *Macrobrachium*

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*lamarrei* (Edwards), of which, except *Macrobrachium idae* (Heller) and *Macrobrachium sulcatus* (Henderson and Matthai) the remaining 7 species are reported from Tamil Nadu. Narayanan (1980) studied hydrobiological study of the Cooum river in Chennai, South India, with special reference to aquaculture and reported 3 *Macrobrachium* species namely *Macrobrachium rosenbergii* (De Man), *Macrobrachium lamarrei* (Edwards) *Macrobrachium javanicum* (Heller).

Jayaram *et al.* (1982) recorded *M. malcolmsonii* (Edwards) and *M. rosenbergii* (De Man) from Cauvery river. Charles (1987) studied batch spawning on larval survival in *M. lanchesteri* (De Man) and Mary Bai (1993) reported two freshwater prawns are *Macrobrachium lamarrei* and *Macrobrachium malcolmsonii* from Cooum river, Chennai. Narayana (1994) investigated the eco-report on the Vellar Basin with inventory of fauna and flora with 6 species of *Macrobrachium viz., Macrobrachium aemulum* (Nobili), *Macrobrachium idea* (Heller), *Macrobrachium idella* (Hilgendorf), *Macrobrachium malcolmsonii* (Edwards), *Macrobrachium scabriculum* (Heller) *Macrobrachium nobilii* (Henderson and Matthai).

The diversity and utilization of freshwater prawns in Cauvery river of Tamil Nadu has reported 7 species of *Macrobrachium viz., Macrobrachium malcolmsonii* (Edwards), *M. rude* (Heller), *Macrobrachium lamarrei* (Edwards), *Macrobrachium aemulum* (Nobili), *Macrobrachium scabriculum* (Heller), *Macrobrachium nobilii* (Henderson and Matthai) and *Macrobrachium australe* (Guerin-Manville) (Mariappan *et al.*, 2002). A check list of marine fauna of Tamil Nadu included *Macrobrachium* species such as *Macrobrachium australe* (Guerin-Meneville), *M. hendersonii hendersoni* (De Man), *Macrobrachium lamarrei* (Edwards), *M. lar* (Fabricius), *M. malcolmsonii* (Edwards), *M. mirabile* (Kemp), *M. rosenbergii* (De Man) *Macrobrachium rude* (Heller) in Gulf of Mannar and Chennai (Anonymous, 2003).

*australe* (Guerin-Meneville), *Macrobrachium canarae* (Tiwari), *Macrobrachium lamarrei lamarrei* (Edwards), *Macrobrachium malcolmsonii* (Edwards), *M. nobilii* (Henderson and Matthai), *Macrobrachium rosenbergii* (De Man), *M. rude* (Heller), *Macrobrachium scabriculum* (Heller) and *Macrobrachium indicum* Valarmathi and Raghunathan (2006) reported *Macrobrachium josephi* Jayachandran, 2001 for the first time outside its type locality, from a rock pool in Medavakkam, Chennai, Tamil Nadu. Mariappan and Richard (2006) during their investigations on the freshwater prawns from Kanchipuram and Thiruvallur district of Tamil Nadu reported 3 *Macrobrachium* species viz., *Macrobrachium lamarrei lamarrei* (Edwards), *Macrobrachium canarae* (Tiwari), *Macrobrachium scabriculum* (Heller). Raghunathan and Valarmathi (2007) collected the freshwater prawns in Singaperumal Koil paddy field Chennai and found them to be *Macrobrachium lamarrei lamarrei* (Edwards), *Macrobrachium malcolmsonii* (Edwards), *Macrobrachium peguense* (Tiwari) and *Macrobrachium unikarnatakae* Jalihal, Shenoy and Sankolli. During their investigation reports *M. peguense* (Tiwari) and *Macrobrachium unikarnatakae* Jalihal, Shenoy and Sankolli, were found to be new for Tamil Nadu. Fifteen *Macrobrachium* species present in Tamil Nadu are *M. aemulum* (Nobili), *Macrobrachium australe* (Guerin-Meneville), *Macrobrachium canarae* (Tiwari), *Macrobrachium dayanum* (Henderson), *Macrobrachium equidense* (Dana), *M. indicum* (Jayachandran and Joseph), *M. josephi* (Jayachandran), *Macrobrachium lamarrei* (Edwards), *Macrobrachium malcolmsonii* (Edwards), *Macrobrachium nobilii* (Henderson and Matthai), *M. peguense* (Tiwari), *M. rosenbergii* (De Man), *Macrobrachium rude* (Heller), *M. scabriculum* (Heller) and *M. unikarnatakae*. Jalihal, Shenoy and Sankolli (Raghunathan and Valarmathi, 2009) Further, Valarmathi (2009) studied on the freshwater prawns and reported 18 species of *Macrobrachium* genus of which 8 species were recorded,

#### SYSTEMATIC POSITION

Kingdom	: Animalia
Phylum	: Arthropoda
Sub-Phylum	: Crustacea
Class	: Malacostraca
Order	: Decapoda Latreille, 1803
Family	: Palaemonidae Rafinesque, 1815
Genus	: <i>Macrobrachium</i> Bate, 1868

Raghunathan and Valarmathi (2005) reported 10 species of freshwater prawns of the genus *Macrobrachium* available in Tamil Nadu viz., *Macrobrachium aemulum* (Nobili), *Macrobrachium*

from Tamil Nadu and were found to be *Macrobrachium aemulum* (Nobili), *Macrobrachium lamarrei* (Edwards), *Macrobrachium latimanus* (Martens), *Macrobrachium malcolmsonii* (Edwards), *Macrobrachium rude* (Heller),

**Table 1. List of *Macrobrachium* Bate, 1868 species reported in Tamil Nadu, India**

Sl. No.	Species reported
1.	<i>Macrobrachium aemulum</i> (Nobili, 1906)
2.	<i>Macrobrachium australe</i> (Guerin-Ménerville, 1838)
3.	<i>Macrobrachium canarae</i> (Tiwari, 1958)
4.	<i>Macrobrachium dayanum</i> (Henderson, 1893)
5.	<i>Macrobrachium equidense</i> (Dana, 1852)
6.	<i>Macrobrachium hendersoni hendersoni</i> (De Man, 1906)
7.	<i>Macrobrachium idae</i> (Heller, 1862)
8.	<i>Macrobrachium idella idella</i> (Hilgendorf, 1898)
9.	<i>Macrobrachium indicum</i> (Jayachandran and Joseph, 1986)
10.	<i>Macrobrachium javanicum</i> (Heller, 1862)
11.	<i>Macrobrachium josephi</i> (Jayachandran, 2001)
12.	<i>Macrobrachium lamarrei lamarrei</i> (Edwards, 1837)
13.	<i>Macrobrachium lanchesteri</i> (De Man, 1911)
14.	<i>Macrobrachium lar</i> (Fabricius, 1798)
15.	<i>Macrobrachium latimanus</i> (Martens, 1868)
16.	<i>Macrobrachium malcolmsonii</i> (Edwards, 1844)
17.	<i>Macrobrachium mirabile</i> (Kemp, 1917)
18.	<i>Macrobrachium nobilii</i> (Henderson and Matthai, 1910)
19.	<i>Macrobrachium peguense</i> (Tiwari, 1952)
20.	<i>Macrobrachium rosenbergii</i> (De Man, 1879)
21.	<i>Macrobrachium rude</i> (Heller, 1862)
22.	<i>Macrobrachium scabriculum</i> (Heller, 1862)
23.	<i>Macrobrachium tiwarii</i> Jalihal, Shenoy and Sankolli, 1988
24.	<i>Macrobrachium unikarnatakae</i> Jalihal, Shenoy and Sankolli, 1988

*Macrobrachium scabriculum* (Heller), *Macrobrachium tiwarii* Jalihal, *Macrobrachium unikarnatakae* Jalihal, Shenoy and Sankolli. Sivaranjani (2010) studied a genetical and ecological diversity of freshwater prawns from Kanyakumari district, Tamil Nadu. During the study periods, 3 species of *Macrobrachium*, viz., *Macrobrachium lamarrei lamarrei* (Edwards, 1837), *Macrobrachium canarae* (Tiwari) and *Macrobrachium scabriculum* (Heller) were reported.

### Conclusion

Freshwater prawns are of considerable importance in inland aquaculture production and also in providing man nutritious and delicious food items. Tamil Nadu water bodies possess many freshwater prawns but proper information on them are not available. A survey on literature for the past hundred years have been collected, documented and analysed (1910-2010) in the present study and a total of 24 species of *Macrobrachium* prawns are available from Tamil Nadu, India (Table 1).

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