


# First record of freshwater shrimp, *Macrobrachium lamarrei lamarrei* (H. Milne Edwards, 1837) from Gujarat, India

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## Abstract

In the present study the presence of freshwater shrimp *Macrobrachium lamarrei lamarrei* (H. Milne Edwards, 1837) was recorded for the first time from a freshwater pond of Dabhoi, Vadodara district of Gujarat State, India in March 2015. This report discusses the taxonomy and distribution of this species.

**Keywords:** Freshwater shrimp; *Macrobrachium lamarrei lamarrei*; first record; Gujarat

## 1 | INTRODUCTION

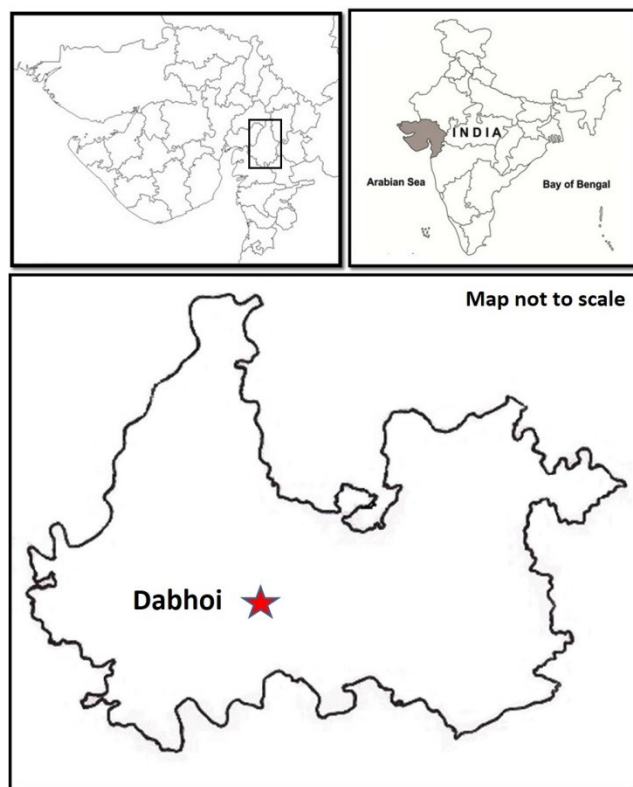
Genus *Macrobrachium* Bate, 1864 is one of the most diverse freshwater genera under the family Palaemonidae Rafinesque, 1815, which has 244 species worldwide (De Grave and Fransen 2011). They are commonly found in freshwater bodies including lakes, rivers, swamps, ditches, irrigation canals, ponds, as well as in estuarine areas (Holthuis 1950). The recent checklist of prawns of India (Radhakrishana *et al.* 2012) included 62 species of *Macrobrachium* to which four new species have been added (Pillai and Unnikrishnan 2012, 2013; Pillai *et al.* 2014, 2015). Out of these, only two species *Macrobrachium rosenbergii* (de Man 1879) and *Macrobrachium malcolmsonii* (H. Milne Edwards 1844) are reported from Gujarat (Patel *et al.* 1984; Suresh *et al.* 2014). The present paper reports the occurrence of *M. lamarrei lamarrei* (H. Milne Edwards 1837) for the first time from Gujarat. This species is reported earlier from Kolkata (Milne-Edwards

1834–1840) and commonly known as “kuncho river prawn”.

## 2 | METHODOLOGY

In the present study a total of nine specimens were collected at ~1100 hours on 24 March 2015 from a freshwater pond of Dabhoi, located in Vadodara district of Gujarat (India) (28°8'59.4"N 73°25'30.5"E; Figure 1). All the specimens were immediately stored in ice and brought to the laboratory. Specimens were identified with the help of standard identification key and research papers (Jaya-chandran 1992; Cai and Ng 2002; Mariappan and Richard 2006). Total length (TL, from the tip of the rostrum to the posterior end of the telson) and carapace length (CL, from the posterior orbital margin to the posterior margin of the carapace) was measured by using digital Vernier callipers (to the nearest 0.01 mm). All the specimens were preserved in 10% formalin solution and deposited in the Zoology Museum (Ref. ZL-AR-PR-59), Department of Zoolo-

gy, The Maharaja Sayajirao University of Baroda, Vadodara, Gujarat, India.



**FIGURE 1** Map showing location of *Macrobrachium lamarrei lamarrei* collection in the Dabhoi of Vadodara district, Gujarat, India.

### 3 | RESULTS AND DISCUSSION

#### 3.1 Systematics

Order Decapoda Latreille, 1803

Family Palaemonidae Rafinesque, 1815

Genus *Macrobrachium* Bate, 1868

*Macrobrachium lamarrei lamarrei* (H. Milne Edwards, 1837) (Figure 2)

#### 3.2 Synonyms

*Palaemon Lamarrei* H. Milne Edwards, 1837: 397.

*Palaemon lamarrei* De Man, 1908: 222; Henderson and Matthai, 1910: 301; Kemp, 1915: 265; Chopra and Tiwari, 1949: 214; Tiwari, 1956: 490; Ahmad, 1957: 19.

*Palaemonetes lamarrei* Arndt, 1933: 250.

*Macrobrachium lamarrei* Holthuis, 1950: 119; Anantha Raman, Reddy, Katre and Ayyappan, 1978: 79; Holthuis, 1980: 95.

*Palaemon lamarrei lamarrei* Tiwari, 1952: 28.

*Macrobrachium lamarrei lamarrei* Jalibal, Almelkar, Shenoy and Sankolli, 1983: 239.

#### 3.3 Materials examined

Ref ZL-AR-PR-59

1 male (TL 53.71 mm, CL 10.64 mm), 2 female (TL 49.81 mm, CL 11.39 mm; TL 51.14 mm, CL 10.03 mm), 6 ovigerous female (TL 49.84 mm, CL 11.60 mm; TL 49.86 mm, CL 10.27 mm; TL 51.55 mm, CL 10.17; mm TL 49.04 mm, CL 9.37 mm; TL 51.90 mm, CL 9.43 mm; TL 48.56 mm, CL 9.44 mm)

Collected by Kangkan Jyoti Sarma and Mrunali Prajapati.

#### 3.4 Description

Rostrum long, slightly upturned, over reaches the antennal peduncle, teeth uniformly arranged on dorsal margin, with a distal gap; ventral teeth arranged compactly up to the tip, rostral formula 1–2+4–7+1–2/6–8. Carapace 1.2 times longer than rostrum. Antennule peduncle slender, about 0.52 times as long as carapace. Scaphocerite 3.3 times as long as wide. Outer base of flagellum with 2 branches, fused in 13 segments. Antennal scale long about 3.0 times as long as broad. Outer margin slightly concave terminating in a strong tooth, anterior margin lamella rounded, over reaches up to outer terminal tooth. Third maxilliped slender, extending upto antennal scale, ultimate segment of third maxilliped slightly shorter than penultimate segment. First pereopod slender, equal, extending up to antennal scale tip, about 1/3 of the total body length, fingers 0.9 times as long as palm, carpus 2.1 times as long as chela, about 0.48 times as long as merus. Second pereopod slender, equal or over reaches the antennal scale, carpus 14.3 times as long as broad, 2.0 times as long as chela; palm slightly longer than fingers. Third to fifth pereopod structure similar, with simple dactylus. Sixth abdominal segment 0.41 times as long as carapace. Appendix masculine distinctly longer than endopod of second male pleopod. Telson elongate, about 1.3 times as long as sixth abdominal segment, two pairs of dorsal and 2 pairs of posterior spines present with two plumose setae. Exopod without subapical spine.



**FIGURE 2** Lateral view of *Macrobrachium lamarrei lamarrei* (scale bar = 1 cm).

### 3.5 Colouration

Body creamy white, brown dots present on rostrum, carapace, abdominal segments and telson. Cephalothorax with greenish-brown pigmentation. Inner flagellum of antennules generally reddish-brown.

### 3.6 Distribution

*Macrobrachium lamarrei lamarrei* is reported from India (Milne-Edwards 1837; Jaliha et al. 1988), Nepal (Sharma and Subba 2005), Bangladesh (Ali et al. 1980), Pakistan (Kazmi and Kazmi 1979) and Myanmar (Cai and Ng 2002).

In India, the species is previously reported from Kolkata (De Man 1908; Koshy 1969); Gorakhpur (Murti and Shukla 1953); Patna, Bengal, and Chilika Lake (Jyachandran 1992); Chennai (Raghunathan and Alarmathi 2007); Bhopal (Hussain and Manohar 2017); Karnataka (Jaliha et al. 1988); Maharashtra (Patil 2001); Andhra Pradesh (Rath et al. 2016) and now from Gujarat.

### 3.7 Remarks

The present study specimens agree with the description and illustrations provide by Mariappan and Richard (2006). In present specimens, flagellum has 13 fused segments while in earlier reports, 7–10 segments were recorded, which, however, is not considered a significantly different character (Mariappan and Richard 2006). *Macrobrachium Lamarrei lamarrei* is closely similar to endemic subspecies *M. Lamarrei lamarroides* (Tiwari 1952). They are distinguished by the length, shape and dentition of the rostrum (Jayachandran 1992).

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### CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

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