



A new species of pouched octopus, *Cistopus* Gray, 1849 (Cephalopoda: Octopodidae) from the southwest coast of India

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Abstract

Octopuses of the genus *Cistopus* Gray, 1849 are commercially valuable catches in the cephalopod fisheries of India. The primary and unique diagnostic character of this genus is the possession of eight small mucous pouches embedded in the oral faces of the webs between the bases of each arm. Historically only a single species of *Cistopus*, *C. indicus*, had been reported from Indian waters. In reviewing the octopod fauna off the Kerala coast, we have detected three species of *Cistopus*, of which one is described here as a new species. *Cistopus platinooidus* **sp. nov.** is distinct from *Cistopus* species described to date (*C. indicus*, *C. taiwanicus* and *C. chinensis*) on the basis of sucker counts, the number and position of enlarged suckers in males, and presence/absence of a calamus. Our studies of catch composition of Kerala octopod fisheries indicate a higher diversity of target species than previously suspected, including a number of undescribed species. Taxonomic resolution and collation of biological and distributional data are required for effective monitoring and management of these valuable fisheries.

Key words: Octopus, *Cistopus*, taxonomy, fisheries, Kerala

Introduction

The shallow coastal waters of central and south-east Asia possess a rich fauna of benthic octopuses, many of which form the basis of large-scale and economically valuable fisheries (Norman *et al.* 2014). Amongst this fauna is a distinctive and poorly resolved genus, *Cistopus* Gray, 1849, whose member species inhabit soft-sediment substrates and are characterised by possession of eight mucous pouches in a ring around the mouth between the arm bases (Fig. 1c). These pouches have previously been termed as water pouches/water pores, with a presumed role in containing water (Robson, 1929). The function of these pouches with their muscular pores is poorly understood but they appear to produce mucous that may aid in the construction of subsurface burrows in soft sediment substrates (Norman 2000; Montana *et al.* 2015).

Up until the mid-1980's, this genus was considered to be represented by a single species, *Cistopus indicus* (Rapp, 1835), with a reported range from the Philippines to India (Roper *et al.* 1984). Subsequent studies detected that this genus represents a complex of species, distinguished on the basis of both, morphological characters and molecular analyses (Norman & Sweeney 1997; Liao & Lu 2009; Zheng *et al.* 2012; Cheng *et al.* 2013). At least four taxa are currently recognised (Norman *et al.* 2014): (i) *Cistopus indicus* (Rapp, 1835) (Ferussac and d'Orbigny, 1834–1848) from the Philippine Islands and Celebes (Sulawesi), Indonesia (ii) *Cistopus taiwanicus* Liao and Lu, 2009 from Taiwan; (iii) *Cistopus chinensis* Zheng, Lin, Lu and Ma, 2012 from the East and South China Seas; and (iv) a fourth undescribed species reported from Singapore and India (Norman *et al.* 2014).

As part of a broader review of the cephalopod fauna of south-west India (Sreeja *et al.* 2012a, b; Sreeja & Biju Kumar 2013a, 2013b; Sreeja, 2013), we have encountered this fourth undescribed species of *Cistopus* being harvested through trawl fisheries off the Kerala coast, India. Here we formally describe this new species and distinguish it from *Cistopus* species described to date.