

Charybdis hellerii

System: Marine_terrestrial

Kingdom	Phylum	Class	Order	Family
Animalia	Arthropoda	Malacostraca	Decapoda	Portunidae

Common name Indo-Pacific swimming crab (English), spiny hands (English), Ishigani New Caledonia (Japanese), New Caledonia-ishigani (Japanese)

Synonym *Goniosoma hellerii* , (A. Milne-Edwards, 1867)
Goniosoma merguense , (DeMan, 1888)
Charybdis merguensis , (Sakai, 1934; Barnard, 1950; Guinot, 1962)
Charybdis (Goniosoma) merguense , (Alcock, 1899; Nobili, 1906, Chopra, 1935; Leene, 1973; Shen, 1937)
Goniosoma sexdentatum , (De Man, 1879)
Charybdis amboinensis , (Leene, 1938)
Goniosoma spiniferum
Charybdis vannamei , Ward 1941

Similar species

Summary *Charybdis hellerii* is an Indo-Pacific, portunid crab that has invaded several locations in the Mediterranean Sea, by Erythrean invasion through the Suez Canal, and the South Atlantic in the Caribbean and United States via ballast water fouling. *Charybdis hellerii* is a potential threat to native crab populations and benthic communities and its introduction should be avoided by adhering to ballast water management guidelines.



[view this species on IUCN Red List](#)

Species Description

Charybdis hellerii is a small crab measuring from about 5-8 cm wide. It is dark green with a light purple on the upper inner surface of palm and dark purple on dorsal surfaces of distal 4 segments of walking and swimming legs. The carapace has pale green to whitish areas on frontal, hepatic, and epibranchial regions. It is most easily identifiable by the spine on the posterior of the carpus on the fifth leg which bears its chela, or claws giving it one of its common names: spiny hands. Its dorsal carapace is naked and its anterolateral margin has 6 prominent black-tipped teeth. Its frontal region bears 6 prominent teeth, 2 inner orbitals, and 4 blunt submedians. Chela are stout with palms bearing 5 strong black-tipped spines on the distal posterior margin. Propodus also with a row of spines on the posterior margin. Adult females are typically 47 to 62 mm and adult males 74 to 83 mm carapace width (Perry, 2009; GSMFC, 2003).

Lifecycle Stages

Charybdis hellerii has an incubation period which lasts about 13 days, its zoeal development averages 40 days, and a megalopa stage that takes another 4 days. This relatively long larval development of about 44 days facilitates wide dispersal. Its juvenile growth and maturation is relatively rapid taking about one year. This results in a short generation time a characteristic that contributes to rapid population growth. Finally, *C. hellerii* have high fecundity and are capable of bearing broods in rapid succession. These developmental and reproductive characteristics facilitate the potential of *C. hellerii* for rapid invasion of new locations (Dineen *et al.*, 2001).

Habitat Description

Charybdis hellerii inhabits the littoral zone of coastal waters with depths of up to 30-50 m. In its native range, it prefers soft bottom substrates but is also known to occur in rocky bottom areas and intertidal coral reefs. Typically found in high salinities of over 28 ppt *C. hellerii* exhibits cryptic behavior, taking advantage of a large variety of structured habitats such as riprap jetties, coralline ledges, mangrove roots, gravel, rocks, and dense algae with populations often limited to them (Dineen *et al.*, 2001; Spiridonov, 1990).

Reproduction

Sexual, oviparous, with females capable of storing sperm at least 5 months. *C. hellerii* experiences reproductive peaks during the winter and spring contrary to other crab species which experience reproductive peaks in summer, a strategy to minimize competition other crab species (Dineen *et al.*, 2001).

Nutrition

Charybdis hellerii has generalized carnivorous diet allows for opportunistic exploitation of many different food sources (Dineen *et al.*, 2001).

General Impacts

Charybdis hellerii may compete with native crab species and inflict changes in natural benthic communities. *C. hellerii* introductions may also affect crab fisheries if it displaces native species or results in the reduction of their numbers (Dineen *et al.*, 2001).

Management Info

Preventative measures: Ballast water fouling is the means of introduction of *Charybdis hellerii* in most instances. Due to the high amount of invasive introductions by way of ballast water fouling, the International Maritime Organization (IMO) in conjunction with the Global Environment Facility and the United Nations Development Programme have established GloBallast, an organization devoted to implementing guidelines and regulations related to ballast water management. Compliance with GloBallast ballast water management guidelines is recommended to prevent the introduction of *C. hellerii* and other potential invasives (IMO, 2009).



GLOBAL INVASIVE SPECIES DATABASE

FULL ACCOUNT FOR: *Charybdis hellerii*

Principal source:

Dineen, J.E. Clark, P.F., Hines, A.H., Reed, S.A. & Walton, H.P. 2001. Life history, larval description, and natural history of *Charybdis hellerii* (Decapoda, Brachyura, Portunidae), an invasive crab in the western Atlantic. *Journal of Crustacean Biology* 21(3): 774-805
[Gulf States Marine Fisheries Commission \(GSMFC\), 2003. *Charybdis hellerii* \(Milne Edwards, 1867\)](#)

Ferreira, A.C., Sankarankuty, C.; da Cunha, I.M.C. & Duarte, F.T. 2001. Yet another record of *Charybdis hellerii* (A. Milne Edwards) (Crustacea, Decapoda) from the Northeast of Brazil. *Revista Brasileira de Zoologia* 18(1):357-358.

[Harriet Perry. 2008. *Charybdis hellerii*. USGS Nonindigenous Aquatic Species Database, Gainesville, FL.](#)

Compiler: National Biological Information Infrastructure (NBII) & IUCN/SSC Invasive Species Specialist Group (ISSG)

Review: Paul F. Clark, Department of Zoology, The Natural History Museum, London.

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ALIEN RANGE

[1] BRAZIL

[1] CUBA

[1] EGYPT

[1] ISRAEL

[1] MEDITERRANEAN & BLACK SEA

[1] TURKEY

[1] VENEZUELA

[1] COLOMBIA

[1] CYPRUS

[1] FRENCH GUIANA

[1] LEBANON

[1] SYRIAN ARAB REPUBLIC

[4] UNITED STATES

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[Gulf States Marine Fisheries Commission \(GSMFC\), 2003. *Charybdis hellerii* \(Milne Edwards, 1867\)](#)

Summary: Available from: http://nis.gsmfc.org/nis_factsheet.php?toc_id=124 [Accessed 2 September 2008]

[International Maritime Organization \(IMO\). 2009. GloBallast. <http://globallast.imo.org/index.asp>](#)

Summary: Available from: <http://globallast.imo.org/index.asp> [Accessed 2 September 2008]

[Netherlands Biodiversity Information Facility \(NLBIF\) biodiversity data portal. Undated. *Charybdis hellerii* \(A. Milne-Edwards, 1867\). \[www.nlbif.nl\]\(http://www.nlbif.nl\).](#)

Summary: Available from: http://www.nlbif.nl/species_details.php?name=Charybdis+hellerii [Accessed 2 September 2008]

General information

Almeida, A. O., Coelho, P. A., Santos, J. T. A. and Ferraz, N.R. 2006. Estuarine Decapod Crustaceans from Ilh?us, State of Bahia, Brazil. *Biota Neotrop.* May/Aug 2006 vol. 6, no. 2 <http://www.biotaneotropica.org.br/v6n2/pt/abstract?inventory+bn03406022006> ISSN 1676-0603.



GLOBAL INVASIVE SPECIES DATABASE

FULL ACCOUNT FOR: *Charybdis hellerii*

[Australian Faunal Directory. 2008. Species *Charybdis \(Charybdis\) hellerii* \(A. Milne Edwards, 1867\).](#)

Summary: Available from:

[http://www.environment.gov.au/biodiversity/abrs/online-resources/fauna/afd/taxa/Charybdis_\(Charybdis\)_hellerii](http://www.environment.gov.au/biodiversity/abrs/online-resources/fauna/afd/taxa/Charybdis_(Charybdis)_hellerii)
[Accessed 26 February, 2010]

[Braga, Adriane A., Adilson Fransozo, Giovana Bertini & Patricia B. Fumis., 2005. Composition and abundance of the crabs \(Decapoda, Brachyura\) off Ubatuba and Caraguatatuba, northern coast of S?o Paulo, Brazil. Biota Neotrop. vol.5 no.2 Campinas 2005](#)

Summary: Available from: http://www.scielo.br/pdf/bn/v5n2/en_v5n2a03.pdf [Accessed 2 September 2008]

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Summary: Available from: <http://www.marinespecies.org/aphia.php?p=taxdetails&id=107382> [Accessed 26 February, 2010]

[Dineen, J., 2001. Species Name: *Charybdis hellerii*. Smithsonian Marine Station at Fort Pierce](#)

Summary: Available from: http://www.sms.si.edu/irlSpec/Charyb_heller.htm [Accessed 2 September 2008]

Dineen, Joseph E.; Clark, Paul F.; Hines, Anson H.; Reed, Sherry A.; Walton, Heather P., 2001. Life history, larval description, and natural history of *Charybdis hellerii* (Decapoda, Brachyura, Portunidae), an invasive crab in the western Atlantic. *Journal of Crustacean Biology*. 21(3). August, 2001. 774-805

Ferreira, Alexander C.; Sankarankuty, Cheruparambil; da Cunha, Inailson M. C.; Duarte, Fabio T., 2001. Yet another record of *Charybdis hellerii* (A. Milne Edwards) (Crustacea, Decapoda) from the Northeast of Brazil. *Revista Brasileira de Zoologia*. 18(Supl. 1). Junho, 2001. 357-358.

Summary: Abstract only: The presence of *Charybdis hellerii* (A. Milne Edwards, 1867), an Indo-Pacific species, in one of the estuaries of the State of Rio Grande do Norte, Brazil is reported here.

Frick, Michael G; Williams, Kristina L., 2006. *Charybdis hellerii*, a non-indigenous portunid crab from the gastrointestinal contents of a Kemp's Ridley sea turtle (*Lepidochelys kempi*) in Georgia, USA. *Marine Turtle Newsletter*. (111). JAN 2006. 15.

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[Harriet Perry. 2008. *Charybdis hellerii*. USGS Nonindigenous Aquatic Species Database, Gainesville, FL. Revision Date: 4/26/2006](#)

Summary: Available from: <http://nas.er.usgs.gov/queries/FactSheet.asp?speciesID=191> [Accessed 2 September 2008]

[ITIS \(Integrated Taxonomic Information System\), 2008. Online Database *Charybdis hellerii* \(A. Milne-Edwards, 1867\)](#)

Summary: An online database that provides taxonomic information, common names, synonyms and geographical jurisdiction of a species. In addition links are provided to retrieve biological records and collection information from the Global Biodiversity Information Facility (GBIF) Data Portal and bioscience articles from BioOne journals.

Available from: http://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=199969 [Accessed 2 September 2008]

Knott, D. M; Wenner, E. L; Thornton, S. L., 2003. Observations on the unusual abundance of tropical *Callinectes* species in the South Atlantic Bight in fall 2002, and remarks on the non-indigenous *Charybdis hellerii*. *Journal of Shellfish Research* [J. Shellfish Res.]. Vol. 22, no. 1, p. 338. Jun 2003.

Lemaitre, Rafael., *Charybdis hellerii* (Milne Edwards, 1867), a nonindigenous portunid crab (Crustacea: Decapoda: Brachyura) discovered in the Indian River lagoon system of Florida. *Proceedings of the Biological Society of Washington*. 108(4). 1995. 643-648.

Summary: Abstract only: The portunid crab *Charybdis hellerii* (Milne Edwards, 1867), a species of Indo-Pacific origin, is reported from the Indian River lagoon system of Florida. Although this species was reported in 1987-1988 from Cuba, Colombia, and Venezuela, this is the first subsequent record in the western Atlantic, and the first in the continental United States. The specimens found in the Indian River include adults of both sexes (one female ovigerous), and juveniles, indicating that the population is reproducing and that this nonindigenous species has become established in the region. This species must now be considered present in the tropical western Atlantic at least across the entire Caribbean region. Recognition characters of *C. hellerii* are provided, as well as a summary of what is known about its distribution, biology, and probable method of arrival. Comments on other marine decapods introduced in eastern North America are included.

[List Of Invasive Alien Species in Egypt., \(Table 1\)](#)

Summary: Note: Complete reference not available.

Available from: <http://www.egyptchm.org/chm/implementation/pdf/alien/Invasive%20Alien%20species%20in%20Egypt.pdf>
[Accessed 2 September 2008]

Magalh?es, C?lio; S?rgio Luiz S. Bueno; Georgina Bond-Buckup; Wagner Cotroni Valenti; Humberto L. Melo da Silva; F?bio Kiyohara; Emerson C. Mossolin and S?rgio S. Rocha., 2005. Exotic species of freshwater decapod crustaceans in the state of S?o Paulo, Brazil: records and possible causes of their introduction. *Biodiversity and Conservation* (2005) 14: 1929?1945

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- Summary:** Available from: http://www.mnhn.fr/museum/front/medias/publication/8647_z06n3a10.pdf [Accessed 2 September 2008]