

THE ACROTHORACICAN AND RHIZOCEPHALAN BARNACLES
OF FLORIDA AND SURROUNDING WATERS

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ABSTRACT

As of the present there have been reported 4 species of burrowing barnacles (Acrothoracica) and 25 species of parasitic barnacles (Rhizocephala) in Florida and in the waters surrounding it. By surrounding waters is meant the Gulf of Mexico, the Caribbean Sea, and the Western Atlantic Ocean. The geographic position of the State of Florida is unique in that it borders upon and extends into each of these major bodies of water; and since these waters commingle and affect each other in important respects today as well as during late Cenozoic time, Florida partakes geologically and faunally of temperate, semi-tropical, and tropical marine conditions. Thus many of the barnacles found in Florida have been reported also in latitudes well to the north and south. Conversely, it is anticipated, because of the hosts they occupy, that some of the burrowing or parasitic Cirripedia not yet reported in Florida but which occur elsewhere in the Gulf, Caribbean, or Western Atlantic, will be discovered eventually in the Floridan province.

By tabulating and listing these little-known barnacles and the hosts with which they are associated, this paper is in effect a dated inventory of two particular orders of organisms within the class Cirripedia. The report is preliminary to a more comprehensive account to be published later this year.

LIST OF SPECIES

The species of Acrothoracica and Rhizocephala reported from Florida and the waters around it are listed below. Opposite each species of rhizocephalan is the decapod host on which it is parasitic, and also the known latitudinal range of the host.

ACROTHORACICA

Lithoglyptes spinatus Tomlinson and Newman
Kochlorine floridana Wells and Tomlinson
Weltneria hessleri Newman
Trypetesa lampas (Hancock)

RHIZOCEPHALA

Briarosaccus callosus Boschma

Tortugaster fistulatus Reinhard
Peltogaster sp. Wells
Sacculina americana Reinhard
Sacculina bicuspidata Boschma
Sacculina boschmai Reinhard
Sacculina hirsuta Boschma

Sacculina pustulata Boschma

Sacculina rathbunae Boschma

Sacculina reniformis Boschma

Sacculina schmittii Boschma

Sacculina tessellata Boschma

RHIZOCEPHALAN HOSTS

Paralithodes camtschaticus (Tilesius)
Lithodes aequispinus Benedict
Lithodes agassizii Smith
Lithodes antarcticus Jacquinot

Paralomis granulosa (Hombron
and Jacquinot)¹

Munidopsis robusta (A. Milne Edwards)

Pagurus longicarpus Say
Trachycarcinus spinulifer Rathbun
Microphyrus bicornutus (Latreille)
Acanthocarpus alexandri Stimpson
Pilumnus caribaeus Desbonne
and Schramm

Pilumnus dasypodus Kingsley

Hemus cristulipes A. Milne Edwards

Arachnopsis filipes Stimpson
Stenorhynchus seticornis (Herbst)
Podocheila riisei Stimpson
Collodes leptochela Rathbun

Anomalothir furcillatus (Stimpson)

Mithrax (Mithraculus) ruber (Stimpson)

LATITUDINAL RANGE OF HOSTS

58.24°N, Auke Bay, Alaska
Bering Sea
Off NE and SE coast of U.S.
Argentina, South Georgia,
and Falkland Islands
53.10°S, Punta Arenas, Chile

Dry Tortugas, Florida
Nova Scotia to Brazil
Northern Gulf of Mexico
North Carolina to Brazil
Massachusetts to Grenadines
Florida Keys to Brazil

North Carolina to Brazil
Northern Gulf of Mexico
to Curacao

North Carolina to Brazil
Florida to Barbados

North Carolina to Brazil
Northern Gulf of Mexico
to Puerto Rico

North Carolina to Grenada
Cuba to Barbados

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<i>Heterosaccus occidentalis</i> Boschma	<i>Mithrax (Mithraculus) forceps</i> A. Milne Edwards <i>Mithrax (Mithraculus) sculptus</i> (Lamarck) <i>Macrocoeloma camptocerum</i> (Stimpson) <i>Pitho anisodon</i> (Von Martens) <i>Pitho iherminieri</i> Schramm <i>Stenocionops furcata</i> (A. Milne Edwards) <i>Microphrys bicornutus</i> Latreille <i>Portunus ventralis</i> (A. Milne Edwards)	Bermuda; North Carolina to Brazil Florida to Brazil North Carolina to Florida. Florida to Curacao North Carolina to Brazil Georgia to Barbados North Carolina to Brazil Georgia to Cabo Frio, Brazil (31°N to 22.51°S) South Carolina to Trinidad Florida to Panama
<i>Loxothylacus bicorniger</i> Boschma	<i>Anasimus latus</i> Rathbun <i>Micropanope lobifrons</i> A. Milne Edwards	Massachusetts to Brazil North Carolina to Brazil
<i>Loxothylacus engeli</i> Boschma	<i>Panopeus herbstii</i> Milne Edwards	North Carolina to Brazil
<i>Loxothylacus longipilus</i> (Boschma)	<i>Panopeus occidentalis</i> Saussure <i>Eurypanopeus depressus</i> (Smith) <i>Pilumnus sayi</i> Rathbun <i>Tetraxanthus rathbunae</i> Chace <i>Rithropanopeus harrisi</i> (Gould) <i>Tetraplax cuadridentata</i> Rathbun <i>Lophopanopeus bellus</i> Stimpson	Bermuda; Massachusetts to Florida North Carolina to Bahamas Northern Gulf of Mexico Maine to Vera Cruz, Mexico Venezuela Eastern Pacific: Alaska to California Massachusetts to Cuba
<i>Loxothylacus perarmatus</i> Reinhard and Reischman	<i>Parthenope (Platylambrus)</i> <i>pourtalesii</i> (Stimpson)	Nova Scotia to Uruguay Bahamas to Brazil; Cape Verde Islands and West Africa
<i>Loxothylacus texanus</i> Boschma	<i>Callinectes sapidus</i> Rathbun <i>Callinectes marginatus</i> (A. Milne Edwards)	Florida to Brazil Southern Florida to Brazil
<i>Ptychascus glaber</i> Boschma	<i>Aratus pisonii</i> Milne Edwards <i>Sesarma (Holometopus) benedicti</i> Rathbun	Cuba to Barbados Puerto Rico to Tobago in Caribbean; Mexico to Ecuador in Eastern Pacific
<i>Lernaeodiscus bilobatus</i> Boschma	<i>Petrolisthes amoenus</i> (Guerin)	North Carolina to Brazil in Western Atlantic; Costa Rica to Ecuador in Eastern Pacific
<i>Lernaeodiscus crenatus</i> Boschma	<i>Petrolisthes marginatus</i> Stimpson	LaJolla, California Dry Tortugas, Florida
<i>Lernaeodiscus porcellanae</i> Muller	<i>Petrolisthes galathinus</i> (Bosc)	Northwest Cuba to Brazil
<i>Lernaeodiscus schmittii</i> Reinhard	<i>Petrolisthes eriomereus</i> Stimpson	
<i>Thompsonia cubensis</i> Reinhard and Stewart	<i>Munida iris</i> A. Milne Edwards <i>Munida stimpsoni</i> A. Milne Edwards	

REMARKS

Fossilized remains of the Acrothoracica and Rhizocephala themselves are extremely rare because of their soft bodies. However, each species of acrothoracican encases its body in a distinctive burrow which it excavates within a suitable substrate such as the shell of mollusks or the skeleton of corals. Such burrows are often preserved in the host, and have been recognized in the Mio-Pliocene and Pleistocene of Florida.

A somewhat similar but more indirect method of inferring the pre-Holocene existence of Rhizocephala is through the fossilization of the host crab, for example the crab *Callinectes sapidus* Rathbun which has been identified in the upper Miocene of Virginia and in the Pleistocene Talbot Formation of Maryland. The rhizocephalan *Loxothylacus texanus* Boschma infests *Callinectes sapidus* in the present, and it may be conjectured that the same parasite infested the same host in the past.

The adverse economic impact to man caused by rhizocephalan parasites is considerable. Shortly after attachment, the barnacle punctures the stomach of its host crab and is then nourished by the contents to become an inflated sac. This form of parasitism is accompanied, for reasons not yet fully understood, by the degeneration of the reproductive organs in both sexes, leading to sterility of the infested crabs. The edible blue crabs (*Callinectes sapidus*) of Gulf and Atlantic waters are often infested with the barnacle parasite *Loxothylacus texanus*, thus diminishing the ultimate catch of this important food source. A similar infestation of the edible king crab (*Paralithodes camtschaticus*) takes place in Alaskan waters by the barnacle parasite *Briarosaccus callosus*, and it has been determined that 70 per cent of the king crabs collected in a randomly selected region off the Alaskan coast have been so affected.