

# False False Angelwing

*Petricolaria pholadiformis*

Class: Bivalvia  
Order: Veneroida  
Family: Petricolidae  
Genus: Petricolaria



These are  
living on the  
shoreline at  
Burntcoat  
Head.

## Distribution

This species is also known as the American piddock. It is native to the coastal waters of the western Atlantic Ocean. It occurs in the Gulf of St. Lawrence and Bay of Fundy south to the Gulf of Mexico.

## Habitat

It is generally found in shallow coastal waters of depths up to 8 metres. It usually bores holes from the midtide level to low water.

## Food

They are suspension filter feeders. They have two siphons. By using its incurrent siphon, water is drawn into the body cavity and food particles are extracted.

## Reproduction

The sexes are separate. Fertilization occurs externally.

Although originating in the western Atlantic it now has spread to many parts of Europe. It is present in several areas of the British Isles, including the Thames Estuary. Records of it occurring there go as far back as 1890. It is now well established in the Netherlands and Denmark where it has usurped another similar species of boring bivalve *Barnea candida*. It was more than likely introduced to Europe by its presence in oyster shipments from the USA. It now occurs on the west coast of North America being introduced in the same manner.

Being a mechanical boring bivalve it has very specific habitat requirements. It bores into hard substrates of clay, chalk, solid mud, peat, wood or limestone and lives in the holes it creates. As it ages and grows it bores deeper into the substrate. It is unable to live on open surfaces and requires a hard material to bore into.

Upon becoming entombed in their permanent bore holes they are completely dependant on accessing particles of organic material suspended in the water column. They breathe and filter food using two siphons extending up to the water surface. Intake is indiscriminate and they segregate inorganic particles from potential food items. This species has a high retention efficiency for particles of a wide size range. Inorganic particles are rejected and expelled using the excurrent siphon.

When spawning ova and sperm (gametes) are released into the water in large numbers. Fertilization takes place when they combine and form a zygote. This (zygote) is a fertilized egg which will further develop into becoming a free swimming larva.

### Development

The zygotes (fertilized eggs) develop to a free-swimming (trochophore) larval stage. The second stage veliger larvae go through several major changes, both external and internal. They develop a ciliated velum used for swimming and trapping food.

### Characteristics

The colour of the external shell is off-white to fawn and the interior is white. The shell is thin and fragile. It has an elongate oval outline and cylindrical shape. It is similar in sculpture on both sides. This sculpturing consists of numerous concentric lines crossed by radiating ribs. Ribs in the anterior half of the shell are large and coarse, with prominent spines.

### Adaptations

They use their specially adapted shell edges to grind down into hard surfaces. The muscular foot grips the surface and helps to rotate the shell in a circular motion. A tubular burrow is formed. This is where they remain for life.

### Status/Threats

Globally the numbers are not under any threat. Severe storms can alter habitats.

### Sightings in Nova Scotia

The rate of growth is dependent on the availability of food and water temperature. They feed on phytoplankton. A functioning foot is developed. This is used when they are ready to settle on suitable substrates. The combination of the foot and velum facilitates exploration for a suitable environment to settle into. Metamorphosis takes place and they become juvenile piddocks or false angelwings, seeking permanent placement in carefully selected, appropriate substrates. They burrow down into these individual home bases. They will remain in these more or less permanent locations, continuing to grow.

The False Angelwing closely resembles the Angelwing *Cyrtopleura costata*. The main distinguishing feature being it lacks the spoon-shaped wings located near the beak (tip) of the (real) Angelwing. The sculptured ribbing continues along the length of the Angelwing in a fairly continuous, uniform manner whereas the False Angelwing ribbing is more prominent towards the anterior end. The anterior end is short and rounded, and the posterior is elongated and slightly gaping. Growth rings can be seen running parallel to the margin. The length of the shell ranges from 25-80 mm, but specimens are commonly up to 65 mm long. They average 40 mm locally.

After it has carved out a home for itself it remains inside its burrow. It extends its life-supporting siphons out the burrow entrance upwards towards the surface. These siphons filter the surrounding seawater for food items. As they grow they continue to excavate the walls of their burrow. Debris from this expansion is flushed out of the cavity. They can live for up to 9 years totally entombed.

Larvae are heavily predated. Regional populations can be devastated by shifts in sedimentation caused by dredging activity.

These occur in many coastal areas.

Angelwing



False Angelwing



British bore holes

