



Crabs Dancing to the Tune of Root-headed Barnacle

The parasitic *Sacculina* plays the devil's role by hijacking its host's body and brain.

Anubha Das and Atharv Das

Carcinus maenas (Green shore crab), a common host of *Sacculina*

NATURE never ceases to amaze us with its bizarre stories but probably the most intriguing ones are those involving host-parasite relationships. From zombie ants acting like a puppet in the hands of a fungus to rats where fear of cats turns into curiosity, leading to a fatal attraction as a protozoan (single-celled organism) parasite hijacks the brain, the list of jaw-dropping stories is really long. One such story involves a parasitic barnacle that doesn't just stop at taking control over the body and brain of its host crab but goes a step ahead and renders its host sterile due to the degeneration of gonads. The story doesn't end here as the castrated males turn feminised both in appearance and behaviour to the extent that they even try mating with other males. It may sound weird, but that's how the parasite has evolved to exploit its host not only for food and shelter but as babysitters, too, while depriving them of reproduction.

Barnacles are small, marine and usually free-living arthropods, playing an important role in the food chain, but

few are parasitic too, like *Sacculina*, also known as “Root-headed barnacle”, as its root-like extensions penetrate the crab's (its host) body to absorb the nourishment. Interestingly, the male *Sacculina* larvae never turn into adults and are short-lived compared to females.

As the high tides at night constantly wash the shoreline, some shore crabs get drenched in the saline water while they are busy foraging actively. Another tide rushes towards the shore and brings along a tiny, microscopic creature that makes its way to one of the unwary male crabs body and gets attached, while another gets attached to the underside of an unsuspecting female crab. Meet the devil, *Sacculina*, which literally translates as a sac in Latin (owing to sac-like shape of a mature parasite's body visible externally).

The microscopic creature that got attached to the crab's body is the larval stage of the female *Sacculina* that slowly penetrates the crab's body and sends numerous root-like processes throughout the body of its host, deriving nutrition,