

Hawaii's Environment

JAN TENBRUGGENCATE

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Malihini barnacle goes local

A barnacle appears to have come halfway around the world to fill a largely vacant environmental niche in Hawaii.

The creature, *Chthamalus proteus*, was not present in Hawaii as recently as 1973, when a comprehensive survey of intertidal life forms was done.

One of the things odd about the new arrival is that unlike most alien marine arrivals, this one originated in the Atlantic Ocean.

The barnacle — we'll call it *proteus* — normally is found in the Caribbean, the Gulf of Mexico and Brazil.

The authors of an article on the barnacle, printed in the British Marine Biological Association's Marine Ecology Progress Series, suggest it may have come through the Panama Canal on some vessel that came to Hawaii and stayed a while.

Bishop Museum scientist Steve Coles, "Hawaii's Sea Creatures" author John Hoover and former University of Hawaii biologist Paul Parnell are among the authors of the study, which also includes scientists from the Mainland, Canada, Britain and Japan.

Members of the *proteus* family don't normally survive on ship hulls, but researchers have found that this species does quite well above the waterline on Hawaii vessels, including barges, research ships and others. The *proteus* could have attached itself to a ship on the other side of the Panama Canal, survived the canal passage and crossing to Hawaii, and then released larvae in Hawaiian waters.

"The original introduction... was probably into Pearl or Honolulu Harbor," the paper said. The first introduction could have occurred shortly after the survey of 1973, or as recently as 1994 or 1995, the scientists said.

Today, "it turns out that these things are all over Hawaii in harbors, even as far up the chain as Midway," said Hoover. They also are common on pilings in Kaneohe Bay, where Hoover first spotted them.

The barnacles form dense colonies at the high-tide level, a region the authors said has not been heavily colonized by native organisms.

"Sometimes they are so thick they obscure the substrate, forming a whitish crust on the rocks at high tide level. They are about the most conspicuous barnacles in the Islands," he said.

Proteus is so well established that it is likely to become a permanent part of the Hawaii environment. However, it may remain in the calm waters of harbors and bays, and not move out onto the more exposed coastal shorelines, the authors said, noting it is often replaced by other species in Caribbean areas where it is exposed to surf.

The authors said they were concerned that new species can sneak into the Hawaiian environment without being detected. *Proteus* already was widespread by the time it was first noticed.

Jan TenBruggencate is The Advertiser's Kauai bureau chief and its science and environment writer. You may call him at (808) 245-3074 or send e-mail (tenb@aloha.net).