

Education Department  
Waikīkī Aquarium  
University of Hawai‘i-Mānoa



## **MARINE LIFE PROFILE: BRITTLESTARS**

Hawaiian name: pe‘a  
Scientific name: Ophiuroidea  
Distribution: Indo-Pacific, including Hawai‘i  
Size: to 8 inches (20 cm) arm-span  
Diet: drifting organic matter & detritus

Superficially, brittlestars resemble their relatives the seastars -- both belong to the Phylum Echinodermata. Brittlestars have five jointed arms and a rounded central disc that contains all of their vital organs. Brittlestars are named for their ability to autotomize or voluntarily drop their arms if attacked by a predator. Arms can be dropped at any of the multiple joints along the length of the arm. Missing arms are replaced by regeneration, a process that probably takes weeks.

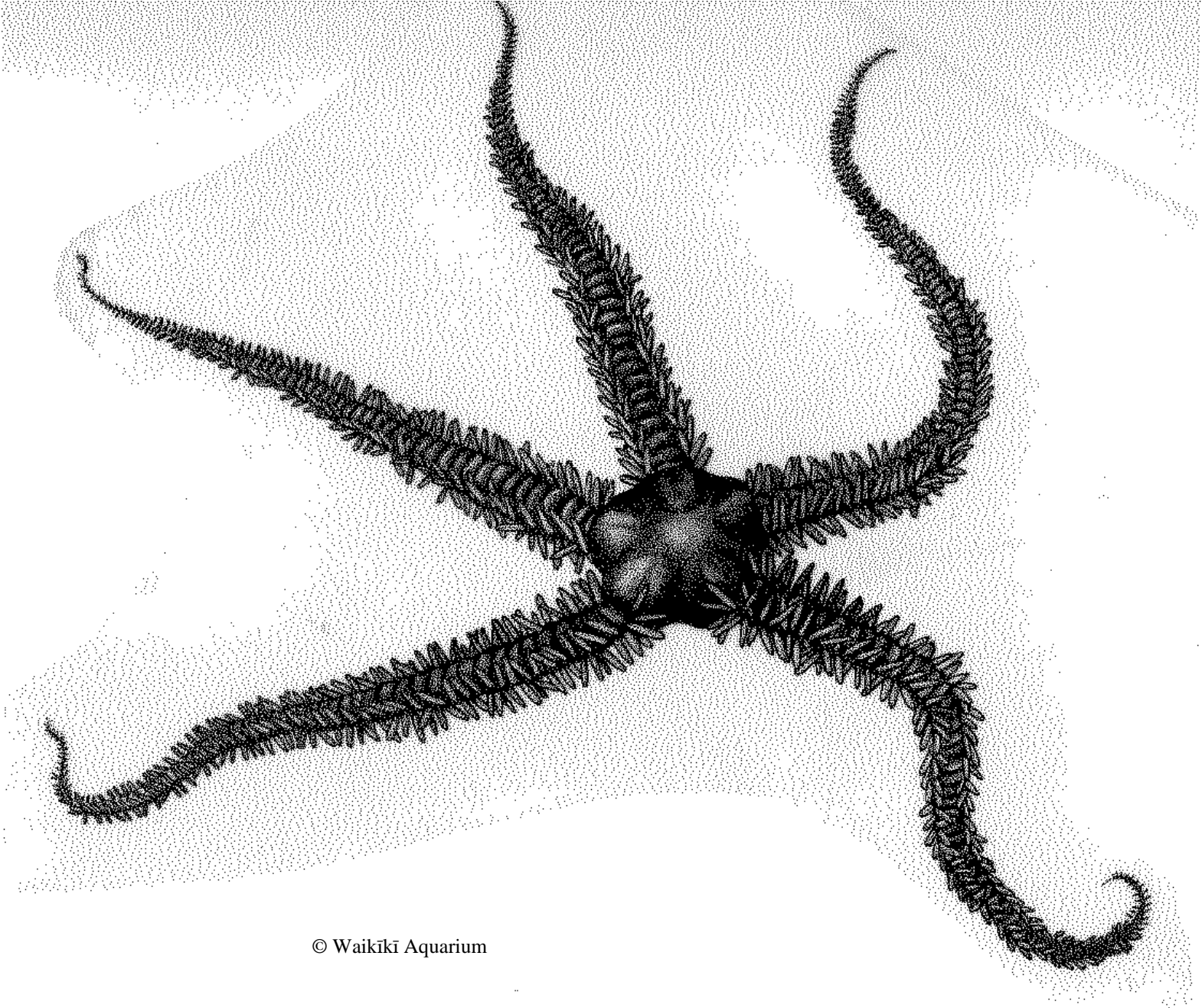
Brittlestars are very active and are common in tide pools and on reef flats, living under rocks or in crevices with only the tips of the arms exposed. They are very sensitive to light, scurrying for cover when exposed. The arms and central disc are covered with tiny transparent calcite crystals which act to focus light onto light-sensitive tissues underneath, forming an array that functions as a single eye! The arms also have spines along the sides, which are used in movement, gripping the bottom as the brittlestar pulls itself along with a "rowing" motion. Tube feet are located on the undersides of the arms but lack sucker discs and are not used in movement.

Brittlestars feed on bottom detritus or on particles floating in the seawater. The tube feet gather the food particles and transfer them to the mouth on the underside of the central disc. The mouth, with 3 triangular teeth, leads to a sac-like stomach, but there is no anus and any undigested material must pass back out of the mouth.

### **Classification:**

Kingdom Animalia  
Phylum Echinodermata  
Class Ophiuroidea

**HAWAIIAN BRITTLESTAR**  
*Ophiocoma* sp.  
pe'a



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