Gracilaria Parva: A Novel Species
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Introduction

Problems with algal classification are mostly due to the past use of morphology and anatomy which have generally been successful for classifying species through the higher ranks to Classes or Phyla, but it has not been helpful in distinguishing the relationships within these groups. As such, this approach is not reliable enough for species identification especially within Gracilaria in which most species contain a very similar cylindrical and stringy morphology as seen in Figure 1. However, DNA sequence analysis is much more reliable for characterizing and identifying species. Our focus has been on red algal genus Gracilaria due to its widespread economic importance from agar used in biological labs and multiple food products. To this end, we have focused on the bottom clades in Figure 2, starting with Gracilaria chouae.

Results

Based on its small size as shown in Figure 4, we have tentatively named our species Gracilaria parva. Surprisingly, the most closely related species, Gracilaria galetensis, is typically between 8 and 16 cm in contrast to Gracilaria parva’s small size of less than 2 cm.

Additionally, as shown in Figure 5, Gracilaria parva was collected in two locations in Panama and one location in Ecuador, all of which were in the Pacific ocean. In contrast, Gracilaria galetensis has been found ranging from North Carolina to Atlantic Panama. As these species inhabit entirely different oceans, we propose that their speciation must have occurred as the Panama isthmus closed sometime between 3 and 18 million years ago.

Discussion

References