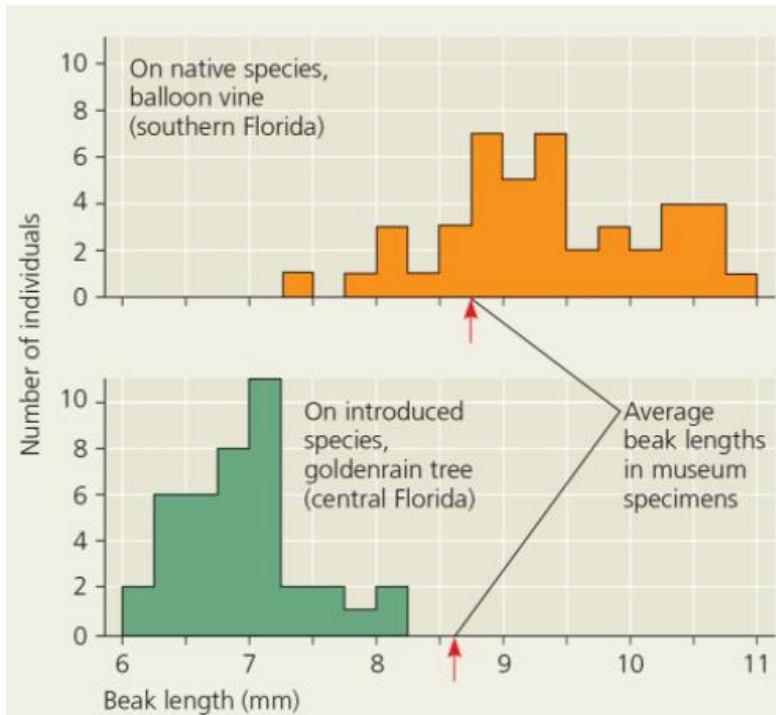# Soapberry Bug Beak Evolution

Soapberry bugs feed most effectively when the length of their "beak" is similar to the depth of the seeds within the fruit. Researchers measured beak lengths in soapberry bug populations feeding on the native balloon vine. They also measured beak lengths in populations feeding on the introduced goldenrain tree. The researchers then compared the measurements with those of museum specimens collected in the two areas before the goldenrain tree was introduced. Their results are summarized in Figure 1.

Figure 1 Beak length of soapberry bug populations

1. a) [SP4, SP6] Make a statement about beak length in the two populations. Justify your response.

b) [SP1] Based on what you know about the soapberry bug feeding strategy, provide an explanation for the difference in beak length in the two populations.

c) [SP1,6] Using your suggestion in (b), explain how the difference in beak length occurred?

2. [SP6] Additional studies took soapberry bug eggs from a population that fed on balloon vine fruits and reared them on goldenrain tree fruits (and *vice versa*). Predict the results you would expect to find in the offspring. Justify your response.

3. [SP3] Researchers claim that the difference in beak length is the result of natural selection. Design a simple experiment that would provide support for this claim.