

*Scolopacidae* is a family which includes the long-billed shore-dwelling birds commonly known as “sandpipers.” However, the family exhibits remarkable diversity, from the tiny waders which may be a mere 10 centimeters long, to the great curlews which may be six times their size. Moreover, unlike many species who achieve evolutionary diversity by virtue of migration to different environments and separated, various birds in the sandpiper family may be found together in the same environment. This begs the question as to what evolutionary mechanism prompted the segregation of the birds into so many different genera while the birds remained in the same habitat.

The answer lies in a key biological feature of the sandpiper – its long narrow bill. All sandpipers live in shoreline areas and feed off invertebrates. This is the utility of the sandpiper’s bill, which enables it to forage through mud and grass and the edge of a waterbody. The ease or difficulty of a particular type of prey relative to a sandpiper’s bill is likely what has caused the divergent evolution of sandpipers, with some lineages finding larger bills more advantageous, and likewise the contrary for others.

For example, the snipe is a type of sandpiper with a moderately long bill that feeds on mostly earthworms as well as some insects. Snipe, and their cousin the woodcock, locate prey by a “sewing machine” type of behavior where by they repeatedly prod the mud with their sensitive bills, which have evolved extra nerves. By contrast, the much larger-billed curlew often feeds on larger crustaceans such as crabs, and for this has a much wider, thicker, and longer bill to assist in this purpose. Snipe and curlew, both descended from a common ancestor, evolved to their current state based on different specific sources of food by shorelines.

One shorebird called the “turnstone” is of particular interest. Native to the arctic archipelago of Canada, the turnstone is a small bird in the sandpiper family with a very short beak. It thrives on insects and often flips over stones to flush out prey, thus its name. Given its diet and proficiency, it is curious why the turnstone is limited to such a small range. One possibility is that the turnstone or similar small-billed scolopacids were much more common and widespread but were unable to maintain critical mass except in the far north where there was little competition. However, another option is that the birds in fact evolved in their native habitat and have been slow to expand. This idea bears some merit, given that the turnstone often winters in the United States and is able to survive those winters

14. The primary purpose of the passage is to

- (A) articulate the nature and cause of the variety within a family of birds
- (B) explain a particular phenomenon and how it affects different ecosystems
- (C) describe in detail each of the birds within a particular family
- (D) contrast the eating habits of various scolopacids
- (E) show why the curlew inhabits different areas from snipe and woodcock

15. The author mentions the turnstone primarily in order to

- (A) show that an aforementioned proposition is not always true
- (B) give a specific example of a disparity previously mentioned
- (C) illustrate a new concept through analogy
- (D) provide additional evidence for one side in a controversy
- (E) demonstrate that all scolopacids live near waterbodies

16. If scientists discovered a new species of scolopacid with a comparatively large thick bill, the passage would most strongly support which one of the following conclusions?

- (A) It does not live in the same habitats as snipe or woodcock.
- (B) It is not a migratory bird.
- (C) It locates prey by flipping over rocks.
- (D) It feeds on larger heavier creatures.
- (E) It spends less time near waterbodies than smaller birds in the same family.

17. Which one of the following is most similar to the feeding behavior of the snipe as described in lines 26-30?

- (A) A person who makes a salad utilizing almost all of the available toppings at a salad bar.
- (B) A cargo ship which operates and carries cargo over a short, fixed route.
- (C) A workplace safety inspector who analyzes every room with a machine designed to pick up the faintest hint of toxins.
- (D) A swimmer who trains by swimming for long periods of time frequently on some weeks, then swimming very little in subsequent weeks.
- (E) An orchestral trombonist who practices the works she needs to learn every day at the same time.

18. Which one of the following best describes the organization of the passage?

- (A) A subject is proposed; the paradoxical details of that subject are elaborated upon.
- (B) A theme is developed; contrary themes are shown to be problematic.
- (C) A concept is set out; the reasons for that concept given, and the concept is applied to two very different situations.
- (D) A topic is chosen; the differences between that topic and other topics are expounded.
- (E) A thesis is articulated and reinforced by illustration, and a curious example which raises questions is mentioned.

19. The author of the passage would be most likely to agree with which one of the following statements?

- (A) Species that eat larger creatures are invariably themselves larger than those that eat smaller ones.
- (B) Creatures can evolve without geographic divergence.
- (C) Most shorebirds are not migratory.
- (D) Shorebirds are only one of many families birds that feed off insects and other creatures near waterbodies.
- (E) The area near waterbodies is more conducive to evolution than other ecosystems.

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