

Natural Selection

Writing in Biology

Aboard the Beagle

There are many individual figures who stand out in the history of science, but few as boldly as naturalist Charles Darwin. To explore relationships among various populations of animals and plants, your textbook uses conclusions reached by Darwin while on his famous voyage on the *Beagle*. Although Darwin was a master of observation and analysis, part of what made Darwin such a compelling thinker and scientist was his outstanding ability as a reader and writer. In addition to his scientific books, for instance, Darwin brought a collection of Shakespeare's plays on board the *Beagle*. The journal he kept while traveling serves as a record of his writing and interpretive abilities.

In this activity, you will read a number of actual excerpts from Darwin's journal¹. By reading these excerpts, you have an opportunity to observe Darwin as a scientist and a writer. You will be asked to consider what Darwin says as well as how he says it. In particular, you will consider his central observations about differences and similarities among species. At the same time, you will need to pay attention to some of Darwin's "asides"—his impressions of climate, geography, and people. Then, you will focus on how Darwin writes, including the metaphors he uses and the questions he asks, in order to draw connections between thinking and writing scientifically. Finally, you will practice your own thinking by writing about evolutionary change.

EXCERPT 1

This excerpt is taken from Darwin's first entry. Pay attention to the details he records and the descriptive terms he uses.

St. Jago—Cape de Verd Islands, Jan., 1832

We found on St. Paul's only two kinds of birds—the booby and the noddy. The former is a species of gannet, and the latter a tern. Both are of a tame and stupid disposition, and are so unaccustomed to visitors, that I could have killed any number of them with my geological hammer. The booby lays her eggs on the bare rock; but the tern makes a very simple nest with seaweed. By the side of many of these nests a small flying-fish was placed, which, I suppose, had been brought by the male bird for its partner. It was amusing to watch how quickly a large and active crab (*Grospus*), which inhabits the crevices of the rock, stole the fish from the side of the nest, as soon as we had disturbed the parent birds. . . . Not a single plant, not even a lichen, grows on this islet, yet it is inhabited by several insects and spiders. The following list completes, I believe, the terrestrial fauna: a fly (*Olfersia*) living on the booby, and a tick which must have come here as a parasite on the birds; a small brown moth, belonging to a genus that feeds on feathers; a beetle (*Quedius*) and a woodlouse from beneath the dung; and lastly, numerous spiders, which I suppose prey on these small attendants and scavengers of the waterfowl. The often repeated description of the stately palm and other noble tropical plants, birds, and lastly man, taking possession of the coral islets as soon as formed, in the Pacific, is probably not quite correct; I fear it destroys the poetry of this story, that heather and dirt-feeding and parasitic insects and spiders should be the first inhabitants of newly-formed oceanic land.

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Writing in Biology (continued)

Write About It

1. What features of the island, other than its animal life, does Darwin record? How does he describe these features?
2. What surprised Darwin about the scene? Do you think these things would surprise you?
3. What "poetry" does Darwin have to correct? How does he correct it? How would you describe his attitude toward this kind of work? What would your attitude be?
4. Think of another "poetic" account of an environment and its inhabitants. Write a few sentences about it.
5. Where do humans fit into Darwin's account?

EXCERPT 2

This excerpt provides as good a record of Darwin's emotions as it does of his physical surroundings. As you read, write down the emotions he associates with his first entrance into the Brazilian rain forest.

Bahia, or San Salvador, Brazil, Feb., 1832

The day has passed delightfully. Delight itself, however, is a weak term to express the feelings of a naturalist who, for the first time, has wandered by himself in a Brazilian forest. The elegance of the grasses, the novelty of the parasitical plants, the beauty of the flowers, the glossy green of the foliage, but above all the general luxuriance of the vegetation, filled me with admiration. A most paradoxical mixture of sound and silence pervades the shady parts of the wood. The noise from the insects is so loud, that it may be heard even in a vessel anchored several hundred yards from the shore, yet within the recesses of the forest a universal silence seems to reign. To a person fond of natural history, such a day as this brings with it a deeper pleasure than he can ever hope to experience again.

Write About It

6. What types of events or experiences inspire similar emotions for you? How does your mood affect what you see, or vice versa? How do you think it affected Darwin?
7. Pretend you are in a good mood and write a paragraph describing an object in the classroom. Then, pretend you are in a bad mood and write another paragraph about the same object.
8. Darwin talks about a "paradoxical mixture of sound and silence." What does this mean? How do you imagine this mixture to be? Can you remember being exposed to a similar experience?

EXCERPT 3

Darwin's most provocative observations were made when he visited the Galapagos Islands. Notice that as Darwin records his thoughts he draws patterns and relationships among the things he sees.

Galapagos Archipelago, Oct., 1835

The natural history of these islands is eminently curious, and well deserves attention. Most of the organic productions are aboriginal creations, found nowhere