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findings, NASA's Sabatino Sofia and two colleagues put the sun's diminution at a slight 0.34 arc seconds altogether between 1715 and 1979.

Parkinson contends that the sun has not shrunk at all; Eddy and other scientists still argue that it has, if only by a small amount. Even slight changes in the future, they argue, could affect the Earth's climate. Meanwhile, astrophysicists and astronomers continue to delve into dusty archives in an attempt to resolve the question.

Darwin's Finches

"Darwin and His Finches: The Evolution of a Legend" by Frank J. Sulloway, in *Journal of the History of Biology* (Spring 1982), D. Reidel Publishing Company, P.O. Box 17, 3300aa Dordrecht, The Netherlands.

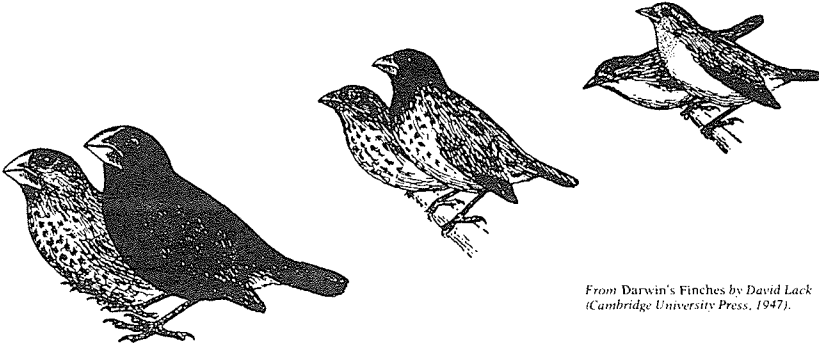
Newton is struck by an apple, Galileo drops weights from the Tower of Pisa—and theories are born. Thus do legends dramatize the painstaking discoveries of great scientists. But surely the legend of "Darwin's finches" is true? Not so, according to Sulloway, a professor of psychology and social relations at Harvard. The finches of the Galápagos Islands are said to have inspired his theory of evolution, but Darwin never even mentioned them in his landmark *Origin of the Species* (1859).

Charles Darwin (1809–82) visited the Pacific archipelago—16 principal islands about 600 miles west of Ecuador—in 1835, aboard H.M.S. *Beagle*. During his five-week stay, he gathered geological specimens from as many of the islands as he could. But he gathered zoological specimens haphazardly. Of the nine finch species (there are 13 "Darwin's finches") that he did collect, he correctly identified only six as finches. And these he thought were very distantly related—too different to arouse thoughts of evolution.

Darwin did notice that mockingbirds varied slightly from island to island. And he was intrigued to learn "that from the form of the body, shape of scales & general size, the Spaniards can at once pronounce, from which Island any Tortoise may have been brought." (Still, he was not intrigued enough to stop his shipmates from eating the tortoises brought aboard the *Beagle*.) While still at sea, nine months after leaving the islands, the significance of these facts began to dawn on him; he wrote in his notes that they might "undermine the stability of Species."

Returning to England in 1836, Darwin turned over his collections to specialists. Ornithologist John Gould correctly identified Darwin's finch specimens as closely related species. This revelation—plus others' findings about his fossil and plant collections—helped to confirm Darwin's thinking. Only then did Darwin pay close attention to the finches. But while on the islands he had recorded very little about them. He tried to deduce the island of origin for his specimens by going through the collections of his shipmates and servant, but he was wrong half the time. Moreover, he could not prove the impact of natural selection on the finches because he had failed to notice any differences in the birds' diets

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From *Darwin's Finches* by David Lack
(Cambridge University Press, 1947).

Male-female pairs representing three of 13 species of "Darwin's finches" found in the Galápagos Islands. The birds are said to have inspired Darwin's theory of evolution—but he never even mentioned them in his *Origin of the Species*.

and behaviors. Thus, the finches never made it into *Origin*.

Whence the legend? By the middle of the 20th century, it was clear to scientists that the finches presented a "textbook example" of Darwin's theories. Darwin's elaborate reconstructions of specimen locations—which later scholars took to be field notes—falsely implied that Darwin himself had recognized this from the start.

Why Dieting Doesn't Work

"Do Diets Really Work?" by William Bennett and Joel Gurrin, in *Science* 82 (Mar. 1982), P.O. Box 10790, Des Moines, Iowa 50340.

It often seems as if almost every adult in weight-conscious America is on a diet. According to Bennett and Gurin, director of the writing program at MIT and managing editor of *American Health*, respectively, such self-control may all be in vain.

Overeating, the authors argue, is not the chief cause of corpulence. Research conducted at fast-food outlets shows that the fat and the skinny eat about the same amounts. Genetic predisposition is the chief determinant of body weight. Each individual, the authors say, has a natural "setpoint"—a kind of fat thermostat—that keeps body weight near a fixed level. Glycerol and other substances released by adipose cells signal how much fat the cells contain: When the substances reach a low level, the brain responds by slowing body metabolism to conserve energy. Too high a level triggers the opposite reaction.

Setpoint theory helps to explain why dieters often gain back weight they have lost. In a 1944 experiment, 36 volunteers placed on an austere 1,750-calorie diet lost a quarter of their weight within six months. They