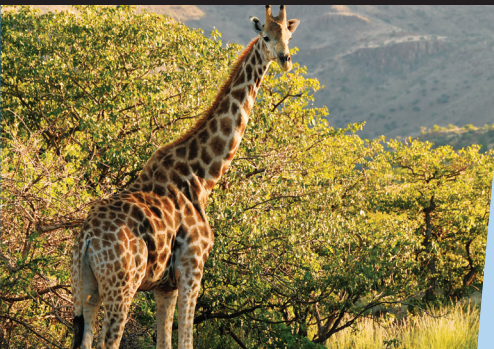


# THE AMERICAN BIOLOGY TEACHER



## About Our Cover

We have chosen this handsome young male Angolan giraffe (*Giraffa giraffa angolensis*) as our cover for the annual Evolution-themed issue for several reasons. First, many conversations about evolution evoke the mythology related to the development of the neck of the giraffe through “use and disuse,” and we should take any opportunity to reject this inaccurate account. More relevant is the fact that an examination of any population of organisms can provide evidence for the reality of evolution and offer some clues about future evolutionary trends. This is certainly the case with the giraffe.

Despite its odd appearance, the giraffe is built on a standard mammalian body plan that includes an interesting aspect of its impressive neck. Like nearly all mammals, the giraffe has only seven cervical vertebrae – the same number as in mice and men and everything in between except for sloths and manatees. What this tells us is that even though it is constrained by the same raw materials, natural selection can produce great diversity. Another lesson that can be seen in giraffes is what might be called “evolution in action” – and that involves what might happen next.

There is significant variation within the roughly one hundred thousand giraffes in Africa. Not only are the coats quite different and distinctive individually, there are four species of these giant herbivores. Furthermore, these four species – the Masai (*G. tippelskirchi*), Northern (*G. camelopardalis*), Reticulated (*G. reticulata*), and Southern (*G. giraffa*) giraffes – are divided into seven to nine subspecies that live in well-defined geographic areas throughout Africa. Subspecies are compelling from an evolutionary perspective because, given time, environmental pressure, and lack of gene flow, new species may develop from them.

Our cover animal is one of the two subspecies of the Southern species, not surprisingly found in the south of the continent. Although named for the nation of Angola, these animals are extinct there, but robust populations exist in central Botswana, Namibia, South Africa, and scattered regions of Zimbabwe. This photograph was taken in northwest Namibia, where Angolan giraffes are quite light in color and have large, uneven light brown patches surrounded by a pale cream color. Often their lower legs are randomly speckled with uneven spots.

This digital image was recorded with a Nikon D850 camera using a 28–300 mm zoom lens with image stabilization. The photographer is William F. McComas, editor of *ABT* and Parks Family Professor of Science Education and Director of the Project to Advance Science Education at the University of Arkansas (mccomas@uark.edu).

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