

THE AMERICAN BIOLOGY TEACHER



About Our Cover

Bactrian camels (*Camelus bactrianus*)

Camels are well-known mammals having been domesticated for millennia. They occur principally in two varieties: the one-humped Dromedary (*C. dromedarius*) and two-humped Bactrian (*C. bactrianus*) species, and a much rarer wild relative of the Bactrian known as *C. ferus*. Dromedaries make up about 94% of the world population of camels with the Bactrian species comprising only about 6%; the wild species is critically endangered.

Collectively, these remarkable animals are found across north and central Africa, the Middle East, India, China, and Australia. If one includes camelid relatives such as llamas and alpacas, their range might be said to include South America. Interestingly, camels arose in the Americas and migrated to Asia via a land bridge during the late Miocene.

The most distinctive feature of camels are the fatty deposits or “humps” on their backs. Contrary to popular belief camels store fat, not water, in their humps. The fat can be metabolized into water or as a food source in times of limited resources. When the fat is depleted, the humps become limp and hang down dramatically. In addition, they have several adaptations to permit survival in the arid desert conditions often associated with these animals including oval red blood cells that resist the osmotic change that occurs when camels drink large quantities of water at once. They also have a complex of intertwined veins and arteries that cool the blood flowing to the brain and can reabsorb water efficiently from the intestine and kidneys, generating syrup-like urine.

This photograph was taken along the ancient Silk Road in Kyrgyzstan, a landlocked country in Central Asia that hosts several of the main east-west trading routes that for centuries brought ideas, religion, and many trade goods including silk – often on the backs of camels – to Europe. Camels have long been used by humans in a variety of ways, as a source of meat, milk, fiber from hair, and, of course, as a mode of transport.

This digital image was recorded with a Nikon D810 camera using a 28-300mm image stabilized zoom lens. The photographer is William F. McComas, editor of the *American Biology Teacher* 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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