



About Our Cover

Ardipithecus ramidus (nicknamed Ardi), an ancient hominin, was discovered in 1994. Since then, more than 110 specimens have been recovered from several different sites in the Afar rift of Ethiopia. The 4.4 million-year-old creature was a tall, tree-climbing, bipedal fellow with a predominantly plant-based diet. *Ardipithecus ramidus* lived in a woodland environment and, although they were certainly not fully human, neither did they exhibit the climbing and walking strategies of modern chimpanzees or gorillas. Ardi is tentatively believed to be ancestral to *Australopithecus*, but it is 1 million years older than *Australopithecus afarensis* (ca. 3.7 mya) and older than *Australopithecus anamensis* (3.9–4.2 million years ago). They were not tool makers, but Ardi does have some traits that carried on into *Australopithecus*. Ardi walked upright on two legs while on the ground and climbed on all fours along the branches of trees. The work on Ardi is frequently credited to Tim White, Professor of Anthropology at the University of California at Berkeley (reference: White, T.D., et al. (2009). *Ardipithecus ramidus* and the paleobiology of early hominids. *Science*, 326, 75–86). The Ardi reconstruction illustration on the cover is by Karen Carr Studio and is provided by the Human Origins Program, Smithsonian Institution, Washington, D.C.

This February *ABT* focuses on evolution, as will every February issue.

Contents

Reprints From The Past

Nothing in Biology Makes Sense Except in the Light of Evolution
[Reprint of Dobzhansky, T. (1973). *Nothing in biology makes sense except in the light of evolution*. *ABT*, 35(3), 125–129.]

Theodosius Dobzhansky 87

Biology Teachers Begin to Pull Together

[Reprint of Riddle, O. (1938). *Biology teachers begin to pull together*. *ABT*, 1(1), 1–4.]

Oscar Riddle 92



Feature Article

Teaching Evolution & the Nature of Science via the History of Debates about the Levels at Which Natural Selection Operates

Why are debates so important in science?

William D. Stansfield 96

Article

A Socratic Method for Surveying Students' Readiness to Study Evolution

How much do your students understand about reproduction, heredity, ontogeny, and sources of genetic and phenotypic diversity?

William D. Stansfield 102

Available online at <http://www.nabt.org/websites/institution/index.php?p=637>

Inquiry & Investigation

Chromosome Connections: Compelling Clues to Common Ancestry

Recognizing our common ancestry with chimps via telomere fusion!

Larry Flammer 108



How To Do It

Witnessing Evolution First Hand: A K–12 Laboratory Exercise in Genetics & Evolution Using *Drosophila*

The red eyes have it! Learning about evolution by natural selection

Caiti S. S. Heil, Brenda Manzano-Winkler, Mika J. Hunter,

Juliet K. F. Noor, Mohamed A. F. Noor 116

Convergent Inquiry in Science & Engineering: The Use of Atomic Force Microscopy in a Biology Class

AFM technology can increase students' motivation and creativity in biology education

Il-Sun Lee, Jung-Ho Byeon, Yong-Ju Kwon 121



Quick Fix

Genesis & the Human Ribcage: An Opportunity to Correct a Misconception & Introduce an Evolution Lesson into the Anatomy Class

How many ribs do you have?

Phil Senter 128

Natural Selection Is a Sorting Process: What Does That Mean?

Sorting out evolution

Rebecca M. Price 130

Using Big Box Biology to Teach Diversity

Big box stores offer great deals for teaching diversity in biology

William Heyborne 133

Departments

From the President • *Being a CONFIDENT Advocate for Teaching Evolution* • Mark D. Little 80

Letter to the Editor • Glenn Branch 81

Guest Editorial • *Yes! Absolutely! Let's Teach Creationism in Science Classes!* • Armando Simón 83

A History of NABT's 75 Years • *NABT Activities in the 1930s* • Bunny Jaskot, Pat Waller 86

Addiction & the Brain • *What's Stress Got to Do with It?* • Helen T. Buckland,

Susanna L. Cunningham 136

Book Reviews • Elizabeth Cowles, Department Editor 139

Classroom Media Reviews • Roberta Batorsky, Department Editor 142

Sacred Bovines • *Contextualizing Creationists* • Douglas Allchin, Department Editor 144