PALEONTOLOGY

TV Dinosaur Team Treads Tricky Mammalian Terrain

Walking with Dinosaurs was a smash hit, but researchers were uneasy with the mix of fact and guesswork. Now mammals get the same treatment

NORWICH, U.K.—After dinosaurs, mammals took center stage: in real life and on television. The same production team that made giant reptiles stomp and roar across our screens in *Walking with Dinosaurs* is continuing where the series left off, 65 million years ago. Like its predecessor, *Walking with Beasts*—a six-part series that began in the U.K. this month and will air on a single night (9 December) in the United States—blends expert knowledge, computer animation, and mechanized models to present extinct mammals feeding, fighting, and fleeing in a "wildlife documentary" format.

This time around, the BBC programmakers faced new challenges, including a subject less familiar to the public and dominated by twitchy, hairy creatures that are harder to animate than dinosaurs. And the makers have taken the bold step of conjuring our own distant ancestors, inferring behavior from modern apes. "It was a very daring decision," says paleontologist Michael Benton of the University of Bristol, U.K.

Benton is a vocal supporter of a production that inevitably attracts criticism from experts, just as *Dinosaurs* did 2 years ago for its blending of fact and inspired guesswork into appealing scenarios (*Science*, 7 April 2000, p. 29). Because of the success of *Dinosaurs*, the team stuck to the same recipe for *Beasts*, but this time around the programmakers provided even more background material using Web sites and interactive TV. "It's all laid out bare for anyone to look at," says series producer Jasper James. "We hide nothing."

How the makers of the program fared is dividing the experts. Benton, a dinosaur specialist, proclaims *Beasts* "a gift to paleontology." Mammal expert Jerry Hooker of London's Natural History Museum is positive, despite some quibbles. "The animation generally is very good … when [the animals] walk, their feet really do seem to be in contact with the ground; when they tread in the dust the dust goes up." But, Hooker adds, "I do cringe sometimes at some of the things that are said."

Andrew Currant, a colleague of Hooker's, declares himself "a little bit disappointed" with *Beasts*. Some of the creatures' movements, he says, are "very Bambi, very Disney." But Currant argues that anything that inspires public interest in lost mammals is good.

James admits that mammals were a tough job: Hair alone was a headache. To prevent the hairy animals from "coming out looking like Muppets," he says, the animators had to develop new techniques to get realistic hair. But mammals have whiskers that move, eyebrows that shift, cheeks that wobble, and ears that twitch, says lead animator Mike Milne: "It was more the extra mobility that mammals have that took us by surprise."

A particularly exacting task was depicting *Australopithecus*, a 3-million-year-old upright hominid. *Beasts* charts a troop after the death of a lead female, the subsequent tensions in the troop, and the troop's search for a new home. The animators worked hard with Robin Crompton of the University of Liverpool, U.K., to give *Australopithecus* a justifiable and believable movement, between ape and human. They based the hominid's behavior on bonobos, a species similar to chimpanzees. Even though the TV crew ducked some contentious questions, such as whether *Australopithecus* had tamed fire, James expects this element to attract the harshest scrutiny. "It's a hot subject," he says.

When birds ate horses. *Gastornis* makes a late lunch of a drunken *Propalaeotherium*.

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But on the whole, mammals simply aren't as sexy as dinosaurs—to the public or to the research community. Paleontologists are keen to point out that this is not from a lack of fossils. "The quality of the fossil record of mammals in the last 65 million years on the whole is better than that of the dinosaurs," says Benton. He notes that some sites, such as the Messel oil shales near Frankfurt, contain mammalian fossils showing hair and gut contents with "astonishing preservation."

Although more may be known about what ancient mammals ate and looked like, scientists remain uncomfortable about inferring behavior, as was necessary for *Beasts*. Besides the hot-button hominids, one example occurs when an early horse, *Propalaeotherium*, is shown eating rotting grapes on the forest floor. Its senses dulled by alcohol in the grapes, the diminutive creature becomes an easy meal for *Gastornis*, a flightless bird that looks like a cross between a parrot and a *Tyrannosaurus rex*.

Far-fetched? Depends on whom you ask. Hooker says the evidence is "absolutely positive" that *Propalaeotherium* ate grapes because a fossil of the horse found in the Messel beds had grape pits in its stomach. Elephants and other modern animals get drunk when they eat rotten grapes. But Hooker thinks putting two and two together is "pushing it a bit." Whereas some researchers shy from making the connection, Benton says it's fair game, arguing that TV needs a compelling story.

British viewers with access to digital television will be able to make up their own minds. If anything appears puzzling, "they can press a button and there will be fossils and a scientist telling them how we know that," says James. This is the first time that interactive TV has been used for a documentary in the U.K. The BBC has also put together two 50-minute "science of" programs, to be screened during the *Beasts* series, and a Web site with animation sequences, mammalian family trees, and explanations of how the programmakers decided on the appearance and behavior of every star creature (www.bbc.co.uk/beasts). The U.S. production will air as a 3-hour-long program on the Discovery Channel, *Walking with Prehistoric Beasts*, in which animation is interspersed with talking heads who provide scientific background directly.

Paleoanthropologist Leslie Aiello of University College London, a consultant to *Beasts*, admits she is uneasy about the show's tendency to stray into "paleofantasy," but overall she declares it "an exciting, good series." Now it's up to U.S. viewers to give their own thumbs-up—or thumbs-down—to the latest prehistoric diorama come to life.

–ANDREW WATSON

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