Journal of Mammalian Evolution, Vol. 12, Nos. 3/4, December 2005 (© 2005)
DOI: 10.1007/s10914-005-7331-9

Book Review

The Hunt for the Dawn Monkey: Unearthing the Origins of Monkeys, Apes, and Humans. Chris Beard. Berkeley: University of California Press. 2004. 363 pp., $27.50 (cloth). ISBN 0520233697.

Who would have thought Chris Beard competing noggin-to-noggin with Elwyn Simons, and vicariously those who went before him, over bragging rights to owning the ancestors' ancestor would make the centerpiece for a very nice, semipopular book on anthropoid origins? Well, it does. This vivid, personal account of Beard's 10-year quest to pinpoint the origins of anthropoids, and the "firestorm" it wrought, is a success. The theme that motivates the story is the claim that he and his colleagues have rewritten the crux of deep *Homo*-history by demonstrating a surprisingly early origin for anthropoids, and in Asia, thus trumping the magnificent findings made in the late Eocene and early Oligocene Fayum of northern Africa. The chance to do so came about with the discovery of new fossils, mainly Chinese, which Beard and colleagues are now collecting into the Eosimiidae, as well as some North American Eocene omomyids that led him to suspect this was the case.

Beard is a gifted writer, a good storyteller, utterly sincere, and he never stops talking about the technical stuff. He supplies enough metaconids, hypoconulids, altiatlasiuses, and hoangoniuses—not to mention the Szalays, Gingeriches, Godinots, and other real-time personages that play a role in the tale—to keep the endorphins flowing among primate-paleo and primate-politico junkies. I'll admit I'm an easy audience for this stuff. I find it fun to hear the morphological arguments again and again, stripped of scientific prose and infused with historical context, ego, ambition, scientific skirmishing, and a few *eureka* moments. I suppose I also find the book enjoyable because I was seriously thick about this genre when I sat down to read it. I know, of course, that our mundane lives in science are filled with nanoepisodes of drama when we want them to be, but who is daring enough to think the average reader would care? Beard may be right on that score. Chalk up another point for Robin Dunbar's thesis: gossip and verbal grooming does make the globe go round.

Time will tell if Beard is the prescient morphologist or the wishful tinker. That he is scientifically bold and creative there is no doubt, for the Chinese specimens that loft this enterprise are still sparse. Much more will come, but the published material as it now stands—jaws, ankles, possibly an ear and a slip of face—can all fit into a couple of size-medium Altoid tins. There is one spectacular lower jaw: both sides, plenty of bone, pristine teeth, undistorted. While three genera have been nominated into the eosimiid family, *Eosimias* is really the thing and what *Eosimias* is is the question. Is it a tarsier relative,

broadly speaking? Or, has Beard spied subtle signs that it comes from our side of the Great Divide, the stamps of an anthropoid, albeit a very primitive one? He is confident that is the situation. The essential evidence Beard presents to make his case has consisted of a vertical mandibular symphysis, erect incisors, large canines, a deep lower jaw, premolar orientation, and a wide trigonid and small talonid heel on the third molar; a new specimen of a related genus hints of a deep face, thus small eyes presumably.

The mandibular and inciso-canine features have been tried before in attempting to link adapids with anthropoids. This time some of the characters may work: adapids have converged on anthropoids in various ways but *Eosimias*, like any haplorhine, is definitely more closely related and stands a better chance of sharing homologies with monkeys and apes. But I am cautioned by philosopher-president George W. Bush, who said, "Fool me once, shame on—shame on you. Fool me—can't get fooled again." While these characters are surely not the paleo-W.M.D. equivalents of bioweapons, Tonka trucks, aluminum tubes, and yellow cake uranium, for Beard they have already blasted open an Asian passage toward Anthropoidea and in the process buried nearly a century of "misguided" (see below) meanderings on the matter, most recently personified by Elwyn Simons and his magical catalog of Egyptian primates. At the same time, Beard takes a lesson from the grandmaster's sourcebook and likewise positions his discoveries as vital to paleoanthropology. The yield is a weird pastiche of Simons, Donald Rumsfeld, and F. Wood Jones: define the dawn of humankind by the fossils you have, not the ones you might want or wish to have—now, out pops a quasi-tarsier as the last link in the chain.

Don't get me wrong—I do like this book, and I do believe tarsiers are the last living link, of a sort. But *Eosimias* as the missing link? I'm willing to be convinced; not swayed yet. Either way, I like this book because students can learn a great deal in the glow of Beard's passion. They will travel with him from his home base at the Carnegie Museum of Natural History in Pittsburgh to Duke to Hopkins; from Wyoming to China to Egypt; from desert to prep lab to conference room. Along the way they will meet players of yesterday and today; Cuvier, Matthew, Wortman, Osborn, Bown, Rose, Cartmill, Kay, Louis Leakey. They will also see how the pursuit of science interplays bumpily with human nature, and hear about the give-and-take that goes down at a scientific meeting of leading thinkers. They will learn about morphology and taxa. I suspect some students will also confuse *Eosimias* with "*Eoanthropus*" of Piltdown fame. And, for pedagogy's sake, I do wish Beard had chosen a different moniker for the title of this book. "Dawn Monkey" is like a throwback to gradism, a concept I work hard to expunge in the classroom. But I guess the search for a snappy vernacular became limited once the authentic nomen was fixed. Spins like "Dawn Ape" were tossed out during Simons' mid-1960s blitz that launched the Fayum into orbit; "Dawn Prosimian" intones the wrong side of the phyletic divide. But Dawn Monkey? Not when the deepest human root you manage to summon up by following the logic of the case is the goggle-eyed, bat-eared, leggy gnome on the book jacket.

Eosimias is a haplorhine that much is clear. It is older than all the indisputable anthropoids from the Fayum, several now known by the highly diagnostic anthropoid skull, and it appears to be more primitive, i.e., more omomyid or tarsier-like in comparable parts. While systematists have barely enjoined the debate in print, there are various opinions about *Eosimias* for it matches nothing else closely, neither any living forms nor any extinct taxa. This explains Beard's dismay. Simons refuses to accept the contention that eosimiids are

anthropoids in the absence of solid similarities aligning them with the Egyptian material. Marc Godinot can't reconcile the idea with his upper molar of an older African genus, *Algeripithecus*, which looks like a miniature knock-off that originated in the Fayum. Fred Szalay sees in *Eosimias* the *gestalt* of a tarsioid, as I do. Phil Gingerich, when encountering the first evidence as little more than a spiky-toothed jaw fragment, friskily raises the specter of hedgehogs. Ross MacPhee finds the only potentially referable petrosal bone absent any synapomorphies either with anthropoids or definitive tarsiiforms. Others, such as Dan Gebo and Marian Dagosto, see anthropoid possibilities in the ankle bones.

Beard concedes that eosimiids most resemble the tarsier-like omomyids, which is to be expected in a protoanthropoid—to some unfathomable degree. Therein is the paradox. Actually, it is not too hard to cherry pick characters supporting a number of alternative hypotheses or to mindlessly PAUP the teeth, which has been done and gotten us nowhere. *Eosimias* is a tough problem, especially as the logical set for a good character analysis is the omomyids, which are taxonomically abundant by comparison but full of morphological and phylogenetic holes. *Eosimias* is also problematic in that many specimens are the spillage of fissure-fills, an impossible taphonomic situation where body parts cannot be matched confidently with one another.

Clearly, we are only at the front end of the *Eosimias* story, and the Asian story of early primate evolution. Will Beard turn out to be right when the next chapters are drafted? Judging by the last 20 years of paleontology on that last, huge, little-explored chunk of Laurasia, there is no question that the contours of primate evolution will be reshaped over and over again as new fossils emerge. Will this have bearing on anthropoid origins? Yes, it already has. New specimens have helped falsify (I'd love to say "kill," but the adapid–anthropoid hypothesis from which it derives seems oddly immortal in some camps.) the notion that Asian amphipithecids are early anthropoids which, incidentally, denies one of Beard's reasons for thinking Asia was the original source for higher primates, i.e., their alleged diversity and broad, early beachhead. Will further discoveries add to knowledge of the enigmatic and relict *Tarsius*? Surely. Will they add to euprimate and primate origins? Probably. Does this mean the continent of Africa is dead as a touchstone for earliest anthropoids, or even primate origins? Not really. So far, the several small swatches of dirt that have been swept for Eocene primates have produced wondrous results. In fact, had taxa like *Catopithecus* and *Algeripithecus* not been found there, I doubt *Eosimias* would ever have gotten a second look as a possible anthropoid.

More philosophically, will validation of eosimiids as basal Asian anthropoids prove Beard's (pp. 270–271) zinger: "[d]ecades of research by paleoanthropologists who sought to decipher how anthropoids evolved from middle and late Eocene prosimians can now be recognized as being woefully misguided—the academic equivalent of a drunken man stumbling down a blind alley, searching for a way home"? Absolutely not. But the inexorable buildup to that metaphor, which appears in the penultimate chapter, leads me to see another value of this book as a source of perspective for younger students. The reconstruction of deep phylogeny, the nodes beneath the crown group, is an error-prone endeavor utterly immersed in a world of ambiguity. It could not be otherwise. So, while it is unfortunate that we live in a culture where being right is so essential to the definition of professional success, the practicing scientist knows well the slow stutter steps of scientific advance. We were made to stumble, first as a wobbly biped, more recently as a brainy knowledge-seeker

who cannot resist the delicious fruit of a scientific challenge, even those not ripe enough to naturally dehisce and reveal their ancient secrets.

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