

SCIENCE NEWS®

The Weekly Newsmagazine of Science

Science Service Publication
Volume 143, No. 16, April 17, 1993

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SCIENCE NEWS (ISSN 0036-8423) is published weekly on Saturday, except the last week in December, for \$39.50 for 1 year or \$68.00 for 2 years (foreign postage \$6.00 additional per year) by Science Service, Inc., 1719 N Street, N.W., Washington, DC 20036. Second-class postage paid at Washington, DC, and additional mailing office. POSTMASTER: Send address changes to SCIENCE NEWS, P.O. Box 1925, Marion, OH 43305. Change of address: Four to six weeks' notice is required — old and new addresses, including zip codes, must be provided.

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Editorial and Business Offices:
1719 N St., N.W., Washington, DC 20036
(202-785-2255)

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Subscription Department:
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Letters

Eoraptor: Ancestral theropod?

In the story on *Eoraptor* ("The Accidental Reign," SN: 1/23/93, p.60), you state that the dinosaur was found in the "foothills of the Andes." That is incorrect: The Ischigualasto Formation outcrops in a Triassic basin some 100 kilometers east of the Andes.

Until recently, our knowledge of the initial steps of dinosaur evolution was restricted to three dinosaur genera: *Herrerasaurus*, *Pisanosaurus*, and *Staurikosaurus*.

Although *Eoraptor* is more generalized than these forms, it is morphologically far from the common ancestor. In fact, primitive ornithischians and sauropodomorphs shared some aspects of *Eoraptor*. Sereno noted the primitive nature of the skull of *Eoraptor*, although he recognized three cranial features diagnostic of the saurischians. But it is incorrect to consider

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Cover: Archaeological and genetic studies indicate that corn is much older than researchers realized even a decade ago. Moreover, new data suggest that it began disseminating through the Americas millennia earlier than believed. These realizations are forcing anthropologists to revise long-held assumptions about the seminal role corn played in civilizing the New World. (Photo: DEKALB Plant Genetics)



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Science Service, which publishes SCIENCE NEWS, is a nonprofit corporation founded in 1921. It gratefully accepts tax-deductible contributions and bequests to assist its efforts to increase the public understanding of science, with special emphasis on young people. More recently, it has included in its mission increasing scientific literacy among members of underrepresented groups. Through its Youth Programs it administers the International Science and Engineering Fair, the Science Talent Search for the Westinghouse Science Scholarships, and publishes and distributes the *Directory of Student Science Training Programs for Precollege Students*.

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the primitive nature of the skull as support for the hypothesis that dinosaurs arose from a common ancestor: Phylogeny is reconstructed on the basis of novel anatomical traits shared by two or more taxa, not on the basis of primitive resemblances.

According to Sereno *et al.* (NATURE, Jan. 7, 1993) *Eoraptor* is a primitive theropod. More properly, *Eoraptor* is an *ancestral theropod*. The importance of this dinosaur is that it sheds new light on how and when evolutionary novelties appeared within the theropod lineage.

Eoraptor was found by the geologist Ricardo Martínez. Although Sereno is a clever scientist and a hard field worker, the discovery of fossils and generation of interpretations are the result of the work of several people.

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You ask whether the dinosaurs achieved global dominance through competition or good fortune — that is, the mass extinction of their rivals. These mechanisms are not mutually exclusive, as the article acknowledges only briefly.

Even assuming that most of the large "reptiles" of the late Triassic were eliminated by the terminal extinction event, the mammals of the time survived. If "classical Darwinian" competition was largely irrelevant to the success of the dinosaurs, as Sereno suggests, what accounts for the suppression of mammalian evolution for the 150 million years following the Triassic?

Perhaps a better model would include both an ecosystem-clearing catastrophe and a subsequent struggle among the survivors.

Joseph M. Ramirez
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