

SCIENCE'S COMPASS

analyses have also included more than 30 putative ancient South American specimens, some of them showing a high degree of fossilization. Different multivariate statistic tools have been used in these studies with complete convergent results.

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We Aren't Worth a Mention?

Floyd E. Bloom's "Endless pathways of discovery" seems remarkably constrained to eliminate discovery of much of human behavior, social organization, and many features of what constitutes being human (Editorial, *Science's Compass*, 14 Jan., p. 229). The nature that, in Stephen Jay Gould's introductory essay to the series (p. 253), an advancing but very human science seeks to understand seems peculiarly devoid of human beings beyond the molecular or cellular, as the iconographic borders indicate. Bloom says that "the editors retain credit for any errors, omissions, or overemphases," or perhaps discredit for a timeline devoid of Adam Smith, Thomas Malthus, Karl Marx, George Perkins Marsh, Sigmund Freud, Max Weber, Franz Boas, John Maynard Keynes, Noam Chomsky, and Ester Boserup, to name a few.

In Gould's essay, where he tries to disperse the "false dichotomies of the science wars," he observes that "science, as a quintessentially human activity, must reflect a surrounding social context..." It is difficult to understand the social context that encourages pathways of discovery that lead everywhere but to ourselves.

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Economics of Bushmeat

There is growing evidence that commercial hunting of wildlife for sale as food is a more immediate threat to wildlife conservation and species survival than is habitat destruction throughout most of the tropical forested regions of the world, a topic discussed in the Policy Forum "Wildlife harvest in logged tropical forests" by John G. Robinson, Kent H. Redford, and Elizabeth

L. Bennett (*Science's Compass*, 23 April 1999, p. 595) and elsewhere (1, 2). Attempts to reduce or halt overexploitation of wildlife have focused on the supply side of the commercial bushmeat trade. Most interventions emphasize law enforcement to curb hunting and transporting of meat to markets, particularly within the context of commercial logging that greatly facilitates the bushmeat trade (see Robinson, Redford, and Bennett's Policy Forum).

We know little about how consumer demand for bushmeat responds to the price of bushmeat and of its substitutes, or to changes in household income. If the quantity of bushmeat demanded by consumers does not respond to large changes in the price of bushmeat, then present command-and-control measures to constrain the supply of bushmeat, or efforts to increase production of livestock alternatives to bushmeat, at best will have a modest effect on wildlife conservation. If the consumption of game, like the consumption of firewood or charcoal, declines when incomes grow, then economic prosperity could enhance wildlife conservation.

Preliminary evidence from household surveys in Boliva and Honduras suggests that bushmeat consumption follows an inverted U pattern with income, increasing as income rises from a low initial base, but then



Iguanas are common bushmeat fare in Honduras.

declining. Consumption also declines strongly when the price of bushmeat increases and that of bushmeat substitutes falls.

At least three specific lessons for policy-makers and donors could be gleaned from these results. First, economic development might result in enhanced wildlife conservation if household incomes rise fast enough and high enough to shift bushmeat from a necessity to an inferior good. Second, given the high own-price elasticity of demand (the change in demand for an item as the price of that item changes) for bushmeat, any factor that lowers the cost of hunting (for example, new weapons or cheaper market access) will increase hunting effort and thus the impact on wildlife. But any activity that raises the opportunity costs of labour could counterbalance the negative affects of new technologies. Last,

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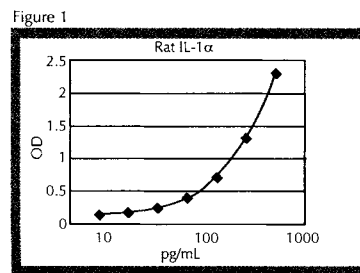
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