

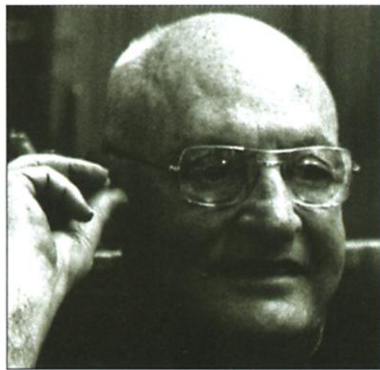
## Venezuelan Response to Yanomamo Book

IN HIS BOOK *DARKNESS IN EL DORADO* (W. W. Norton), Patrick Tierney attacks the research methods and the conclusions reached by Napoleon Chagnon and several other researchers who were involved in studies of the Yanomamo people in Venezuela, studies that were carried out several decades ago (see *Science*, 29 Sept., p. 2251, and 19 Jan., p. 416). In the course of his book, Tierney weaves in half-truths that sweep honorable and decent researchers into his path in his efforts to disqualify everything related to his target.

Such is the case in the accusations and offensive allegations regarding the role played by Marcel Roche, a distinguished Venezuelan man of science. We, the authors of this letter, are some of Roche's colleagues who have devoted our lives over the last half-century to conducting and advancing, together with him, the best possible science in Venezuela. For all of us who collaborated with and learned from Roche in the 1950s and 1960s, it is offensive to read descriptions that imply he was a poorly trained or careless local doctor (he received his medical degree at The Johns Hopkins University and pursued medical research as a Fellow at Harvard Medical School).

Tierney argues that a deadly outbreak of measles in the Yanomamo in 1968 originated with the Edmonston B vaccine, which was administered by Roche and others according to a protocol designed by James Neel. We have no doubt that Roche, an endocrinologist, inoculated Yanomamo people in an effort to stop the spread of the infection, and not as part of an obscure effort to destroy the Yanomamo or to assess their limits of endurance to foreign microorganisms such as the measles virus, "in the attempt to resolve the great genetic question of selective adaptation." The crit-

icized Edmonston B vaccine against measles was later discontinued, but at the time was still used. It was the only weapon available to Roche in the field to fight the epidemic outbreak of the disease (live vaccines, which are prepared with attenuated pathogens, cannot produce a transmissible disease, although they are able to induce defenses against it). In fact, measles is known to have been present in the region before the arrival of the expedition in which Roche took part, as evidenced by testimonies by respected anthropologists from Venezuela (Nelly Arvelo, personal communication) and France (Jacques Lizot, in *El Nacional*, Caracas, 17 Nov. 2000). Furthermore, Tierney notes on page 82 of the book that a measles outbreak occurred in neighboring Brazil in 1967. What can be judged as an act of charity and good will is transformed



Venezuelan scientist Marcel Roche.

steal bones to be sent to U.S. agencies where studies on the effects of radiation on virgin populations were being carried out. At the Instituto, which was a refuge for Venezuelan researchers upon closure of the Caracas university by the dictatorial regime of Marcos Pérez Jiménez, no studies on humans were ever performed nor any forensic work done. Such activities were carried out at public hospitals.

The Instituto was closed in 1958 when the dictatorship was overthrown, but Tierney refers to the activities at the Instituto in-

volving the Atomic Energy Commission, in juxtaposition to events involving Roche that occurred 10 or more years later, at a different location and with different people, linking his story of the Edmonston B vaccine to studies by Roche using radioactive iodine. By citing the events in 1968, Tierney appears to be trying to throw a questionable light on Roche's work 10 years before. And in the discussion of Roche's studies with iodine, Tierney suggests that the doses Roche used were dangerous; however, the oral dose administered by Roche to study thyroid uptake of iodine, which he used with thousands of subjects, has no toxic effect. He used the standard dose for radioactive iodine uptake (RAIU)

tests that is still used today in medical practice and can be found in any general medicine textbook. This is one of many details revealing Tierney's ignorance of the subject matter and lack of appropriate technical advice.

Roche was indeed one of the few

Venezuelan scientists who, in the early 1950s, had been trained in nuclear medicine. He took part, beginning in 1952, in studies recognized worldwide that led to the eradication of goiter, and the consequent myxedema and retardation, in the Andean region. These studies, using radioactive iodine, were already advanced by mid 1954 and were completed in 1955. He became the director of the Nuclear Center in Venezuela in 1958 and the first president of the Venezuela National Research Council in 1969. Would there be a better person to contact than Marcel Roche if an officer from a foreign nuclear agency (specifically, Paul Aebersold) was to visit Venezuela in 1954? Would it not be justified to make a mark next to his name, as Aebersold did in a list of potential interviewees? However, Roche is portrayed by Tierney as the "contact" of some kind of an atomic mafia that harmed the aborigines to fill data records. Whatever Tierney has written about him, Marcel Roche will

**"What can be judged as an act of charity and good will is transformed...into a misleading complot..."**

by Tierney into a misleading complot in his dark book.

Even more absurd are the implications that autopsies were done at the Instituto de Investigaciones Médicas de la Fundación Luis Roche, of which Roche was director, to

be remembered as a distinguished scholar and pacifist.

VIRGILIO BOSH, Department of Physiological Sciences, Universidad Central de Venezuela (UCV). LUIS CARBONELL, Director, Instituto Venezolano de Investigaciones Científicas (IVIC; 1974–1981), and Member of the Academia Nacional de Ciencias (ANC). EDUARDO COLL, Department of Physiological Sciences, UCV. GABRIEL CHUCHANI, Emeritus researcher, IVIC and Member of the ANC. MIGUEL LAUFER,\* Director of IVIC (1993–1997) and editor of *Interciencia*. MIGUEL LAYRISSE, Director of IVIC (1981–1984 and 1992–1993) and Member of the Academia Nacional de Medicina. JORGE VERA, Vice-director of the Universidad de Carabobo (1963–1971). GLORIA VILLEGAS, Instituto de Estudios Avanzados. RAIMUNDO VILLEGAS, Director of IVIC (1969–1974), Chancellor of the Academia Latinoamericana de Ciencias. (All signatories were members, in the 1950s, of the staff of the Medical Research Institute, Luis Roche Foundation, Caracas.)

\*To whom correspondence should be addressed at the Center for Biophysics and Biochemistry, Instituto Venezolano de Investigaciones Científicas, Apartado 21827, Caracas 1020A, Venezuela. E-mail: mlauger@ivic.ve

## Discovery of Earliest Hominid Remains

**THERE ARE INACCURACIES AND NEGATIVE innuendoes about my character in the Random Samples item “6-million-year-old man” (15 Dec., p. 2065), which discusses the Kenya Palaeontology Expedition’s recent find of 6-million-year-old hominid remains in Kenya’s Rift Valley. These are the earliest hominid remains yet found.**

Regarding statements in the item, I have never been “[in] trouble with the Kenyan government.” A court case brought against me charging that I was collecting fossils without a permit was not “suspended”; it was declared *nolle prosequi* by Kenya’s attorney general because my research permit was indeed valid. My permit was never withdrawn by the Kenyan government. A letter was handed to me in 1999 by a member of the staff of the National Museums of Kenya, who is currently studying in the United States, to the effect that my permit was withdrawn, but this letter was discovered to be a forgery.

As for comments by Bernard Wood quoted in the Random Samples item, to my knowledge he is not familiar

with our discovery, so on what basis can he say that the circumstances of the discovery are “extremely unfortunate”? In addition, the brief description of permit applications for palaeontology research in Kenya misrepresents the procedures. Research permits, until a few months ago, were granted by the Office of the President, not by museums (permits are now issued by the Ministry of Education). One does need to be affiliated with an authorized organization to apply for a permit; however, other organizations, including the Community Museums of Kenya (with which I am affiliated), not just the National Museums of Kenya, can issue affiliations for palaeontology research.

Another person quoted in the item, Andrew Hill, refers to my presence in the Tugen Hills as “highly irregular.” The Kenya Palaeontology Expedition, which I and Brigitte Senut lead, has been carrying out research in the area in collaboration with a Kenyan organization created to do this very type of research, with research permission from the Kenyan government in an area where no field survey has been done since 1993. What is so “irregular” about that? Hill also says, “If he knows the date [of the fossil], it’s because of our work.” However, in my Ph.D. thesis (1) written long before Hill began studying the region, I reviewed the ages of the Tugen Hills succession, and the Lukeino Formation was, even at that time, known to be about 6 million years old. Hill had no direct role in this early dating work.

Another inaccuracy is the description of the Community Museums of Kenya as a “private” organization. It is not private, but a nongovernmental organization licensed by the Kenyan government, with equal legal status to the National Museums of Kenya, which is a parastatal organization.

At the end of the Random Samples item, it is said that I am “apparently favored by President Daniel arap Moi,” because I met with him to discuss the find. What is wrong with showing fossils to the president of a country? In 1991, Glenn Conroy showed the *Otaviipithecus* mandible to President Sam Nujoma of Namibia, but no one, to my

recollection, suggested it was unusual. A final detail: the name of the journal we are going to publish in is “*Comptes*,” not “*Contes*,” *Rendus de l’Académie des Sciences*.

“Conte” means fairy tale.

I find it unfortunate that the flagship publication of the American Association for the Advancement of Science should see fit to publish such an inaccurate and biased article, the aim of which appears to be not so much scientific but paleo-political.

MARTIN PICKFORD

Maître de Conférences, Collège

de France, 11, place Marcellin Berthelot, 75005, Paris, France

References and Notes

1. M. Pickford, thesis, University of London (1974).

**THE CIRCUMSTANCES OF THE DISCOVERY OF hominid remains by Martin Pickford are not accurately portrayed in the Random Samples item. The Kenyan government has liberalized many sectors of public life, including museums, and scientists of good faith from anywhere in the world now have a choice to carry out research in Kenya, something that was not possible for the first 35 years of the country’s independence. Among the many changes that have occurred is the wish of Kenyans to oversee and benefit from their own fossil resources. The Community Museums of Kenya, with which Martin Pickford was affiliated at the time of the fossil discovery and still is, reflects this wish. It is registered under the antiquities law in Kenya and is affiliated with various institutions and scientists from around the world. The Community Museums of Kenya has been carrying out field research for 3 years in the Baringo district.**

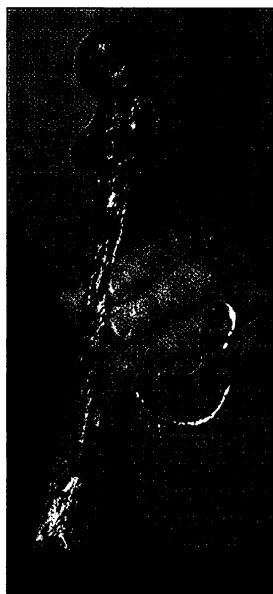
No longer is palaeontology in Kenya the monopoly of a single family or institution. Kenyans have recuperated their heritage, and with the help of the international community, will use it for development of its human and scientific potential.

EUSTACE GITONGA

Director, Community Museums of Kenya, Nairobi, Kenya. E-mail: egitonga@barclays.africaonline.com

## Wording Blurs Survey on Animal Protection

**A SURVEY OF INSTITUTIONAL ANIMAL CARE and Use Committee (IACUC) members described by Plous and Herzog in their letter (27 Oct., p. 711) purports to show that this group of researchers favors the inclusion of rats, mice, and birds under the Ani-**



**Expedition co-leader Brigitte Senut holds the leg bone from a 6-million-year-old hominid.**

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