

The Ancestor Seeker:

An Interview with Michel Brunet

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Michel Brunet, a paleontologist and paleoanthropologist at the Collège de France and the discoverer of the oldest pre-human remains yet to be found, describes to *Books & Ideas* the obsessive quest for the human family's ancestors and the circumstances in which his field, situated at the crossroads between the natural and human sciences, is practiced.

How Does One Become a Paleoanthropologist?

Michel Brunet: Before I was born, my parents lived in Versailles. It was 1940, and France was under German occupation. My mother wanted to give birth to me in the free zone, in the countryside, on my maternal grandmother's farm. Then she left me there. When I was old enough, I negotiated with my grandmother so that I didn't have to go to school. It was she who taught me to read, to write, to count—without telling my parents. When I was eight, I returned to Versailles. I had become a budding naturalist, who wanted to be surrounded by nature and in contact with people. Would I become a doctor, a veterinarian, or an agricultural engineer? Because I was good at math, they made me do a scientific baccalaureate (called a *mathelem*) and I did my university preparatory course ("*classe préparatoire*") at the Lycée Hoche in Versailles, without the slightest interest in it. My high school principal refused to let me transfer to a high school that prepared you to train as an agricultural engineer. As for being a doctor, locked up in your office, or a veterinarian, taking care of Chihuahuas and evolution's other failures, I just couldn't do that. I preferred a career as a naturalist. The paleontologist Jean Piveteau had created a third cycle doctoral program in vertebrate and human paleontology at the Sorbonne. So I attempted to ensure that my training as a naturalist was as complete as possible, by studying geology, paleontology, genetics, botany, and so on.

This training was completely separate from fieldwork. At the time, the only remains we studied were casts. Even Professor Jean Piveteau of the Sorbonne owned only a few Neanderthal remains, because he belonged to what was then a very significant category of paleoanthropologists, who, unlike Camille Arambourg, a great scholar, man of action, and head of the MNHN (the Muséum national d'Histoire naturelle, or the National Museum of Natural History) in Paris, never went into the field. Some of this has to do with generation: when you're the student of a thesis director who has gathered a lot from the field, you may think you can spare yourself the trouble. But many in my generation worked in the field and liked it so much that they never gave it up. In fact, I only take doctoral students on the condition that they agree to go out into the field. Reconstructing the brain of a Cro-Magnon man with 3D imagery and scanners is all well and good, but that kind of approach already existed a century ago. It shouldn't keep you from the field. Fossils are rare and competition is fierce, so it's important to go out and find your own fossils. Some researchers think they can make fossil owners provide

them with scanned images—and most of them do. Personally, I'm opposed to doing this before the study of the concerned fossils is complete. You can't pretend that fieldwork costs or difficulties in obtaining authorizations don't exist. The conditions in which research now occurs are, incidentally, increasingly bureaucratic—a real obstacle course.

How Paleoanthropology was Born

Books & Ideas: Paleoanthropology is not a field people know much about, despite the extensive efforts on the part of your friend and colleague Yves Coppens to make its discoveries and methods better known. Could you, briefly, remind us of its history, development, and methods?

Michel Brunet: It must be emphasized just how recent the concept of the “human fossil”—our field's key object—really is. In the 1830s, when Philippe-Charles Schmerling, a doctor, discovered human fossil remains in Belgium, they were simply put in a drawer, without being studied. Only in 1856 did human remains that had been discovered in the Neander Valley near Düsseldorf and identified as fossils attract scientific attention, earning them the name Neanderthal Man. It has only been for a little more than a century and a half that human beings have conceived of their species as having a history. That's not a long time, given the length of this history itself, which extends back to the emergence of pre-hominids at least seven million years ago. For a long time after the first discoveries, no one went back further than the Neanderthal. Even in the 1960s, Professor Piveteau, the teacher Coppens and I shared, had nothing older to show us than 40,000 year old Neanderthals. Then Coppens brought back Lucy, who was 3.2 million years old, while I found Toumaï, who was 7 million. We had made an enormous leap. Our history suddenly became very long, with deep African roots.

Earlier, everything was based on creationism. The neo-creationists were very cunning. They adopted the idea that the world was ancient in order to make human beings history's culminating point. They used the idea of the human clade, and the images associated with it, like that of the monkey climbing down from the tree and gradually standing up, which was adopted by advertisers to show men and women wearing some product or another they wanted to sell. I think, incidentally, that much of the population is still creationist, or neo-creationist, even though few will admit it. The majority only have a vague understanding of the human species' long history. Another idea that is not easily accepted is that we're all Africans. To give you one anecdote: after France refused to intervene in Iraq in 2003 and the Americans reacted quite violently, the French government chose to send a few speakers to the US to improve our image. They asked me to travel throughout the United States. I chose to give a lecture in Birmingham, Alabama on the topic “We Are All Africans.” It caused a sensation. To overcome the creationist obsession with the human clade, it would be best to speak, rather, of the human stem or branch, which cohabited with other species, and even hybridized itself with them. We've been alone for only 150,000 years. And for at least five million years, we were all black.

Beyond creationist clichés, paleoanthropologists are still caught up in a debate about an old concept that continues, despite our best efforts, to guide us: the idea, the desire of finding man's ancestor. The Neanderthal, with his receding forehead and large brow ridge, does not make for a very respectable grandfather. Quite soon after its discovery, research turned to Asia, in the hope of finding an ancestor more consistent with humanity's image of an ideal forefather. And they did in fact find the Pithecanthropus, in Java, and the Sinanthropus, in China. Yet the cerebral capacity of Homo Erectus was limited, which at the time was about as appealing as a

receding forehead (even though it is well known that an intellectual like Anatole France had a brain that was half the size of Cromwell's, which clearly shows that size has little to do with intelligence). So when they got back from Asia, because they were convinced such a perfect ancestor must also exist in Europe, they fell for a long time for what was in fact a hoax, though it was very influential: the so-called Piltdown Man, "discovered" in England in 1912. With its large cerebral capsule and its primitive jaw, it seemed credible. It was, in fact, an orangutan jaw, the teeth of which had been filed down to prevent them from being identified, attached to the skull of a modern sapiens. The hoax continued until 1953, when mass spectrometers proved that the alleged fossil was recent. Meanwhile, in 1925, Raymond Dart, a young white doctor working in South Africa (two traits that isolated him), described the first pre-human, *Australopithecus Africanus*. The idea that our ancestor could be two million years old, as Dart suggested, was not easily accepted. The paper in which he described his discovery was even turned down by *Nature*. After his pioneering work, there were successive discoveries in South Africa, despite the obstacles posed by apartheid and the regime's reticence to acknowledge the anteriority of African hominids. This very abundant material was preserved in the country's great museums in Johannesburg, Pretoria, and Durban. Just recently, the first complete *Australopithecus* skeleton, known as Little Foot, was found in a cave in Sterkfontein.

In the meantime, starting in 1959, new terrain was being explored. That year, Louis Leakey and Mary, his wife, made their first discovery in eastern Africa. There led to a new round of discoveries in Kenya, Ethiopia, Malawi, and Tanzania. In the Great Rift Valley, the layers that can be accessed because of the geological rupture made digs easier than in other places. In 1974, when the team co-directed by Coppens discovered Lucy, who was determined to be 3.2 million years old, people suddenly became conscious as never before of how far back in time our roots go and that our origins are African.

From Afghanistan to Chad

Books & Ideas: In those days, your gaze was turned towards other horizons—Afghanistan in particular.

Michel Brunet: I was not alone. At the time, many researchers, especially Americans, were seeking our ancestors in Pakistan. Not far away, in Afghanistan, I quickly realized that I wouldn't find an "ancestor," but we did identify a lot of fossils. The team I worked with was expelled. When, two years later, the government of Babrak Karmal re-authorized our work, we refused to return, so as not to give his regime scientific legitimacy. I wanted, at the time, to find a new site, one that others hadn't explored. But it's hard to avoid the necessity of working with local political authorities if you want to do paleoanthropology.

Personally, I didn't want to go to South Africa, because I wanted to go somewhere where no one had been yet. So the question of working with the apartheid regime was never an issue for me. However, in my quest for new sites, I did try to go to Libya. With the help of Jacques Chirac, who was fascinated by paleoanthropology, I met Kaddafi, at night, at his bunker in Sirte. After that, I was able to work in Libya with no problem.

The truth is that political leaders are very interested in this kind of research. What they want is for their country to be named the "cradle of humanity"! Idriss Déby, the president of Chad, where I worked a lot, asked me to write that Chad was the cradle of humanity. I preferred to say that Chad lies on the land that was the cradle of humanity... Politicians are, in this way, not

very different from the public at large. When the issue is the birth of the human race, everyone is interested.

Today, Africa is, for geopolitical reasons, a nearly closed continent. You can't set foot in Libya, Egypt, or Cameroon. I still work in Chad, but the north, the desert, has become impossible. The French Foreign Affairs Ministry denies researchers permission to go there; only the Chadian members of the team can. In N'Djamena, where my team brought the fossils we discovered, you can still work at the national center that supports research. But the last dig I did in Chad was in the southern part of the country, in the beautiful nature reserve at Zakuma National Park, where I had never been before. The Chadians dig for oil there. Beyond Chad, it's now extremely difficult for paleoanthropologists to work anywhere west of the Great Rift Valley. And it's particularly frustrating for people who, like me, believe that working in the field should be the paleoanthropologists' primary task. In all the research reports I've written up to now, I've always been proud to mention that every fossil I've studied was discovered by my team. But one of a fossil's main characteristics is its place in a sedimentary context. A fossil on a great-grandmother's chimney, with no date or location, may be aesthetically appealing, but it has no scientific value. I don't think much of armchair paleoanthropology.

Books & Ideas: Chad is where you discovered Abel and Toumaï, who made it possible for you to propose a new story about our human ancestors. What was the dominant narrative before these discoveries?

Michel Brunet: As I was saying, with the discovery of Lucy, we became aware of our African roots. Coppens, seeing the number of discoveries made in South Africa and eastern Africa, where the oldest fossils were found, proposed the "East Side Story": in this account of our origins, humans appeared in eastern Africa, large monkeys in central Africa. In paleoanthropology, however, a theory only lasts in the interval between two discoveries. Coppens was lucky: his theory lasted twenty years. It was I, a friend of his, who proposed the new theory, when, in 1995, we discovered an *Australopithecus*, Abel, 200 kilometers to the east of Addis Ababa, in Chad. All of a sudden, it became possible that humanity had in fact appeared much further west. My theory met with strong resistance. No one other than scientists spoke about Abel, despite the film we made with Gedeon Programmes, a Parisian production company. If you ask someone in the street who humanity's ancestor is, they'll still say Lucy. When we found Toumaï in 2001, who was twice as old as Abel and who confirmed the validity of my theory about humanity's possible birth in western Africa, two or three zealous disciples of my friend and colleague Coppens who embraced the East Side Story were not very charitable: they called it a gorilla. Voltaire once said: no one has the privilege of being wrong all the time. I think that if the story we proposed after discovering Toumaï has not caught on, for the time being, as much as Lucy's, it's because this discovery was unexpected.

It's important to realize that in our field, as in others, the way your research is made public is crucial, and that, in doing so, you have to take into account criteria that are not purely scientific. The name you give to the remains you find is, for instance, a very significant factor in how they are received. When we gave Abel his name—a biblical name, but also that of a colleague we wanted to honor—this choice posed a problem in Chad, a country where the majority is Muslim. In the case of Toumaï, it was Idriss Déby himself who proposed the name. He was thrilled with the discovery: "Now we've got the oldest one!" I told him: "If you want him to be known and for his name to be known around the world, his name can be no more than two syllables." He thought about it and suggested a reasonably uncommon first name from the Gorane language, which desert nomads give to children who are born before the dry season. Since their life

expectancy is less than those born right before the rainy season, “Toumaï”—“hope of life”—is added to their name for luck. In addition to this nickname, which is not part of the remains’ scientific name, I suggested that the president make a gesture to his neighbors, so as not to emphasize exclusively Toumaï’s Chadian origins: his full name is thus *Sahelanthropus Tchadensis*. So we did our best to push the envelope, to make sure that Toumaï’s reputation would spread and become known to non-paleoanthropologists in Chad, the Sahel, and the rest of the world.

If the name is so important, it’s not only to seduce the public. It’s because among ourselves, among paleoanthropologists, the competition for attention is so harsh. Toumaï, for example, arrived a few months after the description of the Millennium Man, *Orrorin Tugenensis*, who was discovered by Brigitte Senut and Martin Pickford of Paris’s National Museum of Natural History. They were out of luck: they made a great discovery in Kenya that was around 6 million years old. But then, a few months later, Toumaï arrived. Research goes through static periods, when there are lots of expected discoveries and no one bothers their colleagues. Then there are sudden bursts, when unexpected things happen. The *Ardipithecus*, the *Orrorin*, and Toumaï were found over a two year period. Such emulation is crucial for our profession. It’s particularly necessary for those, like me, who dig in difficult terrain, like the desert. There’s something very childish about being the one to find the oldest skeleton. But this doesn’t mean I won’t be happy if someone finds remains older than Toumaï. Quite the contrary.

A Monkey in Politics

Books & Ideas: What’s surprising is that despite your discovery’s importance, you have always refused to propose a “West Side Story” that would decisively place the story of humanity’s origins in western Africa.

Michel Brunet: They tried the “East Side Story,” but it turned out to be wrong. A “West Side Story” is bound to meet the same fate. I’m firmly convinced that what I’m telling you right now will become wrong when the next fossil is discovered. Yet some things don’t change. When Neil Armstrong landed on the moon, he planted a flag and collected a few samples. We did the same thing: we planted Abel’s flag. “Here, west of the Rift, pre-humans also existed, contrary to what they used to say.” My paleoanthropologist and geologist colleagues, including Coppens, didn’t think they’d be found. When we found Toumaï, we planted a second flag. What history will remember, in my view, is that we opened a new path for research. If you looked at the map of Africa before us, research opportunities were confined to South Africa and western Africa. My Franco-Chadian Paleoanthropological Mission team (*Équipe de la Mission Paléoanthropologique Franco-Tchadienne*, or MPFT) considerably broadened the playing field. We expanded it, as others probably will, too.

This new terrain forces us to ask, in turn, new questions. We currently believe that we’re the chimpanzee’s brothers. When you tell this to your children, the first thing they’ll say is: “So can you show me a chimpanzee fossil?” But now, we don’t know of any. This leaves them dreaming. It makes it look like we’re not serious. I tried to find one in Cameroon, but I can’t go there anymore. Right now, I’m trying to find another way to answer the question.

We belong to a group of old world monkeys (monkeys, baboons, *Cercopithecini*, gibbons, orangs, gorillas, and chimpanzees). We share a common ancestor with the new world, neo-tropical monkeys of South America. Where is the monkey’s common ancestor? Is it African? The oldest monkeys we know are Asian (from Myanmar, Thailand, and Southeast Asia) and 50 to 55

million years old. In Africa, we know some that are 30 to 35 million years old. I proposed to Kaddafi that we look for another Toumaï, preferably older, or one of the monkeys' ancestors. My team did in fact find in southern Libya a group of four anthropoid monkey species that were around 40 million years old, but we also found a South American rodent! 40 million years ago was the last climatic maximum the planet has known. At this time, there was no glacier, but a humid tropic forest that began in Myanmar and spread south, covering all of Africa, passing through Antarctica before climbing back up through South America.

Currently, my theory is that these anthropoids went from Africa to Antarctica and from Antarctica to South America. It so happens that I had the chance to meet Michelle Bachelet, the president of Chile who, like Jacques Chirac, loves archeology, in addition to being the daughter and mother of archeologists, and herself a pediatrician, so a scientist. She invited me to give a talk at La Moneda, the presidential palace, and, in 2001, provided me with a Hercules 730 and an escort from the Chilean navy to go to Antarctica. This was the beginning of a new quest. To find Abel, it took me twenty-five years. It's very unlikely I'll have twenty-five years to find the ancestor of neo-tropical monkeys or chimpanzees. But I just returned from a paleontological scouting mission in Patagonia and I think it's reasonable to expect that we'll get results. For now, the oldest monkey we have is 20 million years old: we should be able to double this age and reach 40 million years. I think we'll make it.

It would be an unexpected discovery. The prevailing theory today is that old world monkeys went to the new world aboard natural rafts that drifted from the Gulf of Guinea to the coasts of Brazil. The problem is that when you throw a bottle into the sea, it takes 30 to 35 days to make the crossing. But no one has ever seen a natural raft travel such distances. We know they happen in the Orinoco, where mangrove roots have broken loose, carrying an entire tree and the animals living in it over a hundred kilometers—but not 3,000 kilometers, and not for 30 to 35 days, which requires a fresh water supply.

Other equally fascinating terrains are waiting to be explored. For instance, it would be a good idea to look into the places where humans passed over from Africa to the rest of the old world. I told the director of Beirut's archeological museum that she needed to do digs in her region at levels between two and three million years old. If I were working in Lebanon, that's what I would do. It needs to be done. It shouldn't be that complicated.

Books & Ideas: Twenty-five years is a long time to wait for a discovery. You described this period as your “desert crossing,” and you used this time to run for elected office. How do you explain your ability to maintain your interest for so long, despite the frustrations?

Michel Brunet: When you're really looking for something, you'll find it. But you don't necessarily find what you're looking for. I've found dinosaurs, and the oldest mammals in Africa, dating from the Cretaceous period, but to find human beings, yes, it took me twenty-five years, and I encountered tenacious resistance. When Abel Brillanceau, a petrographer friend of mine who came to help me out in Cameroon, died there of malaria, leaving five young children behind, some of my colleagues were harsh, accusing me of being indirectly responsible for his death by continuing to search in western Africa with no rhyme or reason. It was the kind of thing that made me want to do something other than research. My university career also helped me to understand that you have to help researchers gain recognition, which is without question what they lack the most. People need to understand that when you're doing not applied research, but fundamental research, it's normal for things to take time, just as it's normal to not really know what the point of what you'll find will be.

That's what compelled me to get involved in politics, in the etymological sense of the term—that is, to become involved in the affairs of the city. For twenty-four years, I served on the municipal council of a small town. During my time in office, I met many people, including actual professional politicians. It cost me many hours of sleep. I realized that we live in a country where bureaucracy makes it too complicated for many people to get that which they're theoretically entitled to—a problem that also affects researchers. I was in contact with people, not just human remains. And this isn't bad from the standpoint of my field: paleontology is, after all, a human science, as I see it. And given the environmental crisis we're faced with, a better understanding of the past will help us build a better future...

Professor Brunet's website at the Collège de France: <http://www.college-de-france.fr/site/michel-brunet/>

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