

Why Were the First Anthropologists Creationists?

JONATHAN MARKS

Anthropologists in every generation have been tarred as creationists by radical Darwinians. In only the very first generation of scholarly anthropology, however, does the charge really stick; that is, in the founding tradition of liberal German humanistic anthropology from about 1860–1890. This paper explores the ideas that may have motivated their rejection of evolution.

Rudolf Virchow was arguably the preeminent life scientist in nineteenth-century Germany. Although he made fundamental contributions to the development of cell biology, anthropometry, human adaptability, and epidemiology, his memory in physical anthropology is generally reduced to a single act: rejecting the earliest fossil evidence of human evolution, in the forms of “Neanderthal Man” and “Java Man.”^{1–3}

In a dualistic framework that pits evolutionism against creationism – abstracted from time, culture, and nuance – one is tempted to see Virchow as a closed-minded representative of the old ways, an intellectual conservative refusing to accept the truths of Darwinism despite their obvious validity. In short, as an old fool, precisely as he was portrayed by Ernst Haeckel, the leading spokesman for German Darwinism.

And yet Virchow was neither a conservative nor a dummy. He was a prominent and activist leader of the

Liberal party, a political reformer⁴ and pacifist,⁵ who was personally challenged to a duel by no less than Otto von Bismarck.^{6,7} He pioneered the study of the social conditions that cause disease. He argued on behalf of the rights of Jews in an increasingly anti-Semitic social environment.^{8,9} When he understood the fossils as being, to some extent, pathological specimens, he was speaking as a founder of that medical specialty.^{10,11} Moreover, his pioneering measurements of German schoolchildren began quantitatively to disentangle the concepts of “nation,” “race,” and “type.”^{12–14} Indeed, for “modern physical anthropology” (according to his obituary in *Science*) “no one has done more to shape, guide and foster it than Rudolf Virchow.”¹⁵ Yet, in 1877, he had declared in a scientific meeting in Munich: “*We cannot teach, we cannot designate it as a revelation of science, that man descends from the ape or from any other animal. We can but designate this as a problem, may it seem ever so probable, and may it lie ever so near.*”¹⁶

What an odd position to take! Evolution is apparently so dangerous that we need to shield our children from it, regardless of its empirical validity? Virchow’s comments were intended, and understood, as a direct challenge to the leading German evolutionist, Ernst Haeckel. Even Thomas Huxley walked a fine line here, seeming, in his preface to an English translation of Haeckel’s response, to agree with Virchow’s ambivalence toward teach-

ing evolution: “It is not that I think the evidence of that doctrine insufficient, but that I doubt whether it is the business of a teacher to plunge the young mind into difficult problems concerning the origin of the existing condition of things. I am disposed to think that the brief period of school-life would be better spent in obtaining an acquaintance with nature, as it is; in fact, in laying a firm foundation for the further knowledge which is needed for the critical examination of the dogmas, whether scientific or anti-scientific, which are presented to the adult mind.”¹⁷

Indeed, Virchow gave the second Huxley Lecture in 1898, and his contempt for Haeckel was matched only by his enthusiasm for Huxley. Far from repudiating Huxley, Virchow observed that *Man’s Place in Nature* “stepped boldly across the borderline which tradition and dogma had drawn between man and beast.”¹⁸ “Whatever opinion one may hold as to the origin of mankind,” he added, “the conviction as to the fundamental correspondence of human organization with that of animals is at present universally accepted.”¹⁸

To judge Virchow as a hard-headed, backward-looking creationist, then, seems more than a bit harsh. Surely there was more to his rejection of the fossil evidence of human ancestry than stupidity, intellectual conservatism, or religiosity.

ADOLF BASTIAN

Virchow was not alone in his rejection of human evolution. He was joined most prominently by Adolf Bastian, with whom he was a co-founder of the Berlin Society for Anthropology, Ethnology, and Prehistory in the decade following *The*

Jonathan Marks is Professor of Anthropology at the University of North Carolina at Charlotte, and the author of *Why I Am Not a Scientist* (University of California Press, 2009) and *The Alternative Introduction to Biological Anthropology: Where Anthropology Meets Biology* (Oxford University Press, in press).

Origin of Species.¹⁹ Bastian's opposition to evolution was widely known,^{20,21} but also hard to explain. (In this early period of anthropological thought, the relationships between historical and biological processes were only beginning to be formalized. Bastian had a different dispute with the geographer Friedrich Ratzel over the nature of cultural "evolution.")

Andre Gingrich frames it in terms of political abstractions: "It seems that the reasons for the antievolutionist orientation of German anthropology, so closely connected to state and crown, were distributed among three factors: Protestant pietism tended to reject an antievolutionist theory of the origin of species and of humanity; Prussian nationalism displayed deep skepticism toward a new theory from rival Britain; and imperial hegemony provoked profound distrust of a theory that largely inspired Marx and Engels, the leading thinkers of the German labor movement..."²² Presumably, however, those same social forces would have influenced the many admirers of Ernst Haeckel as well.

Andrew Zimmerman suggests a more formal philosophical basis, rooted in the contemporary assumption that historical reconstruction is invariably inferential, and that the domain of the scientific ought to be reserved for synchronic, experimental studies.²³ Even Franz Boas tried to understand at least Virchow's anti-Darwinism by ascribing to Virchow a belief in the ontological primacy of cells over organisms, and a consequent reluctance to accept the mutability of species until the mutability of cells had been fully worked out.¹⁵

The rejection of evolution by the first generation of anthropologists may have a simpler explanation, however. Rudolf Virchow and Thomas Huxley were intellectual leaders in their respective countries, on a significantly contested point, namely the unity of the human species. On the other side, as it were, there were also powerful biologists, among them, notably, Louis Agassiz in America²⁴ and Paul Broca in France.^{25,26} This issue cross-cut Dar-

winism and was bigger than Darwinism: How was the human species constituted and, consequently, how was the scholarly, scientific study of human diversity to proceed?

The answer seemed to lie with a methodological principle of Adolf Bastian's, "the psychic unity of mankind." This is where the literature in English pretty much dries up, but it is basically a foundational moment for anthropology.²⁷

Adolf Bastian was concerned with founding a science of ethnology, the comparative study of human social behavior.²⁸ He traveled widely, established diverse and extensive collections, and was the highly respected director of the Ethnological Museum, as well as a notoriously turgid and opaque writer^{29,30} whose works were never translated into English, apparently mercifully.³¹ Fundamental to his program, however, was the unity of the human species.³²

Thomas Huxley was similarly committed to the proposition of the unity of the human species. This was one of the tenets of the Ethnological Society of London, founded in England in the 1840s; its opposite was adopted by the Anthropological Society of London when it splintered off in 1863. Huxley, as President of the Ethnological Society in 1870, oversaw the reconciliation of the two rival scientific associations, under the name of "Anthropological," but holding the formal views of the older Ethnological Society.^{33,34} Like Huxley, the Darwinians generally aligned themselves with the monogenist "ethnologicals" as opposed to the polygenist "anthropologicals," who tended to oppose Darwinism with the same vehemence with which they opposed the unity of the human species.³⁵

Adolf Bastian's principle of the "psychic unity of mankind" is essentially what permitted the study of ethnology to exist. If other kinds of people are different orders of beings, then no true communication is ultimately possible between them. The only way that a sound science of ethnology could be established is by supposing that all people are indeed fundamentally similar biologically, the same kinds of beings, and more

like one another than like any other kind of animal. Obviously we do not wish to project modern values on these premodern thinkers, but there is a basic point at the heart of the matter. Can there be a rigorous study of the human species or is the human species itself an illusion?

More specifically, a bleeding-heart illusion, since the Ethnological Society, with Thomas Huxley as its last president, had begun a generation earlier as an anti-slavery and aboriginal protection society with strong roots in the religious and moral dimension of human diversity. Their opponents, the "anthropologicals," commonly prided themselves on their polygenist irreligiosity, but also adopted the morally unpopular position on slavery. (England had outlawed slavery while Darwin was on the *Beagle*.) A significant implication of the new evolutionary theory for Victorian England was that it gave the morally respectable and theologically conservative position of monogenism (unity of humanity, back to Adam) a firmer footing in the science that had previously been the strong point of polygenism (an ancient earth, possibly populated by pre-Adamites). The human species would remain a single natural unit; however, the common ancestor was no longer Biblical Adam, but rather a sort of chimpanzee.^{36,37}

THE MISSING LINK

In Germany, of course, the politics were somewhat different. The chief spokesman for Darwinism in Germany was Ernst Haeckel. His popular works sold well in English translation. In any language, however, the Darwinians, in trying to link their European readers to the apes genealogically, faced a formidable problem: the absence of a fossil record documenting that transition. Unlike Huxley, Haeckel grappled explicitly with this problem, and solved it clearly for his readers, notably in his popular 1868 synthesis, *The Natural History of Creation*. "We as yet know of no fossil remains of the hypothetical primaeval man . . . But considering the extraordinary resemblance between the lowest woolly-haired



Figure 1. Frontispiece and title page of the first German edition of Haeckel's *Natural History of Creation* (1868), courtesy of the Max Planck Institute for the History of Science, Berlin.

men, and the highest man-like apes, which still exist at the present day, it requires but a slight stretch of the imagination to conceive an intermediate form connecting the two, and to see in it an approximate likeness to the supposed primaeval men, or ape-like men.³⁸ That is to say, we do not really need a fossil record to document the transition from ape to man because the nonwhite races form the links that connect Europeans to the apes.

Of course the intermediacy of the nonwhite races was not original with Haeckel, nor even with the Darwinians. Cuvier,³⁹ for example, a half-century earlier, likened “la race nègre” to apes in his treatise on *The Animal Kingdom*. Haeckel was simply adopting a familiar image and using it to his rhetorical advantage. The artwork he drew for the frontispiece of his book certainly left little to the imagination (Fig. 1). After complaints from other scientists like Charles Lyell, Haeckel redrew and expanded the figure for the second German edition two years later and inserted it into the text, rather than using it as a frontispiece. The figure

was omitted from the English translation and from subsequent editions, “but its impact had certainly been felt within the intellectual community and beyond”⁴⁰ (Fig. 2).

Most significantly, Haeckel's positioning of the peoples of the world as connecting Europeans to apes implied that they were not completely evolved. It meant that there could be no psychic unity of mankind because the members of mankind were not all equally human. Consequently, ethnology itself would be impossible, for there would be no basis for comparison; comparing different people would be comparing apples and oranges, and not really different from humans studying monkeys.

Indeed, ethnology would be only quantitatively different from primatology, since Haeckel believed that there were twelve species of people, and that they lay at various distances away from the apes. “Some of the wildest tribes in southern Asia and eastern Africa,” he explained, “have no trace whatever of the first foundations of all human civilization, of family life, and marriage. They live together in herds, like apes, generally

climbing on trees and eating fruits; they do not know of fire, and use stones and clubs as weapons, just like the higher apes... They have barely risen above the lowest stage of transition from man-like apes to ape-like men, a stage which the progenitors of the higher human species had already passed through thousands of years ago.”⁴¹ The relation to the apes was, of course, crucial to Haeckel, and in order to establish continuity with them he would casually sacrifice the unity of the human species. “[T]he mental differences between the lowest men and the animals are less than those between the lowest and the highest men.”^{41:366}

One does not have to put modern ideas of cultural relativism into the heads of these early anthropologists, only the ambition to establish a rigorous basis for the practice of ethnology, in which different groups of people are fundamentally comparable with one another. Regardless of whether it could be established that this point actually motivated these scholars against Haeckel's views, it is nevertheless true that they did oppose Haeckel's views, that Haeckel's views did fundamentally undermine their intellectual program by implicitly denying the psychic unity of mankind. The reasons for their rejection of evolution remain unclear.⁴² Virchow's objections in his 1877 address were specifically about the political implications of evolution (leading apparently to socialism) and its unproven nature. These, however, can hardly be taken at face value, especially in light of Virchow's denial of any “wish to disparage the great services rendered by Mr. Darwin to the advancement of biological science, of which no one has expressed more admiration than [I have].”^{16:vi}

I suggest that the rejection of evolution by the first generation of German anthropologists was, at least in part, the rejection of the particular version of evolution that was being promoted. That version undermined the unity of the human species, as well as the project of studying our species rigorously, both of which were more important to them than whether our ancestors

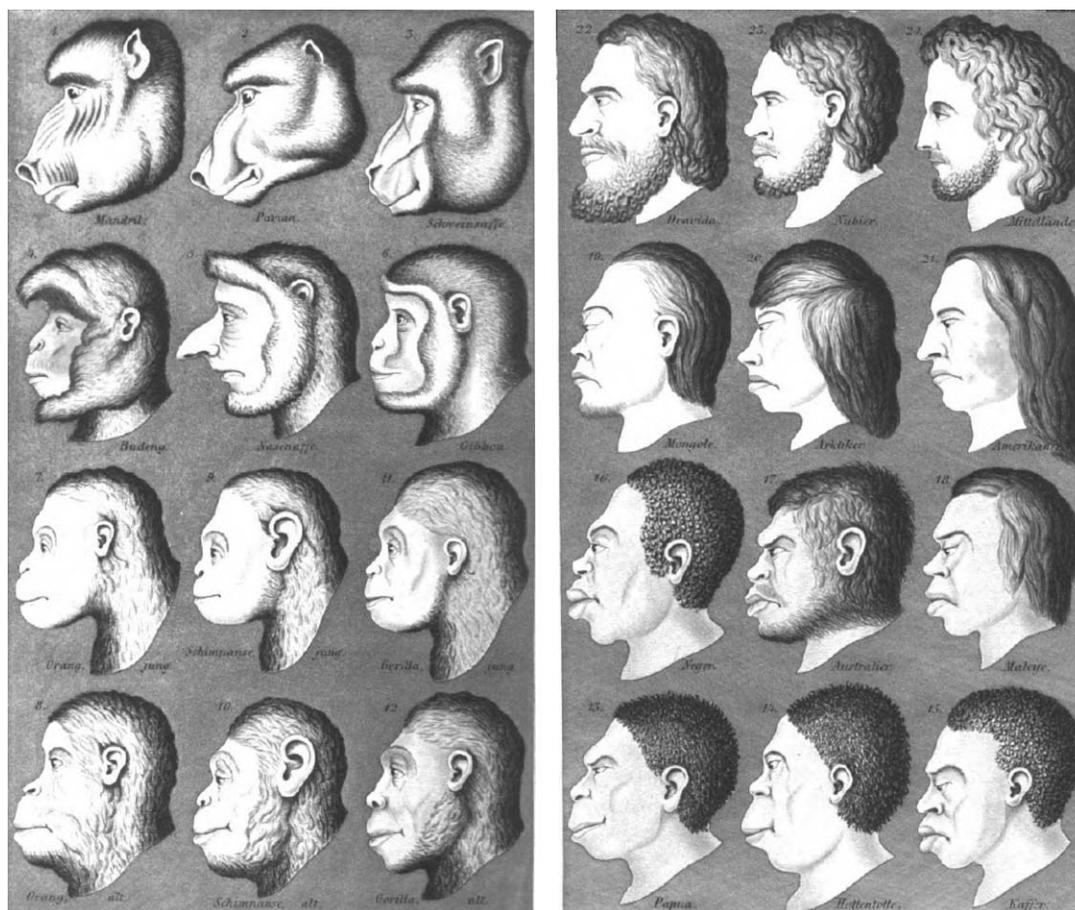


Figure 2. Haeckel's figures XIII and XIV from the second German edition of *Natural History of Creation* (1870), public domain.

were monkeys. Haeckel was explicitly calling for a rival intellectual evolutionary project, involving the “important and fruitful reform of *Anthropology*. From this new theory of man there will be developed a new *philosophy*, not like most of the airy systems of metaphysical speculation hitherto prevalent, but one founded upon the solid ground of Comparative Zoology.”^{38:367}

The anthropological alternative to Haeckel's “solid ground” would ultimately entail the elaboration of a relativist science of the human species in which all human groups are equally human and equally “cultural,” representing variations on the single theme of surviving and reproducing as parts of *Homo sapiens*. Of course, this would be entirely compatible with a geologically recent common ancestry with the apes. It would be the anthropology established by the protégé of Bastian and Virchow in the United

States, Franz Boas. Boas' training lay in a strain of liberal German intellectualism in the late nineteenth century that placed a higher value on the common natures of all peoples than on their descent from apes. When forced to choose between them, these scholars chose the methodological “psychic unity of mankind” over a speculative simian ancestry.

A generation later, reviewing the history of anthropology, Franz Boas noted in the impact of Darwinism “a strong tendency to combine with the historical aspect a subjective valuation of the various phases of development... [thus Darwinism] assumed in many cases an ill-concealed teleological tinge.” The “premature theories of evolution ... had to be revised again and again, as the slow progress of empirical knowledge of the data of evolution proved their fallacy.”⁴³ Just a few years later, Boas himself would be forced to

choose between the “evolution” of the eugenicists (geneticist Charles Davenport, paleontologist Henry Fairfield Osborn, and physical anthropologist Earnest Hooton) or be tarred as soft on creationism.

Although they are rarely discussed together, the history of the study of human origins is intimately connected with the study of human variation.^{44,45} The generational continuity is also significant, given the occasional suggestion that Boas' anthropology was somehow a reflection of his Jewish ancestry rather than his academic training.⁴⁶ Boasian anthropology emerged from a late nineteenth-century liberal humanistic tradition in Germany,⁴⁷ the nature and very existence of which was eclipsed and eventually lost.

CONCLUSIONS

If my interpretation is valid, there also would be a significant caution-

ary tale for the contemporary scholarly community: The acceptance or rejection of “evolution” may have rather more to do with the particular representation of evolution being offered, its rigor and its implications, than it does with the general intelligence of the target audience. That, in turn, would imply a greater measure of responsibility on the part of the scientific community toward the public, the responsibility to differentiate among the various invocations of Darwinism so that the public knows what it is accepting or rejecting, and that invocations of evolution are not all equally credible. That is to say, it is the responsibility of the scientific community to explain that it is possible to reject the racism of Philippe Rushton or James Watson, the evolutionary psychology of Steven Pinker, or the fanaticism of Richard Dawkins, and yet not be a creationist.

Had that option been available to Virchow and Bastian – the opportunity to reject the dehumanizing evolutionary speculations of Ernst Haeckel, the leading spokesman for German Darwinism – they might well have been more inclined to accept the fossil evidence of human evolution.

ACKNOWLEDGMENTS

For their helpful comments, I am grateful to John David Smith, Veronika Lipphardt, Karen Strier, John Fleagle, Peta Ann Katz, and anonymous reviewers. I thank the Max Planck Institute for the History of Science for support during my stay there as a Visiting Research Fellow.

REFERENCES

- 1 Shipman P. 2001. The man who found the missing link: Eugène Dubois and his lifelong quest to prove Darwin right. New York: Simon and Schuster.
- 2 DeLisle, RG. 2007. Debating humankind's place in nature 1860–2000. Upper Saddle River, NJ: Pentice-Hall.
- 3 Gundling T. 2005. First in line. New Haven: Yale University Press.
- 4 Anonymous. 1897. Authors at home III. Rudolf Virchow at Berlin. *The New York Times*, 20 Nov.
- 5 Anonymous. 1887. Bismarck's hard struggle. American socialists helping their brethren. Prof. Virchow speaks. *The New York Times*, 16 Feb.
- 6 Anonymous. 1902. Prof. Virchow is dead. Famous scientist's long illness ended yesterday. He was born in 1821 – German papers say he was the world's greatest medical reformer. *The New York Times*, 6 Sept.
- 7 Anonymous. 1902. Virchow's office in science. *The New York Times*, 6 Sept.
- 8 Anonymous. 1880. Pleas for German Jews. City preachers protest against the persecution. *The New York Times*, 20 Dec.
- 9 Efron JM. 1994. Defenders of the race: Jewish doctors and race science in fin-de-siècle Europe. New Haven: Yale University Press.
- 10 R. T. H. 1902. Rudolph Ludwig Karl Virchow. *Nature* 66:551–552.
- 11 Anonymous. 1891. Rudolf Virchow and his countrymen. *Nature* 44:585–586.
- 12 Virchow R. 1886. Virchow on acclimatization. *Science* 7:169–170.
- 13 Anonymous. 1886. Blondes and brunettes in Germany. *Science* 7:129–130.
- 14 Manias C. 2009. The *Race prussienne* controversy: scientific internationalism and the nation. *Isis* 100:733–757.
- 15 Boas F. 1902. Rudolf Virchow's anthropological work. *Science* 16:441–445.
- 16 Virchow R. 1877. The liberty of science in the modern state. *Nature* 17:111–113, italics in original. An alternative translation was separately published: “WE CANNOT TEACH, WE CANNOT PRONOUNCE IT TO BE A CONQUEST OF SCIENCE, THAT MAN DESCENDS FROM THE APE OR FROM ANY OTHER ANIMAL. We can only indicate it as an hypothesis, however probable it may seem, and however obvious a solution it may appear.” Virchow, R. 1878. The freedom of science in the modern state. London: John Murray, p. 63, capitals in original.
- 17 Huxley TH. 1879. Prefatory note to Freedom in science and teaching by Ernst Haeckel. New York: D. Appleton, p. xvii.
- 18 Virchow R. 1898. Recent advances in science, and their bearing on medicine and surgery. *Nature* 58:554–556.
- 19 Berliner Gesellschaft für Anthropologie, Ethnologie und Urgeschichte. It is worth noting that since “anthropologie” denoted “physical anthropology,” this named the equivalent of three of the “four fields of anthropology.”
- 20 Penny H, Bunzl M, editors. 2003. Worldly provincialism: German anthropology in the age of empire. Ann Arbor: University of Michigan Press.
- 21 Penny HG. 2008. Traditions in the German language. In: Kuklick H, editor. A new history of anthropology. Malden, MA: Blackwell, p 79–94.
- 22 Gingrich A. 2005. Prelude and overture: from early travelogues to German enlightenment. In: Barth F, Gingrich A, Parkin R, Silverman S, editor. One discipline, four ways: British, German, French, and American anthropology. Chicago: University of Chicago Press. p. 87.
- 23 Zimmerman A. 2001. Anthropology and antihumanism in imperial Germany. Chicago: University of Chicago Press.
- 24 Lurie E. 1954. Louis Agassiz and the races of man. *Isis* 45:227–242.
- 25 Broca P. 1864. On the phenomena of hybridity in the genus *Homo*. London: Longman, Green, Longman, & Roberts.
- 26 Brace CL. 1982. The roots of the race concept in American physical anthropology. In: Spencer F, editor. A history of American physical anthropology, 1930–1980. New York: Academic Press. p 11–30.
- 27 Massin B. 1996. From Virchow to Fischer: physical anthropology and “modern race theories” in Wilhelmine Germany. In: Stocking GM, editor. *Volksgeist as method and ethic: essays on Boasian ethnography and the German anthropological tradition*. Madison: University of Wisconsin Press, p 79–154.
- 28 Haddon AC. 1910. History of anthropology. New York: G. P. Putnam's Sons.
- 29 Hartland ES. 1896. Elementary ideas of mankind. *Nature* 53:291–292.
- 30 Brinton DG. 1898. The “folk-mind.” *Science* 7:826–827.
- 31 Lowie R. 1937. The history of ethnological theory. New York: Holt, Rinehart and Winston.
- 32 Köpping K. 1983. Adolf Bastian and the psychic unity of mankind. St. Lucia: University of Queensland Press.
- 33 Cunningham D. 1908. Anthropology in the eighteenth century. *J R Anthropol Inst Great Britain Ireland* 38:10–35.
- 34 Smith GE. 1935. The place of Thomas Henry Huxley in anthropology. *J R Anthropol Inst Great Britain Ireland* 65:199–204.
- 35 Stocking GW. 1971. What's in a name? The origins of the Royal Anthropological Institute (1837–71). *Man* 6:369–390.
- 36 Livingstone D. 2008. Adam's ancestors: race, religion, and the politics of human origins. Baltimore: Johns Hopkins University Press.
- 37 Desmond A, Moore J. 2009. Darwin's sacred cause: how a hatred of slavery shaped Darwin's views on human evolution. New York: Houghton Mifflin Harcourt.
- 38 Haeckel E. 1876. The history of creation: or the development of the earth and its inhabitants by the action of natural causes, V. 2 (translated by E. R. Lankester). New York: D. Appleton, p. 326. A later edition modified this sentence to end: “. . . and their whole mode of life shows much more resemblance to that of wild hordes of apes than to any civilized human community.” Haeckel E. 1892. The History of Creation: Or the Development of the Earth and its Inhabitants by the Action of Natural Causes (translated by E. R. Lankester). 4th ed., v. 2. London: Kegan Paul, Trench, Trübner, p. 490.
- 39 Cuvier, G. 1817. *Le Regne Animal*, vol 1. Paris: Deterville.
- 40 Richards R. 2008. The tragic sense of life: Ernst Haeckel and the struggle over evolutionary thought. Chicago: University Of Chicago Press, p. 227.
- 41 Haeckel E. 1982. The history of creation: or the development of the earth and its inhabitants by the action of natural causes (translated by E. R. Lankester). 4th ed., v. 2. London: Kegan Paul, Trench, Trübner, p. 490.
- 42 Elam C. 1878. Haeckel and Virchow: The evolution controversy in Germany. *Contemporary Review* 33:540–569.
- 43 Boas F. 1904. The history of anthropology. *Science* 20:513–524.
- 44 Wolpoff M, Caspari R. 1997. Race and human evolution. New York: Simon and Schuster.
- 45 Derricourt R. 2010. Raymond Dart and the danger of mentors. *Antiquity* 84:230–235.
- 46 Sarich V, Miele, F. 2004. Race: The reality of human differences. New York: Westview.
- 47 Smith JD. 2009. “I would like to study some problems of heredity”: Felix von Luschan's trip to America, 1914–1915. In: Ruggendorfer P, Szemethy HD, editors. Vienna: Böhlau. p. 141–163.