Biographical Dictionary of the History of Paleoanthropology

Biographical Dictionary of the History of Paleoanthropology

MATTHEW GOODRUM

The University Library at Virginia Tech with Virginia Tech Publishing

Blacksburg, VA

Contents

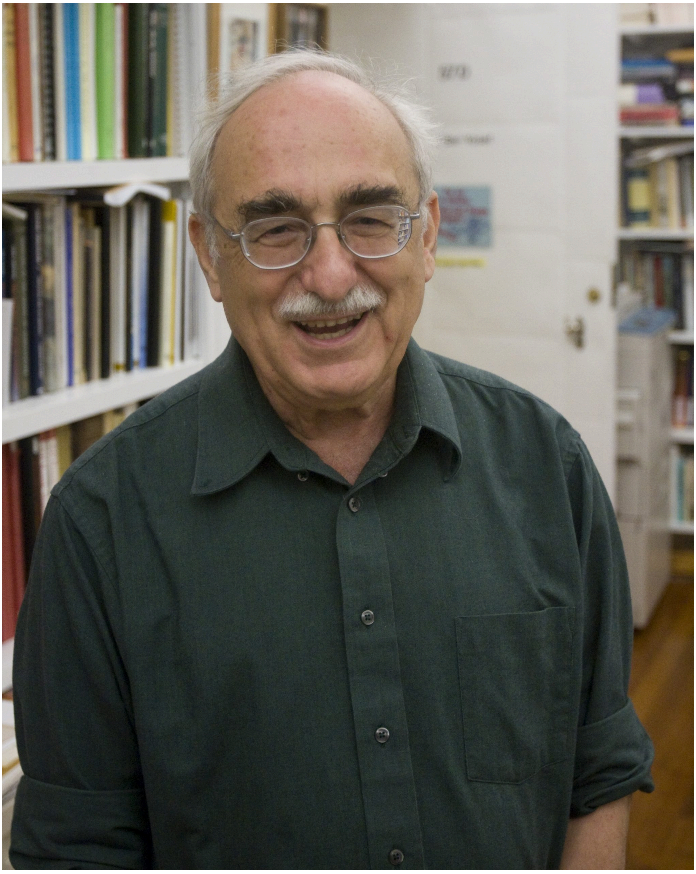
Preface

I began compiling biographical entries for what would become the *Biographical Dictionary of the History of Paleoanthropology* in 2013 as a result of discovering in the course of my research on the early history of paleoanthropology that remarkably little biographical information was readily available in English for some figures who were quite prominent in their own time. The *Biographical Dictionary of the History of Paleoanthropology* is dedicated to providing biographical entries primarily for those paleoanthropologists for whom either little biographical information is available in English or for whom little biographical information exists in any language. Since lengthy biographies exist for many leading paleoanthropologists, I do not intend to duplicate that work here. Instead, I have focused on providing biographical entries for nineteenth century paleoanthropologists as well as those twentieth century paleoanthropologists that have not been the subject of extensive biographical research. The online format of the *Biographical Dictionary of the History of Paleoanthropology* allows me to offer biographies of greater length than is possible in many published biographical dictionaries and to also provide more complete bibliographies of each scientist's publications as well as scholarly literature for each individual. The plan is to continue to add new biographies each year.

Matthew R. Goodrum
Professor of History of Science

Department of Science and Technology in Society
Virginia Tech

Ofer Bar-Yosef (1937–2020)



Ofer Bar-Yosef

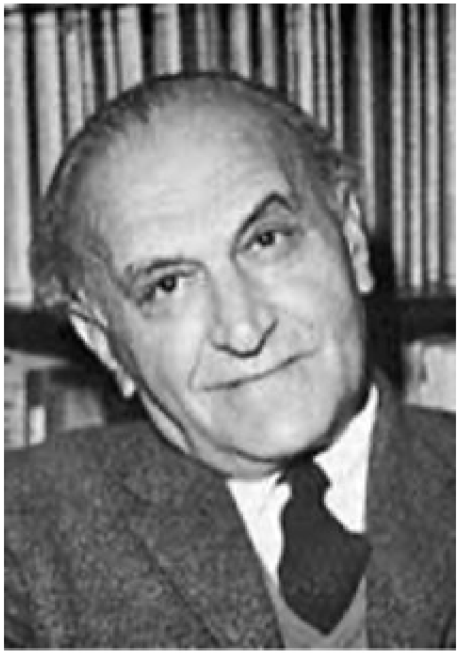
Ofer Bar-Yosef (עפר בר-יוסף) was born on 29 August 1937 in Jerusalem in what is today Israel, but at the time was the British mandate of Palestine. His father, Israel (sometimes spelled Yisrael) Bar-Yosef was born in Palestine when it was still under Ottoman rule. Yisrael Bar-Yosef had studied at the American School of Archaeology in Jerusalem but he took a job in the Treasury Department of the British Mandate Government despite being offered an opportunity to participate in archaeological excavations at Megiddo. Ofer Bar-Yosef's mother, Lea (sometimes spelled Leah)

Lerman, was born in Palestine but her parents immigrated to Palestine from Riga, Latvia. Ofer Bar-Yosef's childhood interest in archaeology led him to excavate a Byzantine cistern when he was only eleven years old and as a teenager he attended meetings of the Israel Exploration Society. After graduating from Bet Ha-Kerem High School in Jerusalem he fulfilled his compulsory military service with the Israel Defense Forces from 1955 to 1958 (he remained in the reserve service from 1958 to 1988).

In 1957, Bar-Yosef was able to participate in excavations at Kebara Cave, located on the western escarpment of Mount Carmel in Israel, as a soldier-volunteer. These excavations were led by Israeli archaeologist Moshe Stekelis and this experience paved the way for Bar-Yosef to join Stekelis' excavations at the site of Nahal Oren in 1959. Stekelis had studied prehistoric archaeology with the French prehistorian Henri Breuil and this connection to French archaeology would prove important for Bar-Yosef's future career. Bar-Yosef entered Hebrew University of Jerusalem in 1960 and he received a B.A. degree in Archaeology and Geography in 1963, followed by a M.A. in Prehistoric Archaeology in 1965. He completed his Ph.D. in Prehistoric Archaeology at the university in 1970 studying under Moshe Stekelis for most of this time. His dissertation, titled *The Epi-Paleolithic Cultures of Palestine*, dealt with Epipaleolithic sites throughout Israeli and this began his lifelong interest in the Epipaleolithic period. As part of his graduate training, Stekelis sent Bar-Yosef to study lithic typology and classification, as well as flint knapping techniques, with French Paleolithic archaeologist François Bordes at the University of Bordeaux for about six months. He also spent another few months studying at the Institute of Archaeology in London. In 1969 Bar-Yosef attended a Wenner-Gren Foundation symposium on Levantine Upper Paleolithic stone tool typology. These experiences gave him a valuable understanding of archaeological methodology and theory as well as familiarity with the French Paleolithic. These influenced his future research interests and methods.

When Moshe Stekelis unexpectedly died in March 1967, Bar-Yosef was made an instructor in the Institute of Archaeology at Hebrew University. He taught prehistoric archaeology first as an Instructor from 1967 to 1970, then as a Lecturer from 1970 to 1973, as Associate Professor from 1973 to 1979, and he was promoted to Full Professor in 1979. However, in 1988 he accepted an offer to become George G. and Janet G. B. MacCurdy Professor of Prehistoric Archaeology at Harvard University. At Harvard, Bar-Yosef also served as Curator of Palaeolithic Archaeology at the Peabody Museum of Archaeology and Ethnology and became the head of the Peabody Museum's Stone Age Laboratory. He retired from his position at Harvard in 2013 and returned to Israel, although he remained active in fieldwork until shortly before his death.

Bar-Yosef was involved in many important archaeological excavations during the course of his long career. When he was a graduate student, Bar-Yosef worked alongside Moshe Stekelis in 1959 and 1960 excavating the Natufian and Neolithic site of Nahal Oren, at Mount Carmel. This was followed by seven seasons at 'Ubeidiya, in the Jordan Valley, from 1960 to 1966. He participated in the survey work and emergency excavation of the Epipaleolithic sites located near Ashdod, along the coastal plain, in 1965 and 1966. He assisted Stekelis during work at Ein Gev I, an Epipaleolithic site in the Jordan Valley, in 1963 and 1964. In the course of the excavations in 1964 they unearthed a human skeleton lying in a shallow pit. They also found animal bones and stone artifacts attributed to the Kebaran culture. These finds were dated to approximately 15,700 years old. Baruch Arensburg, professor of anatomy at Tel Aviv University, undertook the examination and description of the human skeleton (Arensburg and Bar-Yosef 1973).



Moshe Stekelis

Bar-Yosef was part of the research team along with Baruch Arensburg and Eitan Tchernov, professor of zoology at Hebrew University, who excavated Hayonim Cave in the Western Galilee from 1965 to1979. Bar-Yosef and French archaeologist Liliane Meignen later co-directed a second round of excavations at the cave from 1992 to 2000. These investigations revealed a sequence of Mousterian and Aurignacian deposits as well as Early Epipaleolithic (Kebaran) and Late Epipaleolithic (Natufian) deposits. These contained hearths, artifacts, plant remains, Natufian occupation sites and a number of Natufian graves containing human remains (Bar-Yosef and Tchernov 1967; Bar-Yosef and Goren 1973; Cohen and Bar-Yosef 1981; Bar-Yosef 1991). The excavations initiated in 1992 were conducted by a multidisciplinary team of researchers, many of whom had previously worked on the excavations of Kebara Cave (described below). Their research focused on the Middle Paleolithic deposits at Hayonim Cave, which ranged from 250,000 to 150,000 years old. One objective of these excavations was to investigate the first arrival of modern humans into the Levant from Africa. Among the objects recovered were Mousterian stone tools, animal bones, and human remains consisting mostly of hand bones found in 1992 and foot bones found in 1998.

Excavations of the Paleolithic site of ‘Ubeidiya, located just south of the Sea of Galilee in the Jordan Valley, began in 1960 shortly after members of a local Kibbutz discovered the site. Bar-Yosef participated in the initial excavations conducted by Moshe Stekelis between 1960 and 1966. Following Stekelis’ death in 1967, Bar-Yosef continued excavating the site until 1974 under the auspices of the Israel Academy of Sciences, which appointed Louis and Mary Leakey to oversee the project. He returned for another round of excavations there from 1988 to 1999. This work revealed Pleistocene deposits containing 1.4 million year old Oldowan and Acheulean artifacts similar to stone tools unearthed at Olduvai Gorge and other east African sites. This made ‘Ubeidiya the one of the oldest known hominid sites in Israel. In 1972 Bar-Yosef traveled to Olduvai Gorge for three weeks at the invitation of Louis and Mary Leakey. The South African archaeologist Glynn Isaac also invited him to spend ten days at the excavations at Lake Turkana led by Richard Leakey. The archaeological discoveries at ‘Ubeidiya were examined in a monograph published by Bar-Yosef and Naama Goren-Inbar titled *The Lithic Assemblages of ‘Ubeidiya: A Lower Palaeolithic Site in the Jordan Valley* (1993).

During the 1970s Bar-Yosef engaged in a series of excavations in Sinai following the Israeli occupation of the territory after the Six Days War. He and Avner Goren, the Archaeological Staff Officer for Sinai, conducted salvage excavations at Nawamis in ‘Ein Hudeirah, in eastern Sinai, from 1971 to 1973. Bar-Yosef and American anthropologist James Phillips of the University of Illinois at Chicago spent 1973 to 1976 surveying and excavating at Gebel Maghara, in northern Sinai, where they collected material dating from the Upper Paleolithic, Epipaleolithic, Neolithic, and Bronze Age. He also conducted salvage excavations in a series of Pre-Pottery Neolithic B sites in southern Sinai in addition to surveying and excavating at Kadesh Barnea in northern Sinai from 1976 to 1979.

An influential turn in Bar-Yosef's research occurred when he joined the excavations at Qafzeh Cave led by French anthropologist Bernard Vandermeersch of the University of Bordeaux. Qafzeh Cave is located on Mount Precipice in the Jezreel Valley of the Lower Galilee, in Israel. When Moshe Stekelis and René Neuville, the French Consul General in Jerusalem and an amateur prehistorian, conducted the first excavations at Qafzeh from 1933 to 1936 they found several partial human skeletons that were considered to be Neanderthal. French anthropologist Bernard Vandermeersch first visited Qafzeh in 1964 and when the Antiquities Department in Israel approved new research at the site Vandermeersch conducted excavations there from 1965 to 1979. His team ultimately discovered numerous Mousterian artifacts as well as human fossil remains from seventeen individuals, including eleven children. Vandermeersch eventually concluded that the Qafzeh skeletons differed from the Amud 1, Shanidar, and Tabūn 1 Neanderthal skeletons. He thought the Qafzeh skeletons represented anatomically modern humans (Cro-Magnons) (Vandermeersch (1981; 1982). Paleoanthropologists had long believed that Neanderthals produced Mousterian tools, but the association of Mousterian artifacts with anatomically modern humans led Vandermeersch to suggest that the Cro-Magnon humans living in the Levant also made Mousterian tools.

Bar-Yosef worked at Qafzeh from 1977 to 1979 and was present when Vandermeersch's team unearthed a badly crushed human cranium. At a conference on the prehistory of the Levant held in Lyon in 1980, Vandermeersch and Bar Yosef described the stratigraphy, paleontology, and archaeology of the Mousterian deposits at Qafzeh in order to argue that these layers were very old, perhaps 90,000 to 100,000 years. Because of the early dates obtained for the Qafzeh hominids and questions about their relationship to the Neanderthal skeletons found at Tabūn and Amud as well as the human skeletons from Skhūl, in 1981 Bernard Vandermeersch, Liliane Meignen, and Bar-Yosef launched a research project called Évolution des populations et des cultures, au Levant, de la fin du Paléolithique inférieur au début du Paléolithique supérieur (Evolution of populations and cultures in the Levant, from the end of the Lower Paleolithic to the beginning of the Upper Paleolithic). The French Ministry of Foreign Affairs and the National Science Foundation (USA) jointly funded the project. Vandermeersch, Meignen, and Bar-Yosef proposed that it was time to reassess the chronology of Near Eastern hominids by re-excavating certain sites. The project was designed to investigate the relationship between Neanderthals and modern humans in the Levant, to identify possible differences in behaviors between these populations, and to ascertain when the Upper Paleolithic first began and the Neanderthals finally disappeared in the Levant. This project operated from 1982 to 2000 and included French, American, and Israeli scientists who re-excavated Kebara Cave (between 1982 and 1990) and Hayonim Cave (between 1992 and 2000).

Bar-Yosef was part of the international team that pursued the new excavations at Kebara Cave from 1982 to 1990. Kebara Cave is located at Mount Carmel in Israel and lies near two other important caves, Qafzeh and Tabūn. They unearthed deposits dating from the Upper and Middle Paleolithic (65,000 to 48,000 years ago) containing large numbers of stone tools and animal bones. Many of these bones were from animals that had been butchered. In October 1983 the team discovered a largely complete adult male Neanderthal skeleton (KMH 2) that had been intentionally buried in the Mousterian layer. It was dated to about 60,000 year ago and represents one of the best-documented deliberate Neanderthal burials ever found. The team also found a number of teeth and other fragments of bone over the course of their excavations (Arensburg et al. 1985; Meignen and Bar-Yosef 1988; Bar-Yosef et al. 1988; Bar-Yosef et al. 1992).

The Kebara Neanderthal specimens date to a more recent period than the Qafzeh skeletons. Thus, the discoveries at Qafzeh and Kebara demonstrated that Neanderthals had arrived relatively late to the Levant, probably migrating there from Europe. With this new evidence, Bar-Yosef and Vandermeersch shattered the hypothesis that modern *Homo sapiens* are descended from Neanderthals since the modern-looking human skeletons at Qafzeh Cave were contemporaries of, not descendants of, Neanderthal populations (Bar Yosef and Vandermeersch 1991a; 1991b). Bar-Yosef and Meignen edited *Kebara Cave, Mt. Carmel, Israel: The Middle and Upper Paleolithic Archaeology (part I published in 2007 and part II published in 2019), which presented an* analysis of the archaeology, paleontology, and human remains dating from the Middle and Upper Paleolithic periods found at the site. The papers in these volumes describe the daily activities of the cave's Neanderthal inhabitants, which indicate behavioral patterns previously attributed only to Modern humans.

During the 1980s and 1990s Bar-Yosef conducted excavations at a number of other sites inside and outside of Israel. In 1980 and 1981 he conducted excavations at El-Wad Terrace on Mount Carmel with French prehistorian François Raymond Valla. Bar-Yosef and Avi Gopher, professor of archaeology at Tel Aviv University, excavated the pre-ceramic Neolithic mound of Netiv Hagdud, in the Lower Jordan Valley, in 1983 and 1984. Bar-Yosef and archaeologist David Alon, of the Israel Antiquities Authority, conducted excavations at Nahal Hemar Cave, in the Judean Desert, in 1983. Between 1989 and 1996 Bar-Yosef participated in excavations and studied the objects collected in Karain and Öküzini Caves in southwestern Turkey. Işın Yalçinkaya of the University of Ankara and Marcel Otte of the University of Liège directed these excavations and in Öküzini Cave they found Neolithic/Chalcolithic and Epipaleolithic layers dating from 19,790 to 12,900 years ago. Karain Cave contained Lower and Middle Paleolithic deposits that allowed the researchers to trace the development of stone tool industries at the site and to investigate the cultural links between Western Asia and Europe during that time.

Bar-Yosef joined Steve Weiner of the Weizmann Institute of Science, Paul Goldberg of Boston University, and Chinese scientists Xu Qinqi and Liu Jinyi of the Institute of Vertebrate Paleontology and Paleoanthropology in 1996 and 1997 for research at the site of Zhoukoudian, near Beijing, where the “Peking Man” *Homo erectus* fossils were discovered. Their research helped to disprove former claims for the early use of fire at the site (Weiner et al. 1998). This research also applied new approaches of investigating cave morphology and stratigraphy to one of the most important sites for understanding *Homo erectus* and *Homo sapiens* populations in China. Bar-Yosef then collaborated with archaeologist Jirí Svoboda of the Czech Academy of Sciences in 1997 and 1998 during research at Stránská skála, a complex of Upper Paleolithic open-air loess sites on the outskirts of the Brno Basin in the Czech Republic. From 1996 to 2008 Bar-Yosef joined Tengiz Meshveliani of the National Museum of Georgia, and Anna Belfer-Cohen of Hebrew University, in excavations of the Upper Paleolithic deposits of Dzudzuana Cave and the Late Mesolithic to Early Neolithic deposits of Kotias Klde Cave, in the Republic of Georgia. The objective of their research was to discover evidence of the migration of early *Homo sapiens* from Africa into Europe and their possible interactions with Neanderthals in the region (Bar-Yosef et al. 2015).

From 2002 to 2004 Bar-Yosef joined the excavations that were directed by Mehmet Özdoğan, professor of prehistoric archaeology at the University of Istanbul, at Mezra’a Tleilat, a Neolithic mound located in the Euphrates valley in Turkey. Bar-Yosef and Chinese archaeologist Yuan Jiarong, of the Hunan Institute of Archaeology, co-directed excavations of the Upper Paleolithic site at Yuchanyan

Cave, in Hunan Province, China, during 2004 and 2005. Bar-Yosef returned to China for excavation in 2009 at Xianrending Cave, in Jangxi Provice, China with Wu Xiaohong, Zhang Chi, Paul Goldberg, and David Cohen. These excavations provided evidence that the Yangzi River region was among the earliest places in the world where human communities created ceramic vessels, which dated to around 18,000 to 20,000 years ago. This also provided some of the first evidence that pottery preceded the invention of agriculture. This work led Bar-Yosef to become involved in the Origins of Rice Cultivation in the Yangzi River Basin Project to investigate the transition from hunting/gathering to early rice agriculture in Neolithic China. In 2012 he participated in excavations at the early Neolithic site of Shalonggang, one of the earliest village sites in the Middle Yangzi River region of China. Bar-Yosef also conducted excavations at Nahal Ein Gev II, a Natufian site in the Jordan Valley from 2010 to 2012, and from 2011 to 2014 he participated in excavations led by Douglas Baird of Liverpool University at Boncuklu Höyük, an early Neolithic site in central Turkey.

During the course of his long career, Bar-Yosef made many contributions to our understanding of human prehistory. He provided important contributions to lithic analysis, the debates on human dispersals out of Africa, human-Neanderthal interactions, the relationship between environmental and behavioral change, early pottery production, and the development of early agriculture in the Near East. He is widely renowned as an expert on the transition from the Paleolithic to the early Neolithic and the origins of agriculture in the Levant as a result of his excavation of numerous Upper Paleolithic and Epipaleolithic sites. Through his decades of field and laboratory research at Hayonim, Qafzeh, and Kebara Caves (in collaboration with Bernard Vandermeersch, Liliane Meignen, Paul Goldberg, Anna Belfer-Cohen, and others) he contributed to our understanding of the transition from the Middle to the Upper Paleolithic. Significantly, this research helped demonstrate that humans (Cro-Magnons) and Neanderthals coexisted in this region and that there is no one-to-one correlation between Neanderthals and the Middle Paleolithic in the Levant. It also prompted him to suggest that technological and behavioral changes, rather than biological changes due to evolution, allowed modern humans to outcompete the Neanderthals. Bar-Yosef was also interested in the later migration of Cro-Magnons out of the Middle East and their colonization of Europe when Neanderthals still dominated the continent.

Through his discoveries at ʻUbeidiya, Bar-Yosef discovered important evidence for early human dispersals from Africa to Eurasia, which contributed to discussions about the Out of Africa Hypothesis. Through his studies of caves, done in collaboration with Paul Goldberg, Steve Weiner and others, he helped improve our understanding of how humans used caves and rock-shelters during the Upper Pleistocene in the Levant. He also improved the methodology for excavating and studying cave deposits. Bar-Yosef was interested in the changes in climate and ecology that occurred during the Pleistocene and Holocene and how these changes affected the ways humans behaved in their environment and their social systems and settlement patterns. He argued that studies of environmental and climatic changes during the transition from the Pleistocene to the Holocene are essential to understanding the transition from hunting/gathering to farming and the domestication of animals. Bar-Yosef even wrote several papers on Neolithic Jericho and suggested that the walls of the city were built to prevent flooding of the early Neolithic village. He organized or co-organized numerous conferences on a range of topics including Southern Levantine prehistory, Levallois technology, the Aurignacian, the Natufian, pastoralism, the Neolithic demographic transition, seasonality and sedentism, Quaternary chronology and paleoenvironments, and modern human origins.

Bar-Yosef was active in a variety of professional organizations and institutions. He was a co-editor of the journal *Geoarchaeology* from 1995 to 2000 and he became a co-editor of the journal *Eurasian Prehistory* in 2002. He became a member of the Israel Prehistoric Society in 1960 and served as the Society's chair from 1978 to 1981. He was a member of other prominent Israeli institutions, including the Israel Exploration Society (from 1954), the Archaeological Council of the State of Israel, Ministry of Education and Culture (from 1979 to 1988) and of the Society for the Archaeological Survey of Israel from 1977 to 1989. Additionally, Bar-Yosef was a member of the Société Préhistorique Française from 1967 to 1985, of the Society for American Archaeology from 1973, of the Society of Archaeological Science from 1992 to 2013, and of the Geological Society of America from 1994. He was elected a Foreign Associate of the National Academy of Sciences (USA) in 2001 and then a member in 2010. He was also elected a Corresponding Fellow of the British Academy in 2005 and a Foreign Fellow of the Academy of Science of the Republic of Georgia in 2003. Bar-Yosef was instrumental in the creation of the Irene Levi Sala CARE Archaeological Foundation, which provides grants for prehistoric research in Israel. In 2013 he was the first recipient of the Lloyd Cotsen Prize for Lifetime Achievement in World Archaeology, which is bestowed by the Cotsen Institute of Archaeology at the University of California-Los Angeles. He also received honorary doctorates from Ben-Gurion University in 2013 and from the University of Bordeaux in 2018.

Ofer Bar-Yosef died in his home in Kfar Saba, Israel, on 14 March 2020.

SELECTED BIBLIOGRAPHY

Ofer Bar-Yosef and Eitan Tchernov, "Archaeological Finds and Fossil Faunas of the Natufian and Microlithic Industries at Hayonim Cave (Western Galilee, Israel)." *Israel Journal of Zoology* 15 (1966): 104-140.

Ofer Bar-Yosef and Naama Goren, "Natufian Remains in Hayonim Cave." *Paleorient* 1 (1973): 49-68.

B. Arensburg and Ofer Bar-Yosef, "Human Remains from Ein Gev I, Jordan Valley, Israel." *Paleorient* 1 (1973): 201-206.

Dov Nir and Ofer Bar-Yosef, *Quaternary Environment & Man in Israel* (in Hebrew). Tel Aviv: The Society for the Protection of Nature & the Israel Exploration Society, 1976.

Anna Belfer-Cohen and Ofer Bar-Yosef, "The Aurignacian at Hayonim Cave." *Paleorient* 7 (1981): 19-42.

B. Arensburg, O. Bar-Yosef, M. Chech, P. Goldberg, H. Laville, L. Meignen, Y. Rak, E. Tchernov, A.-M. Tillier, and B. Vandermeersch, "Une sépulture néandertalienne dans la grotte de Kébara (Israël)." *Comptes Rendus Hebdomadaires des Séances de l'Académie des Sciences* 300 (1985): 227–230.

Liliane Meignen and Ofer Bar-Yosef, "Kebara et le Paléolithique Moyen du Mont Carmel." *Paleotient* 14 (1988): 123-130.

Ofer Bar-Yosef et al., "*La sépulture néandertalienne de Kebara* (unité XII)." In M. Otte (ed.), *L'Homme de Néandertal*, vol. 5: *La Pensée*. Pp. 17-24. Liège: Université de Liège, 1988.

"Le paléolithique en Israël." *L'Anthropologie* 92 (1988): 76-795.

Ofer Bar-Yosef and Anna Belfer-Cohen, "The Origins of Sedentism and Farming Communities in the Levant." *Journal of World Prehistory* 3 (1989): 447-498.

Ofer Bar-Yosef, "Geochronology of the Levantine Middle Palaeolithic." In P. Mellars and C. Stringer (eds.), *The Human Revolution: Behavioural and Biological Perspectives on the Origins of Modern Humans*. Pp.589-610. Edinburgh: Edinburgh University Press, 1989.

"The Archaeology of the Natufian Layer in Hayonim Cave." In O. Bar-Yosef and F. R. Valla (eds.), *The Natufian Culture in the Levant.* (International Monographs in Prehistory). Pp.81-92. Ann Arbor, Michigan, 1991.

Liliane Meignen and Ofer Bar-Yosef, "Les outillages lithiques mousteriennes de Kebara." In O. Bar-Yosef and B.

Vandermeersch (eds.), *Une squelette mousterienne à Kebara, Mt. Carmel*, Israel. Pp. 49-78. Paris: Editions CNRS, 1991.

Ofer Bar Yosef and Bernard Vandermeersch, “Premiers hommes modernes et Néandertaliens au Proche-Orient: chronologie et culture.” In J. J. Hublin and A. M. Tillier (eds.), *Aux origines d’Homo sapiens*. Pp. 219-250. Paris: P.U.F., 1991a.

“Middle Palaeolithic Chronology and the Transition to the Upper Palaeolithic in Southwest Asia.” In: G. Bräuer and F. H. Smith (eds.), *Continuity or Complete Replacement: Controversies in Homo Sapiens Evolution*. Pp. 261-272. Rotterdam: Balkema Press, 1991.

Ofer Bar Yosef and Bernard Vandermeersch, Premiers hommes modernes at Néandertaliens au Proche Orient: chronologie et culture. In: J.J. Hublin and A. M. Tillier (eds.), *Aux origines d’Homo sapiens.* Pp. 219-250. Paris: Presses Universitaires de France, 1991b.

O. Bar-Yosef, B. Vandermeersch, B. Arensburg, A. Belfer-Cohen, P. Goldberg, H. Laville, L. Meignen, Y. Rak, J. D. Speth, E. Tchernov, A-M. Tillier, S. Weiner, “The Excavations in Kebara Cave, Mt. Carmel.” *Current Anthropology* 33 (1992): 497-550.

Ofer Bar-Yosef and Anna Belfer-Cohen, “From Foraging to Farming in the Mediterranean Levant.” In A. B. Gebauer and T. D. Price (ed.), *Transition to Agriculture in Prehistory*. 21–48. Madison: Prehistory Press, 1992.

Ofer Bar-Yosef and Naama Goren-Inbar. *The Lithic Assemblages of ‘Ubeidiya: A Lower Palaeolithic Site in the Jordan Valley*. (Qedem: Monographs of the Institute of Archaeology, Hebrew University of Jerusalem No.34). Jerusalem: Institute of Archaeology, 1993.

“The Contributions of Southwest Asia to the Study of the Origin of Modern Humans.” In M. Nitecki and D. Nitecki (eds.), *Origins of Anatomically Modern Humans*. Pp. 23-66. Plenum Press: New York, 1994.

“The Lower Paleolithic of the Near East.” *Journal of World Prehistory*, 8 (1994): 211-265.

O. Bar-Yosef and R. Meadow, “The Origins of Agriculture in the Near

East." In T. D. Price and G. Gebauaer (eds.), *Last Hunters- First Farmers*. Pp. 39-94. Santa Fe: School of American Research, 1995.

"The Impact of Late Pleistocene-Early Holocene Climatic Changes on Humans in South-western Asia." In L. Straus, B. Eriksen, J. M. Erlson and D. Yesner (eds.), *Humans at the End of the Ice Age.* Pp. 61-78. New York: Plenum Press: 1996.

"Modern Humans, Neanderthals & the Middle/Upper Paleolithic Transition in Western Asia." In O. Bar-Yosef, L. Cavalli-Sforza and M. Piperno (eds.), *The Lower and Middle Paleolithic*. Pp. 175-190. Forli: Edizioni A.B.A.C.O. 1996.

"The Natufian Culture in the Levant, Threshold to the Origins of Agriculture." *Evolutionary Anthropology* 6 (1998): 159-177.

"On the Nature of Transitions: The Middle to Upper Paleolithic & the Neolithic Revolution." *Cambridge Archaeological Journal* 8 (1998): 141-177.

S. Weiner, Xu Q., P. Goldberg, Liu J., and O. Bar-Yosef, "Evidence for the Use of Fire at Zhoukoudian, China." *Science* 281 (1998): 251-253.

"The Chronology of the Middle Paleolithic of the Levant." In T. Akazawa, K. Aoki, and O. Bar-Yosef (eds.), *Neanderthals and Modern Humans in Western Asia*. Pp. 39-56. New York: Plenum, 1998.

"The Upper Paleolithic Revolution." *Annual Review of Anthropology* 31 (2002): 363-393.

"On the Nature of Transitions and Revolutions in Prehistory." *Journal of the Israel Prehistoric Society* 35 (2005): 469-483.

Ofer Bar-Yosef and Liliane Meignen (eds.), *Kebara Cave, Mt. Carmel, Israel: The Middle and Upper Paleolithic Archaeology, Part 1*. (American School of Prehistoric Research Bulletin, Vol. 49.) Cambridge, Mass.: Peabody Museum of Archaeology and Ethnology, 2007.

Ofer Bar-Yosef and Yosef Garfinkel, *Prehistory of Israel* (in Hebrew). Jerusalem: Ariel, 2008.

Ofer Bar-Yosef and Anna Belfer-Cohen, "The Levantine Upper

Palaeolithic and Epipalaeolithic." In E. Garcea (ed.), *South-Eastern Mediterranean People between 130,000 & 10,000 Years Ago*. Pp. 144-167. Oxford: Oxbow Books, 2010.

"From Foraging to Farming in Western and Eastern Asia." In P. Gepts et al. (eds.), *Biodiversity on Agriculture: Domestication, Evolution & Sustainability*. Pp. 57-91. Cambridge: Cambridge University Press, 2012.

Anna Belfer-Cohen and Ofer Bar-Yosef, "The Natufian in Hayonim Cave and the Natufian of the Terrace." In F. Valla (ed.), *Les Fouilles de la Terrace d'Hayonim (Israël): 1980-1981 et 1985-1989*. Pp. 507-519. Paris: De Boccard, 2012.

Qu, T., O. Bar-Yosef, Y. Wang, and X. Wu, "The Chinese Upper Paleolithic: Geography, Chronology and Typo-Technology." *Journal of Archaeological Research* 15 (2012): 1-73.

B. Vandermeersch, B. Arensburg, O. Bar-Yosef, and A. Belfer-Cohen, "Upper Paleolithic Human Remains from Qafzeh Cave, Israel." *Journal of the Israel Prehistoric Society* 43 (2013): 5-23.

R. E. Taylor and O. Bar-Yosef. *Radiocarbon Dating: An Archaeological Perspective*. 2nd ed. Walnut Creek, Calif.: Left Coast Press, 2014.

Bar-Yosef et al. "Dzudzuana: An Upper Palaeolithic Cave Site in the Caucasus Foothills (Georgia)." *Antiquity* 85 (2015): 331-349.

Liliane Meignen and Ofer Bar-Yosef (eds.), *Kebara Cave, Mt. Carmel, Israel: The Middle and Upper Paleolithic Archaeology, Part I1*. (American School of Prehistoric Research Bulletin, Vol. 51.) Cambridge, Mass.: Peabody Museum of Archaeology and Ethnology, 2019.

SECONDARY SOURCES

"Spotlight on Ofer Bar-Yosef." *AnthroQuest* 43 (1991): 15-18.

James L. Phillips, "Introduction." *Mitekufat Haeven: Journal of the Israel Prehistoric Society* (Special Issue: Advances in Eurasian Prehistory: Papers in Honor of Ofer Bar-Yosef) 40 (2010): 9-12.

John D. Speth, “Ofer Bar-Yosef, Renowned Archaeologist, 29 August 1937 – 14 March 2020.” *PaleoAnthropology* (2020) 69-73.

Anna Belfer-Cohen, Isaac Gilead, Avi Gopher, Naama Goren-Inbar, Nigel Goring-Morris, and Erella Hovers. “Ofer Bar-Yosef (1937–2020) and the New Israeli Prehistory.” *Journal of Anthropological Research* 76 (2020): 405-409.

John Shea, “Ofer Bar-Yosef (1937-2020).” *SAA Archaeological Record* (2020): 56-57.

Alberto Carlo Blanc (1906–1960)

Alberto Carto Blanc

Alberto Carlo Blanc was born in the town of Chambery, in the Savoy region of France, on 30 July 1906. Blanc descended from an old and prominent Catholic Savoyard family. His parents were Gian Alberto Blanc and Maria Blanc (née Menotti). Gian Alberto Blanc was professor of geochemistry at the University of Rome and conducted research on Quaternary geology and paleoanthropology. Gian Alberto was known for his excavations of a cave called Grotta Romanelli and in 1912 he and Aldobrandino Mochi, influenced by the recent establishment of the Institut de Paléontologie Humaine (Institute of Human Paleontology) in Paris, established the Comitato per le Ricerche di Paleontologia Umana in Italia. The Committee, which was formally constituted in May 1913, became the Istituto Italiano di Paleontologia Umana (Italian Institute of Human Paleontology) in 1927. Alberto Carlo's grandfather, Alberto Blanc, was a politician and diplomat. When the Duchy of Savoy voted to become part of France with the Treaty of Turin in 1860, Alberto Blanc chose to retain Italian nationality out of loyalty to the Prince of Savoy. The Blanc family moved to Rome and was awarded the title of baron by king Victor Emmanuel II in 1873. As a child Alberto Carlo Blanc was interested in his father's geological and paleontological pursuits and he became particularly interested in human prehistory, ethnology, Quaternary geology, and paleoanthropology.

After graduating from secondary school in Rome, Blanc enrolled at the University of Pisa where he completed a doctoral degree in geology in 1934 studying under the Italian geologist Giuseppe Stefanini. He remained at the University of Pisa, working first as Stefanini's assistant (1935-1936) then as his research assistant (1936-1938) at the university's Institute of Geology. Stefanini had been one of the proponents of the founding of the Comitato per le Ricerche di Paleontologia Umana and he taught a multidisciplinary natural science approach to the study of human prehistory that integrated geology, paleontology, biology, ethnology, and anthropology. Blanc spent the 1936-1937 academic year in Paris studying in the Laboratoire de Géographie Physique et Géologie Dynamique at the Sorbonne and at the Institut de Paléontologie Humaine, where he interacted with the French prehistorian Henri Breuil. Henri Breuil had been a friend of Gian Alberto Blanc for years and he became an important influence on the young Alberto Carlo. After the year in Paris Blanc returned to Pisa, but when

Giuseppe Stefanini unexpectedly died in 1938 Blanc taught the course in geology for the 1938-1939 academic year. He left this position, however, to become a professor at the University of Rome (officially the Università degli Studi di Roma "La Sapienza") in 1939, where he taught ethnology and human paleontology. Blanc received his Docenza in paleoethnology from the University of Rome in 1940. In 1957 he was appointed to the chair in paleoethnology and became director of the university's Institute of Paleoethnology. He held these positions until his death.

Beginning from his days as a student, Blanc had become involved in geological, archaeological, and paleoanthropological research. While a student at the University of Pisa. Blanc had assisted in the excavations carried out by his father at Grotta Romanelli. In 1933 he joined his father's excavations at Tecchia d'Equi, in Lunigiana, where they discovered stone tools and animal fossils from the Paleolithic. Blanc also initiated the first of what would become many years of investigations of the stratigraphy of the Tyrrhenian coast of Italy in order to reconstruct the changes in climate during the late Quaternary and the chronology of the glaciations in the region. He realized that the work of German geologists Albrecht Penck and Eduard Brückner on the chronology of the glaciations during the Pleistocene, which they conducted in the Alps, could not be easily or directly applied to other regions. Penck and Brückner identified four glacial periods during the Pleistocene (which they named the Gunz, Mindel, Riss, Würm), each separated by warmer interglacial periods. Since the geological evidence from the Alps could not easily be matched to the geology of Italy, Blanc attempted to correlate this sequence of glacial and interglacial periods with the changes in sea level recorded in geological features along the Italian coast. Blanc also investigated the geology along the canals dug in the Agro Pontino on the Pontine plain, focusing especially on the channel called the Canale delle Acque Alte. This allowed him, often in collaboration with University of Pisa botanist Ezio Tongiorgi, to construct a stratigraphic sequence of animal and plant fossils and Paleolithic artifacts. This research also allowed him to establish correlations between the recent geological history of the Mediterranean and that of the Black Sea and the Caspian Sea.

Blanc's interest in paleoanthropology also emerged early in his career. In May 1929 duke Mario Grazioli discovered a Neanderthal cranium in the gravel pit of Sacco Pastore, which lies on the bank of the Aniene River near Rome. Blanc attended the meeting of the Società Romana di Antropologia (Roman Society of Anthropology) later that year where Sergio Sergi, professor of anthropology at the University of Rome, presented the fossil from Saccopastore to the public for the first time. It was the first Neanderthal specimen to be found in Italy and consequently it generated considerable interest. Several partial Neanderthal skeletons had been discovered in France during the previous two decades (Le Moustier in 1908; La Chapelle-aux-Saints in 1908; La Ferrassie in 1909 and 1910; La Quina in 1911), but despite these finds many questions still remained about the Neanderthals and their place in human evolution.

In July 1935, Blanc accompanied Henri Breuil on a visit to the gravel pit at Saccopastore and to their great surprise they found a partial Neanderthal cranium. As a result the Istituto Italiano di Paleontologia Umana and the Institute of Anthropology at the University of Rome sponsored an excavation of the site, led by Blanc over several months in 1936. Blanc's father Gian Alberto as well as Henri Breuil and the Chinese paleontologist Pei Wenzhong participated in the excavations, which produced extinct elephant, rhinoceros, and hippopotamus fossils along with Mousterian artifacts dating from the last interglacial (Riss-Würm) (Breuil and Blanc 1935; 1936). They sent this second Neanderthal cranium to Sergio Sergi for examination and it remains in the collections of the university (Sergi 1948). Since the Saccopastore crania were the first Neanderthals discovered in Italy they provided valuable new information about the Neanderthals and their geographical distribution in Europe. Sergi's examination challenged French paleontologist Marcellin Boule's reconstruction and interpretation of the Neanderthals, which had been based on the La Chapelle-aux-Saints specimen. The discovery of this Saccopastore cranium brought Blanc international recognition and began a period of collaboration with Breuil.

Blanc began examining the coastline around Mount Circeo in 1936, studying the changes in sea level in this area during the Quaternary. He was particularly interested in the way that changes in climate, environment, and glaciations affected animal and human migrations during the Paleolithic. (Blanc 1938). Blanc explored twenty-seven new caves and collected animal fossils and Paleolithic artifacts, many of them Mousterian. During his excavation of the caves on Mount Circeo Blanc met Elena Aguet. She was the daughter of Luigi Aguet, who owned the land around the caves and whose permission Blanc needed to conduct his research. Blanc and Elena Aguet married in February 1939 and during their honeymoon Blanc received unexpected news about the discovery of a Neanderthal cranium in a cave that is now called the Grotta Guattari, at Monte Circeo. The entrance to the cave was discovered by chance on 24 February 1939 when some workers were extracting limestone on the property of Alessandro Guattari. Guattari was the owner of a hotel near San Felice Circeo, a town south of Rome. Blanc had stayed there at times during his work at Mount Circeo. Guattari entered the cave the day after it was discovered and he found the cranium reportedly lying in a circle of stones and animal bones. A few days later Guattari found a Neanderthal mandible. He handed the fossils over to Blanc who recognized the bones as being Neanderthal (Blanc 1938-39; 1939a; 1939b; 1939c; 1940a; 1940b).

Neanderthal cranium from Monte Circeo (courtesy Chris Stringer)

Blanc interpreted the placement of the cranium in a stone circle as demonstrating that the Neanderthals had rituals and religious beliefs. On the basis of damage observed on the cranium Blanc also argued that they engaged in headhunting and ritual cannibalism. Blanc sent the Circeo cranium to Sergio Sergi for examination (Sergio 1938; 1939), but the full description of the fossil was delayed by Sergi's death in 1972 and the anatomist and anthropologist Antonio Ascenzi completed it in 1974 (Sergi 1974). Blanc and Sergi's interpretation of the Neanderthals, based upon the Saccopastore and Circeo specimens, challenged Boule's interpretation of them as primitive and brutish and suggested instead that they were anatomically and culturally more similar to *Homo sapiens* than previously believed. The Circeo skull is now in the collection of the Museo Nazionale Preistorico Etnografico "Luigi Pigorini" in Rome.

Sergio Sergi (left) and Alberto Blanc (right) examining the Monte Circeo cranium

Blanc remained in Italy during World War II and continued to pursue his research. Over three seasons (1941, 1942, and 1949) he and archaeologist Luigi Cardini excavated the rock shelter of Riparo-Mochi, at Balzi Rossi near the border with France, where they recovered Paleolithic artifacts. During these years he also published two papers outlining his theory of ethnolysis, which he later expanded into his theory of cosmolysis. Blanc's theory of ethnolysis sought to explain cultural change during prehistory, relating it to the diversity of ethnic groups, their geographic distribution, and their migrations and interactions, all within the context of environment and climate (Blanc 1942a). Blanc's theory of cosmolysis applied the principles and ideas of ethnolysis to the evolution of the universe and of life (Blanc 1943a). In his ethnological writings Blanc critiqued the German culture-historical school of archaeology and anthropology, as well as the Kulturkreise theory of diffusionists that was linked to this school. He also criticized the ideas, first proposed by the anthropologist Giuseppe Sergi and archaeologist Luigi Pigorini and promoted in the 1920s by Ugo Rellini, professor of paleoethnology at University of Rome, that a North African population had migrated into Iberia and Italy during the Upper Paleolithic (Blanc 1940c). Like most anthropologists and ethnologists of his generation, Blanc addressed the subject of human races and the origins of the races. His ethnological ideas were published in a monograph titled *Origine e sviluppo dei popoli cacciatori e raccoglitori* (1956), which discussed the culture of Paleolithic and Mesolithic people as well as modern hunter-gatherers.

At the end of the war, Blanc initiated several new excavations with colleagues from the Istituto Italiano di Paleontologia Umana. Blanc's team renewed work at Mount Circeo and in 1954 he and archaeologist Luigi Cardini discovered a partial Neanderthal mandible in the Grotta del Fossellone (Blanc 1954). Blanc once again sent this fossil to Sergio Sergi and Antonio Ascenzi for examination. Blanc and Cardini then led a team from the Istituto Italiano di Paleontologia Umana to excavate the site of Torre in Pietra from 1954 to 1957. They found animal bones as well as Mousterian and Acheulean artifacts that helped them to reconstruct the Paleolithic in Italy (Blanc 1954b). Their work also extended the Neanderthal occupation in Italy back to before the last interglacial period (Riss-Würm), earlier than previously known (about 300,000 years ago). This research prompted Blanc to argue that Neanderthal culture remained relatively unchanged over an extremely long period of time despite the fact that Neanderthal anatomy had changed. The studies of the stratigraphy, fossil fauna, and paleobotany of the region around Rome that Blanc had conducted over the course of many years led him to identify five periods associated with glaciations. He named these the Acqua-traversan, Cassian, Flaminian, Nomentanan, and Pontinian and he correlated each of these with the alpine glacial and interglacial periods identified by Albrecht Penck (Blanc 1957).

Blanc and Luigi Cardini then turned their attention to the coastal caves along the Capo di Leuca and while excavating the Grotta delle Tre Porte in 1958 they unearthed deposits dating from the last interglacial period (Riss-Würm) containing hearths, animal bones, and there they found a single Neanderthal tooth (Blanc 1962). During the 1950s Blanc also became interested in Paleolithic art. In 1958 he published a monograph, *Dall'astrazione all'organicità* (From Abstraction to Organicity), based on his studies of prehistoric cave paintings and art. Blanc argued that abstract art preceded naturalistic art while also arguing that both are due to innate tendencies of the human mind, even though one or the other form may dominate for certain periods of time. His interpretation of prehistoric art was influenced by Henri Breuil's magical-religious theory of cave paintings. In an earlier work, titled *Il sacro presso i primitivi* (1945), Blanc examined ethnographic material pertaining to religious beliefs and rituals from across the world and related this to paleoethnological evidence.

Blanc was active in several prominent Italian scientific institutions during his career. Probably the most important to his research was the Istituto Italiano di Paleontologia Umana. Blanc worked closely with the Institute throughout his career, many of his excavations were conducted under the auspices of the Institute, and it shaped his approach to investigating human paleontology. The Institute's members took a multidisciplinary approach to studying human prehistory and emphasized the natural sciences over a historical or simply archaeological approach to studying human prehistory. It's members also considered the study of the climate and environment to be central to this research. The Institute's membership included many prominent Italian scientists, as well as scientists from across Europe. Blanc served as general secretary of the Roman section of the Institute beginning in 1937. In 1945 he and Paolo Graziosi, professor of archaeology and anthropology at the University of Florence, drew up new statutes for the Institute.

Blanc served as president of the Commission on Shorelines, organized by the International Union for Quaternary Research (INQUA), from 1953-1960. He also organized and presided over the fourth meeting of the International Union for Quaternary Research, which held sessions in Rome and Pisa in 1953. This meeting was an important effort to reintegrate Italian scientists into the international community of scientists following the end of World War II and the fall of the fascist government in Italy. Blanc co-organized two symposia sponsored by the Wenner-Gren Foundation for Anthropological Research. He and American paleoanthropologist F. Clark Howell organized a symposium on "Early Man and Pleistocene Stratigraphy in the Circum-Mediterranean Region" that was held at Burg Wartenstein, Austria, in July 1960, but Blanc died two days before the symposium began. He and Luis Pericot of the University of Barcelona organized a symposium on "The Chronology of Western Mediterranean and Saharan Prehistoric Cave and Rock Shelter Art" that was also held at Burg Wartenstein, Austria, a few weeks later.

Blanc was a member of the Istituto Italiano di Antropologia (Italian Institute of Anthropology) as well as the Accademia Nazionale dei Lincei (Lincean Academy). He was also active in the Società Italiana per il Progresso delle Scienze (Italian Society for the Advancement of the Sciences) and he was a member of the Comité de Perfectionnement (Improvement Committee) of the Institut de Paléontologie Humaine in Paris. In 1954 Blanc founded the journal *Quaternaria*, which was dedicated to the natural and cultural history of the Quaternary era, and he served as its editor until his death. He was invited to be a visiting professor at the University of Chicago and at the University of California at Berkeley in 1959. Blanc died unexpectedly on 3 July 1960 in Rome.

SELECTED BIBLIOGRAPHY

A full bibliography of Blanc's works can be found in "Pubblicazioni di Alberto Carlo Blanc," *Quaternaria* 6 (1962): 13-92.

Henri Breuil and Alberto C. Blanc, "Il nuovo cranio di *Homo neanderthalensis* e la stratigrafia del giacimento di

Saccopastore (Roma).” *Bollettino della Società Geologica Italiana*” 54 (1935): 289-300.

Henri Breuil and Alberto C. Blanc, “Le nouveau crâne néanderthalien de Saccopastore (Rome).” *L’Anthropologie* 46 (1936): 1–16.

“Sulla penetrazione e diffusione in Europa ed in Italia del Paleolitico superiore in funzione della paleoclimatologia e paleografia glaciali.” *Quartär* 1 (1938): 1-26.

“L’uomo fossile del Monte Circeo. Un cranio neandertaliano nella Grotta Guattari a San Felice Circeo.” *Rivista di Antropologia* 32 (1938-39): 1-18.

“Il Monte Circeo, le sue grotte paleolitiche ed il suo uomo fossile.” *Bollettino della Reale Società Geografica Italiana* (1939a): 485-493.

“L’uomo fossile del Circeo ed il suo ancora ignoto successore.” *Scienza e Tecnica* 3 (1939b): 345-353.

“L’uomo del Monte Circeo e la sua età geologica.” *Bollettino della Società Geologica Italiana* 58 (1939c): 201-214.

“L’homme fossile du Mont Circé.” *L’Anthropologie* 49 (1939d): 253-264.

“Les grottes paléolitiques et l’homme fossile du Mont Circé.” *Revue scientifique* 78 (1940a): 21-28.

“The Fossil Man of Circe’s Mountain.” *Natural History* 45 (1940b): 281-287.

“Sull’origine del Paleolitico superiore d’Italia.” *Razza e civiltà* 1 (1940c): 489-498.

“Etnolisi—Sui fenomeni di segregazione in biologia ed in etnologia” *Rivista di antropologia* 33 (1942a): 5-113.

“I paleantropi di Saccopastore e del Circeo.” *Quartär* **4** (1942b): 1-37.

“Cosmolisi—Interpretazione genetico-storica delle entità e degli aggrupamenti biologici ed etnologici,” *Rivista di antropologia* 34 (1943a): 144-290.

Corso di etnologia: origine e sviluppo dei popoli cacciatori e raccoglitori. Rome: Tumminelli, 1943.

Il sacro presso i primitivi. Rome: Partenia, 1945.

"L'évolution humaine dans le cadre de la cosmolyse." *Revue de Théologie et de Philosophie* 34 (1946): 49-74.

Sviluppo per lisi delle forme distinte. Rome: Partenia, 1946.

"Reperti fossili neandertaliani nella grotta del Fossellone al Monte Circeo: Circeo IV." *Quaternaria* 1 (1954a): 171-175.

"Giacimento ad industria del Paleolitico inferiore (Abbevilliano superiore ed Acheulano) e fauna fossile ad Elephas a Torre in Pietra presso Roma." *Rivista di antropologia* 41 (1954b): 3-11.

Origine e sviluppo dei popoli cacciatori e raccoglitori. Rome: Edizioni dell'Ateneo, 1956.

"On the Pleistocene Sequence of Rome: Paleoecologic and Archaeologic Correlations." *Quaternaria* 4(1957): 95-109.

"Torre in Pietra, Saccopastore, Monte Circeo. On the Position of the Mousterian in the Pleistocene Sequence of the Rome Area." In G. H. R. von Koenigswald (ed.), *Hundert Jahre Neanderthaler*. Pp. 167-174. Koln-Graz: Bohlau-Verlag, 1958.

"Torre in Pietra, Saccopastore, Monte Circeo. La cronologia dei giacimenti e la paleografia quaternaria del Lazio." *Bollettino della Società Geografica Italiana* 14 (1958): 196-214.

Dall'organicità all'astrazione. Rome: De Luca Editore, 1958.

Notizie sull'operosità scientifica e didattica di Alberto Carlo Blanc. Rome: Castaldi, 1960.

"Leuca I. Il primo reperto fossile neandertaliano del Salento." *Quaternaria* 5 (1962): 271-278.

Sergio Sergi, "Il cranio neandertaliano del Monte Circeo. Nota preliminare." *Rivista di antropologia* 32 (1938): 19-34.

Sergio Sergi, "Il cranio neandertaliano del Monte Circeo."

Atti della Accademia Nazionale dei Lincei, Rendiconti Lincei 29 (1939): 672-85.

Sergio Sergi, "Il cranio del secondo paleoantropo di Saccopastore: Craniografia e craniometria." *Palaeontographia Italica* 42 (1948): 4-164.

Sergio Sergi, *Il cranio neandertaliano del Monte Circeo (Circeo I),* (edited and with a preface by Antonio Ascenzi). Rome: Accademia Nazionale dei Lincei, 1974.

SECONDARY SOURCES

Sergio Sergi, "Ricordo di Alberto Carlo Blanc." *Rivista di antropologia* 48 (1961): 219-220.

Georges Laplace, "Alberto Carlo Blanc." *Bulletin de la Société préhistorique française* 58 (1961): 515-519.

F. Clark Howell, "Alberto Carlo Blanc (July 30, 1906-July 3, 1960)." *Quaternaria* 6 (1962): 3-9.

Gian Alberto Blanc and Maria Cristina Blanc, "Blanc, Alberto Carlo." In *Dizionario Biografico degli Italiani*. Vol. 10, pp. 760-762. Rome: Istituto della Enciclopedia italiana, 1968.

André Cailleux, "Blanc, Alberto-Carlo." In Charles C. Gillispie (ed.), *Dictionary of Scientific Biography*. Vol. 1, pp. 189-190. New York: Charles Scribner's Sons, 1981.

Antonio Ascenzi, "A Short Account of the Discovery of the Mount Circeo Neandertal Cranium." *Quaternaria Nova* 1 (1990-91): 69-80.

Brunetto Chiarelli and Giuseppe D'Amore, "Blanc, Alberto Carlo (1905-1960)." In Frank Spencer (ed.), *History of Physical Anthropology*. Vol. 2, pp. 182-183. New York: Garland Publishing, 1997.

V. S. Severino, "Da Raffaele Pettazzoni a Carlo Alberto Blanc. Una premeditata successione all'incarico di Etnologia." *Studi e materialidi storia delle religioni* n. s. 28 (2004): 397-412.

Stefano Pipi, *Alberto Carlo Blanc (1906-1960): crani, genetica e nuovo umanesimo*. Dissertation completed at the University of Pisa, 2014.

Stefano Pipi, "'Un'etnologia sui generis'": Alberto Carlo Blanc." *Lares* 82 (2016): 41-60.

Louis Capitan (1854-1929)

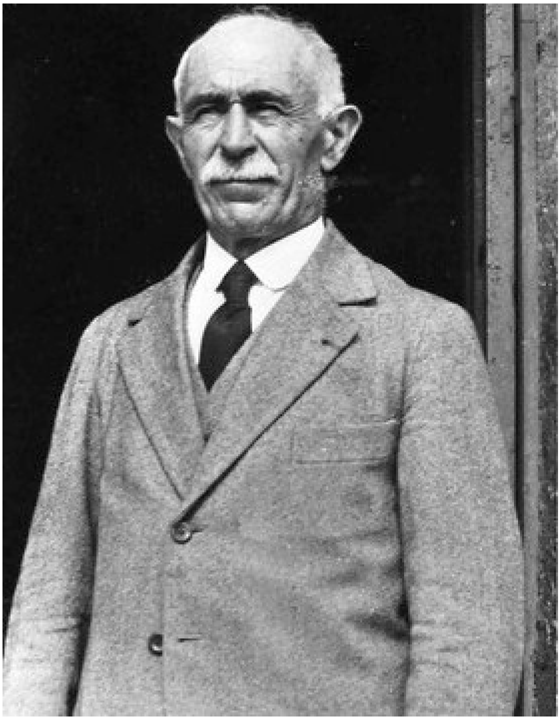
Louis Capitan

Joseph-Louis Capitan was born in Paris on 19 April 1854. His father, Prosper Aimé Capitan, was a military officer who studied at the École Polytechnique and his mother was Antoinette Delphine Barbet. Capitan displayed an interest in anthropology and archaeology from a young age. He attended a series of courses taught by the prehistoric archaeologist Gabriel de Mortillet at the École d’Anthropologie [School of Anthropology] in 1872 and was influenced by his views about artifact typology and Paleolithic cultures. Capitan also visited the laboratory of anthropologist Ernest-Théodore Hamy and followed the archaeological work of Théodore Vacquer, a well-known member of the Commission du Vieux Paris [Commission of Old Paris] who studied the Roman and medieval ruins of the city. Capitan studied medicine at the Faculty of Medicine in Paris where he studied under Claude Bernard and Charles Bouchard. He became an intern at the Hôpitaux de Paris in 1878 and in 1880 he and Charles Bouchard created the Laboratory of Pathology and General Therapeutics in the Faculty of Medicine, which Capitan ran until 1888. Capitan completed his doctoral thesis in medicine in 1883 and worked at the Hotel-Dieu and at La Pitié from 1894 to 1899. During this time he pursued research in bacteriology and published widely on a variety of topics in medicine. His career and personal life was now taking shape and he married Eugénie Hélène Verdin on 11 February 1884. He was appointed chargé de conférences (lecturer) on pathological anthropology at the École d’Anthropologie in 1892 before being appointed to the chair of medical geography, which he held from 1894 to 1897. After the death of Gabriel de Mortillet, Capitan was appointed to succeed him as the chair of prehistoric anthropology at the École d’Anthropologie in 1898, a position that Capitan held until his death. During World War I Capitan served as a physician and directed the Department of Contagious Disease at the military hospital, Hôpital Bégin, in Vincennes.

While Capitan pursued research on a range of medical topics, especially during the early portion of his career, he devoted much of his life to prehistoric archaeology. The work of Mortillet and

Hamy convinced him of the value of integrating geology, paleontology, archaeology, anthropology, and ethnology in his work on human prehistory. Capitan's friendship with agronomist Paul Louis Jules Boudy resulted in his first visit to the village of Les Eyzies, located in archaeologically rich Vézère valley in the Dordogne region of France, sometime during 1892 or 1893. Capitan began collaborating with Denis Peyrony in excavations of Paleolithic sites in the region soon thereafter. Peyrony was a schoolteacher in Eyzies-de-Tayac whose own interested in prehistoric archaeology led him to attend the course of lectures taught by Émile Cartailhac in 1894. Capitan's student, Henri Breuil, soon joined their endeavors. In September 1901 Capitan, Peyrony, and Breuil discovered the decorated caves of Combarelles and of Font-de-Gaume after a local farmer brought Peyrony a small female statue found nearby. The caves bore carvings of animals similar to those found at the Grotte de La Mouthe by the amateur archaeologist Émile Rivière in 1895. Claims made about the discovery Paleolithic paintings and engravings of animals on cave walls were still highly controversial and had been rejected for years by such prominent archaeologists as Émile Cartailhac. But Capitan, Peyrony, and Breuil defended the authenticity of Paleolithic cave art and their discoveries, along with those of Rivière and others, led archaeologists (particularly Cartailhac) to change their minds about Paleolithic cave paintings. Capitan, Peyrony, and Breuil's work at Combarelles and Font-de-Gaume led to an important monograph titled *La caverne de Font-de-Gaume aux Eyzies (Dordogne)*, published under the auspices of Albert I of Monaco in 1910 and later *Les Combarelles aux Eyzies (Dordogne)* published in 1924.

Denis Peyrony



Henri Breuil

Capitan and Peyrony soon began excavating other Paleolithic sites in the Vézère valley. They first explored the site of La Ferrassie in 1896, but they conducted extensive excavations there from 1902 to 1922. They uncovered a substantial number of Mousterian and Aurignacian artifacts and over the course of their excavations they unearthed a total of six Neanderthal skeletons from the site. The first specimen, La Ferrassie 1, was a male skeleton with a nearly complete skull found on 17 September 1909. La Ferrassie 2, an incomplete cranium and skeleton of a female Neanderthal, was found in 1910. In 1912 they discovered the remains of two infants, followed by the skeleton of another infant in 1920. La Ferrassie 6, the nearly complete skeleton of a child, was unearthed in 1921, a year before their excavations there came to an end. The nearly complete nature of the first skeletons discovered and the evidence of ochre on the bones led Capitan and Peyrony to suggest these were Mousterian burials that had involved some kind of ritual. Recognizing the significance of their finds and the importance of having professionally trained paleontologists and archaeologists present to verify the stratigraphic location of the skeletons and ensure they were excavated properly, Capitan invited Marcellin Boule, professor of paleontology at the Muséum National d'Histoire Naturelle [National Museum of Natural History] in Paris, as well as Émile Cartailhac and Henri Breuil to participate in the excavation of the fossils. All of the La Ferrassie skeletons were given to the National Museum of Natural History.

Capitan collaborated with a range of people in excavations at La Grotte de La Grèze (in 1904) and at La Grotte de la Mairie à Teyjat and Vabri Mège (in 1906, 1908, 1909 and 1912). He also worked with public authorities to classify, protect, and scientifically examine the Paleolithic deposits of the Vézère valley. As a member of the Commission des Monuments historiques [Historic Monuments Commission], Capitan and Peyrony began the first official excavations at La Madeleine in 1910 under the auspices of the Ministere de l'Instruction et des Beaux-Arts. In this work Capitan received the support of Paul Leon, director of the Beaux-Arts, and Paul Verdier, chief of the Service des Monuments historiques. In addition to his work in Paleolithic archaeology, Capitan was also interested in the pre-Columbian civilizations of Mexico and Peru. He traveled to Mexico and the United States to examine their pre-Columbian antiquities and he acquired the famous collection of Peruvian artifacts belonging to captain Paul Berthon. As a consequence of these studies, Capitan became a professor at the Collège de France in 1908 where he occupied the chair of Americanism and taught a course on American antiquity. He also became a member of the Société des Américanistes [Society of Americanists] in 1900, becoming its secretary general in 1908, its vice president in 1922, and its president in 1927. Capitan eventually donated his collection of American ethnographic objects to the Musée d'Ethnographie [Museum of Ethnography]. Similarly, he donated his substantial collection of prehistoric artifacts to the Musée des Antiquités Nationales [Museum of National Antiquities]. And he donated his collection of objects pertaining to Parisian history to the Musée Carnavalet in Paris.

Cranium of La Ferrassie 1

Capitan was a member of an impressive number of professional societies and organizations and his career reflects the importance of institutions in the careers of scientists at this time. He became a member of the Société d'Anthropologie de Paris [Anthropology Society of Paris] in 1883 and of the Société de Biologie [Biology Society] in 1887. He was appointed a member of the Prehistoric Section of the Commission des Monuments Historiques in 1896 (later serving as vice president and then president of the Commission). He became a member of the Commission Municipale du Vieux-Paris in 1898, becoming its vice president in 1904 and he presided over the rescue excavations the Commission undertook during the construction of the Paris subway. Capitan served as vice president of the 1906 meeting of the Congrès International d'Anthropologie et d'Archéologie Préhistoriques [International Congress of Prehistoric Anthropology and Archaeology], which met in Monaco. Capitan became a member of the Académie de Médecine [Academy of Medicine] in 1909. He joined the newly founded Institut Français d'Anthropologie from the time it was established in 1911 and this was not the only new institution that he was involved with.

The First World War caused a massive disruption to the international collaboration of scientists and resulted in a great deal of animosity between French and German scientists. As a consequence a group of prominent French anthropologists that included Yves Guyot and Henri Weisgerber, (the director and sub-director of the École d'Anthropologie), Georges Hervé, Léonce-Pierre Manouvrier, Adrien de Mortillet and Louis Capitan circulated a notice on 20 November 1918 calling for the creation of an Institut International d'Anthropologie [International Institute of Anthropology. The purpose of the Institute was to bring together archaeologists and anthropologists after the war. The Institute, created almost entirely by French scientists, differed from the Congrès international d'anthropologie et d'archéologie préhistoriques in that its work focused on the anthropological study of living human populations, rather than prehistoric peoples, and by the fact that scientists from Germany and its allies were excluded from the Institute's activities. Capitan was involved in the creation of the Institute and was elected Secretary General at its first meeting held in Liege in 1921.

Capitan was also active in several important committees associated with major scientific institutions. He became a member of the Comité des Travaux Historiques et Scientifiques [Committee of Historic and Scientific Works] in 1903 and of the comité de perfectionnement [Development Committee] of the Institut de paléontologie humaine [Institute of Human Paleontologie]. He served as a member of the Commission des Monuments mégalithiques [Commission of Megalithic Monuments].[1] Capitan was also an *associés correspondant* of the Société Nationale des Antiquaires de France [National Society of the Antiquaries of France]. In recognition of his many accomplishments Capitan was made a Chevalier of the Légion d'honneur (Legion of Honor) in 1918. He published several books on the prehistory of the Vézère valley as well as valuable a monograph on the results of his excavations, conducted with Jean Bouyssonie, of the Paleolithic site of Limeuil titled *Un atelier d'art Préhistorique: Limeuil* (1924) and a monograph titled *La Madeleine: son gisement, son industrie, ses oeuvres d'art* (1928) that describes the results of the extensive excavations that he and Denis Peyrony undertook at La Madeleine.

Capitan died in Paris in 1929, but there is some confusion regarding the precise date of his death. His longtime friend and colleague, Denis Peyrony, gave the date of Capitan's death as 27 August in the obituary he wrote for the *Bulletin de la Société historique et archéologique du Périgord*. However, the obituaries that appeared in *L'Anthropologie*, the *Journal de la Société des Américanistes*, and the *Bulletin de la Société nationale des antiquaires de France* give the date as 26 August. Confusing the matter further is the fact that some recent accounts of Capitan's life give the date of his death as 1 September. Capitan published a brief autobiographical account of his scientific career along with a bibliography of his publications in 1911, which was later updated in 1917. See Louis Capitan, *Notice sur les travaux scientifiques de M. le docteur Capitan* (Paris: Wellhoff & Roche, 1911) and Louis Capitan, *Notice sur les travaux originaux de M. le Docteur Capitan. Deuxième partie, 1912-1917* (Paris: Wellhoff & Roche, 1917).

SELECTED BIBLIOGRAPHY

Louis Capitan and Denis Peyrony. "Fouilles à la Ferrassie

(Dordogne)." *Congrès préhistorique de France compte rendu* [1905] (1906): 143-144.
Louis Capitan and Denis Peyrony. "Deux squelettes humains au milieu de foyers de l'époque moustérienne." *Revue d'Anthropologie* 19 (1909): 404-409.
Louis Capitan, Henri Breuil, and Denis Peyrony. *La caverne de Font-de-Gaume aux Eyzies (Dordogne)*. Monaco: A. Chêne, 1910
Louis Capitan and Denis Peyrony. "Un nouveau squelette humain fossile." *Revue d'Anthropologie* 21 (1911): 148-150.
Louis Capitan and Denis Peyrony. "Station préhistorique de La Ferrassie, commune de Savignac-du-Bugue(Dordogne)." *Revue d'Anthropologie* 22 (1912): 76-99.
Louis Capitan and Denis Peyrony. "Trois nouveaux squelettes humains fossiles." *Revue d'Anthropologie* 22 (1912): 439-442.
Louis Capitan and Henri Lorin. *Le travail en Amérique avant et après Colomb*. Paris, F. Alcan, 1914.
Louis Capitan and Denis Peyrony. "Nouvelles fouilles à La Ferrassie (Dordogne)."
C. R. Association française pourl'avancement des sciences (1921): 540-542.
Louis Capitan and Denis Peyrony. "Découverte d'un sixième squelette moustérien à la Ferrassie (Dordogne)." *Revue d'Anthropologie* 31 (1921): 382-388.
Louis Capitan, Henri Breuil, and Denis Peyrony. *Les Combarelles aux Eyzies (Dordogne)*. Paris: Masson, 1924.
Louis Capitan. *La préhistoire*. Paris: Payot & cie, 1922.
Louis Capitan and Denis Peyrony. *L'humanité primitive dans la région des Eyzies*. Paris: Stock, 1924.
Louis Capitan. *L'Humanité préhistorique dans la vallée de la Vézère*. Paris, 1924.
Louis Capitan and Jean Bouyssonie. *Un atelier d'art Préhistorique: Limeuil. Son gisement à gravures sur pierres de l'âge du renne*. Paris: Librairie É. Nourry, 1924.

Louis Capitan and Denis Peyrony. *La Madeleine: son gisement, son industrie, ses oeuvres d'art*. Paris: E. Nourry, 1928.

SECONDARY SOURCES

M. A. Maurer and R. Vaufrey. "Louis Capitan." *Journal de la Société des Américanistes* 21 (1929): 402-409.

Édouard Jeanselme. "Notice sur Capitain (1854-1929)." *Bulletins et Mémoires de la Société d'anthropologie de Paris* 10 (1929): 77-78.

Peabody Charles. "Dr. Louis Capitan." *American Anthropologist*. 32 (1930): 567-568.

Denis Peyrony. "M. le Professeur Docteur Capitan." *Bulletin de la Société historique et archéologique du Périgord* 56 (1929): 313-315.

R. Vaufrey, "Nécrologie. Le docteur Louis Capitan." *L'Anthropologie* 39 (1929): 349–352.

Miles C. Burkitt. "Professor Louis Capitan." *Man* 29 (1929): 194-195.

J. Noir. *Le Dr Louis Capitan, professeur, au Collège de France. Eloge prononcé au Comité d'Etudes historiques et archéologiques 'La Montagne Sainte-Geneviève et ses abords'*. Clermont [Oise]: Thiron et Cie, 1929.

Roman d'Amat. "Capitan (Joseph-Louis)." In J. Balteau *et al.* (eds.). *Dictionnaire de biographie française*. Vol. 7, pp. 1066-1067. Paris: Librairie Latouzey et Ané, 1956.

Evelyne Gran-Aymerich and Jean Gran-Aymerich. "Les grands archéologues: Louis Capitan." *Archéologia* 1985, p. 79-82.

Gran-Aymerich Eve. – *Dictionnaire biographique d'archéologie (1798-1945)*. Paris : CNRS Éditions, 2001.

Notes

1 The Commission des Monuments mégalithiques, established in 1879, was attached to the Commission des Monuments Historiques, which had connections to the Académie Celtique and the Société des Antiquaires de France.

Julien Fraipont (1857-1910)

Julien Fraipont (1857-1910)

Julien-Jean-Joseph Fraipont was born in Liège, Belgium, on 17 August 1857. His father Joseph Fraipont was the director of the Crédit Général Liégeois bank and his mother was Julienne Collin.

Fraipont attended the Collège des Jésuites [Jesuit College] in Liège and among his boyhood friends were Maximin Lohest and Charles Mathien. They were all interested in science and were attracted to Charles Darwin's recently proposed theory of evolution and its implications for the origin of humans. Their interest in evolution was influenced by the lectures of their teacher, Father Victor van Tricht, who discussed Darwin's ideas. Fraipont began working in the bank where his father was director, but his desire to pursue a career in science led him to leave his job at the bank and enter the University of Liège in 1875. He attended the classes of the zoologist Edouard van Beneden, who was soon impressed with his young student. As a consequence, Fraipont first became a préparateur (student demonstrator) in van Beneden's biological laboratory at the university in 1878, and then in 1881 he was elevated to the position of assistant in the laboratory. Initially Fraipont's studies were in zoology and he published several papers with van Beneden on marine organisms. Arrangements were also made for him to spend time at several important marine biological laboratories. He traveled first to Ostend, on the Belgian coast, in 1876 followed by a stay at the biological station at Roskoff on the northern coast of Brittany, in France. He then visited the Zoological Institute at Kiel, in Germany, in 1880 and finally the Zoological Station in Naples, Italy, during 1881 and 1882. These experiences allowed Fraipont to publish a number of papers and monographs on the anatomy and embryology of marine invertebrates, protozoa, hydrozoans, trematodes and cestodes.

Fraipont's studies soon expanded beyond just marine zoology. From 1880 to 1884 he worked in both van Beneden's laboratory of biology and the laboratory of geology led by Gustave Dewalque. Dewalque gave Fraipont the responsibility of teaching the course in paleontology in 1884 and Fraipont took over the course on zoological geography and comparative zoology in 1886. He now became increasingly involved in paleontological research and his work on Devonian crinoids (Fraipont 1883; 1884) was awarded a prize by the Société géologique de Belgique in 1884. It was at this time that Laurent-Guillaume de Koninck, a paleontologist and professor of chemistry at the university, asked Fraipont to collaborate on his monograph on the Carboniferous bivalves of Belgium (Koninck 1885). His early scientific research was divided between zoology and paleontology. He published papers on the taxonomy and morphology of different groups of animals, including Archiannelids. Fraipont also published several papers on Palaeozoic fossils, the most remarkable being his work on the beautifully preserved echinoderms and fish from the black marble of Dinant. Near the end of his career he also published a monograph on the Okapia, an unusual animal discovered in the Belgian Congo around 1900. Fraipont concluded that the animal represented a form intermediate between the Cenozoic Giraffidae and present-day giraffes (Fraipont 1907).

In recognition of his scientific accomplishments, the University of Liège appointed Fraipont extraordinary professor in 1886, and in 1889 he was promoted to full professor. In 1891 he took charge of the course on paleontology at a time when he was becoming increasingly interested in Quaternary paleontology and human prehistory. In 1885 Gustave Dewalque directed Fraipont and Pierre Destinez, a préparateur working in geology under Dewalque, to conduct excavations in the Engis caves, where the Belgian physician Philippe-Charles Schmerling found human fossils and stone artifacts in the 1830s. Following this Fraipont joined his childhood friend Maximin Lohest and Ivan Braconier in excavating the Trou al' Wesse cave at Petit-Modave. Between 1885 and 1887 they unearthed six archaeological layers in the cave containing Pleistocene animal fossils and flint artifacts. Additional excavations there by Fraipont yielded a collective Neolithic burial. Fraipont also collaborated with Ferdinand Tihon, a physician in the town of Theux, near Liège, who was also an avid archaeologist. During their excavations of the Grotte du Docteur, at Huccorgne, from 1886 to 1888 Fraipont and Tihon found Neolithic, Magdalenian, and

Mousterian layers containing thousands of stone tools and many animal fossils. Fraipont and Tihon also excavated the Cavernes de la Mehaigne during 1887 and 1888 where they discovered a layer containing Mousterian artifacts with Rhinoceros bones below a layer containing Magdalenian bone tools (Fraipont and Tihon 1889). In 1896 they excavated the Sandron rock shelter at Huccorgne where they unearthed Acheulean and Mousterian artifacts along with a Neolithic ossuary. At the Grotte du Tunnel they discovered Neolithic pottery and artifacts along with human bones, and in the Grotte de l'Hermitage Fraipont and Tihon unearthed Neolithic burials. Fraipont also excavated the Grotte du Mont Falhise (Anthée) in 1896 where he found broken human bones and Neolithic artifacts (Fraipont 1897). Fraipont compiled the results of his investigations of Neolithic sites in the area around Liège to publish a book titled *Les Néolithiques de la Meuse* (1900), where he discussed the peoples who lived along the Meuse valley during the Neolithic period.

Maximin Lohest

Marcel de Puydt

But Fraipont's most important contribution to paleoanthropology arose from his work on the Neanderthal fossils found in the Grotte de Spy. Marcel de Puydt and Maximin Lohest began their excavations of the cave at Spy in August 1885. Marcel de Puydt had studied law and political and administrative sciences at the University of Liège and was director of the Legal Department of the city of Liège. He was also an avid archaeologist and a member of the Institut archéologique liégeois [Liège Archaeological Institute] and in 1881 he discovered the Neolithic station of Sainte-Gertrude, near Rijckholt. Maximin Lohest studied engineering at the University of Liège and had been appointed the assistant to Gustave Dewalque in 1884. De Puydt first met Lohest and Fraipont in 1881 and they all shared an interest in human prehistory and human origins. De Puydt had known of the cave at Spy since his youth and had explored it somewhat before he and Lohest began their work there. They hired Armand Orban, a former miner from Hoccorgne, to conduct the excavations of the terrace in front of the cave and soon they unearthed numerous Mousterian flint artifacts and Pleistocene animal fossils. These included bones of the wooly rhinoceros, mammoth, cave bear, hyena, and horse. Then in June 1886 the excavations uncovered two human skeletons in the lowest strata of the cave deposits.

Neanderthal Crania from Spy

Lohest and de Puydt invited Fraipont to conduct the anatomical and anthropological examination of the human fossils despite his lack of experience in anthropology. Fraipont consulted studies of previously discovered Paleolithic human skeletons conducted by Paul Broca, Armand de Quatrefages, Ernest-Théodore Hamy, Rudolf Virchow, Hermann Schaffhaussen and others. After comparing the two skeletons, and especially the skulls, found at Spy with the Neanderthal fossils found in Germany in 1856 and with other Paleolithic skulls that Quatrefages and Hamy thought belonged to a “Neanderthal race” Fraipont concluded that the Spy skeletons also represented Neanderthals. Since few Neanderthal fossils were known at that time and there was still a great deal of uncertainty about the Neanderthals, Fraipont’s study of the Spy skeletons helped to clarify some questions regarding the geological age and the anatomy of these early hominids. He argued that the Neanderthals were the earliest known inhabitants of Belgium and that they were the makers of Mousterian tools. Fraipont published several major papers on the Spy skeletons (Fraipont and Lohest 1886; Fraipont 1888; 1891) and later returned to the question of the “Neanderthal race” (Fraipont 1895). Fraipont was awarded the Broca Medal by the Société d’Anthropologie de Paris [Anthropology Society of Paris] in 1888 for the 1886 paper on the Spy skeletons. He also published a book, Les cavernes et leurs habitants [Caves and Their Inhabitants] (1896), where he addressed the new scientific evidence relating to the existence of humans during the Ice Age. He discussed the caves in Belgium and in other parts of Europe where artifacts and human bones had been found with the fossilized bones of Pleistocene animals, as well as the archaeological evidence for a succession of Paleolithic, Neolithic, Bronze, and Iron Ages. As a result of his work on human prehistory, in 1890 Fraipont was appointed secretary general of the sixth meeting of the Congrès archéologique et historique [Archaeological and Historical Congress], organized by the Fédération archéologique et historique de Belgique.

Fraipont achieved a great deal of respect and recognition as a professor and researcher by the end of the century. In addition to his many years as a professor of zoology and paleontology he also served as Dean of the Faculty of Science and he became rector of the University of Liège in 1909, only months before his death. He was also put in charge of the Museum of Paleontology at the university, where he worked to save and develop Philippe-Charles Schmerling's huge collection of bones. From 1900, Fraipont and his colleagues Max Lohest, Alfred Habets, Charles-Alfred Gilkinet, and Giuseppe Césaro campaigned to persuade the government to form the degree of engineer geologist at the university. He was a member of many scientific societies and institutions in addition to being a professor at the university. He was a member of the Société géologique de Belgique [Geological Society of Belgium] and served as its president from 1908 to 1909. Fraipont was also a member of the Fédération archéologique et historique de Belgique [Archaeological and Historical Federation of Belgium] and also served as its president. In 1891 he became a member of the Institut Archéologique Liégeois [Archaeological Institute of Liège] and was elected to serve as the Institute's vice president in 1904 and again from 1908-1909 and served as its president in 1905 and again in 1910 just before his death. He became a corresponding member of the Science Class in the Académie royale de Belgique [Royal Academy of Belgium] in 1895 before being elected a titular member in 1901 and in 1908 he was named director of the Science Class. He was also a member of the Société d'Anthropologie de Bruxelles [Anthropology Society of Brussels] and of the Société Royale des Sciences de Liège [Royal Society of the Sciences of Liège]. He also served as a member of the Commission Académique de la Biographie Nationale [Academic Commission of National Biography]. And as one of the culminating recognitions of his accomplishments as a researcher of human prehistory he was chosen to be the president of the twenty-first Congrès archéologique et historique when it met in Liège in 1909.

Fraipont was also a member of many foreign scientific institutions. He was elected a foreign member of the Académie impériale allemande Césarine-Léopoldine-Caroline de Halle in 1890 as well as a corresponding member of the Société impériale des naturalistes de Moscou [Imperial Society of Naturalists of Moscow] in 1895. He was a corresponding member of the École d'Anthropologie [School of Anthropology] in France and of the Anthropologischen Gesellschaft in Wien [Anthropological Society of Vienna]. He was also a foreign associate member of the Société d'Anthropologie de Paris [Anthropology Society of Paris]. Fraipont also received many awards during his career. He was named a Chevalier of the Order of Leopold in 1899. He received the civic medal first class and the commemorative medal of the reign of His Majesty Leopold II. The Academy of France honored him as an Officer of the Academy France; and the French government awarded him the Légion d'honneur [Legion of Honor] several days before his death. In recognition of his contributions to geology a mineral, fraipontite, was named in his honor.

Julien Fraipont died on 22 March 1910 in Liège following a brief sickness.

SELECTED BIBLIOGRAPHY

"Recherches sur les crinoïdes du famennien (dévonien supérieur) de Belgique." Third Part. Annales de la Société géologique de Belgique 10 (1883): 45-68.

"Recherches sur les crinoïdes du famennien (dévonien supérieur) de Belgique." Third Part. Annales de la Société géologique de Belgique 11 (1884): 105-118.

Julien Fraipont and Ivan Braconier "La poterie en Belgique à l'âge du Mammouth (quaternaire inférieur)." Revue d'Anthropologie 2 (1887): 385-407.

Julien Fraipont and Max Lohest. "La race humaine de Néanderthal ou de Canstadt en Belgique. Recherches ethnographiques sur des ossements humains, découverts dans des dépôts quaternaires d'une grotte à Spy et determination de leur âge géologique," Bulletins de l'Académie royale de Belgique ser. 3, 12 (1886): 741-784. [This paper also appeared in Archives de biologie, 7 (1887): 587–757].

"Le tibia dans la race de Néanderthal: Etude comparative de l'incurvation de la tête du tibia, dans ses rapports avec la station verticale chez l'Homme et les Anthropoïdes." Revue d'Anthropologie 3 (1888): 145-158.

Julien Fraipont and Ferdinand Tihon,"Explorations scientifiques des cavernes de la vallée de la Méhaigne," Mémoires couronnés de l'Académie royale des Sciences de Belgique 43 (1889): 5-72.

"Les Hommes de Spy: La race de Canstadt ou de Néanderthal en Belgique." Congrès international d'anthropologie et d'archéologie préhistoriques [1889] (1891): 322-362.

"La race "imaginaire" de Cannstadt ou de Néanderthal. (À la mémoire de A. de Quatrefages." Bulletin de la Société d'Anthropologie de Bruxelles 14 (1895): 32-44.

Les cavernes et leurs habitants. Paris: J.-B. Baillière et Fils, 1896.

Julien Fraipont and Ferdinand Tihon,"Explorations scientifiques des cavernes de la vallée de la Méhaigne," Mémoires couronnés de l'Académie royale des Sciences de Belgique 54 (1896): 1-55.

"La grotte du mont Falhise [Anthée]." Bulletin de l'Académie royale des sciences, des lettres et des beaux-arts de Belgique ser. 3, 33 (I897): 47-51.

Les Néolithiques de la Meuse. Bruxelles: Impr. Hayez, 1900.

"Matériaux pour l'histoire des temps quaternaires en Belgique." Bulletin de l'Académie royale de Belgique (Classe des sciences) (1901): 464-482.

"La Belgique préhistorique et protohistorique." Bulletins de l'Académie royale de Belgique (1901): 823-877.

"Matériaux pour l'histoire des temps quaternaires en Belgique." Bulletin de l'Académie royale de Belgique (1901): 463-482.

"Les origines de la sculpture, de la gravure et de la peinture chez l'homme fossile." Bulletin de l'Institut archéologique liégeois 34 (1904): 333-338.

OTHER SOURCES

Laurent-Guillaume de Koninck, "Faune du calcaire carbonifère de la Belgique. Part 5 Lamellibranches." Annales du Musée royal d' histoire naturelle de Belgique (1885)

SECONDARY SOURCES

Lucien Renard, "Julien Fraipont," Chronique archéologique du Pays de Liège 5 (1910): 27-38.

Paul Fourmarier, "Notice biographique sur Julien Fraipont." Annales de la Société géologique de Belgique 41 (1914): 337-350.

M. Lohest, Charles Julin et A. Rutot, "Notice sur Julien Fraipont, membre de l'Académie." Annuaire de l'Académie royale des Sciences, des Lettres et des Beaux-Arts de Belgique 91 (1925): 130-197.

Georges Ubaghs, "Julien Fraipont." In Bibliographie nationale, vol. 38, supplement vol.10, pp. 221-224. Brussels: Émile Bruylant, 1973.

Michel Toussaint, Les hommes fossiles en Wallonie: de Philippe-Charles Schmerling à Julien Fraipont, l'émergence de la paléoanthropologie. Namur: Ministère de la Region Wallonne, Division du Patrimoine, 2001.

Annick Anceau, Cyrille Prestianni, Frederic Hatert, and Julien Denayer "Les sciences géologiques à l'Université de Liège: deux siècles d'évolution. Partie 1: de la fondation à la Première Guerre Mondiale." Bulletin de la Société Royale des Sciences de Liège 86 (2017): 27-63.

Dragutin Gorjanović-Kramberger (1856–1936)

Dragutin Gorjanović-Kramberger

Dragutin Gorjanović-Kramberger was born in Zagreb on 25 October 1856 in what at the time was the Austro-Hungarian Empire. His father, Matija Kramberger, (who descended from Germans that immigrated to the region in 1648) worked as a cobbler and innkeeper, and his mother, Terezija Dušek (née Vrbanović) was Croatian. They christened their son Karl Kramberger, but in 1882 he adopted the Croatian version of his name due to his growing dedication to Croatian nationalism. As a boy he began collecting fossils from a nearby quarry at Dolje after being introduced to natural history by a local pharmacist and taxidermist Slavoljub Wormastiny, who worked at the National Museum in Zagreb. This led Gorjanović-Kramberger to study geology and paleontology, first at the University of Zurich in 1874 and later at the University of Munich where he studied under the renowned paleontologist Karl Alfred von Zittel. However, Gorjanović-Kramberger transferred once again and completed his doctorate in the natural sciences at the University of Tübingen in 1879 with a dissertation on fossil fish from the Carpathian Basin.

Gorjanović-Kramberger became curator of the Mineralogy and Geology Department at the Croatian National Museum in Zagreb in 1880, where he later served as director of the Department of Geology and Paleontology from 1893 to 1924. In 1884 he also accepted a position as assistant professor of vertebrate paleontology at the University of Zagreb, becoming full professor in 1896. He was also active in several local scientific institutions. Gorjanović-Kramberger was part of the group led by Spiridion Brusina, professor of zoology at the University of Zagreb, that established the Hrvatskoga naravoslovnoga družtva (Croatian Natural History Society) in Zagreb in1885. The Society, which changed its name to Hrvatsko Prirodoslovno Društvo (Croatian Society for Natural Sciences) in 1908, was created to promote interest and research in the natural sciences in Croatia. He was made an associate member of the Jugoslavenske akademije znanosti i umjetnosti (Yugoslav Academy of Arts and Sciences) in 1892, becoming a full member in 1909. The Academy had been established in Zagreb in 1866 by Bishop Josip Juraj Strossmayer as part of a broader cultural and intellectual project to unite the Slavic peoples of the Austro-Hungarian Empire.

Gorjanović-Kramberger was engaged in a wide range of projects including cartography and the geological surveying of Croatia as well as the study of fossil Miocene fish and Cretaceous lizards. His career took a dramatic turn when he first learned of a rock shelter at Hušnjak Hill, located on the outskirts of the town of

Krapina along the Krapinica River. Sand had been quarried from the site for years and Gorjanović-Kramberger first learned of the site when a local schoolteacher named Josip Rehorić sent some recently discovered Pleistocene animal fossils to him in 1895. Gorjanović-Kramberger visited Hušnjak Hill on 23 August 1899 and immediately noticed remains of hearths, stone tools, and a human molar in the cave's deposits. He began excavations at Krapina on 2 September 1899 with the assistance of Stjepan Osterman, a student at the University of Zagreb. Between 1899 and 1905 Gorjanović-Kramberger unearthed about nine hundred hominid fossils from more than seventy individuals and over a thousand stone implements, as well as vast quantities of Pleistocene animal fossils.

The excavations were meticulously conducted and recorded, the stratigraphy of the site was mapped, each fossil was numbered and the position of every fossil was recorded. Gorjanović-Kramberger also introduced several innovative techniques in his research. He photographed fossils and used these in his publications, and he was one of the first paleontologists to use the new X-ray technology to produce a radiograph of a fossil. He also experimented with the use of fluorine dating to prove that the hominid fossils and the Pleistocene mammals were of the same age. When he first began the excavations at Krapina he dated the animal and human remains to the diluvial period, the term generally used to refer to the glacial period (Pleistocene) but as geologists refined the chronology of the Pleistocene Gorjanović-Kramberger eventually dated the fossils to the Riss-Würm interglacial period. Gorjanović-Kramberger was influenced in his interpretation of the Krapina hominid fossils by comparing them with the Neanderthal jaw discovered in 1866 at La Naulette, in Belgium, and with the Neanderthal jaw excavated from the Ŝipka cave, in Moravia, in 1880. His views were also shaped by discussions he had with German anatomist Gustav Schwalbe at the 1903 meeting of the Gesellschaft Deutscher Naturforscher und Ärzte, held in Kassel, Germany. Schwalbe promoted the view that the Neanderthals, or *Homo primigenius* as he called them, were the ancestors of modern humans. As a result of these influences Gorjanović-Kramberger identified the Krapina fossils as belonging to *Homo primigenius* (Neanderthal) and he also recognized that the stone implements discovered at Krapina resembled Mousterian implements found at other sites in Europe.

Krapina 3 Neanderthal partial cranium (from Der diluviale Mensch von Krapina in Kroatien (1906), Plate 1

Gorjanović-Kramberger first announced his discoveries at Krapina in a paper read during the 16 December 1899 meeting of the Jugoslavenske akademije znanosti i umjetnosti (Yugoslav Academy of Arts and Sciences) in Zagreb. He followed this with a paper read on 19 December at the Anthropologischen Gesellschaft in Wien (Anthropological Society of Vienna). Between 1899 and his death, Gorjanović-Kramberger published a substantial number of papers, mostly in German, on the Krapina fossils. His monograph on the Krapina fossils, *Der diluviale Mensch von Krapina in Kroatien* [*Diluvial Man from Krapina in Croatia*] published in 1906, discussed the geology and animal fossils found at the site and described in great detail the morphology of the Neanderthal material. One of Gorjanović-Kramberger's major contributions to the interpretation of the Neanderthals was his recognition that the population represented in the Krapina sample showed considerable morphological variation. He explained the anatomical traits that distinguished the Neanderthals from modern humans, notably their large and robust bones, as being the result of the harsh climate they had to endure and to their possessing only rudimentary tools. He also identified many examples of injuries in the fossils from Krapina, which he interpreted as evidence that life for these people was also full of dangers. He even suggested that the Neanderthals of Krapina engaged in cannibalism since some of the bones were charred and had been broken. Unlike many of his contemporaries, Gorjanović-Kramberger believed that the Neanderthals were the direct ancestors of modern humans and he also supported the Darwinian idea that humans had evolved originally from an ape-like ancestor through stages represented by specimens such as *Pithecanthropus erectus* (now *Homo erectus*).

Although Gorjanović-Kramberger published extensively on the Krapina Neanderthals and delivered lectures in many major German and East European cities he did not visit France, England, or America and as a result his research was not well known outside the German speaking parts of Europe, although the American physical anthropologist Aleš Hrdlička did discuss the Krapina Neanderthals in *The Skeletal Remains of Early Man* (1930). It was not until the work conducted by Fred H. Smith and Milford Wolpoff during the 1970s that paleoanthropologists began to take a renewed interest in the Krapina material. In addition to his excavations at Krapina, Gorjanović-Kramberger was also instrumental in the formation of the Geologijsko povjerenstvo za kraljevinu Hrvatsku i Slavoniju [Geological Commission of the Kingdom of Croatia and Slavonia] in 1909 and he founded the journal *Vijesti geoloskog povjerenstva* [*Geological Commission News*] in 1911 and served as its editor. Gorjanović-Kramberger retired as professor at the University of Zagreb and from his position as director of the National Museum in 1924. He died in Zagreb on 22 December 1936.

SELECTED BIBLIOGRAPHY

"Paleolitički ostaci čovjeka i njegovih suvremenika iz diluvija u Krapini." *Ljetopis Jugoslavenske akademije znanosti i umjetnosti* 14 (1899): 90-98.

"Der paläolithische Mensch und seine Zeitgenossen aus dem Diluvium von Krapina in Croatien." *Mittheilungen der Anthropologischen Gesellschaft in Wien* 29 (1899): 65–68.

"Neue paläolithische Fundstelle." C*orrespondenz-Blatt der Deutschen Gesellschaft für Anthropologie, Ethnologie und Urgeschichte* 31 (1900): 17–18.

"Der diluviale Mensch aus Krapina in Kroatien." *Mittheilungen der Anthropologischen Gesellschaft in Wien* 30 (1900): 203.

"Der paläolithische Mensch und seine Zeitgnossen aus dem Diluvium von Krapina in Kroatien." *Mittheilungen der Anthropologischen Gesellschaft in Wien* 31 (1901): 164-197.

"Der paläolithische Mensch und seine Zeitgenossen aus dem Diluvium von Krapina in Kroatien (Nachtrag, als zweiter Theil)." *Mittheilungen der Anthropologischen Gesellschaft in Wien* 32 (1901): 189-216.

"Der paläolithische Mensch und seine Zeitgnossen aus dem Diluvium von Krapina in Kroatien. Zweiter Nachtrag (als dritter Teil)." *Mittheilungen der Anthropologischen Gesellschaft in Wien* 34 (1904): 187-199.

“*Homo primigenius* aus dem Diluvium von Krapina in Kroatien und dessen Industrie. (Nach den Ausgrabungen im Sommer des Jahres 1905.)” C*orrespondenz-Blatt der Deutschen Gesellschaft für Anthropologie, Ethnologie und Urgeschichte* 36 (1905): 88-90.

“Der paläolithische Mensch und seine Zeitgnossen aus dem Diluvium von Krapina in Kroatien. Dritter Nachtrag (als vierter Teil).” *Mittheilungen der Anthropologischen Gesellschaft in Wien* 35 (1905): 197-229.

Der Diluviale Mensch von Krapina in Kroatien: ein Beitrag zur Paläoanthropologie. Wiesbaden: Kneidel, 1906.

“Die Kronen und Wurzeln der Mahlzähne des Homo primigenius und ihre genetische Bedeutung.” *Anatomische Anzeiger* 31 (1907): 97–134.

“Die Zähne des Homo primigenius von Krapina.” *Anatomische Anzeiger* 32 (1908): 145–156.

“Anomalien und krank- hafte Erscheinungen am Skelett des Urmenschen von Krapina.” *Die Umschau* 12 (1908): 623–662.

“Anomalien und pathologische Erscheinungen am Skelett des Urmenschen von Krapina.” C*orrespondenz-Blatt der Deutschen Gesellschaft für Anthropologie, Ethnologie und Urgeschichte* 38 (1908): 108–112.

“Der vordere Unterkiefer- abschnitt des altdiluvialen Menschen in seinen genetischen Bezie- hungen zum Unterkiefer des rezenten Menschen und jenem der Anthropoiden.” *Zeitschrift für induktive Abstammungs- und Vererbungslehre* 1 (1909): 403–439.

“Der Urmensch von Krapina – Kannibale.” *Anzeiger der 4. Versammlung der tschechischen Naturforscher und Ärzte* (Prague) (1909): 288–299.

“Die verwandschaftlichen Beziehungen zwischen dem *Homo heidelbergensis* aus Mauer und dem *Homo primigenius* aus Krapina in Kroatien.” *Anatomischer Anzeiger* 35 (1910): 359–364.

“Über *Homo aurignacensis* Hauseri.” *Verhandlungen der Geologischen Reichsanstalt* 14 (1910): 300–303.

“Homo aurignacensis Hauseri in Krapina?” *Verhandlungen der Geologischen Reichsanstalt* 14 (1910): 312–317.
“Bemerkungen zu Walkhoffs neuen Untersuchunger über die menschliche Kinnbildung.” *Glasnik Hrvatskoga prirodoslovnoga društva* 24 (1912): 110–117.
“Der Axillarand des Schul- terblattes des Menschen von Krapina.” *Glasnik Hrvatskoga prirodoslovnoga društva* 26 (1914): 231–257.
“Der diluviale Mensch von Krapina.” *Archiv für Rassenbilder* 12 (1926): 111-120.
“Das Schulterblatt des diluvialen Menschen von Krapina in seinem Verhältnis zu dem Schulterblatt des rezenten Menschen und der Affen.” *Vijesti geološk zavoda* 1 (1926): 67-122.
“Die Halswirbel des diluvialen Menschen von Krapina.” *Izvješća o raspravama matematičko-prirodoslovnog razreda* 23 (1929): 24-48.

SECONDARY SOURCES

Ljudevit Barić. “Dragutin Gorjanović-Kramberger i otkriće krapinskog pračovjeka.” In Mirko Malez (ed.). *Krapinski pračovjek i evolucija hominida*. Pp. 23–51. Zagreb: Jugoslavenska akademija znanosti i umjetnosti, 1978.
Ljudevit Barić. “Dragutin Gorjanović-Kramberger and his Discovery of the Krapina Nanderthal Man.” *Collegium Antropologicum* 3 (1979): 125-128.
David Frayer, “The Krapina Neandertals: A Comprehensive, Centennial, Illustrated Bibliography.” Zagreb: Croatian Natural History Museum, 2006.
David Frayer, ““Gorjanović-Kramberger, Dragutin (Karl).” In *New Dictionary of Scientific Biography*. Vol. 3, pp. 154-157. New York: Charles Scribner’s Sons, 2008.
Milan Herak, “Znanstveno djelo Dragutina Gorjanović-Krambergera.” *Geološki vjesnik* 10 (1957): 1-7.
Vanda Kochansky-Devide, “Prof. dr. Gorjanović kao paleontolog.”

In Mirko Malez (ed.). *Krapina 1899-1969*. Pp. 5–11. Zagreb: Jugoslavenska akademija znanosti i umjetnosti, 1970.

Vanda Kochansky-Devidé, "Dragutin Gorjanović-Kramberger kao antropolog. Krapinski pračovjek i evolucija hominida." In Mirko Malez (ed.). *Krapinski pračovjek i evolucija hominida*. Pp. 53–59. Zagreb: Jugoslavenska akademija znanosti i umjetnosti, 1978.

Vanda Kochansky-Devide, "Prilozi povijesti geoloških znanosti, IV. Dragutin Gorjanović-Kramberger." *Geološki vjesnik* 30 (1978): 427–442.

Vanda Kochansky-Devide, "Rad D. Gorjanovića-Krambergera na paleontologiji invertebrate." In Mirko Malez (ed.). *Dragutin Gorjanović-Kramberger: 1856-1936*. Pp. 29-35. Zagreb: Jugoslavenska akademija znanosti i umjetnosti, 1987.

Mirko Malez, 1987 "Doprinos Dragutina Gorjanovića-Krambergera u geologiji kvartara, paleontologiji sisavaca i paleoantropologiji." In Mirko Malez (ed.). *Dragutin Gorjanović-Kramberger: 1856-1936*. Pp. 51-75. Zagreb: Jugoslavenska akademija znanosti i umjetnosti, 1987.

Mirko Malez, "Dragutin Gorjanovi}-Kramberger (1856-1936) and His Contribution to the Advancement of Paleoanthropology and the Beginning of the 20th Century." *Collegium Antropologicum* 12 (1988): 175–188.

Josip Poljak. "Dr. Gorjanović-Kramberger (Nekrolog)." *Priroda* 27 (1937): 1-4.

Josip Poljak, "Prof. Gorjanović-Kramberger kao paleontolog i geolog." *Spomenica u počast gospodinu profesoru Dru. Dragutinu Gorjanović-Krambergeru*. *Glasnik Hrvatskoga prirodoslovnoga društva* 37/38 (1925/1926): 27-38.

Jakov Radovčić, *Dragutin Gorjanović-Kramberger i krapinski pračovjek: Počeci suvremene paleoantropologije—Dragutin Gorjanović-Kramberger and Krapina Early Man: the Foundations of Modern Paleoanthropology*. Zagreb: Hrvatski prirodoslovni muzej and Školska knjiga, 1988.

Marijan Salopek, “Dr. Dragutin Gorjanović-Kramberger.” *Ljetopis Jugoslavenske akademije znanosti i umjetnosti* 50 (1938): 188-192.

Marijan Salopek, “Akademik Dragutin Gorjanović-Kramberger kao paleontolog, geolog i paleoantropolog. “*Rasprave i građa za povijest nauka. Institut za povijest prirodnih, matematičkih i medicinskih nauka, Jugoslavenska akademija znanosti i umjetnosti, Svezak* 3 (1969): 153–171.

Antun Šimunić, “Dragutin Gorjanović-Kramberger Geological Mapping Pioneer in Croatia.” *Kartografija i geoinformacije: casopis Hrvatskoga kartografskog društva* 7 (2007): 52-72.

Fred H. Smith, “Gorjanović-Kramberger, Dragutin (Karl) (1856-1936).” In Frank Spencer (ed.), *History of Physical Anthropology: An Encyclopedia*. Vol. 1, pp. 441-444. New York: Garland, 1997.

Winfried Henke, “Gorjanović-Kramberger’s Research on Krapina – Its Impact on Paleoanthropology in Germany.” *Periodicum biologorum* 108 (2006): 239-252.

Boris Zarnik, “Profesor Gorjanović-Kramberger kao antropolog.” *Spomenica u počast gospodinu profesoru Dru. Dragutinu Gorjanović-Krambergeru*. *Glasnik Hrvatskoga prirodoslovnoga društva* 37/38 (1925/1926): 39-48.

Ernest-Théodore Hamy (1842-1908)

Ernest-Théodore Hamy

Théodore-Jules-Ernest Hamy (better known as Ernest-Théodore Hamy) was born on 22 June, 1842 in Boulogne-sur-Mer, a town in northern France near the border with Begium. His father, Théodore-Auguste Hamy, was a pharmacist in Boulogne-sur-Mer. Hamy studied in various schools as a boy and pursued his secondary education in Paris where he obtained a baccalaureate in letters in 1860 and a baccalaureate in the sciences in 1861. He decided to study medicine at the Faculty of Medicine in Paris and interned at the Salpêtrière under the guidance of Jean-Martin Charcot. There he met the French physician, neurologist, and anthropologist Paul Broca in 1864. As a result of this meeting Hamy became an extern at the Hôpital Saint-Antoine under Broca. Since Hamy was interested in anthropology Broca invited him to become an assistant at the Société d'anthropologie de Paris [Anthropology Society of Paris]. The science of anthropology was professionalizing at this time and Broca had established the Société d'anthropologie de Paris in 1959 to promote anthropological research. One of Hamy's first duties at the Society was to form a collection of human skulls for the Society's museum. Hamy gained further experience when he participated in archaeological excavations, in 1864, of the Merovingian cemetery at Hardenthun (Pas-de-Calais) conducted by Daniel Haigneré, who was an archaeologist and Hamy's former schoolteacher at the Institution Haffreingue.

During this time Hamy also took courses at the Muséum national d'histoire naturelle [National Museum of Natural History] on osteology with Henri Milne-Edwards and prehistory with Edouard Lartet. Hamy was intrigued by the recent discovery of flint artifacts found with extinct animal fossils in glacial deposits, which indicated that humans lived during the Ice Age. Geologists and archaeologists throughout Europe were uncovering similar artifacts and this encouraged Hamy to look for Ice Age artifacts near his hometown. Hamy and his friend Henri-Émile Sauvage, an amateur geologist and paleontologist who was honorary director of the Station aquicole in Boulogne-sur-Mer and curator of the local municipal museum, excavated the Quaternary deposits around Boulogne-sur-Mer where they found stone tools. This early excursion into Paleolithic archaeology led to the publication of a book titled *Étude sur les terrains quaternaires du Boulonnais et sur les débris d'industrie humaine qu'ils renferment* (1866).

Hamy became a member of the Société d'anthropologie de Paris in 1867 and his research into anthropology expanded. He was invited to study the Egyptian mummies and skulls collected by François-Auguste-Ferdinand Mariette as part of the preparation for the 1867 Exposition Universelle held in Paris. Meanwhile he completed his thesis on the human intermaxillary bone in the normal and pathological state (*L'os intermaxillaire de l'homme à l'état normal et pathologique*) in 1868. Broca appointed Hamy préparateur and chef de travaux at the Laboratoire d'Anthropologie at the École pratique des hautes études in 1868. In 1869 Hamy traveled to Egypt with Broca, the zoologist and anthropologist Armand de Quatrefages, and the archeologist François Lanormant as part of the official delegation celebrating the opening of the Suez Canal. During this visit Hamy and Lenormant found time to collect prehistoric flint axes and knives from the Nile basin.

Following the excavations of Henri de Longuy, Edouard Loydreau, and Jules Martin at Santenay, Edouard Lartet directed Hamy to excavate caverns in the valley of Dheune, in Santenay, in 1870. Hamy and Henri de Longuy excavated the bone breccias of several caves including Pointe du Bois, grotte de Saint-Jean and grotte de Saint-Aubin, grotte de la Roche-Fendue du Bois de la Fée where they found Neolithic artifacts and two human skeletons. Hamy's scientific activities were interrupted in 1870 during the terrible period of the Franco-Prussian war. While Paris was under siege by German soldiers Hamy served as a surgeon to the Troisième Légion of the Pas-de-Calais. In 1872 Hamy left his position at the Société d'anthropologie de Paris and became aide-naturaliste (assistant) to Armand de Quatrefages at the Muséum national d'histoire naturelle. Quatrefages held the chair of Anthropology at the Museum and over the next decade he and Hamy examined many of the human fossils recently found in Pleistocene deposits in Europe. Quatrefages and Hamy used the accepted techniques of craniometry (careful measurements of the shape of the skull, particularly the cephalic index and the facial angle) to identify several distinct human races that existed in Europe during the Ice Age. In three papers published between 1873 and 1874, and later expanded upon in their book *Crania ethnica* (1882) they identified a Canstadt race (represented by the Neanderthal skull from Germany and other similar skulls), a Cro-Magnon race (represented by the skeletons found at Les Eyzies and other sites), and brachycephalic races (represented by fossils found at Furfooz in Belgium and Grenelle in France). Hamy published many papers describing newly discovered human fossils from the Ice Age that were important not only for the evidence they provided about the nature of these early humans but also because he helped to establish the techniques that defined how to examine human fossils. It is also important to recognize that Hamy and Quatrefages focused on the problem of identifying prehistoric human "races" rather than discussions of human evolution, since the fossils they examined appeared to be fully human.

Hamy traveled to Copenhagen and Stockholm in 1874 to examine the ethnological and anthropological collections in their renowned museum in order to reorganize the anthropological collections of the Muséum national d'histoire naturelle. He continued to investigate the prehistoric archaeology and anthropology of France and beginning in 1877 he participated in the work of the Commission de la topographie des Gaules and the Commission de géographie de l'ancienne France. Hamy collaborated with archaeologist Alexandre Bertrand, director of the Musée d'Archéologie Nationale (Museum of National Archaeology), on an installation for the 1878 Exposition Universelle held in Paris. Their exhibit displayed artifacts from the Stone Age, the pre-Roman Gallic period, the Roman occupation, and the Frankish period in France.

Hamy also participated in the organization of the Musée ethnographique des Missions scientifiques located at the Trocadéro Palace, which was also part of the Exposition Universelle. The museum collected together ethnographic artifacts from cultures around the world that were held in the collections of numerous institutions in Paris. This display of ethnographic objects was intended to stimulate interest in colonial expansion and the success of the exposition led to calls for the creation of a permanent ethnographic museum. Quatrefages supported this idea and the Chambre des députés (Chamber of Deputies) accepted this proposal. On 19 July 1880 the Minister of National Education, Jules Ferry, signed the decree creating the Musée d'Ethnographie du Trocadéro. Hamy was appointed curator of the museum and director of scientific missions. The museum contained an impressive collection of ethnographic, prehistoric, and physical anthropology specimens. Hamy's principles for arranging the collections in the museum were laid out in an influential book, *Les Origines du Musée d'Ethnographie* (The Origins of the Museum of Ethnography) published in 1890, which reflected the attitude of many scientists of that time that biological and cultural phenomena were linked. Hamy also wanted to reconcile the prevailing views of biological and cultural evolutionism and with the idea of diffusionism. Hamy served as curator of the museum from 1880 until he resigned in 1906 in protest over the dismal state of the museum's budget and the lack of support for the institution. The museum was reorganized into the Musée de l'Homme (Museum of Man) in 1938.

Musée d'Ethnographie du Trocadéro

Many of the leading French anthropologists, including Hamy, Quatrefages, Broca, Gabriel de Mortillet, and Paul Topinard attended the Congrès anthropologique held in Moscow in 1879. In 1882 Hamy founded and edited the journal *Revue d'ethnographie* which ceased publication in 1889 when it merged with *Matériaux pour l'histoire primitive et naturelle de l'homme* (edited by Emile Cartailhac and Ernest Chantre) and with *Révue d'Anthropologie* (edited by Topinard) to form the new the journal *L'Anthropologie*. Hamy became professor of anthropology at the Muséum national d'histoire naturelle in 1892, upon Quatrefages' retirement, and he held the position until 1908. For many years Hamy had been interested in the indigenous peoples of the Americas. This led him to establish the Société des américanistes (Society of Americanists) in 1895, which was devoted to the ethnological and anthropological study of the native people and cultures of the New World. In 1887 Hamy was part of a scientific mission to Tunisia that studied the archaeology and ethnology of the Berbers. He was also an active participant in the Congrès international d'anthropologie et d'archéologie préhistoriques (International Congress of Prehistoric Anthropology and Archaeology) and was president of the 1906 meeting in Monaco.

Hamy was a member of many of the leading scientific societies in France. He became a member of the Société académique du Boulonnais in 1866. He was a member of the Société d'anthropologie de Paris from 1867 to1908, serving as its president in 1884 and 1906. Hamy was a member of the Comité des travaux historiques et scientifiques in 1877 and served as secretary of the Section de géographie historique et descriptive beginning in 1886. He was a member of the Société des traditions populaires and was its president in 1887 and 1895. Hamy was a founding member in 1872 of the Association française pour l'avancement des sciences (French Association for the Advancement of the Sciences) and served as its president in 1901. He was appointed a member of the prestigious Académie des inscriptions et belles-lettres in 1890.

He was also a member of the following institutions:

Société de biologie

Société de géographie

Commission des missions scientifiques et littéraires

Société des américanistes de Paris

Société de l'histoire de Paris et de l'Île-de-France

Société des amis des monuments parisiens

Société française d'histoire de la médecine

Académie nationale de médecine

Société d'anthropologie de Lyon, (corresponding member)

Hamy was also a corresponding or honorary member of scientific institutions in many other European counties.

Hamy received many honors during his long career. He was made an Officer of the Légion d'honneur in 1889. He was also an Officier de l'Instruction publique; a Commandeur de l'ordre d'Isabelle la Catholique; a Commandeur de l'ordre de Saint-Otaries de Monaco; an Officier de l'ordre de Léopold; and chevalier de l'Etoile Polaire, dï Saint-Stanislas, des Saints Maurice et Lazare.

SELECTED BIBLIOGRAPHY

Henri-Émile Sauvage and E. T. Hamy, *Étude sur les terrains quaternaires du Boulonnais et sur les débris d'industrie humaine qu'ils renferment*. Paris: Librairie scientifique, industrielle et agricole, 1866.

Précis de paléontologie humaine. Paris: J.B. Baillière, 1870.

Armand de Quàtrefages and Ernest Théodore Hamy. "Races humaines fossiles – races de Canstadt." *Bulletin de la Société d'Anthropologie de Paris* 8 (1873): 518-523.

Armand de Quàtrefages and Ernest Théodore Hamy. "Races humaines fossiles, mésaticéphales et brachycéphales." *Bulletin de la Société d'Anthropologie de Paris* 9 (1874): 819-826.

Armand de Quàtrefages and Ernest Théodore Hamy. "Races humaines fossiles, Race de Cro- Magnon." *Comptes rendus de l'Académie des sciences Paris* 78 (1874): 861-867.

Armand de Quatrefages, Ernest-Théodore Hamy, and Henri Célestin Formant. *Crania ethnica. Les cranes des races humaines, décrits et figurés d'aprés les collections du Muséum d'histoire naturelle de Paris, de la Société d'anthropologie de Paris et les principales collections de la France et de l'étranger*. 2 vols. Paris, J.B. Baillière et fils, 1882.

Recherches zoologiques pour servir à l'histoire de la faune de l'Amérique centrale et du mexique. première parti, Anthropologie du Mexique. Paris: Imprimerie nationale, 1884.

Études ethnographiques et archéologiques sur l'Exposition coloniale et indienne de Londres. Paris: Ernest Leroux, 1887.

Les origines du Musée d'ethnographie; histoire et documents. Paris: E. Leroux, 1890.

Études historiques et géographiques. Paris: E. Leroux, 1896.

Decades americanae: mémoires d'archéologie et d'ethnographie américaines. 3 vols. Paris: E. Leroux, 1896-1902.

Galerie américaine du Musée d'ethnographie du Trocadéro; choix de pièces archéologiques et ethnographiques. Paris: E. Leroux, 1897.

SECONDARY SOURCES

L. Vallin, "Les pionniers de la Préhistoire régionale: Ernest Hamy (1842-1908)." Numéro spécial Boulonnais. *Cahiers de Préhistoire du Nord* (1989): 16-19.

Résumé des Travaux scientifiques de E. -T. Hamy. Paris: Hennuyer. 1887.

Henri Cordier, *A la mémoire de Ernest-Théodore Hamy, 22 juin 1842 – 18 novembre 1908*. Corbeil: Crété, 1908.

Théodore Reinach "Notice sur la vie et les travaux de M. le Dr Hamy." *Comptes-rendus des séances de l'Académie des Inscriptions et Belles*-Lettres 55 (1911): 55-142.

"Théodore-Jules-Ernest Hamy." *L'Anthropologie* 19 (1908): 595-603.

"Le Professeur Hamy." *Journal de la Société des Américanistes*. 5 (1908): 140-149.

Jean Babelon, "Discours prononcés aux funérailles de M. Ernest Hamy." *Journal de la Société des Américanistes*. 5 (1908): 150-154.

Léon Vaillant, "Discours prononcés, au nom du Muséum d'Histoire Naturelle, aux obsèques de M. le professeur Hamy." *Bulletin du Muséum national d'histoire naturelle* 14 (1908): 322-325.

Henri Cordier, "Le Docteur E.-T. Hamy." *Bulletin de géographie historique et descriptive* (1908): 165-166.

Paul Sébillot, "E.-T. Hamy." *Revue des traditions populaires* 23 (1908): 461.

[Necrologie]. *Bulletin Société d'histoire naturelle d'Autun* 23 (1908): 19-26.

Ernest Chantre, "Le Docteur E. Hamy, sa vie et ses travaux (1842-1908)." *Bulletin de la Société d'Anthropologie de Lyon* 28 (1909): 13-28.

Émile Houzé, “Ernest-T. Hamy, Note biographique” *Bulletin de la Société d’Anthropologie de Bruxelles* 28 (1909): xliii-lv.

Otto Hauser (1874–1932)

Otto Hauser

Otto Hauser was born 12 April 1874 in Wädenswil, Switzerland, to parents who ran a hotel. He studied classical philology, history, and archeology at the University of Basel from 1892 to 1894. From 1894 to 1900 he continued his studies in the Philosophical Faculty of the University of Zurich and at the Eidgenössischen Technischen Hochschule Zürich [Federal Institute of Technology Zurich]. Hauser was soon able to pursue his interest in archaeology when he excavated the Roman camp of Vindonissa, located in Windisch in northern Switzerland, during 1897 and 1898 where he discovered the remains of an amphitheater. Remarkable prehistoric discoveries were being made throughout Europe and this prompted Hauser to travel to the Vézère valley in the Dordogne region of France in 1898 where he began to explore sites previously excavated by French paleontologist Edouard Lartet and his English collaborator Henry Christy. In 1904 Hauser opened an antiquities shop in Munich, Germany, and began selling Paleolithic artifacts to fund his excavations.

As a consequence of the success of these early endeavors Hauser bought a house near Laugerie-Haute in 1906 and rented land at twenty Paleolithic sites in the Vézère valley. He began excavating the Paleolithic site of La Micoque in 1906 with French archaeologist Louis Capitan (the two first met in 1895). Hauser continued working at the site on his own until 1914 and during that time he unearthed stone artifacts that he believed represented a distinct Micoquian culture and race, which he thought were related to fossil human bones found at Taubach and Ehringsdorf in Germany. European archaeologists generally accepted some modified version of French archaeologist Gabriel de Mortillet’s identification of a succession of Paleolithic stone tool industries (Chellean, Mousterian, Solutrean, Magdalenian), so Hauser’s proposal of a new Micoquian industry marked a potentially important but controversial idea. Hauser described the results of his excavations and outlined his ideas about Micoquian artifacts in *Die neuesten Ausgrabungen auf La Micoque (Dordogne) und ihre Resultate für die Kenntnis der paläolithischen Kultur* [Recent Excavations at La Micoque (Dordogne) and Their Results for the Knowledge of Paleolithic Culture] published in 1907. He later expanded upon these ideas in *La Micoque: die Kultur einer neuen Diluvialrasse* [La Micoque: The Culture of a New Ice Age Race] (1916). Hauser's identification of a unique Micoquian culture created complications for the new classification of Paleolithic artifacts and schemes for Paleolithic chronology being proposed by French prehistorian Henri Breuil but it gained the support of Berlin geologist Emil Werth and was eventually adopted, with modifications, by Breuil. It is important to note, given subsequent events, that Hauser sold a large number of Micoquean artifacts in 1906 to the Naturhistorischen Gesellschaft Nürnberg [Nuremberg Natural History Society] and other museums in Germany in order to help fund his ongoing excavations

Hauser began working other Paleolithic sites as well. He undertook excavations of the rock shelters at Le Moustier in September 1907 and soon found Acheulean flint implements. French archaeologists had explored the Paleolithic deposits at Le Moustier since the 1860s and artifacts found at the site formed the basis for Gabriel de Mortillet's Mousterian industry. However, on 7 March 1908 Hauser's workmen unearthed fossilized human bones at the site. The discovery of a nearly complete human skeleton from the Pleistocene was a rare event of potentially great scientific importance so Hauser invited a group of prominent German scientists that included anthropologist Hermann Klaatsch, anatomist Hans Virchow, and archaeologist Gustaf Kossina to observe the skeleton in situ and on 18 April they witnessed the excavation of the precious specimen. The body appeared to have been intentionally buried and there were stone tools found with it. Hauser did not possess the anatomical or anthropological knowledge needed to examine the skeleton so he invited Hermann

Klaatsch, professor of anatomy and anthropology at the University of Breslau (now Wrocław, in Poland), to study the specimen. Klaatsch was familiar with the Neanderthal (or *Homo primigenius* as they were often called at this time) fossils that the Croatian paleontologist Dragutin Gorjanović-Kramberger discovered at Krapina at the turn of the century, as well as with the *Homo heidelbergensis* [Heidelberg man] fossils found in Germany in 1906. The Moustier skeleton resembled Neanderthal specimens found throughout Europe and despite the fact that Klaatsch believed it belonged to the "Neanderthal type" he decided to assign the specimen to a new species of hominid he called *Homo mousteriensis Hauseri* (Klaatsch and Hauser 1909; Klaatsch 1909).

Photograph of the Moustier skull taken by Hauser

This remarkable discovery was soon followed by another. Hauser began excavating the Paleolithic site of Combe-Capelle in 1907. The site contained artifacts ranging from the Mousterian, Aurignacian, and Solutrean. On 26 August 1909 Hauser discovered a human skeleton associated with remains of a shell necklace and Aurignacian tools. Hauser did not immediately remove the skeleton but waited until Hermann Klaatsch could join him and on 12 September they excavated the nearly complete skeleton. From its stratigraphic position and the artifacts found with it they concluded the specimen represented an early human from the Aurignacian period (Hauser and Klaatsch 1908). However, due to the poor excavation methods Hauser employed researchers have doubts regarding the geologic age of this specimen. Klaatsch studied the bones and concluded they differed from both the Neanderthals and the Cro-Magnons and therefore represented a new race that he named *Homo aurignacensis hauseri*. Klaatsch argued that this Aurignacian race had arrived in Europe from Asia and had preceded the arrival of Cro-Magnon Man (Klaatsch and Hauser 1910). While excavating the Paleolithic site of La Rochette in 1910 Hauser unearthed yet another partial human skeleton, associated with pierced horse teeth, that he attributed to the Aurignacian period. Hermann Klaatsch and Walter Lustig published a description of the fossils in 1914 (Klaatsch and Lustig 1914).

Hauser with the Combe-Capelle skeleton

Hauser's excavations and his sale of artifacts abroad angered some French archaeologists. The marquis de Fayolle, president of the Société Historique et Archéologique du Périgord, began to oppose Hauser's plundering of artifacts in 1907 and the French newspaper *Le Matin* published an article in 1910 denouncing Hauser's sale of prehistoric artifacts abroad suggesting he was motivated more by profit than by science. French scientists were incensed when Hauser sold both the Moustier and Combe-Capelle skeletons to the Museum für Völkerkunde in Berlin after asking an exorbitant sum for the specimens.[1] A group of French archaeologists, including Louis Capitan, Henri Breuil, and Denis Peyrony responded by asking government officials to intervene. This led the French government to pass a law in 1913 protecting antiquities and banning their export. Since Hauser largely funded his research by the sale of artifacts this created significant financial difficulties for him. Hauser was eventually driven from France in August 1914 with the beginning of World War I. The French government confiscated his house and storage facilities and Denis Peyrony, a local archaeologist who was also conducting excavations in the Vézère valley, took over the excavations of his sites.

Hauser went to Germany after being driven from France. He received a doctorate from the University of Erlangen in 1916 for a dissertation titled *Über eine neue Chronologie des mittleren Paläolithikums im Vézèretal* [*A New Chronology of the Middle Paleolithic in the Vézère Valley*] outlining his ideas about Middle Paleolithic archaeological cultures, including his ideas about a Micoquian industry, based upon his excavations. Hauser spent the rest of his life in Germany, living in Weimar from 1925 to 1929 and then in Berlin until his death. He earned a living by lecturing and writing books on prehistory. Among his most popular books was *Der Mensch vor 100000 Jahren* [Man 100,000 Years Ago]. Hauser died 14 June 1932 in Berlin.

SELECTED BIBLIOGRAPHY

Die neuesten Ausgrabungen auf La Micoque (Dordogne) und ihre Resultate für die Kenntnis der paläolithischen Kultur. Basel: Selbstverl, 1907.

"Fouilles scientifiques à la Micoque, à Laugerie-Basse et au Moustier." *L'Homme préhistorique* (1908): 40-48.

Otto Hauser and Hermann Klaatsch. "Der neue Skelettfund Hausers aus dem Aurignacien." *Praehistorische Zeitschrift* 2 (1908): 180-182.

"Découverte d'un squelette du type de Néandertal sous l'abri inférieur du Moustier." *L'Homme préhistorique* (1909): 1-16.

Hermann Klaatsch and Otto Hauser, "Homo mousteriensis Hauseri: ein altdiluvialer Skelettfund im Departement Dordogne, und seine zugehorigkeit zum Neandertaltypus." (Archiv für Anthropologie 7 (1909): 287-297.

Hermann Klaatsch, "Preuves que l'Homo mousteriensis Hauseri appartient au type du Néandertal." *L'Homme prehistorique* (1909): 10-16.

Hermann Klaatsch and Otto Hauser, "*Homo aurienacensis Hauseri*, ein palæolithischen Skelettfund aus dem unteren Aurignacien der Station Combe-Capelle bei Montferrand (Périgord)." *Praehistorische Zcitschrift* 1 (1910): 273–338.

Le Périgord préhistorique: guide pour les excursions dans les vallées de la Vézère et de la Dordogne et pour l'étude de leurs stations préhistoriques. Le Bugue: G. Réjou, 1911.

Hermann Klaatsch and Walter Lustig, "Morphologie der paläolithischen Skelettreste des mittleren Aurignacien der Grotte von La Rochette, Dep. Dordogne." *Archiv für Anthropologie* 41 (1914): 81-126.

La Micoque: die Kultur einer neuen Diluvialrasse. Leipzig: Veit, 1916.

Uber eine neue chronologie des mittleren paläolithilums im Vézèretal. Speziell mit bezug auf la Micoque. Leipzig, Veit & comp., 1916.

Ins Paradies des Urmenschen, fünfundzwanzig Jahre Vorweltforschung. Hamburg: Hoffmann und Campe, 1920.

Urmensch und Wilder: eine Parallele aus Urwelttagen und Gegenwart. Berlin: Ullstein, 1921.

Der Mensch vor 100000 Jahren. Jena: Thüringer Verlagsanst, 1924.

Die grosse zentraleuropäische Urrasse; la Micoque, Ehringsdorf, Byci skála, Predmost, Kisla Nedzimova. Langensalza: Beltz, 1925.

Urgeschichte: aus Grundlage praktischer Ausgrabungen und Forschungen. Jena: Thüringer Verlagsanstalt und Druckerei, 1925.

Urwelt. Berlin: Büchergilde Gutenberg, 1929.

SECONDARY SOURCES

Karl Brandt, *Otto Hauser, die Tragik eines Urgeschichtsforschers: Im Paradies d. Urmenschen*. Bonn: Mannus-Verl. 1970.

J.-M. Bouvier, “Le Poisson, Otto Hauser et les autres.” *Bulletin de la Société d’Etudes et de Recherches Préhistoriques des Eyzies* (1978): 55-58.

Jean-Jacques Cleyet-Merle, “Otto Hauser.” *Paléo* 1 (1990): 72-75.

Brigitte Deluc and Gilles Delluc, “L’Affaire de l’abri du Poisson aux Eyzies: Otto Hauser non coupable.” *Bulletin de la Société Historique et Archéologique du Périgord* 124 (1997): 171-177.

Rudolf Drößler. “Otto Hauser – ein berühmter Bürger aus Wädenswil.” *Jahrbuch der Stadt Wädenswil* (1988): 5-30.

Rudolf Drößler, *Flucht aus dem Paradies: Leben, Ausgrabungen und Entdeckungen Otto Hausers*, Halle-Leipzig: Mitteldeutscher Verlag, 1988,

Rudolf Drößler and Manuela Freyberg. “Erwerb der von Otto Hauser entdeckten Skelette von Le Moustier und Combe Capelle durch das Völkerkunde-Museum Berlin. Vorgeschichte, Verlauf, Hintergründe und Folgen des Kaufs im Jahr 1910.” *Ethnographisch-archaologische Zeitschrift* 41 (2000): 83-121.

Rudolf Drößler, Sigrid Drößler, and Manuela Freyberg. “Der Schweizer Archäologe Otto Hauser.Seine Skelettfunde und Hypothesen zur Entwicklungsgeschichte des Menschen und seine vielfältigen Aktivitäten zur Propagierung von Urgeschichtsforschung und Evolution.” *Anthropologischer Anzeiger* 64 (2006): 97-123.

Gerhard Heberer, “Bericht über die Bergung der Skelettreste von Combe Capelle und Le Moustier aus dem Brandschutt des Berliner Museums für Vor- und Frühgeschichte.” In O. Verschuer and K. Gerhardt (eds.). *Bericht über die 5. Tagung der Deutschen Gesellschaft für Anthropologie, 5.–7. April 1956*. Pp 67-72. Göttingen; Musterschmidt Verlag, 1957.

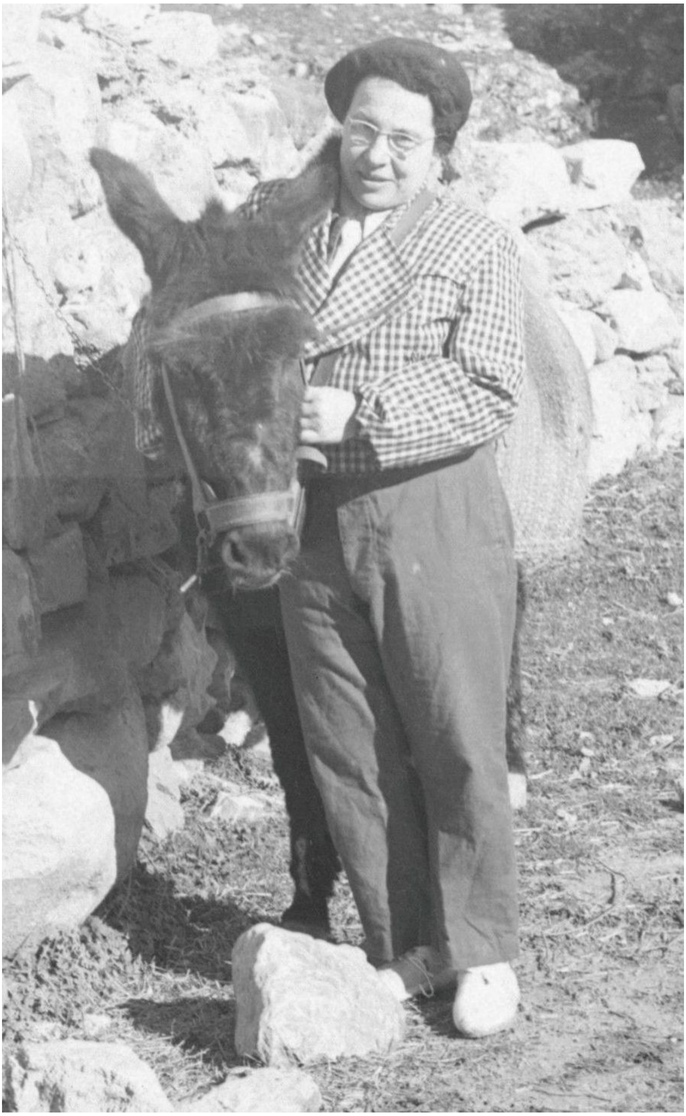
H, Hesse and H. Ullrich. “Schädel des Homo mousteriensis Hauseri wiedergefunden.” Biol Rundschau 4 (1966): 158–160.

Randall White, *L’affaire de l’abri du poisson. Patrie et préhistoire*. Périgueux: Editions Fanlac, 2006.

Notes

1 The Moustier and Combe-Capelle skeletons were on display at the museum until 1945 when Allied bombing raids of Berlin and the resulting fires destroyed the museum. The two skeletons were believed destroyed until parts of the postcranial skeleton of these specimens were recovered from the ruins of the museum by the German paleoanthropologist Gerhard Heberer in 1957. The Moustier skull was rediscovered by H. Hesse and H. Ullrich in 1965 when they inspected boxes that had been placed in bunkers during the war for their protection and subsequently transferred by Russian soldiers to the Soviet Union before they were returned to the now renamed Museum für Vor- und Frühgeschichte, which was then located in East Berlin. (See Heberer 1957 and Hesse and Ullrich 1966).

Germaine Henri-Martin (1902-1975)



Germaine Henri-Martin

Germaine Henri-Martin was born on 8 July 1902 in Paris, France. Her father, Léon Henri-Martin, was a physician and an archaeologist who devoted many years to excavating the Paleolithic site of La Quina. He was one of the founders of the Société Préhistorique Française (French Prehistoric Society) and became known for his work on the Mousterian artifacts from La Quina and the discovery of fossils belonging to Neanderthals, including a partial skeleton. Her mother, Lucie-Marie-Louise Henri-Martin (née Huet), assisted in the excavations at La Quina and while Léon Henri-Martin was serving as a doctor at the front during the First World War, Lucie-Marie-Louise discovered the skull of a Neanderthal child at La Quina. Germaine Henri-Martin grew up living in Paris, but in 1905 her father bought the archaeological site of La Quina, located about thirty kilometers southeast of the town of Angoulême, in the department of Charente, and for the next thirty years he conducted excavations there. The family spent so much time there that he eventually purchased the beautiful old structure known as the Logis du Peyrat, located near the site of La Quina, and transformed it into a country house. Léon Henri-Martin also established a Laboratoire d'Études de Paléontologie Humaine on the site to hold the growing collection of archaeological artifacts and animal fossils. This laboratory, which welcomed many researchers over the years who came to inspect its collections, became associated with the École Pratique des Hautes Études in 1925. Germaine spent much of her childhood observing and even helping in her father's excavations at La Quina.

As a young woman, Henri-Martin trained as a concert violinist but after her father's death in 1936 she reluctantly abandoned this career to take over the Laboratoire d'Études de Paléontologie Humaine. She also turned her efforts entirely to investigating Paleolithic sites in the region. She is best known for her work at the Grotte de Fontéchevade, which she excavated from 1937 to 1953. Several archaeologists had previously explored the cave at Fontéchevade, located about twenty kilometers north of La Quina, including Louis Durousseau-Dugontier who worked there from 1902 to 1910. The deposits in the cave at Fontéchevade consisted of layers possessing Châtelperronian, Aurignacian, and Mousterian artifacts overlaying a deep set of deposits containing a distinctive type of stone tool. Henri-Martin invited the French prehistorian Henri Breuil, a long-time friend of her father, to examine these artifacts and he identified them as belonging to tool-type known as the Tayacian. Breuil had designated a "Tayacian industry" in the 1930s on the basis of stone flakes found in the lowest levels of the Paleolithic site of La Micoque, located near the French village of Les-Eyzies-de-Tayac. Henri-Martin's excavations of the Tayacian levels at Fontéchevade, however, made it the best-known Tayacian site (Henri-Martin 1949a; 1949b). She also recovered many animal fossils from this Tayacian layer that indicated it dated from the Riss-Würm interglacial period.

In August 1947 Henri-Martin unearthed two hominid cranial fossils in this Tayacian layer. The first, called Fontéchevade I was a small fragment of a frontal bone with the glabella, while the second, called Fontéchevade II, was a partial calotte (frontal and parietal). Fontéchevade I possessed features more like modern humans, while Fontéchevade II possessed more archaic features like those found in Neanderthals. Henri-Martin invited French paleoanthropologist Henri Vallois to study these fossils. Vallois published several papers describing them and utilized the dissimilarity between them to support the so-called presapiens hypothesis (Vallois 1947a; 1947b; 1949). The presapiens hypothesis was the idea, supported by many paleoanthropologists during the early twentieth century, that modern humans existed at least since the early Pleistocene and as a consequence hominids such as the Neanderthals and even Homo erectus could not be direct ancestors of Homo sapiens. At the end of her excavations Henri-Martin published a comprehensive report titled La Grotte de Fontéchevade, which appeared in the series of memoires published by the Institut de Paléontologie Humaine (Institute of Human Paleontology). It consisted of three parts published in two volumes between 1957 and 1958. Henri-Martin wrote the first part, which covered the archaeology of the site. Henri Vallois wrote the second part covering the hominid fossils, while the third part covering geology and paleontology was written by Henriette Alimen, Camille Arambourg and A. Schreuder. Throughout her career Henri-Martin maintained relationships and collaborations with scientists who possessed expertise in areas outside her training. In addition to consulting Henri Breuil for his views on artifacts and Henri Vallois for the analysis of the hominid fossils, she had important relationships with several prominent women archaeologists. These included the English archaeologist Dorothy Garrod, who occasionally assisted Henri-Martin with the excavations at Fontéchevade and frequently consulted the collections in the Laboratory at La Peyrat. Suzanne de Saint-Mathurin, was an archaeologist who conducted research with Breuil and Garrod, and also occasionally joined the excavations at Fontéchevade and later at La Quina. Henri-Martin also sought the assistance of Henriette Alimen, a geologist and paleontologist who did important her work on sediment analysis and the formation of the deposits at Fontéchevade.

Henri-Martin made several trips to Yugoslavia to see Paleolithic sites. The Serbian Academy of Sciences and Arts (Srpska akademija nauka i umetnosti) invited her to participate in excavations of Risovača Cave, located just outside the town of Aranđelovac in central Serbia, in the 1950s. Risovača Cave is one of the most important Paleolithic sites in Serbia and the first excavations there were initiated in 1953 by archaeologist Branko Gavela and speleologist Radenko Lazarević, followed by the archaeologist Srećko Brodar in 1955. Henri-Martin also traveled with Suzanne de Saint-Mathurin and Dorothy Garrod to see Paleolithic sites in Spain. Dorothy Garrod and Henri-Martin excavated Paleolithic deposits in the cave of Ras-el-Kelb in Lebanon in 1959. While accompanying the archaeologist Raymond Lantier at the Solutrean site of Roc-de-Sers in 1951 they found a number of new rock carvings, adding to the large collection of bas-relief images of animals collected from the site by her father in the 1920s (Lantier 1952).

Henri-Martin resumed work at La Quina in 1953, although she had conducted occasional work there in previous years, and continued her father's excavations there until her death in 1975. Through her various excavations Henri-Martin was able to expand the collection of artifacts and fossils housed at the Laboratory created by her father in La Peyrat. Like her father, Henri-Martin also welcomed visiting scientists to the Laboratory and to her excavation sites. The Henri-Martin family donated the entire collections of the Laboratory to the Musée des Antiquités nationales (Museum of National Antiquities) in 1976.

Henri-Martin was a member of several prominent scientific institutions including the Société Préhistorique Française (French Prehistoric Society); the Société d'Anthropologie de Paris (Anthropology Society of Paris), the Société Archéologique et Historique de la Charente (Archaeological and Historical Society of Charente), and the Association Française pour l'Avancement des Sciences (French Association for the Advancement of the Sciences). She was awarded the Prix Bonnet (Bonnet Prize) by the Académie des Sciences in 1949 and the Centre National de la Recherche Scientifique (CNRS) awarded her its Bronze Medal in 1958. She was named Maître de Recherche (Senior Research Fellow) at the Centre national de la recherche scientifique in 1963. She was made a Chevalier of the Ordre des Arts et des Lettres (Knight of the Order of Arts and Letters), created by the French government in 1957 to recognize people who made significant contributions to the arts and sciences. Germaine Henri-Martin died in the Paris suburb of La Celle-Saint-Cloud on 5 November 1975.

SELECTED BIBLIOGRAPHY

"L'Homme fossile Tayacien de la grotte de Fontéchevade." Compte-

Rendu des séances de l'Académie des Sciences 225 (1947): 766-767.
"Mise au jour d'une calotte crânienne humaine fossile dans un niveau du Paléolithique ancien de la Grotte de Fontéchevade (Charente)." Gallia 5 (1947): 175-179.
"L'industrie tayacienne de Fontéchevade." Bulletin de la Société Préhistorique Française 46 (1949): 353-363.
"L'industrie tayacienne de Fontéchevade." Comptes rendus des séances de l'Académie des Inscriptions et Belles-Lettres 93 (1949): 112-114.
"Nouvelles constatations sur le Paléolithique inférieur de la Grotte de Fontéchevade (Charente)." Comptes rendus de l'Académie des Sciences 230 (1950): 2234-2236.
Germaine Henri-Martin, Henri Vallois, Henriette Alimen, Camille Arambourg, and A. Schreuder, La Grotte de Fontéchevade (Archives de l'Institut de Paléontologie Humaine). 2 vols. Paris: Masson, 1957-1958.
"La grotte de Fontéchevade." Quaternaire 2 (1965): 211-216.

OTHER WORKS CITED

Henri Vallois, "Un Homme fossile Tayacien en Charente." L' Anthropologie 51 (1947a): 373–374.
Henri Vallois, "Une Importante découverte en paléontologie humaine" Nature (1947b): 397-398.
Henri Vallois, "The Fontéchevade Fossil Men." American Journal of Physical Anthropology 7 (1949): 339-362.
Raymond Lantier, "Les fouilles du sanctuaire solutréen du Roc-de-Sers (Charente) en 1951." Comptes rendus des séances de l'Académie des Inscriptions et Belles-Lettres (1952): 303-307.

SECONDARY SOURCES

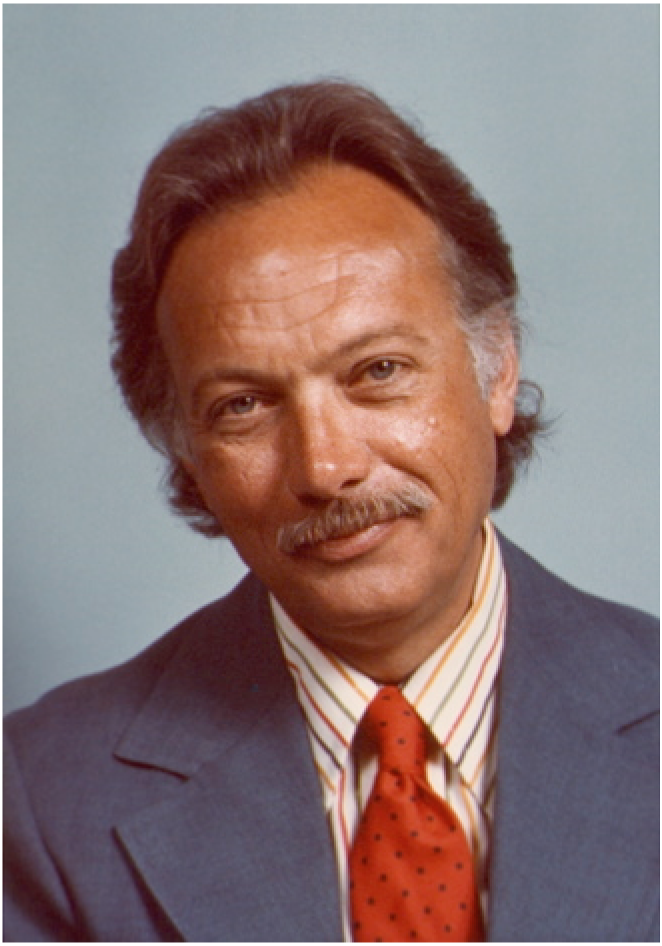
Suzanne de Saint-Mathurin, “Germaine Henri-Martin.” Bulletin de la Société Préhistorique Française 73 (1976): 97-106.

Paulette Marquer, “G. Henri Martin, 1902-1975.” Bulletins et Mémoires de la Société d’Anthropologie de Paris (1975): 405-406.

“Henri-Martin (Germaine).” In François Julien-Labruyère and Robert Allary (eds.), Dictionnaire biographique des charentais et de ceux qui ont illustré les Charentes.
P. 677. Paris: Croît vif, 2005.

Philip G. Chase, André Debénath, Harold L. Dibble, Shannon P. McPherron, The Cave of Fontéchevade: Recent Excavations and Their Paleoanthropological Implications. Chapter 1 “Introduction and Background.” Cambridge: Cambridge University Press, 2009.

Francis Clark Howell (1925–2007)



Francis Clark Howell

Francis Clark Howell (more commonly F. Clark Howell) was born in Kansas City, Missouri, on 27 November 1925 but spent his early years on a farm in Kansas and attended a one-room schoolhouse near Topeka. His family subsequently moved to Nebraska, Indiana, and finally Wisconsin. He became interested in human prehistory and human evolution by reading Henry Fairfield Osborn's *Men of the Old Stone Age* (1916) and William Howell's *Mankind so Far* (1944).

Howell graduated from high school in 1943 and served in the U.S. Navy during World War II, from February 1944 to May 1946 in the Pacific. After being discharged he spent several weeks at the American Museum of Natural History in August 1946 where he met the German paleoanthropologist Franz Weidenreich, whom he had corresponded with during his last year in high school. On this occasion Weidenreich introduced Howell to the American paleontologist George Gaylord Simpson and the German paleontologist Ralph von Koenigswald, who happened to be in New York. Weidenreich had supervised excavations at the *Homo erectus* site of Zhoukoudian, in China, before the war and von Koenigswald had discovered *Homo erectus* fossils in Indonesia. Howell's interactions with Weidenreich cemented his commitment to become a paleoanthropologist.

With support from the GI Bill of Rights, Howell enrolled at the University of Chicago in 1947 where he studied anthropology with Sherwood Washburn, who had just joined the department. Washburn was beginning to transform paleoanthropology through his New Physical Anthropology, which rejected the focus on racial classification that had characterized earlier physical anthropology and instead emphasized the importance of evolutionary biology and population genetics in understanding human evolution and variation among human populations. Howell also studied archaeology with Robert Braidwood, anatomy with Wilton Krogman, and paleontology with Everett Olson. As a result, Howell gained a firm foundation in human skeletal anatomy, archaeology, and mammalian paleontology. During his years at Chicago, Howell was influenced by the Spring Seminar Series organized by Sherwood Washburn, which convinced Howell of the importance of the relationship between evolutionary biology, paleontology, and ecology. He also attended the Cold Spring Harbor symposium on "The Origin and Evolution of Man" where Ernst Mayr, Theodosius Dobzhansky, George Gaylord Simpson and other leading biologists and anthropologists argued for the need to integrate the Modern

Evolutionary Synthesis into paleoanthropology. During 1953 Howell traveled to London and Paris to inspect Neanderthal specimens and while in Paris he befriended French paleoanthropologist Henri-Victor Vallois. Howell returned to Europe in 1956 to inspect Neanderthal specimens from collections throughout the continent and to attend the Neanderthal Centenary conference held in Düsseldorf, which reinforced a multidisciplinary approach to paleoanthropological research.

Howell received his bachelor's degree in anthropology in 1949. He continued his graduate studies at the University of Chicago where he completed his Master's degree in 1951, with a thesis on the Solo hominids found in Indonesia, and his Ph.D. in 1953. His dissertation, titled *Cranial Base Structure in Man*, discussed the bone structure of the skull base in humans. While still a graduate student, Howell published several important papers on the Neanderthals. These were "The Place of Neanderthal Man in Human Evolution" (1951), "Pleistocene Glacial Ecology and the Evolution of 'Classic Neanderthal' Man" (1952), and "The Evolutionary Significance of Variation and Varieties of 'Neanderthal' Man" (1957). In these papers Howell synthesized what was known about the Neanderthals and he brought the ideas of the Modern Evolutionary Synthesis into the interpretation of them. He identified an older Generalized Neanderthal group dating from the Riss-Würm interglacial period that was anatomically more similar to modern humans. This population was followed by a later cold weather adapted "classic Neanderthal" group in which some features of the earlier Neanderthals were modified and exaggerated, especially in Western Europe. He correlated this exaggeration with genetic isolation during the last glacial period (Würm). He also argued that it was unlikely the Neanderthals were the direct ancestors of modern Europeans.

After completing his graduate studies, Howell worked as an anatomy instructor in the School of Medicine at Washington University, in St. Louis, Missouri, from 1953 to 1955. There he had the opportunity to work closely with anatomist Mildred Trotter, who was one of the founding members of the American Association of Physical Anthropologists. It was while he was at Washington University that Howell married Betty Tomsen, who worked as a nurse. Over the many years of their partnership she would often accompany him on expeditions and often assisted with labeling, cleaning, and cataloguing specimens. Howell's first experience with archaeological fieldwork came in 1953 when he assisted American Paleolithic archaeologist Hallam Movius with a test excavation of the Abri Pataud rock shelter in France. While there he became friends with French archaeologist François Bordes. He also made his first trip to Africa in 1954, where he met Louis and Mary Leakey as well as Raymond Dart. The Department of Anthropology at the University of Chicago hired Howell as a professor in 1955 (he became a full professor in 1962) and he remained there until 1970.

From 1957 to 1958 Howell conducted excavations at Isimila, in Tanganyika (now Tanzania), with Glen Cole and Maxine Kleindienst. There they recovered Acheulean hand-axes along with animal bones dated to approximately 260,000 years ago. Howell made a preliminary survey of the Omo River basin in southwestern Ethiopia in 1959, but confusion over collecting permissions led Ethiopian customs officials to confiscation the specimens he had collected and this proved to be a severe setback. As a result, he did not return to the Omo for several years. However, Howell did attend the fourth Pan-African Congress on Prehistory and Quaternary Studies, held in Leopoldville (now Kinshasa, in the Democratic Republic of the *Congo)* in 1959 and was fortunate enough to be in Nairobi, Kenya, when Mary Leakey discovered the Zinjanthropus (now *Paranthropus boisei*) fossils that same year.

It was during the 1959 Pan-African Congress on Prehistory that the Spanish archaeologist Lluís Pericot, of the University of Barcelona, interested Howell and French archaeologist Pierre Biberson, of the Musée de l'Homme (Museum of the Man) in Paris, in the excavations carried out by the Enrique de Aguilera y Gamboa (Marquis of Cerralbo) at the site of Torralba, in Spain, from 1909 to 1913. Howell visited the sites of Torralba and Ambrona in 1960 and organized an international multidisciplinary team to conduct excavations at these sites from 1961 to 1963 and again in 1980, 1981 and 1983). The 1980s excavations were co-directed with Leslie Gordon Freeman, of the University of Chicago, and Martín Almagro Basch, director of the Museo Arqueológico Nacional de España (National Archaeological Museum of Spain). They recovered about seven hundred Acheulean stone tools and more than two thousand animal fossils from Torralba and more than four thousand Acheulean stone tools and several thousand fossils from Ambrona, which are dated to between 300,000 to 400,000 years old (Howell, Butzer, and Aguirre 1962). At Torralba the researchers found what they interpreted to be evidence that hominids (perhaps *Homo erectus*) hunted game, including elephants, by lighting fires and herding animals into swamps, where they were killed and butchered. This interpretation is now questioned. No hominid fossils were found at either site, however, so the identification of the makers is unclear. Howell's decision to assemble a multidisciplinary team from the very beginning of the research project served as an important model for the Omo expedition later.

Howell spent the 1964-1965 academic year, during the interim after his field research at Torralba and Ambrona, as a visiting professor at the University of California, Berkeley where he taught the courses of Theodore McCown, who was going on leave. McCown had assisted British anatomist Arthur Keith in the description of the hominid fossils discovered in the caves of Skhūl and Tabūn, at Mount Carmel in Palestine. When McCown died in 1969 the university invited Howell to join the faculty. Howell accepted the offer and was a professor in the Department of Anthropology at the University of California, Berkeley from 1970 until he retired in 1991. At Berkeley he joined a group of prominent colleagues that included his former mentor Sherwood Washburn, as well as Paleolithic archaeologists John Desmond Clark and Glynn Isaac, and later paleoanthropologist Tim White. Also at Berkeley at this time were biochemist Allan Wilson, who did groundbreaking work in molecular anthropology, and Garniss Curtis, who was one of the geochemists who developed the potassium-argon dating method that proved so crucial for establishing dates for hominid fossil sites.

Howell is best known for his work in the Omo River basin, in Ethiopia. French paleontologist Camille Arambourg spent about eight months exploring the Omo basin in 1932 and 1933 where he recovered numerous animal fossils. Kenyan anthropologist Louis Leakey, already known for his excavations at Olduvai Gorge, met with Ethiopian emperor Haile Selassie in 1966 to discuss the possibility of an expedition to the Omo basin. The result was that Arambourg, Leakey, and Howell organized a joint French-Kenyan-American expedition to explore the Plio-Pleistocene deposits of the lower Omo River basin. The International Omo Research Expedition conducted work for eight successive field seasons from 1967 to 1973. The Kenyan team, led by Richard Leakey due to Louis' bad health, left the project in 1968. After the death of Arambourg in November 1969, Yves Coppens led the French contingent. The International Omo Research Expedition was unprecedented in terms of scope, scale, and expense. Its primary sources of funding were the National Science Foundation, the Centre National de la Recherche Scientifique (CNRS), and the National Geographic Society. From the very beginning, Howell planned for a large, multidisciplinary group of scientists in the American contingent that would study the geology, geochronology, paleontology, archaeology, and paleoanthropology of the site as well as the environment and climate prevailing at the time the deposits were forming.

The International Omo Research Expedition proved immensely significant for several reasons. The many river sediment and volcanic layers as well as animal fossils in the Shungura and Usno

Formations combined with the newly developed potassium-argon (K-Ar) and magnetostratigraphic dating methods allowed Howell to develop a detailed stratigraphic sequence that was important for the precise dating of the various deposits. Already in 1959 Howell had recognized the potential of the potassium-argon dating method that was being developed by Garniss Curtis and Jack Evernden. The International Omo Research Expedition's most important contribution was probably to establish the detailed course of faunal change, especially in mammal species, in eastern Africa between roughly 3.6 and 1 million years ago. The study of fossil pigs by paleontologist Basil Cooke was particularly important because the many pig species could be dated and since these species frequently replaced one another pig fossils in the basin could be used as a chronological marker for other deposits that could not be dated using other methods. This work had significant implications for what came to be called the KBS tuff controversy. The KBS tuff was a layer of volcanic material in the deposits along Lake Rudolf (now Lake Turkana), in Kenya, where the researchers of the Koobi Fora Research Project, led by Richard Leakey, were searching for hominid fossils. Potassium-argon dating of the tuff returned a date of 2.6 million years, but the animal fossils found in these deposits were inconsistent with this date. For several years in the early 1970s, paleoanthropologists were divided by disagreement over the dating of the tuff. Clark was one of the early skeptical voices regarding the KBS dates and outlined his views during the 1973 Wenner-Gren Foundation for Anthropological Research meeting in Nairobi. In the end, careful biostratigraphic analysis of the sort done by Howell, Basil Cooke, and geologist Frank Brown in the Omo basin was instrumental in resolving the dispute.

In addition to working out the stratigraphy, dating, and identification of animal fossils, the International Omo Research Expedition also discovered hominid fossils, although most of them were only small fragments. The hominid fossils included mandibles, parts of crania, and many isolated teeth. Howell published several reports, often in collaboration with Yves Coppens, on the hominid fossils from the Omo basin (Howell 1969; Howell and Coppens 1974; Howell and Coppens 1976; Howell 1978). After examining these fossils Howell argued that they belonged to four species (*Australopithecus boisie, Australopithecus africanus, Homo habilis,* and *Homo erectus*) and he was able to arrange them chronologically, which offered possible new insights into their phylogenetic relationships (Howell and Coppens 1976). The expedition also found stone tools dated to more than 2.3 million years ago. Along with the papers describing the hominid fossils from Omo, Coppens and Clark oversaw the publication of a monumental three volume monograph, *Les faunes Plio-Pléistocènes de la basse vallée de l'Omo* (*Ethiopie*) (The Plio-Pleistocene Fauna of the Lower Omo Valley), on the animal fossils found during the course of their work there. Unfortunately, a change in the Ethiopian government brought work in the Omo basin to a close in 1974.

While the analysis of the material from the Omo basin continued, Howell also became involved in a number of other activities. He led the first American Paleoanthropology Delegation to the People's Republic of China in 1975. President Richard Nixon's historic trip to China not only opened political contacts with the country, it also created opportunities to reestablish links between American and Chinese scientists. The American Paleoanthropology Delegation was part of an exchange program operated by the Committee on Scholarly Communication with the People's Republic of China. This committee was founded jointly by the American Council of Learned Societies, the National Academy of Sciences, and the Social Science Research Council. From 15 May to 14 June 1975 the delegation met Chinese paleoanthropologists, visited the Institute of Vertebrate Paleontology and Paleoanthropology (IVPP) in Beijing, and traveled to sites such as Zhoukoudian (where the Peking Man fossils were found). A decade later, from late 1987 to early 1988, Howell returned to China to take part in a tour of Miocene and Plio-

Pleistocene fossil deposits and to examine the vertebrate fossil collection of the Yunnan Provincial Museum in Yunnan, China.

Throughout his career, Howell participated in the meetings sponsored by the Wenner-Gren Foundation for Anthropological Research and he helped to organize several influential symposia. Howell and Italian paleontologist Alberto Carlo Blanc co-organized the symposium on “Early Man and Pleistocene Stratigraphy in the Circum-Mediterranean Region” that was held at Burg Wartenstein, Austria, in July 1960. The papers were subsequently published in a special issue of the journal *Quaternaria* in 1962. The following year Howell co-organized a symposium with French ecologist François Bourlière on “African Ecology and Human Evolution.” This influential symposium, held at Burg Wartenstein in July 1961, brought together archaeologists, paleoanthropologists, geologists, and primatologists to discuss a synthetic approach for studying hominids within their ecological context. This meeting was also one of the first attempts to integrate evidence from Northern, Eastern, and Southern Africa. The symposium led to the publication of *African Ecology and Human Evolution* (Howell and Bourlière 1963).

But perhaps the most important of the Wenner-Gren meeting that Howell helped organize was the symposium on the “Stratigraphy, Paleoecology, and Evolution in the Lake Rudolf Basin.” It was co-organized by Howell, Yves Coppens, Glynn Isaac, and Richard Leakey and was sponsored by the Wenner-Gren Foundation for Anthropological Research and the National Geographic Society. Held in Nairobi, Kenya, in September 1973, it brought together the scientists from the three research groups working at Lake Rudolf (now Lake Turkana) and the Omo River basin. The papers focused on the geology, paleontology, ecology, and archaeology of the deposits containing hominid remains at these sites. It avoided the debates, rampant at the time, over hominid taxonomy and phylogeny. A significant part of the symposium was devoted to correlating the stratigraphy, animal fossils, and radiometric dates of the Omo basin deposits with those from Koobi Fora along Lake Turkana. This was all connected to the KBS tuff controversy and the symposium helped to finally resolve this problem. The papers were published in *Earliest Man and Environments in the Lake Rudolf Basin: Stratigraphy, Paleoecology, and Evolution* (1976).

From 1988 to 1989, Howell and Güven Arsebük, professor of anthropology at Istanbul University, led a joint Turkish-American project that conducted extensive excavations of the Paleolithic deposits in Yanmburgaz Cave, located just west of Istanbul in Turkey. These excavations unearthed approximately 1700 Lower Paleolithic stone and bone artifacts as well as animal fossils dating from the Middle Pleistocene. From 1993 to 1994, Howell joined a team of researchers from the University of California, Berkeley in a joint project with Turkish anthropologist Erksin Güleç and others from the University of Ankara, as well as scientists from the Turkish Geological Service, to excavate the sediments at Dursunlu (Konya), on the Anatolian Plateau in Turkey. These investigations yielded animal fossils and quartz artifacts that date to at least 780,000 years ago.

Howell is considered to be one of the architects of modern paleoanthropology. He believed paleoanthropology should be a science that integrated archaeology, geology, biological anthropology, ecology, evolutionary biology, primatology, and ethnography. He was a strong advocate for making paleoanthropological research a multidisciplinary collaborative endeavor that brought together experts from different disciplines. His colleagues repeatedly note that he helped transform paleoanthropology from a discipline focused on discovering hominid fossils to one that investigates the paleontology, geology, geochronology, archaeology, and paleoenvironment of a site. He was an expert on the hominid fossil record as well as Pleistocene stratigraphy and its animal fossil record. In addition to his work in paleoanthropology, Howell also conducted research on the evolution of carnivores and of Old World monkeys.

His major publications cover a wide range of subjects. Beyond his early publications on the Neanderthals and the many papers on the Omo basin, Howell published papers on the timing and circumstances of the Pleistocene occupation of Europe by early humans (Howell 1959a). In this context he examined the Villafranchian fauna of Europe as well as the Acheulean artifacts found in Europe. Howell contributed the immensely useful chapter on the "Hominidae" in *Evolution of African Mammals* (1978) edited by V. J. Maglio and H. B. S. Cooke, which reviewed the African hominid fossil record. He also wrote the chapter on "Evolution of Hominidae in Africa" that appeared in the first volume of the *Cambridge History of Africa* (1982). However, his most widely read work was *Early Man* (1965), a book written for a general audience and published by Time/Life Books as part of their Life Nature Library series. This was one of the first general summaries of modern paleoanthropology and it reached a very wide readership. Howell also served as senior scientific adviser for the television documentary *The Man-Hunters*, which featured his fieldwork in the Omo basin.

In addition to his research and publications, Howell was influential in many of the central institutions of American paleoanthropology and he played a role in the creation of several new institutions. Howell was instrumental in the creation of the Leakey Foundation (officially the *L.S.B. Leakey Foundation for Research Related to Man's Origins, Behavior & Survival)*. The Leakey Foundation was formed in 1968 by supporters of Louis Leakey's research in order to secure funding for human origins research of all kinds. As a member of the Foundation Howell served as Science Advisor, as chairman of the Science and Grants Committee, and as a trustee. As chairman of the Science and Grants Committee he steered funding to a broad range of disciplines beyond just archaeology and physical anthropology, including projects on hunter-gatherers and on non-human primates. It was partially through Howell's encouragement that the Leakey Foundation supported Jane Goodall's work on chimpanzees in what is now the

Gombe Stream National Park (in Tanzania), Biruté Galdikas' studies of orangutans in Indonesia, and Diane Fossey research on gorillas in Rwanda.

Howell founded the Laboratory for Human Evolutionary Studies in 1970, shortly after arriving at the University of California, Berkeley. It was renamed the Human Evolution Research Center in 1995 and for more than thirty years Howell co-managed it with his colleague Tim White. He was also involved in establishing the Berkeley Geochronology Center. Howell also played a significant role in the creation of the Institute for Human Origins in 1981, which is now located at Arizona State University. He also encouraged the founding of the Stone Age Institute by Nicholas Toth, Kathy Schick, and Henry Corning in Bloomington, Indiana, in 2000. Howell was active in a number of other scientific institutions. He served as a trustee of the California Academy of Sciences from 1976 until 1990, and held the office of president from 1980 to 1982. The Academy awarded him its Fellows Medal in 1990. Howell was a member of the American Association of Physical Anthropologists, of the American Anthropological Association, and of the Deutsche Quartärvereinigung (German Quaternary Association). During the 1960s he was involved in the Hominid Casting Program of the Wenner-Gren Foundation for Anthropological Research, which produced and distributed high-quality casts of significant hominid fossils. Howell also served on the advisory council of the National Center for Science Education beginning in 2013.

Howell received many awards and honors during his career and was elected to several prestigious organizations. He was elected to the National Academy of Sciences in 1972 and he served as an adviser to the National Science Foundation. He was elected a fellow of the American Academy of Arts and Sciences in 1974 and of the American Philosophical Society in 1975. He was also a member of the American Association for the Advancement of Science. He was named an honorary fellow of the Royal Anthropological Institute of Great Britain and Ireland; a Foreign Associate of the Royal Society of South Africa in 1985; and a Foreign Associate Member of the Académie des Sciences in 1989. He received the Charles Darwin Award for lifetime achievement from the American Association of Physical Anthropologists. In 1998 the Leakey Foundation awarded him the Leakey Prize and he received the Franklin L. Burr Award of the National Geographic Society in 1993. Howell was the Distinguished Lecturer in 1977 at the 76th annual meeting of the American Anthropological Association, where he presented a paper titled “Understanding Human Origin: Problems and Prospects.” The

University of Chicago awarded him with an honorary doctorate in 1992. Howell’s name is also immortalized taxonomically. At least seven extinct species are named for him. The species name howelli is attached to two mollusks, two ancestral species of civet cats, one hyena, an extinct species of antelope, and a primate of the loris family.

In 2003, Howell and Tim White formed the Revealing Hominid Origins Initiative (RHOI). This was an umbrella program that supported the collection, curation, and study of fossils dating mainly from the period, 5 to 7 million years ago, when humans and chimpanzees last shared a common ancestor. The RHOI was the largest paleoanthropology project ever funded by the National Science Foundation and by the time the project ended in 2010 it had underwritten thirty-six paleontological projects involving more than fifty scientists in fifteen countries, and it generated three hundred and ninety-six publications. Howell had a profound influence on paleoanthropology through his research but also as a mentor to his students. He trained many students while at Chicago and Berkeley, including an entire generation of young Ethiopian paleontologists who earned their doctorates under him. In February 2007, one month before his death, Howell sat down for interviews with Samuel Redman of the Bancroft Library’s Oral History Center. He continued to work in his laboratory as emeritus professor until his illness forced him to stop. F. Clark Howell died of metastatic lung cancer on 10 March 2007 at his home in Berkeley, California.

SELECTED BIBLIOGRAPHY

"The Place of Neanderthal Man in Human Evolution." *American Journal of Physical Anthropology* 9 (1951): 379-416.

"Pleistocene Glacial Ecology and the Evolution of 'Classic Neanderthal' Man." *Southwestern Journal of Anthropology* 8 (1952): 337-410.

"The Evolutionary Significance of Variation and Varieties of 'Neanderthal' Man." *Quarterly Review of Biology* 32 (1957): 330-347.

"The Age of the Australopithecines of Southern Africa." *American Journal of Physical Anthropology* 13 (1955): 635-661.

"The Evolutionary Significance of Variation and Varieties of 'Neanderthal' Man." *Quarterly Review of Biology* 32 (1957): 330-347.

"The Villafranchian and Human Origins." *Science* 130 (1959a): 831-844.

"Upper Pleistocene Stratigraphy and Early Man in the Levant." *Proceedings of the American Philosophical Society* 103 (1959b): 1-65.

"European and Northwest African Middle Pleistocene Hominids." *Current Anthropology* 1 (1960): 195-232.

F. Clark Howell, Karl Butzer, and Emiliano Aguirre, *Noticia preliminar sobre el emplazamiento acheuleuse de Torralba, Soria*. Madrid: Ministerio de Educación Nacional, 1962.

F.C. Howell and F. Bourlière, Eds. *African Ecology and Human Evolution* Viking Fund Publications in Anthropology, No. 36 (Wenner-Gren Foundation for Anthropological Research) Chicago: Aldine, 1963.

"Observations on the Earlier Phases of the European Lower Paleolithic." *American Anthropologist* 68 (1966): 88-201.

"Recent Advances in Human Evolutionary Studies." *Quarterly Review of Biology* 42 (1967): 471-513.

"Remains of Hominidae from Pliocene-Pleistocene Formations in the Lower Omo Basin, Ethiopia." *Nature* 223 (1969): 1234-9.

F. Clark Howell and Yves Coppens, "Inventory of Remains of Hominidae from Pliocene/Pleistocene Formations of the Lower Omo Basin, Ethiopia (1967–1972)." *American Journal of Physical Anthropology* 40 (1974): 1-16.

F. Clark Howell and B. A. Wood, "Early Hominid Ulna from the Omo Basin, Ethiopia." *Nature* 249 (1974): 174-176.

F. Clark Howell and Yves Coppens, "An Overview of Hominidae from the Omo Succession, Ethiopia." In Y. Coppens, F. C. Howell, G. Isaac, and R. Leakey (eds.). *Earliest Man and Environments in the Lake Rudolf Basin. Stratigraphy, Paleo-ecology and Evolution*. Pp. 522–532. Chicago: University of Chicago Press, 1976.

Yves Coppens, F. Clark Howell, Glynn Isaac, and Richard Leakey, *Earliest Man and Environments in the Lake Rudolf Basin. Stratigraphy, Paleoecology, and Evolution*. Chicago: University of Chicago Press, 1976.

N. T. Boaz and F. C. Howell, "A Gracile Hominid Cranium from Upper Member G of the Shungura Formation, Ethiopia." *American Journal of Physical Anthropology* 46 (1977): 93-108.

"Overview of the Pliocene and Earlier Pleistocene of the Lower Omo Basin, Southern Ethiopia." In Clifford Jolly (ed.), *Early Hominids of Africa*. Pp. 85-130. London: Duckworth, 1978.

"Hominidae." In V. J. Maglio and H. B. S. Cooke (eds.). *Evolution of African Mammals*. Pp. 154-248. Cambridge: Harvard University Press, 1978.

Y. Rak, and F. C. Howell, "Cranium of a Juvenile Australopithecus boisei from the Lower Omo Basin, Ethiopia." *American Journal of Physical Anthropology* 48 (1978): 345-366.

"Evolution of Hominidae in Africa" in J. Desmond Clark (ed.), *Cambridge History of Africa*. *Vol. 1 From the Earliest Times to ca. 500 B.C.* Pp. 70-156. Cambridge University Press, 1982.

Yves Coppens and F. Clark Howell, *Les Faunes Plio-Pléistocènes de la basse vallée de l'Omo (Ethiopie)*. 3 vols. Paris: Editions du Centre national de la recherche scientifique, 1985, 1987, 1988.

"Overview of the Pliocene and earlier Pleistocene of the Lower Omo Basin, Southern Ethiopia." In C. Jolly (ed.), *Early Hominids of Africa*. Pp. 85-130. London: Duckworth, 1978.

"Homo habilis in Detail." *Science* 253 (1991): 1294-5.

"A Chronostratigraphic and Taxonomic Framework of the Origins of Modern Humans." In M. H. Nitecki and D. V. Nitecki (eds.), *Origins of Anatomically Modern Humans*. Pp. 253-319. New York: Plenum Press, 1994.

"Thoughts on the Study and Interpretation of the Human Fossil Record." In W. Meikle, F. C. Howell, and N. Jablonski (eds.), *Contemporary Issues in Human Evolution*. Pp. 1-45. California Academy of Sciences Memoir 21, 1996.

"Paleo-demes, Species Clades and Extinctions in the Pleistocene Hominin Record." *Journal of Anthropological Research* 55 (1999): 191-243.

F. Clark Howell, Güven Arsebük, Steven L. Kuhn, Mihriban Özbasaran, Mary C. Stiner, *Culture and biology at a crossroads: The Middle Pleistocene record of Yarimburgaz Cave (Thrace, Turkey).* Istanbul: Ege Yayinlari, 2010.

SECONDARY SOURCES

Bernard Wood, "Obituary: Francis Clark Howell (1925-2007)." *American Journal of* Physical Anthropology 136 (2008): 125-127.

Tobias, Phillip V. "Francis Clark Howell Hon. FRSSAf 1925-2007." *Transactions of the Royal Society of South Africa* 62 (2007): 44-46.

K. W. Butzer and R. G. Klein, "F. Clark Howell 1925-2007." *Journal of Archaeological Science* 34 (2007): 1552-1553.

Leslie Freeman, “Francis Clark Howell (1925-2007).” *American Anthropologist* 110 (2008): 274-276.

Tim White, “Obituary: F. Clark Howell 1925-2007.” *Nature* 447(2007): 52.

Susan Anton, “Of Burnt Coffee and Pecan Pie: Recollections of F. Clark Howell on his Birthday. November 27, 1925 – March 10, 2007.” *PaleoAnthropology* (2007): 36-52.

Elwyn Simons, “Francis Clark Howell: November 27, 1925 – 10 March 2007.” *Proceedings of the American Philosophical Society* 155 (2011): 205-209.

Richard Klein, “Francis Clark Howell.” Biographical Memoirs. National Academy of Sciences 2013

Mary C. Stiner and Steven L. Kuhn, “Early Man: A Tribute to the Late Career of F. Clark Howell.” *Journal of Human Evolution* 55 (2008): 758-760.

Samuel J. Redman, “F. Clark Howell: Modernizing Physical Anthropology through Fieldwork, Science, and Collaboration.” An interview conducted by Samuel J. Redman in 2007. Regional Oral History Office, The Bancroft Library, University of California, Berkeley, 2012.

Glynn Isaac (1937–1985)

Glynn Llywelyn Isaac was born on 19 November 1937 in Cape Town, South Africa. His father was William Edwyn Isaac, a botanist who became Professor of Botany at the University of Cape Town, and his mother was Frances Margaret Leighton, the flowering-plant expert at Cape Town's Bolus Herbarium. Isaac grew up in the western Cape with his twin brother Rhys. He became interested in archaeology as a teenager after reading a book by the American Egyptologist James Henry Breasted, *A Brief History of Ancient Times* (1927), which prompted him to explore the prehistoric archaeology of the western Cape. After graduating from school he worked on Bronze Age and late Mesolithic excavations in England and completed a diploma course in archeological techniques at The University of London. He received his B.Sc. in Geology (for which he received the Class Medal), in 1956. He then received his B.Sc. in Zoology (for which he received the Class Medal in 1957) and in Archaeology/Ethnology at the University of Cape Town in 1958. Isaac studied with anthropologist Monica Wilson, who taught him the ethnography of southern African peoples, and archaeologist John Goodwin, who taught him about the Stone Age in South Africa. During this period he participated in excavations at the Early Stone Age site of Cape Hangklip, located on the Indian Ocean coast of South Africa. Also, in 1956, he hitchhiked 1,000 miles from Cape Town to Livingstone, Northern Rhodesia (now Zambia) to study the collections at the Rhodes-Livingstone Museum. When John

Goodwin died in early 1959, Isaac taught the archaeology course at the University of Cape Town that year.

Isaac entered Cambridge University in October 1959 as a member of Peterhouse. He received an Elsie Ballot Scholarship, which is awarded to South African students, to study Paleolithic Archaeology (the Elsie Ballot Scholarship is the equivalent of a Rhodes Scholarship at Oxford University). Isaac read Part II of the Archaeological and Anthropological Tripos and received his B.A. in archaeology in the summer of 1961, studying under Grahame Clark and Charles McBurney. He joined McBurney's excavations at the Lower Paleolithic site of La Cotte de St Brelade, Jersey, in 1960. During the summer of 1960, Isaac also worked with American archaeologist Hallam Movius Jr. on the excavation of the Abri Pataud rockshelter in France. Isaac also worked with Eric Higgs in Libya for a field season in 1961. In 1960 Isaac met his future wife, Barbara Miller, at a Derbyshire Archaeological Society dig at Creswell Crags led by Charles McBurney. Miller had a B.A. in English from Cambridge University and she was working as an education officer at the Sheffield City Museum at the time. During their life together, she collaborated with Isaac on his research projects.

Isaac's studies took a dramatic turn when Kenyan paleoanthropologist Louis Leakey invited Isaac to conduct research at Olorgesailie. This research became the subject of Isaac's doctoral research. Leakey was the curator of the Coryndon Museum in Nairobi and was already renowned for his discoveries at Olduvai Gorge and other sites. Leakey first appointed Isaac to be Warden of Prehistoric Sites for what at that time was the Royal National Parks of Kenya. Isaac held this position from 1961 to 1962 and in this capacity he had responsibility for Olorgesailie, Kariandusi, and Gamble's Cave. He was promoted to Deputy Director of the Centre for Prehistory and Paleontology (which Leakey had created at the Coryndon Museum in 1961) and Isaac held this position from 1963 to 1965. Olorgesailie is an Acheulean archaeological site located between two extinct volcanoes, Mt. Olorgesailie and

Oldonyo Esakut, in the Great Rift Valley in southern Kenya. Louis and Mary Leakey conducted excavations there from 1942 to 1954 and the site was developed as an open-air Prehistoric Site with a residential warden. Following Louis' invitation to work at Olorgesailie, Isaac conducted extensive excavations there from 1961 to 1965. He studied the stratigraphy and archaeology, which proved to be important because Olorgesailie contained a number of well-preserved living sites that are marked by concentrations of bone fragments from extinct animals along with hand axes and other stone tools deposited along the shoreline of a now-extinct lake. Isaac systematically compared the structure and contents of these living sites, which allowed him to identify the behavior patterns of the hominids that inhabited the site and to test ideas about the rate and direction of behavioral change in early hominid communities.

Isaac returned to Cambridge in 1965 after completing his research at Olorgesailie in order to write his dissertation. He received his PhD from Cambridge University in 1969 with a dissertation titled *The Acheulean Site Complex at Olorgesailie, Kenya: A Contribution to the Interpretation of Middle Pleistocene Culture in East Africa* (1968). But he continued to study and write about the Olorgesailie material. In 1977 Isaac published a monograph titled *Olorgesailie: Archaeological Studies of a Middle Pleistocene Lake Basin in Kenya*, which presented a comprehensive summary of his research there. In this book he formulated research questions and developed methodological approaches that ranged widely, including site-formation processes, artifact function and design, and the reconstruction of early hominid hunting abilities and social organization. He conducted a quantitative analysis of the morphology of the Acheulean artifacts from Olorgesailie and this analysis showed that there was little, if any, short- or long-term change in Acheulean tools over a period of many thousands of years. In an early example of taphonomic research, Isaac experimented with replicas of bones and stone tools in order to evaluate the sedimentary processes that might have led to the unusual concentrations of artifacts and animal bones at Olorgesailie, and he developed innovative multivariate approaches to analyze the attributes of hand axes and cleavers.

Before Isaac left Kenya to return to Cambridge he had conducted research at several other sites besides Olorgesailie. Louis Leakey, Isaac, and Barbara Whitehead Anthony excavated the open-air site of Prospect Farm, located in the Nakuru-Naivasha basin, from November 1963 to July 1964. They unearthed a sequence of Middle Stone Age, Late Stone Age, and Neolithic deposits. Isaac and Ronald Clarke then excavated Gamble's Cave II, also located in the Nakuru-Naivasha basin, in 1964. Additionally, Louis Leakey asked Isaac in late 1963 to join Richard Leakey's team on the western shores of Lake Natron, in Tanganyika (now Tanzania), where Richard was prospecting for fossils. During the field survey in 1964, one of the Kenyan members of the team, Kamoya Kimeu, found a 1.5 million year old australopithecine mandible at a site called Peninj, just west of Lake Natron (Leakey and Leakey 1964). The team excavated the area where the jaw was discovered and Isaac investigated the geology of the site and conducted excavations that unearthed some of the oldest known Acheulean hand axes in Africa, similar to those found at Olduvai Gorge (Isaac 1965; 1967). Finally, Isaac and Charles Nelson excavated the Prolonged Drift site, northwest of Lake Nakuru, from 1969 to 1970 where they found Neolithic artifacts.

In the course of all this work, Isaac had moved to the United States in 1966 to join the faculty of the Department of Anthropology, at the University of California, Berkeley. There his colleagues included Sherwood Washburn, J. Desmond Clark, Phyllis Dolhinow, Theodore McCown, Elizabeth Colson, Richard Hay, and in 1970 F. Clark Howell also joined the faculty. At Berkeley, Isaac was part of the Old World Prehistory Program and in 1969 he established the University of California Archaeological Research Group in Kenya. From July 1969 to March 1970 the group studied the geological stratigraphy, paleoenviromental history, and prehistory of the Naivasha-Nakuru Lake Basins and spent a short time at Lake Natron. This was at a time when the International Omo Research Expedition was working in Ethiopia and Richard Leakey had just initiated the East Rudolf excavations. The National Museums of Kenya organized an expedition led by Richard Leakey in 1968 to study the geology and paleontology of the east side of Lake Rudolf (renamed Lake Turkana in 1975), in northern Kenya. In 1969 a base camp was established at Koobi Fora, a sandy beach on the shore of the lake, which became the center of operations for this research. Richard Leakey invited Isaac to conduct archaeological research at East Rudolf in 1969 and subsequently asked him to become co-leader of The East Rudolf Research Project when it was established in 1970 (the project was renamed the Koobi Fora Research Project in 1975).

With funding from the National Science Foundation, Isaac and a group of his Berkeley graduate students excavated a number of sites along the lake where they unearthed Oldowan and Acheulean tools. These sites ranged in age from 1.9 to 1.4 million years old. Isaac devoted considerable attention to the Oldowan tools that Kay Behrensmeyer, a graduate student from Harvard University, discovered among Pleistocene animal fossils. Behrensmeyer joined the East Rudolf Research Project in 1969 and was tasked with studying the geology of the area and mapping its stratigraphy. One particular layer of volcanic tuff contained Oldowan artifacts similar to those that Louis and Mary Leakey had discovered at Olduvai Gorge. This layer was named the Kay Behrensmeyer Site tuff (KBS tuff) and it could be dated using the recently developed potassium-argon (K-Ar) dating method, which yielded a date of 2.6 million years for the tuff layer. This very early date proved to be quite controversial because it was inconsistent with dates from the Shungura and Usno Formations in the Omo River basin in Ethiopia. French paleontologist Camille Arambourg and American paleoanthropologist F. Clark Howell had begun research in the

Omo basin in 1967 and a major component of their research was to establish a detailed record of the change in mammal fossils in the long sequence of geological deposits at the site. These deposits consisted of river sediments and volcanic layers that could be dated using the potassium-argon dating method. Basil Cooke's study of fossil pigs from the Omo basin proved particularly important because the many pig species could be dated and since these species frequently replaced one another, pig fossils could be used as a chronological marker for other deposits that could not be dated using other methods.

The geological and paleontological work in the Omo basin had significant implications for what came to be called the KBS tuff controversy. Potassium-argon dating of the KBS tuff had returned a date of 2.6 million years, but comparisons of the animal fossils found in this deposit with those from the Omo basin suggested a younger date of about 1.9 million years. For several years in the early 1970s, paleoanthropologists were divided by disagreement over the dating of the KBS tuff. In September 1973 the Wenner-Gren Foundation for Anthropological Research sponsored a symposium held in Nairobi, Kenya, on the "Stratigraphy, Paleoecology, and Evolution in the Lake Rudolf Basin." The symposium, organized by F. Clark Howell, Yves Coppens, Glynn Isaac, and Richard Leakey brought together scientists from the research groups working at Lake Rudolf and the Omo River basin in the hope of resolving the KBS tuff controversy. The papers focused on the geology, paleontology, ecology, and archaeology of the deposits containing hominid remains at these sites. Isaac presented a paper on the "Plio-Pleistocene Artifact Assemblages from East Rudolf, Kenya" (Isaac 1976a). The symposium avoided the debates, rampant at the time, over hominid taxonomy and phylogeny. A significant part of the symposium was devoted to correlating the stratigraphy, animal fossils, and radiometric dates of the Omo basin deposits with those from Lake Rudolf. The symposium helped to finally resolve the KBS tuff controversy and the papers were published in *Earliest Man and Environments in the Lake Rudolf Basin: Stratigraphy, Paleoecology, and Evolution* (1976). In the end further research eventually resolved the dispute. During the KBS tuff controversy Isaac was a strong advocate for collegial dialogue and he expressed the importance of undertaking new research to resolve the discrepant dates.

Isaac was fundamentally interested in the evolution of human behavior and he used archaeology to investigate a range of questions related to this. He developed original and significant ideas about the archaeological record and the evolution of human society over the course of his career. He wrote a paper (Isaac 1971) titled "Whither Archaeology?" as a response to an article published by English archaeologist Jacquetta Hawkes (Hawkes 1968) that attacked the New Archaeology. In his paper, Isaac defended archaeology as a humanistic science. Isaac was interested in a wide range of questions. These included determining when stone tools began to be made, determining the function of these tools, and how clusters of artifacts and bones were formed. He worked to integrate Paleolithic archeology, human paleontology, cultural anthropology, ecology, primatology, ethology, nutritional studies, geology, and paleogeography into an integrated whole. He believed strongly in hypothesis testing and taphonomic studies. He encouraged the pursuit of actualistic studies such as ethnoarchaeology, primatology, experimental archaeology, and he was a pioneer of landscape archaeology, which he referred to as "the scatter between the patches." This notion of "the scatter between the patches" refers to his observation that stone tools are found not just in the context of established home base, butchery, and quarry sites, but also as a thin, diffuse scatter between these sites. He suggested that this scatter represented geographically unfocused, recurrent activities possibly associated with foraging. The preliminary analysis of widely scattered surface finds dating from the Oldowan/Acheulean transition in East Turkana suggested that there might be significant differences in the tool kits used at home bases and those used in these more diffuse foraging activities.

During the course of his research at Olorgesailie and at Koobi Fora, Isaac developed a classification of sites based upon the proportion of stone artifacts relative to animal bones. The major categories in this system were 1) Camp or occupation sites containing a high density of stone and bone objects; 2) Quarry or workshop sites with a high density of stone artifacts but a low density of bones; 3) Kill or butchery sites with a high density of bones but a low density of stone artifacts; 4) Transitory camps with a low density of both stone artifacts and bones (Isaac 1971b). He also introduced new ideas relating to the Oldowan industry. Louis Leakey created the term "Oldowan" in 1936 to refer to the oldest stone tools found at Olduvai Gorge. Mary Leakey then distinguished older "Oldowan" tools from later "Developed Oldowan" tools. However, Isaac (1976a) combined these two types into what he called the Oldowan Industrial Complex.

From the archaeological evidence recovered from sites such as KBS (FxJj1) and HAS (FxJj3) at Lake Turkana, Isaac formulated his food sharing/home base hypothesis in the mid-1970s. This idea linked Lower Paleolithic archaeology with social anthropological theory and drew upon the work of such people as physical anthropologist Sherwood Washburn, primatologist Jane Lancaster, and anthropologist Richard Lee (who studied the !Kung San in the Kalahari desert). This was at a time when Sherwood Washburn was promoting the Man the Hunter hypothesis, which argued that hunting had played an important role in human evolution. In fact, Isaac presented a paper at the "*Man the Hunter*" symposium organized by Richard Lee and Irven DeVore in 1968. This paper (Isaac 1968) introduced some ideas about home bases where hunters brought game back to share with their mates and offspring. Isaac used the archaeological data from Lake Turkana to infer that hominids transported food and artifacts to a central location. He also concluded there was a relatively high level of meat consumption among these hominids. To explain these inferences he hypothesized the existence of home bases, food sharing and division of labor as the adaptive complex of early hominids. He argued that these behaviors provided the selective pressures for the development of language and other human characteristics. From this model, he argued that the earliest (Oldowan) archeological sites in Africa should be interpreted as the material remains of newly evolved types of hominid behavior that included the use of home bases, flaked-stone technologies, food sharing, significant meat-eating resulting from hunting and/or scavenging, and a pronounced sexual division of labor.

Isaac's food sharing/home base model eventually replaced the "Man the Hunter" hypothesis as a framework for interpreting human behavioral and social origins. The landmark paper that presented this model (Isaac 1978) appeared in the same year that Jane Lancaster (1978) also published a paper that stressed the importance of sharing in human evolution. The food sharing/home base hypothesis argued that a modern human "habitually carries tools, food and other possessions either with his arms or in containers" and communicates with other humans by a spoken language. This model also argued that the acquisition and sharing of food is "a corporate responsibility," that modern human hunter-gathers conduct their foraging operations in the vicinity of communal gathering places or "home bases," and that humans seek to acquire high-protein foodstuffs by hunting or fishing. Isaac noted that none of these behaviors are common in apes. He argued that tool-use was important both for gathering food and for processing it for consumption. After examining the archaeological evidence from Koobi Fora, he argued that hominids had developed these behaviors at some point between 2.5 and 1.5 million years ago and that they were part of "a novel adaptive strategy" which led to modern *Homo sapiens*.

Isaac's work at Koobi Fora resulted in important investigations of the tool-making abilities, subsistence patterns, ranging behavior, and social behavior of the hominids that made Oldowan tools. He studied the ways stone tools were used, how hominid social groups were organized, their diet, whether they slept in trees or on the ground, and the development of their ability to speak. He conducted experiments on archaeological site formation that would enable researchers to distinguish hominid action from animal action or geological processes. His research led to an improved ability to identify the various agencies responsible for taphonomic accumulations and dispersals at sites, as well as the establishment of many of the criteria that are the hallmarks of hominid activity during the Plio-Pleistocene period. Isaac believed that in order to reconstruct hominid behavior at hominid sites one needed to analyze the distribution of hominid fossils, artifacts, and hominid modified animal bones within the landscape. He was interested in the movement of early hominids and where they preferred to live. As part of this research, he constructed maps and diagrams showing the movement of hominids. Several students wrote doctoral theses based upon research at Koobi Fora, with topics including artifact replication, site deposition, taphonomy, and food acquisition.

However, during the late 1970s and early 1980s, some of Isaac's ideas about early hominid behavior, especially the "food sharing/home base" model, received criticism. One of the most influential critics was the American archaeologist Lewis Binford. In his book *Bones, Ancient Men and Modern Myths* (1981), Binford complained that Isaac's hypothesis relied upon too many assumptions concerning the association between the stone tools and the animal fossils found at archaeological sites. These criticisms subsequently led Isaac to downplay the "humanness" of early Paleolithic hominids and to establish a wide-ranging research program to investigate site formation that involved actualistic and experimental studies. He replaced the idea of home bases with the term "central place foraging" areas, which did not require food sharing or division of labor. Significantly, he continued to emphasize the value of considering multiple alternative hypotheses when interpreting archeological data.

During the course of his career, Isaac made important contributions to the theory of artifact typology. He was strict about the proper classification of his finds and the ordering of data generally. This is seen in his coordination work for the Commission on Nomenclature for the Pan-African Congress of Prehistory and Quaternary Studies. Isaac enthusiastically accepted new methodological tools and theoretical approaches. These included the quantitative analysis of data, the recently developed radiometric techniques for dating sites, stable isotope analysis, geoarchaeological and site formation studies, and optimal foraging theory. He was critical of “simple additive models” that proposed sequences for the appearance of modern human characteristics that included moving to the savanna, bipedalism, tool use, hunting, and brain enlargement because some of the behaviors that such models sought to explain were already present in chimpanzees. He proposed instead an integrated model. “Integrated growth is a better analogue than chain reaction. Thus I would favor models involving concurrent development with mutual reinforcement of adaptive advantages by matching changes in all components, and from this stance I would argue that hunting, food sharing, division of labor, pair bonding, and operation from a home base or camp, form a functional complex, the components of which are more likely to have developed in concert than in succession. It is easy to see that tools, language, and social cooperation would fit into the functional complex as well, and very likely had equally long development histories within the overall system” (Isaac 1972b).

When Isaac began working at Koobi Fora, he was still at the University of California, Berkeley. He was invited to be a Visiting Fellow at Peterhouse, at Cambridge University, during the 1975-76 academic year and he was a visiting scholar in the Department of Prehistory and Archaeology at the Australian National University in the summer of 1976. He was later invited to be a visiting professor in the Department of Anthropology at Harvard University during the spring semester in 1981. Isaac accepted an offer to become a professor at Harvard as well as Curator of Paleolithic Archaeology at the Peabody Museum in 1983 and he remained at Harvard until his death. In the course of his career, Isaac was an active member of a number of scientific institutions and was involved in organizing several important conferences. Isaac and Desmond Clark organized a conference on “Les plus anciennes industries en Afrique” for the International Congress of Prehistoric and Protohistoric Sciences that was held on 13 September 1976 in Nice, France. Desmond Clark, Glynn Isaac, and Jean Combier organized a conference on “Las industrias más antiguas: pre-Acheulense y Acheulense” for the International Congress of Prehistoric and Protohistoric Sciences that was held in Mexico City from 19-24 October 1981. He was a participant (along with Bernard Grant Campbell, Desmond Clark, Raymond Dart, Dian Fossey, David Hamburg, Richard Hay, F. Clark Howell, Mary Leakey, and Jane Goodall) at the Leakey Foundation Symposium titled “In Search of Man,” which was held on 2 December 1973 before an audience of a thousand people in San Francisco, California. He was a joint-organizer of the Gordon Conference on Diet held in California in 1984, which brought together archaeologists, anthropologists, chemists, nutritionists and health scientists.

Isaac was among a group of researchers present at a meeting held in Urbana, Illinois, in April 1971 that founded the Society of Africanist Archaeologists in America (now the Society of Africanist Archaeologists). Some of the others present at the founding were Desmond Clark, Richard Klein, Mary Leakey, Richard Hay, and Fred Wendorf. Isaac was a founding director of the Foundation for Research into the Origins of Man from 1976 to 1983 and chaired its Science and Grants Committee. Richard Leakey established the Foundation in 1973 in order to fund his research. Isaac was a member of the South African Archaeological Society, the American Anthropological Association, and the Prehistoric Society (UK). He was also a Fellow of the American Association for the Advancement of Science and a Life Fellow of the California Academy of Sciences. Isaac was elected a Fellow of the Society of Antiquaries of London shortly before his death. He served as a member of the National Science Foundation (NSF) Anthropology Panel (1981-82) and as a council member for Section H (Anthropology) of the American Association for the Advancement of Science (1981-83). He also served on the editorial board of the journal *Science* from 1982 to 1983. Isaac received numerous awards and scholarships during his career, including the J.S. Guggenheim Foundation Fellowship (1975-1976).

Throughout Isaac's career, the political debate over apartheid engaged many South African scientists and Isaac was an outspoken opponent of apartheid. In fact his parents left South Africa and moved to Kenya in 1961 in part because of the government's apartheid policy. Isaac occasionally raised the issue with some of his South African colleagues, such as Phillip Tobias, over whether scientists should leave the country as a form of protest against apartheid.

Isaac became ill with a fever on a trip to Beijing for the National Academy of Sciences and was taken to the United States Naval Hospital at Yokosuka, near Tokyo. He was preparing to return to the United States for treatment when he collapsed and died at the American air base in Tokyo, Japan on 5 October 1985. After his death, Barbara Isaac edited a collection of eighteen of his most important scholarly papers in the book *The Archaeology of Human Origins: Papers by Glynn Isaac* (1989). She also co-edited his posthumous monograph *Koobi Fora Research Project, Volume 5: Plio-Pleistocene Archaeology*, published in 1997. Barbara Isaac donated the Glynn Isaac Papers to the National Anthropological Archives at the Smithsonian Institution in 2001 and 2002.

SELECTED BIBLIOGRAPHY

"The Stratigraphy of the Peninj Beds and the Provenance of the Natron Australopithecine Mandible." *Quaternaria* 7 (1965): 101-130.

"The Stratigraphy of the Peninj Group-Early Middle Pleistocene Formations West of Lake Natron, Tanzania." In W. W. Bishop and J. D. Clark (eds.). *Background to Evolution in Africa*. Pp. 229-257. Chicago: University of Chicago Press, 1967.

"Traces of Pleistocene Hunters: An East African Example." In I. DeVore and R. Lee (eds.), *Man the Hunter*. Pp. 253-261. Chicago: Aldine, 1968.

"Studies of Early Culture in East Africa." *World Archaeology* 1 (1969): 1-28.

"Whither Archaeology?" *Antiquity 45 (1971a): 123-129.*

"The Diet of Early Man: Aspects of Archaeological Evidence from Lower and Middle Pleistocene Sites in East Africa." *World Archaeology* 2 (1971b): 278-299.

"Chronology and Tempo of Cultural Change during the Pleistocene." In W.W. Bishop and J. A. Miller (eds.). Calibration of Hominoid Evolution: Recent Advances in Isotopic and other Dating Methods as Applicable to the Origin of Man. Pp. 381-430. Edinburgh: Scottish Academic Press, 1972a.

"Early Phases of Human Behaviour: Models in Lower Palaeolithic Archaeology." In D. L. Clarke (ed.). *Models in Archaeology*. Pp. 167-199. London: Methuen, 1972b.

"Identification of Cultural Entities in the Middle Pleistocene." In H. J. Hugot (ed.), Actes de 6° Session, Congrès Panafricain de Préhistoire. Pp. 556–562. Chambéry: Les Imprimeries Réunies de Chambéry, 1972.

Glynn Isaac and Garniss Curtis, "Age of Early Acheulian Industries from the Peninj Group, Tanzania." *Nature* 249 (1974): 624-627.

"Middle Pleistocene Stratigraphy, and Cultural Patterns in East Africa." In K. W. Butzer and G. Isaac (eds.), *After the*

Australopithecines: Stratigraphy, Ecology and Culture Change in the Middle Pleistocene. Pp. 495-542. The Hague: Walter de Gruyter, 1975.

"Plio-Pleistocene Artifact Assemblages from East Rudolf, Kenya." In Y. Coppens, F .C. Howell, G. L. Isaac and R. Leakey (eds). *Earliest Man and Environments in the Lake Rudolf Basin: Stratigraphy, Paleoecology, and Evolution*. Pp. 552–564. Chicago: University of Chicago Press, 1976a.

J. Desmond Clark and Glynn Isaac (eds.), *Les plus anciennes industries en Afrique*. Paris: Centre national de la recherche scientifique, 1976.

Glynn Isaac and Elizabeth McCown (eds.), *Human Origins: Louis Leakey and the East African Evidence*. Menlo Park, Calif.: W. A. Benjamin, 1976.

Glynn Isaac (with the assistance of Barbara Isaac), *Olorgesailie: Archaeological Studies of a Middle Pleistocene Lake Basin in Kenya*. Chicago: University of Chicago Press, 1977.

"The Food-Sharing Behavior of Protohuman Hominids." Scientific American 238 (1978): 90-108.

Glynn Isaac and Richard Leakey (eds.), *Human Ancestors: Readings from Scientific American*. San Francisco: W. H. Freeman, 1979.

"Archaeological Tests of Alternative Models of Early Hominid Behaviour: Excavations and Experiments." *Philosophical Transactions of the Royal Society of London* Series B 292 (1981): 177-188.

Ian Hodder, Glynn Isaac, and Norman Hammond (eds.), *Pattern of the Past: Studies in Honour of David Clarke*. Cambridge: Cambridge University Press, 1981.

J. Desmond Clark, Glynn Isaac, and Jean Combier (eds.), *Las industrias más antiguas: pre-Acheulense y Acheulense*. México City: Union Internacional de Ciencias Prehistoricas y Protohistoricas, 1981.

"The Cultures of the Middle Palaeolithic/Middle Stone Age." In *The Cambridge History of Africa. Vol. 1. From the Earliest Times to C.*

500 B.C. J. Desmond Clark (ed.). Cambridge: Cambridge University Press, 1982.

"The Archaeology of Human Origins: Studies of the Lower Pleistocene in East Africa, 1971–1981." *Advances in World Archaeology* 3 (1984): 1-87.

Glynn Isaac and Barbara Isaac, *The Archaeology of Human Origins: Papers by Glynn Isaac.* Cambridge: Cambridge University Press, 1989.

Koobi Fora Research Project, Volume 5: Plio-Pleistocene Archaeology. (Edited by Glynn Isaac, with the assistance of Barbara Isaac). Oxford: Clarendon Press, 1997.

OTHER SOURCES

Jacquetta Hawkes, "The Proper Study of Mankind." *Antiquity* 42 (1968): 255-262.

Louis Leakey and Mary Leakey, "Recent Discoveries of Fossil Hominids in Tanganyika: At Olduvai and Near Lake Natron." *Nature* 202 (1964): 5-7.

Jane Lancaster, "Carrying and Sharing in Human Evolution." *Human Nature Magazine* 1 (1978): 82-89.

SECONDARY SOURCES

J. Desmond Clark, "Glynn Llywelyn Isaac, 1937-1985: A Personal Appreciation and Assessment." *The African Archaeological Review* 4 (1986): 7-19.

Bernard Wood, ""Glynn Llywelyn Isaac, 1937-1985." *American Journal of Physical Anthropology* 70 (1986): 289-291.

J. Desmond Clark, "Glynn Llywelyn Isaac, 1937-1985." *Antiquity* 60 (1986): 55-56.

Bernard Wood, "Glynn Isaac 1937-1985." *Nature* 319 (1986): 15.

R. R. Inskeep, "Glynn Llywelyn Isaac." *The South African Archaeological Bulletin* 41 (1986): 5.

"Glynn Llywelyn Isaac." *Azania* 20 (1985): iv.

Robert J. Blumenschine, "Breakfast at Olorgesailie: The Natural History Approach to Early Stone Age Archaeology." *Journal of Human Evolution* 21 (1991): 307-327.

Rhys Isaac, *Glynn Isaac and the Search for Human Origins in Africa*. (Inaugural Glynn Isaac memorial lecture delivered 21 April 1993). Rondebosch, South Africa: UCT Press, 1995.

Interview with Barbara Isaac (17 May 2007) available at http://www2.arch.cam.ac.uk/repository/barbara-isaac-2007.pdf

Hermann Klaatsch (1863–1916)

Hermann Klaatsch

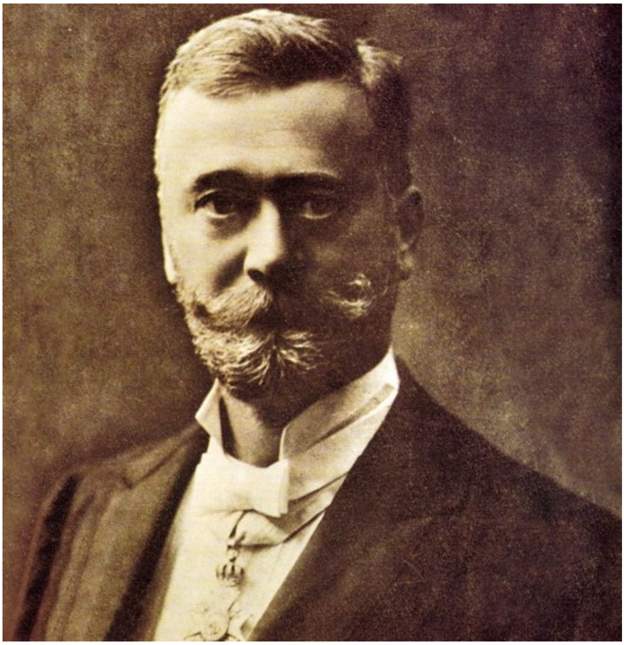
Hermann August Ludwig Klaatsch was born in Berlin on 10 March

1863, the son of August Hermann Martin Klaatsch, a prominent Berlin physician, and Julie Klaatsch. After graduating from the Königliche Wilhelms-Gymnasium in Berlin in 1881, Klaatsch entered the University of Heidelberg where he studied medicine and comparative anatomy under Carl Gegenbaur. He completed his medical degree in 1885 and for the next three years he worked as an assistant to Heinrich Wilhelm Waldeyer at the Anatomical Institute at the University of Berlin. He was also able to spend some time working in the laboratory of the physician and anthropologist Rudolf Virchow and at the Augusta hospital. During this period Klaatsch was interested in zoology and spent several months studying at the biological station of Villefranche, near Nice. In 1888 Klaatsch accepted Gegenbaur's invitation to return to Heidelberg to be an assistant at the Anatomical Institute at the university. He began teaching human anatomy at the University of Heidelberg in 1890 and was promoted to the status of professor extraordinarius in 1895.

Klaatsch soon became interested in human paleontology, human evolution, and physical anthropology. This led him to travel to England, France, and Croatia where he visited important anthropological collections. In a paper read before the Deutschen Gesellschaft für Anthropologie, Ethnologie und Urgeschichte in 1899 Klaatsch rejected the thesis supported by Darwin, Huxley, and Haeckel that humans evolved from the anthropoid apes. He argued instead that the human, ape, and monkey lineages had diverged from an original prosimian ancestor. He would later change his opinion on human evolution however. Klaatsch's interest in evolutionary theory led him to publish a book on Darwin's theory, *Grundzüge der Lehre Darwin's*, which was so successful that several editions were printed between 1900 and 1919. The Neanderthals were becoming an increasingly important subject in paleoanthropology at this time and at the meeting of the Anatomischen Gesellschaft [Anatomical Society] held in Bonn in 1901 Klaatsch presented a paper on the limb bones of the

Neanderthal specimen (Klaatsch, 1901b). At the same meeting German anthropologist Gustav Schwalbe presented a paper on the Neanderthal cranium. Schwalbe, unlike Klaatsch, became a strong supporter of the idea that Neanderthals were direct ancestors of modern humans. Klaatsch also published several papers on the large collection of Neanderthal fossils discovered by the Croatian paleontologist Dragutin Gorjanović-Kramberger at Krapina, in Croatia, beginning in 1899 as well as a paper comparing the Neanderthal crania unearthed by Maximin Lohest and Marcel de Puydt in the Grotte de Spy in Belgium in 1886 with Neanderthal crania from Krapina. (Klaatsch 1901a, 1902a, 1902c).

European archaeologists were also embroiled in a debate over the validity of eoliths, chipped pieces of flint found in Tertiary deposits that some archaeologists argued were human artifacts. Klaatsch was interested in these claims and traveled to France and Belgium in 1902 and 1903 to investigate some of the more important collections of eoliths. Klaatsch had also become friends with Otto Schoetensack, a lecturer at the University of Heidelberg who was convinced that Australia was the homeland of the first human beings and that the human race in fact originated there. Klaatsch and Schoetensack discussed the potential value of traveling to Australia to find evidence for this theory. Motivated by his interest in prehistoric humans Klaatsch traveled throughout Australia and Tasmania between 1904 and 1907 but because of poor health Schoetensack was unable to accompany him. During his travels Klaatsch studied the Aborigines, especially their morphology and culture, and examined Aboriginal rock art. He also used this opportunity to collect a large quantity of ethnographic objects that he sold to German museums. After leaving Australia Klaatsch made a brief visit to the island of Java in the Dutch East Indies (now Indonesia0 where he visited the site where Dutch anatomist Eugène Dubois discovered the *Pithecanthropus erectus* fossils in 1891-92.



Otto Schoetensack

Dragutin Gorjanović-Kramberger

Upon returning to Germany in 1907, Klaatsch accepted a position as professor of anatomy and anthropology at the University of Breslau (now Wrocław, in Poland). There he also served as curator of the collections of the Anatomical Institute and of the Ethnographic Museum. He published a paper on the stone artifacts used by contemporary Aboriginal Australians and Tasmanians, comparing them with prehistoric artifacts from Europe (Klaatsch, 1908a). He also published important papers on the skull of the Aboriginal Australians (Klaatsch, 1908b) and a comparison of the morphology of Aboriginal Australian skulls with Neanderthal skulls (Klaatsch, 1908c). Anthropologists throughout the nineteenth century relied upon craniometry, which was a set of techniques and measurements of skulls that utilized a variety of instruments, to investigate human races. Klaatsch used craniometry in his study of Australian and Neanderthal skulls, but in the course of his investigations he modified these craniometric methods. Unlike some anthropologists he emphasized comparative anatomy and was skeptical of what he saw as the excessive use of statistical data by some anthropologists. He outlined his ideas about craniometry in a paper published in 1909 (Klaatsch 1909a).

Klaatsch assisted Otto Schoetensack in the analysis of a fossil human mandible that workmen found in a quarry at Mauer, near Heidelberg, in 1907. The peculiar morphology of the fossil and its great age led Schoetensack to conclude it belonged to an entirely new species of hominid that he named *Homo heidelbergensis*. When the Swiss amateur archaeologist Otto Hauser unearthed a human skeleton at the Paleolithic site of Le Moustier, in the Vézère valley in France in 1908, he invited Klaatsch to collaborate with him in studying these fossils. Klaatsch examined the skeleton, which was nearly complete, and although he acknowledged that it shared many features in common with Neanderthal fossils found throughout Europe he considered this skeleton to represent a distinct type that he named *Homo mousteriensis Hauseri* (Klaatsch and Hauser, 1909; Klaatsch, 1909c). Then in 1909 Hauser discovered yet another human skeleton while excavating at Combe-Capelle, also located in the Vézère valley. This skeleton was found with the remains of a necklace made of shells as well as Aurignacian artifacts. Klaatsch was again invited to study the fossils and concluded they represented an entirely new Paleolithic human race that he called *Homo aurignacensis Hauseri* (Klaatsch and Hauser, 1910). Klaatsch suggested that this “Aurignacian race,” which differed from both the Neanderthals and Cro-Magnons, had migrated into Europe from Asia before the arrival of Cro-Magnons into Europe (Klaatsch, 1910). When Hauser excavated a partial human skeleton associated with Aurignacian artifacts at the Paleolithic site of La Rochette in 1910, Klaatsch and Walter Lustig published a description of these fossils as well (Klaatsch and Lustig, 1914).

Otto Hauser with the skeleton from Combe-Capelle

In addition to his examination of hominid fossils, Klaatsch also formulated some original ideas about human evolution. He rejected German anthropologist Rudolf Virchow’s influential assertions that the Neanderthals were pathological and not an extinct species of human. But he also rejected the claims made by Gustav Schwalbe and Dragutin Gorjanović-Kramberger that the Neanderthals were the direct ancestors of modern humans. Klaatsch argued that modern humans had evolved from Cro-

Magnons and that Cro-Magnons were contemporaries of the Neanderthals. He also suggested there were Homo *aurignacensis* fossils among the Krapina Neanderthals discovered by Gorjanović-Kramberger. Klaatsch also promoted a polygenist (polytypic) theory of human evolution, which argued that current human races had separate evolutionary origins. He also opposed the theories of Charles Darwin, Thomas Huxley, and Ernst Haeckel, that humans evolved from an anthropoid ape ancestor. Instead, Klaatsch suggested that humans and the anthropoid apes evolved from a hypothetical common ancestor he named *Proanthropus*, which was more human-like than apelike in its morphology. The human and anthropoid lineages probably diverged in the Eocene or Oligocene period, with he human line becoming more humanlike but the separate ape lineages degenerating from the common ancestor and becoming more apelike. He went on to propose that a hypothetical Asian group of humanlike apes he called *Propithecanthropus* evolved through two branches, the eastern evolved into orangutans as well as the Aurignacian race of humans and modern Mongoloid races, whereas the western branch evolved into gorillas as well as the Neanderthals and Negroid races. Because of this conception of human evolution Klaatsch was forced to reject *Pithecanthropus erectus* as a direct human ancestor.

Klaatsch published several books on human evolution and human prehistory for a general audience, including *Die Anfänge von Kunst und Religion in der Urmenschheit* [*The Beginnings of Art and Religion in Earliest Humanity*] published in 1913 and *Der Werdegang der Menschheit und die Entstehung der Kultur* [*The Development of Mankind and the Birth of Culture*] published posthumously in 1920. Klaatsch was elected a member of the Leopoldina in 1903. He remained at the University of Breslau until his death of pneumonia on 5 January 1916 in Eisenach, Germany.

SELECTED BIBLIOGRAPHY

Grundzüge der Lehre Darwin's: Allgemein verständlich dargestellt. Mannheim: J. Bensheimer, 1900.

"Bericht über den neuen Fund von Knochenresten des altdiluvialen Menschen von Krapina in Kroatien." *Zeitschrift der Deutschen Geologischen Gesellschaft* 53 (1901a): 44–46.

"Das Gliedmassenskelet des Neanderthalmenschen." *Anatomischer Anzeiger* 19 (1901b): 121–154.

"Occipitalia und Temporalia der Schädel von Spy vergleichen mit denen von Krapina." *Zeitschrift für Ethnologie* 34 (1902a): 392–409.

"Das Hinterhauptbein–Osoccipitaledes Menschen von Krapina." *Mittheilungen der Anthropologischen Gesellschaft in Wien* 32 (1902c): 194–200.

"Entstehung und Entwickelung des Menschengeschlechtes." In: H. Kraemer (ed.) *Weltall und Menschheit*, Volume 2. Pp. 3–338. Berlin: Deutsches Verlagshaus Bong & Co, 1902.

"Die Steinartefakte der Australier und Tasmanier, verglichen mit denen der Urzeit Europas." *Zeitschrift für Ethnologie* 40 (1908a): 407-436.

"The Skull of the Australian Aboriginal." *Reports from the Pathological Laboratory of the Lunacy Department, New South Wales Government* 1, part 3 (1908b): 43-167.

"Das Gesichtsskelett der Neandertalrasse und der Australier." *Verhandlungen der Anatomischen Gesellschaft* 22 (1908c): 223-273.

Otto Hauser and Hermann Klaatsch. "Der neue Skelettfund Hausers aus dem Aurignacien." *Praehistorische Zeitschrift* 2 (1908): 180-182.

"Kranio-Morphologie und Kranio-Trigonometrie" *Archiv für Anthropologie* 7 (1909a): 1-28

"Die Fortschritte der Lehre von der Neandertalrasse (1903– 1905)." *Ergebnisse der Anatomie und Entwicklungsgeschichte* 17 (1909b): 431–462.

Hermann Klaatsch and Otto Hauser, "Homo mousteriensis Hauseri:

ein altdiluvialer Skelettfund im Departement Dordogne, und seine zugehorigkeit zum Neandertaltypus." *Archiv für Anthropologie* 7 (1909): 287-297.
"Preuves que l'Homo mousteriensis Hauseri appartient au type du Néandertal." *L'Homme prehistorique* (1909c): 10-16.
"Die neueste Ergebnisse der Palaontologie des Menschen und ihre Bedeutung fur das Abstammungsproblem" *Zeitschrift für Ethnologie* Xl1. [1909], p. 537).
Hermann Klaatsch and Otto Hauser, "*Homo aurienacensis Hauseri*, ein palæolithischen Skelettfund aus dem unteren Aurignacien der Station Combe-Capelle bei Montferrand (Périgord)." *Praehistorische Zeitschrift* 1 (1910): 273–338.
"Die Aurignac-Rasse und ihre Stcllung im Stammbaum der Menschheit." *Zeitschrift für Ethnologie* 42 (1910): 513–577.
"Menschenrassen und Menschenaffen." *Korrespondenz-Blatt der Deutschen Gesellschaft für Anthropologie, Ethnologie und Urgeschichte* 41 (1910): 91–99.
"Die Stellung des Menschen im Naturganzen." In O. Abel et al. (eds.). *Die Abstammungslehre. Zwölf gemeinverständliche Vorträge über die Deszendenztheorie im Licht der neueren Forschung*. Jena: Gustav Fischer, 1911 pp. 321–483.
Die Anfänge von Kunst und Religion in der Urmenschheit. Leipzig: Verlag Unesma, 1913.
Morphologische Studien zur Rassendiagnostik der Turfanschädel. (Abhandlungen der Königlich Preussischen Akademie der Wissenschaften zu Berlin). Berlin: Verl. der Königl. Akad. der Wiss., 1913.
Hermann Klaatsch and Walter Lustig, "Morphologie der paläolithischen Skelettreste des mittleren Aurignacien der Grotte von La Rochette, Dep. Dordogne." *Archiv für Anthropologie* 41 (1914): 81-126.
Hermann Klaatsch and Adolf Heilborn. *Der Werdegang der Menschheit und die Entstehung der Kultur.* Berlin: Bong & Co., 1920.

[Translated into English by Joseph McCabe, *The Evolution and Progress of Mankind*. New York: Stokes, 1923.]

SECONDARY SOURCES

Georg Thilenius. "Hermann Klaatsch." *Korrespondenz-Blatt der Deutschen Gesellschaft für Anthropologie, Ethnologie und Urgeschichte* 47 (1916): 1-4.

Richard Wegner. "Hermann Klaatsch." *Anatomischer Anzeiger* 48 (1915-6): 611-623.

Hugo Mötefindt. "Hermann Klaatsch." *Naturwissenschaftliche Wochenschrift* (1916): 297-299.

Theodor Mollison "Hermann Klaatsch." *Deutsche medizinische Wochenschrift* (1916): 263-264.

Eugen Fischer. "Hermann Klaatsch." *Zeitschrift für Ethnologie* 47 (1916): 385-390.

Bruno Oetteking. "Hermann Klaatsch." *American Anthropologist* 18 (1916): 422-425.

Hans Hahne. "Klaatsch, Hermann zum Gedächtnis." *Mannus*. 7 (1916): 366-375.

Hans Seger. "Hermann Klaatsch als Anthropologe." *Prähistorische Zeitschrift* 7 (1916): 241-246.

Gaston Mayer. "Klaatsch, Hermann." In *Neue Deutsche Biographie*. Vol. 11, p. 697-8. Berlin: Duncker & Humblot, 1977.

Walter Jankowsky. "Hermann Klaatsch und die Entwicklung der modernen Anthropologie." In Walter Jankowsky (ed.). *Abhandlungen aus dem Gebiet der Anthropologie*. Darmstadt 1962, Pp. 25–31.

Brigitte Stehlik. "Hermann Klaatsch and the Tiwi, 1906." *Aboriginal History* 10 (1986): 59-77.

Corinna Erckenbrecht. "Vom Forschungsziel zur Sammelpraxis. Die Australienreise und die völkerkundliche Sammlung Hermann Klaatsch im Lichte neuer Quellen." *Kölner Museums-Bulletin.*

Berichte und Forschungen aus den Museen der Stadt Köln 3 (2006): 25–36.

Corinna Erckenbrecht. *Auf der Suche nach den Ursprüngen: die Australienreise des Anthropologen und Sammlers Hermann Klaatsch 1904-1907*. Koln: Gesellschaft für Völkerkunde, 2010.

Jia Lanpo (1908–2001)

Jia Lanpo

Jia Lanpo (贾兰坡) (in early publications his name was transliterated as Chia Lan-p’o) was born in Yutian, Hebei Province, in China on 25 November 1908 during the waning years of the Qing dynasty.

He graduated from the Huiwen Academy in Beijing in 1929 and later that year he obtained a position as a trainee at the newly established Cenozoic Research Laboratory, located at the Peking Union Medical College in Beijing. Canadian anatomist Davidson Black and Chinese geologist Weng Wenhao created the Laboratory as a consequence of Black's discovery of hominid fossils at Zhoukoudian, near Beijing, and it rapidly became an important center of paleoanthropological research. In 1931 Jia became a technical assistant at the Geological Survey of China and joined the excavations at Zhoukoudian working under the guidance of Chinese paleontologist Pei Wenzhong, who supervised the excavations. As a member of the team excavating at Zhoukoudian Jia worked first with Davidson Black, who led the paleoanthropological research at Zhoukoudian and served as director of the Cenozoic Research Laboratory until his death in 1934, and then with the German anatomist Franz Weidenreich, who was appointed director of the Laboratory after Black's death. A number of foreign researchers also spent time at the Laboratory and at Zhoukoudian during these years, including Swedish paleontologist Anders Birger Bohlin, French paleontologist Pierre Teilhard de Chardin, and the French prehistorian Henri Breiul.

Reconstructed Homo erectus (Peking Man) skull from Zhoukoudian

Jia served as personal secretary to the Pierre Teilhard de Chardin and had the opportunity to work with Henri Breuil while these men were in Beijing. These interactions with foreign scientists fostered Jia's lifelong desire to maintain international links with scientists. When Pei traveled to France in 1935 to study with Henri Breuil, Jia was appointed field director of excavations at Zhoukoudian and in November 1936 he oversaw the discovery of three nearly complete *Homo erectus* crania, along with stone artifacts and animal fossils. Jia was promoted to Research Investigator in 1937, but work at Zhoukoudian came to an end in 1941 as the Japanese army advanced on Beijing. Pei and Jia helped Weidenreich photograph and make plaster casts of the *Homo erectus* fossils and packed the fossils so they could be sent out of the country, but unfortunately the crates carrying the fossils were lost in transit. After Weidenreich left China in 1941, because of the Japanese invasion, Pei Wenzhong became the director of the Cenozoic Research Laboratory. Jia was promoted to Research Technician in 1945 and is credited with preserving thousands of research notes, letters, and 2000 photographs and negatives from the excavations at Zhoukoudian by hiding them in his own home in Beijing during the war.

Davidson Black

Pei Wenzhong

After the victory of the communists and the creation of the People's Republic of China in 1949 the Cenozoic Research Laboratory was reorganized and in 1953 it was renamed the Laboratory of Vertebrate Paleontology (古脊椎动物研究室) and was affiliated with the Chinese Academy of Sciences. In 1960 the Laboratory was renamed the Institute of Vertebrate Paleontology and Paleoanthropology (古脊椎动物与古人类研究所) and it has become one of the leading scientific institutions in China. Jia was one of the scientists, along with Pei Wenzhong, who were instrumental in the creation of the IVPP. During this period of transition and institution building Jia was successively promoted to the positions of Assistant Research Professor (1949-1953), Associate Research Professor (1953-55), eventually becoming a Research Professor in 1956 at the IVPP. During his career at the Institute of Vertebrate Paleontology and Paleoanthropology Jia held a number of posts, including Assistant Director of the Institute's Cenozoic Laboratory, Director of its Specimen Preparation Laboratory, and Head of the Zhoukoudian Work Station. It was also probably important for his career that in 1950 Jia joined the Jiusan Society (**九三学社**), one of the eight legally recognized political parties in the People's Republic of China that follow the direction of the Communist Party of China and are members of the Chinese People's Political Consultative Conference.

Jia led the excavations at Zhoukoudian when they resumed in 1949 and his research focused on the changes in the animal fossils over time at the site. This led him to conclude that northern China had undergone a series of climactic changes, consisting of alternating warm and cold periods, during the several hundred thousand years that the area was occupied by hominids. Jia wrote several books during the 1950s and 1960s describing *Homo erectus* in China, their culture, and the world they inhabited. Among the most prominent was **中國猿人** (**北京人**) [*Chinese Ape Man* (*Peking Man*)], first published in 1950. Jia was part of a team conducting a geological survey in the southeastern Chinese Autonomous Region of Guangxi in 1956 that made a rare discovery of *Gigantopithecus* teeth at a site called Heidong (Black Cave). He excavated Paleolithic sites at Dingcun in 1954 and at Kehe in 1959, both located in Shanxi Province in northern China. During excavations in 1957 in Changyang County, Hubei Province, Jia's team unearthed a human maxillary (upper jaw) bone from deposits containing animal fossils dating from the Middle Pleistocene, making them as much at two hundred thousand years old (Jia 1957). Jia argued that the fossil belonged to early *Homo sapiens*, but this conflicted with the prevailing theories about the origins of *Homo sapiens* in Asia accepted by European and American anthropologists. In contrast, Jia long supported the view that modern humans had evolved in central Asia from earlier hominid species such as Homo erectus, and he rejected the Out of Africa Hypothesis, which argues that Homo sapiens evolved in Africa and then migrated into Europe and Asia. In his book *Early Man in China*, published in English in 1980, Jia argued that hominids had evolved in China over long periods of geologic time independently of hominids that were evolving in Africa. He presented *Homo erectus* (Peking Man) as an important part of Chinese history and he traces the pedigree of modern Chinese peoples back into the Pleistocene in China.

In 1964 he was part of the multidisciplinary team that investigated the geologic deposits at Lantian, in Shaanxi Province, where a *Homo erectus* mandible partial cranium were found. His subsequent excavation of the Early Paleolithic site at Xihoudu and the Late Paleolithic site at Shiyu in Shanxi Province in the 1960s provided important insights into the human occupation of China in the Pleistocene. On the basis of his studies of Paleolithic artifacts from across Northern China, Jia and his colleagues proposed the idea that there were two parallel stone tool traditions in Northern China. The Kehe-Dingcun Series is characterized by large choppers and triangular points, while the Zhoukoudian Locality 1-Shiyu Series is characterized by small flake tools. They suggested that these two stone tool traditions persisted from the Early Paleolithic until the Late Paleolithic, extending even into the Neolithic when they developed into two different agricultural patterns (Jia, Gai, and You 1972). This hypothesis influenced Chinese archaeologists for several decades.

Jia led the excavations at Xujiayao, also in Shanxi Province, during 1976, 1977, and 1979 that unearthed a large quantity of stone tools along with bones of early *Homo sapiens* from several individuals including the partial cranium of a child (Jia et al. 1979). In 1975 Jia published *The Cave Home of Peking Man*, an English language book that discussed *Homo erectus* in China, the archaeological evidence of their culture, the environment in which they lived, and their geologic age. Other works discussed the faunal and climactic changes that occurred in northern China during the Pleistocene. Notably, Jia suggested that the *Homo erectus* remains from Zhoukoudian did not represent the earliest stages of human evolution in China. He suspected the earliest evidence of humans in China might be discovered in the early Pleistocene deposits of the Nihewan basin in Hebei province. Chinese researchers conducted excavations in the Nihewan basin during the 1970s but Jia was later instrumental in arranging a rare Chinese and American collaboration, led by himself and John Desmond Clark of the University of California at Berkeley, that worked in the Nihewan basin from the late 1980s through the early 1990s. Throughout much of his career, Jia pursued a multidisciplinary approach to investigating paleoanthropology and this multidisciplinary approach was reflected in much of the research conducted at the IVPP.

During the Cultural Revolution from 1966 to 1976, when universities were closed and intellectuals became targets of abuse, Jia and other researchers at the IVPP were harassed and the institution vandalized. Despite years of political and social turmoil spanning the Japanese invasion of China through the communist revolution and the Cultural Revolution Jia remained a prominent advocate of scientific research in China. During his long and influential career Jia held many professional positions in prominent Chinese scientific institutions. He was elected Academician of the Chinese Academy of Sciences in 1980 and he served as a member of the Cultural Bureau of the Chinese State Council. He was a member of the Institute of Archaeology (Chinese Academy of Sciences) and was a member of the Geological Bureau of the Biological Section of the Chinese Academy of Natural Sciences. He served as the Assistant Director of the Quaternary Geology and Glaciology Sections of the Chinese Geological Association. He also served as the Assistant Chairperson of the Board of Directors of the Chinese Archaeological Association as well as the Assistant

Director and Secretary of the Chinese Pacific History Society. He was also a member of the National Cultural Relics Commission of the Ministry of Culture. Jia received international recognition for his work when he was elected a Foreign Associate of the United States National Academy of Sciences in 1994. Jia played a central role in the process of designating the Peking Man site of Zhoukoudian a UNESCO World Heritage Site in 1987. For many years he also acted as the conservator of the Zhoukoudian Archives.

Jia Lanpo died of a cerebral hemorrhage on 8 July 2001. His cremated remains were placed at Zhoukoudian beside those of his fellow paleontologists Pei Wenzhong and Yang Zhongjian.

SELECTED BIBLIOGRAPHY

中國猿人 (北京人) [Chinese Ape Man (Peking Man)]. Shanghai, Long men shu dian, 1950. [with later editions in

“Notes on the Human and Some Other Mammalian Remains from Changyang, Hupei.” *Vertebrata PalAsiatica* 1 (1957): 247-258.

Jia, Lanpo, Gai Pei, and You Yuzhu. “Report of excavations in Shiyu, Shanxi — A Palaeolithic Site.” *Acta Archaeologica Sinica* 1 (1972): 39–60.

The Cave Home of Peking Man. Peking: Foreign Languages Press, 1975.

Jia Lanpo and Wang Jian, **西侯度: 山西更新世早期古文化遗址** [Xihoudu: A Lower Paleolithic Site in Shanxi Province]. Beijing: Wen wu chu ban she, 1978.

La Caverne de l’homme de Pékin. Pékin: Éditions en langues étrangères, 1978.

Jia Lanpo, Wei Q., and Li C. “Report on the Excavation of the Hsuchiayao Man Site in 1976.” *Vertebrata PalAsiatica* 17 (1979): 277-293.

Early Man in China. Beijing: Foreign Languages Press, 1980.

Jia Lanpo and Loïc Chotard*, Nos ancêtres les chinois: la préhistoire de l'homme en Chine*. Paris: Éditions France-Empire, 1982.

贾蘭坡舊石器时代考古论文選 [The palaeoliths of China, selected works of Jia Lanpo]. Beijing : Wen wu chu ban she : Xin hua shu dian Beijing fa xing suo fa xing, 1984.

Jia Lanpo, and Huang Weiwen, 1985a, "On the Recognition of China's Palaeolithic Cultural Traditions." In Wu Rukang and J. W. Olsen, (eds.). *Palaeoanthropology and Palaeolithic Archaeology in the People's Republic of China.* Pp. 259-265. Orlando: Academic Press, 1985.

Jia Lanpo and Ho Chuan Kun, "Lumière nouvelle sur l'archéologie paléolithique chinoise." *L'Anthropologie* 94 (1990): 851-860.

SECONDARY SOURCES

Lanpo Jia; Xiang Lin; Mingsheng Li. **世纪老人的话. 贾兰坡卷**. Shenyang Shi: Liaoning jiao yu chu ban she, 2000.

大師導讀: 北京猿人: 賈蘭坡和他的考古大發現. Taibei shi: Long tu teng wen hua, 2011.

Dennis A. Etler, "Jia Lanpo (1908-2001)," *American Anthropologist* 104 (2002): 297–299.

John W. Olsen. "A Tribute to Jia Lanpo (1908-2001)." *Asian Perspectives* 43 (2004): 191-196.

* I would like to acknowledge the assistance of Lo Kuan-Hung in translating Chinese sources.

Louis Lartet (1840-1899)

Louis Lartet

Louis-Marie-Hospice Lartet was born in Castelnau-Magnoac, in the southwest of France, on 18 December 1840. His father, Édouard Lartet, was a geologist and prehistorian who played an important role in establishing the study of Ice Age humans in France. During the 1860s Édouard Lartet and the English banker Henry Christy explored caves and rock shelters in the Vézère valley where they found Paleolithic artifacts and animal figures carved from ivory and reindeer antler. Louis Lartet grew up wandering the countryside around the family home in the department of Gers, where he developed an interest in nature and especially for collecting shells and fossils. The latter led him to pursue studies in geology. Lartet studied for two years at the lycée in Toulouse beginning in 1852, but the family later moved to Paris where his father cultivated relationships with many leading French scientists.

Lartet's geological career advanced significantly during the 1860s when he was offered several research valuable opportunities. He became an assistant (préparateur) at the Muséum National d'Histoire Naturelle (National Museum of Natural History) in October 1862, which placed him in one of the most important scientific institutions in the country. That same year he was invited to join the French paleontologist Édouard de Verneuil on a geological expedition in Spain. While there Verneuil and Lartet, accompanied by the Spanish geologist Casiano de Prado, visited the archaeological site of San Isidro, in Madrid, where they found a Paleolithic flint axe in Pleistocene deposits. Verneuil and Lartet published a paper on this artifact, which was significant because it was the first evidence for Ice Age humans found in Spain (Verneuil and Lartet 1863). Lartet became a member of the Société Géologique de France (Geological Society of France) in 1863. The following year he was offered an opportunity to join an expedition organized by a French aristocrat, the Duc de Luynes.

Honoré-Théodoric-Paul-Joseph d'Albert de Luynes was a scholar with an interest in both history and archaeology. The purpose of de Luynes' expedition was to explore Palestine and surrounding regions and especially to investigate the origin of the Dead Sea. Lartet was responsible for conducting geological research during the expedition, which lasted from February 1864 to June 1865. While investigating the deposits along the Dead Sea, Lartet took the opportunity to collect information on the archaeology of the region as well. He studied the dolmens located along the Dead Sea at the ancient site of Ammonitide, at Manfoumieh near Mount Nebo, and at Djebel Attarus. These monuments consisted of four large stones forming the sides of the dolmen, with a circular opening forming an entrance, and one stone covering the top. He also explored the extensive Roman ruins and the necropolis at Um-Keis, the site of the ancient city of Gadara, located near the Sea of Galilee. When the expedition traveled to Syria, Lartet conducted excavations at Nahr el Kelb, where he unearthed flint knives and other stone tools as well as broken bones belonging to animals that were either extinct or that no longer lived in the region. Lartet also found stone tools along the coast of Lebanon during this expedition.

The geological research that Lartet conducted during this expedition served as the subject of his doctoral thesis, titled *Essai sur la géologie de la Palestine et des contrées avoisinantes telles que l'Egypte et l'Arabie: comprenant les observations recueillies dans le cours de l'expédition du duc de Luynes à la Mer Morte* (Essay on the Geology of Palestine and Neighboring Countries such as Egypt and Arabia), which was submitted to the faculty of sciences at the University of Paris in 1869. The thesis was published in the journal *Annales des sciences géologiques* and also appeared as a book. The second part of this work, which dealt with paleontology, was delayed by the onset of the Franco-Prussian War and was not published until 1872 (both in the *Annales des sciences géologiques* and as a book. Lartet later published *Exploration géologique de la Mer Morte, de la Palestine et de l'Idumée* (Geological Exploration of the Dead Sea, Palestine, and Idumea) (1876), which discussed the geology and paleontology of Palestine. In this book he included a chapter that discussed the new evidence pertaining to human prehistory in the region. The discovery of Stone Age artifacts in this region was significant because it was seen as the cradle of civilization by many scholars, who thought that civilization had been introduced into a culturally and technologically less advanced prehistoric Europe from a civilized Orient. Lartet had to deal with the topic of human prehistory in the Holy Land cautiously given its implications for biblical notions of human history since this was potentially a sensitive subject for the church.

After his return from the Dead Sea expedition in 1865 Lartet accompanied his father on a trip to Spain. Louis examined caves in Álava and the Cameros Mountains, but ill health prevented Édouard from participating in this work. Louis explored twenty caves in the area around Torrecilla de Cameros; including a collection of caverns called the Lóbrega Cave. He collected animal bones as well as stone tools from caves at Peña de la Miel, which he attributed to the Reindeer Age. He also unearthed human bones, stone tools, and pottery from the Lóbrega Cave, which he dated to the late Stone Age (Lartet 1866; see also Pelayo López and Gozalo Gutiérrez 2013). The German anthropologist Franz Ignaz Pruner-Bey, living in Paris at the time, published a description of these artifacts and human bones (Pruner-Bey 1866). Lartet was becoming increasingly involved in the study of Ice Age humans. Throughout the 1860s Lartet and periodically assisted his father with the excavation of Paleolithic sites in the Vézère valley. Lartet became involved with the Congrès International d'Anthropologie et d'Archéologie Préhistoriques (International Congress of Prehistoric Anthropology and Archaeology) soon after it was first conceived in 1866. These were meetings that brought together geologists, paleontologists, archaeologists, and anthropologists from across Europe to discuss the many new discoveries being made about human prehistory. Lartet served as the secretary of the third meeting of the Congress when it met in England, at Norwich and London, in 1868.

Lartet is best known for his excavations at the Cro-Magnon rock shelter near the village of Les Eyzies. During construction of a railroad through the village in March 1868, workmen dug into the floor of the rock shelter where they encountered artifacts and human bones. After the authorities were informed and the scientific importance of the site was recognized Victor Duruy, from the Ministry of Public Education, asked Lartet to conduct a thorough excavation. He unearthed artifacts made from flint, ivory, and reindeer antler, but most importantly he recovered four partial human skeletons and one infant skeleton. Lartet's task was to confirm the authenticity of these objects and to determine their geological age. The animal bones from the site, which included mammoth and reindeer, were studied by Édouard Lartet and indicated that the human remains dated to the end of the Pleistocene. Lartet presented a paper on his discoveries at Cro-Magnon on 21 May 1868 at the Société d'Anthropologie de Paris (Anthropology Society of Paris) and published a paper defending the geological antiquity of the human skeletons (Lartet 1868a; 1868b). The idea that humans lived during the Ice Age was a recent and still controversial idea. Geologists had only found a small number of human bones in Pleistocene deposits to this point and the skeletons from Cro-Magnon offered invaluable information regarding who these Ice Age people were. Several prominent anthropologists, including Franz Ignaz Pruner-Bey (1868a; 1868b), Paul Broca (1868a; 1868b), and Armand de Quàtrefages and Ernest-Théodore Hamy (1874) examined the skeletons and concluded that they belonged to a distinct race of people who lived in Europe during the Ice Age.

Illustration of a skull from Cro-Magnon. (From Edouard Lartet and Henry

Christy, Reliquæ Aquitanicæ, London: William and Morgate, 1875, Appendix, 'Description of the Plates', 'C', Skulls and Bones, Plate 1)

In 1869 Lartet resigned from his position as assistant at the Museum of Natural History to become a préparateur at the Sorbonne. His career was on an upward trajectory following his successful completion of the excavations at Cro-Magnon, but then several disasters befell him. The first was the Franco-Prussian War (1870-1871), which caused Lartet to leave Paris and during the war he served as a sergeant-major in Gers. Lartet suffered considerable stress as a result of the war, which was compounded by the death of his father in 1871. These two events deeply affected Lartet and seem to have disrupted the course of his career. At the end of the war he returned to Paris but he soon left for the south of France. Once more Lartet was called upon to supervise excavations following yet another discovery of Ice Age human remains found in a rock shelter in the Pyrenees.

The events that prompted this began in 1872 when Raymond Pottier, a member of the Société Française d'Archéologie (French Society of Archaeology), found Stone Age artifacts in Landes and Chalosse. Pottier then enlisted the assistance of Gatien Chaplain-Duparc in the excavations. Chaplain-Duparc was a former officer of the merchant navy and in his many travels throughout the world he had collected ethnographic and archaeological objects. French anthropologist Ernest-Théodore Hamy had encouraged Chaplain-Duparc to excavate caves in the Pyrenees and he had examined the tumulus of Garin, near Luchon, as well as excavating several caves near Lorthet. Pottier and Chaplain-Duparc began excavating the rock shelter of Duruthy, located near Sorde (Basses-Pyrénées) in 1873. In addition to artifacts they unearthed a human skeleton and when a second skeleton was discovered on 12 January 1874 Lartet was called in to take over the excavations. In the lowest strata of the rock shelter Lartet and Chaplain-Duparc recovered parts of a human skeleton, including a skull, along with a necklace made from cave lion and cave bear teeth. Immediately above this was a charcoal layer containing Magdalenian artifacts including arrowheads associated with animal bones. Above this was a layer containing human bones belonging to more than thirty individuals along with flint implements (Lartet and Chaplain Duparc 1874). The results of the excavations at Duruthy were presented at the Société d'Anthropologie de Paris on 18 June 1874 and a month later at the meeting of the Congrès International d'Anthropologie et d'Archéologie Préhistoriques held in Stockholm, Sweden. These discoveries were important because they provided later researchers with evidence regarding the material culture and the inhabitants of France spanning the period from the so-called Reindeer Age (during the late Paleolithic) to the Neolithic.

Lartet accepted a position teaching geology at the University of Toulouse in 1873. Initially his appointment was as a suppléant or lecturer in the Faculty of Sciences, but in 1879 he was promoted to Chair of Geology and Mineralogy at the university when Alexandre Leymerie retired. Lartet devoted his time to teaching and studying the geology of the Pyrenees. He also undertook the massive task of organizing the mineralogy and paleontology collections of the Faculty of Science in a new building at the university. Lartet served as an important member of the Council of the University of Toulouse for a number of years. Lartet saw to the completion and publication of the *Description géologique et paléontologique des Pyrénées de la Haute-Garonne* in 1881, which his predecessor Alexandre Leymerie had left unfinished.

Lartet was a member of several local and national scientific societies. He became a member of the Société Géologique de France in 1863 and of the Société Archéologique du Midi de la France in 1874. He became a member of the Société d'Agriculture de la Haute-Garonne in 1880, of the Académie des Sciences, Inscriptions et Belles-Lettres de Toulouse in 1882, and of the Société d'Histoire Naturelle de Toulouse in 1883. He was also a member of the Société Archéologique, Historique, Littéraire et

Scientifique du Gers. Lartet was elected a Foreign Correspondent of the Geological Society of London in 1882. Lartet retired as a professor at the University of Toulouse due to poor health in 1899 and returned to Seissan, in Gers, where he died in his family home in August. None of the obituaries published at the time give the date of this death, but his funeral was held on 16 August 1899.

SELECTED BIBLIOGRAPHY

Edouard de Verneuil and Louis Lartet, "Note sur un silex taillé trouvé dans le diluvium des environs de Madrid." *Bulletin de la Société Géologique de France* 20 (1863): 698-702.

"Note sur la découverte de silex taillés en Syrie accompagnée de quelques remarques sur l'âge des terrains qui constituent la chaîne du Liban." *Bulletin de la Société Géologique de France* 22 (1865): 537-545.

"Poteries primitives, instruments en os et silex taillés des cavernes de la Vieille Castille (Espagne)." *Revue archéologique* 13 (1866): 114-134.

"Sur les grottes du bassin de l'Èbre (Espagne) où sont trouvés des ossements de mammifères fossiles et de vestiges de l'industrie humaine". *Bulletin de la Société Géologique de France* 23 (1866): 718.

"Sur les découvertes relatives aux temps préhistoriques faites en Palestine." *Compte rendu de la Congrès International d'Anthropologie et d'Archéologie Préhistoriques* [1867] (1868): 115-119.

"Mémoire sur une sepulture des anciens troglodytes du Périgord." *Annales des sciences naturelles: Zoologie et paléontologie* ser 5, 10 (1868a): 133-45.

"Une sépulture des troglodytes du Périgord," *Bulletins de la Société 'Anthropologie de Paris* 3 (1868b): 335-349.

Essai sur la géologie de la Palestine et des contrées avoisinantes, telles *que l'Egypte et l'Arabie: comprenant les observations recueillies dans le cours de l'expédition du duc de* Luynes à la Mer Morte. Paris: V. Masson, 1869.

"Une sépulture des troglodytes du Périgord à Cro-Magnon", suivi de "Remarques sur la faune de Cro-Magnon". *Matériaux pour l'histoire naturelle et primitive de l'homme,* V, pp. 97-108, 7 fig. (English translation in Lartet E. et Christy H., *Reliquiae Aquitanicae*).

Essai sur la géologie de la Palestine et des contrées avoisinantes, telles que l'Egypte et l'Arabie: comprenant les observations recueillies dans le cours de l'expédition du duc de Luynes à la Mer Morte. *Part 2: Paléontologie*. Paris: Masson, 1873.

"Traces de l'homme préhistorique en Orient." *Matériaux pour l'histoire naturelle et primitive de l'homme* 8 (1873): 177-194.

"Gravures inédites de l'âge du renne paraissant représenter le Mammouth et le Glouton." *Matériaux pour l'histoire naturelle et primitive de l'homme* 9 (1874): 33-36.

Louis Lartet and Chaplain-Duparc, "Sur une sépulture des anciens Troglodytes des Pyrénées superposée à un foyer contenant des débris humains associés à des dents sculptées de lion et d'ours." *Matériaux pour l'histoire primitive et naturelle de l'homme* 9 (1874): 101-67. 302-330

Honoré d'Albert Luynes, duc de; Ch Mauss; Henri Joseph Sauvaire; Louis Marie Horpice Lartet; Louis Vignes; marquis de Melchior Vogüé, *Voyage d'exploration à la mer Morte, à Petra, et sur la rive gauche du Jourdain*. 3 volumes. Paris: A. Bertrand, 1874. (Volume 3 on geology is written by Lartet).

"Sur un atelier de silex taillés et une dent de Mammouth trouvés près de Saint-Martory, aux environs d'Aurignac (Hte-Garonne)." *Matériaux pour l'histoire naturelle et primitive de l'homme* 10 (1875): 272-275.

Exploration géologique de la Mer Morte de la Palestine et de l'Idumée. Paris: A. Bertrand, 1876.

OTHER SOURCES

Franz Ignaz Pruner-Bey. “Description sommaire des restes humains découverts dans les Grottes de Cro-Magnon, prés de la station des Eyzies, arrondissement de Sarlay (Dordogne), en Avril 1868.” *Annales des sciences naturelles: Zoologie et paléontologie* ser 5, 10 (1868): 145-155.

Franz Ignaz Pruner-Bey, “Sur les ossements humains des Eyzies.” *Bulletins de la Société d’Anthropologie de Paris* 3 (1868): 416-446.

Paul Broca, “Sur les crânes et ossements des Eyzies.” *Bulletin de la Société d’Anthropologie de Paris* 3 (1868): 350-392.

Paul Broca, Description sommaire des restes humains découverts dans les grottes de Cro-Magnon près de Les Eyzies, *Annales de Sciences naturelles, Zoologie et Paléontologie* 10 (1868): 145-155.

Armand de Quàtrefages and Ernest Théodore Hamy. “La race de Cro-Magnon dans l’espace et dans le temps.” *Bulletin de la Société d’Anthropologie de Paris* 9 (1874): 260-266.

Francisco Pelayo López and Rodolfo Gozalo Gutiérrez, “Confirming Human Antiquity: Spain and the Beginnings of Prehistoric Archaeology.” *Complutum* 24 (2013): 43-50.

SECONDARY SOURCES

E. C., [Obituary for Louis Lartet] *Revue des Pyrénées* 11 (1899): 601-602.

Marcellin Boule, “Mort de Louis Lartet.” *L’Anthropologie* 10 (1899): 497-498.

E. de Margerie, “Éloge de Louis Lartet.” *Bulletin de la Société géologique de France* ser. 3, 28 (1900): 511.

A. Lavergne, “Louis Lartet.” *Revue de Gascogne* 41 (1900): 177-182,

Emile Cartailhac, “Eloge de Louis Lartet.” *Mémoires de la Société Archéologique du Midi de la France* 16 (1903): 9-18.

Père André. “Louis Lartet (1840-1899) fils et digne successeur d'Édouard Lartet." *Bulletin de la Société Archéologique, Historique, Littéraire et Scientifique du Gers* 72 (1971): 458-467.

A. M. Monseigny and A. Cailleux, "Lartet, Louis." In *Dictionary of Scientific Biography*. Charles Gillispie (ed.). Vol. 8, pp. 44-45. New York: Charles Scribner's Sons, 1981.

G. Laurent, "Louis Lartet 1840-1899." In *Dictionnaire du Darwinisme et de l'Évolution* (p. tOrt, dir.), puF, paris, (1996) II: 2582-2583

Henri Martin (Léon Henri-Martin) (1864-1936)

Henri Martin

Henri Martin was born in Paris on 5 March 1864 into an illustrious family. His father Henri-Charles Martin was a physician, naturalist, and explorer who amassed a substantial entomological collection that he donated to the Muséum National d'Histoire Naturelle. His mother was Marie Joséphine Elisabeth Duseigneur, whose father was the sculptor Jean Bernard Duseigneur. Martin's paternal grandfather, also named Henri Martin, was a famous historian who served as a Senator in the French government. He was also a member of several prominent institutions including the Société de Anthropologie de Paris, the Académie Française, and he served as president of the Commission des Monuments Mégalithiques. He was, moreover, a friend of Jacques Boucher de Perthes, whose excavations in the 1830s and 1840s provided some of the earliest archaeological evidence for the existence of humans during the Ice Age. Before proceeding further it will be helpful to address the change in Martin's name. For most of his career he was known and published under the name Henri Martin, although he was often distinguished from his grandfather by the title of doctor Henri Martin. The French government authorized Martin to change his name to Léon Henri-Martin on 15 June 1931, yet there is evidence in some documents that he informally went by this name for many years prior to having it officially changed. Since current writers refer to him as Léon Henri-Martin, I will do so hereafter.

As a young boy Henri-Martin had an interest in the natural sciences, which led him to accompany his father on voyages to the Caucasus and to Algeria. During the meeting of the Association Française pour l'Avancement des Sciences (French Association for the Advancement of Science) in Algiers in 1881 Henri-Martin joined an excursion organized by his grandfather to see the megalithic monuments of Algeria located in the province of Constantine. Henri-Martin graduated with a degree in the natural sciences from the Sorbonne in 1888 and with the encouragement of his father he then decided to study medicine. He entered the Faculty of Medicine at the University of Paris where he studied under the renowned professor of histology Mathias-Marie Duval. Henri-Martin served as an externe at the hospital of Paris and obtained his degree in medicine in 1894 with a thesis titled *Recherches anatomiques et embryologiques sur les artères coronaires du cœur chez les vertébrés* (*Anatomical and Embryological Researches on the Coronary Arteries of the Heart among the Vertebrates*), which earned a gold medal. On 5 January 1895, shortly after completing his medical degree, Henri-

Martin married Lucie-Marie-Louise Huet. They had three children: Charlotte-Simone, Charlotte-Germaine, and Bernard.

As reflected in the topic of his medical thesis, Henri-Martin's early scientific interest was in embryology and herpetology. He spent the period from 1899 to 1901 studying the organs relating to venom in vipers, which led to the publication of several papers on the subject. Henri-Martin's life as a physician and researcher living in Paris was interrupted in December 1908 when he went to Messina as the head of the French delegation of the Red Cross, part of the international relief effort, after the great earthquake and tsunami that struck the Sicilian city. When the First World War began Henri-Martin insisted on joining the war effort despite his age. He served as a volunteer doctor (Médecin-major of a regiment) and later became the assistant to the Médecin général attached to the Third Army. He was wounded twice during the war, first during the bombardment of Arras and later at Verdun. When doctors at the front noticed that apparently minor chest wounds often proved fatal as a result of complications Henri-Martin was put in charge of an investigation into this phenomenon in 1916. As a result of his research, which involved performing autopsies of many soldiers, he learned the causes of these complications and for this he was awarded the prix Monthyon [Monthyon Prize for Medicine and Surgery] by the Académie des Sciences in 1918, and the prix Godard (Godard Prize) by the Académie de Médecine in 1919.

In May 1916 the French government established a service called the Archives et Documents de la Guerre (Archives and Documents of the War) which led to the creation of a museum located at Val-de-Grâce in Paris (the Musée du service de santé des armées, colloquially called the Musée du Val-de-Grâce) that consisted of an anatomy and clinical collection, a historical museum, and a library. The archives and collections were designed to illustrate the work of the military health service during the Great War. Henri-Martin and several other doctors were responsible for the anatomical and clinical collection. During the war he conducted thousands of autopsies of soldiers, which allowed him to assemble a unique collection displaying combat wounds in various organs of the human body. For years after the war this collection at the museum was used to train military doctors at the Ecole d'Application du Service de Santé Militaire. As part of this work Henri-Martin also published a respected work on the combat wounds in the lungs that received a grand prize from the Académie des Sciences. He also contributed to the *Iconographie du Musée du Val-de-Grâce* (*Iconography of the Museum of Val-de-Grâce*), composed under the direction of Octave Jacob who was the Médecin militaire inspecteur during the war, which illustrated and described the wounds sustained by soldiers (Jacob 1918).

While Henri-Martin's early scientific interests were in embryology and herpetology, by the turn of the new century his interests turned to prehistoric archaeology. He was one of the founding members (along with Paul Reymond and Emile Rivière) of the Société Préhistorique de France when it was formally established in 1904 (it was renamed the Société Préhistorique Française in 1911). Henri-Martin attended the first Congress held by the Société Préhistorique de France in the French town of Périgueux in 1905 and this led to the events that would define the rest of his career. During the Congress he visited the site of La Quina, located about thirty kilometers southeast of the town of Angoulême in the department of Charente. The site consists of a rockshelter and deposits lying at the foot of a cliff along the Voultron River. Archeologists had previously explored the site but Henri-Martin recognized its potential significance so he bought the land with the intention of undertaking new excavations. The French prehistoric archaeologist and geologist Gustave Chauvet first explored La Quina in 1872 and the construction of a road there in 1881, which exposed animal bones and artifacts, led Chauvet and others to conduct new excavation. Henri-Martin began new excavations at La Quina in 1905 and he continued working at the site until 1936. His numerous archaeological and paleontological discoveries and his many publications based on his years of research at La Quina made important contributions to Paleolithic archaeology and paleoanthropology.

Henri-Martin still had his medical practice in Paris, but between 1905 and the outbreak of war in 1914 he devoted his vacations to exploring the deposits at La Quina. He conducted meticulous excavations, digging a trench that exposed the stratigraphy of the site. He unearthed Mousterian and Aurignacian occupation levels that contained abundant stone and bone tools as well as numerous animal bones. The animal fossils in the Mousterian level were mostly reindeer and horse with some mammoth, cave hyena, bison, and other animals. The vast collection of artifacts found at the site over the years allowed Henri-Martin to trace the development of bone and stone tools during the Mousterian at La Quina. He undertook innovative studies of bone artifacts (made from the humerus and foot bones from horse, reindeer, and bison) that were used to retouch flint tools, which shed light on how some Mousterian tools were made. While identifying and classifying the various types of artifacts found at La Quina, Henri-Martin described intensively retouched stone tools from the site that he called Moustérienne perfectionée (perfected Mousterian). He also traced the development of Mousterian artifacts, which displayed greater complexity over time, thus demonstrating the improvement of Neanderthal tool-making abilities throughout the Mousterian. Henri-Martin did most of the excavating at La Quina himself, although over the years he was assisted by several people including Louis Giraux, who was one of the founding members of the Société Préhistorique de France. Giraux collaborated with Henri-Martin in studying the bone tools and the evidence of butchery found on animal bones at the site. In fact, Henri-Martin pioneered the study of the marks that stone tools leave on animal bones.

The results of these early studies of the Mousterian artifacts and animal bones at La Quina led to a series of monographs that appeared sequentially over many years. *Recherches sur l'évolution* *du Moustérien dans le gisement de La Quina, Charente. Ossements utilisés* (*Researches on the Evolution of the Mousterian in the Deposits of La Quina, Charente*), published in two sections in 1907 and 1909, discussed the use of bone tools during the Mousterian and presented a stratigraphy of the site. This was followed by a third installment on bone tools published in 1910, which along with the previous two sections form the first volume of *Recherches sur l'évolution du Moustérien dans le gisement de La Quina, Charente.* Volume two, titled *Recherches sur l'évolution du Moustérien dans le gisement de La Quina, (Charente). Industrie lithique*, was published in 1923. In addition to describing the stone tools from La Quina and presenting a typology of stone tool types the monograph reflects Henri-Martin's interest in examining how Mousterian people used stone tools.

In addition to stone and bone tools Henri-Martin also began to find isolated fragments of fossilized human bones. Then on 18 September 1911 Henri-Martin unearthed a skeleton of a female Neanderthal lying at the base of the Mousterian layer. His first announcement of the discovery was at the Académie des Sciences on 16 October 1911 (Henri-Martin 1911a), which was followed by a paper read on 26 October at the Société Préhistorique Française (Henri-Martin 1911b). During the 1912 meeting of the Congrès Préhistorique de France held in the nearby town of Angoulême, Henri-Martin guided the attendees through the site so they could inspect the deposit where the Neanderthal skeleton was found. Neanderthal skeletons were rare and there was still a great deal that was uncertain about their anatomy and their place in human evolution. A nearly compete Neanderthal skeleton discovered in August 1908 in a cave near the French village of La Chapelle-aux-Saints had been taken to the Museum of Natural History in Paris where the paleontologist Marcellin Boule conducted the most thorough examination to date of any Neanderthal remains (Boule 1911, 1912, 1913). Boule's conclusions were very influential and they elevated the La Chapelle-aux-Saints skeleton to considerable prominence, but it was not the only Neanderthal skeleton recently discovered. Otto Hauser, a Swiss amateur archaeologist, unearthed a nearly complete Neanderthal skeleton from the French site of Le Moustier in March 1908, which was examined by the German anthropologist Hermann Klaatsch. And during 1909 and 1910 the French anthropologist Louis Capitan and his collaborator Denis Peyrony discovered first a male Neanderthal skeleton then a female Neanderthal skeleton at La Ferrassie. in the Vézère valley. Thus, the La Quina Neanderthal skeleton was one in a series of important Neanderthal specimens discovered in the span of just four years.

La Quina Neanderthal skull (from Hrdlička 1913, plate 39)

Henri-Martin, who was trained as an anatomist, extracted the bones from the matrix and performed an examination of the skeleton. He determined it belonged to a female and estimated that she had been less than thirty years old when she died. Despite the evidence that the La Chapelle-aux-Saints and the La Ferrassie Neanderthal specimens had been intentionally buried, the lack of disturbed sediment around the La Quina skeleton led Henri-Martin to think this was not a burial. However, a number of scientists, including the American physical anthropologist Aleš Hrdlička, questioned this conclusion. Hrdlička thought Neanderthals would not abandon their dead. Henri-Martin published several papers on his analysis of the skull from La Quina, along with a photograph of his reconstruction of the skull (Henri-Martin 1911b, 1911e, 1912a, 1912d, 1913a). His reconstruction of the skull was likely influenced by Marcellin Boule's conception of the Neanderthals and their place in human evolution, which resulted in a more simian appearance to the skull than some anthropologists were willing to agree with. Henri-Martin also published a series of papers between 1911 and 1913 containing detailed and thorough descriptions of the La Quina skeleton.

Aleš Hrdlička traveled to La Quina to visit Henri-Martin in 1912 and inspected the specimen. This allowed him to provide a lengthy description of the site and the skeleton in the *Annual Report of the Smithsonian Institution* (Hrdlička 1913). Besides the scientific descriptions of the La Quina skeleton, Henri-Martin also collaborated with the sculptor Charles Bousquet in 1913 to produce a bust representing their image of what this Neanderthal would have looked like when alive (this bust is currently held in the collections at the Musée d'Archéologie Nationale in Paris). However, while Henri-Martin agreed with Boule on the apelike nature of the Neanderthals he disagreed with him on their cultural attainments, rejecting the notion that they were brutish by noting their tools, hunting, and butchering abilities. Henri-Martin began work on a major monograph on the skeleton (*Recherches sur l'évolution du Moustérien dans le gisement de La Quina, (Charente). Vol. III, L'Homme fossile de La Quina*), but this work was delayed by World War I and only appeared in 1923 and focused mostly on the skull (Henri-Martin 1923a).

As work at La Quina progressed and Henri-Martin accumulated a growing collection of artifacts and animal fossils it became necessary to create a laboratory at the site. He bought a beautiful old structure known as the Logis du Peyrat, located near the village of Blanzaguet-Saint-Cybard. He transformed it into a country house and constructed a Laboratoire d'Études de Paléontologie Humaine to house his collection and provide workspace for his investigations. The laboratory was devoted to the study of prehistory and comparative anatomy and eventually became associated with the École Pratique des Hautes Études in 1925. As a growing number of scientists began to visit La Quina, Henri-Martin welcomed them to stay at the country house and inspect the collections at the laboratory. Among those visitors was Charles Peabody, director of the Peabody Museum at Harvard University, who visited La Quina during the meeting of the Congrès Préhistorique de France in 1912. The two men developed a close relationship and Henri-Martin decided to donate some archaeological specimens to the Peabody Museum. Peabody returned to La Quina in late September 1913 when he spent ten days assisting Henri-Martin with some excavations and he conducted a study of the stone tools from the site (Peabody 1914).

Charles Bousquet's sculpture of the La Quina Neanderthal

Henri-Martin acquired a reputation as an indefatigable researcher who was friendly and welcoming to fellow scientists that frequently visited La Quina to inspect the collections housed in the Laboratory or to participate in excavations. Henri-Martin was also active in many prominent scientific institutions in France. As mentioned earlier, he was one of the founding members of the Société Préhistorique Française and in 1910 he was named its honorary president. He remained active in the Society throughout his life and he served as president of the 1912 meeting of the Congrès Préhistorique de France, which was held in Angoulême. Henri-Martin became a member of the Société d'Anthropologie de Paris (Anthropology Society of Paris) in 1914 and he was a member of the Société Archéologique et Historique de la Charente (Archaeological and Historical Society of Charente). Henri-Martin became a member of the Institut Français d'Anthropologie (French Institute of Anthropology), which had been created in 1911, and served as its president from 1930 to 1933. He was also one of the original members of the Société des Africanistes (Society of Africanists), which was founded in 1930 to promote anthropological, sociological, linguistic, economic, archaeological, and geographical research about Africa in France.

Henri-Martin also played a role in facilitating prehistoric research by American scientists. It was Henri-Martin, through his collaborations with the American archaeologist Charles Peabody, who first suggested the establishment of the American School of Prehistoric Research. The school, which was initially called the American Foundation in France for Prehistoric Studies or alternatively the American School in France of Prehistoric Studies), was founded in 1921 through the efforts of Charles Peabody and George Grant MacCurdy, professor of anthropology at Yale University. It was created to give American students an opportunity to participate in excavations in France and to visit the country's museum collections. Henri-Martin generously invited the School to conduct excavations at La Quina and MacCurdy led the first season in 1921, Peabody led the second season in 1922, and Aleš Hrdlička led the third season in 1923 but these excavations produced few artifacts.

Henri-Martin's decades of excavations at La Quina not only produced a substantial collection of archaeological artifacts and human fossils. It allowed him to present a much more complete picture of the development of Mousterian, and even Aurignacian artifacts, than existed previously. He also developed pioneering works on taphonomy and experimental archaeology and he developed groundbreaking techniques for studying Paleolithic artifacts. He conducted detailed examinations of the Neanderthal fossils from La Quina and the *Homo sapiens* fossils from Roc-de-Sers and published careful descriptions of these finds. This important work, however, has been overshadowed by Marcellin Boule's research on the La Chapelle-aux-Saints Neanderthal. Today it seems that Henri-Martin's archaeological research is more recognized and cited than his anatomical descriptions of the human skeletal remains. Henri-Martin donated large portions of his extensive collection of archaeological and paleontological artifacts to several museums including the Musée des Antiquités Nationales, the Muséum National d'Histoire Naturelle, the Muséum de Toulouse, the Muséum d'Histoire Naturelle de Lyon, and numerous other institutions in France and abroad. A hall containing objects Henri-Martin had collected was named for him at the Musée des Antiquités Nationales. Despite receiving little financial support during the early period of his research, Henri-Martin was later praised for not selling his valuable artifacts as some archaeologists had.

He received several honors in the course of his life. He was named an Officer of the Légion d'Honneur in recognition of his service during World War I. Toward the end of his career he was given the title of director of the École Pratique des Hautes Études in recognition of his many years of work. Henri-Martin continued to work at La Quina until his death at his country house at La Peyrat, in Blanzaguet-Saint-Cybard, on 9 June 1936. He was buried at the Montparnasse Cemetery in Paris. His daughter Germaine Henri-Martin continued the excavations at La Quina and took over the Laboratory at La Peyrat. In 1976 she donated the remaining collection held at the Laboratory to the Musée des Antiquités Nationales.

SELECTED BIBLIOGRAPHY

Henri Martin and Charles Ovion, "Contribution à l'étude de la cité lacustre de Condette (Pas-de-Calais)." *Compte-Rendu de la Congrès préhistorique de France* [1905] (1906): 433-442.

Recherches sur l'évolution du Moustérien dans le gisement de La Quina, Charente. Fascicule 1, Ossements utilisés. Paris: C. Reinwald: Schleicher frères, 1907.

Recherches sur l'évolution du Moustérien dans le gisement de La Quina (Charente). Fascicule 2, Ossements utilisés. Paris: C. Reinwald: Schleicher frères, 1909.

Recherches sur l'évolution du Moustérien dans le gisement de La Quina, (Charente). Fascicule 3, Industrie osseuse. Paris: C. Reinwald: Schleicher frères, 1910.

"Sur un squelette humain de l'époque moustérienne trouvé en Charente." *Compte-Rendu de l'Académie des Sciences* 153 (1911a): 728-729.

"Présentation d'un crâne humain trouvé avec le squelette à la base du moustérien de La Quina (Charente)." *Bulletin de la Société Préhistorique Française* 8 (1911b): 615-627.

"Découverte d'un squelette humain de l'époque moustérienne inférieure de la Quina (Charente)." *L'Homme préhistorique* (1911c): 225-232.

"Dents humaines moustériennes de La Quina (Charente)." *Bulletin de la Société Préhistorique Française* 8 (1911d): 247.

"Présentation de moulages et de photographies. Reconstitution du crâne de l'homme fossile de La Quina." *Bulletin de la Société Préhistorique Française* 8 (1911e): 740-741.

"L'homme fossile moustérien de la Quina; reconstitution du crâne." *Bulletin de la Société Préhistorique Française* 9 (1912a): 389-424.

"Position stratigraphique des ossements humains recueillis dans le Moustérien de La Quina de 1908 à 1912." *Bulletin de la Société Préhistorique Française* 9 (1912b): 700-709.

"L'homme fossile de La Quina." *L'Homme préhistorique* (1912c): 225-227.

"Le crâne de l'homme fossile moustérien de La Quina." *Compte-Rendu de l'Association Française pour l'Avancement des Sciences* (1912d): 538-539.

"Répartition des ossements humains trouvés dans le gisement moustérien de La Quina (Charente)." *Compte-Rendu de l'Académie des Sciences* 155 (1912e): 982-983.

"À propos de la découverte de l'homme fossile de la Quina." *Revue des études anciennes* (1912g): 61-64.

"Reconstitution du type néanderthalien sur le crâne de l'homme fossile de La Quina " *Bulletin de la Société Préhistorique Française* 10 (1913a): 86-88.

"Nouvelle série de débris humains disséminés, trouvés en 1913, dans le gisement moustérien de La Quina." *Bulletin de la Société Préhistorique Française* 10 (1913b): 540-543.

"Présentation d'un crâne d'enfant âgé de huit ans, trouvé en place dans le Moustérien supérieur du gisement de La Quina." *Bulletins et Mémoires de la Société d'Anthropologie* 1 (1920): 113-125.

"Un crâne d'enfant néandertalien provenant du gisement de La Quina (Charente)." *L'Anthropologie* 31 (1921a): 331-334.

"Sur la répartition des ossements humains dans le gisement de La Quina." Charente, *L'Anthropologie* 31 (1921b): 340-345.

"Etude d'une rotule humaine trouvée dans le Moustérien de la Quina (Charente)." *Compte-Rendu de l'Association Française pour l'Avancement des Sciences* (1921c): 955-958.

Recherches sur l'évolution du Moustérien dans le gisement de La Quina, (Charente). Vol. II. Industrie lithique. Angoulème: Imprimerie ouvriere, 1923a.

Recherches sur l'évolution du Moustérien dans le gisement de La Quina, (Charente). Vol. III, L'Homme fossile de La Quina. Paris: O. Doin, 1923b.
"Un squelette humain d'âge indéterminé, inhumé dans le Moustérien supérieur de La Quina." *L'Anthropologie* 33 (1923c): 188.
"Un crâne trouvé en Charente (vallée du Roc)." *L'Anthropologie* 34 (1924): 298-301.
"La station aurignacienne de la Quina," *Bulletins et Mémoires de la Société d'Anthropologie de Paris* ser. 7, 6 (1925): 10-17.
Recherches sur l'évolution du Moustérien dans le gisement de La Quina, (Charente). Vol. IV. L'enfant fossile de La Quina. Angoulème: Imprimerie ouvriere, 1926.
"Mâchoire humaine moustérienne trouvée dans la station de La Quina." *L'homme préhistorique* 13 (1926d): 3-21.
"Caractères des squelettes humains quaternaires de la vallée du roc (Charente)." *Bulletins et Mémoires de la Société d'Anthropologie de Paris* ser. 7, 8 (1927): 103-129.
La Frise sculptée et l'atelier Solutréen du Roc (Charente). (Archives de l'Institut de Paléontologie humaine, Mémoire 5). Paris: Masson et Cie, 1928a.
Études sur le Solutréen de la vallée du Roc (Charente). Angoulême: Imprimerie Ouvrière, 1928b.
"Le crâne d'enfant néanderthalien de La Quina." *Bulletins et Mémoires de la Société archéologique et historique de Charente* [1926-27] (1928c): xcvi-ciii.
"Les sculptures du Roc." *Préhistoire* 1 (1932): 1-8.

OTHER SOURCES CITED

Marcellin Boule, "L'Homme fossile de la Chapelle–aux–Saints." *Annales de Paléontologie* 6 (1911): 109-172.
Marcellin Boule, "L'Homme fossile de la Chapelle–aux–Saints." *Annales de Paléontologie* 7 (1912): 105-192.

Marcellin Boule, "L'Homme fossile de la Chapelle–aux–Saints." *Annales de Paléontologie* 8 (1913): 209-278.

Aleš Hrdlička, "The Most Ancient Skeletal Remains of Man." *Annual Report of the Board of Regents of the Smithsonian Institution* (1913): 491-552 (on La Quina see pp. 544-46).

Octave Jacob, *Iconographie du Musée du Val-de-Grâce*. (With the collaboration of Doctors Lannou, Latarjet, Lefort, Henri-Martin, Pascal, Perret, de Rothschild). Paris: Aristide Quillet, 1918.

Charles Peabody, "Ten Days with Dr. Henri Martin at La Quina." *American Anthropologist* n.s. 16 (1914): 257-67.

SECONDARY SOURCES

Henri Vallois. "Le docteur Henri Martin." *Les Cahiers de Marottes et Violons d'Ingres* n. s. 47 (1959): 7-20.

A. Vayson de Pradenne (Société Préhistorique Française), R. Lantier (Musée des Antiquités Nationales), Etienne Rabaud (Institut Français d'Anthropologie), and L. Joleaud (Sorbonne), "Nécrologie: Docteur Henri-Martin." *Bulletin de la Société Préhistorique Française* 33 (1936): 354-363.

R. L. "Le Dr. Léon Henri-Martin (1864-1936)." *Revue archéologique* ser. 6, 8 (1936): 92-94.

Léonce Joleaud, "Mort du Docteur Léon Henri-Martin." *Journal des Africanistes* 6 (1936): 231-232.

Etienne Patte, "L'œuvre scientifique du Docteur Henri-Martin." *Mémoires de la Société Archéologique et Historique de la Charente* (Supplement) (1965): 79-89.

"Henri-Martin (Léon-Henri)." In François Julien-Labruyère and Robert Allary (eds.), *Dictionnaire biographique des charentais et de ceux qui ont illustré les Charentes*. Pp. 676-677. Paris: Croît vif, 2005.

Karel Maška (1851-1916)

Karel Maška

Karel Jaroslav Maška (in German his name appears as Karel Maschka while in some other languages his name appears as Charles Maska) was born on 28 August 1851 in Blansko, in southern Moravia, which at the time was part of the Austrian empire (today it is in the Czech Republic). He attended the parish school in Blansko and continued his studies at the recently established Realschule in Brno (Brünn) from 1865 to 1870, where Gregor Mendel was one of his teachers. A Realschule is a German secondary school that emphasized science and mathematics, unlike the gymnasium, which emphasized a more traditional classical education. While a student in Brno, Maška became a member of the Matice moravské (Moravian Foundation), a Czech cultural, literary, and scientific society established in 1849 during a time of Czech national revival. After graduating from the Realschule he attended the German technical university in Brno from 1870 to 1872. At this time he also became a member of the Akademický čtenářský spolek Zora (Academic Readers' Club Zora), which cultivated a Czech patriotic agenda and hosted lectures and folk music.

Maška left Brno to study first at the technical school in Vienna and later at the University of Vienna, where he studied mathematics. He graduated in 1877 after completing the state professorial exam, but he had already left Vienna in 1874 to take his first teaching position. Maška had previously held the position of Drawing Assistant at the City High School in Brno from 1870 to 1872. He then worked as a substitute teacher at the state secondary school in Jihlava from 1874 to 1875, and in 1875 he transferred to the state secondary school in Znojmo. Once he had passed the state professorial exam Maška became a teacher of mathematics at the German secondary school at Nový Jičín (Neutitschein), in Moravia, where he taught from 1879 to 1892.

Maška had already become interested in geology, paleontology, and human prehistory while he was a student in Vienna. His first excavation was of a Neolithic site near Znojmo in 1875. During this early stage of his career Maška was particularly influenced by Jindřich (or Heinrich) Wankel, who was a pioneer of Moravian Paleolithic archaeology. Wankel was a physician in Maška's hometown of Blansko, but he also conducted important research in cave exploration, paleontology, and prehistoric archaeology during the 1870s and 1880s. When he was a student, Maška worked with

Wankel on excavations and later became his professional assistant. Maška was particularly interested in studying the geology and paleontology of the Moravian karst and so began exploring the many caves in the region. Heinrich Preisenhammer, a lawyer in Nový Jičín, was the first to direct Maška's attention to the caves located nearby on Kotouč Mountain, near Štramberk (Stramberg). Since the Theresianische Akademie (Theresian Academy), a prestigious military academy in Vienna, owned the land Maška had to get their permission to excavate the caves.

He excavated several caves in the region from 1878 to 1882 and in addition to animal fossils from the Pleistocene he also began to discover human artifacts in some caves. Two caves were particularly important, Čertova díra and Šipka. In Čertova díra, which means Devil's Hole, Maška unearthed Pleistocene animal bones as well as stone artifacts distributed in five stratigraphic layers in the cave. Maška began excavating at Šipka cave in 1879 and soon found Pleistocene animal bones, charcoal from hearths, and stone tools. The stratigraphy of the cave preserved three distinctive layers of human occupation during the Pleistocene. The most remarkable discovery came on 26 August 1880 when Maška unearthed a fossil human mandible (lower jaw) from the oldest archaeological layer in the cave. The German anthropologist Hermann Schaaffhausen examined the Šipka mandible in November 1880, comparing it with the La Naulette mandible found in Belgium in 1866 and the original Neanderthal fossils found in the Feldhofer Grotte, in Germany, in 1856 (Schaaffhausen 1880; 1883). Today the Šipka mandible is considered to be Neanderthal, but when Maška announced the discovery it contributed to the debate over whether those fossils belonged merely to an early race of humans or to a distinct Neanderthal species.

Maška relied upon the ideas of the French paleontologist Edouard Lartet and the French prehistoric archaeologist Gabriel de Mortillet to locate his discoveries within a relative chronology of the Paleolithic. Lartet proposed using the animal fossils found in

Paleolithic sites to arrange them chronologically into a Cave Bear Age, followed by a Mammoth and Rhinoceros Age, then a Reindeer Age, and finally an Auroch Age. Mortillet subdivided the Paleolithic into a sequence of periods (Acheulean, Mousterian, Solutrean, and Magdalenian) based upon distinctive types of stone artifacts. Judging from the stratigraphy at Čertova díra and Šipka, and the animal fossils and artifacts found in each layer, Maška identified the earliest deposits at the two sites as dating to Lartet's Cave Bear Age where the artifacts corresponded to Mortillet's Mousterian. Then there were deposits in the upper layers of the caves belonging to the Mammoth Age, with artifacts corresponding to Mortillet's Solutrean. At another site, Pekärna cave, he argued that the deposits belonged to Lartet's Reindeer Age, with artifacts that corresponded to Mortillet's Magdalenian. Maška also referred to the recently proposed idea that the Pleistocene experienced several glacial periods separated by warmer interglacial periods when discussing the geology and fossils in the Moravian caves he had explored (Maška 1886).

Maška presented two papers before the Anthropologische Gesellschaft in Wien (Anthropological Society in Vienna) announcing his first major discoveries in the caves at Štramberk (Maška 1882a; 1882b). Thinking it important to also address a Czech audience, he published additional articles in Czech periodicals. He then gave a detailed account of his excavations and discoveries in *Der diluviale Mensch in Mähren* (Diluvial Man in Moravia) published in 1886. These discoveries were consistent with similar discoveries made in Western Europe and were important because they extended knowledge about the European Paleolithic into Moravia. The most contentious discovery was the Šipka mandible. Maška presented the Šipka mandible to his colleagues at a meeting of anthropologists held in Salzburg, Austria, in 1881. Hermann Schaaffhausen repeated his interpretation of the fossil and Jindřich Wankel noted its similarity to the La Naulette mandible and highlighted its apelike features. But Rudolf Virchow denied there were any apelike features present in the specimen and considered its peculiar morphology to be the result of pathology (Virchow 1882). Virchow, Germany’s most prominent anthropologist, was a vigorous opponent of the idea that the Neanderthal fossils found in 1856 belonged to an apelike evolutionary ancestor of modern humans and consistently opposed similar interpretations of other fossils.

Many other scientists examined the Šipka fossil in the years following its discovery, including the German anthropologists Gustav Schwalbe and Johannes Ranke, and the Czech paleontologist Jan Woldřich. The German dentist Robert Baume examined the mandible and concluded it belonged to a primitive Pleistocene human race (Baume 1883). Another German dentist and researcher, Otto Walkhoff, took an X-ray photograph of the fossil that helped to determine it belonged to a child. He also compared this fossil to other mandibles from Spy, Goyet, and Krapina and argued it belonged to the same geological period as the Neanderthal fossils discovered by the Croatian paleontologist Dragutin Gorjanović-Kramberger at Krapina between 1899 and 1905. There was also a growing consensus by the turn of the twentieth century that the Šipka specimen was Neanderthal (or *Homo primigenius* as some scientists now referred to the species). However, Virchow and Ranke continued to argue that its features were due to pathology.

Jindřich Wankel

Following the excavations at Štramberk, Maška joined his friend and colleague Jindřich Wankel in excavations at Předmostí in 1882. Předmostí (or Predmost) is an open-air site of loess deposits located in the Bečva river valley near Přerov, in eastern Moravia. Wankel discovered the site in 1879 and conducted excavations there from 1880 to 1882 and from 1884 to 1886. Maška excavated Predmost from 1882 to 1895, with the assistance of Martin Kříž who joined the excavation in 1884. Wankel and Maška found huge numbers of mammoth bones at Predmost, which led them to suggest that prehistoric mammoth hunters had killed these animals (Wankel 1890; 1892; Maška 1889a). Maška also identified three archaeological layers at the site containing artifacts made from stone, bone, and ivory that he dated to the end of the Paleolithic. His most significant discovery, however, came on 7 August 1894 when he unearthed a Paleolithic "mass grave" containing at least twenty individuals, including eight adults and twelve juveniles (including three infants). Fourteen skeletons were nearly complete but six were fragmentary.

By the end of August 1894 Maška had managed to excavate the entire grave. In addition to the skeletons and artifacts, Maška also discovered several so-called Predmost Venus figurines, mammoth metacarpals (finger bones) that had been carved into human figures. These human skeletons and artifacts are now considered to belong to the Gravettian period and are considered to be from 24,000 to 37,000 years old. The discoveries at Predmost were remarkable for the large number of human skeletons recovered and for the specimens of Paleolithic art. Maška traveled widely presenting papers and displaying his discoveries at anthropological meetings and in public lectures from 1881 until 1913.[1] In 1891 he displayed his prehistoric collection at the Jubilee Exhibition in Prague. Most significantly he read a paper and presented specimens from the Paleolithic tomb at Predmost at the meeting of the Congrès International d'Anthropologie et d'Archéologie Préhistoriques (International Congress of Prehistoric Anthropology and Archaeology) held in Paris in 1900 (Maška 1902).

Over the many years that Maška excavated Paleolithic sites in Moravia he tried to interpret his discoveries in the light of the new ideas that were being proposed about Pleistocene geology and prehistoric archaeology. He originally described his paleontological discoveries within the framework of the diluvial geology that was prominent during the first half of the nineteenth century. However, when geologists began to promote the idea that glaciers covered much of Europe during the Pleistocene and that the climate had been much colder than today, Maška adopted the new Ice Age theory. He was familiar with the research of Albrecht Penck, a German geologist and professor at the University of Vienna, who argued that the Ice Age was actually a series of colder glacial periods separated by warmer interglacial periods, and Maška gradually integrated these ideas into his research. He was also familiar with French paleontologist Marcellin Boule's attempts to correlate Gabriel de Mortillet's periodization of Paleolithic artifacts with Penck's geological sequence of glacial and interglacial periods. While Maška primarily investigated Paleolithic sites he also excavated the Hallstatt tumulus in Hlásnice where he found a burial containing bronze objects, a gold ring and an amber pearl. In the same mound he unearthed a human skeleton buried with a spear and armor, and two bronze dishes.

For most of these years Maška had been working as a teacher in Nový Jičín, which gave him sufficient opportunity to conduct excavations in his free time. Thus, it was with some reluctance that he agreed to become the director of the secondary school in Telč in 1892, knowing this would interfere with his excavations. Maška retired from this position in 1915 and returned to Brno to become the curator of the geological and paleontological department of the Moravské zemské muzeum (Moravian Land Museum). In 1902 Maška had approached the museum about buying his extensive collection of more than 200,000 archaeological and paleontological specimens. Negotiations continued for several years and in 1907 the museum agreed to purchase a large portion of Maška's collection and it was finally moved to the museum in 1909. Maška devoted much of his time as curator at the museum organizing its archaeological collections and integrating his own specimens into it.

Maška was a member of several prominent Austrian scientific institutions, including the Anthropologische Gesellschaft in Wien (Anthropological Society in Vienna) and the Central-commission zur Erforschung und Erhaltung der Kunst-und Historischen Denkmale (Central Commission for Research and Preservation of Art and

Historic Monuments). He was also a member of many Moravian and Czech scientific and cultural organizations, some of which were intended to promote Czech culture and nationalist goals. He was a founding member of the Moravská musejní společnost (Moravian Museum Society) in Brno and chaired its opening meeting in 1888. In 1891, only a year after Emperor Franz Joseph I approved its creation, Maška became a member of the Česká akademie pro vědy, slovesnost a umění (Czech Academy of Science, Literature and Art), which had its headquarters in Prague. He was elected a member of the Královská česká společnost nauk (Royal Bohemian Society of Sciences) in 1913. He was also a member of the Přírodovědecký klub v Brně (Natural Science Club of Brno). Maška was a corresponding member of the Vlastenecký musejní spolek v Olomouci (Patriotic Museum Association in Olomouc), which was created in 1883, as well as a foreign member of the Archeologický spolek Včela Čáslavská (Archaeological Association Včela Čáslavská). He received several honors toward the end of his life, including from Emperor Franz Joseph I.

While Maška's discoveries were widely discussed in Austria and Germany they received little attention elsewhere until the publication of Robert Munro's *Palaeolithic Man and Terramara Settlements in Europe* (1912), Aleš Hrdlička's *The Most Ancient Skeletal Remains of Man* (1915), and Henry Fairfield Osborn's *Men of the Old Stone Age* (1916). Unfortunately, no anthropologist conducted an extensive analysis of the human skeletons from Predmost until the Czech anthropologist Jindřich Matiegka published descriptions of the fossils in the 1930s (Matiegka 1934; 1938). These two monographs, along with casts made of several of the Predmost skulls, offer modern scientists invaluable information because the fossils were destroyed during the Second World War. Objects from the Moravian Museum, including Maška's collection, were removed to Mikulov Castle, in southern Moravia, for safekeeping but in 1945 the castle was destroyed when Germans set fire to the castle.

Maška died of a stroke on 6 February 1916 in Brno.

SELECTED BIBLIOGRAPHY

Über den diluvialen Menschen in Stramberg. *Mitteilungen der Anthropologischen Gesellschaft in Wien* 12 (1882): 32-38.

"Versammlung österreichischen Anthropologen und Urgeschichtsforscher zur Salsburg." *Mittheilungen der Anthropologischen Gesellschaft in Wien,* Bd XII (1882).

"Pravěké nálezy ve Štramberka." *Časopis Vlastivědného spolku musejního Olomouc* 1 (1884): 15-22, 64-69, 152-159.

Der diluviale Mensch in Mähren. Ein Beitrag zur Urgeschichte Mährens. Programm der mährischen Landes-Oberrealschule in Neutitschein für das Schuljahr 1885-86. Neutitschen: Selbstverlag, 1886.

"Die mährischen Mammuthjäger in Predmost." *Correspondenz-blatt der deutschen Gesellschaft für Anthropologie, Ethnologie und Urgeschichte* 20 (1889): 9-11.

"Ueber die Gleichzeitigkeit des Mammuth: mit dem diluvialen Menschen in Mähren." *Correspondenz-blatt der deutschen Gesellschaft für Anthropologie, Ethnologie und Urgeschichte* 20 (1889): 114-119.

"Ueber zwei neue Jadeitfunde in Mähren." *Correspondenz-blatt der deutschen Gesellschaft für Anthropologie, Ethnologie und Urgeschichte* 20 (1889): 212-214.

"Ein viertes Jadeitbeil in Mähren." *Mittheilungen der anthropologischen Gesellschaft in Wien* 19 (1889): 42-45.

"Lössfunde bei Brünn und der diluviale Mensch." *Mitteilungen der Anthropologischen Gesellschaft in Wien* 19 (1889): 46-64.

"Nález diluvialniho clovéka v Predmosti." *Ceský Lid* 4 (1895): 161-164.

"La station paléolithique de Predmost en Moravie (Autriche)." *Compte rendu de la Congrès International d'Anthropologie et d'Archéologie Préhistoriques* [1900] (1902): 130-132.

Charles Maška and Hugo Obermaier, "La station solutréenne de Ondratitz (Moravie)." *L'Anthropologie* 22 (1911): 403-412.

Charles Maška, Hugo Obermaier, and Henri Breuil, “La statuette de mammouth de Predmost.” *L’Anthropologie* 23 (1912): 273-285.
“Soška mamutí z Předmostí.” *Pravěk* 8 (1912): 5-12.

OTHER SOURCES CITED

Robert Baume, *Die Kieferfragmente von La Naulette und aus der Schipkahöhle. als Merkmale für die Existenz inferiorer Menschenrassen in der Diluvialzeit*. Leipzig: Arthur Felix, 1883.
Jindřich Matiegka, *Homo předmostensis: fosilní člověk z Předmostí na Moravě. 1 Lebky.* Prague: Nakladema Ceske Akademie ved a umeni, 1934.
Jindřich Matiegka, *Homo předmostensis: fosilní člověk z Předmostí na Moravě. 2 Ostatní části kostrové.* Prague: Nakladema Ceske Akademie ved a umeni, 1938.
Hermann Schaaffhausen, “Funde in der Schipkahöhle in Mähren.” *Verhandlungen des naturhistorischen Vereins der Preussischen Rheinlanden und Westfalens* 37 (1880): 260-264.
Hermann Schaaffhausen, “Ueber den menschlichen Kiefer aus der Schipka-Höhle bei Stramberg in Mähren.” *Verhandlungen des naturhistorischen Vereins der Preussischen Rheinlanden und Westfalens* 40 (1883): 279-305.
Rudolf Virchow, “Der Kiefer aus der Schipka-Höhle und der Kiefer von La Naulette.” *Zeitschrift für Ethnologie* 14 (1882): 277-310.
Jindřich [Heinrich] Wankel, “Die Mammuthjägerstation bei Předmostí im österreichischen Kronlande Mähren.” *Mitteilungen der Anthropologischen Gesellschaft in Wien* 20 (1890): 1-31.
Jindřich [Heinrich] Wankel. *Die Praehistorische Jagd in Mahren*. Olmütz, Selbstverlag, 1892.

SECONDARY SOURCES

Jan Knies, “Karel Jaroslav Maška (1851-1916).” *Wiener prähistorische Zeitschrift* 3 (1916): 141-151.

Cyrill Purkyně, “Karel Jaroslav Maška.” *Almanach České Akademie* 27 (1917): 104-116.

Bohuslav Klíma, “K. J. Maška.” *Časopis Moravského musea* 36 (1951): 9-20.

Otokar Maška, *Karel Jar. Maška: Život a dílo moravského badatele o pravěku*. Blansek: Vlastivědné muzeum, 1965.

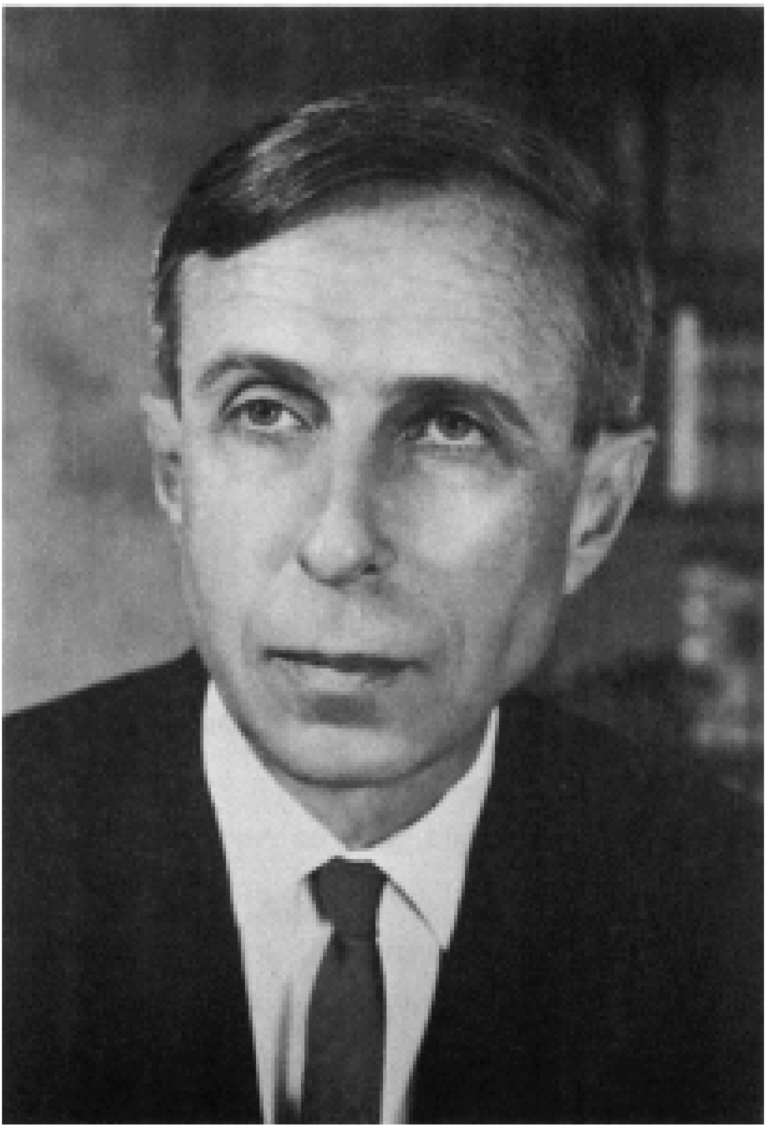
Martin Oliva, “Dvojité jubileum Karla Jaroslava Mašky (1851-1916) trochu aktuálněji.” *Pravěk: časopis moravských a slezských archeologů* new series 11 (2001): 401-421.

Petr Kostrhun, “Před stoletím zemřel Karel Jaroslav Maška.” *Acta Musei Moraviae* 2 (2016): 227-240.

NOTES

1 These include Salzburg in 1881, Heidelberk in 1882, Solnohrad in 1888, Vienna in 1889, Cracow in 1888, Moscow in 1892, Prague in 1895, Paris in 1900, Salzburg in 1905, Prague and Kroměříž in 1908, Vienna in 1910, Kojetín in 1911, again in Prague in 1912, and again in Vienna in 1913.

Theodore McCown (1908–1969)



Theodore McCown

Theodore Doney McCown was born in Macomb, Illinois, on 18 June 1908. His father, Chester Charlton McCown, was a biblical scholar and his mother was Harriett Doney. The family moved to Berkeley, California, in 1913 when Chester Charlton McCown became professor of New Testament Literature and Interpretation at the Palestine Institute of the Pacific School of Religion. In addition to his research as a New Testament scholar, Chester Charlton McCown also engaged in archaeological excavations through a long association with the American School of Oriental Research in Jerusalem. He was appointed a fellow there in 1920 and later served as its director in 1929 and its acting director from 1935 to 1936. While in Palestine, Chester Charlton McCown participated in the archaeological excavations at the site of Jerash (Gerasa), which he directed from 1930 to 1931. Theodore and his younger brother, Donald (who eventually became an authority on the archaeology of Persepolis and other ancient sites in Iran) were both exposed to classical and Middle Eastern archaeology during the 1920s through their father’s work.

McCown studied anthropology at the University of California, Berkeley where Alfred Kroeber was a leading figure. McCown attributed his interest in anthropology to reading Henry Morton Stanley’s book *In Darkest Africa; or, the Quest, Rescue, and Retreat of Emin, Governor of Equatoria* (1890). In 1928, he spent three months as an assistant to Ronald Olson excavating Indian shell mounds on the coast near Santa Barbara and Santa Cruz Island. During the summer of 1929, McCown spent three months studying the Kawaiisu Indians in the mountains of east Bakersfield, California. McCown completed his B.A. in anthropology in 1929 (with highest honors) and in 1930 he was appointed an assistant at the American School of Oriental Research in Jerusalem and participated in the excavations at Jerash. McCown entered the graduate program in anthropology at Berkeley in 1931 and later that year he travelled through France, Spain, Switzerland, Germany, Czechoslovakia, Austria, and Hungary with the summer school of the American School of Prehistoric Research. The American School of Prehistoric Research, founded in 1921 by Charles Peabody and Yale University anthropologist George Grant MacCurdy, was created to give American students an opportunity to participate in excavations in Europe and to visit museum collections.

A significant event in McCown's scientific career began in 1930 when he was invited to join the extensive excavations being conducted at the Wadi el-Mughara (the Valley of the Caves) at Mount Carmel, which is located about 20 km south of Haifa in what at that time was the British mandate of Palestine (now Israel). These excavations, led by British archaeologist Dorothy Garrod, were a joint project of the British School of Archaeology in Jerusalem and the American School of Prehistoric Research. Garrod, working closely with Welsh paleontologist Dorothea Bate, began excavations at Mount Carmel in 1929. She excavated the el-Wad Cave (also known as Athlit cave) while British archaeologist Francis Turville-Petre was given the responsibility of excavating the Kebara Cave in 1930. Garrod assigned the excavation of Skhūl Cave (also known as Mugharet es-Skhūl or the Cave of the Kids) to McCown during the 1931 field season. He had joined the excavations as a field representative with the American School of Prehistoric Research and was assigned to assist Garrod. English archaeologist Mary Kitson-Clark had already completed a test excavation in Skhūl Cave in 1929 that unearthed a Mousterian deposit.

McCown's initial excavations at Skhūl extended from 4 April to 3 June 1931 and the second excavation season was from 11 April to 17 July 1932. He uncovered three archaeological layers: Layer A contained a mixed assemblage of Natufian, Mousterian and Aurignacian material, and below this Layers B and C contained Lavalloiso-Mousterian artifacts (Garrod and Bate, 1937; McCown and Keith, 1939). More remarkably, during the course of his excavations human bones belonging to ten individuals were unearthed. On 3 May, 1931 McCown discovered the fragmentary skeleton of a child (Skhūl I) in the Mousterian layer. But most of the fossils were discovered during his second field season. On

30 April 1932 he and his assistant Hallam Movius Jr., who at this time was a graduate student at Harvard University, discovered a partial human skeleton (Skhūl II), and the cranial fragments and mandible along with a few postcranial bones of an adult female (Skhūl III), and a nearly complete adult male skeleton (Skhūl IV) in the Mousterian layer of the cave. From their appearance McCown believed these individuals had been intentionally buried. Then on 2 and 3 May 1932 McCown and Movius unearthed another nearly complete adult male skeleton (Skhūl V) that was found with the mandible of a wild boar, as well as a very partial adult male skeleton (Skhūl VI). Then on 13 May McCown's team encountered a partial male skeleton (Skhūl VII) that was found near a child's skeleton (Skhūl VIII). Finally, a partial adult male skeleton (Skhūl IX) was found on 19 May. A tenth individual, the skeleton of an infant (Skhūl X) was only recognized in 1935 while McCown was removing the bones of Skhūl VII from its matrix.

The English anatomist and paleoanthropologist Arthur Keith, who was conservator at the Royal College of Surgeons in London, was invited to study and describe the human fossils from Mount Carmel. Keith had visited Palestine in 1930 as part of a visit to Egypt and the Near East organized by the Royal College of Surgeons, and while he was in Palestine Garrod gave him a tour of the excavation sites at Mount Carmel. Keith observed the fossils encased in the rock of the cave floors and offered the facilities at the Royal College of Surgeons where the specimens could be freed from their matrix and examined. The first block containing one of the Skhūl skeletons arrived in London in 193I and further specimens were transferred to the Royal College of Surgeons as they were unearthed. It was decided that McCown would assist Keith with the preparation and examination of the fossils. McCown and Keith presented a joint paper on the human fossils discovered so far in the Skhūl Cave at the inaugural meeting of the International Congress of Prehistoric and Protohistoric Sciences held in London in August 1932 (McCown and Keith 1934). As work progressed, McCown published a series of papers between 1932 and 1937, some coauthored with Keith, on the fossils from Mount Carmel (McCown 1932; McCown 1933; McCown 1934a and 1934b; McCown 1936; Keith and McCown 1937).

However, by 1933 Keith’s health was declining and he resigned as conservator at the Royal College of Surgeons to take up the role of Master at Buckston Browne Farm, in Kent, where he had a specially equipped laboratory constructed so that the work on the Mount Carmel fossils could be conducted at the residence. McCown began the laborious task of removing the fossils from the stone blocks in 1933, first at the Royal College of Surgeons but in August 1934 McCown moved into Keith’s home at Buckston Browne Farm where they conducted their work on the fossils until 1937. During the time McCown was in England working with Keith, his research was funded by a Taussig Traveling Fellowship in Anthropology (1933-34), an Amy Bowler Johnson Traveling Fellowship (1934-35), and a fellowship from the American School of Prehistoric Research (1935-37). Increasingly, responsibility for examining the fossils fell to McCown (Keith was by this time nearly seventy years old). Dorothy Garrod and Dorothea Bate published the first volume of *The Stone Age of Mount Carmel* in 1937 and McCown contributed chapters on the archaeology of Skhūl Cave. Two years later, McCown and Keith completed the second volume titled *The Stone Age of Mount Carmel: The Fossil Human Remains from the Levalloiso-Mousterian* (McCown and Keith 1939).

In this volume McCown and Keith described the ten partial human skeletons from Skhūl Cave and the partial female skeleton found in the Lower Mousterian layer of the nearby Tabūn Cave and they summarized the inventory of the Upper Paleolithic human material from the el- Wad and Kebara caves, but they did not describe the Natufian material from either Shukbah or el-Wad. From the stratigraphical, archaeological, and faunal evidence from the Skhūl and Tabūn caves they argued that the hominid fossils from the two sites were approximately the same age. However, after comparing the specimens from the two caves, McCown and Keith noted morphological differences between the fossils from Skhūl and Tabūn. The Skhūl remains appeared to be more closely related to modern *Homo sapiens*—for example, they lack the projecting nasal region seen in the Tabūn skeleton, and the Skhūl mandibles have a chin, whereas the mandible from Tabūn does not. McCown and Keith suggested that the differences between the hominids of Tabūn and Skhūl could be due to an evolutionary progression. Their analysis of the Mount Carmel fossil remains indicated a population in the “throes of evolution” with characteristics of both modern humans and Neanderthals being present in the fossils. They argued that the fossils represented a population that was evolving from Neanderthal to Cro-Magnon. They suggested that the Tabūn specimens were older and more primitive, while the Skhūl specimens were more recent and more advanced. Significantly, they rejected an alternative hypothesis, that the skeletons might reflect hybridization between two anatomically divergent populations.

McCown’s interpretation of the fossils from Skhūl and Tabūn sometimes differed from Keith’s and his interpretation of them changed in later years. He later came to view the Tabūn and Skhūl fossils as representing a single polymorphic population rather than as different hominid species. In his early publications he already argued that the fossils should be viewed as belonging to a group of individuals that displayed considerable variability, noting that members of a single species are rarely morphologically identical. However, since McCown was the junior scientist, Keith’s views prevailed in their 1939 monograph. Following common practice at the time, they named these fossils *Palaeoanthropus palestinensis*, which they considered a local form of Neanderthal, but few scientists adopted the name or the new species. Today paleoanthropologists consider the Skhūl fossils to be older than the Tabūn specimens and to represent early *Homo sapiens*. Importantly, McCown also argued that the Skhūl skeletons had been intentionally buried. This was at a time when debate raged over the question of whether Neanderthals buried their dead.

In addition to this work, McCown was also completing his dissertation research. He obtained permission from the Government of Palestine to send the Natufian skeletons from Mount Carmel to Berkeley for examination and McCown returned to Berkeley in 1938. McCown received his Ph.D. in 1939, under the direction of Alfred Kroeber, with a dissertation titled *The Natufian Crania from Mount Carmel, Palestine, and Their Inter-relationships*. It is primarily a study of the Natufian crania from el- Wad Cave but also includes a brief section on two adult crania from Shukbah Cave. McCown began teaching in the Anthropology Department at Berkeley in 1938 as an Instructor while he was still completing his Ph.D. He was appointed Assistant Professor in 1941 and was promoted to Associate Professor in 1946 and to Full Professor in 1951. He served as acting chair during the 1948-49 academic year and as department chair from 1950 to 1955. McCown created the program in physical (biological) anthropology at Berkeley soon after joining the faculty, and while at Berkeley, McCown directed eighteen Ph.D. students and served on the committees of numerous others. This was at a time when Earnest Hooton at Harvard University and Wilton Krogman at the University of Pennsylvania were among the few professors training physical anthropologists in the United States. Additionally, McCown served as curator of physical anthropology at the university's Lowie Museum beginning in 1948. He also held a joint position in the Department of Criminology from 1948 to 1950 and he taught forensic anthropology at a time when there were only a few other practitioners in this applied field of anthropology. Many of the graduate students that he supervised went on to form the first generation of practicing forensic anthropologists in the United States. McCown was involved in university administration and served as associate dean of the College of Letters and Science from 1956 to 1961.

McCown conducted archaeological excavations in the mountainous region of Huamachuco and Cajabamba, in Peru, under the auspices of the Institute of Andean Research from August 1941 to March 1942 and again in 1945. These excavations led McCown to identify two periods of occupation at these sites (Middle Huamachuco and Late Huamachuco) represented by distinct architectural styles in buildings and by distinctive pottery styles. He also examined human skeletons that Alfred Kroeber had collected from Aramburu and other Peruvian sites as part of an expedition for the Field Museum in Chicago (McCown 1945). McCown's academic work was interrupted by World War II. During his military service from 1942 to 1945 he was assigned duty to the Sixth Army Quartermaster Corps, Graves Registration Service, based at the San Francisco Presidio. His assignments included personal identification of war dead. This served as a stimulus to his postwar interest in practicing and teaching forensic anthropology. Following the war, from 1948 to 1950, McCown was a consultant for the military on a project relating to research on prostheses that he had begun in 1945.

At the end of the war, McCown returned to Berkeley and his anthropological work. He married Elizabeth Ann Richards in 1946. She had studied anthropology at Berkeley and then completed a Master's degree in physical anthropology in 1946 at the University of Chicago, where she studied under Walter Krogman. In 1948 McCown began a project to analyze the collection of California Indian skeletons that Alfred Kroeber had collected earlier in the century. He also conducted a number of prominent forensic investigations that led to the identification of Junipero Serra (1715-1784) at the Franciscan Mission in Carmel, California; the identification of Juan Bautista de Anza (1735-1788), the founder of San Francisco, whose remains were exhumed in Arizpe, Mexico; and the negative identification of remains reputed to be those of the American aviatrix Amelia Earhart that were found on a Pacific island. McCown led two expeditions to the Narmada Valley of India, the first in 1958 and the second from 1964 to 1965, where he was accompanied by his wife Elizabeth. During the 1958 season he collaborated with researchers at the Deccan College Postgraduate and Research Institute located in Poona. In the Narmada Valley he established the stratigraphic contexts of alluvial deposits that contained Paleolithic stone tools dating to the Middle Pleistocene. During the 1964-1965 expedition McCown was assisted by Berkeley graduate student George Shkurkin and S. C. Supekar, a graduate student at Deccan College. In the course of their excavations, they collected Acheulean artifacts at Mahadeo Piparia in the Narmada Valley.

McCown's research and teaching combined biological anthropology and cultural anthropology. He believed that "man is a part of 'brute creation,' that the hypotheses which are valid for the processes of organic evolution apply as well to man as to other animals." He was a member of several prominent professional societies. These include the American Association for the Advancement of Science, the Society for American Archaeology, the American Society of Physical Anthropology, and the American Society for Human Genetics. He was a Fellow of the American Anthropological Association as well as a Fellow of the Royal Anthropological Society of Great Britain and Ireland. McCown presented a paper on hominid taxonomy at the Cold Spring Harbor Symposium on Quantitative Biology held in 1950 (McCown 1951). This meeting was significant because it marked an important step in integrating the Modern Evolutionary Synthesis into paleoanthropology. He also published an influential paper on the training and education of physical anthropologists (McCown 1952). McCown died from a heart attack in Berkeley on 17 August 1969.

SELECTED BIBLIOGRAPHY

"A Note on the Excavation and the Human Remains from the

Mugharet es-Sukhul (Cave of the Kids), Season of 1931." *American School of Prehistoric Research, Bulletin 8* (1932): 12-15.

"Fossil Men of the Mugharet es-Sukhul, near Athlit, Palestine, Season of 1932." *American School of Prehistoric Research, Bulletin 9* (1933): 9-15.

Theodore McCown and Arthur Keith. "Palaeanthropus palestinus." *Proceedings of the First International Congress of Prehistoric and Protohistoric Sciences* (1934): 48.

"Discovery of a Mousterian Cemetery on Mount Carmel." *Proceedings of the First International Congress of Prehistoric and Protohistoric Sciences* (1934a): 48-50.

"The Oldest Complete Skeletons of Man" (with a note by Sir Arthur Keith). *American School of Prehistoric Research, Bulletin 10* (1934b): 13-19.

Theodore McCown and Arthur Keith. "The Mousterian People of Palestine: their anatomy." Report of the British Association for the Advancement of Science, Sectional Transactions, 1935 pp. 41-42.

"Mount Carmel Man." *American School of Prehistoric Research, Bulletin 12* (1936): 131- 140.

Arthur Keith and Theodore McCown, "Mount Carmel Man. His Bearing on the Ancestry of Modern Races." *American School of Prehistoric Research, Bulletin 13* (1937): 5-15.

"Chapter VI. Mugharet es-Skhūl. Description and Excavations." In D. A. E. Garrod and D. M. A. Bate, *The Stone Age of Mount Carmel: Excavations at the Wady el-Mughara*. Vol. I. Pp. 91-107. Oxford: Clarendon Press, 1937.

Theodore McCown and Arthur Keith, *The Stone Age of Mount Carmel: The Fossil Human Remains from the Levalloiso-Mousterian*. Vol. 2. Oxford: Clarendon Press, 1939.

"The Antiquity of Man in the New World." *American Antiquity* 7 (1941): 203-213.

"Pre-Incaic Huamachuco; Survey and Excavations in the Region of

Huamachuco and Cajabamba." *University of California Publications in American Archaeology and Ethnology* 39 (1945): 223-400.
"Genus Palaeoanthropus and the Problem of Supra-specific Differentiation among the Hominidae." *Cold Springs Harbor Symposia on Quantitative Biology: Origin and Evolution of Man*, Cold Spring Harbor, New York, 15 (1951): 87-94.
"The Training and Education of the Professional Physical Anthropologist." *American Anthropologist* 54 (1952): 313-317.
Theodore McCown and K. A. R. Kennedy (eds.), *Climbing Man's Family Tree: A Collection of Writings on Human Phylogeny, 1699-1971*. Englewood Cliffs, NJ: Prentice Hall, 1971.
The Theodore D. McCown papers are located in the Bancroft Library at the University of California, Berkeley. Collection number: BANC MSS 86/3 c CARTON 1; BANC MSS 86/3 c CARTON 2; BANC MSS 86/3 c; BANC MSS 86/3 c
Dortothy Garrod and Theodore McCown correspondence (letters sent between 1930 and 1954) are held at Cambridge University Library.

OTHER SOURCES CITED

Dortothy Garrod and Dorothea Bate, *The Stone Age of Mount Carmel: Excavations at the Wady el-Mughara.* Vol 1. Oxford: Clarendon Press, 1937.

SECONDARY SOURCES

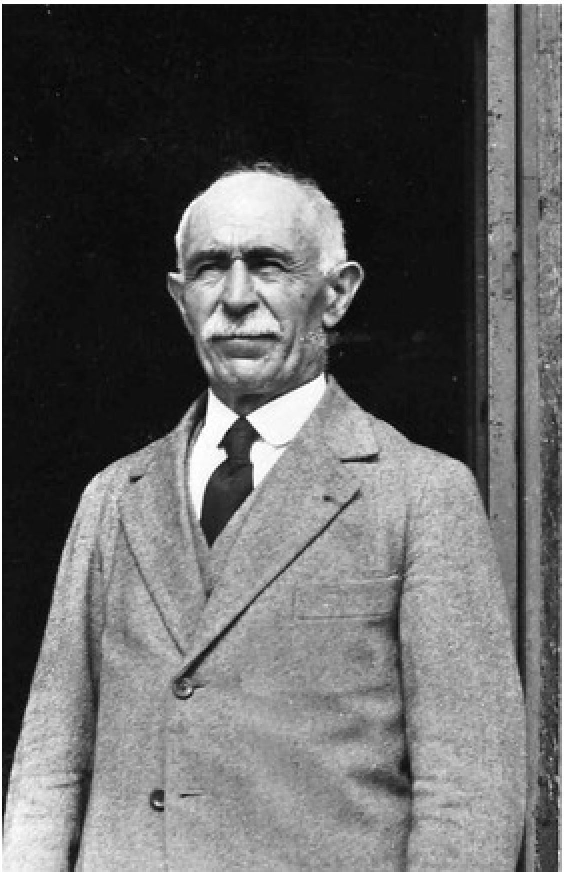
E. A. Hammel, "Theodore Doney McCown, June 18, 1908-August 17, 1969." *Papers of the Kroeber Anthropological Society* 41 (1969): 1-7.
Sheilagh T. Brooks, Theodore D. McCown, 1908-1969. *American Journal of Physical Anthropology* 32 (1970): 165-166.
K. A. R. Kennedy, (1997). "McCown, Theodore D(oney) (1908-1969)." In Frank Spencer (ed.), *History of Physical Anthropology: An Encyclopedia.* Vol. 2, pp. 627-629. New York: Garland.

Kenneth Kennedy and Sheilagh T. Brooks, "Theodore D. McCown: A Perspective on a Physical Anthropologist." *Current Anthropology* 25 (1984): 99-103.

Kenneth Kennedy and Elizabeth Langsthroth, "Recent Recovery of Unpublished Field Notes of Theodore D. McCown's Paleoanthropological Explorations in the Narmada River System, India, 1964 –1965." *Asian Perspectives* 50 (2013): 132-143.

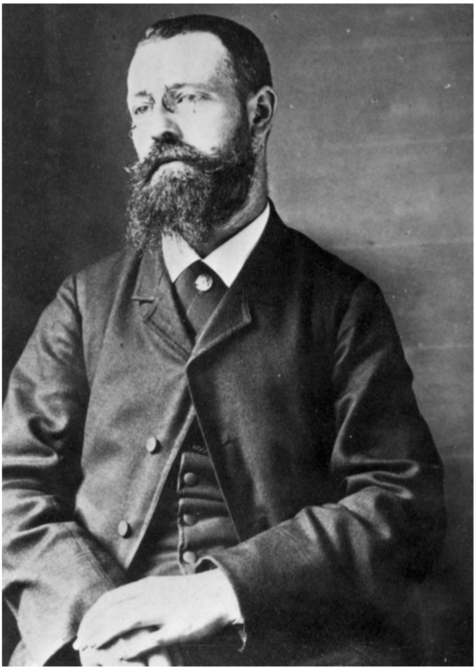
I. De Groote, C. Stringer, T. Compton, B. Kruszynski, and S. Bello, "Sir Arthur Keith's Legacy: Re-discovering a lost collection of human fossils." *Quaternary International* 337 (2014): 237-253.

Denis Peyrony (1869-1954)



Denis Peyrony

Denis Peyrony was born 21 April 1869 in Cussac, in the Dordogne region of France. His parents were farmers but after studying at the École supérieure in Belvès and then at the École normale of the Department of Dordogne Peyrony became a schoolteacher in the village of Eyzies-de-Tayac in 1891. In 1894, prompted by an interest in prehistory, he took a course taught by the French archaeologist Émile Cartailhac. Peyrony also became friends at this time with Louis Capitan, who was a professor at the École d'Anthropologie [School of Anthropology] in Paris, and the two men began a long collaboration surveying and excavating prehistoric sites in France. In September 1901 Capitan, Peyrony, and prehistorian Henri Breuil discovered the decorated caves of Combarelles and of Font-de-Gaume after a local farmer brought Peyrony a small female statue found in the road near the site. The caves contained depictions of animals on its walls similar to those found by Émile Rivière at the Grotte de la Mouthe in 1895. These discoveries were made at a time when cave paintings and engravings depicting Pleistocene animals were still viewed with great skepticism by European archaeologists and these new finds contributed to changing attitudes about Paleolithic cave art. Their work resulted in two important monographs, published under the auspices of Albert I of Monaco: *La caverne de Font-de-Gaume aux Eyzies (Dordogne)* published in 1910 and *Les Combarelles aux Eyzies (Dordogne)* published in 1924. Peyrony soon discovered other engravings on the walls of the Grotte de Bernifal in 1902 and on the walls of the Grotte de La Calévie and at the Grotte de Teyjat in 1903.



Louis Capitan

Henri Breuil

Following these discoveries, Peyrony began excavations at a number of Paleolithic rock shelters and caves located in the Dordogne region, usually in collaboration with Capitan or Breuil. He collaborated in excavations with Henri Breuil in 1908 that examined the stratigraphy of the Pagès rock shelter. They were not the only excavators exploring the Paleolithic sites of this archaeologically rich region. The Swiss amateur archaeologist Otto Hauser began excavations at La Micoque in 1906 and at Le Moustier in 1907 that produced numerous artifacts. In March 1908 Hauser's excavations at Le Moustier unearthed a human skeleton that was later identified as being a Neanderthal. Hauser then undertook excavations at Combe-Capelle in 1907 that resulted in the discovery in August 1909 of a human skeleton along with Aurignacian artifacts. To the great chagrin of French scientists Hauser sold the precious skeletons found at Le Moustier and Combe-Capelle to the Museum für Völkerkunde in Berlin after asking an exorbitant amount of money that no institutions in France were willing to pay. In fact, Hauser had been selling Paleolithic artifacts retrieved from his excavations in the Dordogne for years in order to fund his archaeological researches. Matters got worse when it was learned that one of the so-called Laussel Venus sculptures discovered by Gaston Lalanne in the Grotte de Lausel in 1911 had also been sold to the Museum für Völkerkunde.[1] These events angered French scientists and politicians to such an extent that the French government finally passed a law in 1913 protecting antiquities and banning their export in order to combat what they saw as foreign plundering of important artifacts. Hauser was forced to leave France in 1914 with the beginning of World War I.

Prompted by concern over Hauser's excavations and the sale of artifacts abroad, Capitan and Peyrony convinced the French government to purchase the Paleolithic sites of Le Moustier, Laugerie-Haute, and La Micoque previously owned by Otto Hauser. In 1913 they also induced the government to purchase the Château des Eyzies-de-Tayac in order to transform it into a museum.

Construction was delayed by World War I but in 1918 the Musée National de Préhistoire [National Museum of Prehistory] opened, although the official opening of the museum did not occur until 1923. Peyrony was appointed its first director and the museum housed his personal collection of artifacts. By this time Peyrony already held a number of professional positions. He was a non-resident member of the Comité des Travaux Historiques et Scientifiques, an organization created in Paris in 1834 and funded by the state in order to encourage historical and scientific research. In addition, in 1911 he was appointed chargé de mission (project manager) of the Prehistoric section of the Commission des Monuments Historiques [Commission of Historic Monuments], which was part of the Ministère de 1'Instruction et des Beaux-Arts. This position offered a rare case where an excavator received public funds for archaeological work from the Ministère de l'Instruction Publique. Peyrony used each of these positions to protect archaeological sites and limit the damaging activities of antiquities hunters and amateur excavators.

Peyrony initiated new excavations at Le Moustier in 1910 where he uncovered an important sequence of Paleolithic strata and discovered an infant Neanderthal skeleton in 1914. He and Capitan also began new excavations at the rock shelter of La Madeleine in 1911-12, where they recorded stratigraphic changes in stone and bone artifacts and collected specimens of portable art. In fact their collection of Paleolithic portable art recovered from various sites had grown so large that they donated a substantial number of objects to the Musée des Antiquités Nationales [Museum of National Antiquities] in 1912. Meanwhile, events elsewhere soon demanded their attention. Excavations conducted by the Bordeaux physician Gaston Lalanne in the rock shelter of Cap Blanc, near Les Eyzies, had discovered carved images of horses, bison and reindeer in 1909. He had also recovered stone and bone tools at the site. Construction in 1911 designed to protect the newly discovered rock carvings unexpectedly unearthed a Magdalenian human skeleton at the site. Capitan and Peyrony were immediately invited to excavate the skeleton in order it to insure the excavation would conform to the highest scientific standards, which was a measure of the respect these two researchers commanded as a result of their previous work. From 1912 to 1913 Peyrony also excavated the Roque Saint-Christophe site and he conducted excavations at the Poisson rock shelter from 1917 to 1918.

Of particular importance were the excavations Peyrony and Capitan conducted at La Ferrassie, located in the Vézère valley, between 1902 and 1922, although they had originally explored the site in 1896. At La Ferrassie they found Mousterian and Aurignacian artifacts and a total of six Neanderthal burials. The first of these, La Ferrassie 1, was a male skeleton with a nearly complete skull that was discovered on 17 September 1909. La Ferrassie 2 was an incomplete cranium and skeleton of a female Neanderthal that was found in 1910. The skeletons of two infants were unearthed in 1912, followed by another infant in 1920. La Ferrassie 6 was a nearly complete skeleton of a child discovered in 1921. Due to the rarity and significance of these discoveries Capitan and Peyrony invited Marcellin Boule (the professor of paleontology at the Muséum National d'Histoire Naturelle who examined the La Chapelle-aux-Saints Neanderthal skeleton discovered in 1908), prehistoric archaeologist Émile Cartailhac, and prehistorian Henri Breuil to participate in the examination of these specimens. All of these skeletons were given to the Muséum National d'Histoire Naturelle {National Museum of Natural History] in Paris.

Cranium of LaFerrassie 1

Throughout the 1920s Peyrony excavated and recorded the stratigraphy of Le Moustier, La Madeleine, and Laugerie-Haute. In 1926 he discovered the skeleton of an infant covered in shells at La Madeleine, which he later donated to the Musée National de Préhistoire. Peyrony also initiated new excavations at La Micoque from 1929 to 1932. There he identified fifteen stratigraphic layers and identified an archaeological industry he called the Tayacian consisting of large stone flake tools, which lay immediately below an archaeological layer that Otto Hauser had named the Micoquian industry. Peyrony's excavations and careful attention to stratigraphy across such a large number of Paleolithic sites allowed him to work out the chronology of the Middle and Upper Paleolithic. Using artifact typology and stratigraphy he identified a regional succession of industries or cultures, some of which he believed coexisted in the Paleolithic. This contradicted the widely adopted scheme proposed by Gabriel Mortillet that arranged Paleolithic archaeological industries in a single linear sequence. Peyrony identified what he believed were a succession of distinct archaeological industries within Mortillet's Solutrean and

Magdelenian. His work also showed that the Aurignacian was very complex and in the early 1930s he created the term “Périgordien” to refer to an Upper Paleolithic industry that developed in parallel and coexisted with the Aurignacian, although archaeologists later abandoned this idea. Peyrony argued that these cultural changes, represented by changes in artifacts, could be explained as the result of changes in climate and fauna as well as the arrival of distinct races of prehistoric humans. Peyrony’s investigations of Paleolithic artifacts and chronology influenced Henri Breuil’s ideas about Paleolithic archaeology and especially his division of the Magdalenian into six phases.

In addition to his scientific labors Peyrony began to organize visits for the public to the prehistoric sites of the Eyzies-de-Tayac region, the first of which occurred in 1920. Peyrony’s research earned him the respect of his colleagues, which led to his becoming a member of the Société historique et archéologique du Périgord and a corresponding member of the Académie nationale des Sciences, Belles-Lettres et Arts de Bordeaux. He also served as a delegate and as a correspondent of the Ministère de l’Instruction Publique. In 1929 Peyrony was appointed Inspecteur des Monuments Préhistoriques [inspector of prehistoric monuments] with responsibilities to monitor, manage, and protect historic sites. This was the same year that his friend and colleague Louis Capitan died, thus ending their long collaboration, although Peyrony continued to excavate and publish into the 1940s. Peyrony died 25 November 1954 in Sarlat, France.

SELECTED BIBLIOGRAPHY

Louis Capitan and Denis Peyrony. “Fouilles à la Ferrassie (Dordogne).” *Congrès préhistorique de France compte rendu* [1905] (1906): 143-144.

Louis Capitan and Denis Peyrony. “Deux squelettes humains au milieu de foyers de l'époque moustérienne." *Revue d'Anthropologie* 19 (1909): 404-409.

Louis Capitan and Denis Peyrony. "Un nouveau squelette humain fossile." *Revue d'Anthropologie* 21 (1911): 148-150.

Louis Capitan and Denis Peyrony. "Station préhistorique de La Ferrassie, commune de Savignac-du-Bugue(Dordogne)." *Revue d'Anthropologie* 22 (1912): 76-99.

Louis Capitan and Denis Peyrony. "Trois nouveaux squelettes humains fossiles." *Revue d'Anthropologie* 22 (1912): 439-442.

Louis Capitan and Denis Peyrony. "Nouvelles fouilles à La Ferrassie (Dordogne)."

C. R. Association française pourl'avancement des sciences (1921): 540-542.

Louis Capitan and Denis Peyrony. "Découverte d'un sixième squelette moustérien à la Ferrassie (Dordogne)." *Revue d'Anthropologie* 31 (1921): 382-388.

Denis Peyrony. "Découverte d'un squelette humain à La Madeleine," Actes de la troisième session de l'Institut international d' anthropologie, Amsterdam, 1927, 3, p. 318-320.

Louis Capitan, Henri Breuil, and Denis Peyrony. *La caverne de Font-de-Gaume aux Eyzies (Dordogne)*. Monaco: A. Chêne, 1910.

Denis Peyrony. *Élements de préhistoire*. Ussel: G. Eyboulet & Fils, 1914.

Louis Capitan, Henri Breuil, and Denis Peyrony. *Les Combarelles aux Eyzies (Dordogne)*. Paris: Masson, 1924.

Louis Capitan and Denis Peyrony. *La Madeleine: son gisement, son industrie, ses oeuvres d'art*. Paris: E. Nourry, 1928.

Denis Peyrony. *Les gisements préhistoriques de Bourdeilles (Dordogne)*. Paris: Masson, 1932.

Denis Peyrony. "La Ferrassie: Moustérien-Périgordien-Aurignacien," *Préhistoire* 3 (1934): 1-92.

SECONDARY SOURCES

Henri Breuil, “Nécrologie de monsieur Denis Peyrony,” *Bulletin de la Société Préhistorique Française*, 51 (1954): 530-533.

Randall White and Alain Roussot, “Résumé de ma vie: une note autobiographique de Denis Peyrony.” *Bulletin de la Société Historique et Archéologique du Périgord*. 125 (2003): 453-472.

Notes

1 Raymond Peyrille, the man hired by Lalanne to direct the excavations, was apparently induced to sell the precious Paleolithic figurine by Max Verworn, professor of physiology at the University of Bonn.

Edouard Piette (1827–1906)

Edouard Piette

Louis-Edouard-Stanislas Piette was born on 11 March 1827 at Aubigny, in the Ardennes region of France near the border with Belgium. His father, Louis-Auguste Piette, was a notaire (a public official authorized to certify legal documents) in Aubigny and later served as mayor of Rumigny, and his mother was Anne Henriette Stéphanie Lhoste. The family later moved to Charleville when

Piette's father was appointed conseiller général of the Ardennes. Piette studied at the college in Charleville where he and his brother Henry roamed the countryside collecting plants, insects, and fossils from the local quarry. After a year studying at Metz, he and Henry became clerks preparing to be notaires in Charleville. After three years they went to Paris where they attended courses in the natural sciences at the Sorbonne, the Muséum National d'Histoire Naturelle (Museum of Natural History), and at the École des Mines (School of Mines). Following his father's wishes Piette obtained a degree in law in 1852 and returned to the Ardennes where he registered as a lawyer at the bar of Rocroi. He married Emilie Jenny Clémentine Graux and they had two daughters, Marie and Louise.

In addition to establishing a career as a lawyer, in 1858 Piette published *Education du Peuple* (Education of the People), a book that advocated compulsory and secular education, as well as the teaching of morality that was not based in any specific religious denomination. Meanwhile he was appointed justice de paix (justice of the peace) first in Raucourt in 1860, then at Rumigny in 1861, Asfeld in 1864, and at Craonne in 1868. His independent nature brought negative attention from government authorities and this may help explain his frequent transfers to new locales. Through the intervention of his friend, the famous historian Henri Martin, he was appointed a judge in the civil court in 1882, a position he held at several places throughout France (Eauze, Gers, Segré, Le Mans, Angers), which allowed him to pursue his scientific interests in many different regions of France.

While successfully serving as a magistrate and judge, Piette never lost his original interest in the natural sciences and despite the demands of his official duties he found time to pursue a range of scientific endeavors. From an early age Piette was interested in natural history, particularly paleontology and geology. From 1860 to 1870 he and the French pharmacist and paleontologist Olry Terquem studied the geology of the Aisne, the Ardennes, the Meuse, and the Moselle as well as sandstone deposits in

Luxembourg (Terquem and Piette 1865). He assembled a large collection of Bathonian fossils from the Jurassic period and he contributed a volume on the Jurassic gastropods he had collected to the series on French paleontology instigated by Alcide d'Orbigny (Piette 1891). Beyond these geological researches Piette also became interested in prehistoric archaeology. While serving as justice de paix in Craonne, he and Edouard Fleury explored the necropolis in Çhassemy called Le Dessus de Prugny. Working at the site from 1868 to 1869 they distinguished three layers of burials dating to the Neolithic and the early Iron Age. Piette also examined a dolmen in Rumigny in 1870, the only monument of this kind that was known at that time in the Ardennes.

After enduring the upheaval of the Franco-Prussian War, Piette was encouraged to travel to the spa town of Bagnères-de-Luchon in the southwest of France, at the foot of the Pyrenees, for rest and to take the mineral waters in order to recover from the stress that had weakened his health. While there he studied the Pleistocene glaciers of the valley of the Garonne and the Pique rivers. He also met the French geologist Edouard Lartet who was engaged in excavating Paleolithic archaeological sites in the Vézère valley and this meeting spurred Piette to search for Paleolithic sites in the caves of southwest France. Thus began a long period, from 1871 to 1897, when Piette excavated the Upper Paleolithic sites of Gourdan, Lortet, Mas d'Azil, and Brassempouy. These investigations produced a remarkable collection of carved and engraved pieces of bone and ivory that made Piette one of the leading experts on Paleolithic art. Piette pursued this research in his free time and financed the excavations from his own personal wealth. According to the French archaeologist Émile Cartailhac, who was Piette's friend and colleague, Piette spent several thousand francs each season for the rights to excavate these sites and to pay teams of laborers to conduct the work. In addition to the practical challenges he confronted in this research, when news spread of his spectacular finds antique dealers sometimes raided his excavations at night to steal artifacts (Cartailhac 1906).

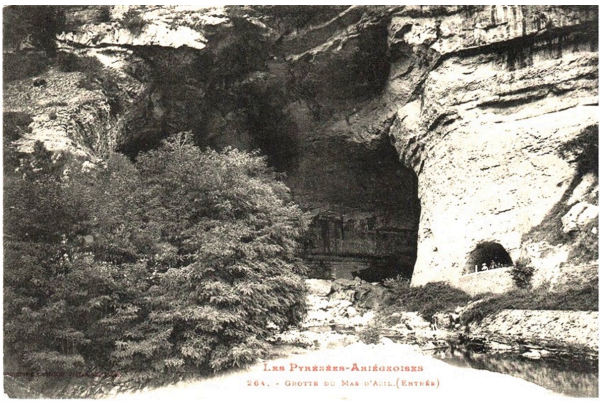
The first site that Piette investigated was the cave at Gourdan, located near the town of Montrejeau in Haute-Garonne. In 1871 Piette and Charles Fourcade, a naturalist from Bagnères-de-Luchon, initiated the first excavation and soon found artifacts. Piette worked at Gourdan from 1871 to 1875 and he employed the skills and methods he had learned as a geologist to carefully explore each layer of the cave in order to produce a stratigraphic record of its deposits. These deposits contained animal bones (especially reindeer), tools made from flint and bone, but even more exciting were pieces of bone and reindeer antler carved with images of animals. These included reindeer, stag, goats, bison, horses, and other animals. The carved images from the lower layers at Gourdan were finely executed and were realistic depictions of animals, but the carvings from the upper layers were crudely made and differed markedly from the older artifacts. In addition to these artifacts, Piette also found human bones, including a partial upper jaw, a fragment of a mandible, and skull fragments. All of the human bones were badly broken and reduced to small fragments. Most had notches and incisions on them, which Piette interpreted as evidence of cannibalism. Ernest-Théodore Hamy, an anthropologist at the Museum of Natural History in Paris and curator of the Musée d'Ethnographie (Museum of Ethnography), later published a description of the human bones from Gourdan (Hamy 1889). Piette presented several papers at the Société d'Anthropologie de Paris (Anthropology Society of Paris) describing his discoveries at Gourdan (Piette 1871; 1873; 1875), but soon his attention was drawn to other sites.

In 1873 Piette began excavating a cave called the grotte de Lortet, located in the Hautes-Pyrénées, with the assistance of prehistoric archaeologist Émile Cartailhac and Eugène Trutat, curator of the Muséum d'Histoire Naturelle in Toulouse. They unearthed flint tools, finely made harpoons along with a range of other tools made from bone and antler, and once again pieces of bone and antler with engraved figures of animals (Piette 1874). Piette attributed the artifacts from Gourdan and Lortet to what French archaeologists frequently called the Reindeer Age (‘âge du renne), but the French archaeologist Gabriel de Mortillet had recently designated his period the Magdalenian (de Mortillet 1869; 1872). Piette also excavated a cave called the grotte d’Espalungue at Saint-Michel, in Arudy in the department of Pyrénées-Atlantique, during 1873 and 1874. He uncovered several stratigraphic layers containing animal bones, flint tools, harpoons made from antler, bone and antler tools, bas-relief sculptures and engraved horse heads from the Magdalenian period. By comparing the artifacts and animal fossils from Gourdan and Lortet, combined with his careful stratigraphic analysis of the cave deposits, Piette was able to demonstrate that they did not all belong to the same precise geologic period, despite clearly belonging to the so-called Reindeer Age. This was one of the first indications that the Reindeer Age was of very long duration and was more complex than archaeologists thought.

His frequent transferal from one post to another often disrupted his research and was the cause for some frustration, but it also meant that he could explore the prehistoric ruins of new areas. During the 1870s Piette began a fruitful collaboration with Julien Sacaze, a lawyer in the town of Saint-Gaudens, in Haute-Garonne. Sacaze was also an archaeologist and historian who published many works on the early history of the region along the Pyrenees in southwest France, and so was familiar with many prehistoric monuments. Piette and Sacaze investigated the cromlech and tumuli at Mount Epiaup during 1875 and 1876 (Piette and Sacaze 1877). In 1877 and 1878 they excavated the Iron Age tumulus of Avezac Prat (Hautes-Pyrénées) on the Lannemezan plateau, which contained a cremation burial and beautifully made urns (Piette and Sacaze 1879). From 1877 to 1880 Piette and Sacaze investigated the Neolithic and Bronze Age tumuli that lay between the towns of Bartrès, Ossun, Gers, and Lourdes, including the tumulus of

Pouy Mayou which they excavated during the winter of 1879-1880 (Piette 1881a; 1884). Piette also appears to have joined Sacaze in the exploration of the early Iron Age incineration burials at Bordes-de-Rivière in 1880. In addition, when Piette was appointed justice of the peace in the town of Eauze, in the department of Gers, in 1879 the Ministry of Public Education directed him to explore the Gallo-Roman monuments that had been uncovered there as the result of the construction of a railroad. Eauze was built on the site of the Roman city of Elusa, which had been capital of the Roman province of Novempopulania, and Piette was able to collect antiquities and record Roman inscriptions from the site (Piette 1881b).

One of Piette's most influential excavations was conducted at the site of Mas d'Azil. Near the village of Mas d'Azil, which lies at the foothills of the Pyrenees in Ariège, there exists an enormous tunnel in the rock through which the Arize River flows. There are caves and galleries lying along the tunnel that contained deep geologic deposits. Repair to the nearby road had unearthed new deposits in the tunnel and these attracted the attention of Piette in 1887. He conducted careful excavations, recording the stratigraphy of the site. Piette unearthed layers dating from the Iron Age that contained animal bones and pottery and below these were Bronze Age and Neolithic layers containing artifacts and the bones of domesticated animals. Still deeper there were deposits dating from the Reindeer Age (the Magdalenian period). The upper layers of these Magdalenian deposits contained flint tools and stag horn harpoons, but the lower layers contained reindeer antler harpoons and many pieces of carved bone and ivory depicting bison, horse, deer and even a human figure. When Piette explored the deposits on the left bank of the river he found red painted pebbles along with flint artifacts that resembled Magdalenian tools. He also found many flattened double-barbed harpoons made of stag antler, which differed from Magdalenian harpoons, which were rounded and made of reindeer antler. The most significant fact about these deposits was that there were no reindeer fossils and the animal bones all belonged to species that inhabited France after the retreat of the glaciers at the end of the Ice Age. This meant that these deposits and the artifacts they contained dated to a time after the end of the Paleolithic but were older than the Neolithic.



Mas d'Azil

At this time many prominent prehistorians believed there was a discontinuity between the Paleolithic and the Neolithic periods in Europe. They believed the Paleolithic population had disappeared as a result of the retreat of the glaciers and the disappearance of the Ice Age fauna and that Neolithic newcomers entered Europe a long period of time after this. Gabriel de Mortillet and Émile Cartailhac were among the French scientists who supported this idea, as did William Boyd Dawkins and others in Britain. On the basis of the objects he collected at Mas d'Azil, Piette argued that he had discovered a transition period between the Paleolithic and Neolithic. He called this period the Azilian and he presented his evidence for this transitional period to the Académie des Sciences (Piette 1889) and in an important paper titled "Hiatus et lacune: Vestiges de la période de transition dans la grotte du Mas-d'Azil" (Piette 1895a). Piette knew his discovery of a transitional period between the Paleolithic and Neolithic would be controversial so he invited members of the Société géologique de France (Geological Society of France) to inspect the site and its stratigraphy. The paleontologist Marcellin Boule was the Society's secretary at that time and he traveled to Mas-d'Azil to inspect the site and its artifacts in situ, coming away convinced of the validity of Piette's claims. This also marked the beginning of a long professional relationship between the two men.

In the course of the excavations of this transitional "Azilian" layer at Mas-d'Azil Piette unearthed a burial containing two partial skeletons whose bones were covered with red ochre. But scientists found the painted pebbles that Piette collected in this Azilian layer, small stones bearing red markings painted on them, particularly intriguing. Piette eventually came to believe that the symbols on these pebbles represented objects, words, and even whole sentences. He even suggested that these enigmatic symbols had provided the elements of the most ancient alphabets of the Bronze Age, appearing partly in Trojan, Cyprian, and Aegean writing; but especially visible in the alphabets of the Phoenicians, Greeks, and Italians (Piette 1905). Several institutions, including the British Museum, obtained specimens of these painted pebbles but after Piette's death convincing evidence appeared that some of the painted pebbles were forgeries made by workmen.

The last site that Piette explored was a cave called grotte du Pape at Brassempouy. The Paleolithic site at Brassempouy had already been the subject of several excavations. Pierre-Eudoxe Dubalen, a pharmacist and amateur archaeologist, found Upper Paleolithic artifacts during excavations in 1880 and 1881. Joseph de Laporterie, a lawyer, archaeologist and historian from Landes, resumed excavations at Brassempouy in 1890. Piette and de Laporterie worked at the site from 1894 to 1897, unearthing several layers containing Magdalenian artifacts along with mammoth and rhinoceros fossils. They also found pieces of bone and ivory engraved with images of horses, and in one layer they found five beautiful ivory statuettes. The most famous of these is the "Dame à la Capuche," a female figure carved from steatite, which they discovered in 1894.

Over the course of many years excavating sites along the Pyrenees Piette had accumulated a remarkable collection of Upper Paleolithic artifacts, especially sculpted and engraved pieces of bone and ivory. Piette displayed some of his Paleolithic art objects at the Exhibition Universelle held in Paris in 1878. Among those who attended the Exhibition was Marcelino Sanz de Sautuola, a Spanish lawyer and landowner with an interest in prehistory. Sanz de Sautuola had begun to explore the cave of Altimira, in the north of Spain, in 1875 with the hope of finding prehistoric artifacts. He met with Piette during the Exhibition and Piette advised him on how to excavate prehistoric caves. In 1879 Sanz de Sautuola discovered images of Ice Age animals painted on the walls in the rear of the cave. Although many anthropologists rejected the authenticity of the cave paintings at Altamira, Piette wrote a letter to Cartailhac in 1887 arguing that they were authentic Magdalenian art. Piette displayed his growing collection of Paleolithic art at the 1889 Exhibition Universelle in Paris and again at the 1900 Exhibition Universelle where his collection on display at the Trocadéro Palace drew large crowds.

Carved Horse Head found at Mas d'Azil (from L'art pendant l'age du renne, Plate LXVII)

Prior to Piette's excavations at Gourdan, Lortet, Mas-d'Azil, and Brassempouy geologists and paleontologists had difficulty in distinguishing the Reindeer Age from older Paleolithic deposits. Yet it was clear to researchers that it was an important period in human prehistory. Before Piette it was not possible to imagine that the Reindeer Age could be divided into periods, but his research provided stratigraphic, paleontological, and archaeological evidence of a succession of changes during the Reindeer Age that indicated a long duration of time. Indeed, because Piette had experience as a geologist he was careful to record the stratigraphy of the sites he excavated. This allowed him to reconstruct the relative chronology of their deposits. Over the years Piette proposed several schemes for dividing the Paleolithic into periods. The French prehistorian Gabriel de Mortillet had already proposed a sequence of periods within the Paleolithic (Chellean, Mousterian, Solutrean, and Magdalenian) based largely on the types of artifacts found in French Paleolithic sites (de Mortillet 1883). Piette's method for dividing the Paleolithic into periods differed in important ways from that of de Mortillet. Piette stressed the importance of relying upon stratigraphy, combined with paleontological and ethnographic evidence. These criteria took precedence over the typological method that de Mortillet employed.

As early as 1889 Piette proposed dividing the Paleolithic into a series of epochs (Achéolienne Mostérienne Sulistrienne, Magdalénienne). He also subdivided the Magdalenian into a series of phases on the basis of animal fossils: Elaphienne (red deer); Tarandienne (reindeer); Hippiquienne (horse); and Bovidienne (ox). In other works he describes an époque sulistrienne (characterized by Solutrean artifacts and a fauna of spotted hyena, mammoth, auroch, and horses); an époque éburnéenne (characterized by Magdalenian artifacts and ivory sculptures, with a fauna of auroch, mammoth, *Rhinoceros tichorinus*, lion, panther); and an époque tarandienne (that part of the Magdalenian characterized by artifacts and sculpture made from reindeer antler and a fauna of ox, aurochs, reindeer, red deer, horse, wild boar, badger, fox, wolf). Alternatively Piette proposed subdividing the French Paleolithic into an Amygdalithic period (characterized by hand axes and correlated with de Mortillet's Chellean and Acheulean), a Niphetic period (de Mortillet's Mousterian), and a Glyptic period (characterized by the presence of art objects). However, Piette's periodization schemes and his nomenclature for these periods were not widely adopted by European archaeologists.

Perhaps more influential was his proposal of an âge glyptique (Glyptic Age), which referred to the period at the end of the Paleolithic that was characterized by fine art objects of carved or engraved bone and ivory as well as cave paintings; and of an âge asylien (Azilian Age) that fell between the end of the Magdalenian period, at the end of the Paleolithic and the beginning of the Neolithic. In other words it represented the period after glaciers had retreated and the reindeer and other Ice Age animals no longer live in France. This period was characterized by the colored pebbles and other artifacts Piette had found at Mas d'Azil. Several prominent archaeologists adopted this periodization and nomenclature during the early twentieth century, but Piette's

Azilian period was later largely subsumed into the idea of a Mesolithic period. In his important monograph on Paleolithic art, Piette proposed a series of phases of the development of art during the Glyptic Age based on faunal evidence and changes in the art: Elaphienne, Rangiférien (or Tarandienne), Hippiquienne, and Eléphantien (or éburnéen) (Piette 1907). Beyond these attempts to trace a chronological series of phases for the Upper Paleolithic, Piette also drew important conclusions about the development of Paleolithic culture and art.

Regarding the evolution of Upper Paleolithic art, Piette argued that sculpture preceded figures carved in relief, and these preceded designs engraved onto the surface of bone and stone. He also believed that naturalistic and realistic depictions of animals represented the first forms of art but that later more abstract depictions appeared. Piette conducted important studies of the changing form of harpoons from the Upper Paleolithic into the Azilian (Mesolithic) period in France (Piette 1895d). Interestingly, Piette suggested that sculptured figures of humans could be used to identify the human races that lived in France during the Paleolithic. This was rooted in his belief that Paleolithic art presented realistic depictions of nature. For example, he argued that a steatophagous female figurine excavated at Brassempouy indicated that an African “Bushman race” (“race bochimane”) existed in France during the Upper Paleolithic. Piette argued that during the Glyptic Age there were three races in France: Neanderthal, Somali, and European (Piette 1902). At a time when European archaeologists and anthropologists were debating the cultural and intellectual abilities of Paleolithic peoples, whether they were primitive savages or people possessing a rudimentary civilization, Piette was convinced that the high quality of Upper Paleolithic artifacts and art objects indicated that these peoples were not uncultured savages but possessed an admirable culture and civilization.

By the 1890s Piette had collected more than 300 art objects and a large number of artifacts from the sites he had excavated. He had published numerous papers covering a range of topics, but the demands of serving as a judge and the relentless sequence of excavations at Mas d’Azil and Brassempouy prevented him from finishing a monograph on his discoveries. As a consequence, in 1891 Piette requested that he be appointed an honorary judge, thus allowing him to retire back to Rumigny and devote all his time to writing papers and working on a book about Paleolithic art. It was at this time that Marcellin Boule invited Piette to write a series of articles on prehistoric ethnography for the journal *L’Anthropologie*. The result was a series of nine papers (under the heading “Études d’ethnographie préhistorique”) published between 1895 and 1906 covering topics ranging from plant cultivation during the Mesolithic at Mas-d’Azil, the semi-domestication of horses and reindeer during the Magdalenian, the colored pebbles from Mas-d’Azil, and the discoveries at Brassempouy. As Piette composed the text for his monograph on Upper Paleolithic art he sought the collaboration of the skilled draughtsman Henri Formant, who worked at the Muséum d’Histoire Naturelle in Paris, to produce illustrations of the many pieces of Paleolithic art in Piette’s collection. Piette enlisted Jules Pilloy, a master of the technique of chromolithography, to produce the beautiful color plates that appeared in the book. Unfortunately, integrating the new discoveries from Mas d’Azil and Brassempouy caused delays and Piette died before the book was finished. The posthumous publication of *L’art pendant l’âge du Renne* (Art during the Reindeer Age) was left to Piette’s son-in-law Henri Fischer and it appeared in 1907. The book offered one of the most extensive studies of Paleolithic art yet published. In it Piette presented the latest version of his chronological division of the Paleolithic and the chronological phases of the development of Upper Paleolithic art. But the most significant feature of the book was the many pages of color plates displaying the remarkable range of carved and engraved objects that Piette had collected from the caves of the Pyrenees.

Piette accumulated one of the most extensive collections in all of Europe of Upper Paleolithic sculpted and engraved figures made from bone, antler, and ivory through his excavations at Gourdan, Lortet, Arudy, Mas d'Azil and Brassempouy. He occasionally augmented his collection by purchasing objects from other sites. Sometime between 1898 and 1902 Piette acquired seven carved figurines originally discovered by Louis Julien in the Grimaldi cave, in Italy, in the 1880s. He also acquired objects excavated from the Paleolithic French sites of Laugerie-Basse and Les Eyzies-de-Tayac. Piette first raised the prospect of donating his collection to the Musée des Antiquités Nationales (Museum of National Antiquities) with Alexandre Bertrand, the founder and the original director of the Museum, in 1888. Several universities and foreign museums offered to purchase Piette's collection but he reached an agreement with the museum in 1902 that resulted in the donation of the collection to the museum in 1904, under the condition that it would be kept together and be displayed according to his instructions, and that the museum pay for the publication of *L'Art pendant l'Âge du Rennes*. Salomon Reinach, who became director of the museum in 1902 following Bertrand's death, designed the Salle Piette (Piette Hall) where the collection was displayed.

Despite publishing numerous scientific papers and presenting his ideas before various scientific institutions in France, Piette received little recognition or support from the French scientific community throughout his years of persistent research. Several prominent French scientists, particularly, Marcellin Boule, Émile Carthailac, and Salomon Reinach, eventually bemoaned the failure of French scientific institutions and the national government to recognize the value of Piette's work. Indeed, it was only shortly before Piette's death that his scientific peers recognized his achievements through official honors. It was partially through his friendship with the famous historian Henri Martin, who was a member of the Académie Française and a Senator in the French government, that Piette's work began to gain the respect of French scientists. Piette was named a laureate of the Société Nationale des Antiquaires de France (National Society of Antiquaries of France), where he was awarded the Society's gold medal in 1904. At the instigation of the prominent paleontologist Albert Gaudry, Piette was named a laureate of the Académie des Sciences (he was awarded the Saintour prize in 1905). And through the efforts of Salomon Reinach he was named a laureate of the Académie des Inscriptions et Belles-Lettres (he was awarded the Joest prize in 1905).

Piette had a direct influence on the career of the French prehistorian Henri Breuil. The two men met in 1897 when the young Henri Breuil was a student at the Seminary of Saint-Sulpice in Paris. Breuil joined the excavations at Brassempouy where he learned Piette's stratigraphic excavation technique. Piette was impressed with Breuil's skills as a draughtsman and asked him to draw some artifacts for his monograph. Breuil was also involved in arranging the Piette Hall at the Musée des Antiquités Nationales. Breuil later suggested that Piette's collection of Magdalenian artifacts was an important influence in his decision in later years to study that archaeological period. Henri Breuil became an important prehistorian and expert on Paleolithic art during a career that spanned the first half of the twentieth century.

Piette was a member of many prominent scientific institutions in France and abroad. He became a member of the Société Géologique de France in 1851 and of the Société d'Anthropologie de Paris in 1870. He was a member of the Société Historique de Haute-Picardie (serving as its president) and of the Association Française pour l'Avancement des Sciences. He was a non-resident member of the Comité des Travaux Historiques et Scientifiques. In recognition of his many scientific accomplishments Piette was elected an honorary member of many regional, national, and foreign societies. He was also a corresponding member of many societies, notably the Société Nationale des Antiquaires de France (for a complete list see Fischer 1907). Piette was a founding member of the Société préhistorique de France (later renamed the Société préhistorique française) and he was elected its honorary president in 1904.

Piette died on 5 June 1906 in his family home, the château de la Cour des Prés, in Rumigny.

SELECTED BIBLIOGRAPHY

De l'Éducation du peuple. Paris: A. Delahays, 1859.

Olry Terquem and Édouard Piette, *Le Lias inférieur de l'est de la France, comprenant la Meurthe, la Moselle, le grand-duché de Luxembourg, la Belgique et la Meuse*. Paris: F. Savy, 1865.

"Les grottes de Gourdan (Haute-Garonne)." *Bulletins et Mémoires de la Société d'Anthropologie de Paris* 6 (1871): 247-263.

"Sur la grotte de Gourdan, sur la lacune que plusieurs auteurs placent entre l'âge du renne et celui de la pierre polie, et sur l'art paléolithique dans ses rapports avec l'art gaulois." *Bulletins et Mémoires de la Société d'Anthropologie de Paris* 8 (1873): 384-425.

"La grotte de Lortet pendant l'âge du renne." *Bulletins et Mémoires de la Société d'Anthropologie de Paris* 9 (1874): 298-317.

"Sur de nouvelles fouilles dans la grotte de Gourdan." *Bulletins et Mémoires de la Société d'Anthropologie de Paris* 10 (1875): 279-296.

Edouard Piette and Julien Sacaze, "La Montagne d'Espiaup." *Bulletins et Mémoires de la Société d'Anthropologie de Paris* 12 (1877): 225-251.

Edouard Piette and Julien Sacaze, "Les tumulus d'Avezac-Prat, Hautes-Pyrénées." *Matériaux pour l'histoire primitive et naturelle de l'homme* 10 (1879): 499-517.

"Note sur les tumulus de Bartrès et d'Ossun." *Matériaux pour l'histoire primitive et naturelle de l'homme* 16 (1881a): 522-540.

Note sur l'épigraphie d'Élusa. Imprimerie Abadie, à Saint-Gaudens, 1881b.

"Exploration de quelques tumulus situés sur les territoires de

Pontacq et de Lourdes." *Matériaux pour l'histoire primitive et naturelle de l'homme* 1 (1884): 577- 594.

"Un groupe d'assises représentant l'époque de transition entre les temps quaternaires et les temps modernes." *Comptes rendus des séances de l'Académie des Sciences* 108 (1889): 422-424.

Alcide d' Orbigny and Édouard Piette, *Paléontologie française: Description zoologique et géologique de tous les animaux mollusques et rayonnés fossiles de France, comprenant leur application à la reconnaissance des couches. Tome 3. Terrains jurassiques. Gastéropodes.* Paris: Masson, 1891.

"Phases successives de là civilisation pendant l'âge du renne, dans le midi de la France et notamment sur la rive gauche de l'Arise (Grotte du M as dAzil)." *Association française pour l'avancement des sciences* part 2 (1892): 649-654.

"Races humaines de la période glyptique." *Bulletins et Mémoires de la Société d'Anthropologie de Paris* 5 (1894): 381-394.

"Note pour servir à l'histoire de l'art primitif." *L'Anthropologie* 5 (1894): 129-146.

Edouard Piette and Joseph de Laporterie, "Les fouilles de Brassempouy en 1894." *Bulletins et Mémoires de la Société d'Anthropologie de Paris* 5 (1894): 633-648.

Edouard Piette and Joseph de Laporterie, "Sur des ivoires sculptés provenant de la station quaternaire de Brassempouy (Landes)." *Comptes rendus des séances de l'Académie des Sciences* 119 (1894): 249-251.

"Hiatus et lacune. Vestiges de la période de transition dans la grotte du Mas-d'Azil." *Bulletins et Mémoires de la Société d'Anthropologie de Paris* 6 (1895a): 235-267.

"Fouilles faites à Brassempony en 1895." *Bulletins et Mémoires de la Société d'Anthropologie de Paris* 6 (1895b): 659-663.

"La station de Brassempouy et les races humaines de la période glyptique." *L'Anthropologie* 6 (1895c): 129-151.

"Études d'ethnographie préhistorique. Répartition stratigraphique des harpons dans les grottes des Pyrénées." *L'Anthropologie* 6 (1895d): 276-292.

"Études d'ethnographie préhistorique, II. Les plantes cultivées de la période de transition au Mas d'Asil." *L'Anthropologie* 7 (1896): 1-17.

"Études d'ethnographie préhistorique, III. Les galets coloriés du Mas d'Asil." *L'Anthropologie* 7 (1896): 385-427.

Edouard Piette and Joseph de Laporterie, "Études d'ethnographie préhistorique, IV. Fouilles à Brassempouy en 1896." *L'Anthropologie* 8 (1897): 165-173.

Edouard Piette and Joseph de Laporterie, "Études d'ethnographie préhistorique, V. Fouilles â Brassempouy en 1898." *L'Anthropologie* 9 (1898): 531-555.

"Gravure du mas d'Azil et statuettes de Menton." *Bulletins et Mémoires de la Société d'Anthropologie de Paris* 3 (1902): 771-779.

"Études d'ethnographie préhistorique, VI. Notions complémentaires sur l'Asylien." *L'Anthropologie* 14 (1903): 641-654.

"Études d'ethnographie préhistorique, VII. Classification des sédiments formés dans les cavernes pendant l'âge du Renne." *L'Anthropologie* 15 (1904): 129-176.

"Études d'ethnographie préhistorique, VIII. Les écritures de l'âge glyptique." *L'Anthropologie* 16 (1905): 1-12.

"Études d'ethnographie préhistorique, IX. Le chevêtre et la semi-domestication des animaux aux temps plèistocènes." *L'Anthropologie* 17 (1906): 27-54.

Édouard Piette and Jules Pilloy, *L'art pendant l'age du renne*. Paris: Masson, 1907.

OTHER SOURCES CITED

Ernest-Théodore Hamy, "Étude sur les ossements humains trouvés par M. Piette dans la grotte murée de Gourdan." *Revue d'anthropologie* ser. 3, 4 (1889): 257-271.

Gabriel de Mortillet, “Essai d’une classification des cavernes et des stations sous abri, fondee sur les produits de l’industrie humaine.” *Comptes rendus hebdomadaires des séances de l’Académie des sciences* 68 (1869): 553-555.

Gabriel de Mortillet, “Classification des diverses périodes de 1’age de la pierre.” *Revue d’Anthropologie* 1 (1872): 432-42.

Gabriel de Mortillet, *Le préhistorique: antiquité de l’homme*. Paris: C. Reinwald, 1883.

Secondary Sources:

Salomon Reinach, *La collection Piette au Musée de Saint-Germain*. Paris: Ernest Leroux, 1902.

Henri Fischer, *Edouard Piette 1827-1906*. Rennes: Oberthur, 1906.

Marcellin Boule, “Edouard Piette.” *L’Anthropologie* 17 (1906): 214-224.

Émile Cartailhac, “Édouard Piette.” *Revue des Études Anciennes* 8 (1906): 274-276.

S. Zaborowski, “Edouard Piette,” *Bulletins et Mémoires de la Société d’anthropologie de Paris* 7 (1906): 260-264.

Adrien de Mortillet, [obituary of Edouard Piette]. *Bulletin de la Société préhistorique de France* 3 (1906): 225-233.

Paul Raymond, “Edouard Piette.” *La Revue préhistorique* (1906): 137-146.

Henri Breuil, “L’Évolution de l’art quaternaire et les travaux d’Edouard Piette.” *Revue Archéologique* ser. 4, 13 (1909): 378-411.

Henry Carnoy, “Piette (Louis-Edouard-Stanislas).” In *Dictionnaire biographique international des écrivains*. Vols. 1-4 1902-1906. Pp. 161-168. Hildesheim: G. Olms, 1987 [Reprint].

Marthe Chollot-Legoux, *Collection Piette, art mobilier préhistorique*. Paris: Editions des Musées nationaux, 1964.

Henri Delporte, *Piette, pionnier de la préhistoire*. Paris: Picard, 1987.

Catherine Schwab, *La collection Piette: Musée d’archéologie nationale, Château de Saint-Germain-en–Laye*. Paris: Réunion des Musées nationaux; Saint-Germain-en-Laye; Musée d’archéologie nationale, 2008

Émile Rivière (1835-1922)

Émile Rivière

Émile-Valère Rivière de Précourt was born in Paris on 22 April 1835. His father was a physician and after attending the lycée Bonaparte Rivière also decided to study medicine. He was an intern at the asiles de convalescence (convalescent asylum) Vincennes, but illness interrupted his career. In 1868 he traveled to Cannes in the hope that this would improve his health. Rivière then traveled to Menton, a town on the French coast near the Italian border, in April 1869. There he visited the nearby caves of Baoussé-Roussé, just across the border in Italy in the commune of Grimaldi, with his friend Stanislas Bonfils, who had an interest in prehistory. Bonfils had opened a natural history museum in Menton in 1860 and he had collected fossils and artifacts from the Grimaldi caves near Menton since 1850. The construction of the railroad from Marseille to Genoa exposed numerous animal fossils, making this an excellent area to conduct paleontological research. Enamored with the region, Rivière decided to move to Menton in 1870 to pursue his new interest in prehistory.

After obtaining permission from the Italian government, Rivière conducted excavations in the nine caves at Baoussé-Roussé from 1870 to 1875. His excavations were systematic and he carefully recorded the stratigraphy of each cavern. On 26 March 1872 he unearthed a human skeleton covered in black hematite and red ochre along with an ornament made of shells and deer teeth as well as stone artifacts in a cave called Grotte du Cavillon. This remarkable find was followed, in February and June 1873 by his discovery of three human skeletons in the Grotte Bausse da Torre, which he first began excavating in 1871. These were also associated with stone artifacts and ornaments made of shells, as well as extinct Pleistocene animals such as cave bear, hyena, and rhinoceros. These discoveries were significant because few human fossils from the Paleolithic had been discovered at this time. When Rivière examined these skeletons and compared them with other Pleistocene human remains he concluded that the humans from Baoussé-Roussé were similar to the human skeletons found at Cro-Magnon. These human skeletons were eventually donated to the Muséum National d'Histoire Naturelle in Paris.

Human skeleton discovered at Menton in 1872. (From Matériaux pour l'histoire primitive et naturelle de l'homme (1872) plate following page 228)

Rivière moved on to examine other caves at the site and in July 1875 he unearthed the skeletons of two children. These were later donated to the geological collections of the Institut Catholique de Paris. Rivière believed all these skeletons were from undisturbed deposits that belonged to the end of the Mousterian or the beginning of the Solutrean despite the fact that some artifacts were made of bone that some considered to be Magdalenian. He also argued that the positioning of the bodies and the objects found with them were evidence that they had been intentionally buried. However, several prominent French prehistorians, including Gabriel de Mortillet and René Verneau, believed the human skeletons found at Menton did not date from the Paleolithic but instead were more recent Neolithic burials.[1]

Skeletons of two children found in 1875.(From De l'antiquité de l'Homme dans les Alpes-Maritimes (1887), Plate XIII)

A later dispute over the geological age of a human skeleton found among Pleistocene animal fossils at Billancourt in the outskirts of Paris, which Rivière believed was an example of the intrusive burial of a much later human body in an older geologic deposit, prompted Rivière to seek the assistance of Adolphe Carnot, professor of chemistry at the École des Mines in Paris, in developing a chemical method to determine the relative ages of fossil bones. In 1892 Carnot measured the amount of fluorine present in human bones from Billancourt and compared them with the amount of fluorine present in the Pleistocene animal fossils found at the site. Since bone absorbs fluorine dissolved in ground water at a constant rate, bones of the same geologic age should contain about the same amount of fluorine while bones deposited at different times will contain different amounts, as long as they originate from the same locality. In a series of papers published between 1892 and 1893 Carnot and Rivière reported the results of their research using the fluorine dating method, which showed that the human remains found at Billancourt were in fact much younger than the animal fossils and therefore did not date from the Pleistocene.

Rivière later shifted his research to the Dordogne region, where previous French archaeologists had discovered numerous caves containing human remains and artifacts belonging to the Paleolithic period. He and the French archaeologist and geologist Gustave Chauvet were among the first to explore the Paleolithic site of La Micoque in 1895, which became the location of valuable excavations by other archaeologists during the early twentieth century. Rivière made an important contribution to the study of Paleolithic care art when he began to investigate the Grotte de la Mouthe, located near Eyzies de Tayac, in 1894. During his excavations of this cave he found Paleolithic flint artifacts, but in 1895 he noticed faintly visible figures of bison, ibex, stag, horse, and reindeer engraved on the walls, partially covered by stalagmite. This was not the first discovery of cave art. While excavating the Altamira cave located on his estate in Spain in 1879, Marcelino Sanz de Sautuola had discovered paintings of extinct Pleistocene animals on parts of the cave wall. Despite the fact that Juan Vilanova y Piera, professor of geology at the University of Madrid, believed these images to be authentic examples of Paleolithic art the majority of European prehistorians believed the paintings to be fraudulent. The subject of Paleolithic cave paintings and engravings was therefore quite controversial. Rivière announced his discovery to the president of the Académie des Sciences and read a paper on the subject there in 1896. By 1897 his excavations had produced extinct animal fossils along with stone tools, perforated shells, and an engraved limestone lamp. He traced the wall art and had it photographed by Charles Durand, which made them the first photographs taken of Paleolithic cave engravings. The animals depicted on the walls resembled the images on portable art that had been accepted as authentic Paleolithic art.

Rivière presented a paper outlining his discoveries on 3 June 1897 to the Société d'Anthropologie de Paris but was unable to convince Émile Cartailhac and Édouard Harlé, two French prehistorians who had inspected the cave paintings at Altamira and rejected them as forgeries. His claims generally received a great deal of skepticism but some archaeologists believed it was important to inspect the site before forming an opinion. Therefore, on 10 August 1896 a delegation of experts from the Société Historique et Archéologique du Périgord [Historical and Archaeological Society of Périgord] examined the engravings and concluded that they were in fact authentic. It was not until 14 August 1902 that members of the Association Française pour l'Avancement des Sciences [French Association for the Advancement of the Sciences] made an excursion to the site to officially examine it. Opinions about the authenticity of Paleolithic cave paintings and engravings changed as additional discoveries at other sites finally led Cartailhac and others to publically accept cave art in 1902. Meanwhile, Rivière continued to excavate various prehistoric sites. He excavated a Gallo-Roman necropolis on the Rue du Hameau in Paris in 1903. Then in 1905 he discovered what he considered to be a human skeleton dating from the Chellean-

Mousterian period at the rock shelter at Moustier de Peyzac, in the Dordogne region of France.

Rivière's career as a scientist was also developing at this time. He published *De l'antiquité de l'homme dans les Alpes-Maritimes* [On the Antiquity of Man in the Maritime Alps] in1887. This was an award winning book on the prehistory of that region based upon excavations of its caves, megalithic monuments, barrows, and dolmens. From 1880-1904 he was a writer for the journal *Revue scientifique*. He was hired to be the Deputy Laboratory Assistant at the Collège de France [at least from 1897] and was later promoted to Assistant Laboratory Director and eventually Laboratory Director in 1905. He was also active in French intellectual life. He became an early member of the Association des Journalistes Parisiens [Association of Parisian Journalists] in 1887. He was a member of the Association Française pour l'Avancement des Sciences. He was a member of the Société d'Anthropologie de Paris [Anthropology Society of Paris] and of the Société Française d'Archéologie [French Society of Archaeology], the leading anthropological and archaeological societies in France.

Rivière was also a member of several prominent historical societies:

Société archéologique et historique des IIIe, IVe, XIe et XIIe arrondissements de Paris

Société de l'histoire de Paris et de l'Île-de-France (member since 1879)

Société des amis des monuments parisiens (member from 1898 to1900)

Société historique d'Auteuil et de Passy

Société historique du VIe arrondissement de Paris

Société scientifique et littéraire de Cannes et arrondissement de Grasse

Rivière contributed to the promotion and institutionalization of prehistoric archaeology in France when he and the physician and prehistorian Paul Raymond proposed the idea of creating the

Société Préhistorique de France (Prehistoric Society of France) in 1903. The Society was formally established in January 1904 with Rivière serving as its president during the first year of its existence. The Society was renamed the Société Préhistorique Française in 1911. Rivière served as president of the inaugural meeting of the Congrès Préhistorique de France {Prehistoric Congress of France] held in Périgueux in 1905, which was organized by the Société Préhistorique de France.

Rivière won numerous awards during his lifetime and was ten times a laureate of the Académie des Sciences. In addition to his prehistoric research he also published on the history of medicine. Rivière is credited with inventing the term *spéléologie* (speleology) in 1890, from the Greek *spêlaion* (cavern) and *logos* (science), to refer to the study of caves.

Émile Rivière died on 25 January 1922 in Paris.

SELECTED BIBLIOGRAPHY

"Sur le squelette humain trouvé dans les cavernes des Baoussé-Roussé (Italie), dites grottes de Menton, le 26 Mars 1872," *Matériaux pour l'histoire primitive et naturelle de l'homme* ser. 2, 7 (1872): 228-232.

"Note sur l'homme fossile des cavernes de Baoussé Roussé, en Italie, dites Grottes de Menton." *Congrès international d'anthropologie et d'archéologie préhistoriques Comptes rendus* (1872): 164-175.

"Les fouilles des grottes de Baoussé-Roussé, dites grottes de Menton." *Bulletins de la Société d'Anthropologie de Paris* 7 (1872): 584-589.

"Découverte d'un nouveau squelette humain de l'époque paléolithique dans les cavernes des Baoussé-Roussé (Italie), dites Grottes de Menton." *Comptes rendus hebdomadaires des séances de l'Académie des Sciences* 76 (1873): 1027-1031.

"Sur trois nouveaux squelettes humains découverts dans les grottes de Menton et sur la disparition des silex taillés et leur remplacement par des instruments en grès et en calcaire." *Matériaux pour l'histoire primitive et naturelle de l'homme* 9 (1874): 94-98.

"Détermination par l'analyse chimique de la contemporanéité ou de la

concontemporanéité des ossements humains et des ossements d'animaux trouvés dans un même gisement." *Association française pour l'avancement des sciences Comptes Rendus* part 2 (1892): 378-382.

"Fossilisation et analyse chimique des os." *Bulletins de la Société d'Anthropologie de Paris* ser. 4, 4, (1893): 309-315.

"La grotte de la Mouthe," *Bulletins de la Société d'Anthropologie de Paris* 8 (1897): 302-329, 484-490

De l'antiquité de l'Homme dans les Alpes-Maritimes. Paris, J.B. Baillère, 1887.

Gustave Chauvet and Émile Rivière. "Gisement quaternaire de La Micoque." *Comptes rendus hebdomadaires des séances de l'Académie des Sciences* 123 (1896): 401-403.

Gustave Chauvet and Émile Rivière. "Station quaternaire de La Micoque (Dordogne)." *Association française pour l'avancement des sciences Comptes rendus* part 2, (1897): 697-707.

"Le squelette humain chelléo-moustérien du Moustier-de-Peyzac (Dordogne)." *Bulletin de la Société préhistorique de France* 5 (1908): 441-442.

"Note sur l'ordre chronologique véritable des six premières découvertes de grottes à gravures et à peintures." *Bulletin de la Société préhistorique de France* 6 (1909): 376-380.

SECONDARY SOURCES

"Obsèques de M. Emile Rivière." *Bulletin de la Société préhistorique de France* 19 (1922): 50-52.

J. Bossavy, “M. Émile Rivière.” *Bulletin de la Société préhistorique de France* 19 (1922): 257-267.

L. Franchet. “Emile Rivière (1835-1922).” *Revue scientifique* (1922): 127-128.

Louis Capitan. “Émile Rivière.” *Revue anthropologique* (1922): 6-7.

Martha B. Kendall. “Rivière de Précourt, Émile-Valère.” In *Dictionary of Scientific Biography*. Charles Gillispie (ed.). Vol. 11, pp. 483-484. New York: Charles Scribner’s Sons, 1970.

Philippe Soulier, “Aux origines de la Société Préhistorique Française: la Société Préhistorique de France (1904-1910).” *Bulletin de la Société préhistorique française*, 90, (1993): 95-103.

Notes

1 In 1895 Prince Albert I of Monaco undertook new excavations in the Grotte des Enfants, in deposits that lay below Rivière’s earlier excavations. This led to the discovery of four human skeletons that were subsequently examined by René Verneau who identified a distinct “Grimaldi race” on the basis of these specimens.

Wu Rukang (1916–2006)

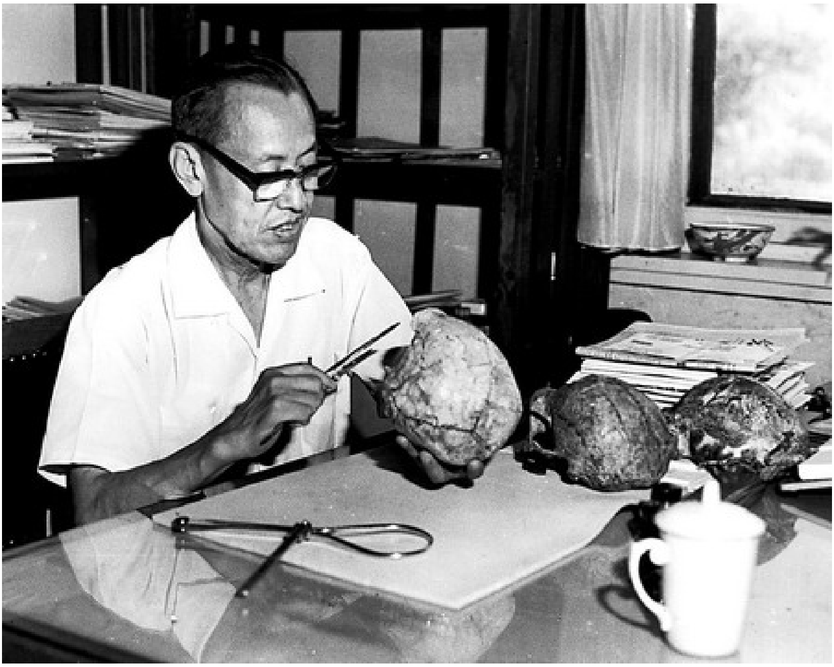
Wu Rukang

Wu Rukang (**吴汝康**) (before 1967 his name was transliterated as Woo Ju-Kang) was born on 19 February

1916 in Wujin County, Jiangsu Province, in eastern China. His father was an elementary school principle. Wu completed a BS degree in biology from National Central University (later renamed Nanjing University) in Nanjing in 1940. Shortly thereafter Wu Dingliang (Woo Ting-Lian), the director of the Anthropology section of the Institute of History and Philology (歷史語言研究所), which was part of the Academia Sinica, hired Wu to work with him as an intern at the Institute. The Institute of History and Philology had been forced to relocate to Kunming, in Yunnan Province, because of the war with Japan. Wu Rukang worked with Wu Dingliang from 1940 to 1942 studying human skeletons and conducting field surveys on the different ethnic groups in Guizhou Province. From 1942 to 1944 Wu was a lecturer at Guizhou University but left to become assistant researcher in the newly established preparatory office of the Institute of Physical Anthropology, part of the Academia Sinica, where he worked from 1944 to 1946.

In 1946, Edmund V. Cowdry, an American who taught anatomy at the Peking Union Medical College from 1917 to 1921 before joining the faculty at the Washington University School of Medicine, arranged for Wu Rukang to travel to the United States to study at the Washington University School of Medicine, in St. Louis, Missouri. After obtaining his Master' degree in 1947, Wu completed his Ph.D. in physical anthropology under the supervision of Mildred Trotter in 1949 with a dissertation titled "Ossification, Growth and Variation of the Human Maxilla and Palate Bone." As part of his research, Wu spent the summer of 1948 studying paleoanthropology under the direction of T. Dale Stewart at the National Museum of Natural History at the Smithsonian Institution in Washington, DC. In the autumn of 1949, Wu returned to China, but his return was complicated by the break in diplomatic relations between the newly established People's Republic of China and the United States, so he had to travel first to Taiwan and then secretly cross to the mainland.

Upon his return Wu joined the faculty of the Dalian Medical College where he served as a professor and the director of the Department of Anatomy. From 1953 to 1956 he also worked as an adjunct researcher in the Laboratory of Vertebrate Paleontology (古脊椎动物研究室). The Laboratory originated from the Cenozoic Research Laboratory, which was created in 1929 in conjunction with the excavations at Zhoukoudian that produced the famous *Homo erectus* (Peking Man) fossils. In 1953 the Cenozoic Research Laboratory was reorganized into the Laboratory of Vertebrate Paleontology, affiliated with the Chinese Academy of Sciences, and in 1960 the Laboratory was renamed the Institute of Vertebrate Paleontology and Paleoanthropology (古脊椎动物与古人类研究所). Excavations had recently reopened at Zhoukoudian and professor Yang Zhongjian, who later became director of the Institute of Vertebrate Paleontology and Paleoanthropology, invited Wu to examine some of the new fossils found there. It is from this point that Wu's career became devoted to paleoanthropology research. In 1956, he left the Dalian Medical College to become a full time researcher at the Institute of Vertebrate Paleontology and Paleoanthropology (at that time it was still called the Laboratory of Vertebrate Paleontology). Significantly, Wu also joined the Communist Party of China in 1957.



Wu examining hominid fossils

During his long career at the Institute of Vertebrate Paleontology and Paleoanthropology Wu studied many important fossils relating to primate and especially human evolution. Construction projects undertaken by the new government as well as the resumption of scientific excavations produced a wealth of new ape and hominid specimens. Wu studied *Dryopithecus* fossils found in 1956-7 in Yunnan province and a cache of fossils found in 1975 at Lufeng, in Yunnan province, that were originally thought to represent *Sivapithecus* and *Ramapithecus*. Wu examined these fossils and in 1987 he proposed they be placed in a new genus called *Lufengpithecus* (Wu 1987). Wu became particularly known for his comprehensive analysis of *Gigantopithecus* fossils, which led to an important monograph titled *The Mandibles and Dentition of Gigantopithecus* (Wu 1962).

In 1949 excavations resumed at Zhoukoudian and soon new fossils were found at the site. Wu and his colleague Jia Lanpo examined new *Homo erectus* teeth and limb bones found at Zhoukoudian between 1949 and 1951 (Wu and Jia 1954). Wu then published a description of a *Homo erectus* mandible found at Zhoukoudian in 1958 (Wu and Zhao 1959). Excavations also began to discover *Homo erectus* fossils in other parts of China. Wu studied the *Homo erectus* mandible, found in 1963, and the cranial and facial bones found in 1964 in Lantian County, Shaanxi Province, during excavations conducted by the Institute of Vertebrate Paleontology and Paleoanthropology (Wu 1964; 1966). These two specimens came to be called Lantian Man and are thought to be older than the specimens from Zhoukoudian. Wu also studied the *Homo erectus* partial cranium excavated from Longtan Cave in Hexian County, Anhui Province in 1980–81 (Wu and Dong 1982).

Reconstruction of the Lantian Man fossils (Shaanxi History Museum)

The renewed excavations also unearthed ancient *Homo sapiens* fossils from the Paleolithic. Early in his career Wu and Peng Ruce examined a *Homo sapiens* partial cranium found at Maba, in Guangdong Province in 1958 (Wu and Peng 1959). Then in 1984 students from Peking University under the direction of Professor Zun'e Lu excavated a partial human skeleton from a collapsed limestone cave near Sitian Village, in Liaoning Provence. The so-called Jinniushan skeleton is thought to be 200,00 years old and displays a combination of *Homo erectus* and *Homo sapiens* features and is considered to be archaic *Homo sapiens*. Wu and his assistant Zhao Zongyi reconstructed the cranium of the specimen and published a description of it in 1988 (Wu 1988a).

Wu, like many of his Chinese colleagues, supported what is called the Multiregional Hypothesis. He argued that *Homo erectus* populations in Asia evolved into the modern human populations of those areas (Wu and Lin 1983). The opposing theory is the Out of Africa Hypothesis, which argues that *Homo erectus* became extinct in Asia and the *Homo sapiens* that migrated out of Africa into Asia are the ancestors of modern Asian peoples. In 1988 Wu published a paper where he proposed the creation of a new discipline called neoanthropology. While paleoanthropology is the study of hominid evolution, neoanthropology would focus specifically on the physical anthropology of modern *Homo sapiens* (Wu 1988b). By this time Wu was one of the most important paleoanthropologists in China. He served as the deputy director of the Institute of Vertebrate Paleontology and Paleoanthropology from 1977 to 1983. In addition, he served as the vice chairman of the Chinese Society of Anatomical Sciences from 1970 to 1978, and then as its chairman from 1978 to 1986. In 1980, he was elected academician of the Academic Divisions of the Chinese Academy of Sciences. In 1982, he founded the journal *Acta Anthropologica Sinica*, which focuses on paleoanthropology and physical anthropology in China.

Wu died in Beijing on 31 August 2006.

SELECTED BIBLIOGRAPHY

Wu Rukang and Jia Lanpo, "New Discoveries of Sinanthropus pekinensis in Choukoutien." *Acta Paleontologica Sinica* 2 (1954): 267–288.

Wu Rukang and Zhao Zikuei. "New Discovery of Sinanthropus Mandible from Choukoutien." *Vertebrata PalAsiatica* 3 (1959): 169–172.

Wu Rukang and Peng Ruce. Fossil Human Skull of Early Paleoanthropic Stage Found at Mapa, Shaoquan, Kwantung Province. *Vertebrata Palasiatica* 3 (1959): 176-182.

巨猿下頜骨和牙齒化石*The Mandibles and Dentition of*

Gigantopithecus. (Palaeontologia sinica, New ser. D: 11), 1962.
"Mandible of the Sinanthropus-Type Discovered at Lantian, Shensi." *Vertebrata PalAsiatica* 1(1964a): 1–12.
"Mandible of Sinanthropus lantianensis." *Current Anthropology* 5 (1964b): 98–102
"The Hominid Skull of Lantian, Shensi." *Vertebrata PalAsiatica* 10 (1966):1-22.
"Palaeoanthropology in the New China." In L. K. Koenigsson (ed.). *Current Arguments on Early Man*. Pp. 182–206. London: Pergamon Press, 1980.
Wu Rukang and Dong, Xingren. "Preliminary Study of Homo erectus Remains from Hexian, Anhui." *Acta Anthropologica Sinica* 1(1982): 2-13.
Recent Advances of Chinese Palaeoanthropology. Hong Kong: Hong Kong University Press, 1982.
Wu Rukang and Lin Shenglong. "Peking Man." *Scientific American* 248 (1983): 78–86.
北京猿人遣址综合研究 [Multi-disciplinary Study of the Peking Man Site at Zhoukoudian.] Beijing, 1985.
"A Revision of the Classification of the Lufeng Great Apes." *Acta Anthropologica Sinica* 6 (1987): 265–271.
"The Reconstruction of the Fossil Human Skull from Jinniushan, Yinkou, Liaoning Province and its Main Features." *Acta Anthropologica Sinica* 7 (1988a): 97-101.
"Paleoanthropology and Neoanthropology." *International Social Science Journal* 116 (1988b): 265-270.
Wu Rukang, Wu Xinzhi, and Zhang Senshui, **中国远古人类** [Early Humankind in China]. Beijing: Ke xue chu ban she: Xin hua shu dian Beijing fa xing suo fa xing, 1989.
南京直立人 [Homo erectus from Nanjing.] Nanjing: Jiangsu ke xue ji shu chu ban she, 2002.

SECONDARY SOURCES

Frank Spencer, "Wu Rukang (1916-)." In Frank Spencer (ed.) *History of Physical Anthropology: An Encyclopedia*. 2 vols. Vol. 2, pp. 1118-1120. New York: Garland Publishing, 1997.

Wu Xinzhi, "Wu, Rukang." In Claire Smith (ed.), *Encyclopedia of Global Archaeology*. Pp. 7920-7921. Springer New York, 2014.

Li Luyang, 吴汝康传 [Biography of Wu Rukang]. Shanghai: Shanghai Scientific and Technological Education Publishing House, 2004.

Wu Xinzhi, "Wu Rukang," in W. Qianjin & H. Yanhong (eds.), *Outstanding Persons of Chinese Academy of Sciences*: 546-549. Beijing: Science Press, 2010.

* I would like to acknowledge the assistance of Lo Kuan-Hung and Shih Po-Jen in translating Chinese sources.

Hermann Schaaffhausen (1816–1893)

Hermann Schaaffhausen

Hermann Joseph Schaaffhausen was born 18 July 1816 in Koblenz, Germany. His father, Hubert Josef Schaaffhausen, was a wealthy merchant in Koblenz and his mother was Anna Maria Wachendorf. In 1834 he began his medical studies at the University of Bonn where he studied zoology with Georg August Goldfuss, anatomy with August Franz Joseph Karl Mayer, surgery and surgical anatomy with Karl Wilhelm Wutzer, and mental illness and anthropology with Christian Friedrich Nasse. After completing his studies at Bonn, Schaaffhausen entered the University of Berlin in 1837 where he studied under Johannes Müller. He received his medical doctorate on 31 August 1839 with a dissertation titled *De vitae viribus*. The following year he passed the state medical exam and during the autumn he visited Dresden, Prague, Vienna and Munich and Würzburg. He spent six months studying in Paris in 1842 and also visited London for three months in the summer of 1843. Schaaffhausen was appointed a Privatdozent (lecturer) of physiology at the University of Bonn in 1844 and was promoted to Professor extraordinarius in 1855. He was made Geheimer Medicinalrath (Privy Medical Councilor) in 1868. Schaaffhausen remained a professor on the medical faculty at the university for the remainder of his career, lecturing on physiology, anatomy, medicine, and anthropology. He lobbied the university for years to establish a chair in anthropology but the Medical Faculty rejected his pleas, in part due to his support for the idea of human evolution.

Early in his career Schaaffhausen discussed the idea of biological evolution in an article published in 1853 titled "Ueber Beständigkeit und Umwandlung der Arten" (On the Constancy and Transformation of Species) where he declared that the immutability of species was not proven. This was several years before Charles Darwin published *On the Origin of Species* (1859). Schaaffhausen presented a paper at the meeting of the Versammlung deutscher Naturforscher und Aerzte in 1867 titled "On the Anthropological Questions of Our Time" where he argued that humans had developed from animal ancestors, but he also believed that humans represent the pinnacle of creation and that a divine plan directed the emergence of humans. He argued, as Darwin did, that the biological and intellectual differences that separate humans from other animals are quantitative, not qualitative, and he noted the simian traits that one could observe in the anatomy of both prehistoric peoples and existing "lower races" (Schaaffhausen 1867).

Much of Schaaffhausen's research dealt with anthropology and the study of prehistoric humans in Europe. This was at a time when anthropology was emerging as a distinct science and becoming professionalized. Paul Broca in France and Rudolf Virchow in Germany were founding institutions and establishing the methodology of anthropology. They emphasized the study of human races by making careful measurements of human bodies. For prehistoric skeletons this meant the measurement of bones and especially the use of craniometry, the measurement and study of the form of human skulls. Schaaffhausen was one of the original members of the Deutsche Gesellschaft für Anthropologie, Ethnologie und Urgeschichte (German Society for Anthropology, Ethnology and Prehistory) when it was founded in 1869. He was a member of a commission organized by the Society to catalogue all the human skeletal remains found in Germany. Schaaffhausen was also involved in the discussion among German anthropologists over how to standardize the way anthropological measurements were taken, which led to the Frankfort Agreement in 1881 establishing an agreed method among German anthropologists for making craniometric measurements. He also worked to create a standard way of measuring the cranial capacity of human skulls.

Today Schaaffhausen is best known for his contributions to paleoanthropology through his work on the original Neanderthal fossils. In 1856 workmen quarrying stone from the Feldhofer Grotte in the scenic Neander Valley, near Düsseldorf in northern Germany, unearthed human bones in the cave. Johann Carl Fuhlrott, a teacher at the Gymnasium in Elberfeld who had an interest in geology and paleontology, learned of the rare discovery and immediately went to recover the bones. He obtained the top portion of the skull, a clavicle and scapula, the right and left ulnae, a radius bone, the left pelvic bone, and the right and left femora.

Fuhlrott noted that the bones appeared to be completely fossilized, which meant the bones might be extremely old. Recognizing the potential scientific significance of these fossils, Fuhlrott brought them to Schaaffhausen for analysis. Schaaffhausen was struck by the shape of the cranium and the evidence for the great geological age of the bones. Fuhlrott and Schaaffhausen presented papers describing the fossils and the geology of the Feldhofer Cave at a meeting of the Niederrheinische Gesellschaft für Natur- und Heilkunde (Lower Rhine Medical and Natural History Society) in Bonn in 1857. Schaaffhausen published a paper comparing the Neanderthal bones with other prehistoric human skeletons (Schaaffhausen 1858) and Fuhlrott published a paper in the *Verhandlungen des Naturhistorischen Vereins der preussischen Rheinlande und Westphalens* in 1859 describing the geology of the Feldhofer cave and how the bones were discovered. Fuhlrott and Schaaffhausen argued that the Neanderthal fossils dated from what was then called the Glacial Period, which meant they lived at the same time as mammoths, wooly rhinoceros, and other extinct Ice Age animals.

Johann Fuhlrott

Rudolf Virchow

Schaaffhausen identified several features where the Neanderthal cranium differed markedly from modern human skulls. It possessed prominent eyebrow ridges and the long sloping shape of the cranium indicated that it belonged to what Schaaffhausen called a savage and barbarous race of ancient human. He concluded that the Neanderthals were the original wild race of humans that lived in Europe before other peoples migrated into Europe in prehistoric times. The Neanderthal fossils generated considerable debate among anthropologists across Europe. Rudolf Virchow, the most influential anthropologist in Germany, argued that the distinctive morphological features of the bones were the result of pathology and not evidence that they belonged to a distinct primordial human race. Uncertainty over how to interpret the Neanderthal fossils continued for decades and it was not until after the discovery of additional Neanderthal fossils at the end of the nineteenth century, along with the growing acceptance of the theory of evolution, that the Neanderthals began to be accepted as an extinct species of ancient human.

Schaaffhausen's illustration of the Neanderthal cranium showing the side, front, and top views that depict the unusual form of the cranium (the protruding bony ridges over the eye sockets, the low sloping forehead, and the long low brain case)

Schaaffhausen continued over the next thirty years to write about the Neanderthal fossils and to investigate other prehistoric human remains in an attempt to understand the populations that inhabited Europe during prehistory. He examined the partial Neanderthal mandible that Karel Maška discovered in 1880 in the Šipka cave, in Moravia (today part of the Czech Republic) (Schaaffhausen 1880, 1883). He also discussed the human cranium unearthed at Podbaba, near Prague, in 1883 that was described by Anton Fritsch (Schaaffhausen 1883, 1884). This fossil was initially believed to date from the Paleolithic although its geologic age remains uncertain. He recognized the significance of the two Neanderthal skeletons discovered in a cave near the Belgian village of Spy in 1886, which helped to clarify the anatomy of the Neanderthals and vindicated his original opinion that they represented a distinct type of human (Schaaffhausen 1887a, 1887b). Schaaffhausen also examined the partial human skeleton that Alexander Makowsky excavated from the Pleistocene loess deposits under the Franz-Joseph Strasse in Brünn (Brno), Moravia, in 1891(Schaaffhausen 1892).

Schaaffhausen was a member of several prominent German and foreign scientific societies. In 1845 he became a member of the Naturhistorischen Vereins der preussischen Rheinlande und Westphalens (Natural History Society of the Rhineland and Westphalia), which was located in Bonn, and in 1864 he became a member of the Senckenbergischen Naturforschenden Gesellschaft (Senckenberg Nature Research Society), which is located in Frankfurt am Main. He was also a member of the Vereins von Alterthumsfreunden im Rheinlande (Association of the Friends of Antiquity in the Rhineland), the Niederrheinische Gesellschaft für Natur- und Heilkunde (Lower Rhine Society for Natural and Medical Science), and the Historischer Verein für den Niederrhein (Historical Association for the Lower Rhine). Schaaffhausen was elected a member of the prestigious Kaiserlichen Leopoldinisch-Carolinischen Deutschen Akademie der Naturforscher on 25 November 1873. He was elected a foreign member of the Société d’Anthropologie de Paris (Anthropology Society of Paris) in 1863, an honorary member of the Anthropological Society of London in 1868, and a member of the Société impériale des naturalistes de Moscou (Imperial Society of Naturalists of Moscow) in 1874. In addition to his scientific activities Schaaffhausen served as president of the Vereins der Rettung zur See (Association for Rescue at Sea).

Schaaffhausen served as co-editor for many years of the influential journal *Archiv für Anthropologie*. He was also one of the founders of the Rheinischen Landesmuseums located in Bonn. He published many important scientific papers during his career, but no major monographs. Many of his most important anthropological papers were published as a book titled *Anthropologische Studien* [*Anthropological Studies*] in 1885. Schaaffhausen died in Bonn on 26 January 1893. He was buried in the Old Cemetery in Bonn. Among those who attended his funeral were Kaiser Wilhelm II, the Queen of Sweden, and many of his colleagues from the university.

Schaaffhausen obtained the assistance of a Bonn artist to have this reconstruction made representing his best guess at what the Neanderthals looked like. He relied upon the new information obtained from the two recently discovered Neanderthal skulls from Spy in Belgium. This is one of the earliest published artistic portrayals of an extinct hominid.

SELECTED BIBLIOGRAPHY

"Ueber Beständigkeit und Umwandlung der Arten." *Verhandlungen des Naturhistorischen Vereins der Preussischen Rheinlande und Westfalens* 10 (1853): 420-451.

"Ueber die Entwickelung des Menschengeschlechts und die Bildungsfähigkeit seiner Rassen." *Amtlichen Bericht über die ein* *und dreissigste Versammlung deutscher Naturforscher und Aerzte in Bonn* (1857): 73-81.

"Ueber die Hautfarbe des Negers und über die Annäherungen der menschlichen Gestalt an die Thierform." *Amtlichen Bericht über die ein und dreissigste Versammlung deutscher Naturforscher und Aerzte zu Göttingen* [1854] (1860): 103-114.

"Zur Kenntnis der ältesten Rasseschädel." *Archiv für Anatomie, Physiologie und wissenschaftliche Medicin* (1858): 453–478.

"On the Crania of the Most Ancient Races of Man." *The Natural History Review* 1 (1861): 155-176.

"Ueber den Zustand der wilden Völker" *Archiv für Anthropologie* 1 (1866): 161-190.

"Ueber die anthropologischen Fragen der Gegenwart." *Archiv für Anthropologie* 2 (1867): 327-41.

"Ueber die Urform des menschlichen Schädels." *Abhandlungen aus dem gebiete der naturwissenschaften, mathematik und medicin als Gratulationsschrift der Niederrheinischen Gesellschaft für Natur- und Heilkunde zur feier des Fünfzigjährigen Jubiläums der Königlich Rheinischen Friedrich-Wilhelms Universität* (1868): 59-84.

"Ueber germanische Grabstätten am Rhein." *Jahrbücher des Vereins von Alterthumsfreunden im Rheinlande* 44 (1868): 86-162.

"Die Lehre Darwin's und die Anthropologie." *Archiv für Anthropologie* 3 (1868): 259-266.

"Darwinism and Anthropology." *Journal of the Anthropological Society of London* 7 (1868): cviii-cxi.

"On the Development of the Human Species and the Perfectibility of Its Races." *Anthropological Review* 7 (1869): 366-375.

"Ueber die Methode der vorgeschichtlichen Forschung." *Archiv für Anthropologie* 5 (1871): 113-128.

"Sur l'anthropologie préhistorique." *Congrès d'anthropologie et d'archéologie préhistoriques Compte Rendu* [1872] (1873): 535-549.

Wilhelm Baer, Hermann Schaaffhausen, and Friedrich von Hellwald. *Der vorgeschichtliche Mensch. Ursprung und Entwickelung des Menschengeschlechtes*. Leipzig: O. Spamer, 1874.

"Der Neanderthaler Fund." *Correspondenz-Blatt der Deutschen Gesellschaft für Anthropologie, Ethnologie und Urgeschichte* (1878): 116-120.

"Funde in der Schipkahöhle in Mähren." *Verhandlungen des naturhistorischen Vereins der Preussischen Rheinlanden und Westfalens* 37 (1880): 260-264.

"Ueber den menschlichen Kiefer aus der Schipka-Höhle bei Stramberg in Mähren." *Verhandlungen des naturhistorischen Vereins der Preussischen Rheinlanden und Westfalens* 40 (1883): 279-305.

"Die Schädel aus dem Löss von Podbaba und Winaric in Böhmen." *Verhandlungen des Naturhistorischen Vereines der Preussischen Rheinlande und Westfalens* (1884): 364-379.

Anthropologische Studien. Bonn: Marcus, 1885.

Der Neanderthaler Fund. Bonn: Marcus, 1885.

"Ueber den Schädel von Spy." *Correspondenzblatt der Deutschen Gesellschaft für Anthropologie, Ethnologie und Urgeschichte* 18 (1887a): 161-162.

"Ueber die Funde menschlicher Skelette bei Spy." *Verhandlungen des Naturhistorischen Vereins der Preussischen Rheinlande und Westfalens* (Korrespondenzblatt) 44 (1887b): 75-76.

"Vorgeschichtliche Funde in Mähren." *Verhandlungen des Naturhistorischen Vereins der Preussischen Rheinlande und Westfalens* 49 (1892): 26-37.

SECONDARY SOURCES

Johannes Ranke, "Professor Dr. Hermann Schaaffhausen," *Jahrbücher des Vereins von Alterthumsfreunden im Rheinlande* 94 (1893): 1-42.

Johannes Ranke, "Schaaffhausen, Hermann." In *Allgemeine Deutsche Biographie*, (Historischen Kommission bei der Bayerischen Akademie der Wissenschaften), (1893), vol. 35, pp. 748-751.

E. Roth, "Hermann Schaaffhausen," *Leopoldina* 29 (1893): 168-173.

Hermann Hüffer, “Hermann Schaaffhausen.” *Annalen des Historischen Vereins für den Niederrhein* 56 (1893): 189-194.

Rudolf Virchow, “Hermann Schaaffhausen,” *Verhandlungen der Berliner* Gesellschaft für Anthropologie, Ethnologie und Urgeschichte (1893): 85-86.

Ursula Zängl-Kumpf, *Hermann Schaaffhausen (1816–1893) – die Entwicklung einer neuen physischen Anthropologie im 19. Jahrhundert*, Frankfurt am Main: R. G. Fischer, 1990.

Ursula Zängl-Kumpf, “Hermann Schaaffhausen (1816-1893) und die frühe Geschichte des Faches Anthropologie.” *Anthropologischer Anzeiger* 50 (1992): 335-354.

Ursula Zängl-Kumpf, ” Schaaffhausen, Hermann (1816-1893).” In Frank Spencer (ed.). *History of Physical Anthropology: An Encyclopedia*. 2 vols. New York: Garland Publishing, vol. 2, pp. 909-911.

Ursula Zängl-Kumpf, “Hermann Schaaffhausen (1816-1893) and the Neanderthal Finds of the 19th Century,” in Ralf W. Schmitz (ed.), *Neanderthal 1856-2006* (Mainz am Rhein: Verlag Philipp von Zabern, 2006), pp. 45–53.

Gustav Schwalbe (1844–1916)

Gustav Schwalbe

Gustav Albert Schwalbe was born on 1 August 1844 in Quedlinburg, Germany. His father, Gustav Ferdinand Schwalbe, was a physician who died when his son was only two years old. Schwalbe studied medicine at the Friedrich-Wilhelms University in Berlin during the winter of 1862-3 then spent the summer of 1863 at the University of Zurich. He then studied from late 1863 to 1865 at the Rheinischen Friedrich-Wilhelms University in Bonn before returning to Berlin during the summer of 1865 where he obtained his MD degree in 1866 with a thesis titled *Observationes nonnullae* *de infusiorum ciliatorum structura*. Schwalbe completed his military service between May 1867 and March 1868 at the Königshusaren (King's Hussars) in Bonn and from 1868 to 1869 he worked as an assistant at the Physiological Institute in Amsterdam. In 1870 he completed his habilitation for anatomy at the University of Halle with a thesis titled *De canali Petiti et de zonula ciliari*. Schwalbe then obtained a position as post-doctoral assistant physician in the military hospital in Reichenberg in Bohemia. During the Franco-Prussian war Schwalbe served as a medical assistant in the 7th Kürassier-Regiment. From 1870-71 he was also a Privatdozent (lecturer) in anatomy at the University of Halle and in 1871 he additionally taught at the University of Freiburg. He was an assistant professor of histology in the Medical Faculty at the University of Leipzig from 1871 to 1873 and then professor of anatomy and director of the Anatomical Institute at the University of Jena from 1873 to 1881. While at Jena Schwalbe met Ernst Haeckel and was influenced by his views about evolution. Schwalbe left Jena and served as professor of anatomy and director of the Anatomical Institute at the University of Königsberg from 1881 to 1883 before finally becoming professor of anatomy and director of the Anatomical Institute at the Kaiser-Wilhelms University of Strasburg from 1883-1914.

During the early portion of his career Schwalbe was involved in research in anatomy, histology, and physiology. He made important discoveries relating to the lymphatic system, the nervous system, and the sense organs. He published several important works on anatomy including an influential textbook on neurology, *Lehrbuch der Neurologie* (1881). Beginning in the 1880s Schwalbe's research increasingly focused on physical anthropology and human evolution. Unlike some contemporary anthropologists, he stressed the importance of using comparative morphology and developmental studies to understand human evolution. He developed a methodology that he called *Formanalyse* (analysis of form) that employed precise measurement and analysis of hominid fossils within the context of comparative anatomy and morphology. Biologists at this time were exploring the subject of human evolution and the relationship of humans with the apes and monkeys, while paleontologists and prehistoric archaeologists were unearthing human fossils from Pleistocene deposits that offered insights about prehistoric peoples.

In France the anthropologists Armand de Quàtrefages and Ernest-Théodore Hamy identified two distinct dolichocephalic races, Neanderthals and Cro-Magnons, as well as several brachycephalic races after examining human fossil specimens found throughout Europe. However, like many anthropologists at the time, they did not consider any of these specimens to represent an extinct species of human. When the Dutch anatomist Eugène Dubois announced the discovery of a fossilized cranium and femur from the island of Java in the Dutch East Indies (now Indonesia) in 1895 and claimed that it belonged to an extinct hominid species he called *Pithecanthropus erectus* the debate over human evolution took a new turn. Schwalbe obtained casts of the *Pithecanthropus* cranium and in 1897 he visited Dubois in the Netherlands in order to examine the *Pithecanthropus* fossils directly. This resulted in Schwalbe publishing a detailed description on the cranium where he compared it with monkey and ape skulls as well as human skulls from various races. While conducting this research Schwalbe developed a variety of new craniometric methods. He also recognized the necessity of comparing Dubois' *Pithecanthropus* cranium with the original Feldhofer Neanderthal cranium discovered in Germany in 1856. Schwalbe concluded that the *Pithecanthropus* cranium differed significantly from ape crania and that it possessed features that were intermediate between apes and the Neanderthal cranium (Schwalbe 1899).

The analysis of the Pithecanthropus erectus specimen generated a new interest in the Feldhofer Neanderthal specimen and Schwalbe began to examine this fossil and other Pleistocene human specimens. Quàtrefages and Hamy attributed the Feldhofer

Neanderthal and several other human fossils found throughout Europe to what they called the Canstatt race. But after subjecting some of these specimens to new craniometric analysis Schwalbe argued that Quàtrefages and Hamy had wrongly grouped together what were in fact two distinct populations: one representing early Pleistocene Neanderthals and the other representing late Pleistocene humans. Furthermore, after employing his new craniometric methods to examine the Feldhofer Neanderthal cranium Schwalbe concluded that it did not merely represent a prehistoric human race but instead belonged to a distinct species of extinct human that he called *Homo primigenius*. As a consequence he not only rejected Quàtrefages and Hamy's Canstatt race but also German anthropologist Rudolf Virchow's influential assertions that the peculiar anatomical features observed in the Feldhofer Neanderthal fossils were the result of pathology in a modern human and not evidence for a distinct type of human (Schwalbe 1901a; 1901b).

Schwalbe was also an advocate of evolution and he supported the argument promoted by Charles Darwin, Thomas, Huxley, Ernst Haeckel and others that humans had evolved from an anthropoid ape ancestor. Schwalbe proposed a conception of human evolution where *Pithecanthropus erectus* evolved into *Homo primigenius* (Neanderthals) and they in turn evolved into modern humans. Schwalbe was careful to say that while the actual *Pithecanthropus* and Neanderthal fossils known at that time might not be the direct ancestors themselves of modern humans, they at least accurately reflected those stages of human evolution. As a consequence, Schwalbe rejected the pre-sapiens notion of human evolution, which argued that human fossils found in early Pleistocene deposits (such as the skeleton found in England at Galley Hill in 1888 and at Ipswich in 1911) indicated the existence of anatomically modern humans from the beginning of the Pleistocene, which meant they coexisted with the Neanderthals and thus could not be descended from them. Toward the end of his career Schwalbe presented his general views about human evolution and human prehistory in two books: *Die Vorgeschichte des Menschen* [*The Prehistory of Mankind*] (1904) and *Studien zur Vorgeschichte des Menschen* [*Studies on the Prehistory of Mankind*] (1906). Schwalbe also adopted many of the anthropological opinions about human races and their origins that prevailed in Germany at this time. He accepted the theory that asserted the existence of a Nordic race of blond dolichocephalic people who inhabited northern Europe that could be distinguished from other European races.

In addition to his many academic appointments, Schwalbe held a number of professional positions and was active in professional societies. He held the position of Hofrat (councilor) and Geheimer Medizinalrat and served as chairman of the medizinischen Prüfungskommission [Medical Examiners Commission]. He was an active member of the Deutschen Gesellschaft für Anthropologie, Ethnologie und Urgeschichte [German Society for Anthropology, Ethnology, and Prehistory] and was a foreign member or honorary member of many anthropological societies throughout Europe. He was also a member of the Société de Médecine de Gand [Medical Society of Ghent]. Schwalbe served as the editor of several journals: *Morphologischen Arbeiten* (from 1891-98), *Jahresberichte über die Fortschritte der Anatomie und Entwicklungsgeschichte* (from 1892-1916), and *Beiträge zur Anthropologie Elsaß-Lothringens* (from 1898-1902). He founded the journal *Zeitschrift für Morphologie und Anthropologie* in 1899 and served as its editor with the goal of improving anthropological methodology and theory. In recognition of his many accomplishments he was elected a member of the Leopoldina. Schwalbe died in Strasburg on 23 April 1916.

SELECTED BIBLIOGRAPHY

Lehrbuch der Neurologie. 3 vols. Erlangen: Besold, 1881.

"Ueber Schädelformen der ältesten Menschenrassen mit besonderer Berücksichtigung des Schädels von Egisheim." *Mittheilungen der Philomathischen Gesellschaft in Elsess-Lothringen* 3 (1897): 72-85.

"Studien über Pithecanthropus erectus Dubois." *Zeitschrift für Morphology und Anthropologie* 1 (1899): 16-240.

Der Neanderthalschädel. Bonn: C. Georgi, 1901a.

[Originally published in *Bonner Jahrbücher* 106 (1901): 1-72.

"Ueber die specifischen Merkmale des Neanderthalschädels." *Verhandlungen der Anatomischen Gesellschaft* (1901b): 44-61.

Der Schädel von Egisheim. (Beiträge zur Anthropologie Elsaß-Lothringens 3). Strassburg: K. J. Trübner, 1902.

Die Vorgeschichte des Menschen. Braunschweig: F. Vieweg und Sohn, 1904.

Studien zur Vorgeschichte des Menschen. Stuttgart: E. Nägele, 1906.

"Das Schädelfragment von Brüx und verwandte Schädelformen." *Zeitschrift für Morphologie und Anthropologie* (1906): 81-182.

SECONDARY SOURCES

Eugen Fischer. "Gustav Schwalbe." *Zeitschrift für Morphologie und Anthropologie* 20 (1917): I-VIII.

Franz Keibel. "Gustav Albert Schwalbe." *Anatomischer Anzeiger* 49 (1916): 210-221.

Theodor Mollison. "Gustav Albert Schwalbe." In *Mitteldeutsche Lebensbilder*. Vol. 1, *Lebensbilder des 19. Jahrhunderts*. Pp. 397-411. Magdeburg: Selbstverl. d. Historischen Kommission für die Provinz Sachsen und für Anhalt, 1926.

Fred H. Smith. "Gustav Schwalbe: Neandertal Morphology and Systematics, 1899–1916." *Physical Anthropology News* 6 (1987): 1-5.

Frank Spencer. "Schwalbe, Albert (1844-1916)." In Frank Spencer (ed.) *History of Physical Anthropology: An Encyclopedia*. 2 vols. Vol. 2, pp. 916-918. New York: Garland Publishing, 1997.

Ralph Solecki (1917–2019)

Ralph Solecki

Ralph Stefan Solecki was born on 15 October 1917 in Brooklyn, New York, to Polish immigrants. His father, Casimir Solecki, sold insurance and his mother, Mary (née Tarnowska), was a homemaker. While his parents named him Stefan Rafael he was known throughout his career as Ralph. Solecki's interest in archaeology began when he was about ten years old after he read newspaper reports of the treasures that the British Egyptologist Howard Carter had retrieved from the tomb of the Egyptian pharaoh Tutankhamun. In 1931 his family bought a house in Cutchogue, on Long Island's North Fork, in New York, and soon thereafter Solecki began searching the farm fields near his home for Native American arrowheads and other artifacts. Solecki attended Newtown High School in Elmhurst, Queens, and after graduating in 1936 he enrolled in the City College of New York where he received a B.S. degree in geology in 1942. Throughout these years he had been engaged in a number of productive archaeological excavations. Solecki and his childhood friend Stanley Wisnewski, who was also an aspiring archaeologist, often spent time collecting Native American artifacts along Maspeth Creek, on Long Island. While still a student in high school Solecki read an article about a log fort built in the 1630s by the Corchaug, a local Native American tribe, with the help of European settlers. The precise location of the Fort Corchaug site had been lost to time so during the summer of 1935 Solecki began searching for remains of the fort. An amateur archaeologist suggested that he look on the west side of Downs Creek, which lay just east of the Solecki family home. He began digging at the site in 1936 and found Native American and Dutch trade goods. His most extensive excavations of the site were conducted from 1946 to 1948 and formed the basis of his Master's thesis in archaeology at Columbia University. From his excavations of Fort Corchaug Solecki concluded that it had served as a defense against attack from New England tribes who traveled to eastern Long Island to collect shells as well as a trading post where wampum was manufactured and traded to the Dutch in New Amsterdam from the 1630s to the 1660s.

Solecki was one of the members of the Committee on American Anthropology of the Flushing Historical Society that conducted excavations of the Fort Massapeag site from 1937 to 1938. Fort Massapeag, located in the town of Oyster Bay on Long Island, was a Dutch fortified trading post constructed around the 1650s to facilitate trade with the local Native American population. The excavation team, which also included Carlyle Sheeve Smith who was an archaeology student at Columbia University and a friend of Solecki, mapped the earthworks of the fort and found Native American artifacts from the Late Woodland period, including pottery and wampum. In 1939 Solecki again joined other members of the Flushing Historical Society to excavate a shell pit at the head of Hawtree Creek, an arm of Jamaica Bay, located in Queens County, New York. During the excavation they found pottery fragments and stone artifacts along with a Native American grave dating from the Late Woodland Period. The grave contained the skeleton of an adult woman and the partial skeleton of an infant, which were donated to the American Museum of Natural History in 1947. To this point in his life Solecki's archaeological experience was limited to the region around his home in New York, but that changed when he spent three summer field seasons conducting archaeological excavations in Nebraska, the first in 1939 working with Carlyle Shreve Smith, the second in 1940 working with Robert Cumming, Jr., and the last in 1941 working with Marvin (Gus) Kivett.

Like many other young men of his generation, Solecki's life took a dramatic turn with the United State's entrance into the Second World War. He served in the army in Europe from 1942 to 1945 and was wounded. At the end of the war Solecki returned to New York where he enrolled at Columbia University in 1946 to study anthropology. While at Columbia Solecki studied with William Duncan Strong, who was professor of American archaeology. His

Master's thesis, completed in 1950, was based upon his excavations at Fort Corchaug. From 1948 to 1949, while still a graduate student at Columbia, Solecki joined the River Basin Surveys. The River Basin Surveys were salvage archaeology surveys administered by the Smithsonian Institution. The need for such surveys was spurred by new dam construction projects. As part of the River Basin Surveys Solecki worked at the Bluestone Reservoir, on the border of West Virginia and Virginia, where he unearthed the remains of Native American villages, mounds, rock art, and the remains of colonial forts. Solecki also worked at the West Fork Reservoir on the Monongahela River in West Virginia where he identified Native American campsites. Solecki was transferred from the River Basin Surveys to the Bureau of American Ethnology in 1949, although in this new position he still participated in projects conducted by the River Basin Surveys. Solecki conducted important excavations organized by the Bureau of American Ethnology at the Adena Mound in Natrium, West Virginia from December 1948 to January 1949 that unearthed a large number of burials and artifacts (Solecki 1953). From May to September 1949 he accompanied an expedition organized by the United States Geological Survey, the Bureau of American Ethnology, and the Smithsonian Institution to the upper Kokpowruk and Kokolik rivers in Alaska where he studied the archaeology of this area and observed the culture of the local Eskimo.

After several years of working with the River Basin Surveys and the Bureau of American Ethnology, Solecki was appointed an associate curator of archaeology at the Smithsonian Institution in 1951. He was also still a graduate student at Columbia University. His career took a significant turn in 1950 when he took a leave of absence from his duties at the Smithsonian to join a University of Michigan expedition to the Near East led by George Cameron, who invited Solecki to join the expedition. At the end of the expedition, however, Solecki remained in Iraq to independently explore the Shanidar Cave, one of forty caves he visited in the Kurdistan region.

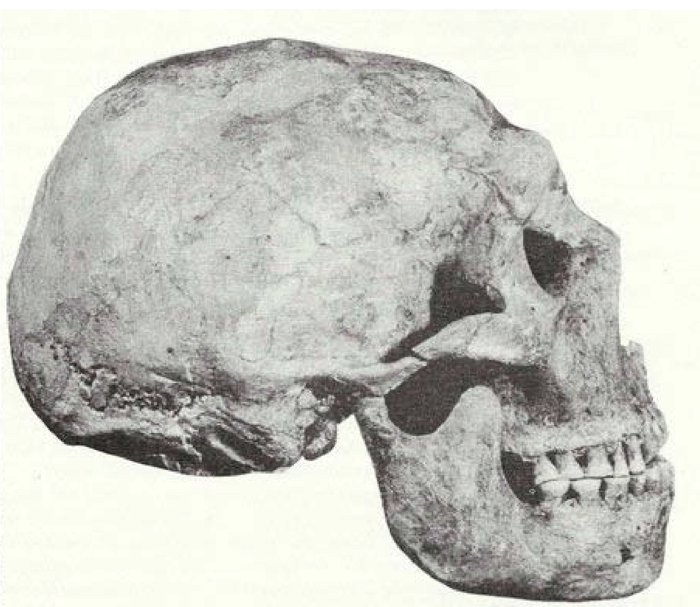
Between 1951 and 1961 he led a team of archaeologists and anthropologists that excavated Shanidar Cave and the nearby site of Zawi Chemi. Shanidar is located in the Zagros Mountains in the Kurdistan region of northern Iraq. Solecki reported his desire to investigate the Shanidar cave to the Directorate General of Antiquities of Iraq, which was led by Director General Naji al Asil. Solecki eventually spent four seasons excavating at Shanidar. The first season extended throughout 1951 and was funded by the Directorate General of Antiquities of Iraq. The second season from May to August 1953 was conducted under the auspices of the Smithsonian Institution and the Directorate General of Antiquities of Iraq. The third season lasted from October 1956 to June 1957. Political events during the summer of 1958 forced Solecki to postpone that planned field season until 1960. This proved to be the last season of excavations at Shanidar because the Kurdish rebellion in the country prevented further fieldwork after 1961.

Solecki's excavations of the Shanidar Cave uncovered artifacts from four major cultural layers covering a period of about 100,000 years. From bottom to top these consisted of a Middle Paleolithic flake-based industry classified as “Mousterian” (Layer D); an Upper Paleolithic blade-based industry named “Baradostian” (Layer C); a Mesolithic industry called “Zarzian” characterized by backed blades (Layer B2) and similar material associated with a group of Proto-Neolithic burials (Layer B1); and an upper layer that contained Neolithic industries and recent artifacts (Layer A). During the second excavation season at Shanidar Solecki sent charcoal samples from hearths in the cave to the U. S. Geological Survey and they employed the newly developed radiocarbon dating technique to date the stratigraphic layers. Solecki collected a large number of distinctive stone artifacts from Layer C that he dated to the Upper Paleolithic. The Cambridge University archaeologist Dorothy Garrod, who led the excavations of the Mount Carmel site in Palestine from 1929 to 1934, visited the Shanidar site in December 1953 especially to inspect these Upper Paleolithic artifacts. It was

Garrod who suggested that these artifacts be called Baradostian, after the local mountain range.

The most significant discoveries from Shanidar Cave, however, were a remarkable series of Neanderthal skeletons. The first Neanderthal material from the site was the crushed skeleton of an infant that was discovered on 22 June 1953 and is now referred to as Shanidar 7 (Solecki 1957). The Turkish anthropologist Muzaffer Şenyürek, of the University of Ankara, traveled to Baghdad at Solecki's request to study the infant skeleton during December 1956 and January 1957 (Şenyürek 1957a; 1957b). Then during the third season's work at Shanidar Solecki's team unearthed three partial Neanderthal skeletons over the period from 27 April to 23 May 1957 (Solecki 1960). George Maranjian, of Harvard University, was the physical anthropologist on the expedition during the third season and he assisted in the excavation and preparation of the skeletons. These are now referred to as Shanidar 1, 2, and 3 and they were dated to about 40,000 years ago. It was later realized that parts of the Shanidar 3 skeleton had been discovered earlier but were not recognized as human bones at the time. Much of the Shanidar 3 skeleton was excavated during the third and fourth seasons of excavation. In June 1957 Solecki invited Thomas Dale Stewart to undertake the preparation, reconstruction, and analysis of the Neanderthal skeletons. Stewart, who was the curator of physical anthropology at the National Museum of Natural History (Smithsonian Institution), arrived in Baghdad in October and his work resulted in the publication of several initial reports on the Shanidar 1 skeleton (Stewart 1958; 1959).

When Solecki resumed excavations for the fourth field season at Shanidar Stewart served as the physical anthropologist on the team. On 3 August 1960 the team unearthed another Neanderthal skeleton (now designated Shanidar 4) and just a few days later on 7 August they discovered yet another partial Neanderthal skeleton (now designated Shanidar 5). The Shanidar 4 skeleton would become famous as the flower burial. This skeleton was found lying on its side with its legs in a flexed position. Arlette Leroi-Gourhan, the paleobotanist on the expedition, discovered pollen from flowers in the grave with the skeleton, which led Solecki to propose that flowers had been buried with this individual. There was also other evidence indicating aspects of Neanderthal behavior. The Shanidar 1 skeleton belonged to an adult male, but the skeleton showed evidence of many injuries sustained during this individual's life. These had healed but some were so severe that Solecki realized the only way this person could have survived was if other members of his community had taken care of him. Bones from several other individuals were also unearthed during this season, but it was only later that they were recognized and catalogued as Shanidar 6, 8, and 9.



Shanidar 1 skull

During the third and fourth seasons at Shanidar Solecki's wife, Rose Solecki, joined the expedition team. Rose Muriel Lilien was born on 18 November 1925 in New York City and she completed her undergraduate degree in anthropology from Hunter College in 1945. She went on to receive her Ph.D. in anthropology from Columbia University, where she studied under William Duncan Strong and joined Strong's excavation team in Peru from 1952 to 1953. Ralph and Rose married in 1955 and the following year Rose joined Ralph at Shanidar where she began excavating the nearby Proto-Neolithic site of Zawi Chemi Shanidar. This was an open-air village site located in the Shanidar valley, on the left bank of the Greater Zab River, near Shanidar Cave. There Rose Solecki discovered stone and bone artifacts dating from the period when these people were making the transition from a nomadic to a sedentary culture. During the last days of the 1960 excavation season at Shanidar, Solecki's team discovered an undisturbed Proto-Neolithic cemetery in the B Layer at the back of the cave dating to around 10,600 years ago. The excavation of the cemetery exposed twenty-six graves that contained various grave offerings, mainly bone and stone tools and beads, as well as human skeletons. Solecki recovered the remains of thirty-five individuals; including twenty infants and children, five adolescents, and ten adults.

Ralph and Rose Solecki (Solecki Papers Project, Smithsonian Institution)

Solecki was forced to stop work at Shanidar due to political unrest in Iraq. The Shanidar Neanderthal skeletons (with the exception of Shanidar 3) and the skeletons from the Proto-Neolithic cemetery were sent to the Baghdad Archaeological Museum (now the Iraq Museum).[1] The Shanidar 3 skeleton was sent to the National Museum of Natural History at the Smithsonian Institution in

Washington D.C. Solecki had already completed his Ph.D. in anthropology at Columbia University in 1958. His dissertation, titled *The Baradostian Industry and the Upper Palaeolithic in the Near East*, focused on his archaeological discoveries in the Upper Paleolithic deposits of Shanidar Cave. The description and analysis of the Shanidar Neanderthal skeletons fell to T. Dale Stewart (Stewart 1958; 1959; 1963; 1977). However, he was unable to complete the study of all the skeletal material so in 1976 Erik Trinkaus, who was a professor of anthropology at Harvard University at the time, took over the study of the fossils (Trinkaus 1983).

Solecki's discoveries at Shanidar were significant for a number of reasons. They were the first Neanderthals specimens found in this part of Eurasia. More consequential were the conclusions he drew from these specimens. These were published in *Shanidar, The First Flower People* (1971), a book that Solecki wrote for a general audience. His assertion that Neanderthals buried their dead was provocative because it indicated they were more like modern humans than many scientists thought at the time. Solecki's interpretation of the Shanidar 4 "flower burial" remains the most controversial because he used it to argue that Neanderthals possessed behaviors and a mentality usually only attributed to later Cro-Magnon people (the humans who inhabited Europe during the end of the Ice Age). The discoveries at Shanidar did contribute to changing attitudes among paleoanthropologists about the Neanderthals during the later decades of the twentieth century.

Meanwhile Solecki's career was advancing. He served as curator of archaeology at the Smithsonian Institution from 1958 to 1959. In 1959 he accepted a position as professor in the Anthropology Department at Columbia University, where he remained until 1988. Rose Solecki was also hired as a research associate in the Anthropology Department and worked closely with her husband throughout their careers. While at Columbia Solecki had opportunities to work at sites throughout the Middle East and

Africa. He conducted excavations of prehistoric sites as part of the Columbia University Nubian Expedition in Sudan from 1961 to 1962. During the Columbia University expedition to Turkey in 1963 he discovered prehistoric cave paintings of animals. Ralph and Rose Solecki led a series of excavations of the Paleolithic deposits in the rock shelters at Yabroud (or Yabrud), in Syria, first from 1963 to 1965, then again in 1981 and from 1987 to 1988. The German archaeologist Alfred Rust first studied the site in the 1930s, and in fact Rust spent time with the Soleckis during their initial excavations at the site. In 1969, 1970, and 1973 Solecki excavated caves at Nahr Ibrahim, in Lebanon, where he unearthed Middle Paleolithic artifacts. Plans to return for another season in 1975 were derailed by the deteriorating political situation in the country. He also excavated the Middle Paleolithic site at El Masloukh in Lebanon in 1969.

Solecki organized an important conference held in 1969 at the Institute of Archaeology in London sponsored by the Wenner-Gren Foundation for Anthropological Research. The conference brought together experts on the Paleolithic archaeology of the Levant in order to formulate a common typology for Upper Paleolithic and Epi-Paleolithic artifacts, using objects from the site of Ksar Akil held in the Institute of Archaeology's collections. Solecki was a member of several scientific organizations, including the Society for American Archaeology and the Anthropological Society of Washington. He served on the board of trustees of the American Schools of Oriental Research and was one of the founders in 1980 of the Professional Archaeologists of New York City, an organization established to protect and preserve archaeological and historic resources in New York City. During the early 1950s Solecki used aerial photography to identify and examine archaeological sites and later published a paper on the use of aerial photography and photo-interpretation in archaeology (Solecki 1957). Ralph and Rose Solecki both retired from Columbia University in 1988, but in 1990 they accepted positions as adjunct professors at Texas A&M University in College Station, Texas. They continued to publish and to study the archaeological material they had collected over their long careers. The Soleckis collaborated with anthropologist Anagnostis Agelarakis to study the many artifacts and skeletons originally excavated from the Proto-Neolithic cemetery in Shanidar Cave. This resulted in the publication of *The Proto-Neolithic Cemetery in Shanidar Cave* in 2004, which not only examined the material recovered from the site but also discussed the mortuary customs of this population. In 2000, Ralph and Rose left Texas A&M University and moved to South Orange, New Jersey. Ralph Solecki died of pneumonia on 20 March 2019 in Livingston, New Jersey. In 2017, members of the Department of Anthropology Collections and National Anthropological Archives began the Ralph S. and Rose L. Solecki Papers and Artifacts Project to preserve their archaeological specimens and manuscript materials.

SELECTED BIBLIOGRAPHY

"Archeology and Ecology of the Arctic Slope of Alaska." *Annual Report of the Smithsonian Institution* [1950] (1951): 469-495.

Exploration of an Adena Mound at Natrium, West Virginia. (Bureau of American Ethnology Bulletin 151). Washington: United States Government Printing Office, 1953.

"Shanidar Cave: A Paleolithic Site in Northern Iraq." Annual Report of the Smithsonian Institution (1954): 389-425.

"Practical Aerial Photography for Archaeologists." *American Antiquity* 22 (1957): 337-352.

"Three Adult Neanderthal Skeletons from Shanidar Cave, Northern Iraq." *Annual Report of the Smithsonian Institution* [1959] (1960): 603-635.

"New Anthropological Discoveries at Shanidar Northern Iraq."

Transactions of the New York Academy of Sciences ser. 2, 23 (1961): 690-699.

Shanidar, The First Flower People. New York: Knopf, 1971.

Ralph Solecki, Rose Solecki and Anagnostis Agelarakis, *The Proto-Neolithic Cemetery in Shanidar Cave*. College Station: Texas A&M University Press, 2004.

"Reminiscences of Plains Archaeology, Pre- and Post-World War II." *Plains Anthropologist* 51(2006): 537-552.

Stanley Wisniewski and Ralph Solecki, *The Archaeology of Maspeth, Long Island, New York and Vicinity*. Rochester: New York State Archaeological Association, 2010.

OTHER SOURCES CITED

Muzaffer Şenyürek, "The Skeleton of the Fossil Infant Found in Shanidar Cave, Northern Iraq." *Anatolia* 2 (1957): 49-55.

Muzaffer Şenyürek, "A Further Note on the Palaeolithic Shanidar Infant." *Anatolia* 2 (1957): 111-121.

T. Dale Stewart, "First Views of the Restored Shanidar 1 Skull." *Sumer* 14 (1958): 90-96.

T. Dale Stewart, "The Restored Shanidar 1 Skull." *Smithsonian Report for 1958* (1959): 473-480.

T. Dale Stewart, "Shanidar Skeletons IV and VI." *Sumer* 19 (1963): 8-25.

T. Dale *Stewart, "The Neanderthal Skeletal Remains from Shanidar Cave, Iraq: A Summary of Findings to Date." Proceedings of the American Philosophical Society 121 (1977): 121-165.*

Erik Trinkaus, The Shanidar Neandertals. New York: Academic Press, 1983.

SECONDARY SOURCES

*Sam Roberts, "*Ralph Solecki, 101, Archaeologist Who Uncovered the

Inner Life of Neanderthals." *The New York Times* (April 17, 2019): Section B, p. 14.

Notes

1 Fortunately, the human skeletal material from Shanidar Cave was spared when the museum was looted in 2003.

Josef Szombathy (1853-1943)

Josef Szombathy

Josef Szombathy was born on 11 June 1853 in Vienna. His father, also named Josef, was a tailor whose family arrived in Vienna from Hungary and his mother, Juliane Rubner, came from Bavaria.

Szombathy's father died in 1871 and from this point Peter Trümmel, a clerk at the Landwirthschaftsgesellschaft (Agricultural Society) became his legal guardian. Szombathy attended the municipal secondary school (Oberrealschule) in Vienna and after graduating he studied chemistry at the Polytechnische Institut of Vienna from 1870 to 1874 (the institute changed its name to the Kaiserlich-Königlichen Technische Hochschule in 1872). At the Polytechnic Institute he attended the lectures of Andreas Kornhuber on botany and paleontology as well as the lectures on mineralogy and geology taught by Ferdinand von Hochstetter. In 1872 Szombathy worked with Hochstetter on the preparation of an exhibit for the 1873 Weltausstellung (World Exhibition) in Vienna of giant birds from New Zealand sent by Julius Haast, the director of the Canterbury Museum in Christchurch. Szombathy was hired as Hochstetter's assistant in 1875 and this relationship had a profound influence on Szombathy's career. Hochstetter, who became a professor at the Polytechnische Institut in 1860, became interested in prehistory and anthropology after investigating the pile dwellings in Krain (Carniola, in what today is Slovenia) in 1864. He was an original member of the Anthropologische Gesellschaft in Wien (Anthropological Society in Vienna) from its founding in 1870. Hochstetter was appointed director of the Hofmineraliencabinet, the royal court mineral collection, in 1877 and Szombathy was appointed as his assistant at the Hofmineraliencabinett in September 1878. Meanwhile, Hochstetter was directed by the Austrian government to organize the new natural history museum in Vienna, the Kaiserlich-Königlichen Naturhistorisches Hofmuseum (later renamed the Naturhistorisches Museum), which was approved by emperor Franz Josef I on 29 April 1879. Construction of the museum was completed in 1881 and the museum opened in August 1889 with Hochstetter as the head of the Anthropological-Ethnological Department, which included the prehistoric collection.

Ferdinand von Hochstetter

During the summer of 1875 Szombathy accompanied Austrian geologist Franz Toula on a geological expedition to Bulgaria, which was still part of the Ottoman Empire at that time. In 1875 and 1876, Szombathy attended lectures at the University of Vienna on geology and paleontology taught by Eduard Suess as well as lectures on physical geography and the drawing of maps taught by Friedrich Simony. He also taught natural history at the Vienna municipal secondary school (Kommunal-Oberrealschule) from autumn 1875 through spring 1877, and he attended the paleontology lectures of Melchior Neumayr at the University of Vienna in 1880 and 1881. Szombathy's first experience at an archaeological excavation came in May 1877 when he assisted Hochstetter during excavations of the Iron Age cemetery at Hallstatt, which produced many skeletons and artifacts. In 1879 Szombathy and Ferdinand Schulz, the preparator of the State Museum in Ljubljana, participated in the excavation of Križna jama (Kreuzberghöhle) in Krain (Carniola), which were also led by Hochstetter. These excavations resulted in the discovery of a complete cave bear skeleton. Szombathy used his training to make exact surveys and plans of the cave, sieved the sediments, and took samples for later examination, which was rather unusual for archaeological excavations in those days.

From 1879 to 1883 Szombathy explored, mapped, and excavated several Moravian caves on behalf of the Prähistorische Kommission (Prehistoric Commission). Ferdinand von Hochstetter had proposed the creation of a Prehistoric Commission within the Akademie der Wissenschaften (Academy of Sciences) and he served as the commission's chairman after it was established in 1878. The Prehistoric Commission was created to undertake speleological investigations and "palaeo-ethnographical" research on Austrian territory. It was also tasked with preventing the unscientific exploitation of major sites for private purposes (see Mader 2018). Although Szombathy never became a member of the Prehistoric Commission, he participated in many excavations conducted under its auspices. As part of these investigations Szombathy examined the Diravica cave in 1880, where he discovered the remains of a prehistoric settlement from the Neolithic period. These included human artefacts made of stone and bones, bone remains from horses, pigs, deer, reindeer and arctic hare. He also unearthed Pleistocene animals from the Výpustek Cave during excavations in 1880 and 1881. These included skeletons of cave bears (*Ursus spelaeus*), the skeleton of a rhinoceros (*Rhinoceros tichorhinus*), skulls and bones of a cave lion (*Panthera spelaea*), cave hyena (*Crocuta spelaea*), horse, wolf, wildcat, and ibex. These were sent to the Naturhistorisches Hofsmuseums in Vienna.

Szombathy became director of the Prehistoric-Anthropological Collection at the Naturhistorisches Hofsmuseums in 1882, when it was separated from the Ethnology Collection. He worked at the museum for the rest of his career and was appointed Kustos (Custodian) seventh class in 1886 and was promoted to Kustos first class in 1897. As the head of the Prehistoric-Anthropological Collection, Szombathy was influential both through his extensive excavations, which he undertook in order to increase the number of paleontological and prehistoric objects, and through his arrangement and cataloguing of the museum's collections. After attaining his new position at the museum, Szombathy received a number of travel grants that allowed him to visit other museums and archaeological sites throughout Europe. He received a grant from the museum for a study trip to Germany and Denmark in July and August 1891. During this trip he visited Prague, Teplitz, Dresden, Halle, Berlin, Danzig, Königsberg, Stettin, Stralsund, Copenhagen, Kiel, Hamburg, Hanover, Cologne, Mainz, Nuremberg, Regensburg, Munich and Salzburg and was able to take part in the meeting of the Deutschen Gesellschaft für Anthropologie, Ethnologie, und Urgeschichte (German Society for Anthropology, Ethnology, and Prehistory) in Danzig. In March 1893 Szombathy traveled with the Austrian writer and art collector Moriz Ritter von Gutmann to Egypt where he visited ancient monuments and the museum at Giza and acquired objects for the Naturhistorisches Hofsmuseums. He returned home through Greece and visited ancient sites there including Eleusis, Corinth, Tiryns, Argos, Mycenae and Olympia. Then in 1893, 1894, and 1896 he traveled on behalf of the Anthropologischen Gesellschaft in Wien to the region of Bukovina in the Eastern Carpathian Mountains (a region that today forms part of Romania and Ukraine) and visited museums in Chernivtsi, Lemberg and Cracow. During these trips, lasting several weeks each, he collected objects for the ethnographic collection at the Naturhistorisches Hofsmuseums as well as for the Verein für österreichische Volkskunde (Association for Austrian Folklore).

Szombathy conducted a large number of archaeological excavations over the course of his career. These ranged from Paleolithic sites dating to the Pleistocene through Bronze and Iron Age sites. His most significant contribution to paleoanthropology came during his excavations of the Fürst Johanns Höhle, a cave located near the town of Mladeč (Lautsch) in Moravia. Szombathy's excavations, conducted under the auspices of the Academy of Sciences and the Naturhistorisches Hofmuseum, began in June 1881 and were continued during July and August 1882. The cave was owned by Prince Johann von und zu Liechtenstein, who offered some meager funds to support the excavations. Lack of money prevented a careful and systematic excavation of the cave's deposits. While Szombathy did sketch the stratigraphy of the cave, he primarily focused on the recovery of objects. His main objective was to prove the contemporaneity of humans and reindeer in this region during the late Paleolithic. The excavations quickly produced Pleistocene animal fossils (reindeer, cave bear, mammoth) and stone and bone artifacts as well as fossilized human bones thought to belong to about five individuals. These consisted of two nearly complete crania and a partial juvenile cranium along with postcranial bones that were unearthed in 1881 and parts of a crania and some postcranial bones that were found in 1882 (see Antl-Weiser 2006). Szombathy was convinced by the evidence that these human bones dated from the Pleistocene (they were later determined to date from the Aurignacian period). These fossils were sent to the Naturhistorisches Hofmuseum. Szombathy presented a paper on the Mladeč fossils at the International Congress of Prehistoric Anthropology and Archaeology held in Paris in 1900. He argued that the human remains were contemporary with the Paleolithic artifacts and the extinct animal bones found in the cave and that they resembled the Cro-Magnon fossils from France (Szombathy 1902a). Szombathy initially faced some skepticism regarding the Pleistocene age of the Mladeč specimens, in part because the specimens were fragmentary (a condition Szombathy rather implausibly attributed to cannibalism or some other form of human activity) and because they had been recovered very close to the surface of the cave deposits.

Szombathy conducted no further excavations at Mladeč, but the Moravian amateur prehistorian Jan Knies continued to excavate the cave and found more human bones. Jan Smyčka, a physician and mayor of the larger nearby town of Litau who worked with Knies during these excavations, sent a report of their discoveries to scientists in Vienna and Szombathy returned to Mladeč in August 1904 to inspect the new discoveries made by Knies and Smyčka in Quarry Cave. In 1903 Knies and Smyčka had unearthed the front half of a cranial vault and other cranial and skeletal fragments and in 1904 they found a nearly complete adult calvaria, a fragmentary adult calvaria, and other cranial and skeletal fragments (Knies 1905). These fossils were again thought to date from the Aurignacian. Some of the fossils found by Knies went to the Litovel Museum and the rest went to the Moravské zemské muzeum in Brno. The Mladeč Caves became the property of the Krajinska musejni spolecnost v Litovli (Litovel Museum Association) in 1911, which initiated an extensive project of clearing the caves in order to make them accessible to the public. This work began in 1912 under Jan Smyčka's supervision but unfortunately it profoundly changed the Main Cave, whose chambers were completely cleared out to make it easier to move about in the cave. Szombathy later reported that some human remains were unearthed during this process. Additional human fossils were subsequently found by Josef Fürst and Smyčka around 1922, which prompted Szombathy to visit the site again in 1925 in order to inspect these new fossils. This led him to publish a detailed description of the geology, archaeology, and the human fossils recovered from the Mladeč caves (Szombathy 1925).

Szombathy investigated other caves as well, including the Pivka Jama-Höhle, in Krain (Carniola), which he explored and mapped in 1885. This work was organized by the Karst Committee of the newly founded Österreichischen Touristen-Club (Austrian Tourist Club). But many of his most important excavations were of Iron Age sites. In 1883 he dug for two months at Watsch (Vace), which was one of the richest Iron Age sites in Carniola. But his excavations of the burial grounds at St. Lucia (Sveta Lucija) and Idrija pri Bači were among his most important. Paolo Bizzarro had conducted excavations of the early Iron Age (Hallstatt period) burial grounds at St. Lucia (now Most na Soči, in Slovenia) in 1880 under the auspices of the Zentral-Kommission für Erforschung und Erhaltung der Kunst- und Historischen Denkmale (Central Commission for Research and Preservation of Art and Historic Monuments). Following these initial excavations, the Italian paleontologist Carlo Marchesetti, director of the Museum of Natural History in Trieste, excavated approximately 3610 individual graves between 1884 and 1902 (Marchesetti 1893). Szombathy conducted his own excavations of around 2450 graves between December 1885 and August 1890. Marchesetti and Szombathy were initially in competition with one another as they represented two institutions contending for finds, but by 1890 they began to collaborate in the work (see Mader 1995). Their excavations produced large quantities of pottery and iron artifacts (Szombathy 1887). From 1886 to 1887 Szombathy excavated the large necropolis containing several thousand cremation graves at Idrija pri Bači, located near the site of St. Lucia. These date to the Early Iron Age (Hallstatt period), Late Iron Age (La Tène period) and Roman periods. His excavations unearthed large numbers of grave goods consisting of bronze vessels and iron tools, some incised with north Italic inscriptions (Szombathy 1901). Szombathy conducted new excavations at Hallstatt in September 1886 which resulted in the discovery of thirteen graves in what is called the

Steinbewahrersölde and he excavated two Early Iron Age (Hallstatt period) barrows at Kučar in 1887 and 1888.

On various occasions throughout his career Szombathy collaborated with the Slovenian archaeologist Jernej (*Bartholomäus)* Pečnik. Pečnik was a self-taught archaeologist from Dolenjska. His early excavations were carried out under the auspices of the regional museum in Ljubljana, but many of his excavations were supported by the Central Commission for Research and Preservation of Art and Historic Monuments. Szombathy first met him in 1886 and originally did not approve of his work, but after Dragotin Dežman's death in 1889 Pečnik began collaborating with Szombathy and the museum in Vienna. Dragotin Dežman (known in German as Karl Deschmann) had served as the custodian of the Land Museum of Carniola in Ljubljana. During the course of their collaborations, Pečnik carefully followed Szombathy's instructions for conducting excavations, including keeping the artifacts from each grave together and recording finds in a log. Szombathy and Pečnik excavated barrows in Slovenia beginning in 1887. In 1888 Szombathy opened ten barrows in Grm and another twenty in the Podzemelj necropolis, in 1888 he excavated thirty-seven Late Iron Age (La Tène period) graves in Zemelj. Szombathy also excavated the Bronze Age burial mounds in Kronporitschen south of Pilsen, first in 1888 and again intermittently from 1895 to 1909.

Jernej Pečnik excavated the Early Iron Age (Hallstatt period) site of Magdalenska gora (Magdalenenberg) in Slovenia during 1893 and 1894, which resulted in the discovery of human skeletons and numerous artifacts. These were examined and described by Szombathy (1894) and the artifacts were sent to the museum in Vienna. Construction work in the 1890s led to the discovery of a Late Roman period cemetery in Kranj (ancient Carnium), in Slovenia. When artifacts and human bones were unearthed Pečnik initiated excavations in June 1900 that unearthed three graves. This led Szombathy and Pečnik to dig there in June and July 1901 and together they opened sixty-six graves (Szombathy 1902b).

Szombathy also worked extensively at the prehistoric cemetery of Gemeinlebarn, which contained nearly 300 graves belonging to several cultures. These prehistoric graves first came to light during construction work near the Gemeinlebarn train station, which prompted the Austrian amateur archaeologist Adalbert Dungel to investigate some cremation burials in 1885 with the assistance of the Prehistoric Commission. In November 1885 the Naturhistorisches Hofsmuseum began excavations at Gemeinlebarn but it was not until 1889 that Szombathy began excavating a series of Early Bronze Age cremations, Middle Bronze Age burials, and Early Iron Age (Hallstatt period) tombs (Dungel and Szombathy 1890). He led more extensive excavations at the site from 1916 to 1922 despite the difficult conditions during the First World War. Szombathy unearthed many artifacts and a large number of skeletons at Gemeinlebarn and he published an account of these discoveries in *Prähistorische Flachgräber bei Gemeinlebarn in Niederösterreich* [Prehistoric Flat Graves near Gemeinlebarn in Lower Austria] (1929).

Venus of Willendorf

Szombathy's most significant contribution to Paleolithic archaeology was the discovery of the famous Venus of Willendorf figurine (see Antl-Weiser 2008). In 1908 railroad construction cut through the loess deposits near the village of Willendorf, in Lower Austria, revealing seven Paleolithic layers. Szombathy, along with German prehistorian Hugo Obermaier and Josef Bayer, who worked at the museum in Willendorf, saw this as an opportunity to explore the cultural development of the Upper Paleolithic in the region. Obermaier had recently completed his dissertation on Central European Paleolithic archaeology and had worked with Szombathy for several years already. Obermaier and Bayer managed the excavations, which were conducted under the auspices of the Naturhistorisches Hofsmuseum. They unearthed numerous Aurignacian stone tools, then on 7 August 1908 all three were present when one of the excavators, Johann Veran, found the Venus figurine. The statuette was carved from a type of oolitic limestone that is not found in the region and so it must have been brought there. The Venus of Willendorf was the best-preserved Paleolithic figurine that had been discovered at the time (Szombathy 1909; 1910). When first discovered the statuette was thought to be approximately 15,000 years old, but it is now thought to date to about 25,000 years ago. Szombathy presented a plaster replica of the figurine at a conference in 1909 and compared it to the Brassempouy statuette discovered by French Paleolithic archaeologist Édouard Piette.

During the course of his long career as the head of the Prehistoric-Anthropological Collection at the Naturhistorisches Hofsmuseum, Szombathy dramatically expanded the number of artifacts in the collection, from about 7000 objects to about 53,000, and the anthropological collection increased from about 600 to more than 700 specimens. He also created inventories of the finds in the collection and introduced the practice of listing finds chronologically instead of by region, which was the more common practice at the time. As a field archaeologist, Szombathy introduced rigorous excavation and recording methods. He increased the scientific quality of his excavations by utilizing his early technical and scientific training and his research displayed a commitment to positivism. This contrasts with the following generation, which approached prehistoric archaeology from a humanities perspective. Szombathy published numerous papers on his archaeological discoveries, but many of his excavations were never published, which makes his extensive excavation diaries and reports important sources of information for scholars today. In addition to his work as a prehistoric archaeologist, Szombathy also conducted anthropological investigations of the prehistoric skeletons he unearthed, including craniological studies of the skulls from Hallstatt, and he developed new osteological measurement methods in the course of this research.

Szombathy was an active member of many scientific institutions. He was an influential member of the Anthropologischen Gesellschaft in Wien (Anthropological Society in Vienna). He was elected a member in November 1879, served as the Society's secretary, and from 1910 to 1920 he was its vice president. In recognition of his many achievements Szombathy was named an honorary member of the Society in March 1931. Szombathy was a member of the Wiener Prähistorische Gesellschaft (Vienna Prehistoric Society) from its founding in 1913 and served as its vice president from 1913 to 1934. He was named an honorary member of the Society in February 1933 and he was honorary president of the Society from 1935 until his death in 1943. Szombathy was an important member of the Österreichischen Touristen-Club (Austrian Tourist Club) and served as its president from 1896 to 1898 and again from 1906 to 1912. Franz von Hauer, the director of the Geologischen Reichsanstalt, created the Section for Speleology (Sektion für Höhlenkunde) within the Club in 1879 in order to encourage cave exploration. In 1885, members of the Section for Speleology, which included Szombathy, formed the Karst Committee of the Club. Over the years Szombathy led Club trips to Bosnia in 1897, to Dalmatia in 1898, and to Athens, Constantinople, Santorin, Egypt, Malta and Sicily in 1905. In 1883 Szombathy became a member of the Verein zur Verbreitung naturwissenschaftlicher Kenntnisse in Wien (Association for the Dissemination of Scientific Knowledge in Vienna), which had been created in 1860. He was also a member of the Wissenschaftlichen Club in Wien (Scientific Club in Vienna) from 1889 until it was dissolved in 1927, but he had been associated with the club from its origin. The Club was founded by Ferdinand von Hochstetter in 1876 with the purpose of promoting social and intellectual interactions among the members of the various scientific institutions in Vienna.

Szombathy was appointed Konservator (curator) of the Zentral Kommission für die Erforschung und Erhaltung der Kunst- und historische Denkmale (Central Commission for the Research and Preservation of the Art and Historical Monuments) for the districts of Baden, Neunkirchen and Wiener Neustadt in 1900. He had previously worked as a Korrespondent for the commission. In this post as well as his other positions he was able to coordinate the scientific and financial collaboration between the Central Commission, the Prehistoric Commission, the Naturhistorisches Hofsmuseum, and the Anthropologischen Gesellschaft. In 1905 he was appointed secretary of a committee to establish regulations for the preservation of antiquities. In fact, Szombathy had first expressed the need for a law to preserve prehistoric monuments and sites in 1889 at a joint meeting of the Deutschen Gesellschaft für Anthropologie, Ethnologie, und Urgeschichte and the Anthropologischen Gesellschaft in Wien, but it was only in 1909 that the Central Commission began to draft such a law.

His international stature is reflected in the many foreign scientific institutions of which he was a corresponding member. These include the Numismatic and Antiquarian Society of Philadelphia (1884), the American Philosophical Society (1885), the Gesellschaft für Anthropologie, Ethnologie und Urgeschichte in Berlin (1894), the Société d’Anthropologie de Paris (1901), the Kongelige Nordiske Oldskrift-Selskab in Copenhagen (1907), the Ecole d’Anthropologie in Paris (1908), the Vereins für das Museum schlesischer Altertümer in Breslau, the Altertumsgesellschaft "Prussia" in Königsberg, the Österreichischen Archäologischen Instituts in Wien, and the Hrvatsko Arheologicko Druztvo in Agram. Szombathy was also elected an honorary member of the Munich branch of the Gesellschaft für Anthropologie, Ethnologie, und Urgeschichte in 1895, and of the Schweizerische Gesellschaft für Urgeschichte in 1918.

Szombathy served as co-editor of the *Mitteilungen der Anthropologischen Gesellschaft in Wien* on several occasions (1883-86, 1894-1901, 1910-20). Although he never became a member of the Prehistoric Commission of the Academy of Sciences, Szombathy did serve as the anonymous editor of the Commission's *Mitteilungen*. After World War I he was named chairman of the Studienfürsorge für Kriegerwaisen (Student Welfare Service for War Orphans). In March 1918 Szombathy was appointed curator (Konservator) of the Kaiserlich-Königlichen Staatsdenkmalamtes für prähistorische und antike Agenden (State Monument Office for Prehistoric and Ancient Agendas) for the districts of Baden, Lilienfeld and Mödling.

Throughout his career Szombathy attended many meetings of the Deutschen Gesellschaft für Anthropologie, Ethnologie, und Urgeschichte as well as other scientific meetings throughout Germany and the Austrian Empire. He attended the Congrès international d'anthropologie et d'archéologie préhistoriques in Paris in 1900, where he presented a paper on the human fossils from Mladeč. While in Paris he visited the archaeological collections at the Musée d'Archéologie Nationale, the Musée d'Ethnographie du Trocadéro, and at the Louvre. He also took the opportunity to visit the Paleolithic sites of the Vézère valley. On yet another occasion, in the spring of 1924, he traveled through Italy visiting Venice, Florence, Naples, Pompeii, Palermo, Rome, and Bologna where he devoted much of his attention to their archaeological and art objects. Szombathy received several honors in the course of his career. He was made a Ritter des Franz Joseph-Ordens (Knight of the Franz Joseph Order) in 1889 in recognition for his efforts in creating the prehistoric collection at the Museum, and a Ritter des Ordens der Eisernen Krone 3rd Klasse (Knight of the Order of the Iron Crown 3rd Class) in 1916 at the time of his retirement. He was awarded a Medal of Honor (Ehrenmedaille) in 1914 for forty years of service. He was also appointed government councilor (Regierungsrat) on 21 December1905.

After many years as director of the Prehistoric-Anthropological Collection at the Naturhistorisches Hofsmuseum, Szombathy took early retirement in 1916 due to a legal dispute relating to excavations conducted in 1910 by Pietro Savini, which involved claims of the embezzlement of finds. However, Szombathy continued to act as a "honorierte wissenschaftliche Hilfskraft" (honored research assistant) at the museum until January 1919 when Josef Bayer returned from military service in the Middle East during World War I and became director of the Prehistoric-Anthropological Collection. Bayer had previously served as Szombathy's assistant at the museum. Even after his retirement Szombathy continued to conduct excavations for the museum until 1929 and he remained an unpaid volunteer at the museum. The museum honored Szombathy with the title of Hofrat after he retired. In June 1933 Sombathy was honored on the occasion of his 80th birthday during a joint meeting of the Anthropologische Gesellschaft in Wien and the Wiener Prähistorische Gesellschaft. Sombathy's first wife, Sophie Salomon, died of a stroke on 3 November 1925. They had been married since 2 October 1882. Szombathy married his second wife, Wilhelmine Theresia Rent, in 1933. Szombathy died of cardiac arrest on 9 November 1943 at his home in Vienna.

SELECTED BIBLIOGRAPHY

"Die Skelette aus den Gräbern von Roje bei Moräntsch in Krain." *Denkschriften der Kaiserlichen Akademie der Wissenschaften* (*Mathematisch- Wissenschaften Classe*) 42 (1880): 45-54.

"Über Ausgrabungen in den mährischen Höhlen im Jahre 1881." *Sitzungsberichte der kaiserlichen Akademie der Wissenschaften* (*Mathematisch-Naturwissenschaftliche Classe*) 85 (1882): 90-107.

"Die Höhlen und ihre Erforschung." Schriften des Vereins zur Verbreitung naturwissenschaftlicher Kenntnisse Wien 23 (1883): 487-526.

"Grabfunde von Kunewald in Mähren." *Mitteilungen der Anthropologischen Gesellschaft Wien* 14 (1884): 59-60.

"Ausgrabungen in den mährischen Höhlen im Jahre 1883." *Sitzungsberichte der kaiserlichen Akademie der Wissenschaften* (*Mathematisch-Naturwissenschaftliche Classe*) 89 (1884): 353-358.

"Eine paläolithische Fundstätte im Löss bei Willendorf in Niederösterreich." *Mitteilungen der Anthropologischen Gesellschaft Wien* 14 (1884): 35-36.

"Die Nekropole von Santa Lucia im Küstenlande." *Mitteilungen der Anthropologischen Gesellschaft Wien* 17 (1887): 26-29.

"Ausgrabungen am Salzberg bei Hallstatt 1886." *Mitteilungen der Prähistorischen Kommission der Österreichischen Akademie der Wissenschaften* 1 (1888): 1-7, 49-79.

Adalbert Dungel and Josef Szombathy, "Die Tumuli von Gemeinlebarn." *Mittheilungen der prähistorischen Commission der kaiserlichen Akademie der Wissenschaften in Wien* 1 (1890): 49-77.

"Funde aus dem Löss bei Brünn." *Correspondenzblatt der Deutschen Gesellschaft für Anthropologie, Ethnologie, und Urgeschichte* 20 (1889), 85-88

"La Tène-Fund von Mitrowitz an der Save in Slavonien." *Mitteilungen der Anthropologischen Gesellschaft Wien* 20 (1890): 10-19.

"Ein Tumulus bei Langenlebarn in Niederösterreich." *Mitteilungen* *der Prähistorischen Kommission der kaiserlichen Akademie der Wissenschaften* 1 (1893): 79-90.

"Neue figural verzierte Gürtelbleche aus Krain." *Mitteilungen der Anthropologischen Gesellschaft Wien* 24 (1894): 226-231.

"Bemerkungen zu den diluvialen Säugethierknochen aus der Umgebung von Brünn." *Mitteilungen der Anthropologischen Gesellschaft Wien* 29 (1899): 78-84.

"Der zwölfte internationale Congress für prähistorische Anthropologie und Archäologie zu Paris 1900." *Mitteilungen der Anthropologischen Gesellschaft Wien* 30 (1900): 189-197.

"Das Grabfeld zu Idria bei Bača." *Mittheilungen der prähistorischen Commission der kaiserlichen Akademie der Wissenschaften in Wien* 1 (1901): 291-363.

"Un crâne de la race de Cro-Magnon trouvé en Moravie." *Compte rendu Congrès international d'anthropologie et d'archéologie préhistoriques* [1900] (1902a): 133-140.

"Grabfunde der Völkerwanderungszeit vom Saveufer bei Krainburg." *Mittheilungen der k.k. Central-Commission für Erforschung und Erhaltung der Kunst- und Historischen Denkmale* 3. Vol. 1 (1902b): 231.

"Die Vorläufer des Menschen." *Schriften des Vereins zur Verbreitung naturwissenschaftlicher Kenntnisse Wien* 43(1903): 1-35.

"Der diluviale Mensch in Europa." *Globus* 84 (1903): 319-324.

"Die Vorläufer des Menschen." *Schriften des Vereins zur Verbreitung naturwissenschaftlicher Kenntnisse Wien* 43 (1903): 1-35.

[The Forerunners of Man]

"Neue diluviale Funde von Lautsch in Mähren." *Jahrbuch der k. k. Zentral-Kommission für Kunst-und historische Denkmäler* 2 (1904): 8-15.

"Die Aurignacienschichten in Löss von Willendorf," *Korrespondenzblatt der Deutschen Gesellschaft für Anthropologie, Ethnologie, und Urgeschichte* 40 (1909), 85-88.

"Die diluvialen Kulturschichten von Willendorf. Vortrag auf der Monatsversammlung am 12. Januar 1910 vor der

Anthropologischen Gesellschaft." *Mitteilungen der Anthropologischen Gesellschaft Wien* 40 (1910): 8-9.
"Nachbildung des diluvialen Schädels von La Chapelle-aux-Saints." *Mitteilungen der Anthropologischen Gesellschaft Wien* 43 (1913): 22-24.
"Altertumsfunde aus Höhlen bei St. Kanzian im österreichischen Küstenlande." *Mittheilungen der prähistorischen Commission der kaiserlichen Akademie der Wissenschaften in Wien* 2 (1913): 127-190.
"Das Versiegen einzelner prähistorischer Kunstepochen und die Stellung der paläolithischen Kunst Mitteleuropas." *Mitteilungen der Anthropologischen Gesellschaft Wien* 45 (1915): 141-161.
Tabellen zur Umrechnung der Schädelmasse auf einen Rauminhalt von 1000 Kubitkzentimetern. (Ergänzungsheft zu den Mitteilungen der Anthropologischen Gesellschaft in Wien). Vienna: Kommission bei Alfred Hölder, 1918.
"Ausgrabungen in Gemeinlebarn (N.-Ö.) im Jahre 1919." *Mitteilungen der Anthropologischen Gesellschaft in Wien* 50 (1920): 58–60.
"Die jungdiluvialen Skelette von Obercassel bei Bonn." *Mitteilungen der Anthropologischen Gesellschaft Wien* 50 (1920): 60-65.
"Die Tumuli im *Feichtenboden bei Fischau* am Steinfeld." *Mitteilungen der Anthropologischen Gesellschaft Wien* 54 (1924): 164-197.
"Die diluvialen Menschenreste aus der Fürst-Johanns-Höhle bei Lautsch in Mähren." *Die Eiszeit* 2 (1925): 1–34, 73–95.
"Gegen die Überschätzung des Homo Aurignacensis Hauseri, Klaatsch." *Mitteilungen der Anthropologischen Gesellschaft in Wien* 57 (1927): 28-38.
"Die Menschenrassen im oberen Paläolithikum, insbesondere die Brüx-Rasse." *Mitteilungen der Anthropologischen Gesellschaft in Wien* 57 (1927): 106–110.
"Die Menschenrassen im oberen Paläolithikum: Bemerkungen zu Dr. K. Sallers Abhandlung." *Mitteilungen der Anthropologischen Gesellschaft in Wien* 57 (1927): 202–219

Prähistorische Flachgräber bei Gemeinlebarn in Niederösterreich. Berlin and Leipzig: W. de Gruyter, 1929.

"Kleinwüchsige Skelette aus bronzezeitlichen Gräbern bei Gemeinlebarn." *Mitteilungen der Anthropologischen Gesellschaft Wien* 61 (1931): 1-28.

"Bronzezeit-skelette aus Niederösterreich und Mähren." *Mitteilungen der Anthropologischen Gesellschaft Wien* 64 (1934): 1-101.

OTHER SOURCES

Jan Knies, "Nový nález diluviálního člověka u Mladče na Moravě." *Věstník klubu přírovědeckého Prostějov* 8 (1905): 3-19.

Carlo de Marchesetti, *Scavi nella necropoli di S. Lucia presso Tolmino*. (Bollettino della Società Adriatica di Scienze Naturali in Trieste 15). Trieste, 1893.

SECONDARY SOURCES

Carl Blaha, Johann Jungwirth, and Karl Kromer. "Geschichte der Anthropologischen und der Prähistorischen Abteilung des Naturhistorischen Museums in Wien." *Annalen des Naturhistorischen Museums in Wien* 69 (1965): 451-461.

Stane Gabrovec, "Josef Szombathy: Prispevek k zgodovini konservatorske službe na slovenskih tleh." *Varstvo spomenikov* 12 (1967): 63-67.

Brigitta Mader, "Die Zusammenarbeit der Naturhistorischen Museen in Wien und Triest im Lichte des Briefwechsels von Josef Szombathy und Carlo de Marchesetti (1885 -1920): 'Mit besten Grüßen von Haus zu Haus'." *Annalen des Naturhistorischen Museums in Wien. Serie A für Mineralogie und Petrographie, Geologie und Paläontologie, Anthropologie und Prähistorie* 97 (1995): 145-166.

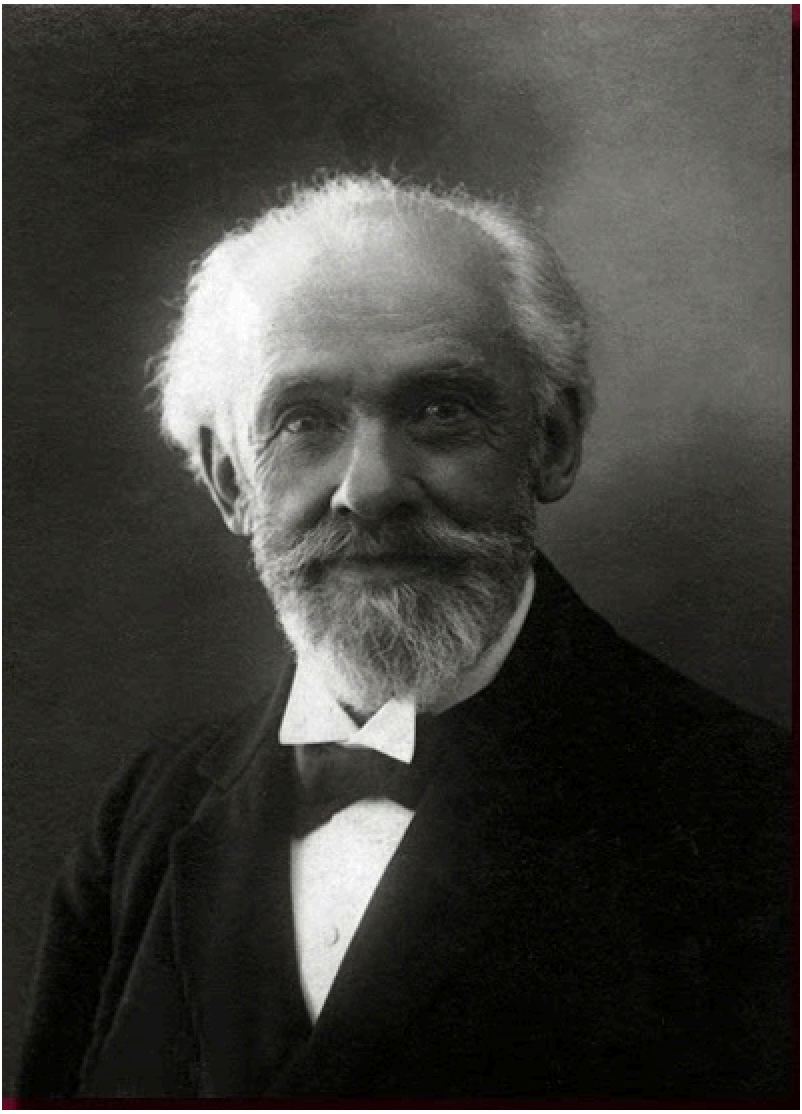
Angelika Heinrich, "Josef Szombathy (1853-1943)." *Mitteilungen der Anthropologischen Gesellschaft in Wien* 133 (2003): 1–45.

Walpruga Antl-Weiser, "Szombathy's excavations in the Mladecˇ Cave and the first presentations of the results". In Maria Teschler-Nicola, *Early Modern Humans at the Moravian Gate: The Mladecˇ Caves and their Remains.* Pp. 1-16. Vienna/New York: Springer-Verlag, 2006.

Walpurga Antl-Weiser, *Die Frau von W. Die Venus von Willendorf, ihre Zeit und die Geschichte(n) um ihre Auffindung.* (Veröffentlichungen der Prähistorischen Abteilung; Vol. 1). Vienna: Verlag der Naturhistorischen Museums, 2008.

Brigitta Mader, *Die Prähistorische Kommission der Kaiserlichen Akademie der Wissenschaften 1878-1918*. Vienna: Verlag der österreichischen Akademie der Wissenschaften, 2018.

René Verneau (1852-1938)



René Verneau

René Pierre Verneau was born on 23 April 1852 in La Chapelle-sur-Loire, in central France.[1] His family belonged to the provincial petty bourgeoisie. His father, René Verneau, was a farmer, and his mother was Marie Clémence Galbrun. As a boy Verneau was interested in science, collecting plants, stones, and insects as well as assembling a small chemistry laboratory. Verneau studied at the college in Saumur where he completed a Bachelors degree in 1869 and he entered the Faculty of Medicine in Paris to study medicine, but the Franco-Prussian War interrupted his studies. During the war he served as a surgeon's assistant to Charles Pajot, professor at the Faculty of Medicine. After the war Verneau continued his medical studies but his interests changed when he attended the course on prehistoric anthropology at the Sorbonne taught by Ernest-Théodore Hamy and the anthropology course of Armand de Quatrefages at the Muséum national d'histoire naturelle [National Museum of Natural History]. These experiences led Verneau to decide upon a career in anthropology. The leading centers of anthropological research at this time were the Museum of Natural History, where Quatrefages held the chair of anthropology, and a group of related institutions created by Paul Broca. These included the Société d"Anthropologie de Paris [Anthropology Society of Paris] founded in 1858, the Laboratoire d'Anthropologie [Laboratory of Anthropology] created in 1867, and the École d'Anthropologie [School of Anthropology] established in 1876.

Verneau completed his degree in medicine in 1875 with a thesis on the human pelvis titled *Le Bassin dans les sexes et dans les races* for which he received a Lauréat of the Faculty of Medicine. That year he also became a member of the Société d'anthropologie de Paris, which put him in contact with many of France's leading anthropologists, particularly Paul Broca. Meanwhile, Quatrefages had been so impressed with Verneau that he hired him as a prèparateur (student demonstrator) at the Museum of Natural History in 1873. Verneau's career took an unexpected turn in 1876 when he was invited to join an expedition to the Canary Islands organized by the French government's Ministry of Public Education. The expedition was established to gather scientific data about the archipelago of islands that lie off the west coast of Morocco. Verneau was tasked with studying the early inhabitants of the archipelago and investigating their potential relationship with the Paleolithic Cro-Magnon people whose fossil remains had been discovered in France and other parts of Europe. This inquiry was prompted by the opinion, originally proposed by Paul Broca and later promoted by Ernest-Théodore Hamy, that there were anatomical similarities between the aboriginal inhabitants of the archipelago (the Guanches) and the Cro-Magnon people, which suggested the Guanches might be related in some way to the Ice Age Cro-Magnons (later anthropological research dispelled this idea however).

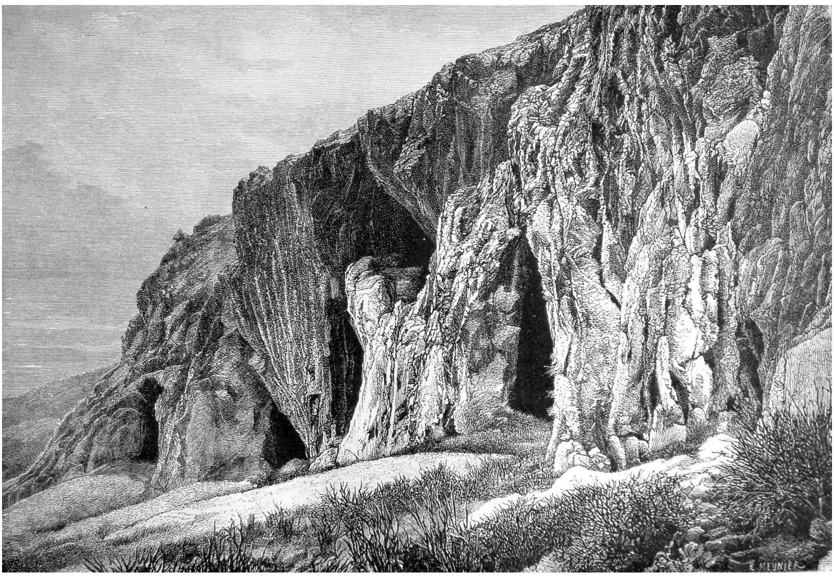
Verneau traveled among the Canary Islands during 1876 and 1877 studying skeletons of the aboriginal population and examining prehistoric tombs. He returned to Paris in the autumn of 1877 and presented a report on his investigations to the Ministry of Public Education. This experience initiated Verneau's lifelong passion for the Canary Islands, which he would visit six times over the course of his life. When the Museo Canario was established in 1879, through the initiative of the Canarian physician and anthropologist Gregorio Chil y Naranjo, Verneau was named an honorary member of the museum along with Quatrefages and Sabin Berthelot (the French consul in the Canary Islands). The museum, located in Las Palmas de Gran Canaria, collected anthropological and archaeological material relating to the aboriginal population of the Canary Islands. Verneau spent portions of his career collecting objects for the museum and later he reorganized much of the anthropological collection of the museum.

In addition to working as a prèparateur at the Museum of Natural History in Paris, Verneau was also appointed a professor at the Association polytechnique in 1879 where he taught a course in anthropology for the general public. Throughout his career Verneau displayed an interest in bringing the discoveries of anthropology to a wider public through lectures and books. In 1884 he returned to the Canary Islands and spent the next few years, until 1887, exploring all the islands of the archipelago. During this trip he examined prehistoric tombs and caves, such as the Cueva Pintada (Painted Cave), studied the contemporary culture of the Guanches, and assembled a skeletal and ethnographic collection of the islands' peoples. After returning to Paris Verneau wrote a book, *Cinq années de séjour aux Îles Canaries* [*Five Years Living in the Canary Islands*] published in 1891, that recounted his travels and investigations of the archipelago.

Verneau was promoted to assistant at the Museum of Natural History in 1892, working under Ernest-Théodore Hamy who had succeeded Quatrefages to the chair of anthropology. That same year he also taught a course on anthropology at the Enseignement populaire supérieur in Paris. In addition to his teaching and research Verneau published a popular book on human prehistory titled *L'enfance de l'humanité* [*The Childhood of Humanity*] (1890). His career was now advancing quickly. He served as the editor, jointly with paleontologist Marcellin Boule, of the journal *L'Anthropologie* from 1894 to 1930. The journal was founded by Verneau, Boule, and Hamy when the *Revue d'ethnographie*, which ceased publication in 1889, merged with *Matériaux pour l'histoire primitive et naturelle de l'homme* and *Révue d'anthropologie* to form the new journal *L'Anthropologie*. Verneau also became a member of the Société des américanistes (Society of Americanists), founded by Hamy in 1895 with a dedication to the ethnological and anthropological study of the native peoples and cultures of the New World. Among his many anthropological researches, Verneau studied the early inhabitants of Patagonia in South America, which resulted in an important monograph titled *Les anciens Patagons* [*The Ancient Patagonians*] published in 1903. In addition to his growing number of responsibilities, in 1900 he served as the secretary general of the Congrès international d'anthropologie et d'archéologie préhistoriques [International Congress of Prehistoric Anthropology and Archaeology] meeting in Paris.

Verneau was increasingly becoming involved in the study of prehistoric humans. He had already published several papers on prehistoric skeletons, but when new human skeletons were unearthed at Baoussé-Roussé (Balzi Rossi), on the coast of Italy just across the border from the French village of Menton, he was invited to examine them. Excavations conducted there by French archaeologist Émile Rivière between 1870 and 1875 had uncovered several Cro-Magnon skeletons along with Paleolithic artifacts. The caves strewn along the cliffs at Baoussé-Roussé continued to attract the attention of excavators over the following years. Louis Julien, an antiquities dealer, excavated a human skeleton in the Barma Grande cave in February1884 and during subsequent excavations he unearthed several statuettes made of soapstone. Following Julien's excavations François Abbo purchased the site and began quarrying operations. On 7 February 1892 Abbo unearthed a human skeleton during quarrying work in the Barma Grande cave and several days later two more skeletons were unearthed along with flint artifacts, ivory pendants, and shell ornaments. The Ministry of Public Education in France requested the Museum of Natural History in Paris to investigate these discoveries and Hamy asked Verneau to undertake an examination of these finds. No precise records were made of the initial discoveries and Verneau arrived at the site two weeks after they were made. Joseph Abbo, the owner's son, continued to conduct excavations and on 12 January 1894 he unearthed a fourth skeleton near the bottom of the cave and soon thereafter a fifth charred skeleton was found. Verneau studied these five skeletons as well as the skull found by Julien in 1884, which had been preserved in the Menton museum. Verneau published a series of papers on these skeletons (Verneau 1892a; 1992b; 1894; 1899) and eventually a monograph titled *L'homme de la Barma-Grande (Baoussé-Roussé)* [*The Humans of Barma-Grande*] (1899) that described the human fossils from the

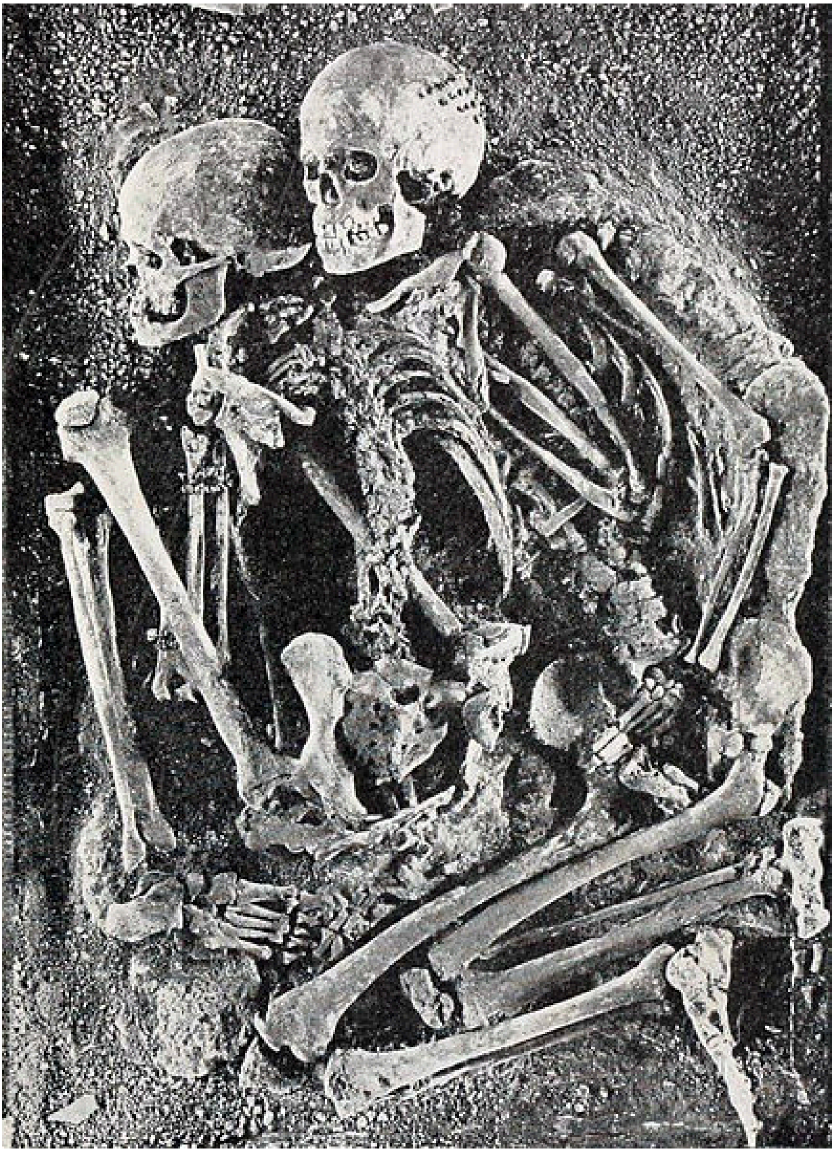
Barma Grande cave and compared then with the human skeletons previously found there by Rivière and with Cro-Magnon skeletons found elsewhere in France.



Caves at Baoussé-Roussé (from Nouvelle géographie universelle (1877)

These new discoveries at Baoussé-Roussé attracted the attention of Prince Albert I of Monaco, who had an intense interest in human prehistory. After conducting some excavations of his own there in 1895 he financed the excavation of the eight most important caves at Baoussé-Roussé, which came to be called the caves of Grimaldi since they were located in the commune of Grimaldi. Léonce de Villeneuve, an ordained priest and Canon of Monaco who was also an archaeologist and paleontologist, conducted the excavations with the assistance of Frederico Lorenzi. In a cave called the Grotte des Enfants they found numerous artifacts and reindeer bones in the upper layers, while the lower layers contained a warmer climate fauna that included Merck's rhinoceros, hippopotamus, and straight-tusked elephants. The lowest layer held Mousterian tools. Unlike earlier excavators Villeneuve carefully recorded the stratigraphy in the cave, which allowed an accurate dating of the fossils and artifacts found there. On 10 April 1901 Villeneuve unearthed a female skeleton associated with pierced shells that probably formed some kind of ornament [this skeleton is now considered to be Mesolithic]. Below this skeleton he found a male skeleton buried with its arms crossed over its chest and pierced shells and deer teeth ornaments were found on the body. Then on 3 June 1901 Villeneuve unearthed the skeletons of an elderly woman buried along with an adolescent boy. These two skeletons lay immediately below the male skeleton found earlier and they too were found with flint artifacts and shell ornaments.

Marcellin Boule, professor of paleontology at the Museum of Natural History in Paris was invited to study the animal fossils that Villeneuve and Lorenzi discovered. Émile Cartailhac, professor of prehistoric archaeology at the University of Toulouse, undertook the study of the artifacts. Verneau conducted the study of the human remains and he soon became convinced that two different groups were present. He noted that the two skeletons found in the deepest later of the cave, the old woman and the adolescent boy, differed anatomically from the skeletons found above them in the cave. When he compared the new skeletons from the Grotte des Enfants with skeletons found previously in the caves of Baoussé-Roussé (those found by Émile Rivière in the 1870s and by Louis Julien and Joseph Abbo at Barma Grande) Verneau observed that all these skeletons, with the exception of the old woman and the adolescent, resembled the Cro-Magnon people whose fossils were known from various Paleolithic sites in Europe. When he examined the skeletons of the old woman and the adolescent boy, however, Verneau concluded that they possessed “Negroid traits” and displayed features that differed in noticeable ways from Cro-Magnon skeletons. He argued that these two skeletons represented a hitherto unknown Paleolithic race of humans that he called the “race de Grimaldi” (Grimaldi race).



Skeletons of Verneau's "Grimaldi Race"

The impressive results of these excavations were published at the expense of Prince Albert I in a detailed two volume work titled Les Grottes de Grimaldi (Baoussé-Roussé) (1906-1919), with Villeneuve, Boule, Cartailhac, and Verneau contributing sections pertaining to their areas of expertise. They describe the excavations, the animal fossils, and the human remains and archaeological artifacts. On the basis of the stratigraphy and the animal fossils Boule believed the human skeletons dated from what he called the “early part of the Reindeer Age,” which would place them in the Middle Pleistocene (they are now attributed to the lower Aurignacian). Verneau’s description of the skeletons from the Grotte des Enfants along with the skeletons he had studied from Barma Grande and those excavated by Émile Rivière resulted in one of the most important revisions of paleoanthropologist’s understanding of Cro-Magnons since the original work of Broca, Quatrefages, and Hamy in the 1860s and 1870s. Verneau also argued, on the basis of all this new evidence, that Paleolithic humans buried their dead, contrary to the long-held view of Gabriel de Mortillet and others that it was impossible that such primitive and early people could have engaged in such a practice. The skeletons and artifacts recovered during these excavations were placed in the collections of the Musée d’anthropologie préhistorique [Museum of Prehistoric Anthropology] in Monaco, which was founded in 1902 by Prince Albert I who appointed Léonce de Villeneuve the Museum’s first director.

Verneau’s identification of a Grimaldi race among the Paleolithic skeletons at Baoussé-Roussé influenced the thinking of paleoanthropologists throughout the early twentieth century. He came to believe that the earliest Homo sapiens possessed Negroid traits and that the first humans to inhabit Europe were Negroid. He supported these claims on the basis of examinations of prehistoric skeletons from various parts of Europe. In addition to his study of Paleolithic humans, Verneau also studied Neolithic skeletons. Among them were the human skeletons that Léonce de Villeneuve excavated from the Neolithic tombs in the Grotte des Bas-Moulins in Monaco (Verneau and Villeneuve 1901). He also continued to conduct anthropological studies of living populations. He wrote the volume on ethnography and anthropology for the Mission in Ethiopia (1901-1903), led by Jean Duchesne-Fournet under the auspices of the Ministry of Public Instruction, which studied the geography, geology, zoology, and anthropology of Ethiopia (Jean Duchesne-Fournet et al. 1908-1909).

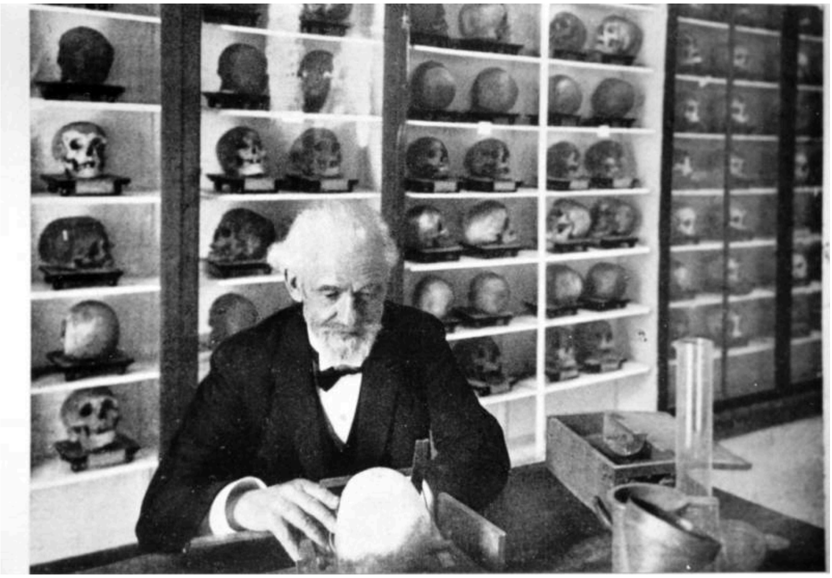
Verneau's professional life changed notably following the work on the Paleolithic human fossils from Baoussé-Roussé. He taught a course on human paleontology at the École d'Anthropologie in 1905 where he discussed the important human fossils discovered in Europe as well as his views on prehistoric human races. After working for four years at the Musée d'ethnographie du Trocadéro [Museum of Ethnography] housed in the Trocadéro Palace in Paris, Verneau was appointed the conservateur [curator] of the museum in 1907. He succeeded Ernest-Théodore Hamy who resigned as the museum's director in 1906 in protest over the dismal state of the museum's budget and the lack of support for the institution. Then in 1909, after many years working as an assistant, Verneau succeeded Hamy to the chair of anthropology at the Museum of Natural History. One of his main objectives was to integrate the ethnographical and the anthropological approaches to the study of humans, which were often treated separately by French ethnographers who were interested in the cultures of different peoples and French anthropologists who often were focused on craniometric and anthropometric examinations of human bodies in order to identify their racial classification.

French anthropological institutions were also undergoing change at this time as the field became more developed and there were a larger number of researchers engaged in anthropology related investigations. Verneau resigned from the Société d'anthropologie de Paris in 1910 as a result of a dispute with Adrien de Mortillet over the work of a commission investigating the mixing of races. He was one of the founding members, along with Marcellin Boule and other leading French scientists, of the Institut Français d'Anthropologie [French Institute of Anthropology] when it was established in 1911. The Institute was founded in some respects in opposition to the Société d'anthropologie de Paris, which focused on physical anthropology and the identification of racial characteristics. The Institute, instead, wanted to unite ethnographic studies of cultures with anthropological studies of race. Verneau succeeded Boule as president of the Institute in 1922. One of the most influential new institutions to be created was the Institut de Paléontologie Humaine [Institute of Human Paleontology]. Prince Albert I of Monaco founded the Institute in 1910 as a research institution devoted to the study of human prehistory. Marcellin Boule was appointed professor of paleontology as well as the Institute's director, Henri Breuil was the professor of prehistoric ethnography, Émile Cartailhac the professor of archaeology, Hugo Obermaier the professor of geology, and René Verneau the professor of prehistoric anthropology. The building housing the Institute opened in Paris in 1920 and its members conducted excavations, assembled collections of prehistoric objects, and published their research under the auspices of the Institute.

The First World War deeply affected European science. During the war Verneau held the position of chief medical officer at Juvisy where there was a military school. The war damaged relationships between French and German scientists and this interrupted the international cooperation that characterized European science before the war. Besides affecting the relationships between individual scientists it also affected scientific institutions, with some excluding members from the defeated nations or breaking their contact with fellow institutions in those countries. As a consequence of the war a group of prominent French anthropologists circulated a notice on 20 November 1918 calling for the creation of an Institut International d'Anthropologie [International Institute of Anthropology. The Institute was established in 1921 with the purpose of bringing archaeologists and anthropologists together after the war, but scientists from Germany and Austria were excluded from the Institute's activities. But some influential prehistorians and anthropologists, including Verneau, Boule, Hugo Obermaier, and Pedro Bosch-Gimpera argued that the Institute should open its membership to scientists from all countries.

Verneau was a founding member of the Académie des Sciences Coloniales [Academy of Colonial Sciences], which was created in 1922. He was also a member of the Commission des Monuments Préhistoriques [Prehistoric Monuments Commission]. In 1924 he was awarded the Huxley Medal by the Royal Anthropological Institute of Great Britain and Ireland and in his paper for the Huxley Lecture Verneau took the unusual position of supporting the view that the Neanderthals were the direct ancestors of Homo sapiens (Verneau 1924). Verneau's best known book was Les origines de l'humanité [The Origins of Humanity] (1926), which was written for a general audience and discussed Neanderthal and Cro-Magnon fossils, the Grimaldi skeletons, the Chancelade skeleton, and the Paleolithic archaeological record.

Verneau received a number of awards and honors throughout his career. He was awarded the Medal of the Société de Géographie Commerciale de Paris (Paris Commercial Geography Society) in 1924. He was Officier de la Légion d'honneur (Officer of the Legion of Honor) and in 1931 he was elevated to the rank of Commandeur de la Légion d'honneur (Commander of the Legion of Honor). He was also an Officier de l'Instruction publique [Officer of Public Education]. He received a number of foreign honors as well. The Spanish government made Verneau a Commander of the Order of Isabelle-la-Catholique as well as a Commander of the Order of Alphonso XII. The government of Monaco named him an Officer of the Order of Saint-Charles de Monaco, and the government of French Indo-China named Verneau Commander of the Imperial Order of the Dragon of Annam in recognition of his scientific work in Indo-China.



Verneau in the Anthropology Collections of the Museo Canario in 1932

After successively holding positions as prèparateur, assistant, and professor of anthropology at the Museum of Natural History, Verneau retired from his position at the Museum in 1927. The following year he retired from his position as curator of the Museum of Ethnography. He remained professor of prehistoric anthropology at the Institute of Human Paleontology until 1937. Verneau died on 7 January 1938 in Paris.

SELECTED BIBLIOGRAPHY

René Verneau and Alfred Edmund Brehm, Les races humaines. Paris J.-B. Baillière et Fils, 1890.

Le bassin dans les sexes et dans les races. Paris: Baillière, 1875.

"Crâne moderne de type de Cro-Magnon." Bulletins de la Société d'anthropologie de Paris ser. 2, 11 (1876): 408-417.

"Crânes de l'allée couverte de Montigny-l'Engrain. La race de Furfooz à l'époque des dolmens." Bulletins de la Société d'anthropologie de Paris ser. 3, 10 (1887): 713-725.

L'enfance de l'humanité. Paris: Hachette et Cie, 1890.

Cinq années de séjour aux iles Canaries. Paris: A. Hennuyer, 1891.

"Note sur une nouvelle découverte de troglodytes dans une grotte des Baoussé-Roussé, commune de Vintimille (Italie)." Comptes rendus des séances de l'Académie des Inscriptions et Belles-Lettres 36 (1892): 95-101.

"Nouvelle découverte de squelettes préhistoriques aux Baoussé-Roussé, près Menton." L'Anthropologie 3 (1892): 513-540.

"Découverte d'un nouveau squelette humain dans une grotte des Baoussé-Roussé." L'Anthropologie 5 (1894): 123-124.

"Les nouvelles trouvailles de M. Abbo dans la Barma-Grande, près de Menton." L'Anthropologie 10 (1899): 439-452.

L'homme de la Barma-Grande (Baoussé-Roussé): étude des collections réunies dans le museum praehistoricum fondé par Thomas Hanbury près de Menton. Baoussé-Roussé: Fr. Abbo, 1899.

The Men of the Barma-grande (Baoussé-Roussé): An Account of the Objects Collected in the Museum Præhistoricum, Founded by Commendatore Th. Hanbury near Mentone. Transl. by O. C. and B. C. Baoussé-Roussé, near Mentone: F. Abbo, 1900.

Les Boers et les races de l'Afrique Australe. Paris: Armand Colin & Cie, 1899.

René Verneau and L. de Villeneuve, "La grotte des Bas-Moulins (principauté de Monaco)." L'Anthropologie 12 (1901): 1-27.

Les anciens Patagons: contribution à l'étude des races précolombiennes de l'Amérique du Sud. Monaco: Imprimerie de Monaco, 1903.

"Crâne de Baoussé-Roussé." Bulletins et Mémoires de la Société d'anthropologie de Paris ser. 5, 5 (1904): 559-570.

Léonce de Villeneuve, Marcellin Boule, René Verneau, and Émile Cartailhac, Les Grottes de Grimaldi (Baoussé-Roussé). 2 vols. Monaco: Imprimerie de Monaco, 1906-1919.

René Verneau and Paul Rivet, Ethnographie ancienne de l'Equateur. Paris, Gauthier-Villars, 1912.

René Verneau and Georges de Gironcourt, Résultats anthropologiques de la mission de M. de Gironcourt en Afrique occidentale. Paris: Masson, 1918.

"La race de Neanderthal et la race de Grimaldi: leur role dans l'humanité." Journal of the Royal Anthropological Institute of Great Britain and Ireland 54 (1924): 211-230.

Les origines de l'humanité. Paris: F. Rieder et cie, 1926.

L'homme: races et coutumes. Paris: Larousse, 1931.

OTHER SOURCES CITED

Jean Duchesne-Fournet et al., Mission en Éthiopie (1901-1903). 2 vols. Paris: Masson et cie, 1908-1909.

SECONDARY SOURCES

"Verneau (René)." In *Qui êtes-vous?: Annuaire des contemporains; notices biographiques*, p. 750. Paris: Delgrave, 1924.

Henri Vallois, "René Verneau," *L'Anthropologie* 48 (1938): 381-389.

R. L. "Le Dr. René Verneau (1852-1938)." *Revue archéologique* 12 (1938): 85.

George Montandon, "René Verneau." *Revue anthropologique* 48 (1938): 86-88.

Marcel Mauss, "René Verneau: 25 April, 1852-7 January, 1938." *Man* 39 (1939): 12-13.

Gérard Cordier, "Un illustre Bourgueillois méconnu: le docteur René Verneau (1852-1938)," *Bulletin de la Société des Amis du Vieux Chinon* 8 (1984): 1089-1092.

Frank Spencer, "Verneau, René (Pierre) (1852-1938)." In Frank

Spencer (ed.) *History of Physical Anthropology: An Encyclopedia*. 2 vols. Vol. 2, pp. 1091-2. New York: Garland Publishing, 1997.

Notes

1 There is some confusion about Verneau's actual date of birth. Sources published during his lifetime and several obituaries give April 23 as his birthday, but Marcel Mauss says April 25 in his obituary and many modern sources give this date as well, probably relying upon Mauss. To further confuse the matter Gérard Cordier gives April 24 as Verneau's birthday.

2 The museum was reorganized into the Musée de l'Homme (Museum of Man) in 1938.

Heinrich Wankel (1821–1897)

Heinrich Wankel

Jindřich (Heinrich) Wankel (he published primarily under the name Heinrich) was born on 15 July 1821 in Prague, in what at that time was the Austrian Empire. His father, Damian Wankel, was a provincial councilor in Prague whose family was originally from Bavaria, in Germany. Wankel's mother, Magdalena Schwarzová

(Schwarz) was Czech and instilled a sense of pride for Czech culture in her son. Wankel attended the gymnasium (German secondary school) in the Malá Strana (Lesser Town) district in Prague and after graduating he entered the University of Prague (at that time called Charles University in Prague) in 1841 where he obtained a degree in medicine in 1847 with a thesis on the diseases of the eardrum. He stayed on at the university in order to get a degree in surgery in 1848. Wankel studied under the anatomist Josef Hyrtl and briefly worked as his assistant after completing his degree. He also took a position in a Prague hospital and during the revolution of 1848 he treated the wounded from the barricades in Prague. Wankel met the Czech painter Josef Mánes at this time and they became close friends, often traveling together. It was during this period that Wankel set out on a trip to Vienna and stopped in Moravia. He fell in love with the region and in October 1849 he moved first to the town of Jedovnice where he worked as a physician at the iron smelting factory owned by Hugo Karl Salm-Reifferscheidt. Two years later he moved to Blansko and on 17 August 1851 he married Eliška Šímová (Elisabeth Schima).

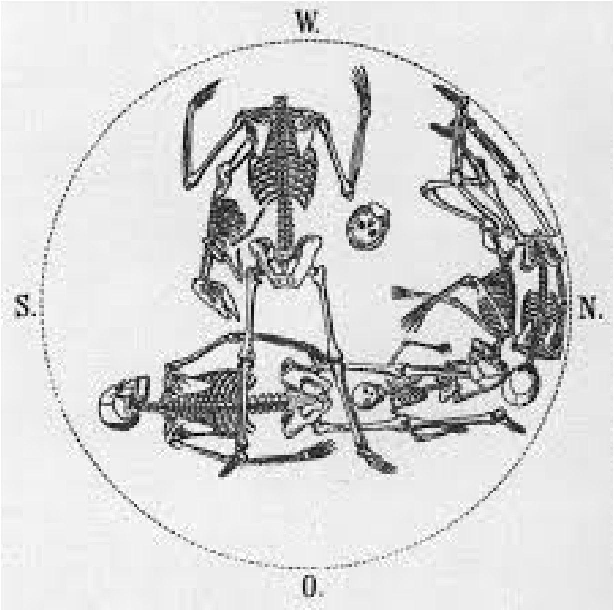
Wankel retained his association with the influential Salm family, who served as patrons of culture and science in Blansko. Hugo František Salm-Reifferscheidt had created the František Museum in Brno in 1817. Wankel attained some renown as a physician by suppressing the cholera epidemics that raged in Blansko in 1850, 1851, and 1855 as well as for his treatment of the wounded and sick during the Austrian wars of 1859-1866. For this work he was awarded the Goldene Verdienstkreuz (Golden Merit Cross) by the emperor Franz Joseph I in 1866. Wankel began to explore the many local caves in the Moravian karst in 1849 and this began his life-long work of exploring and excavating Moravian caves. One of the first sites Wankel examined were the Sloup-Šošůvka Caves where he unearthed Pleistocene animal fossils, including cave bear, cave lion, and hyena. This initiated his interest in paleontology just at a time when European paleontologists were becoming increasingly interested in the fossil fauna of the Ice Age. At a centenary commemoration of the birth of the German geologist Abraham Werner that was organized by a group of Brno naturalists in the town of Adamov (Adamsthal) in 1850, Wankel read a paper on his paleontological discoveries and displayed a reconstructed skeleton of a cave bear.

In 1850, Wankel established a laboratory at his home to facilitate his study of the Pleistocene fossils he was now discovering in large numbers from Moravian caves. These fossils had been mined and used for spodium in a nearby sugar refinery for some time before he began his investigations. Wankel set about devising ways to prepare and preserve the fossils he was collecting. He began to reconstruct their skeletons and soon he was preparing skeletons for museums. As Wankel's research expanded Salm-Reifferscheidt offered financial support as well as miners to assist with the excavation work and Wankel's growing collection was housed in one of the buildings on the grounds of the Blansko castle. Meanwhile, Wankel began to excavate new caves, often accompanied by his friend Josef Mánes. In 1856 Wankel surveyed the so-called Macocha abyss, a sinkhole 138 meters deep that is part of a vast underground system formed by the Punkva River, which cuts its way through the Moravian karst near the town of Vilémovice. Wankel presented a paper on his cave discoveries before the Werner-Vereins zur Geologischen Durchforschung von Mähren und Schlesien (Werner Association for the Geological Research of Moravia and Silesia) in 1858 and later donated a cave bear skeleton to the Association. He published a number of scientific papers on the Moravian caves and his paleontological discoveries as well as articles for a general audience (Wankel 1856; 1860; 1861; 1868a). Some of these popular works were illustrated by the Czech painter and illustrator Bedřich Havránek (Friedrich Hawranek).

Almost immediately after Wankel began to explore Moravian caves he also began to find prehistoric artifacts. This was just at the time when other European geologists were finding crude stone tools in Pleistocene deposits containing extinct animal bones, which was compelling them to accept the idea that humans had lived during the Ice Age. Wankel visited the exhibition of prehistoric artifacts organized by the French archaeologist Gabriel de Mortillet at the Exposition Universelle held in Paris in 1867. There he saw the collection of Paleolithic, Neolithic, and other prehistoric objects. Wankel published an account of the exhibit that also discussed the research of Jacques Boucher de Perthes in the Somme valley, the excavations conducted by Édouard Lartet and Henry Christy in the Vézère valley, and the discovery of the Neanderthal specimen in Germany (Wankel 1868b). Wankel also noted the similarity of some Paleolithic artifacts from France with stone artifacts he had unearthed from a Moravian cave called Býčí skála (Bull Rock cave), and this prompted him to renew his excavations there.

Wankel conducted excavations at Býčí skála from 1867 to 1873. During the course of his work he distinguished two distinct periods represented in the cave's deposits. One dated to the Pleistocene and contained Paleolithic artifacts while the other dated to the Iron Age (Hallstatt). In the Pleistocene deposits he found stone axes and bone tools as well as fragments of crude pottery associated with the bones of cave bear and cave lion, which he considered to be evidence that humans had coexisting with these animals. But Wankel achieved the greatest renown for the discovery of a Hallstatt period burial in another section of Býčí skála. In 1869 two cousins, Gustav and Arnošt Felkl, had found a statuette of a bronze bull in the cave. So Wankel obtained funds for new excavations from Johann II of Liechtenstein, who owned the land. In 1872 Wankel unearthed an Iron Age Hallstatt burial dating to around the 6th century BCE in the entrance chamber of the cave. The grave contained one male skeleton along with the skeletons of forty young women. The burial also contained the skeletons of two horses, the remains of a chariot, offerings of grain, textiles, ceramic and metal vessels, jewelry (including bronze bracelets), and glass and amber beads. These objects are now in the collections of the Naturhistorisches Museum (Natural History Museum) in Vienna. Wankel interpreted this as the grave of a nobleman and that young women had been ritually killed to accompany him (Wankel 1871). This interpretation was disproved by further research at the end of the twentieth century. Wankel also suggested that the bronze bull found in the cave indicated that the site had been a cult site, perhaps similar to the cult of Apis in Egypt, but this idea was severely criticized and he soon abandoned it. Wankel presented a paper on his discoveries at Býčí skála at the Russian Archaeological Congress held in Kiev in 1874.

Wankel excavated a large number of caves and prehistoric burials in Moravia throughout the 1870s and 1880s. He conducted excavations periodically in Výpustek Cave from 1869 until 1882. There he unearthed Neolithic stone tools and some bone artifacts, along with Pleistocene animal bones. Wankel excavated some tombs near Rajhrad (Raigern) in 1872 where he unearthed the skeletons of a man, a woman, and three children mixed together with the bones of a piglet. The tomb also contained a polished stone axe and pottery. The male skeleton appeared to have been decapitated, which led Wankel to interpret the burial as a Bronze Age Celtic human sacrifice (Wankel 1873). In 1876 he excavated Eve’s cave, which is located near Býčí skála. There he unearthed reindeer and horse bones associated with flint knives and shards of pottery, as well as some human bones. Wankel dated these finds to the late Paleolithic, a period referred to at this time as the Reindeer Age (Magdalenian). In another part of the cave Wankel discovered cave bear bones associated with flint knives, which further indicated that humans were contemporaries of the cave bear in Moravia (Wankel 1877). After noticing a young female skull among the Býčí skála human skeletons that showed evidence of trepanation, he wrote a paper on the implications of this discovery (Wankel 1878). Soon afterwards Wankel visited the collection of human skulls in the museum in Prague and found two prehistoric skulls from Bilin, in Bohemia, that displayed evidence of trepanation (Wankel 1879b).



Tomb at Raigern (from Wankel 1873, plate following p. 108)

Wankel excavated a prehistoric tomb lined with stones that contained five human skulls, an iron knife, and clay objects at Bořitov, near Blansko in 1878. He conducted the first excavations of Kůlna Cave in 1880 and sent the stone tools he found there to the Naturhistorisches Hofmuseum in Vienna. (The Moravian archaeologist Martin Kříž conducted extensive further excavations there from 1881 to 1886.) Wankel also began excavations at Pekárna (Kostelik) cave after an initial exploration by Moravian archaeologist Jan Knies encountered archaeological finds there. Wankel unearthed broken bones belonging to horse, reindeer, and arctic fox mixed with hundreds of stone knives and axes, harpoons, as well as carved bones and reindeer antler and some shards of crude pottery that he dates to the late Reindeer Age (Magdalenian) (Wankel 1881).

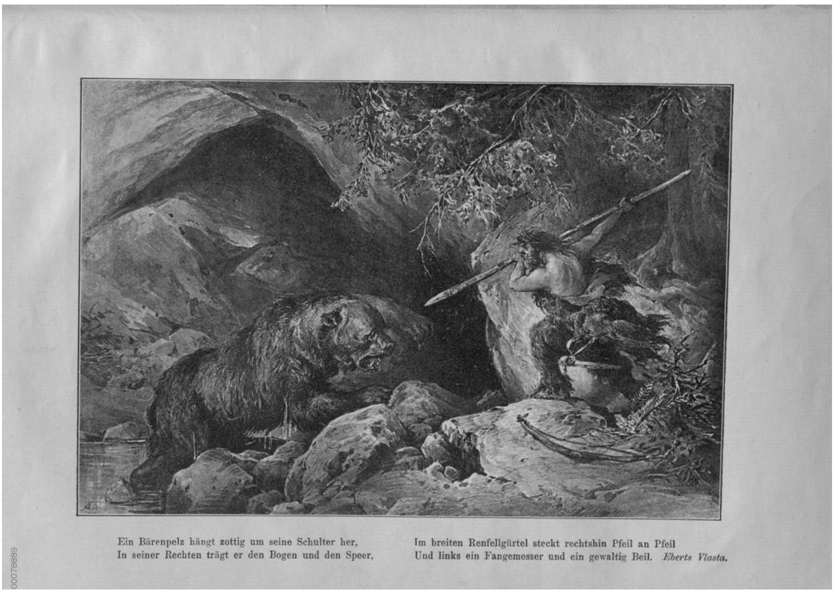
In 1879 Wankel discovered the open-air archaeological site of Předmostí (Predmost). Predmost consists of loess deposits and limestone bluffs located in the Bečva river valley near Přerov, in eastern Moravia. He conducted excavations there from 1880 to 1882 and again in 1884 and 1886. Karel Maška, who had assisted Wankel in some of his investigations, conducted further excavations at Predmost from 1882 to 1895. When Wankel discovered the site it was being exploited as a quarry for the extraction of loess and limestone. Sadly, hundreds of wagonloads of mammoth bones from the site were also being extracted to produce spodium (which was used for the whitening of sugar) or were pulverized to produce fertilizer. Some remarkable objects found during this commercial extraction were sent to private collectors. In the course of his excavations, Wankel unearthed large numbers of mammoth bones and artifacts made from stone and bone, as well as charcoal from hearths and the bones of various other extinct animals.

Wankel noticed distinct cut marks on the mammoth bones, which he interpreted as evidence that these animals had been butchered by humans. Then in 1884 Wankel unearthed a partial human mandible lying under a mammoth femur. He argued that the mandible dated from the same period as the mammoth bones. Wankel initially dated the Predmost finds to the "Mammoth Age" and he argued that Predmost was a place where humans had hunted and butchered mammoths (Wankel 1885a). Wankel's discoveries at Predmost attracted the attention of other European prehistorians, including the Dutch naturalist Japetus Steenstrup, who visited Predmost in 1888. Steenstrup published two papers rejecting Wankel's suggestion of mammoth hunters and arguing instead that Predmost was a sort of mammoth cemetery and that long after the extinction of the mammoths, Neolithic humans had exploited the site for mammoth ivory, much as the Yakut people of Siberia continued to do in modern times (Steenstrup 1889; 1890). Wankel eventually modified his interpretation of the finds from Predmost, partially in response to the critique of Steenstrup, and suggested that people from the Reindeer Age came to collect the mammoth bones (Wankel 1890). However, new excavations conducted by Karel Maška demonstrated that the mammoth and human remains at Predmost did indeed date from the same period. The German anthropologist Hermann Schaaffhausen, who is best known for his description of the Neanderthal fossils found in Germany in 1856, conducted an examination of the human mandible from Predmost and a full description of this specimen was conducted by the Czech anthropologist Jindřich Matiegka in 1934. The animal fossils and human artifacts Wankel collected at Predmost were sent to the Anthropologischen Gesellschaft in Wien (Anthropological Society in Vienna), to the museum in Olomouc (Olmütz), and to the Moravské zemské muzeum (Moravian Land Museum) in Brno (Brünn). The human mandible was sent to the museum in Olomouc.

During the course of his paleontological and archaeological investigations, Wankel presented papers on many of his discoveries at the Anthropologischen Gesellschaft in Wien, but he also published accounts in articles for a more general audience. Wankel also published several books on prehistory. Wankel's best-known book was *Bilder aus der Mährischen Schweiz und ihrer Vergangenheit* (Images from the Moravian Switzerland and Its Past), which was published in 1882 with illustrations by his friend Josef Mánes. Written for a general audience, Wankel describes the geology of the caves he had explored and the extinct animal fossils he discovered. He then discusses his archaeological discoveries, beginning with descriptions of Paleolithic artifacts and the Ice Age inhabitants of Moravia and proceeding through the Neolithic and Bronze Ages to portray the people and their manner of living during Moravian prehistory.

In his *Beitrag zur Geschichte der Slaven in Europa* (Contribution to the History of the Slavs in Europe), published in 1885, Wankel argued that the Slavs were present in Moravia from prehistoric times and did not arrive during the migrations of the 5th century, as was commonly believed by many European scholars. He suggested that their original homeland was beyond the Carpathian Mountains and when they migrated into central Europe the only people present there were the remnants of the Paleolithic inhabitants of the region. Many German archaeologists rejected Wankel's claims, which led him to engage his critics over this. Wankel's final book, *Die Praehistorische Jagd in Mahren* (The Prehistoric Hunt in Moravia), published in 1892, summarizes his ideas about the Paleolithic inhabitants of Moravia based upon his researches. Much of the book addresses his discoveries at Predmost and the arguments surrounding the association of mammoth bones and human artifacts at the site.

Wankel traveled widely throughout his life and participated in many scientific conferences and exhibitions. During a trip to Constantinople, Syria, Palestine, and Egypt in 1869 he studied the archaeological ruins in these regions. Wankel displayed some of his archaeological and paleontological discoveries at the Weltausstellung (World Exhibition) held in Vienna in 1873, where he received a medal for his exhibit. He then displayed his archaeological and paleontological collection at the Versammlung deutscher Naturforscher und Aerzte in Graz (Congress of German Naturalists and Physicians in Graz) in 1875. Following this he exhibited his collection at the international anthropological exhibition and congress held in Moscow in 1879. At the anthropological meeting held in Berlin 1880 Wankel exhibited the objects from Býčí skály. He sent an exhibit to the World's Columbian Exposition held in Chicago in 1893 and his depiction of the "First Hunt," which was accompanied by a display of a cave bear skull with the tip of a stone spearhead stuck into it as well as other Paleolithic artifacts from Moravia was honored with a medal (Wilson 1901). Wankel influenced the important National Ethnographic Exhibition that was held in Prague in 1895 and his fellow Moravian prehistoric researchers, Karel Maška, Jan Knies, Martin Kříž, and Innocenc Ladislav Červinka Červinka were all involved in the event.



Frontispiece to Die Praehistorische Jagd in Mahren (1892)

Wankel was a member of many prominent scientific and cultural institutions. Perhaps most importantly, he was one of the first members of the Anthropologischen Gesellschaft in Wien (Anthropological Society in Vienna), which was founded in 1870. Wankel presented many of his paleontological and archaeological discoveries to the Society. He also became a corresponding member of the influential Deutschen Gesellschaft für Anthropologie, Ethnologie und Urgeschichte (German Society for Anthropology, Ethnology, and Prehistory) when it was founded in Mainz, Germany, in 1870. He was a member of the Zoologisch-

Botanische Gesellschaft (Zoological-Botanical Society) in Vienna from 1856 to 1876. He became a member of the Society as a result of research he conducted on the eyeless insects, spiders, and crustaceans found in some Moravian caves. Wankel was a member of the Werner-Vereins zur Geologischen Durchforschung von Mähren und Schlesien (Werner Association for the Geological Research of Moravia and Silesia), as well as a corresponding member of the Kaiserlich Königlichen Geologischen *Reichsanstalt (Imperial Royal Geological Institute) in Vienna. He was appointed Curator of the* Central-commission zur Erforschung und Erhaltung der Kunst-und Historischen Denkmale (Central Commission for Research and Preservation of Art and Historic Monuments) in 1885. The Commission was established by the Vienna Academy of Sciences in 1850 to prevent the destruction of historic monuments, including prehistoric antiquities.

Wankel was a corresponding member of the Královská česká společnost nauk (Royal Bohemian Society of Sciences) as well as an honorary member of the Imperial Russian Anthropological Society in Moscow. Wankel and his wife founded the čtenářsko-pěveckého spolku Rastislav (Rastislav Readers 'and Singers' Association) in Blansko in 1862, which was created with the intent to revive Czech culture. Wankel was elected an honorary member of the Včela Čáslavská, a museum and archaeological association located in the town of Čáslav, in Bohemia, that was established in 1864 to protect local historical monuments. Wankel and the Moravian writer and ethnographer Jan Havelka founded the Vlastenecký spolek musejní v Olomouci (Patriotic Museum Association in Olomouc) in 1883 and Wankel edited the Association's journal for several years. The Association and its museum served as an important center for Czech researchers interested in archaeology and anthropology.

Wankel served as a member of the municipal council of Blansko from 1861 to 1883. He retired from his position as physician in Blansko and moved to Olomouc (Olmütz) in 1883. Following the move to Olomouc, financial difficulties compelled Wankel to sell his extensive collection of objects amassed from his many excavations. It consisted of hundreds of stone tools, hundreds of bronze artifacts, and hundreds of Iron Age objects, hundreds of pieces of pottery, bone tools, Pleistocene animal fossils, as well as human skeletons and around fifty skulls (from Býčí skála and Raigern as well as other sites). Wankel wanted to sell the collection to the František Museum in Brno, where Moritz Trapp had served as curator since 1864, but the museum could not afford to buy the collection. Wankel approached the museum in Prague, but they would not purchase the collection either. The abbot of the Rajhrad monastery, Günter Kalivoda, offered to buy it for the local Franciscan Museum, but the abbot died suddenly in April 1883 so the sale fell through. Through the efforts of Josef Szombathy, curator of the Prehistoric Collection of the Naturhistorisches Hofmuseum (now the Narurhistorisches Museum) in Vienna, much of Wankel's collection was sold to the Anthropologischen Gesellschaft in Wien for 12,000 guilders, which then donated them to the Naturhistorisches Hofmuseum. The remaining part of the collection was sold by Wankel's wife shortly after his death in 1897 (Stloukal and Szilvássy 1984).

During the course of his long career studying Moravian prehistory, Wankel came to know some prominent scientists. He was friends with Count Aleksei Sergeyevich Uvarov, the founder of the Moscow Archaeological Society, as well as Dmitry Nikolayevich Anuchin, the founder of anthropology as a scientific discipline in Russia. Wankel corresponded with German anthropologist and prehistorian Rudolf Virchow. He also influenced the young generation of Czech Paleolithic researchers that included Karel Maška, Jan Knies, and Martin Kříž. His grandson, Karel Absolon, became an influential Czech archaeologist and speleologist. Wankel's paleontological and archaeological research garnered international recognition and the Danish naturalist Japetus Steenstrup called Wankel the "Father of Austrian Prehistory." In 1892, Wankel suffered a stroke that left him partially paralyzed.

Wankel died in Olomouc on 5 April 1897. He is buried in the Central Cemetery in Olomouc-Neředín, in a common grave with his son-in-law Jan Havelka and Ignát Wurm.

SELECTED BIBLIOGRAPHY

"Ueber die Fauna der mährischen Höhlen." *Verhandlungen der Zoologisch-Botanischen Gesellschaft in Wien* 6 (1856): 467-470.

"Beiträge zur Fauna der mährischen Höhlen." *Lotos* 10 (1860): 105-122, 137-143.

"Beiträge zur österreichischen Grotten-Fauna." *Sitzungsberichte der Akademie der Wissenschaften mathematisch-naturwissenschaftliche Klasse* 43 (1861): 251-265.

"Die Slouper Höhle und ihre Vorzeit." *Denkschriften der mathematisch-naturwissenschaftlichen Classe der Kaiserlichen Akademie der Wissenschaften* 28 (1868a): 95-131.

"Der mensch der postpliocänen Periode und die Pariser Ausstellung." *Lotos* 18 (1868b): 18–23, 37–46.

"Prähistorische Alterthümer in den mährischen Höhlen." *Mitteilungen der Anthropologischen Gesellschaft in Wien* 1 (1871): 266-282, 309-314, 329-343.

"Der Menschenknochenfund in der Býčískálahöhle." *Mitteilungen der Anthropologischen Gesellschaft in Wien* 1 (1871): 101-105.

"Eine Opferstätte bei Raigern in Mähren." *Mitteilungen der Anthropologischen Gesellschaft in Wien* 3 (1873): 75-94.

"Gleichzeitigkeit des Menschen mit dem Höhlenbären in Mähren." *Mitteilungen der Anthropologischen Gesellschaft in Wien* 7 (1877): 1-6.

"Der Bronze-Stier aus der Bycískála-Höhle." *Mitteilungen der Anthropologischen Gesellschaft in Wien* 7 (1877): 125-154.

"La contemporaneité de l'homme avec l'ours des cavernes, en Moravie." *Matériaux pour l'histoire primitive et naturelle de l'homme* 12 (1877): 137-138.

"Ein prähistorischer Schädel mit einer halbgeheilten Wunde auf der Stirne höchstwahrscheinlich durch Trepanation entstanden." *Mitteilungen der Anthropologischen Gesellschaft in Wien* 7 (1878): 86-95.

"Prähistorische Eisenschmelz- und Schmiedestätten in Mähren." ("Prehistoric iron smelting and forging facilities in Moravia") *Mitteilungen der Anthropologischen Gesellschaft in Wien* 8 (1879a): 289-324.

"Ueber die angeblich trepanirten Cranien des Beinhauses zu Sedlec in Böhmen." *Mitteilungen der Anthropologischen Gesellschaft in Wien* 8 (1879b): 352-360.

"Prähistorische Funde in der Pekárna-Höhle in Mähren. " *Mitteilungen der Anthropologischen Gesellschaft in Wien* 10 (1881): 347-348.

Bilder aus der Mährischen Schweiz und ihrer Vergangenheit. Vienna: Holzhausen, 1882.

"Prvni stopy lidské na Moravë." *Časopis Vlastivědného spolku musejního Olomouc* 1 (1884): 2-7, 41-49, 89-100, 137-147.

Beitrag zur Geschichte der Slaven in Europa. (Olmütz: Fürst-Erzbischöfl. Buch- u. Steindruckerei, 1885.

"Der Mammutjäger in Mähren." *Kosmos* (1885a): 114-118.

"Die Mamuthlagerstätte bei Predmost in Mähren." *Correspondenz-blatt der deutsehen Gesellschaft für Anthropologie, Ethnologie und Urgeschichte* 21 (1890): 33-36.

Die Praehistorische Jagd in Mahren. Olmütz, Selbstverlag, 1892.

(Other Sources Cited):

Japetus Steenstrup "Mammuthjaeger-Stationen ved Predmost." *Oversigt over det Kongelige Danske Videnskabernes Selskabs Forhandlinger* (1888): 145-212.

Japetus Steenstrup, "Die Mammuthjäger-Station bei Předmostí im österreichischen Kronlande Mähren." *Mitteilungen der Anthropologischen Gesellschaft in Wien* 20 (1890): 1-31).

Thomas Wilson, "A Cave-Bear Skull Exhibited by Dr. Wankel, of Austria." *Reprort of the Committee on Awards of the World's*

Columbian Commission. 2 vols. Vol. 1, pp. 333-334. Washington: Government Printing Office, 1901.

Jindřich Matiegka, *Homo predmostensis, Fosilní clovck z Predmostí na Moravf, Díl I.* Prague: Nákladem ceské akademie vfd a umfní, 1934.

SECONDARY SOURCES

Moris Trapp, "Med.-Dr. Heinrich Wankel." *Notizen-Blatt der Historisch-Statistischen Section der Kaiserlich-Königliche Mährisch-Schlesische Gesellschaft zur Beförderung des Ackerbaues, der Natur- und Landeskunde* (1878): 33-36.

Constantin von Wurzbach, "Wankel, Heinrich." In *Biographisches Lexikon des Kaiserthums Oesterreich.* Vol. 53, pp. 70-74. Vienna: Kaiserlich-königliche Hof- und Staatsdruckerei, 1886.

"M. U. Dr. Jindřich Wankel." *Časopis Vlastivědného spolku musejního v Olomouci* 14 (1897): 113-118.

"Jindř. Wankel (obituary)." *Nové Jllustrované Listy* (29 May 1897): 263-264.

Lubor Niederle, "Dr. Jindřich Wankel." *Časopis Společnost přátel starožitností českých v Praze* 5 (1897): 30-31.

"Dr. Jindřich Wankel." *Národopisný sborník českoslovanský* (1897): 197.

Valerie Absolonová and Věra Bednářová, "Blanenská léta Med. Dr. Jindřicha Wankla (kritický pohled do života a práce)." *Vlastivědný věstník moravský* 21 (1970): 182-208.

Vratislav Grolich, *MUDr. Jindřich Wankel, otec moravské archeologie, 150*. Blansko: Okresní vlastivědné museum, 1971.

Milan Stloukal and Johann Szilvássy, "Sammlung Wankel in der anthropologischen Abteilung des Naturhistorischen Museums in Wien." *Anthropologie* 22 (1984): 51-71.

Johannes Mattes, " Wankel, Heinrich (Jindřich)." *Wissenskulturen des Subterranen: Vermittler im Spannungsfeld zwischen Wissenschaft* *und Öffentlichkeit. Ein biografisches Lexikon*. Pp. 529-31. Gottingen: Vandenhoeck & Ruprecht, 2019.

Hans Weinert (1887–1967)

Hans Weinert

Hans Weinert was born on 14 April 1887 in Braunschweig, Germany, the son of Hermann Weinert and Maria Steinkamp. After graduating from the Wilhelm-Gymnasium in Braunschweig in 1905 he studied physiology and anatomy at the University of Göttingen from 1905 to 1907. Weinert completed his doctorate at the University of Leipzig in 1909 and then worked as a schoolteacher in Eisleben from 1913 to 1918. Weinert's research interests began to take shape while he studied anthropology and medicine at the University of Berlin from 1924 to1926, where he worked with Ernst Fischer and Theodor Mollison conducting research collecting anthropometric measurements of students. Weinert completed his habilitation thesis titled *Biologische Grundlagen für Rassenkunde und Rassenhygiene* [Biological Foundations of Racial Science and Racial Hygiene] in 1926 under the guidance of the anthropologist Felix von Luschan. He accepted a position as Privatdozent (lecturer) at the University of Berlin from 1926 to 1927 and served as an assistant at the Anthropologische Institut [Anatomical Institute] at the University of Munich from 1927 to 1928.

In 1927 the German government established the Kaiser-Wilhelm-Institut für Anthropologie, menschliche Erblehre und Eugenik [Kaiser Wilhelm Institute for Anthropology, Human Heredity and Eugenics], which soon became one of the most important centers for anthropological research in the country. Weinert was appointed a Privatdozent (lecturer) at the Institute in 1927, a position that he held until 1935, and in 1928 he became the custodian of the collection of human skulls at the Institute. In addition to his position at the Institute, Weinert also held the position of professor extraordinarius in anthropology at the University of Berlin from 1932 to 1935. By this time Weinert's research was focused on human evolution, the analysis of human fossils, and the study of human prehistory. In 1925 he published an account of a skull belonging to a skeleton that the Swiss archaeologist Otto Hauser had excavated from the French Paleolithic site of Le Moustier in 1908. The German anthropologist Hermann Klaatsch had examined the skeleton and designated it a new type of Ice Age human that he called *Homo mousteriensis*. However, after Weinert reconstructed the skull and compared it with other human fossils he argued that the skeleton from Le Moustier represented a Neanderthal (Weinert 1925). He followed his analysis of the Le Moustier skull by a thorough investigation of the famous

Pithecanthropus erectus fossils that the Dutch anatomist Eugène Dubois had discovered on Java, Indonesia, in the 1890s (Weinert, 1928).

The archaeological and fossil record of Ice Age humans had grown significantly during the early twentieth century. Weinert's *Menschen der Vorzeit. Ein Überblick über die altsteinzeitlichen Menschenreste* [Pre-Historic Men. A Survey of the Human Remains from the Paleolithic], first published in 1930, was a valuable summary of the hominid fossil record and was revised in a second edition that appeared in 1947. Weinert made an important contribution to hominid paleontology when he extended his earlier study of the *Pithecanthropus erectus* fossils by comparing them with the *Sinanthropus* (Peking Man) fossils discovered by Canadian anatomist Davidson Black and Chinese paleontologist Pei Wenzhong at Zhoukoudian, near Beijing, in China. The similarities that Weinert observed in the *Sinanthropus* fossils and *Pithecanthropus* specimen led him to argue that they in fact belong to the same genus and thus *Sinanthropus* should be reclassified as *Pithecanthropus* (Weinert 1931a).

In addition to his anthropological analyses of human fossils, Weinert was among an early group of scientists who realized that the comparison of blood proteins and blood groups between humans and the existing species of apes could offer clues to the phylogenetic relationships between apes and humans, which had long been a major subject of speculation among evolutionary biologists and anthropologists. Weinert conducted studies of blood groups among apes and he identified the same groups (O, A, B, AB) in apes as are found in humans, while the blood groups in monkeys differed from those in humans. In a paper titled "Blutgruppenuntersuchungen an Menschenaffen und ihre stammesgeschichtliche Bewertung" ["Blood Group Tests on Apes and their Phylogenetic Evaluation"], published in 1931, Weinert argued that these results show a close phylogenetic relationship between apes and humans and support the anthropoid origin of humans. Throughout his career Weinert was a strong proponent of the idea that humans were more closely related to chimpanzees than other apes and that humans had evolved from the chimpanzee lineage. Rather controversially, this research also prompted Weinert to suggest the potential value of testing whether it might be possible to create a hybrid of a human and ape by artificially inseminating a female chimpanzee using sperm taken from an African Negro, preferably a pygmy. At this time Weinert published his second influential book, *Ursprung der Menschheit* [The Origin of Mankind] (1932). In this book he discussed the anatomy of primates and hominids. Significantly, he argued that gorillas and chimpanzees are more closely related evolutionarily to humans than are gibbons and orangutans (for many years some prominent anthropologists had argued the opposite, that humans may have evolved from the gibbon or orangutan lineage and thus were more closely related to these apes than to chimpanzees and gorillas). In the book Weinert also discussed the stages of hominid evolution and the process of hominization as inferred from the current hominid fossil record, which included *Sinanthropus*, the Neanderthals, and early human fossils.

Many competing theories of how humans evolved, each presenting quite different phylogenetic relationships between humans and apes, existed during this time. In addition, anthropologists also differed in their notions of the origin of the various human races. In 1934 Weinert published his habilitation thesis, *Biologische Grundlagen für Rassenkunde und Rassenhygiene* [Biological Foundations of Racial Science and Racial Hygiene], which he had completed almost a decade earlier. In this book he addressed the question of the phylogenetic relationship of humans to the other primates as well as the origin of human racial variation. Weinert criticized the idea supported by some anthropologists, such as Hermann Klaatsch, that each human race evolved separately from a different ape ancestor (for example the idea that Negros evolved from the gorilla lineage, Mongoloids from the orangutan lineage). However, he still accepted the widely held view that there were superior and inferior human races. He explained the origin of human races and their inequality by arguing that the “lower races” evolved first but did not continue to evolve over time, whereas other human populations continued to evolve into the “higher races”, eventually culminating in the emergence of the Caucasian race, which in his view had evolved from Cro-Magnons.

Weinert left Berlin in 1935 to become professor of anthropology at the University of Kiel, where he was also appointed director of the Anthropological Institute at the university. By this time conditions in Germany had changed dramatically with the rise of the National Socialist (Nazi) Party, which affected every part of German social, political, and academic life. Weinert became a member of the Nationalsozialistischer Lehrerbund (National Socialist Teachers’ Association) in 1934 and became a member of the Nazi party in 1937. At Kiel, Weinert continued to study human evolution. He conducted excavations in Italy and France during the late 1930s and expressed views about the origin of the Cro-Magnons and Neanderthals that were criticized by Nazi officials such as Assien Bohmers. In *Die Rassen der Menschheit* [The Races of Mankind], first published in 1935 (with new editions appearing in 1939 and 1941) Weinert distinguished three primary human races: Nordic, Mongolian, and Negro. He also adopted the view expressed by many anthropologists that the Aboriginal Australians represented the earliest form of humanity. He eventually came to reject the idea of the Asian origin of the Nordic race, which he suggested had arisen in Europe instead. He argued that the Nordic race appeared at the end of the Ice Age when the glaciers retreated from Germany.

Steinheim cranium

Recently discovered human fossils were also contributing to the debate over human evolution and the prehistoric populations of Europe. Weinert (1936a) published a description of the Steinheim cranium, first discovered by the owner of a gravel pit in Steinheim, Germany, along with extinct animal bones in 1933. The skull possessed a mixture of Neanderthal and modern human features, but Weinert argued that it represented a Neanderthal and that its more modern features were the result of the retention of juvenile traits and the fact that the cranium was from a female individual. In a separate paper he examined anew the human mandible found in the Mauer sand pit, near Heidelberg in Germany, in 1907 and originally described by the German paleontologist Otto Schoetensack. Schoetensack assigned this jaw bone to an extinct form of human he called *Homo heidelbergensis* and on the basis of his new analysis Weinert (1937) noted the similarity between this specimen and *Pithecanthropus* mandibles. Weinert turned his attention next to study the fragments of a human skull that the German physician and explorer Ludwig Kohl-Larsen discovered near Lake Njarasa, in Tanzania, in 1935. Kohl-Larsen suggested the fossils represented an extinct form of human he called *Africanthropus njarasensis*. Weinert (1938a; 1939a) argued that the fossils dated to the early Pleistocene and he suggested that *Africanthropus* was closely related to *Pithecanthropus* and *Sinanthropus* and represented the equivalent stage of hominid evolution in Africa (see also Weinert, Bauermeister and Remane 1939).

In addition to his studies of human fossils, Weinert continued to theorize about human evolution and the origin of human races in light of the growing archaeological and human fossil record. *Entstehung der Menschenrassen* [The Formation of Human Races], first published in 1938 with a second edition in 1941, again explored the question of the origin of the human races, when they had emerged, and the causes for their formation. Weinert now identified four major races (Australoid, Europoid, Mongoloid, and Negroid) with each divided into subgroups. He addressed the question of whether some modern human races, such as the Australians or Mongoloids, could be traced back to earlier hominids such as *Pithecanthropus* or *Sinanthropus*. Regarding human evolution, he argued that the chimpanzee lineage and the human lineage had separated toward the end of the Pliocene and that the various human races only appeared in the Pleistocene. Weinert divided the stages of human evolution during the Pleistocene into three periods: the Pithecanthropus stage of the early Pleistocene represented by *Pithecanthropus*, *Sinanthropus*, and *Africanthropus*; the Neanderthal stage represented by *Homo soloensis* (Java), Rhodesian man in Africa, and Neanderthals in Europe; and the Cro-Magnon stage represented by the Wadjak skull (from Indonesia), the Boskop skull (from Africa), and Cro-Magnon specimens from Europe. Thus, Weinert believed that the Neanderthals were the direct ancestors of modern humans, a view advocated by the American anthropologist Aleš Hrdlička and the German anthropologist Franz Weidenreich but opposed by the majority of anthropologists at this time. However, Weinert believed that the modern human races had only emerged at the early *Homo sapiens* stage of evolution and could not be traced back to the Neanderthals. In *Der geistige Aufstieg der Menschheit vom Ursprung bis zur Gegenwart* [The Intellectual Rise of Man from his Origins to the Present-Day] (1940), Weinert argued that the biological and anatomical evolution of the human body could be correlated with the development of the human intellect. And *Stammesgeschichte der Menschheit* [Phylogeny of Mankind], published in 1941, presented his views on the phylogenetic relationship between humans and the apes and the place of various hominid fossils in the human evolutionary tree.

In one of his last scientific papers Weinert (1950) examined a hominid fossil that Ludwig Kohl-Larsen discovered at a site then called Garusi (now Laetoli, in Tanzania) during the East African Expedition in 1939. Weinert studied the fossil, a maxillary bone (upper jaw) that still contained three teeth and concluded the specimen resembled the *Meganthropus palaeojavanicus* fossils discovered by the German paleontologist Ralph von Koenigswald in 1941 in Indonesia. Thus, Weinert assigned the Garusi fossil to a new species *Meganthropus africanus*, although other paleoanthropologists argued the fossil represented a species of *Australopithecus*.

During the Nazi period, Weinert served in the Rassen- und Siedlungsamt SS [Race and Settlement Office SS], which determined eligibility for entry into the SS in order to ensure the racial purity of SS personnel. Toward the end of the Second World War Kiel was bombed and the Anatomical Institute at the university, where Weinert worked, was damaged. During the Allied bombing of Kiel in 1944 Weinert’s house was destroyed. After the war he taught at the renamed Institut für menschliche Erblehre und

Eugenik [Institute of Human Genetics and Eugenics] in Kiel where he remained until 1955. Weinert was a member of a number of scientific institutions during the course of his career. He became a member of the Instituto Italiano di Paleontologia Umana [Italian Institute of Human Paleontology] in 1942. In the same year he also became a member of the Ernst-Haeckel-Gesellschaft [Ernst Haeckel Society] in Jena. Weinert was appointed to the prestigious Leopoldina (Deutschen Akademie der Naturforscher) in 1940. He served as the co-editor of the *Zeitschrift für Rassenkunde* [Journal of Racial Science] and was the editor of the *Zeitschrift für Morphologie und Anthropologie* [Journal of Morphology and Anthropology] from 1949 to 1956. After his retirement Weinert spent the remainder of his life in Heidelberg, where he died on 7 March 1967.

SELECTED BIBLIOGRAPHY

Der Schädel des eiszeitlichen Menschen von Le Moustier. J. Springer, 1925.

"Pithecanthropus erectus." *Zeitschrift für Anatomie und Entwicklungsgeschichte* 87 (1928): 429–547.

Menschen der Vorzeit. Ein Überblick über die altsteinzeitlichen Menschenreste. Stuttgart: F. Enke, 1930 (2nd edition 1947).

"Der 'Sinanthropus pekinensis' als Bestatigung des Pithecanthropus erectus." *Zeitschrift fur Morphologie und Anthropologie* 29 (1931a): 159-187.

"Blutgruppenuntersuchungen an Menschenaffen und ihre stammesgeschichtliche Bewertung." *Zeitschrift für Rassenphysiologie* 4 (1931b): 8-23.

Ursprung der Menschheit; über den engeren Anschluss des Menschengeschlechts an die Menschenaffen. Stuttgart: F. Enke, 1932 (2nd edition 1944).

Biologische Grundlagen für Rassenkunde und Rassenhygiene. Stuttgart: F. Enke,

1934 (2nd edition 1943.
Unsere Eiszeit-Ahnen. Berlin: Brehm, 1934 (2nd edition 1938).
Die Rassen der Menschheit. Leipzig and Berlin: B. G. Teubner, 1935 (2nd edition 1939, 3rd edition 1941).
"Der Urmenschenschädel von Steinheim." *Zeitschrift fur Morphologie und Anthropologie* 35 (1936): 413-518.
Zickzackwege in der Entwicklung des Menschen. Leipzig: Quelle & Meyer, 1936.
"Dem Unterkiefer von Mauer zur 30jahrigen Wiederkehr seiner Entdeckung." *Zeitschrift für Morphologie und Anthropologie* 37 (1937): 102-113.
"Der erste afrikanische Affenmensch 'Africanthropus niarasensis'." *Der Biologe* 7 (1938a): 125-129.
Entstehung der Menschenrassen. Stuttgart: F. Enke, 1938 (2nd edition 1941).
Vom rassischen Werden der Menschheit. 3 vols. Erfurt: K. Stenger, 1938.
"Africanthropus der neue Affenmenschenfund vom Njarasa-See in Ostafrika." *Zeitschrift für Morphologie und Anthropologie*, 38 (1939a): 18-24.
Hans Weinert, W. Bauermeister and A. Remane. "Africanthropus njarasensis. Beschreibung und phylethische Einordnung des ersten Affenmenschen aus Ostafrika." *Zeitschrift für Morphologie und Anthropologie*, 37 (1939): 252-308.
Der geistige Aufstieg der Menschheit vom Ursprung bis zur Gegenwart. Stuttgart: F. Enke, 1940.
Stammesgeschichte der Menschheit. Stuttgart: Kosmos, Gesellschaft der Naturfreunde, 1941.
Die Riesen-Affenmenschen und ihre stammesgeschichtliche Bedeutung. München: Müller & Steinicke, 1948.
"Über die neuen Vor- und Frühmenschenfunde aus Afrika, Java, China und Frankreich." *Zeitschrift für Morphologie und Anthropologie* 42 (1950): 113-148.
Stammesentwicklung der Menschheit. Braunschweig: Vieweg, 1951.

SECONDARY SOURCES

Johann Schaeuble. “Hans Weinert 70 Jahre alt.” *Anthropologischer Anzeiger* 21 (1957): 88-89.

Johann Schaeuble. “Hans Weinert (1887-1967).” *Zeitschrift für Morphologie und Anthropologie* 59 (1967): 104-105.

Ulrich Schaefer, “Hans Weinert, 1887-1967.” *Anthropologischer Anzeiger* 30 (1968): 315-316.

Ursula Zängl-Kumpf. “Weinert, Hans (1887-1967).” In Frank Spencer (ed.). *History of Physical Anthropology*. Vol. 2, pp. 1110-1111. New York: Garland Publishing, 1997.

Beate Meyer. *“Jüdische Mischlinge”: Rassenpolitik und Verfolgungserfahrung 1933-1945*. Hamburg: Dölling und Galitz, 1999.

Beate Meyer. “Hans Weinert, (Rasse)Anthropologe an der Universität Kiel von 1935 bis 1955.” In Michael Ruck and Heinrich Pohl, (eds.). *Regionen im Nationalsozialismus*, Bielefeld: Verlag für Regionalgeschichte, 2003.

This is where you can add appendices or other back matter.