

Abstract presented (virtually) at the 91st Annual Meeting of the American Association of Biological Anthropologists [Denver, CO], March-April, 2022; *American Journal of Biological Anthropology* 177 (S73): 45.

---

Dating and site formation of the Late Villafranchian mammals from Senèze, France

ERIC DELSON<sup>1,2,3,4,5</sup>, KAREN L. BAAB<sup>6</sup>, TERENCE D. CAPELLINI<sup>7</sup>, SIOBHÁN COOKE<sup>8</sup>, SARAH FREIDLIN<sup>9</sup>, STEPHEN FROST<sup>10</sup>, EVA C. GARRETT<sup>11</sup>, WILLIAM E.H. HARCOURT-SMITH<sup>1,2,3,4</sup>, RUSSELL HOGG<sup>12</sup>, KIERAN MCNULTY<sup>13</sup>, TARA PEBURN<sup>12</sup>, MICHELLE SINGLETON<sup>14,15</sup>, KATHERINE ST. JOHN<sup>16,17,3,4</sup>, MICHAEL STEIPER<sup>18,3,4</sup> and JOHN A. VAN COUVERING<sup>2,3,4</sup>

<sup>1</sup>Department of Anthropology, Lehman College/CUNY, <sup>2</sup>Department of Vertebrate Paleontology, American Museum of Natural History, <sup>3</sup>PhD Program in Anthropology, CUNY Graduate Center, <sup>4</sup>NYCEP, (the New York Consortium in Evolutionary Primatology), <sup>5</sup>Institut Català de Paleontologia Miquel Crusafont, Universitat Autònoma de Barcelona, Spain, <sup>6</sup>Department of Anatomy, Midwestern University, Glendale, <sup>7</sup>Department of Human Evolutionary Biology, Harvard University, <sup>8</sup>Center for Functional Anatomy and Evolution, Johns Hopkins University School of Medicine, <sup>9</sup>Department of Anthropology, University of Central Florida, <sup>10</sup>Department of Anthropology, University of Oregon, <sup>11</sup>Department of Anthropology, Boston University, <sup>12</sup>Department of Rehabilitation Sciences, Florida Gulf Coast University, <sup>13</sup>Department of Anthropology, University of Minnesota, <sup>14</sup>Department of Anatomy, Chicago College of Osteopathic Medicine, Midwestern University, <sup>15</sup>Life Sciences Section, Negaunee Integrative Research Center, Field Museum, <sup>16</sup>Department of Computer Science, Hunter College/CUNY, <sup>17</sup>Division of Invertebrate Zoology, American Museum of Natural History, <sup>18</sup>Department of Anthropology, Hunter College/CUNY

The Senèze site, located within a volcanic maar in the Haute-Loire district of the Massif Central, has yielded thousands of mammalian fossils including many nearly complete skeletons since it was first reported by Marcellin Boule in 1892. The holotype skull of *Paradolichopithecus arvernensis* and a partial ulna of *Macaca* are the only primates. Senèze is the reference locality for the mammalian MNQ 18 biochron and the late Villafranchian interval of early Pleistocene age. New fieldwork directed by the late Claude Guérin, Martine Faure and Eric Delson from 2001-2006 aimed to clarify stratigraphy, age, paleoenvironment and taphonomy, and an edited volume reporting the results is nearing publication. Many NYCEP PhD students and faculty (co-authors here) participated in the research. Recalibrated to current standards, the published argon-argon dates include  $2.07 \pm 0.02$  Ma above all fossils,  $2.12 \pm 0.03$  Ma below one main fossiliferous horizon (with *Dicerorhinus* and *Eucladoceros* skeletons),  $2.14 \pm 0.04$  Ma below other fossils and  $2.19 \pm 0.03$  Ma above two *Allhippus* skeletons. Short paleomagnetic

columns support these ages, suggesting the presence of the Feni subchron (C2A.n1, ca. 2.14-2.10 Ma) within the Matuyama Chron. The base of the section is undated but probably at least 2.0 Ma, with the possibility of the Huckleberry Ridge and Réunion excursions mostly beyond the sampling intervals. Both taphonomic and stratigraphic analyses agree that the most likely mode of skeletal preservation involved animals slipping into the lake and drowning, unable to regain the steep bank, with no evidence of catastrophic action (e.g., fumarole gas).

USA: NSF, National Geographic Society, Leakey Foundation, and PSC-CUNY faculty research program; France: le Ministère de la Culture, le Conseil général de Haute-Loire et le Conseil régional d'Auvergne.

---