

Cambridge University Press

978-0-521-89844-7 - The Cave of Fontéchevade: Recent Excavations and their Paleoanthropological Implications

Philip G. Chase, André Debénath, Harold L. Dibble and Shannon P. McPherron

Frontmatter

[More information](#)

THE CAVE OF FONTÉCHEVADE

This book provides a summary of the discoveries made during the course of excavations at the Paleolithic cave site of Fontéchevade, France, between 1994 and 1998. The excavation team used modern field and analytic methods to address major problems raised by earlier excavations at the site from 1937 to 1954. These earlier excavations produced two sets of data that have been problematic in light of data from other European Paleolithic sites: first, the Lower Paleolithic stone tool industry, the Tayacian, that differs in fundamental ways from other contemporary industries and, second, the human skull fragment that has been interpreted as modern in nature but that apparently dates from the last interglacial, long before there is any evidence for modern humans from any other site in Europe. By applying modern stratigraphic, lithic, faunal, geological, geophysical, and radiometric analyses, the interdisciplinary team demonstrates that the Tayacian “industry” is a product of site-formation processes and that the actual age of the Fontéchevade I fossil is compatible with other evidence for the arrival of modern humans in Europe.

Philip G. Chase is a senior research scientist at the University of Pennsylvania Museum of Archaeology and Anthropology. He is the author of *The Emergence of Culture* and *The Hunters of Combe Grenal*, as well as numerous articles and chapters on Paleolithic archaeology, zooarchaeology, and the origins and evolution of symbolism and culture.

André Debénath is professor and director of research at the University of Rabat and professor emeritus at the University of Perpignan. He specializes in the Paleolithic of the Charente River Basin, France, and of Morocco. He has excavated numerous sites in both countries and has published more than 200 articles and several books.

Harold L. Dibble is professor of anthropology at the University of Pennsylvania and curator-in-charge of the European Section at the University of Pennsylvania Museum of Archaeology and Anthropology. Editor of the journal *PaleoAnthropology*, he is the author of 12 books and has directed excavations in France, Morocco, and Egypt for more than 25 years.

Shannon P. McPherron is an archaeologist in the Department of Human Evolution at the Max Planck Institute for Evolutionary Anthropology. He has codirected Paleolithic field projects in France, North Africa, and East Africa, and he has published on lithic analysis, site formation processes, and the use of computers in archaeology. He is coauthor, with Harold Dibble, of *Using Computers in Archaeology: A Practical Guide*.

Cambridge University Press

978-0-521-89844-7 - The Cave of Fontéchevade: Recent Excavations and their Paleoanthropological Implications

Philip G. Chase, André Debénath, Harold L. Dibble and Shannon P. McPherron

Frontmatter

[More information](#)

Cambridge University Press

978-0-521-89844-7 - The Cave of Fontéchevade: Recent Excavations and their Paleoanthropological Implications

Philip G. Chase, André Debénath, Harold L. Dibble and Shannon P. McPherron

Frontmatter

[More information](#)

The Cave of Fontéchevade

RECENT EXCAVATIONS AND THEIR
PALEOANTHROPOLOGICAL
IMPLICATIONS

Philip G. Chase

University of Pennsylvania Museum of Archaeology
and Anthropology

André Debénath

University of Perpignan Via Domitia

Harold L. Dibble

University of Pennsylvania

Shannon P. McPherron

Max Planck Institute for Evolutionary Anthropology



CAMBRIDGE
UNIVERSITY PRESS

Cambridge University Press

978-0-521-89844-7 - The Cave of Fontéchevade: Recent Excavations and their Paleoanthropological Implications

Philip G. Chase, André Debénath, Harold L. Dibble and Shannon P. McPherron

Frontmatter

[More information](#)

CAMBRIDGE UNIVERSITY PRESS

Cambridge, New York, Melbourne, Madrid, Cape Town, Singapore, São Paulo, Delhi

Cambridge University Press

32 Avenue of the Americas, New York, NY 10013-2473, USA

www.cambridge.org

Information on this title: www.cambridge.org/9780521898447

© Philip G. Chase, André Debénath, Harold L. Dibble, and Shannon P. McPherron
2009

This publication is in copyright. Subject to statutory exception
and to the provisions of relevant collective licensing agreements,
no reproduction of any part may take place without the written
permission of Cambridge University Press.

First published 2009

Printed in the United States of America

A catalog record for this publication is available from the British Library

Library of Congress Cataloging in Publication data

The cave of Fontéchevade : recent excavations and their paleoanthropological
implications / edited by Philip G. Chase . . . [et al.].

p. cm.

Includes bibliographical references and index.

ISBN 978-0-521-89844-7 (hardback)

1. Fontéchevade Cave (France) 2. Antiquities, Prehistoric – France – Fontéchevade
Cave. 3. Stone age – France – Fontéchevade Cave. 4. Human remains
(Archaeology) – France – Fontéchevade Cave. 5. Tools, Prehistoric – France –
Fontéchevade Cave. 6. Excavations (Archaeology) – France – Fontéchevade
Cave. 7. France – Antiquities. I. Chase, Philip G.

GN776.22.F65C38 2008

936.4–dc22 2008005649

ISBN 978-0-521-89844-7 hardback

Cambridge University Press has no responsibility for the persistence or
accuracy of URLs for external or third-party Internet Web sites referred to in
this publication and does not guarantee that any content on such Web sites is,
or will remain, accurate or appropriate. Information regarding prices, travel
timetables, and other factual information given in this work are correct at
the time of first printing, but Cambridge University Press does not guarantee
the accuracy of such information thereafter.

Cambridge University Press

978-0-521-89844-7 - The Cave of Fontéchevade: Recent Excavations and their Paleoanthropological Implications

Philip G. Chase, André Debénath, Harold L. Dibble and Shannon P. McPherron

Frontmatter

[More information](#)

To the memory of Antoine Debénath

Cambridge University Press

978-0-521-89844-7 - The Cave of Fontéchevade: Recent Excavations and their Paleoanthropological Implications

Philip G. Chase, André Debénath, Harold L. Dibble and Shannon P. McPherron

Frontmatter

[More information](#)

Cambridge University Press

978-0-521-89844-7 - The Cave of Fontéchevade: Recent Excavations and their Paleoanthropological Implications

Philip G. Chase, André Debénath, Harold L. Dibble and Shannon P. McPherron

Frontmatter

[More information](#)

Contents

<i>Foreword, by Anta Montet-White</i>	page ix
<i>Acknowledgments</i>	xv
<i>List of Authors and Contributors</i>	xvii
PART I. INTRODUCTION, BACKGROUND, AND METHODOLOGY	
<i>Philip G. Chase, André Debénath, Harold L. Dibble, and Shannon P. McPherron</i>	
1 Introduction and Background	3
2 Introduction to the 1994–1998 Excavations	28
PART II. SPECIALIZED ANALYSES	
3 Sedimentology and Stratigraphy at Fontéchevade	63
<i>William R. Farrand</i>	
4 Paleoclimate Delineation Using Magnetic Susceptibility Data	87
<i>Brooks B. Ellwood</i>	
5 Electrical Resistivity Survey of Fontéchevade	95
<i>Shannon P. McPherron and Brooks B. Ellwood</i>	
6 The Fossil Human Remains	103
<i>Philip G. Chase and Virginie Teilhol</i>	
7 Radiometric Dates	117
<i>Philip G. Chase, Henry P. Schwarcz, and Thomas W. Stafford, Jr.</i>	
8 Faunal Taphonomy	127
<i>Philip G. Chase</i>	

Cambridge University Press

978-0-521-89844-7 - The Cave of Fontéchevade: Recent Excavations and their Paleoanthropological Implications

Philip G. Chase, André Debénath, Harold L. Dibble and Shannon P. McPherron

Frontmatter

[More information](#)

viii
 CONTENTS

9	The Fauna from Henri-Martin's Excavation of Bed E	139
	<i>Jean-François Tournepiche</i>	
10	The Upper Paleolithic of Fontéchevade	154
	<i>Laurent Chiotti</i>	
11	Description of the Lithic Industries	170
	<i>Harold L. Dibble and Shannon P. McPherron</i>	
PART III. ANALYSIS AND CONCLUSIONS		
	<i>Philip G. Chase, André Debénath, Harold L. Dibble, and Shannon P. McPherron</i>	
12	Processes of Site Formation and Their Implications	229
13	Summary and Conclusions	248
	<i>References</i>	255
	<i>Index</i>	269

Cambridge University Press

978-0-521-89844-7 - The Cave of Fontéchevade: Recent Excavations and their Paleoanthropological Implications

Philip G. Chase, André Debénath, Harold L. Dibble and Shannon P. McPherron

Frontmatter

[More information](#)

Foreword

Anta Montet-White

In 1994, the authors of this book undertook new excavations at the Cave of Fontéchevade, a site best known for its human remains and the uncommon artifact assemblages recovered by Germaine Henri-Martin in the 1950s. Henri Vallois attributed the skull fragments to an early form of *Homo sapiens*, which he designated as presapiens, and the artifact assemblages associated with them were labeled “Tayacian” by Henri Breuil, who had also confirmed the relatively early (interglacial) date based on faunal association. Henri-Martin’s interpretation of the cave as a campsite marked by the presence of large hearths was supported by observations and arguments in line with accepted views of her time. However, progress in recovery and analytical techniques and changes in perspectives and theories lead present-day researchers to challenge earlier findings and sometimes overturn the interpretations proposed by previous generations of archaeologists. The latest work at Fontéchevade is a vivid illustration of this process.

Discovered at the end of the nineteenth century, the cave was first excavated in the years before World War I, and although visited occasionally by professional archaeologists, it was abandoned to looters for some 20 years before becoming Germaine Henri-Martin’s research focus in 1937. She worked at the site off and on until 1955. The site was then considered closed until the new team, whose results are described in this monograph, decided to undertake a new series of investigations. In short, there have been three distinct episodes of active fieldwork at Fontéchevade, each one reflecting the resources, technical capabilities, and concerns of its time.

Cambridge University Press

978-0-521-89844-7 - The Cave of Fontéchevade: Recent Excavations and their Paleoanthropological Implications

Philip G. Chase, André Debénath, Harold L. Dibble and Shannon P. McPherron

Frontmatter

[More information](#)

x

FOREWORD

Before World War I, the field of Paleolithic archaeology in France was dominated by a small number of professionals, but it also welcomed a large number of amateurs, as the many discoveries of the late 1800s and the archaeological exhibits presented at world's fairs had excited considerable public interest. Centers of systematic research began to develop in several regions. Peyrony, Breuil, and Capitan focused on the Périgord and the Pyrenees. The Charente received recognition thanks to the work at La Quina of Germaine's father, Léon Henri-Martin (who was born Henri Martin but changed his name to Henri-Martin). Regional and national *sociétés savantes* published the latest findings, which were presented at regular meetings. The pioneer work of Breuil and Peyrony focused primarily on the temporal ordering of cultural stages defined by specific assemblages of bone or stone artifacts. Their writings remain the best testimony of research at the time.

At the same time, geologists, other natural scientists, and educated amateurs, among whom were medical doctors, teachers, and priests, surveyed and collected artifacts and often engaged in the excavation of cave sites. There was little control or restriction, other than securing the permission of the landowners. The collected artifacts were considered the property of the excavators and/or the landowners, and private collections multiplied. The sites were often excavated rapidly and completely, the objective being to procure collectible items, while other bone and stone artifacts were discarded. For example, the Saint-Périers, amateur archaeologists with a great deal of field experience, dug a trench through the Fontéchevade Cave in one day; they then abandoned the site, which they judged to be without interest. Artifact assemblages were sometimes sold but often ended up in small museums with little or no provenance or context information. Some researchers presented summaries to local or regional *sociétés savantes*, but there again the proportion of published results was small indeed. Few followed the example of a Denis Peyrony.

Durousseau-Dugouthier did extensive work in the Fontéchevade Cave between 1902 and 1910, collecting series of artifacts and bone, but he kept no notes. Vallade, who followed in 1913 and 1914, did keep some records, but his concern seems to have been to identify cultural layers on the basis of index fossils. He was content to bring some support to the classification and ordering of Paleolithic manifestation proposed by Breuil. Between them, Durousseau and Vallade

Cambridge University Press

978-0-521-89844-7 - The Cave of Fontéchevade: Recent Excavations and their Paleoanthropological Implications

Philip G. Chase, André Debénath, Harold L. Dibble and Shannon P. McPherron

Frontmatter

[More information](#)

emptied the cave of all visible layers that contained Mousterian and Early Upper Paleolithic assemblages.

Gemaine Henri-Martin's work was of a very different nature. She was a musician by vocation who came to Paleolithic archaeology somewhat reluctantly to maintain the research lab founded by her father at Le Peyrat and to continue the work he had engaged in the region; it was from him that she received most of her training. She maintained contacts with professionals in a determined effort to keep up with progress in the field. She sought the advice and collaboration of other researchers, most noticeably that of Henri Breuil, who was the recognized authority in the field. He was the one to whom she turned to corroborate her interpretation of the lowermost material, recovered under the Mousterian. She was quick to consult Henri Vallois for the analysis of the human remains.

Working in what was decidedly a man's world, she sought continued support and frequent and regular exchange of ideas with women who were active in the field. Among her closest friends were Suzanne de Saint-Mathurin, an erudite amateur archaeologist who discovered the sculptured friezes at Angles sur l'Anglin, and Dorothy Garrod, a professional noted more especially for her work at Tabun (Israel) and Bacho Kiro (Bulgaria). Garrod spent a considerable amount of time at Le Peyrat making use of the comparative collections stored in Henri-Martin's laboratory. Henriette Alimen inspired much of the research done on site formation and sediment analysis that became a major section of Henri-Martin's published report.

In her introduction to that report, Henri-Martin (1957) acknowledges the financial support that she received from state organizations. Compared to modern project budgets, the sums she had at her disposal were minimal, being only enough to compensate one, sometimes two, laborers for a few weeks and to purchase essential equipment or provide protection to the site. She had no crew, working by herself except for the occasional help of neighbors and students. She worked at sites located near her house, as a bicycle was her only mode of transport. Similar situations prevailed at most of the sites I visited in the early and mid-1950s, including Combe Grenal, where Bordes was working, and even more so at Caminade, where Denise de Sonneville-Bordes was excavating. The field school at Arcy-sur-Cure was something of an exception, as it had a relatively large crew of student volunteers. It is perhaps worth mentioning that, in spite

xi

FOREWORD

Cambridge University Press

978-0-521-89844-7 - The Cave of Fontéchevade: Recent Excavations and their Paleoanthropological Implications

Philip G. Chase, André Debénath, Harold L. Dibble and Shannon P. McPherron

Frontmatter

[More information](#)

xii

FOREWORD

of very limited resources, F. Bordes and A. Leori-Gourhan, each in his own way, managed to reinvent excavation methods, developing and enforcing standards that were to transform the field. By the late 1950s, the situation had evolved, and some projects at least enjoyed financial support that enabled them to accommodate larger teams of students. However, Henri-Martin's excavations had closed by then.

Her excavation techniques were much improved compared to those of her predecessors at the site. Yet she did not keep up with the dramatic changes introduced by the new generation of professional archaeologists who transformed the field in the late 1940s and early 1950s. She was cognizant of the changes in excavation and recovery techniques but continued to practice methods learned in the 1930s. She discussed grid systems, the use of Cartesian coordinates to locate artifacts in situ, and other related topics with her friends and with students she encountered. She did divide the site into sectors, and eventually, in an effort to follow the new guidelines, she established a grid. Yet, she recorded exact coordinates only in the case of unusually important items. Her concern was to identify and follow natural stratigraphy, but she was most comfortable working on a slant rather than a vertical exposure. She kept careful notes of daily progress, but provenance information was limited to unit and level. She did, however, under Alimen's influence, engage the collaboration of many specialists who provided sediment analyses that were then up to date. And to her credit, she completed and published a detailed report of her work.

The work of Chase, Debénath, Dibble, and McPherron belongs to a completely different era. The project, conducted in the 1990s, almost 50 years after that of Henri-Martin, was well funded and well staffed, as modern projects tend to be. The excavation methods they introduced or developed are at the cutting edge of recovery techniques. More important perhaps, the problem orientation and the whole theoretical framework within which their archaeological fieldwork operates have been completely transformed. They started out questioning every conclusion proposed by Henri-Martin: What part did natural processes play in the formation of the site of Fontéchevade? Are the chipped stones human-made? Is the Tayacian a real variant of the early Middle Paleolithic? Are the proposed dates and interpretations acceptable?

Henri-Martin's interpretations may or may not withstand the test imposed by modern archaeology. However, one should remember

Cambridge University Press

978-0-521-89844-7 - The Cave of Fontéchevade: Recent Excavations and their Paleoanthropological Implications

Philip G. Chase, André Debénath, Harold L. Dibble and Shannon P. McPherron

Frontmatter

[More information](#)

that the work she accomplished was a step in the development of our understanding of prehistory, and when viewed in the context of its time, her well-published contribution remains significant. And as the field is alive and well, current views may not, in turn, resist the scrutiny of future generations of archaeologists.

xiii

FOREWORD

Cambridge University Press

978-0-521-89844-7 - The Cave of Fontéchevade: Recent Excavations and their Paleoanthropological Implications

Philip G. Chase, André Debénath, Harold L. Dibble and Shannon P. McPherron

Frontmatter

[More information](#)

Cambridge University Press

978-0-521-89844-7 - The Cave of Fontéchevade: Recent Excavations and their Paleoanthropological Implications

Philip G. Chase, André Debénath, Harold L. Dibble and Shannon P. McPherron

Frontmatter

[More information](#)

Acknowledgments

We thank the National Science Foundation and the University of Pennsylvania Museum of Archaeology and Anthropology for funding of the Fontéchevade excavations. The Leakey Foundation funded the radiometric dating. (We thank Don Dana for his continued support.) M. Perrin and the staff of the Musée d'Archéologie Nationale, Saint-Germain-en-Laye, provided invaluable assistance and access to the material excavated by Germaine Henri-Martin.

We are grateful to all of the residents of the village of Orgedeuil for their generous hospitality, especially M. and Mme. A. Buffet, the owners of the site, not only for permission to excavate there but also for their interest and assistance.

Finally, we thank all the students and volunteers, without whose hard work the excavations would never have taken place. Thanks also to Dr. Galina Sorokina and Brad Evans for their drawings.

Cambridge University Press

978-0-521-89844-7 - The Cave of Fontéchevade: Recent Excavations and their Paleoanthropological Implications

Philip G. Chase, André Debénath, Harold L. Dibble and Shannon P. McPherron

Frontmatter

[More information](#)

Cambridge University Press

978-0-521-89844-7 - The Cave of Fontéchevade: Recent Excavations and their Paleoanthropological Implications

Philip G. Chase, André Debénath, Harold L. Dibble and Shannon P. McPherron

Frontmatter

[More information](#)

xvii

List of Authors and Contributors

AUTHORS

Philip G. Chase

University of Pennsylvania Museum of Archaeology and
Anthropology, Philadelphia, Pennsylvania, United States.

Email: pchase@sas.upenn.edu

André Debénath

Université de Perpignan, Via Domitia, Perpignan
(Pyrénées-Orientales), France, and Muséum National d'Histoire
Naturelle, Paris, France. Email: Adebenath2b@aol.com

Harold L. Dibble

Department of Anthropology, University of Pennsylvania,
Philadelphia, Pennsylvania, United States.

Email: hdibble@sas.upenn.edu

Shannon P. McPherron

Max Planck Institute for Evolutionary
Anthropology, Department of Human Evolution, Leipzig, Germany.

Email: mcpherron@eva.mpg.de

CONTRIBUTING SPECIALISTS

Laurent Chiotti

Département de Préhistoire du Muséum National D'histoire
Naturelle, Les Eyzies-de-Tayac (Dordogne), France.

Email: lchiotti@mnhn.fr

Cambridge University Press

978-0-521-89844-7 - The Cave of Fontéchevade: Recent Excavations and their Paleoanthropological Implications

Philip G. Chase, André Debénath, Harold L. Dibble and Shannon P. McPherron

Frontmatter

[More information](#)

xviii

AUTHORS AND
CONTRIBUTORS

Brooks B. Ellwood

Department of Geology and Geophysics, Louisiana State University,
Baton Rouge, Louisiana, United States. Email: ellwood@lsu.edu

William R. Farrand

Department of Geological Sciences and Exhibit Museum of Natural
History, University of Michigan, Ann Arbor, Michigan, United
States. Email: wfarrand@umich.edu

Henry P. Schwarcz

School of Geography and Earth Sciences, McMaster University,
Hamilton, Ontario, Canada. Email: schwarcz@mcmaster.ca

Thomas W. Stafford, Jr.

Stafford Research Laboratories, Inc., Lafayette, Colorado, United
States. Email: twstafford@stafford-research.com

Virginie Teilhol

Direction Scientifique et Culturelle du Paléosite, Saint-Césaire,
France. Email: v.teilhol@paleosite.fr

Jean-François Tournepiche

Musée d'Angoulême, Angoulême (Charente), France, and
Université Bordeaux I, Talence (Gironde), France.

Email: jftbill@aol.com