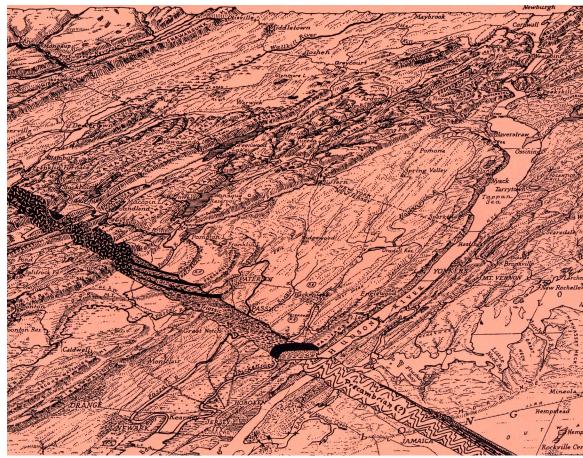
2001 New York State Geological Association Field Trip Guide Book



GEOLOGY OF THE

LOWER HUDSON VALLEY

Organizer: Paul Olsen

Lamont-Doherty Earth Observatory

Editor: Alexander E. Gates

Rutgers University-Newark

Volume 73, 2001

©New York State Geological Association, ISSN 1061-8724

2001 NEW YORK STATE GEOLOGICAL ASSOCIATION FIELDTRIP GUIDEBOOK:

GEOLOGY OF THE LOWER HUDSON VALLEY

Edited by: Alexander E. Gates Department of Earth and Environmental Sciences Rutgers University Newark, NJ 07102

Organized by: Paul E. Olsen Lamont-Doherty Earth Observatory Palisades, NY

Prologue

The New York State Geological Association fieldtrip of 2001 became yet another victim of the September 11 World Trade Center disaster. The original organizer was Dr. Paul Olsen and six trips were to be run from his home base at Lamont-Doherty Earth Observatory in late September. Unfortunately, Paul was stranded overseas for nearly one week by the subsequent suspension of flights after the terrorist attacks. He was unable to make the final preparations for the conference. In addition, the disruption of services and fear that gripped the New York metropolitan area dissuaded many would-be attendees and the registration numbers were way down from previous years. Therefore, the conference was postponed to December 2. Perhaps as a result of continued uneasiness or because of the lateness in the season, registration for the new date was also poor and once again the conference and trips were postponed. A tentative date for the 2001 conference was set for April 5, 2002 but the officers of the New York State Geological Association decided to cancel it instead. Half of the participants opted to withdraw their trips from the guidebook but the other half agreed to include their trips in the guidebook largely to keep the continuity of guidebooks. There was a general consensus that a gap in the series should be avoided. Dr. Olsen did not have time to assemble the guidebook and the editorship was passed on to me. Therefore this 2001 New York State Geological Association fieldtrip guidebook contains three trips on the biostratigraphy and fossils of the Mesozoic Newark Basin, the Mesozoic igneous activity in the Newark Basin and on the regional tectonics of the Grenville event in the Hudson Highlands. Keep in mind that none of these trips were ever run nor even presented at a conference. However, they are presented here so that interested geologists can run their own trips with the latest of ideas.

Alexander E. Gates Professor and Chair Rutgers University Newark, NJ

CONTENTS

TRIP TITLE	<u>LEADERS</u>	<u>PAGE</u>
The Uniform Composition of CAMP Diabase Types and the Absence of Wall Rock Contamination at Northern New Jersey and Staten Island, New York Locations	Alan I. Benimoff And John H. Puffer	4-58
The "Age of Dinosaurs" in the Newark Basin, with Special Reference to the Lower Hudson Valley	Paul E. Olsen and Emma C. Rainforth	59-175
Bedrock geology, geochemistry and geochronology of the Grenville Province in the western Hudson Highlands, New York	Alexander E. Gates, David W. Valentino, Matt Gorring, Jeffrey R. Chiarenzelli, and Michael A. Hamilton	176-203