

Killion Canyon dunes and tuff wedge

Richard M. Chamberlin and Orin J. Anderson

New Mexico Geology, v. 15, n. 1 pp. 16, Print ISSN: 0196-948X, Online ISSN: 2837-6420.

<https://doi.org/10.58799/NMG-v15n1.16>

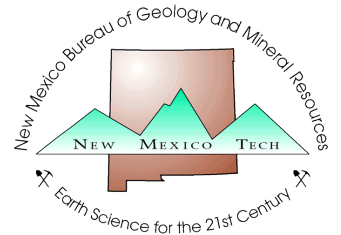
Download from: <https://geoinfo.nmt.edu/publications/periodicals/nmg/backissues/home.cfm?volume=15&number=1>

New Mexico Geology (NMG) publishes peer-reviewed geoscience papers focusing on New Mexico and the surrounding region. We also welcome submissions to the Gallery of Geology, which presents images of geologic interest (landscape images, maps, specimen photos, etc.) accompanied by a short description.

Published quarterly since 1979, NMG transitioned to an online format in 2015, and is currently being issued twice a year. NMG papers are available for download at no charge from our website. You can also [subscribe](#) to receive email notifications when new issues are published.

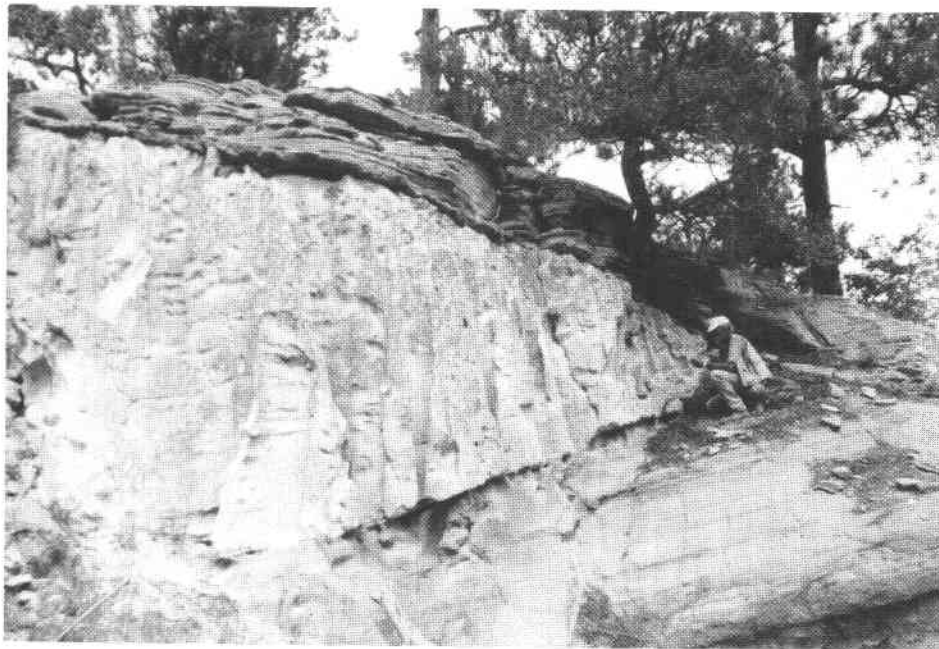
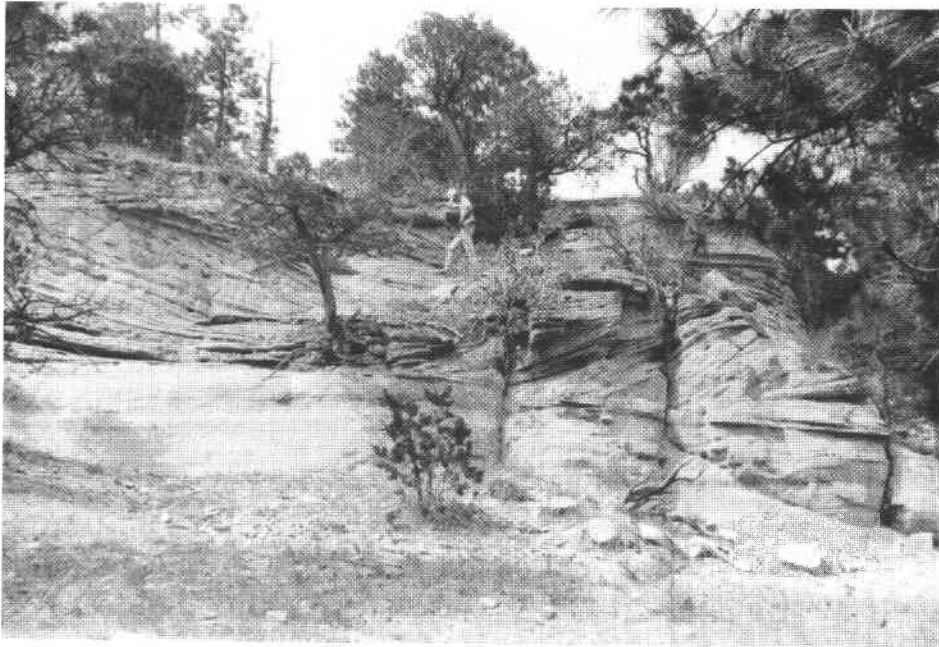
New Mexico Bureau of Geology & Mineral Resources
New Mexico Institute of Mining & Technology
801 Leroy Place
Socorro, NM 87801-4796

<https://geoinfo.nmt.edu>



This page is intentionally left blank to maintain order of facing pages.

Gallery of Geology



Killion Canyon drains the rugged northern flank of the Mangas Mountains in Catron County, New Mexico. In the upper reaches of Killion Canyon (34.077°N, 108.282°W; elevation 8,390 ft) the north wall of the canyon provides excellent exposures of crossbedded eolian sandstones (upper photo) and an interbedded wedge of the 28.6-million-year-old Vicks Peak Tuff (lower photo). At the base of the white tuff, the 20° slope represents a late Oligocene dune face buried almost instantaneously by the nonwelded ash-flow tuff. The Vicks Peak Tuff was erupted from the Nogal Canyon cauldron some 60 mi to the southeast of Killion Canyon.

Recent reconnaissance mapping of the Quemado 30×60-minute quadrangle by R. M. Chamberlin, O. J. Anderson, and S. M. Cather has shown that the distal margins of the Vicks Peak Tuff and the Bloodgood Canyon Tuff (28.1 Ma) intertongue with an elongate wedge of eolian sandstone at least 60 mi long and as much as 600 ft thick. Preliminary observations of the crossbedding suggest that the prevailing winds were generally from the west. This unnamed eolian formation trends east-west parallel to the northern margin of the Mogollon-Datil volcanic field. It generally thickens northward away from the middle Tertiary volcanic highlands. The tuffaceous eolian sandstones grade downward into fluvial conglomeratic sandstones that intertongue with early Oligocene ash-flow tuffs. Thick piles of late Oligocene to early Miocene mafic lavas typically overlie the eolian sandstones. Discontinuous exposures of the eolian formation can be found on the flanks of several lava-capped ranges from Allegros Mountain, near Pietown, New Mexico, westward to Escudillo Mountain, near Alpine, Arizona. Numerous springs on the flanks of these ranges appear to issue from the eolian formation, which suggests that it may form an important regional aquifer. This unnamed eolian formation may be correlative with the middle Tertiary Chuska Sandstone located north of Gallup. If this tentative correlation is correct, much of the southern Colorado Plateau may have been covered by a large dune field in late Oligocene time, about 28 million years ago.

Richard M. Chamberlin
Orin J. Anderson
NMBMMR

Killion Canyon dunes and tuff wedge