ODA
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functionally related to mode of life.
on to this generalization in being the
move in a preferential direction yet
The reason for this can be attri-
. The first gastropods, the Bellero-
symmetry from their monoplacophoran
ented the gastropods with a major pro-
he head of the animal.
ave rise to the early radiation of the
or groups represents a special symme-
ed to a different mode of life.
inferred adaptations are as follows.
ost active mode of life (active gra-
and necessarily retained bilateral
over the head was solved by the de-
elenizone. The Pleurotomariina
e (passive grazers) and as a result
olved the problem of the anus over the
oiling. The resultant regulatory de-
o the right of the head. The Macluri-
life style (deposit feeders, filter
the anus over the head by migration
consequent elimination of the right
hyperstrophic coiling which serves to
the right through regulatory detorsion.
oups exhibit secondary convergence.

CA AND ITS BEARING ON THE PETROGENESIS

Survey, Reston, Virginia, 22092
art of the system anorthite-forsterite-
th metallic Fe have been determined for
The compositions of the three piercing
an-opx-trid) are significantly dis-
join when compared with the iron-free
positions of the three piercing points
1% silica; 1218±5°C at 21% an, 28% ol,
n, 18% ol, 64% silica, respectively.
Fe-Mg distribution between orthopy-
g) liq/(χMg)opx(χFe)liq = 0.30, is temp-
C and 1170°C. Inasmuch as bulk comp-
opx-an join contain opx+an+trid+ol
1150°C), and olivine is only present in
"invariant" point has Fe/Fe+Mg ~0.75,
liquidus olivine and liquid (K_D=0.33),
re also independent of temperature.
is essential to understanding the ANT
the source region composition for the
iker et al. (Proc. 3rd Lunar Sci. Conf.
m explains the observed mineralogy of
s, and troctolites, and indicate a
0% molten. Addition of small amounts
field, permitting early precipitation of
ctolites.

EISTOCENE RHYOLITE OF THE MINERAL RANGE, UTAH--GEOTHERMAL AND CHEOLOGICAL SIGNIFICANCE

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ttle-eroded rhyolitic tuffs, domes, and flows extend over about 25
along the west side of the Mineral Range, southwest Utah, within
m of the Roosevelt KGRA (known geothermal resource area). Most rhy-
ite vented near the crest of the Mineral Range and was deposited in
st-draining valleys, burying essentially modern topography. Initial
ptions produced bedded air-fall pumice and nonwelded ash-flow tuff.
se were followed by as many as 10 viscous domes and small flows of
olite that contain 1-5% phenocrysts of quartz, sodic sanidine, and
tite; distinction between domes and eroded flow segments is locally
fficult. Youngest activity produced two low-viscosity flows of non-
phyritic rhyolite characterized by much high-quality obsidian of
obable archeological significance.

Preliminary K-Ar and fission-track ages suggest that the rhyolitic
canism began about 1 m.y. ago. The rhyolite rests on dissected
nite of the Mineral Range batholith, the largest intrusion in Utah,
ich has yielded published K-Ar ages of 10 and 15 m.y. Additional
topic studies are under way to determine whether these young ages
present time of intrusion or later reheating. In either case, the
arent ages of the granite, in conjunction with the Pleistocene age
rhyolite in the Mineral Range, indicate a major late Cenozoic ther-
anomaly, the size and age of which are significant to evaluation of
Roosevelt KGRA. The rhyolite is the only known source of abundant
lement-grade obsidian in the southwest between eastern California
northern New Mexico.

RGE CATLIN AND MOUNTAIN BUILDING: AN ANATOMY OF GEOFOLLY

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rge Catlin, painter and ethnographer of the American Indian, wrote
Lifted and Subsided Rocks of America in 1870. The book expressed
lin's contempt for the leading geologists of his day, and he
iculed their mountain-building theories, proposing his own as the
y acceptable substitute. He hypothesized the uplifting of mountain
ins under the pressure of steam generated by surface waters seeping
n to a sedimentary-igneous interface heated to incandescense by the
ten inner core of the earth. The mountain chains in rising left
at open vaults below them which were occupied by raging subterranean
ers. Such a river, many times larger than the Mississippi, poured
thward under the Rocky Mountains to meet with a similar torrent
wing to the north under the Andes. The rivers met in the Gulf of
ico and hurled their combined waters across the Atlantic as the
f Stream.
s book, written by an embittered sick old man, is a model of Geo-
ly and the history of its author provides an opportunity to study
anatomy of the phenomenon. Catlin, following a youthful trauma
the death of a beloved brother, a geologist, saw his own distin-
shed work in ethnography derogated and his career destroyed by
y Schoolcraft, geologist cum ethnographer, who held high govern-
al office. Advised by his friend Humboldt to seek redress, his
orts failed and this book written shortly before his death may
e been the result.

XPERIMENTAL INVESTIGATION OF PORPHYRITIC TEXTURE

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