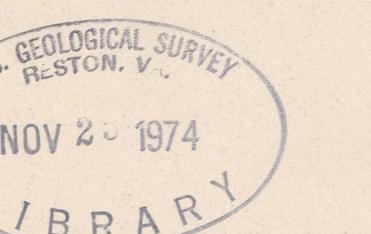




PREPARED BY THE U.S. GEOLOGICAL SURVEY AND THE LIBERIAN
GEOLOGICAL SURVEY UNDER THE JOINT SPONSORSHIP OF THE
GOVERNMENT OF LIBERIA AND THE AGENCY FOR INTERNATIONAL
DEVELOPMENT, U.S. DEPARTMENT OF STATE



GEOLOGIC MAP OF THE ZWEDRU QUADRANGLE, LIBERIA

by
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U. S. Geological Survey
OPEN FILE REPORT 74-307
This report is preliminary and has
not been edited or reviewed for
conformity with Geological Survey
standards or nomenclature.

EXPLANATION Correlation of Map Units

Jd	Stratigraphic succession not implied for the following units	Jurassic
di		Plutonic igneous rocks
md		Precambrian
sm		Metamorphic rocks
sa		
s		
q		
am		
i		
it		
is		
gndq₂		
gnl		
gnm		

MAP SYMBOLS
Field data are shown by conventional symbols; other data sources are indicated by letter symbols adjacent to structure symbols, or at limit of line segment to which the symbol applies:
M, aeromagnetic data; P, photo interpretation; R, radiometric data

Map symbols include:
— Fault--U, upthrown side; D, downthrown side
△ Thrust fault--sewest on upper plate
× Fault zone or shear zone
— Fault intruded by dike
— Antiform--showing trace of crestal plane and direction of plunge
↓ Overturned antiform
↑ Overturned synform
— Strike and dip of axial plane of fold
Inclined
Vertical
Strike and dip of beds
Inclined
Horizontal
Vertical
Strike and dip of foliation--open symbol indicates foliation transverse earlier foliation or bedding; solid symbol indicates relation to bedding unknown
Inclined
Horizontal
Vertical
Strike and dip of parallel foliation and bedding
Inclined
Horizontal
Vertical
Strike and dip of joints
Inclined
Horizontal
Vertical
Strike and dip of planar features determined from photo interpretation (P) or aeromagnetic data (M); one, two, or three ticks indicate gentle, medium, or steep dip
→ Bearing and plunge of lineation--marked arrow indicates strike axis or intersecting foliations; solid arrow indicates general lineation
Structural trend based on photo interpretation
— Structural trend based on magnetics
● Observed outcrop
— Marker bed distinguished by rock symbol or index mineral
Index minerals:
ad andalusite en eudialyte k kyanite
an anthophyllite ep epidote m muscovite
au augite ga garnet py pyrite
b biotite sp graphite px pyroxene
cl clinozoisite h horblende s sillimanite
cg cummingtonite-grunerite hy hypersthene st staurolite
q quartz il ilmenite ta tremolite-actinolite
s schist
schist near Tobli, mostly quartz mica schist, locally garnetiferous, with some quartzite, iron-formation, and amphibolitic schist
Amphibolitic schist
Foliated actinolite and hornblende schist, locally garnetiferous
Mica schist
Garnet-muscovite schist near Tobli, fine-grained feldspathic muscovite schist elsewhere
Melanocratic gneiss
Amphibolite and slightly foliated pyroxene-hornblende-plagioclase gneiss
Leucocratic gneiss
Typically well foliated medium-grained biotite gneiss, includes numerous bodies of melanocratic gneiss not mappable at this scale
Quartz diorite gneiss
Mostly well foliated leucocratic biotite gneiss poor in potash feldspar

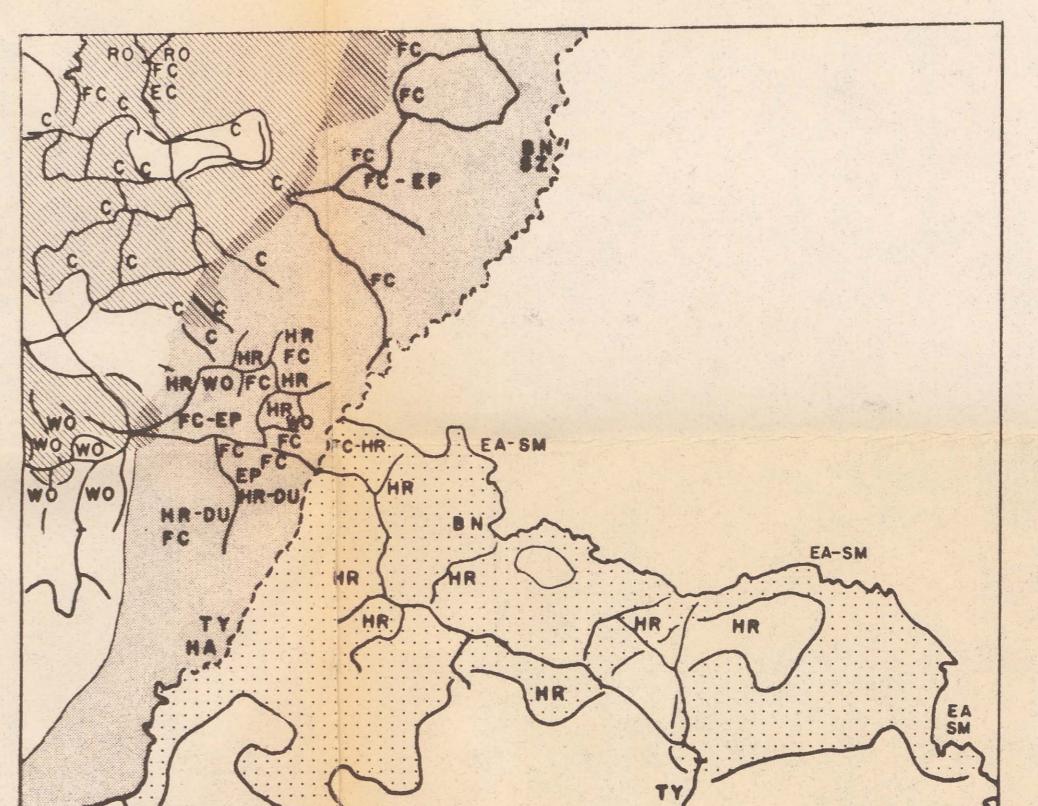


Figure 1--Sources of Field Data and Areas of Responsibility for Compilation

Area covered by Officer and Tremaine (1961)	BN G. O. Bachman (USGS)	EP E. Phillips (USGS)
Area covered by the Muller company	BN G. R. Cooper (USGS)	EP S. Rosenblum (USGS)
Area compiled by Force; the remainder compiled by Beikman	DU J. D. N. Dunbar (USGS)	SZ J. F. Seitz (USGS)
	EA R. L. Earhart (USGS)	SM G. C. Simmons (USGS)
	FC F. R. Force (USGS)	TY R. G. Tydal (USGS)
	HR J. N. Hoare (USGS)	WO C. S. Woterson (USGS)

Surface traverse
Helicopter traverse

