

and in locating potential targets for mineral exploration.

The airborne surveys, which cover the entire country, required approximately 140,000 km of traverse, mostly along north-south lines 0.8 km apart over land and 4 km apart over the continental shelf. Continuous photography and Doppler navigation provided horizontal control; flight altitude was 150 m

above mean terrain. The geophysical data obtained from these airborne surveys are presented, by quadrangle, in these folios of 1:250,000-scale maps that show on separate sheets geographic, geologic, aeromagnetic, and total-count gamma radiation data for each of 10 quadrangles. The index map shows the locations map of the Bopolu quadrangle, (Behrendt and Wotorson, 1974) should be used in conjunction with this total-count gamma radiation map.

from 100 to >500 cps, respectively. Iron-formation, granulite, and other mafic rocks range from 0-1.5 percent K_2O and from 25-200 cps. In general all of the area above 250 cps is granitic terrane, as well as most areas be-

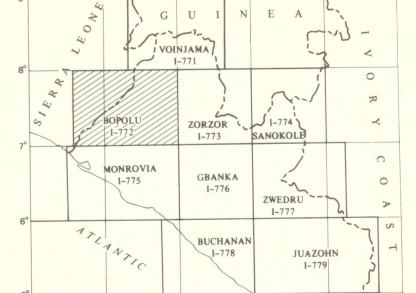
tween 100 and 250 cps. Figure 1 shows the generalized radiation level for the data in this quadrangle. Figure 2 is a map showing possible geologic contacts inferred from the radioactivity and magnetic data.

GEOLOGY

the rocks of the Bopolu quadrangle are predominantly granite gneiss (White and Leo, 1969) the foliation of which strikes northeast, typical of the Liberia. Several inferred geologic contacts are indicated from a comparison Liberian age province (about 2,700 m.y.) (Hurley and others, 1971). White between the radioactivity data and the magnetic data (fig. 2).

shown on the aeromagnetic map near the southeast corner of the quadrangle is associated with a band of positive radiometric anomalies that range from

Most of the bedrock in the area, granite gneiss, has the low radiation level (about 125-200 cps) typical of westernmost Liberia, which contrasts with a generally high level (250-500 cps) in central Liberia (fig. 1). An anomalously low (125 cps) radiation level over granite gneiss is in the northwest corner of the quadrangle (fig. 1). Other, linear lows correlate with the mag-We suggest that the generally low radiometric level and abundance of magnetic anomalies associated with the granite gneiss in this quadrangle



INDEX MAP OF LIBERIA - Showing location of quadrangle and miscellaneous geologic investigations maps published by the U.S. Geological Survey. Area of I-772 shaded.

100 MILES

HARPER

1-780

TOTAL-COUNT GAMMA RADIATION MAP OF THE BOPOLU QUADRANGLE, LIBERIA

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