Spatial and temporal distribution and petrogenesis of Miocene ultrapotassic volcanism in Gangdese,Tibet

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We investigated Miocene ultrapotassic volcanism in the interior of the Gangdese belt in southern Tibet. The volcanic activity is characterized by scattered small-volume (0.45km^2, 78 km^2) terrestrial flows. Two representative samples from Gongmutang, Zhongba County (N30°48.9', E84º26.0'), and another two from Mibale, Nimu County (N30°50.2', E86°39.43') are discussed here. These samples are potassium-rich (6.25% < K_2O < 7.87%) over a range of SiO_2 (50.85~58.41%) and Na_2O (1.88~2.71%) contents. Mg-number of sample CQ1 with MgO =10.72 wt % is 0.66, suggesting that it represent a relatively primitive melt, while others with MgO of 4.22 to 4.81 wt % are evolved ones.

Table 1: $^{40}Ar/^{39}Ar$ age data for Gongmutang and Mibale volcanic samples

Sample	Rock Type	$^{40}Ar/^{36}Ar$ (Plateau Age in Ma	1σ	MSW D
CQ1	phono-tephrite	16.10	0.12	1.80
CQ2	trachy-andesite	16.59	0.13	0.85
8030-5	trachy-andesite	13.47	0.13	1.60
8030-18	trachy-andesite	13.17	0.11	0.99

The ages obtained for samples with the more basic compositions are slightly older than the more evolved ones in both areas, indicating a high rate of eruption. Furthermore, on primitive mantle-normalized incompatible element diagrams, our samples resemble ultrapotassic rocks elsewhere in the Gangdese belt in having similar enrichments (i.e., high LREE/HREE ratios) and characteristic negative Sr, Nb, Ta, and Ti anomalies, suggesting similar petrogenetic processes.

A compilation of available $^{40}Ar/^{39}Ar$ age data on the Miocene ultrapotassic volcanic rocks indicates almost simultaneous volcanism in north-south direction at a given longitude in the interior of the Gangdese belt although it is also apparent that the ultrapotassic volcanism displays an eastward migration.

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Study on the character of mineral pollution in soil from lead-zinc mining area

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As a absolutely necessarily component in biogeocenose, soil act as a important role in every circulation. Soil-plants system is a basic construction unit in terrestrial ecosystem, and also is the junction of the matter energy circulation in ecosystem. It is not only the most acitive environment factor on earth, but also is the cherishable renewable resource. If the system is polluted, not only the plants outputs and qualities will be affected, but the atmosphere and the water circumstance will also be affected.

The soil's main components is mineral substances, organic contents, live organic bodies, moisture, atmosphere and etc. The mineral substances weihgt occupy the solid phase weight (soil dry weight) of 90%~95%, or even more. So the main components in soil is mineral suvstances.

In plumbum and zinc diggings, because of the exploitation, around soils were unavoidable polluted. The mineral sediment aroud the diggings with dust, stream and aerosol. That make the Pb pollution in the soil around the diggings. The paper used the SEM and X diffraction method to analysis the farmland soil in plumbum and zinc diggings, and found the zinc minerals in the soil mainly is $PbCO_3$, $PbSO_4$, PbS, $PbCO_3 \cdot 2Pb(OH)_2$, and etc. The paper also analysised the conformation of the Pb in the soil, and found there is some connection with the conformation and the minerals. So, the research of Pb pollution in soil can not only through the conformation analysis, but also through the mineral research method. This provide a new path for the heavy metal pollution research.

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