

GEOCHEMISTRY, MINERALOGY, AND GEODYNAMIC FRAMEWORK OF LATE CENOZOIC POTASSIC ALKALINE BASALTS IN WESTERN KAMCHATKA.

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Over 200 subvolcanic bodies, homogenous basaltic massifs and mixed complexes, of absarokite-shonkinite-syenite calc-alkaline rocks were found in the Tigil uplift (Western Kamchatka), which stretches parallel to the Central Kamchatka island-arc volcanic belt (Fig. 1). Alkaline rocks of 15 to 300 m thick dikes, sills, and domes show chiefly Pl-Fsp-Ol-Cpx-Phl-Bi-Mt-Ilm mineralogy. Syenites and shonkinites are enriched with analcime; shonkinites contain accessories and xenoliths of titanite, almandine, schorlomite, aegirine, spinels, apatite, and zircon. By their mineralogy, alkaline rocks of Western Kamchatka are proximal to orenditic lamproites, but differ by high Al in micas and spinels and high Fe# of olivine, and lack in leucites, richterites, priderites, and wadeites. Volynets et al. (1987) consider them correlable with lamproites. Potassic rocks of Western Kamchatka show SiO₂ variations from 46 to 62%, high potassic alkalinity (till 8,5%) in syenites, and high Mg# (till 11% MgO) in shonkinites; their rare-element chemistry differs by high abundances of Rb, Ba, F, Be, Zr, Hf, La, Ce, U, Th, high Ni and Cr. ⁸⁷Sr/⁸⁶Sr ratios range from 0.7036 to 0.7040 corresponding to the known upper limit values for Kamchatka Late Cenozoic volcanics. K-Ar age determinations place the rocks within Pg33-Ng12. Some features of chemistry and mineralogy of the studied potassic alkaline basaltoids of Western Kamchatka evidence of their origin in relation to post-subductional compensative lithospheric extension. In our view, compositional features of island-arc and rift-related series do not allow assigning the rocks to lamproites. Most likely they have been produced by magmatism in the back of a Paleogene island arc evident in volcanic complexes west and north-west of the study region. After completion of the island arc structure, potassic alkaline melts formed at the level of phlogopite-rich metasomaic mantle substrate. The study was supported by grant 97-05-65671 from the Russian Foundation of Basic research. Symposium 6.8