Dans la région volcanique néogene du Sud-Est de l'Espagne, se trouvent associées espatial et temporellement des roches calco-alcalines, shoshonitiques et ultrapotassiques.

Les lamproites se présentent en pipes de diametre reduit (~1 km) et excéptionellement comme des laves. Essentiellement, elles sont constituées par de l'olivine (Fo_{92}-Fo_{78}), de la phlogopite, du clinopyroxene ($En_{51}Fs_4Wo_{45}$-$En_{46}Fs_{13}Wo_{41}$) et des proportions variables, selon le degré de cristallinité, de la richterite potassique, de la sanidine et du verre; dans quelques types, des orthopyroxenes ($En_{85}Fs_{12}Wo_3$-$En_{72}Fs_{25}Wo_3$) et de la leucite peuvent apparaître. Sur la base des compositions normatives, on peut distinguer quatre types de lamproites: jumillites (avec ol et lc normatives), cancalites (avec ol normative), fortunites (avec < 5% de ol ou q normatives) et verites (avec > 5 de q normative). Tous ces types montrent une haute relation $Mg/Mg+Fe^{2+}$ (0,82-0,72), des hauts contenus en Ni,Cr,K_2O,P_2O_5,Ba,Sr,Th et Zr, et un bas teneur en Al_2O_3 et CaO.

Les particularités de ces roches ne peuvent-pas s'expliquer par des simples processus de cristallisation fractionnée a partir d'un magma commun, et non-plus par la variable fusion partielle d'un manteau péridotitique standard. Par contre, quelques données mineralogiques et chimiques son favorables au mélange des magmas de differente composition. Les calculs effectués à ce sujet avec les élements majeurs, indiquent que les quatre types de lamproites du Sud-Est de l'Espagne pourraient avoir été originés par le mélange, dans des proportions variables, d'un magma shoshonitique et d'un autre de type kimberlitique.

C11

THE ULTRAPOTASSIC ROCKS OF THE BETIC CORDILLERA, SPAIN

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The ultrapotassic rocks of SE Spain are reinvestigated mainly on the basis of new geochemical and mineralogical data. The rocks are characterized by phlogopite, olivine, sanidine, ±biotite, ±clinopyroxene, ±orthopyroxene, ± K-rich amphibole, ±glass. Phlogopite is present both as phenocrysts and as microcrysts(Ph1 and Ph2): Ph2 has Ti and Fe/Mg higher than Ph1. Only in some case the chemistry of phlogopite is related to the degree of fractional crystallization. Four different kinds of biotite have been found. lowTi-biotite associated with crustal xenoliths unstable biotite(B1), phenocrysts(B2), microcrysts(B3). Sometimes Ph and B coexist together. The rocks have low - moderate Al_2O_3(8.9-12.8), low Fe/mg ratio, Nb/Y =1, high contents of Zr,P, Th,Ce,Ba,Ni,Cr, and low Sc and Y values. Many rocks exhibit(Na+K)/Al(atoms) major than unit. Frequently the investigated outcrops are geochemically well identified. Nevertheless, chemical variations between the different outcrops are gradual. The petrogenesis of these rocks is really difficul to explain. The magmas generated in the mantle, but crustal contamination or magma mixing largely influenced the rock chemistry. The fluids too possibly played an important role during the petrogenesis and produced selective enrichment of several elements.

C12

TRACE ELEMENT GEOCHEMISTRY OF K-RICH LAVAS FROM ALBAN HILLS, ROMAN COMAGMATIC PROVINCE (Italy)

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Quaternary K-rich volcanics are widespread in the Roman-Neapolitan area. Based on major and trace element abundances a potassium series(KS) and a high-potassium series (HKS) have been distinguished. KS rocks are represented by alkali basalts, trachybasalts, latites and trachytes which have lower enrichment in K and other incompatible elements with respect to leucitites, leucite-tephrites and leucite-phonolites which make up the HKS. At Alban Hills together with predominant pyroclastics, leucititic and tephritic leucititic lava flows occur. On 22 selected Alban lava samples major element, Cs,Rb,Sr,Hf,Ta,Th,Sc,Cr,Co,Ni and REE contents have been determined. SiO_2 ranges between 40-49%, K_2O= 5-10% ca, Mg_v=37-69. Cs(4.8-61ppm), Rb(47-540ppm), Sr (1090-2700ppm), Th(36-130ppm) and LREE display all high values. REE patterns are strongly fractionated for both light and heavy REE with a significant negative Eu anomaly. The ferromagnesian elements are variable and, except for Co, positively correlated with Mg_v. The obtained data indicate that the K-rich volcanism of Alban Hills is the product of low degree of melting of a LILE-enriched garnet-peridotitic mantle. The observed elemental variations have been produced by low-pressure fractionation with separation of cpx, leucite and spinel as main phases. The distribution patterns of Alban Hills lavas normalized against a primordial mantle composition are similar to those observed in leucite-bearing volcanics from Aeolian arc, where these rocks are associated with shoshonitic volcanics and both follow calc-alkaline magmatism. This supports the view that the K-rich magmatism of Roman comagmatic province represents the latest stage of a subduction-related volcanic cycle.

C13

KIMBERLITE AND LAMPROITE DYKES, WEST GREENLAND. IMPLICATIONS FOR MELTING OF RICHTERITE, PHLOGOPITE AND CLINOPYROXENE IN A LIL ENRICHED MANTLE.

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Thin kimberlite and lamproite dykes are exposed in the Precambrian rocks of the Sissimiut area, central West Greenland. The dykes are remarkable fresh and show evidence of multible intrusions. The kimberlites are characterised by olivine megacrysts with groundmass perovskite and spinel, and contains olivine-phlogopite-ilmenite nodules. Two types of lamproites have been distinguished. The most common type is pseudoleucite, rutile-, +/- olivine-bearing. The second is a MARID type with richterite, rutile, Mn-ilmenite, and megacrysts of clinopyroxene.

Geochemically the kimberlites are distinguished from the lamproites by higher MgO, FeO, CaO, CO_2, Cr, Ni, Co and Cu contents, and lower amounts