

Composition of mafic minerals from peralkaline potassic syenite – granite association from Bulgaria.



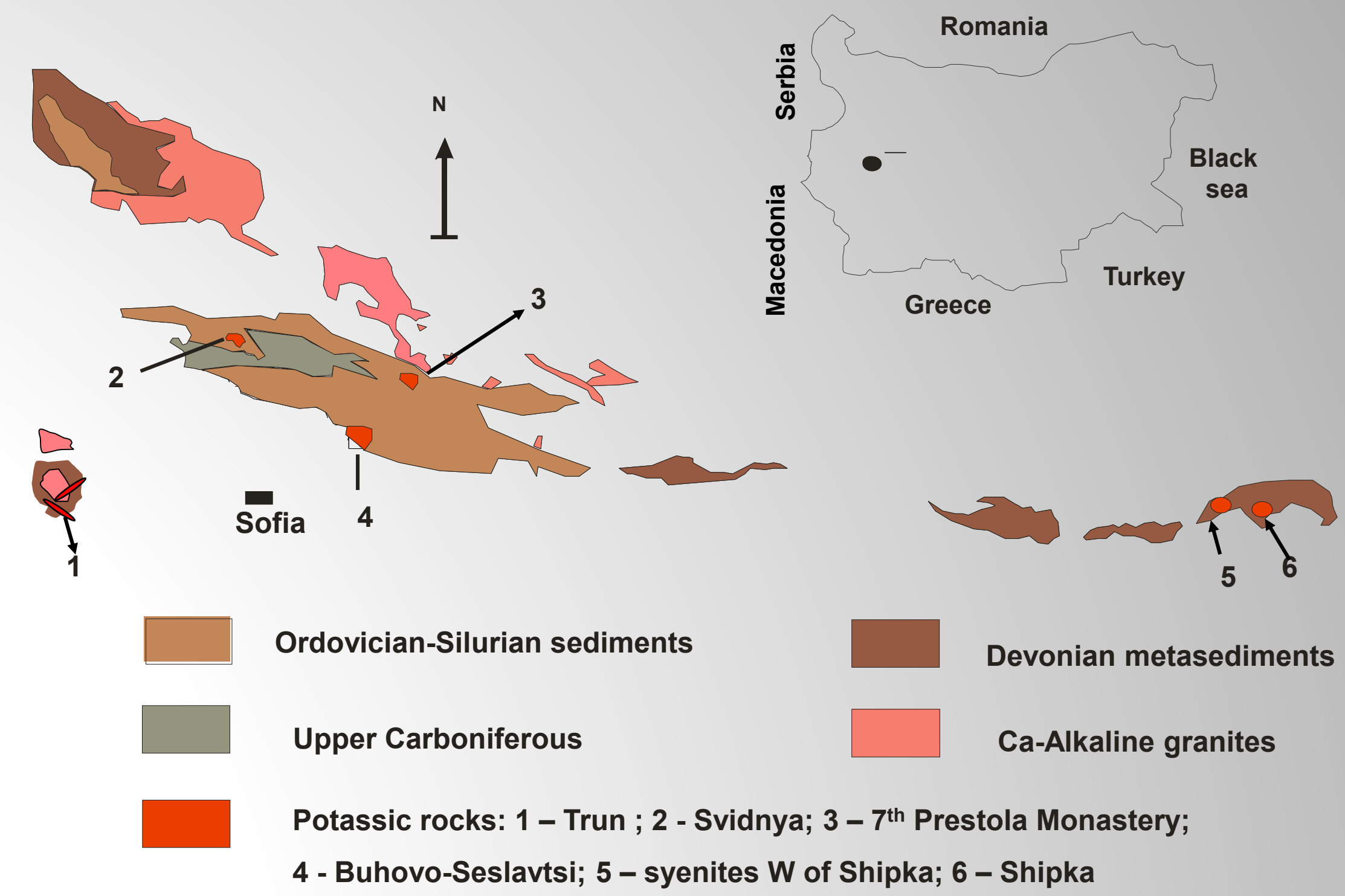
Several potassic monzonite-syenites-granite plutons outcrop in Kraishte and Stara planina (Balkan) regions:

Lutskan, Svidnya, 7th Prestola Monastery, Buhovo-Seslavtsi, syenites west of Shipka, Shipka pluton.

These magmatic bodies are of Variscan age (330-305 Ma), formed during postcollisional relaxation of the crust. They have high K, LILE and T-U contents. The final dykes possess strong peralkaline character and trace elements enrichment (both LILE and HFSE). The trace elements and isotope signature of the rocks suggest derivation from Enriched Mantle source (EM II).

Petrographic compositions of the plutons:

- Lutskan:** metaluminous granite with peralkaline syeniteporphyries
- Svidnya:** metaluminous to slightly peralkaline melasyenites, syenites and quartzsyenite. Final dykes are strongly peralkaline syenite and graniteporphyries.
- 7th Prestola Monastery:** peralkaline quartzsyenite and granite.
- Buhovo-Seslavtsi:** metalumoninous syenite-monzonite intrusion, followed by mildly peralkaline syenite porphyry; the final dykes are strongly peralkaline syenite and graniteporphyries.
- Syenites W of Shipka:** slightly peralkaline melasyenites.
- Shipka:** metaluminous monzonites, with peralkaline syeniteporphyries



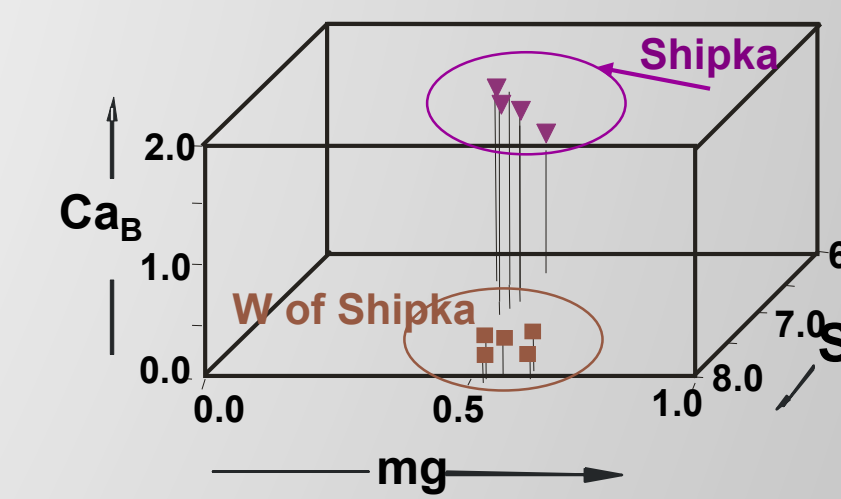
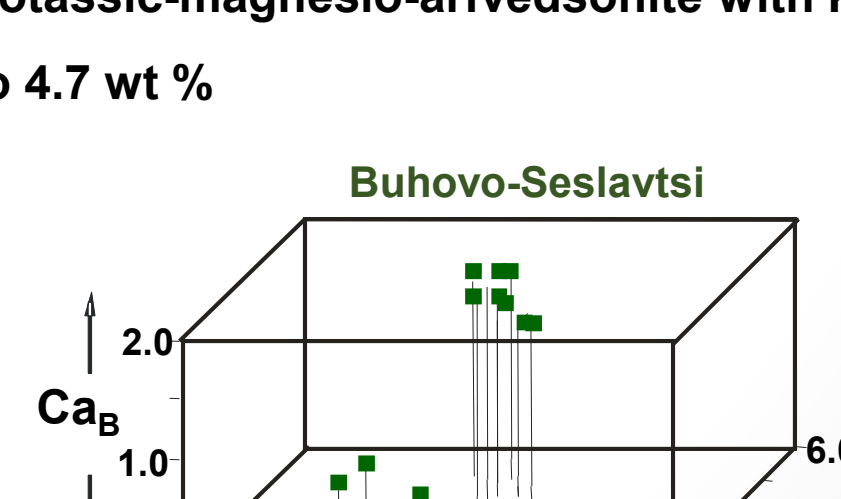
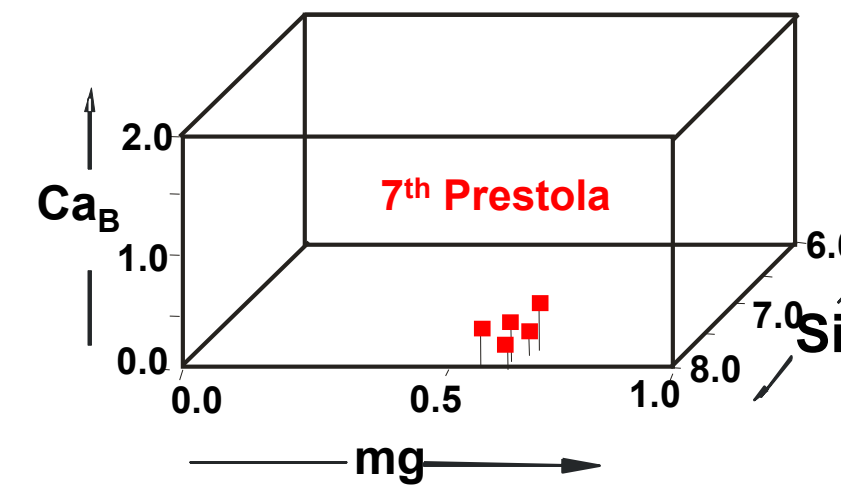
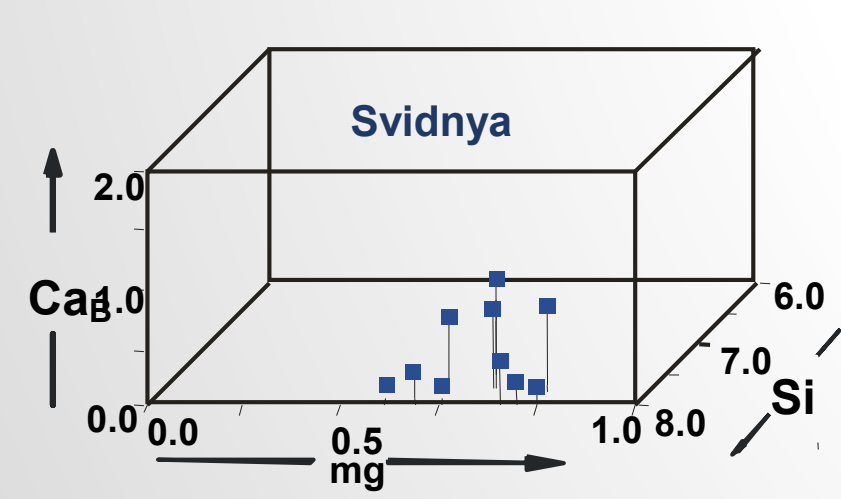
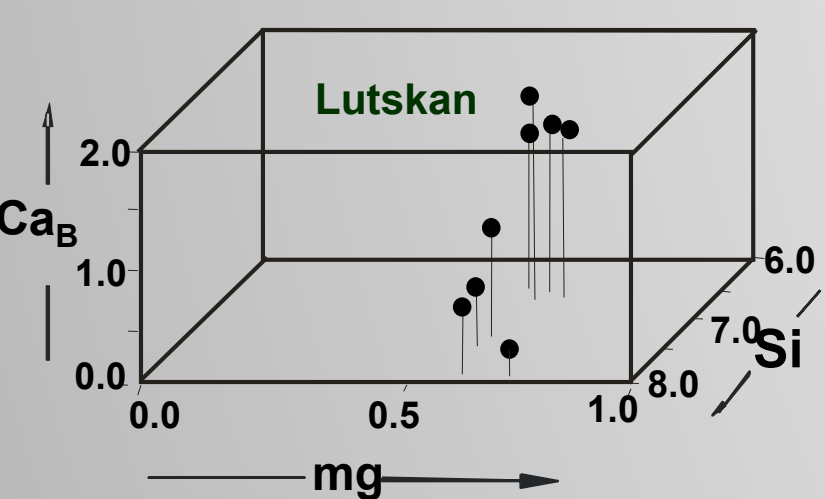
Minerals compositions

Micas:

Lutskan:	Svidnya:	7 th Prestola Monastery:	Buhovo-Seslavtsi:	Syenites W of Shipka:	Shipka:
Biotite X_{Mg} 60-55; rare Phl X_{Mg} 80	Biotite X_{Mg} 60-55; rare Phl X_{Mg} 85	Rare biotite X_{Mg} 60-55	Biotite X_{Mg} 60-55; rare Phl X_{Mg} 90	Phlogopite to biotite X_{Mg} 85-65	Biotite X_{Mg} 81-45; in peralkaline dyke with F up to 4 wt %

Amphiboles

Lutskan:	Svidnya:	7 th Prestola Monastery:	Buhovo-Seslavtsi:	Syenites W of Shipka:	Shipka:
Mg-hornblende Mg-Riebeckite, Richterite, Fe-Winchite	Richterite to Mg-Arfvedsonite	Winchite - barrosite	Mg-hornblende Fe-barrosite, Fe-winchite to richterite Potassic-magnesio-arfvedsonite with K_2O up to 4.7 wt %	Arfvedsonite with 4.4 wt % TiO_2	Mg-hornblende



Clinopyroxenes

Svidnya:	Buhovo-Seslavtsi:	Syenites W of Shipka:	Shipka:
Diopside – Na diopside – Aegirine-Augite – Aeg Late aegirine enriched in Ti with up to 6 - 6.5 wt % TiO_2 low to moderate Zr (< 1 wt % ZrO_2)	Diopside – Na diopside – Aegirine-Augite – Aeg Late aegirine enriched in Ti with up to 5 wt % TiO_2 low to moderate Zr (< 1 wt % ZrO_2)	Diopside - Augite	Diopside – Augite Aegirine-Augite to Aegirine Up t 2.9 wt % ZrO_2 and 3.4 wt % TiO_2

