DIGEST OF LECTURE NOTES

by Prof. Alexander Bobrov

Part 11. Apolonivsky volcano

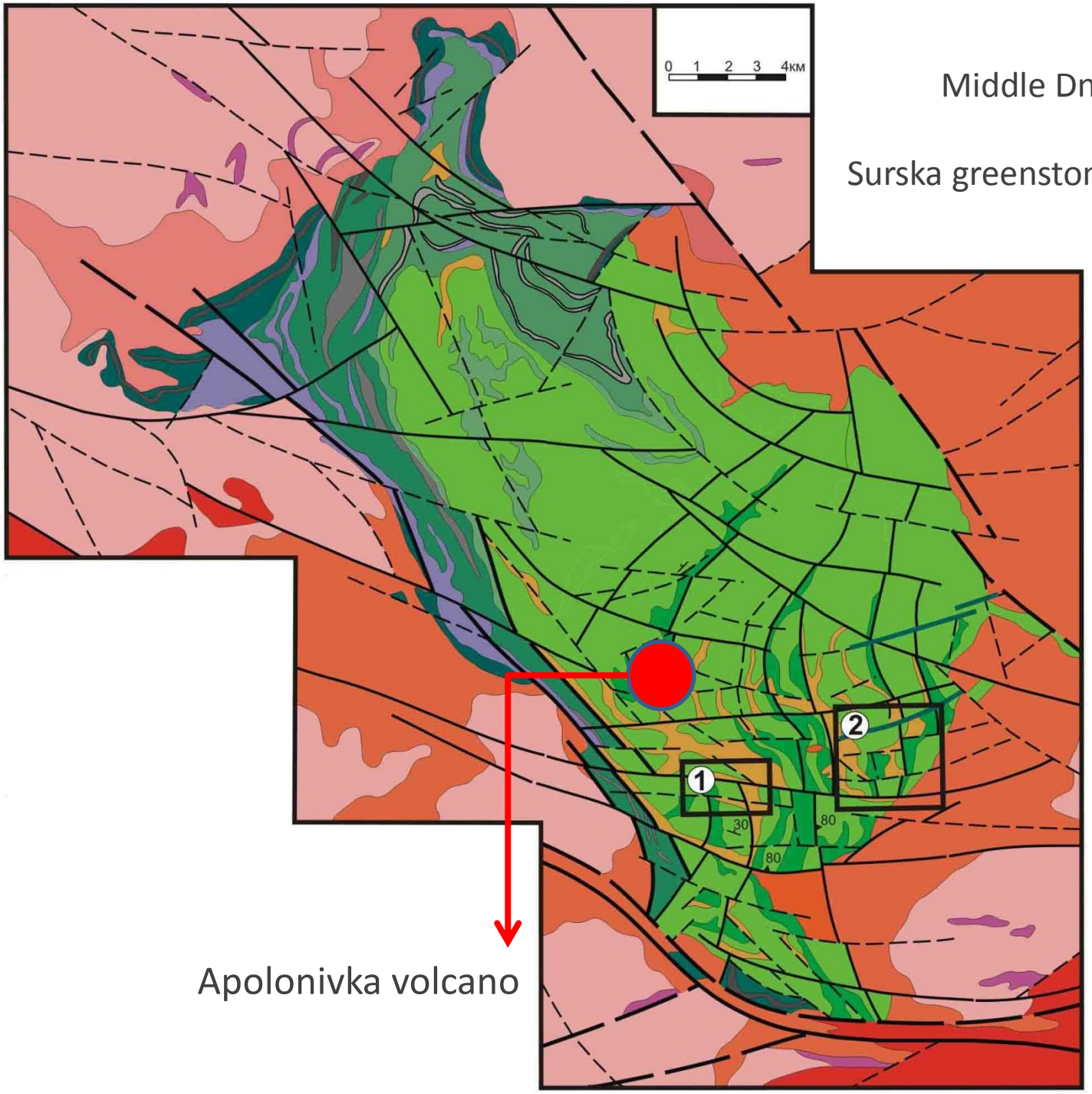
(rock age – more than 3.2 billion years
Outcrop is in the non-working quarry)

A. Bobrov Kospekt of lectures “Volcanic rocks in the Greenestone belts of the Ukrainian Shield”. Part 11. Apolonivsky volcano // Lvov.-University, 1998.-43p

Panorama of Apolonivka quarry

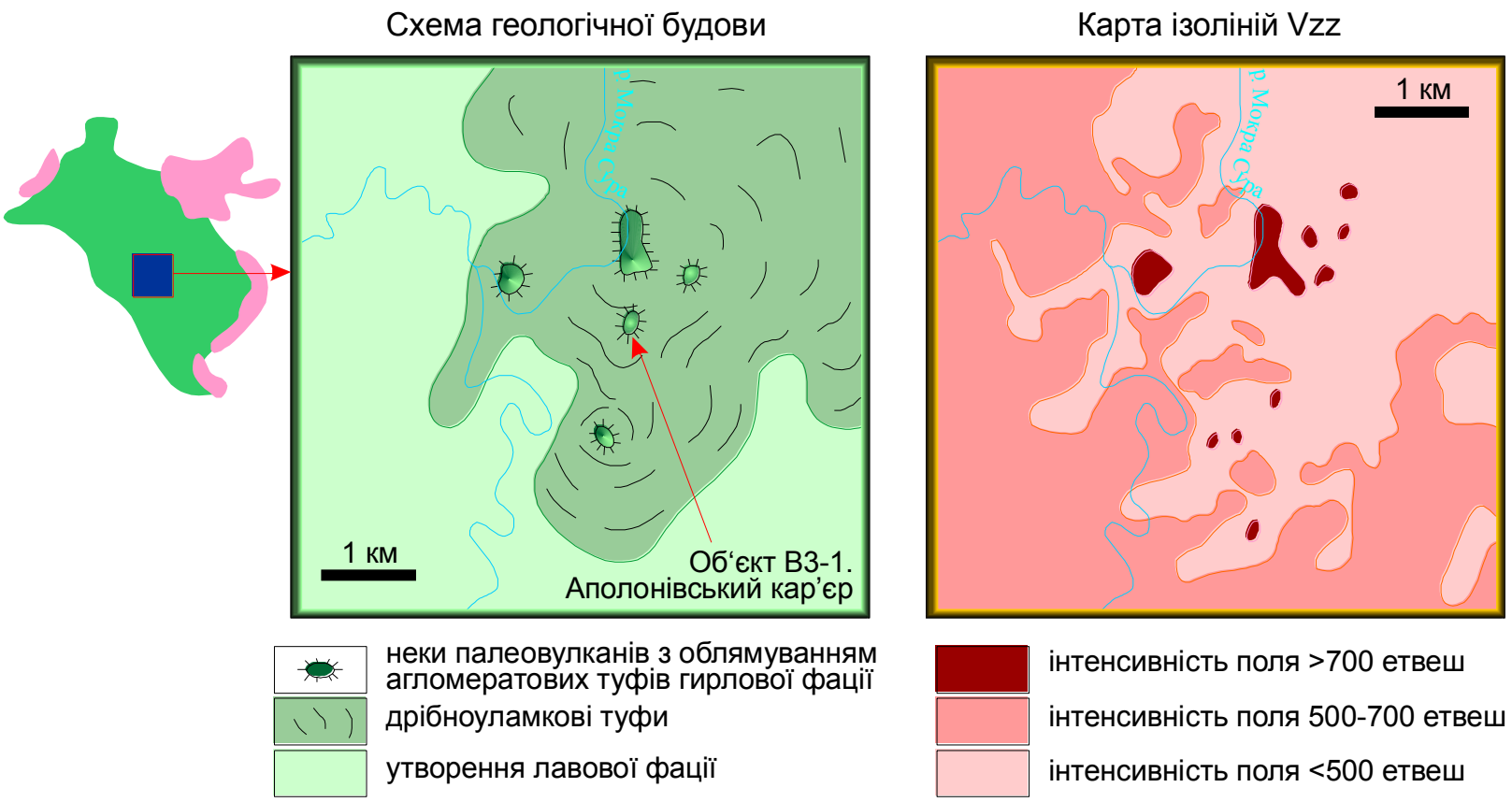
Middle Dnieper.

Surska greenstone structure.

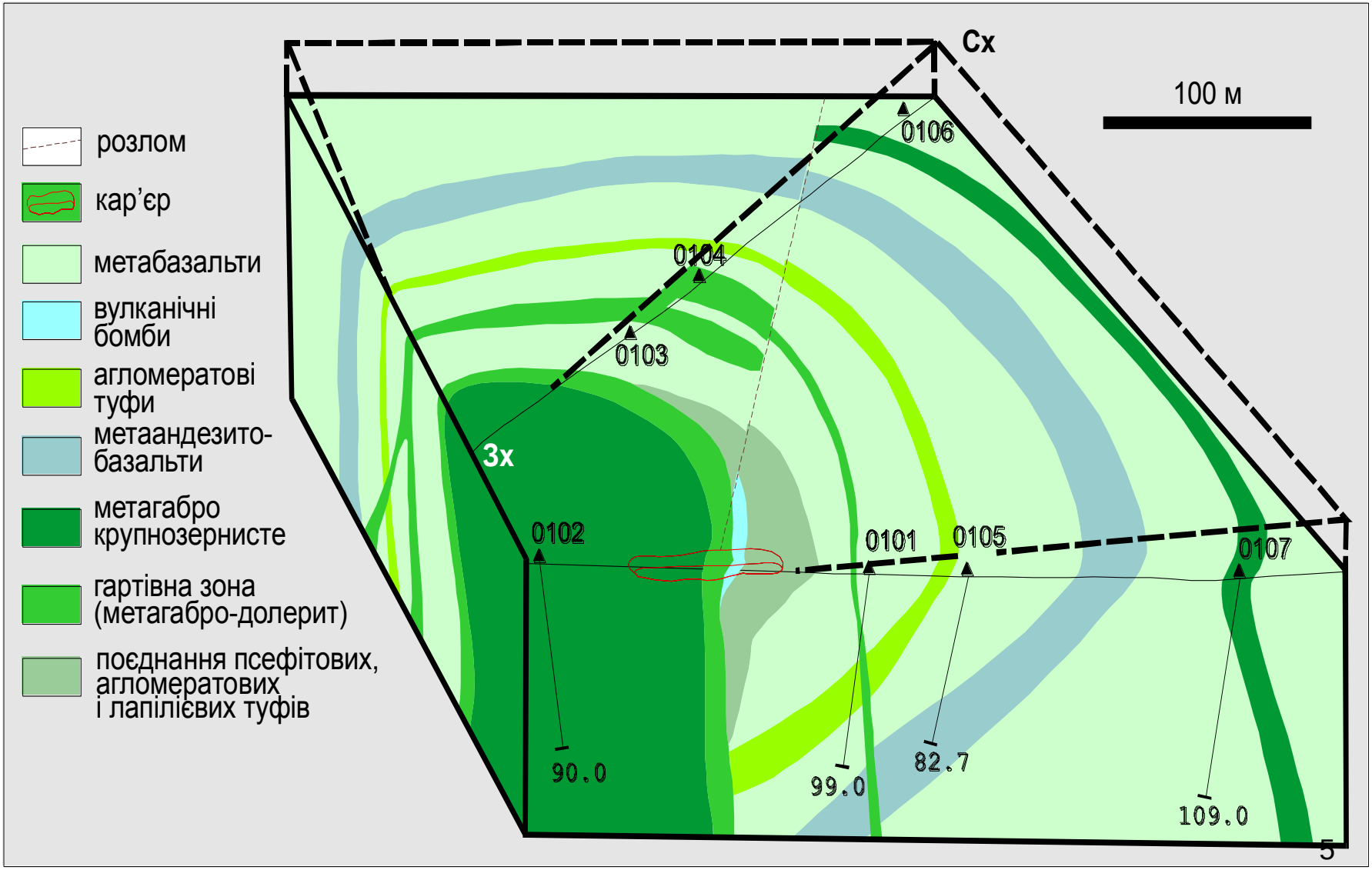


Apolonivka volcano

Scheme of the structure and isoline map Vzz (d = 0) of Apolonivka paleovolcano (based on Baklanov et al., 1968, with simplifications)



Fragment of Apolonivka paleovolcano



The central part of one of the paleovolcano sources consists of metagabbroid body which is characterized by ellipse shape with a slight elongation in the north. Metagabbroid size is 500 x 300 m. Some parts of it can be seen in the western and central parts of the career.

Within endocontact of metagabbroid plug towards contact with the frame and metavolcanics and pyroclastics there is a progressive decrease in the degree of crystallinity from medium to coarse grained metagabbro varieties to fine grained metagabbro-dolerites. The presence of these areas width up to 15-20 m manifested shrinkage of porphyritic amphibole formations and reducing the degree of crystallinity of underlying rock tissue without changing its mineral and chemical composition.

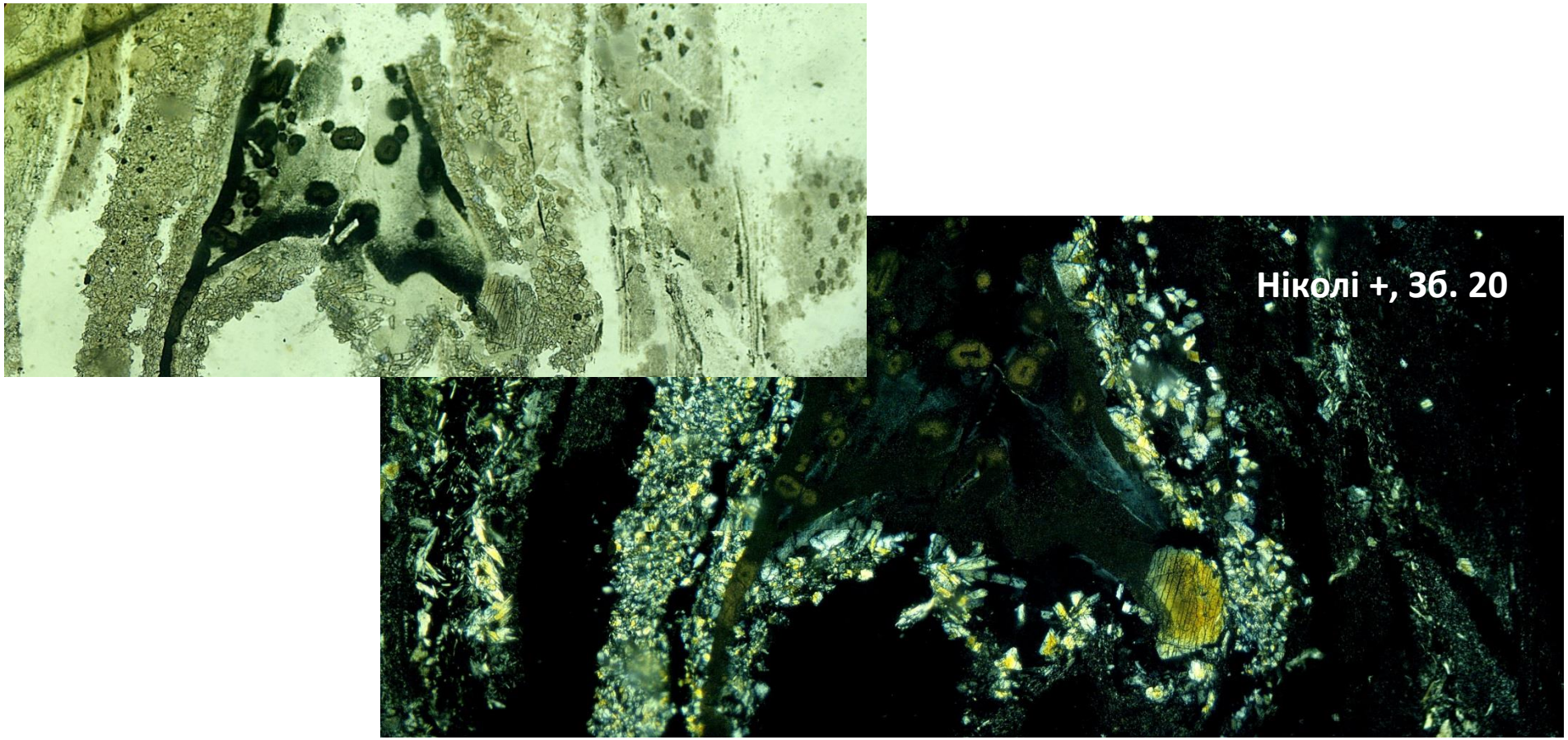
Different-sized sharp fragments of metabasalts and metagabbro-dolerites in the medium-clastic tuff mass. Gaps fulfilled with quartz-epidote aggregate, ferruginized. Sample size 6-11 sm

Debris of metagabbro-dolerites in metabasalts. On contact with debris - hardening zone changes.
Diameter of debris: 25cm (top sample) and 9 cm (sample at the bottom)

Debris of metagabbro-dolerites in metabasalts (general plan of outcrop and structure detail).

Various metatuffs and tuff lavas

Photomicrograph of metatuff. The space between the large debris is psammite linking tissue zonal structure. Nicole -., Зб.18.



Small debris have features of zonal structure shown by the presence on their periphery first rim lighting (1-2 mm), which corresponds to the maximum intensity epidotization, and then - a thin strip of dark substantially chlorite composition. The gaps between small debris fulfilled with quartz, epidote and are very ferruginized. The number of debris in the tuffs cement of this type of is very high (70-80%). Separate areas of cemented with iron hydroxide debris externally resemble baked tuffs.

Fragment of the contact part of metabasalt flows (with and without debris).

Photomicrographs of metagabbro-dolerites (а, б)
of plug part of paleovolcano and metabasalts front part (в).

Nicole + increase 15.