Geosistemy perehodnykh zon = Geosystems of Transition Zones / Геосистемы переходных зон

2022, volume 6, № 4, pp. 339–359

URL: http://journal.imgg.ru/archive.htm ; https://elibrary.ru/title_about.asp?id=64191

https://doi.org/10.30730/gtrz.2022.6.4.339-359; https://www.elibrary.ru/urpxel

Bark of assimilation shoots of the Beauverd spirea shrub (*Spiraea beauverdiana* S.K. Schneid.): structural changes under the conditions of volcanic stress in the South Kuril Islands and the Kamchatka Peninsula

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Abstract. The article analyzes the bark of annual assimilation shoots of the Beauverd spirea shrub (*Spiraea beauverdiana* S.K. Schneid., Rosaceae Juss.) growing under the stressful conditions of volcanic and post-volcanic activity in the Kuril Islands (Kunashir, Iturup) and the Kamchatka Peninsula. The combination of negative environmental factors under the conditions of fumarolic, gas-hydrothermal activity and on pyroclastic deposits in volcanogenic landscapes causes disturbance in the activity of the lateral meristems of the stem – phellogen and vascular cambium. Under the conditions of volcanic stress, the functional activity of these meristems can be both constant and intermittent during the growing season, or may be completely absent (temporary dormancy of meristems). As a result of combinations of different functional activity of meristems in assimilation shoots and in their individual sections, different anatomical structures of the cortex can form in S. *beauverdiana*. Based on the totality of structural and functional features, we identified three types of anatomical organization of the one-year-old cortex in S. *beauverdiana* from volcanic habitats, which are visualized by light microscopy in the form of contrasting anatomical patterns. We believe the structural changes in the one-year-old crust formed as a result of the unstable activity of the phellogen and vascular cambium under the influence of volcanic stress, to be adaptive.

Keywords:

phloem, periderm, anomalies, bark, assimilation shoots, woody plants, gas hydrotherms, solfataras, slag fields, volcanic activity

For citation: Vatserionova E.O., Kopanina A.V., Vlasova I.I. Bark of assimilation shoots of the Beauverd spirea shrub (*Spiraea beauverdiana* S.K. Schneid.): structural changes under the conditions of volcanic stress in the South Kuril Islands and the Kamchatka Peninsula. *Geosistemy perehodnykh zon = Geosystems of Transition Zones*, 2022, vol. 6, no. 4, pp. 339–359. (In Russ., abstr. in Engl.). https://doi.org/10.30730/gtrz.2022.6.4.339-359; https://www.elibrary.ru/urpxel

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