

The study of polymorphs of Wordian Amb Formation, Salt Range of Western Pakistan in relation to Geochemistry

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The Amb Formation of Wordian age (Martmann, 2003) was investigated for geochemistry. Twenty six samples were collected from out crop for geochemistry at Zaluch Nala of Western Salt Range of Pakistan.

The results of the collected samples displayed major oxides of K₂O, P₂O₃, Na₂O, MgO, Al₂O₃, TiO₂, Fe₂O₃, FeO, P₂O₅, SiO₂ & C (with addition of H₂O).

To find the number of polymorphs of twenty six out crop sample of thirty grams was processed one by one.

The productivity level of each sample was controlled by the comparative amount of CaO, MgO and C (both inorganic and organic).

Fifty six polymorphs species of thirty two were reported. Among these, eleven genera and nineteen species belong to trilete, six genera and nineteen species to monosaccates, twelve genera and twenty four species to bisaccates. Pollens Colpates (two species) and acolpate (one species) were also reported from the samples.

The Role of Swamps in Formation of Chemical Composition of River Waters in Western Siberia

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The landscape is characterized by the wide spread occurrence of raised oligotrophic swamps with the dominant role of the ridge-pool and ridge-lacustrine-pool systems in combination with areas of riams-oligotrophic complex piny-suffruticous-sphagnous swamps and narrow bands of transitional swamps along the periphery of watershed areas. Geographical coordinates of the area are N56°03'07" E82°22'42".

Water samples for the analysis were taken within the basin of the Klyuch River in the most typical swampy geobiocoenoses: piny-suffruticous-sphagnous with a 10-15 meter pine (point 2); piny-suffruticous-sphagnous with a scrubby pine (point 3); sedge-sphagnum (point 5).

Index	Max. allowable conc. (MAC) est. Russia	the Klyuch River	Mire		
			Point 2	Point 3	Point 5
pH	6.5–8.5	6.5	4.4	3.8	4.1
mineralization	1000	72.0	30.2	25.1	15.1
NH ₄ ⁺	1.9	3.8	6.7	6.0	3.5
COD,mgO/dm ³	15	122.2	262.4	157.7	162.2
humic acid	-	6.7	8.9	9.5	5.5
fulvic acid	-	41.1	66.6	53.1	43.3
Fe _{total}	0.3	2.5	2.9	1.8	1.3

Table: Chemical composition of swamp and river waters for 2006 – 2011 years of research, mg/dm³

The chemical composition of swamp waters of area under study is an averaged sample of the one-meter peat mire layer and represents biochemical and biological processes occurring in them. The content of water-soluble carbon in the water under study at its maximum values varies from 106.6 mgC/dm³ in point 2 to 63.4 mgC/dm³ in point 5. This index for river waters falls by 3-5 times. Due to that fact that the intensity of the peat decomposition processes in a high bog increases from the center to the periphery (from point 5 to point 2), the content of all components of the geochemical runoff increases in this direction. A high content of NH₄⁺ (5.4 mg/dm³) is observed in swamp waters: it almost three times exceeds the maximum allowable concentrations. The content of NH₄⁺ in river water is one and a half time lower – 3.8 mg/dm³. It should be also noted that the value of dichromate oxidizability in the swampy area 25 times exceeds MAC, as compared with river waters, where this index is exceeded only by 11 times. Thus, for a number of natural reasons, swamp and river waters contain high concentrations of organic and biogenic substances, the content of which in river waters is several times lower.