Ф I of poplar, D=52,4%, Ba $_{0,97}$ Cu $_{0,93}$ Zn $_{0,91}$ Pb $_{0,89}$ Sr $_{0,88}$ Ag $_{0,81}$ Cd $_{0,60}$ Mo $_{0,46}$ Tl $_{0,39}$

Ф I wormwood, D=44,5, Ba $_{0,92}$ Ag $_{0,91}$ Cd $_{0,85}$ Zn $_{0,81}$ Pb $_{0,69}$ Cu $_{0,53}$ Sr $_{0,48}$ Mo $_{0,42}$ Tl $_{0,29}$

The barium, copper, silver, cadmium, tallium receive considerable role in both plants in composition of paragenetic associations of ecosystem city Zmeinogorsk. The last elements from it list appear by admixture**,** but they turn out an important pollutants, absorption by plants.

The intense change (yellow of leafs) on poplars and birches happened in July 2004 year in ecosystem of Biisk in area of target burning rocket fuel (to N-W and N-E from target) after next burnings. Unusual early defoliation foliose trees and bushes took place at beginning august. The probes of leafs birch and poplar in it area turn out with anomaly concentrations of manganese, aluminium, mercury, cobalt, chromium, strontium. The near list anomaly elements fixed in wormwood also. High concentrations noted for lead, zinc and barium in wormwood besides above indicating.

Consequently necessity it note that in limits of every ecosystem arranged considerable variations in spectrums of anomaly elements. Anomaly indicators at lead, cadmium, zinc, cooper, cobalt in soils and in leafs of different herb reveal in the center of c. Biisk, that there are connect with high longstanding assignment on environment movement auto transport on the stretch auto station – Biisk city and these caused by high fume of it area and thrusting out in atmosphere tetra etil lead and other heavy metals with exhaust gases.

The near picture technogenic pollution observe for center of city Barnaul, area of railway station, auto station and so area “Potok”, where there are concentrate intensive movement auto transport. The anomaly significances in ecosystem of Barnaul as against Biisk obtain the elements of first class of danger – mercury and beryllium (Zhdanova, Gusev, 2006).

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CONFIGURATION OF CROSS CRACKS FORMED IN BRITTLE MATERIALS BY MEANS OF PLASTIC SUBSTANCES AND EXTERNAL LOADING ON FRACTURED SAMPLE

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To find out the possibilities of crack configuration management in the course of its development under the conditions of external loading on the destroyed sample a series of laboratory experiments in a press was carried out by my colleague Kyu N.G. and me. Four separate organic glass blocks dimensioned 100×100×100 mm each one were used in the experiment and were fractured using plasticine. The purpose of the experiments was to find out general principles of crack formation in such conditions.

The first experiment was carried out without any external loading on the tested sample and served as the basis for the following comparisons. The plasticine charging was performed through a bore drilled out in the block center into its bottom-hole part by means of a special cylinder device held in this bore by thread. The bottom-hole pressure was measured by a manometer provided with a special adaptor placed on the opposite side of the block. In the course of the experiment it was found out that with the increase of the putty amount introduced into the crack and simultaneous growth of its dimensions the putty charge pressure decreases at the end and at the beginning of every separate stage of the experiment. Besides, the horizontal and vertical dimensions of the formed crack and also the zones of its filling with a plastic substance grow much the same in the nature with the result that the crack assumes a definite round-shape form. At the beginning of plasticine charging the pressure changed from 370 atm до 150 atm, and at the end – from 200 atm to 50 atm. The split of the sample followed the pressure downtick. In the course of carrying out the first experiment all the earlier educed principles of development of the crack formed using plastic substances transverse the shot hole axis in brittle materials were confirmed, they corresponding to the lack of external loading on the tested sample.

The second experiment was carried out at the vertical loading on the sample on the part of press. Because of technical failures (faulty seals in the system of oil charging) the loading varied fluently within the interval from 10 to 15 tons. A characteristic feature of the second experiment was an accelerated growth of the crack and the zone of its filling with the putty in the direction of loading appliance to the tested

sample (vertical). At a light loading (10-15 tons) these changes were scarcely noticeable as usual measuring devices were used. The crack shape grew looking like an ellipse with the bigger side oriented in the vertical direction. As a result of the last charging a split of the block into two parts occurred. At the beginning of charging the pressure changed from 300 atm to 100 atm, and at the end – from 175atm to 50 atm. The split of the sample followed the pressure downtick.

The third experiment was carried out at the loading equal to 60-70 tons on the part of the press. At the moment of its being finished the pressure made 70 kgf/cm^2. At the moment of unloading on the part of the press the pressure turned out to be at the level of 45kgf/cm^2. After that the loading was fluently increased up to 60 tons. Under the loading the crack mainly grew in the vertical direction (the direction of loading appliance), and without it – in the horizontal direction, bringing its shape into proximity with a round. At the beginning of charging the pressure changed from 190 atm to 200 atm, and at the end – was at the level of 139 atm. The experiment was carried out up to the split of the sample into two parts.

The fourth experiment was carried out at the loading equal to 85 tons on the part of the press. Its characteristic feature was the fact that the pressure in the crack center fell slower than in the previous experiments. After ceasing the charging of plasticine and exposing the sample to the same loading - 85 tons for 15 minutes, the pressure in the crack center didn't practically fall and became equal to 100 kgf/cm^2. The crack ellipse changed the orientation from the vertical one at the beginning to the horizontal one at the end. A peculiarity of this experiment was the greatest vertical loading applied to the fractured sample and, as a consequence of it, the possibility of a better observation of the tendency educed by means of carrying out the previous experiments. At the beginning of charging the pressure was maintained at the level of 190 atm, and at the end – at about 110 atm. The experiment was carried out up to the split of the sample into two parts.

The educed principles can be successfully used at breaking out natural stone, the procurement of which is carried out under the conditions of mineral deposits' underground mining method and great value rock pressure presence, using plastic substances.

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