

URANIUM OF SEDIMENTARY CARBONATE-APATITE AT CATAGENESIS

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As it has been established by a number of researches, authors of this contributions inclusive, such elements, as CO₂, Na, S, Sr, H₂O+ leave the crystalline structure of the sedimentary apatite during catagenesis (deep burial). We have proposed that the same trend may be characteristic of such element as U. For the examination of this supposition the collection of phosphorites has been chosen which includes: a) more young (Mesozoic and Cenozoic) phosphorites which were not noticeable transformed in the catagenetic environments; b) phosphorites of the same age essentially altered by the catagenetic processes; c) ancient (Lower Cambrian and Precambrian) phosphorites which, as a rule, underwent the deep or essential catagenetic transformation. It has been obtained, that all phosphorites, which underwent the strongest catagenetic transformations are characterized by lower content of U than those not been transformed during catagenesis. Some indices of the phosphorites' apatite composition including uranium in the order of their increasing transformation degree during catagenesis are given below:

Deposit, suite, basin	CO ₂ /P ₂ O ₅	Na ₂ O/P ₂ O ₅	H ₂ O+/P ₂ O ₅	U/P ₂ O ₅ x10 ⁻⁴
Polpiono deposit, Cretaceous	0,03	0,16	0,04	0,13
Pilskaya suite, Neogene	0,009	0,05	0,62	2,42
Arravallian Basin, Riphean	0,01	0,008	0,007	0,1

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