
Analogues of Flint Clays in Soviet Literature

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Abstract: The term "flint clay" used in USA and several other countries, corresponds very closely to the term "toasted bread (sukhar) clay". In both USA and U.S.S.R., the typical occurrences of "toasted clays" are confined to deposits of the lower Carboniferous. In their properties and occurrence the well-studied toasted clays of the Borovichy deposit (Novgorod province) are highly similar to the flint clays of Missouri, differing significantly only in having lower bulk specific gravity and higher porosity than do Missouri flint clays. Varieties with excess free alumina (diaspore, boehmite) are observed both among "toasted" and flint clays. The author suggests the term "toasted complex" (sukharnii kompleks) which corresponds to W. D. Keller's term "flint clay facies". The clays of the "toasted complex" are sediments of ancient swamps and lakes which contained rich vegetation. Their source material was finely dispersed silicate particles transported from dry land. The structure and properties of toasted clays are explained by the precipitation of kaolinite as colloidal clumps in which crystallization occurred with formation of intimate intergrowths and variously oriented segregations.

Clays and Clay Minerals; May 1970 v. 18; no. 1; p. 1-5; DOI: [10.1346/CCMN.1970.0180102](https://doi.org/10.1346/CCMN.1970.0180102)

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