

depth of 8, 12 and 15 km. The probability calculations were carried out and given for the whole study area during the next 30 years in the form of tables and maps.

Pre-Alpine history of the Ukrainian Carpathian Foreland and its combustible minerals

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Pre-Alpine history of the Ukrainian Carpathian Foreland is connected with the ancient continental marginal areas of the East European Platform, and succession of the formation – with a long and varied interaction between surrounding regions at different stages of their development: active geosyncline, orogenic and young platform during several tectonic stages – Baikalian (R3), Caledonian (V-D1) and Hercynian (D2-P). At each of these stages on the territory of the western region of the Ukraine the structures, characteristic of that stage only and unlike others, were formed. By genetic principle one can distinguish here: 1. Volyn-Orsha Baikalian transverse foredeep (as it was understood before). However, if this structure is considered on a scale of the whole East European Platform and its distribution is taken into account, then it should be called through foredeep (avlakogene), although its formation undoubtedly is connected with the events occurred near the platform edges. 2. Caledonian fore-system included in Volyn-Podillya area of the Baltic-Black Sea pericraton (s.s) deep (V-D11) and Boyanets foredeep (foothills) (D12-3). 3. Lviv-Lublin Hercynian posthumous foredeep (D2-C2). 4. Hercynian fore-platform uplift composed of dislocated deposits from Riphean to the Lochkovian stage of the Lower Devonian. 5. Hercynian foothill deep (Silesia-Pokuttya) (C2-P) which is now overlapped by formations of next Alpine stage, but lets us know about itself by fragments of its rocks (black coal and conglomerate of verrucano) in flysch and molasses along the whole northern slope of the Carpathian. It is known that main belts of oil and gas accumulations are often confined to similar structures of the ancient platforms. Pericraton deeps, the constituent parts of the edge systems of continental borderlands, are especially rich in combustible minerals. Similar structures are located in the eastern part of the Arabian Peninsula, Volga-Ural region, in Alberta and Saskatchewan deeps in North America and on Sahara plate. Within the Ukrainian Carpathian Foreland the deposits of natural gas and black coal have been discovered. Gas deposits are mostly found in terrigenous deposits of the Middle and Lower Devonian, black coals – in deposits of Carboniferous. Moreover, analysis of the known criteria of oil and gas potential has allowed us to distinguish perspective complexes: Silurian and Cambrian. In the first of them, the discovery of new hydrocarbon fields is connected with a lithofacies of organogenic limestones that compose a submeridian reef system consisting of organogenic buildups at three levels: Bahovytsk, Malynovetsk and Skalsk, and extends from the Volodymyr-Volyn fracture through Lokachy-Olesko-Buchach to the Ukrainian-Romanian frontier. In the Cambrian complex, promising for oil and gas are both anticlinal traps and traps of non-anticlinal type – lithological zones of thinning out of sand layers, stratigraphic, disjunctively screened and so on. Results of studies devoted to generalization of material on the Late Precambrian sedimentary formations give reasons to classify Wendian and Riphean complexes as promising objects, too.

Coal deposits are connected with the Carboniferous of the Lviv-Volyn Basin where one can count about 90 coal seams. Of commercial value are six of them in the Buh suite of the Serpukhovian stage, and they are worked by 14 mines. Further prospects are connected with the northern part of the basin as well as with the Polish frontier areas.