

THE STUDY OF ANCIENT EARTHQUAKES - A NEW ASPECT IN GEOLOGICAL STUDIES

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The paleoseismic study methods have been worked out. Traces of ancient earthquakes were studied in the deposits of various ages (Vend-Phanerozoic period) in platform and folded areas of the Caucasus, Siberia, Taimyr, Verkhoyansk Range, and the Baikal Lake region. Development of ancient earthquakes is correlated in time with genetic types and development stages of sedimentary basins. They time for the epochs of changing directions or speeds of plunging and rising of basins. Seismocontrolling structures within the basins were transitional zones and tectonic levels as well as dividing zones of large blocks - mainly fractures of certain kinematic types. Data on earthquakes for the period of several hundred million years is the key to the study of nature, conditions of evolution and forecast of current seismicity. The most effective is the experience of using information on ancient earthquakes for forecasting epochs of accelerating of fractures, stratigraphic correlation of cuts, solving of problems of sedimentogenesis, paleostructural and paleogeographic reconstruction. Geological observations and experiments have determined the effect of seismicity on formation and acceleration of hydrocarbons. It is anticipated that earthquakes participate in the formation of certain types of hydrothermal, stratified and alluvial mineral deposits. Thus, paleoseismic studies are a source of new information and additional possibilities for study of the Earth's history, determination of new aspects of mineral resources formation and broadening of expertise on mechanisms and conditions of earthquake evolution.