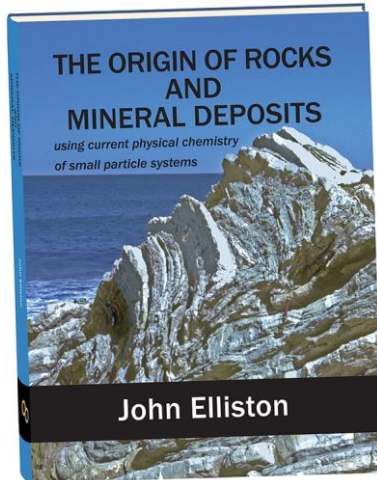


NEW LEADING-EDGE CONNOR COURT PUBLICATION



"The Origin of Rocks and Mineral Deposits – using current physical chemistry of small particle systems" introduces an exciting new alternative to traditional thinking in the Earth sciences. This book now published internationally for the first time, illustrates and explains 259 examples of problematic geological observations that provide conclusive evidence of the properties of ancient sediments and the way that mineral deposits are formed. The research has used the basic scientific method of logical conclusions from direct observation.

Natural sediments are immense accumulations of high-energy particles containing colloids (1 to 1,500 nanometers) that can attain a more stable (lower energy) condition by aggregation and the heat-generating chemical reactions by which close-packed particle clusters crystallise. Nothing is more fundamental to our understanding of the way that rocks and orebodies are formed than the physical and chemical properties of the materials from which they are derived. These are detailed in the book.

The author has been involved in the conduct and supervision of mineral exploration and research for over 50 years. After early experience in industrial chemistry and as a consulting geologist he joined a small struggling mining company in 1956. The support of leading academic consultants and a talented exploration team led to developing an understanding of the nature and origin of the source rocks and mineral deposits. This new understanding enables metal source rocks to be identified, and the pathways from source to mineral deposit can then be utilised to dramatically improve exploration success.

An independently commissioned consultants report (McKinsey & Company, Inc., New York, 1975) was able to demonstrate this dramatic improvement (+300%) in the cost effectiveness of mineral exploration programs when this additional basic chemistry and new understanding of ore forming processes were applied. Due to this unsurpassed record of exploration success, the initially small mining company grew to a major corporation in the top ten of Australian companies for 9 years.

The most interesting conclusion from the research is that liquefaction of wet sediment pastes allows the high-energy colloidal particles to reduce surface energy by re-

arranging themselves. This gives rise to the observed metamorphic, porphyroidal and granitoid textures.

The Industrial Research and Development Board for the Australian Government and the most authoritative colloid scientists and exploration geologists in Australia have confirmed the validity of this innovative research. International publication of these revolutionary research results will create renewed interest in Earth science and the use of scientific method. The new geological theory *"has the same importance to that subject as Darwin's to biology"* (Ninham and Nostro, 2010, p. 72).