## RICHARD E. CHAPMAN
Biographical Review

Richard E. Chapman is a nomadic Englishman presently on sabbatical leave from the University of Queensland, where he has taught geology for the last six years.

Dr. Chapman was educated at Oxford and Leeds Universities in England, and then went to work for the Royal Dutch/Shell group first as a field geologist, later as production geologist and petroleum engineer. He worked in Netherlands New Guinea, Brunei and Nigeria--and so naturally developed an interest in the geology of abnormal fluid pressures. His main published work is his book "Petroleum Geology; a Concise Study" (Elsevier, 1973).

## THE PETROLEUM GEOLOGY OF YOUNG REGRESSIVE SEQUENCES

Richard E. Chapman

### ABSTRACT

Young regressive sequences lead to abnormally pressured clays that are mechanically unstable while they are abnormally pressured, and so suffer an early deformation that is revealed by growth structures. The abnormal pressures are a consequence of undercompaction, so fluid migration is retarded. This exposes more of the original pore fluids to higher temperatures and much higher pressures for a longer time. Since the mechanical instability is contemporaneous with the retarded compaction, the structural consequences precede or are contemporaneous with the migration of the bulk of the fluids. Growth structures exist before the bulk of the fluid migrates, and they exist down the migration path (down the fluid potential gradient). Petroleum accumulation in structural traps in regressive sequences is a consequence of accumulation of the regressive sequence of sediments.