

# New Concepts in Global Tectonics

## NEWSLETTER

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| A recently-formed large scale anticline identified by reflection seismic data had earlier been variously interpreted to arise due to compressive stresses from Himalayan orogeny or due to wrench movements along Narmada Geofracture zone bordering the dome in the north or due to uplift. It is argued in this paper that the feature is an uplift and that the earlier explanations are untenable. The sharp downwarping of sediment beds bordering the uplift in the north is interpreted as a collapse feature arising from the withdrawal of viscous igneous matter. This is the first instance of demonstration of igneous diapirism using reflection seismic data.   |    |
| Sun induced semi-diurnal stresses on Earth's surface, which trigger earthquakes and volcanic eruption, Vinayak G. KOLVANKAR.....  | 12 |
| Various research workers have reported EM ( <i>electro-magnetic</i> ) emissions prior to the earthquakes or during earthquake sequences. EM emissions of semi-diurnal type, spaced in the time domain from the local noontime, were observed in many examples prior to earthquakes/volcanic eruptions. Such emissions were also observed in a very wide frequency band from VLF ( <i>very low frequency</i> ) to Microwave range. It was also found in these examples that earthquakes/volcanic eruptions occurred simultaneously with these EM emissions. From this study, it can be concluded that the semidiurnal stresses on the Earth and moon are primarily caused by the position of the Sun.  |    |
| Is large-scale subduction made unlikely by the Mediterranean deep seismicity? Giancarlo SCALERA... 24   | 24 |
| Inspection of South Tyrrhenian, Aegean and South Carpathian deep foci zones makes clear that they are related to uplift of deep mantle material. Their presence under actively rising part of orogens leads to a unified interpretation of the involved phenomena, and to a new interpretation of the orogenic processes and fold belt building. The evidence points to vertical displacements of materials as the main process responsible for deep earthquakes, volcanic phenomena and orogenesis.  |    |
| Geology and tectonic development of the Pacific Ocean. Part 2: Regional structural control on the auriferous Tabar-Feni volcanic arc, Papua New Guinea, Dong R. CHOI, Romeo RODRIGUEZ and Boris I. VASILIEV.....  | 31 |
| The world-class gold mineralization along the Tabar-Feni arc, especially in Lihir Island, is attributed to deep magmatic activities, which occurred at the junction of the Cape York-Bismarck Sea Anticline and its perpendicular NW-SE global-scale deep-seated tectonic zone ( <i>Western Pacific Deep Tectonic Belt</i> ) running adjacent to the T-F arc. The gigantic Lihir (Ladolam) gold deposit and the unique geochemical signatures of the T-F volcanic arc can be best explained by these regional structures. The ultimate source of the mineral deposits and the magmatic/geothermal activities in the T-F arc must be sought in the core. The new tectonic interpretation implies positive hydrocarbon prospects for the Ontong Java Plateau. |    |
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