Paper B10

Early Carboniferous (Tournaisian) Radiolarians from Peninsular Malaysia and their significanc

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Distribution of Early Carboniferous (Tournaisian) radiolarians was widespread. They were reported from Western Europe, southern North America, Australia, Turkey, south China and Southeast Asia. In Peninsular Malaysia, the Early Carboniferous radiolarians were reported from the Kubang Pasu Formation, Late Paleozoic chert sequence from north Perak, the chert block in Langkap and the Kenny Hill Formation. The Kubang Pasu chert is exposed at several earth quarries at Ulu Pauh and Guar Sanai, Perlis, Bukit Inas, Ladang Cheong Chong Kaw, Kampung Belukar, Bukit Panchor, Bukit Kamelong, Bukit Telaga Jatuh, Guar Kepayang, and Bukit Meng, Kedah. Early Carboniferous radiolarian chert was also reported from Late Paleozoic rock sequence exposed at north Perak near the Thai border. High diversity radiolarians were reported from the chert block exposed at Langkap Negeri Sembilan. The radiolarians from the Kubang Pasu were recorded from Ulu Pauh, Bukit Kamelong, Telaga Jatuh, Bukit Binjal and Guar Kepayang. Samples from Bukit Binjal yielded nine species of radiolarians viz. *Stigmosphaerostylus variospina* (Won*), Entactinia unispina* Won, *Entactinia inaquoporosa* Won*, Callela hexatinia* Won*, Callela* cf *parvispinosa, Trianosphaera hebes* Won*, Cubaxonium? Octaedrospongiosum* Won*, Duplexia foremanae* Won and *Duplexia parviperporata* Won. Other localities yielded only two species mainly *Stigmosphaerostylus variospina* (Won) and *Callella* sp. Radiolarite from the Paleozoic rock sequence north Perak yielded twenty radiolarian taxa namely *Albaillella* cf. *perforata* s.l. Won, *Archocyrtium lagabriellei* Gourmelon, *Archocyrtium pulchrum* Braun, *Archocyrtium venustum* Cheng, *Astroentactinia biaciculata* Nazarov, *Astroentactinia digitosa* Braun, *Astroentactinia mirousi* Gourmelon, *Astroentactinia multispinosa* Won, *Astroentactinia stellaesimilis* Won, *Belowea hexaculeata* Won, *Belowea variabilis* Ormiston & Lane, *Ceratoikiscum berggreni* Gourmelon, *Palaeoscenidium cladophorum* Deflandre *Pylentonema antiqua* Deflandre *Stigmosphaerostylus brilonensis* (Won), *Stigmosphaerostylus tortispina* (Ormiston & Lane), *Stigmosphaerostylus variospina* (Won), *Stigmosphaerostylus vulgaris* (Won), *Trilonche altasulcata* (Won), and *Triaenosphaera* sp. Thirty radiolarian taxa were identifie from the chert block in Langkap i.e. *Albaillella cornuta* Deflandre *Albaillella defland ei* Gourmelon, *Albaillella paradoxa* Deflandre *Albaillella undulata* Deflandre *Archocyrtium clinoceros* Deflandre *Archocyrtium ludicrum* Deflandre *Archocyrtium lagabriellei* Gourmelon, *Archocyrtium pulchrum* Braun, *Archocyrtium strictum* Deflandre *Archocyrtium* cf. *ferrum* Braun, *Archocyrtium* sp. A, *Archocyrtium* sp. B, *Astroentactinia multispinosa* Won, *Astroentactinia biaciculata* Nazarov, *Belowea* sp. *Callella* cf. *conispinosa* Won, *Callella* sp*., Callella parvispinosa* Won, *Ceratoikiscum avimexpectans* Deflandre *Ceratoikiscum berggreni* Gourmelon, *Ceratoiciskum umbraculum* Won, *Ceratoiciskum* sp., *Cerarchocyrtium singulum* Cheng, *Cystisphaeractinium mendax* Deflandre *Cystisphaeractinium* sp. A, *Cystisphaeractinium* sp. B, *Entactinia digitosa* Braun, *Entactinia vulgaris* Won, *Entactinosphaera palimbola* Foreman, *Huasha* sp, *Polyentactinia polygonia* Foreman, *Pylentonema* sp*., Robotium* sp., and *Triaenosphaera sicarius* Deflandre The radiolarians from these localities exhibit different specifi diversity which was related to the different type of environments. The relatively shallow water environment is characterized by low diversity and is dominated by *Stigmosphaerostylus variospina* (Won) and *Calella* sp. The deeper water is characterized by high specifi diversity and dominated by *Albaillella* association. Early Carboniferous was considered as a part of an ice-house period. During the Tournaisian there was a hypersiliceous event where the radiolarian productivity was very high. The high radiolarian productivity during this time suggests that the water mass was very rich in nutrient and siliceous material. This event was probably related to the upwelling currents which brought nutrient-rich bottom water to the surface. The widespread radiolarian bearing chert can be used as a marker bed for stratigraphic correlation in Peninsular Malaysia.

Warta Geologi (Newsletter of the Geological Society of Malaysia), Vol. 36, No. 2, April-June 2010