



MYANMAR GEOSCIENCES SOCIETY

FIFTEENTH PAPER READING SESSION

ABSTRACT VOLUME

24 July 2011

Seminar Room

MES Building

Hlaing Universities Campus

(See the program on back cover)

On the Age of SALINGYI LIMESTONE and Part of Tertiary Basement

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A study of foraminiferal fossils from the Salingyi area was undertaken based on the limestones. The limestones contain rich larger foraminifera. Present research has recorded eleven foraminifera species. Study of these foraminifera species together with analysis of embryonic apparatus of *Lepidocyclina* indicate that the limestone units of the Salingyi area are assigned to Upper Oligocene (Chattian) in the light of foraminiferal evidence.

The Age, Correlation and Foraminiferal Biostratigraphy of the Thayetmyo-Tondaung (Lime Hill) area

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A study of foraminiferal Biostratigraphy of the Thayetmyo Tondaung (Lime Hill) area was carried out based on thirty six samples which were collected from the main Quarries. The Tondaung area is situated about four miles southwest of Thayetmyo. The stratigraphic units exposed in the Tondaung Quarries are composed mainly of limestones interbedded with clays, shales, and marls, all of which have been assigned to the Okhmintaung Formation. The limestones are thin-bedded to thick-bedded, fine- to coarse-grained, creamy coloured compact and fairly hard, interbedded with light bluish gray clays and shales and also some marls. The clays and shales are fairly compact, fairly soft and greasy in appearance. Both the limestone and clay and shale are endowed with very rich foraminiferal fossils. Recent study has shown that there are one hundred and twenty seven species in the sediments, among which fifteen species are planktonics and about ten species are larger foraminifera, and the rest are made up of hyaline and arenaceous smaller foraminiferal species. The age of the Tondaung units has been assigned to the upper part of Middle Oligocene to lower Late Oligocene (i.e. Rupelian to Chattian).

The foraminiferal biostratigraphy of the Tondaung units has been established in the following zones:

<u>Serial No.</u>	<u>Biostratigraphic zones</u>	<u>Geological Age</u>
2.	<i>Globigerina ciperensis</i> / <i>Globigerina angulisuturalis</i> Zone	Late Oligocene
1.	<i>Globorotalia opima opima</i> Zone	Middle Oligocene

Attempt has been made to correlate Tondaung fauna with not only the local Myanmar fauna but also those of the interregionally established zones.

Geology of Pharkant, Lonekhin and Tawmaw Areas, Myitkyina District, Kachin State

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The study area is situated in Pharkant Township, Myitkyina District, Kachin State. It is bounded by latitudes 25.54° to 25.74° N and longitude 96.22° to 96.37° E in one inch topographic map numbers 92 C/2 and C/6. The total area coverage is about 234 square kilometres.

The major rock units of the study area are serpentinitized peridotite (serpentinite and shear serpentinite), oxidized siliceous breccias, agglomerate and iron ore deposits, schists (muscovite-epidote-schist, kyanite-muscovite-epidote schist and garnet-muscovite schist), jadeite-albite-amphibolite rocks, *Orbitolina* limestone, Irrawaddy Formation (Namting Series, named by Chhibber – 1934) and Uru Boulder Conglomerate unit. The limestone unit of the research area is *Orbitolina* bearing of Middle Cretaceous (Cenomanian) age. The schist unit is related to the tectonic lineaments. The serpentinitized peridotite bodies are bounded by step and straight like tectonic contacts and intruded into schist unit. These serpentinite (altered from peridotite) is host rock of jadeite-albite dike or vein. Moreover, it occurs as the bedrock of jadeite bearing conglomerate bed.

Occurrences of Kyanite and Associated Minerals in Southeast Ywathit Area, Mohnyin Township, Mohnyin District, Kachin State

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Ywathit area lies within the northern part of the Central Myanmar Basin and the western margin of the Sino-Burma Ranges. It is mountainous, rugged and undulated terrains in southeast part. These mountainous regions are western part of Katha-Gangaw Range. Metamorphic rocks are cropped out along stream sections of the mountainous region and namely Katha Metamorphics. Exposed rock units from limited area are mainly schists with quartzite including various metamorphic minerals such as kyanite, garnet, staurolite and sillimanite.

Quartzites are the host rock of kyanite but some are present in schist. Kyanite is associated with metamorphic minerals such as garnet, staurolite and sillimanite which are recognized in the various units of the study area. Large crystals of almandines are found in primary and residual soil but most are highly weathered. Almandines that are found in residual soil show beautiful rhomb-dodecahedron crystals. Kyanite and almandine are also found as interlocking crystals or as parallel growing crystals in the study area.

Beautiful deep blue colour kyanites of the study area are economically important and famous as Mohnyin Nilar. They are extracted from primary as well as secondary deposits. In primary deposits, gem quality blue kyanites are found in quartzite. As second deposit, it is found in the streams such as Pha-lakha Chaung and Kha-ram Chaung where local people work for gemstones from alluvial deposits derived from certain schists. Nowadays, commercial mining worksites are absent. The natives search gemstones mostly along the streams.

Keywords: Central Myanmar Basin, Sino-Burma Ranges, Katha Metamorphics, kyanite.

Alluvial Fans along the Sagaing Fault in Sagaing Township and Their Active Tectonic Significance

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North of Sagaing in Central Myanmar, the Upper Neogene alluvial fans are among the most striking geomorphic features around the Sagaing Fault, and they are broadly differentiated into two groups: the older fans (Lower Pleistocene) and the younger fans (Upper Pleistocene-Holocene). The present work studies the nature and development of both groups of alluvial fans, in order to document the tectonic activity of the Sagaing Fault. Depending on the local tectonic setting, processes of development of the alluvial fans along the Sagaing Fault within the study area can be classified into at least three categories, viz. (1) growth of fans where tectonic signatures, should they ever formed, are overwhelmed by rapid sedimentation, (2) uplifting of alluvial fans by the transpressional stresses related to strike-slip tectonics and (3) laterally displacing alluvial fans relative to their provenance areas by the dextral motion of the Sagaing Fault, with an average velocity of 15 mm yr^{-1} . It is concluded that Upper Neogene alluvial fans bear a valuable proxy record of the active tectonic activity of the Sagaing Fault.

Kew Words: Pleistocene, Holocene, alluvial fan, Sagaing Fault, Mezaligyauung Fanglomerate, sediment-gravity flows, debris flows, fanglomerate, provenance area, Sagaing Metamorphics, Irrawaddy Formation, bajada, right-lateral offset

Paleobathymetry of the Pyawbwe Formation, Paukkhaung Area

Soe Moe Lwin

The study area is located between latitudes 18° 67' N - 19° 2' N and longitude 95° 39' E - 95° 45' E covering an area of 25 square miles (4 square kilometre) in the one inch topographic maps 85 M/12 and N/9. The Pyawbwe Formation, the oldest unit in the study area, is mainly made up of nodular, gray shales and clays with some sandstone interbeds and it is overlying unconformably the Kyaukkok Formation. A total of 43 shale samples were taken from the study area and they were processed in the laboratory to extract foraminiferal fossils. A total of 87 foraminiferal species under 36 genera belonging to 31 families were identified. The paleobathymetry and paleoenvironment of Pyawbwe Formation is interpreted based on (i) the species diversity and population, (ii) the ratio of benthonic species and planktonic species, (iii) the nature of morphotypes and (iv) the chemical compositions of the sediment from the XRF results. Therefore, the Pyawbwe Formation was considered to be deposited from shallow marine to deep marine. The vertical sequence of Pyawbwe Formation in the study area was interpreted as transgressive sequence in the lower part and the regressive sequence in the middle and upper parts.

Keywords: Pyawbwe Formation, paleobathymetry and paleoenvironment, shallow marine, deep marine, transgressive, regressive.

Notes

Notes

15th PAPER READING SESSION

(with an Invited Lecture)

PROGRAMME

Sr.	Title and Author(s)	@
1.	Opening Address by MGS President	0900
2.	On the Age of Salingyi Limestone and part of Tertiary basement <i>(Htun Nyunt Oo and Than Htut)</i>	0915
3.	The age, correlation and foraminiferal biostratigraphy of the Thayetmyo-Tondaung (Lime Hill) area <i>(Chit Saing and Kyin Saw)</i> (1015 – 1045 Coffee Break)	0945
4.	Geology of Pharkant, Lonekhin and Tawmaw Areas, Myitkyina District, Kachin State <i>(Khaing Nyein Htay)</i>	1045
5.	Occurrences of Kyanite and Associated Minerals in Southeast Ywathit Area, Mohnyin Township, Mohnyin District, Kachin State <i>(Wai Yan Lai Aung)</i> (1145 – 1300 Lunch Break)	1115
6.	Alluvial Fans along the Sagaing Fault in Sagaing Township and their active tectonic significance <i>(Myint Thein)</i>	1300
7.	Paleobathymetry of the Pyawbwe Formation, Paukkhaung Area <i>(Soe Moe Lwin)</i> (1400 – 1430 Coffee Break)	1330
8.	A Life of Geologist and the Oil and Gas Industry in Alberta, Canada (<i>Invited Lecture</i>) <i>(Dr. Myo Myint, Consultant Geologist, Canada)</i>	1430