



First Circular

UNESCO Project IGCP-700

PALAEOZOIC CARBONATE BUILD-UPS IN SOUTH EAST ASIA

(Year 3: Meeting + fieldtrip training for students/academics and young scientists on Sibumasu Palaeozoic carbonate build-ups, fossils and palaeoenvironments in Southern Thailand and Northern Malaysia)

25th - 30th September 2023

Meeting at Blusotel Ao Nang Beach, Krabi

THAILAND



Website IGCP-700

Hybrid meeting (in-person and online)

IGCP-700
PALAEOZOIC CARBONATE BUILD-UPS IN SOUTH EAST ASIA

Organized by

Maharakham University, THAILAND
Department of Mineral Resources, THAILAND
Universiti Teknologi Petronas, MALAYSIA
Nanjing Institute of Geology and Palaeontology, Chinese Academy of Sciences, CHINA
Seckenberg Research Institute and Natural History Museum, Frankfurt, GERMANY

In cooperation with

Geological Society of Thailand
Union of Geological Sciences (VUGS), VIETNAM
Department of Geotechnology, Khon Kaen University, THAILAND
Department of Geological Science, Chiang Mai University, THAILAND
Department of Geology, Chulalongkorn University, THAILAND
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Scientific committee

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| Prof. Clive Burrett | Assoc. Prof. Mongkol Udchachon |
| Prof. Chen Jitao, | Prof. Steve Kershaw |
| Assist. Prof. Halay Tsegab Gebretsadik | Dr. Peter Königshof |
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Last year achievements of the IGCP-700

From 13th to 16th December 2021, an inaugural conference meeting of the project was held in NE Thailand. Initiation of the project was delayed due to substantial domestic travel restrictions due to Covid-19. This very successful hybrid conference was both online and in-person with 19 presentations on the first day and was followed by two days examining and discussing outcrops in the Loei fold belt. The main thrust of the inaugural meeting was to introduce Thailand-based geologists to carbonate geology. IGCP project 700 is the first IGCP project to cover carbonate studies and a major focus of the inaugural meeting was to introduce Thai geologists to carbonate sedimentology, structure and palaeontology.

From 22nd - 25th August 2022, we organized the Year 2: Meeting (hybrid) + fieldtrip training for students/academics and young geoscientists on Palaeozoic carbonate build-ups in Central Thailand, after a one-day meeting, a fieldtrip was conducted along the Phetchabun fold belt in Central Thailand



from Phetchabun in the north to Lopburi, Saraburi and nearby areas in the south visiting the late Palaeozoic carbonate sequences build-ups and fossils. This trip includes a field carbonate training/workshop led by prominent carbonate workers from the developed world (both in-person and online). The course includes basic concept and application for both academic knowledge and economic benefit for students/academics and geoscientists on Carbonate sedimentology, Carbonate depositional environments, Palaeontology and biostratigraphy, Regional stratigraphic correlation, mapping of the carbonate sequences in SE ASIA and Education for the general public and geoparks.

Numbers of international and national networks for IGCP700 have been conducted and maintained. For year 2 meeting, we have cooperated with senior scientists from several countries and they are keen to support academically to our young participants. These senior scientists help talks on several topics and they include Prof Dr Stephen Kershaw, Brunel University, London, Prof Dr Xiaochi Jin, Institute of Geology, Chinese Academy of Geological Sciences, Dr Moyra Wilson, University of Western Australia, Dr Pol Chaodumrong, Department of Mineral Resources, Bangkok, Dr Christopher K. Morley, Retired Geophysicist (PTTEP), based at Devon, U.K., and Prof Dr Clive Burrett, Mahasarakham University. For year 3 meeting, we will announce the keynote speakers in the next announcement.

Although carbonates cover a very significant area of SE Asia, carbonate studies are rarely taught at Thai universities at other than an elementary level. These lectures, hand specimens and outcrop demonstrations were valuable in introducing the numerous junior participants to details of carbonate studies and we hope that this IGCP project will encourage them to engage in further academic or applied studies.

Background

The study of limestones, particularly reef limestones requires bridging across disciplines and timescales in a comparative approach leading to the recognition of trends and patterns. Understanding of ecological changes of ancient reefs is also crucial to evaluate threats to modern coral reefs. The aims of the project are to integrate and synthesise information on Palaeozoic carbonate build-ups throughout South East Asia. Research will focus on the growth and demise of carbonate platforms, the distribution and geometry of build-ups, climate change vs. reef development, and framework-builder diversification in the Palaeozoic. Facies settings of interest will range from seamount carbonates to supratidal and shallow-subtidal environments. We will also address the economic potential of carbonates and thus the planned conference will be of interest for scientists as well as decision makers, politicians, and companies. Carbonates, particularly caves are very attractive for the general public, therefore we foster collaboration with geoparks and national parks.

Limestones are well-known in SE Asia both in Indochina and Sibumasu terranes as extremely attractive karst areas for instance Ha Long Bay in the World Heritage area of Vietnam, that pure limestones are also designed to be used for food production, beverage industries and much more, in Krabi and Phang Nga in Thailand, in the UNESCO Geoparks in Langkawi, Satun and Dong Van (Malaysia, Thailand and Vietnam, respectively) and in the Kinta Valley (Malaysia) and Khammouane and Vang Vieng areas of Lao PDR. Apart from scenic beauty, all these areas and many more have caves that are both aesthetically attractive and have considerable actual and potential for palaeontological, palaeoclimatic, archaeological, historical and biological research. Limestones are also sites of large cement works and many karst areas are being or potentially will be destroyed by quarrying for cement (Kiernan, 2010). One aim of this project is to map areas of suitable quality limestone distant from tourist areas in order to help avoid conflict between the two important industries: tourism and construction. Limestone is important economically as host to very important mineral deposits (e.g. Devonian limestone of the Sepon copper-gold mine in Lao PDR, (Thassanapak et al., 2017) and to important petroleum accumulations such as the Permian limestone of North East Thailand (Booth and Sattayarak, 2011).

Limestones are scientifically important as they are important archives of palaeoclimatic and palaeoceanographic data, of palaeodiversity and as palaeogeographic features. South East Asia



contains not only ancient tropical limestones but also cold-water limestones (e.g. early Permian limestones in Malaysia and Thailand (Rao, 1996; Thassanapak et al., 2019). Platform limestones of various ages are widespread across South East Asia and occur in a variety of tectonic environments (e.g. Udchachon et al., 2013). How they accumulated and the controls from tectonic, biotic and palaeoclimatic factors are amongst the academic aims of this project. How the widespread platforms grew, laterally and vertically, how the carbonate factories kept-up with subsidence and the mystery of carbonate platform demise (Wilson et al., 2019) will be important considerations. These also have significant economic implications as platform growth and their palaeogeographic setting controls primary porosity and hence petroleum reservoir formation (e.g., Saw et al., 2019).

Important time

May 2023 – Open for registration and abstract submission (please visit website for online registration)

30th August 2023 – Deadline for abstract submission

5th September 2023 – Online registration and bank transfer close/ Final circular distribution

25th September 2023 – Meeting at Blusotel Ao Nang Beach, Krabi, Thailand

26th-30th September 2023 – Fieldtrip in Southern Thailand and Northern Malaysia

Sponsors

IGCP-700 is also seeking sponsoring agencies/companies to help support the meeting especially for students

To support the IGCP-700 meeting or student registration, please contact us.

Registration

Conference registration fee (free on-line meeting)

Professional 250 USD On-site registration 280 USD

Student 100 USD

(student needs support please contact us)

Fieldtrip/workshop fee (including transportation, accommodation, meal, guidebook) 280 USD

Preliminary Programme

24th September 2023 - Arrival of participants/ desk registration at Blusotel, Ao Nang, Krabi Province, Southern Thailand

25th September 2023 **IGCP-700 Annual Meeting**

Morning session:

- Desk registration
- Plenary (+virtual) presentation by guest speakers
- Oral presentation

Afternoon session:

- Oral presentation
- Poster presentation
- Welcome dinner

26th September 2023 - Basal Kungurian and younger Permian carbonates, limestone cave and fossils in Krabi and nearby areas

27th September 2023 - Travel to Satun and fieldtrip/workshop on Palaeozoic carbonate development, Middle Devonian coral-stromatoporoid reef, Ordovician stromatolite, build-ups and fossils in Satun UNESCO Geopark, southern Thailand

28th September 2023 - Fieldtrip/workshop on Palaeozoic stratigraphy, build-ups and fossils in Satun UNESCO Geopark, southern Thailand (then



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| | travel across the Thai-Malay border; Wang Prachan Boundary Post) |
| 29th September 2023 | Fieldtrip/workshop on stratigraphy and carbonate development and visiting Ordovician build-ups and other sections in northern Malaysia |
| 30th September 2023 | - Travel across the border to Thailand - Regional correlation and synthesis - Conclusion of the meeting |

Location of major field activities

After a one-day meeting, a fieldtrip has been planned along the Sibumasu terrane in Southern Thailand from Krabi in the north to Satun and Malaysia in the south visiting the Palaeozoic stratigraphy, carbonate sequences, build-ups and fossils. This trip includes a field carbonate training/workshop led by prominent carbonate workers from the developed world. The course includes basic concept and application for both academic knowledge and economic benefit for students/academics and geoscientists on

1. Carbonate sedimentology and depositional environments
2. Palaeontology and biostratigraphy
3. Regional stratigraphic correlation and mapping of the carbonate sequences in SE ASIA
4. Geopark and education

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