

แบบเสนอโครงการหนึ่งอาจารย์หนึ่งผลงาน
ประจำปี 2550

ชื่อโครงการ: A study of Jurassic-Cretaceous plants from Northeastern Thailand

ผู้เสนอ: Dr. Paul J. Grote

สาขาวิชา: Biology

สำนักวิชา: Science

ลักษณะโครงการโดยสังเขป: Although many animal fossils from Cretaceous and Jurassic deposits in Northeastern Thailand have been studied, fewer studies have been made of plant fossils. The plant fossils that have been studied are mostly specimens of fossilized wood. The objective of this research is to collect and study plant fossils, including wood, leaves, and pollen from Late Jurassic- Early Cretaceous deposits in Northeastern Thailand.

กลุ่มเป้าหมาย: Biologists, geologists, and others interested in past life and climates in Asia

ระยะเวลาดำเนินการ: One year (January-December, 2007)

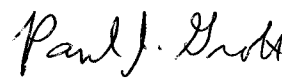
ขั้นตอนการดำเนินการ

- 1) Fossils, including wood, leaves, and pollen, will be collected from deposits in the Phu Kradung Formation in Northeastern Thailand.
- 2) The fossils will be studied at SUT and compared with modern plants and other plant fossils.
- 3) The results will be analyzed to make conclusions about the composition of forests in the past and about past climates.
- 4) An oral presentation will be given at an international meeting.

ประโยชน์จากโครงการ: The study of plant fossils from the Jurassic-Cretaceous in Northeastern Thailand will provide evidence as to the types of plants, ecosystems, and climates present during this time period.

ดัชนีวัดความสำเร็จ:

The results of this research will be presented as an oral presentation at an international meeting.


(ลงนาม)

วันที่

หมายเหตุ : - โครงการร่วมหลายอาจารย์โปรดแนบรายละเอียดการแบ่งงานและหน้าที่รับผิดชอบ
- โครงการใช้เวลาดำเนินงานเกิน 1 ปี ให้แนบรายละเอียดแผนงานในแต่ละปี

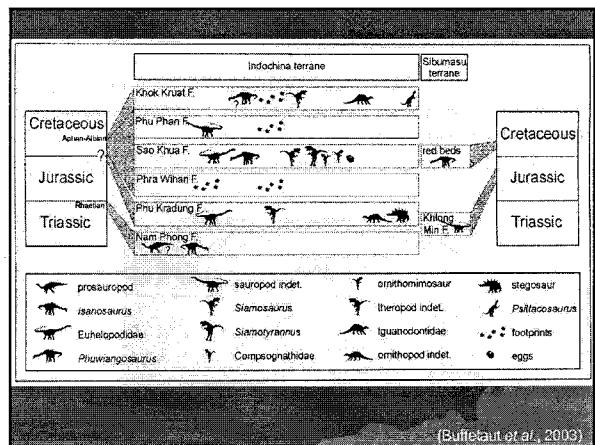
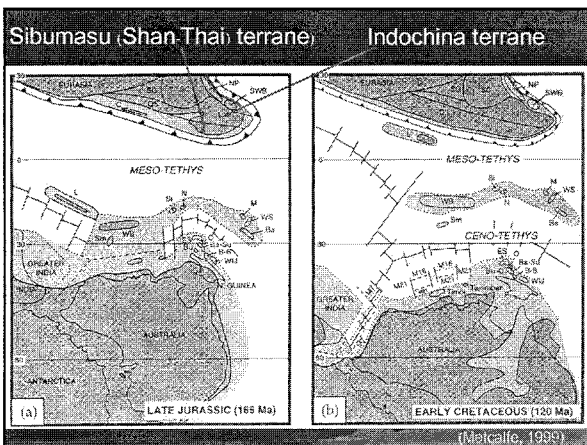
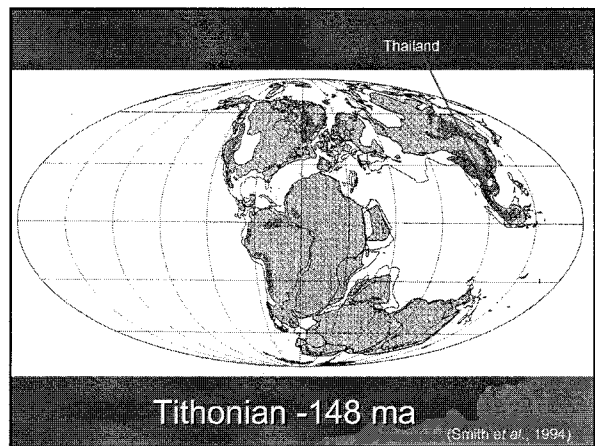
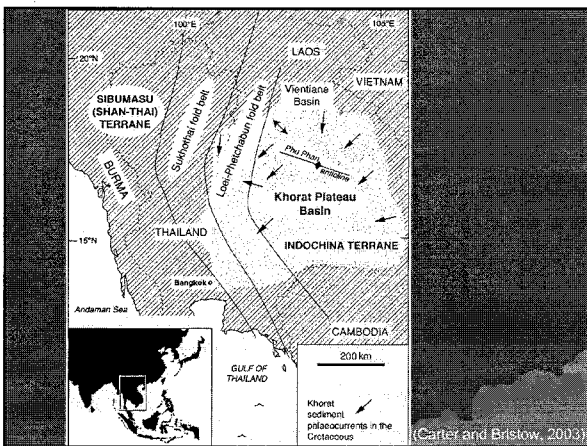
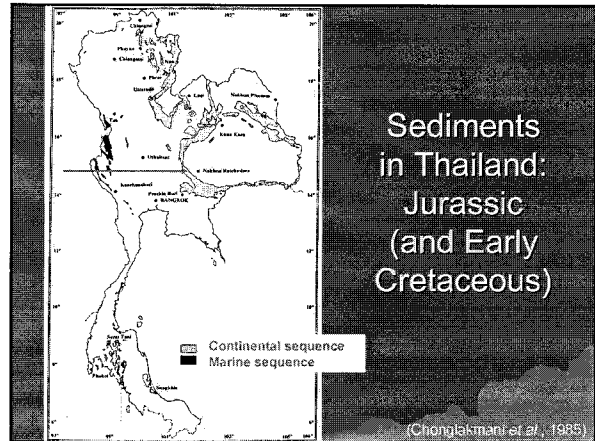
Floras from the Late Jurassic of Northeastern Thailand

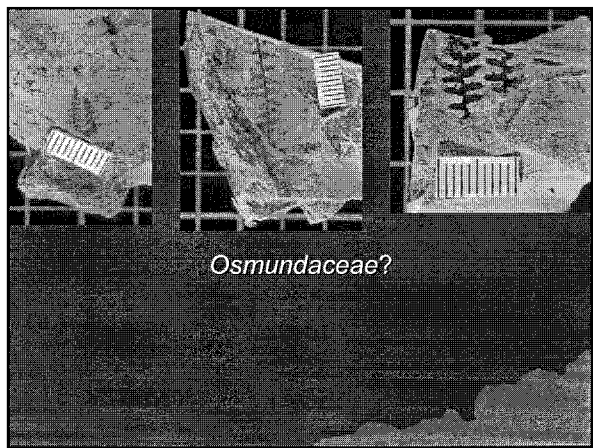
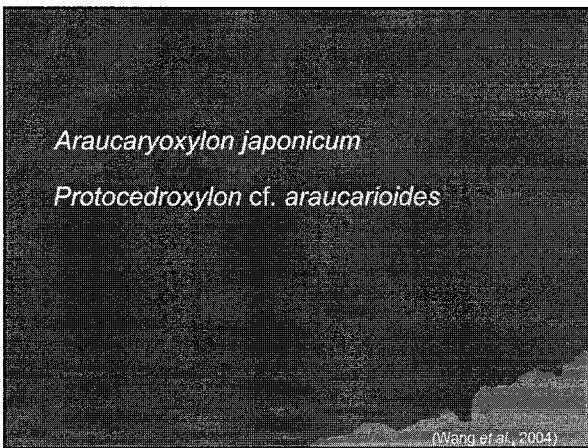
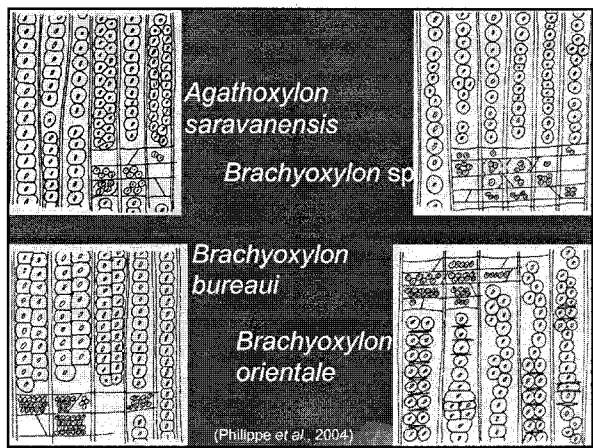
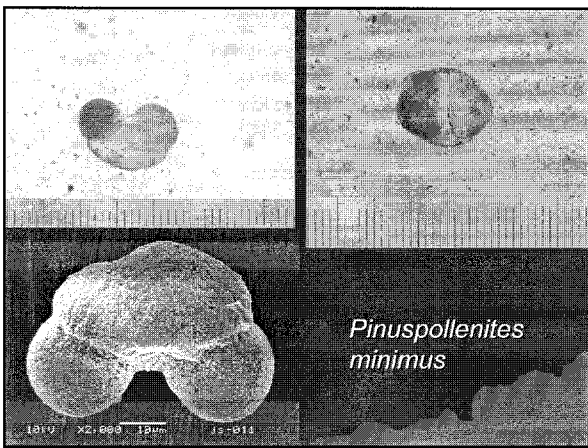
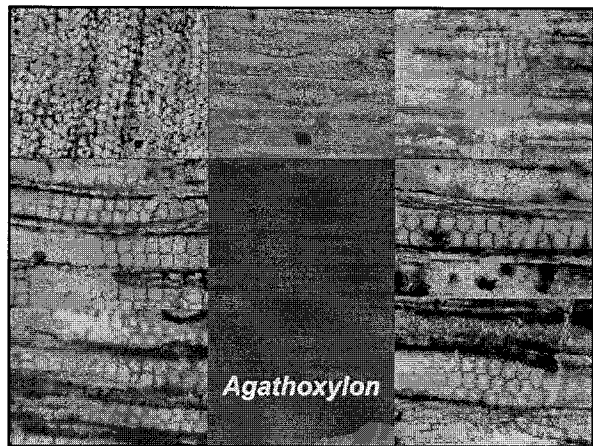
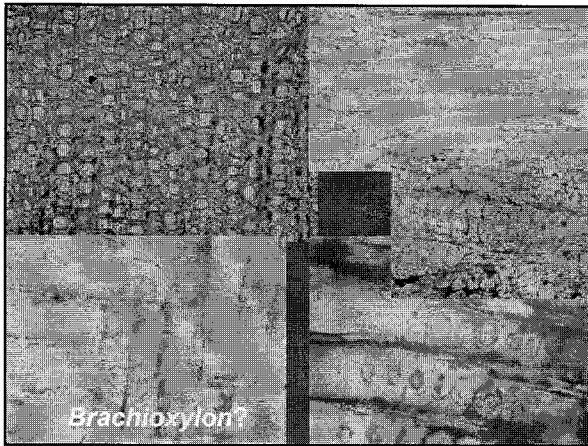
Paul J. Grote, School of Biology, Institute of Science, Suranaree University of Technology, Nakhon Ratchasima 30000 Thailand; paul@sut.ac.th

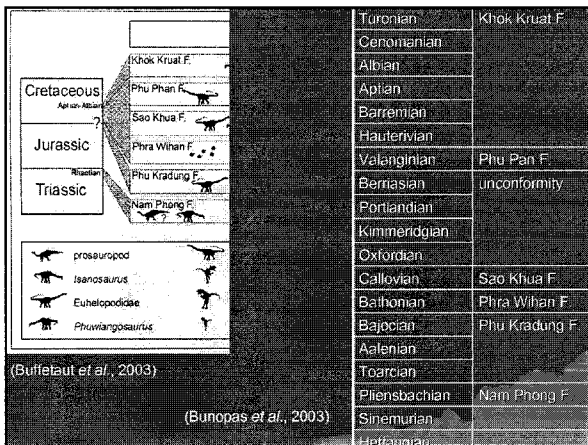
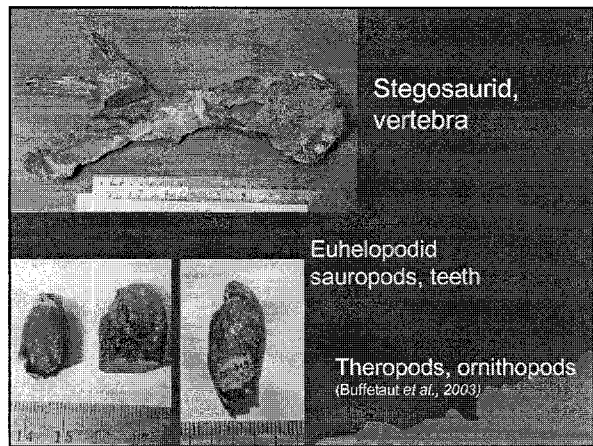
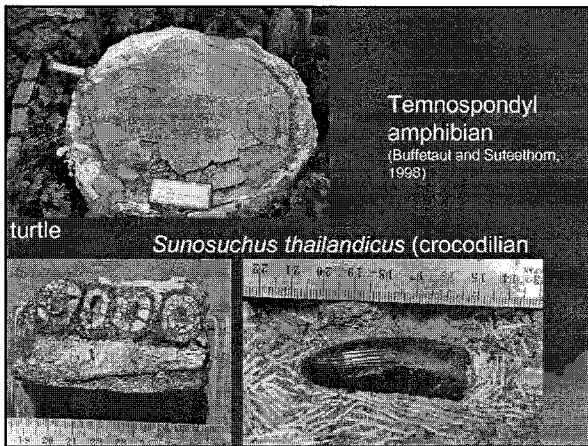
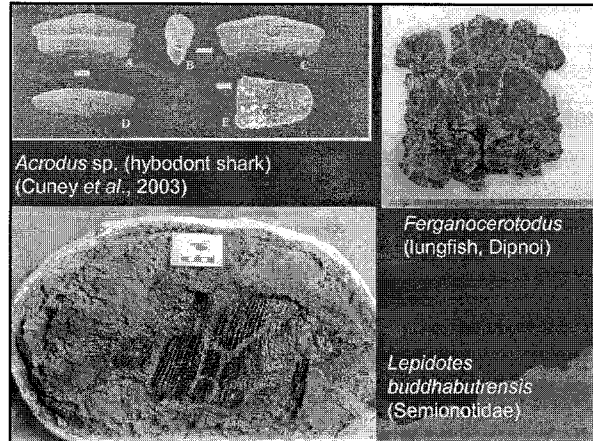
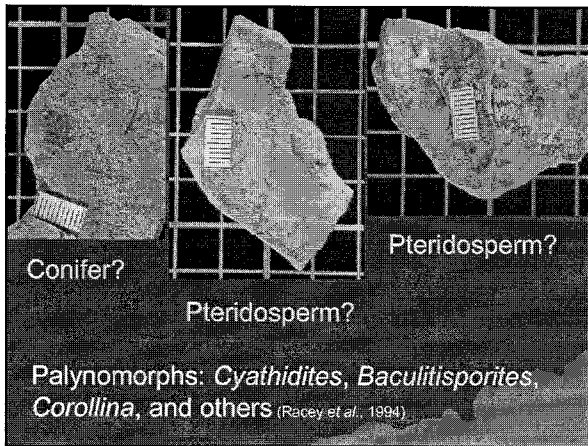
Non-marine Jurassic outcrops occur predominantly in northeastern, but also in northern, eastern, and southern Thailand. In the northeast, the Phu Kradung Formation is considered to be Late Jurassic or possibly Early Cretaceous in age. Although animal fossils from this formation have been rather extensively collected and studied, fewer plant remains have been studied. A large silicified trunk of *Araucaryoxylon* sp. (= *Agathoxylon* sp.) was described by Srisuk in 2000. Four species of conifer wood were described by Philippe et al. in 2004: *Agathoxylon saravanensis*, *Brachyoxylon boureaui*, *B. orientale*, and *B. sp.* Wang and colleagues in 2004 reported wood of *Araucaryoxylon* and *Protocedroxylon*. Additional fossils have been collected of fragments of fern fronds, a conifer twig, and possible pteridosperm reproductive structures. Palynomorphs, including *Cyathidites*, *Baculatisporites*, and *Corollina*, were reported by Racey and colleagues in 2004. To increase the knowledge of Jurassic plants, additional fossils, including silicified wood, were collected from Nakhon Ratchasima province in the southern part of Northeast Thailand. The wood was found to comprise at least two types of conifers. The first type has uniseriate rays composed of parenchyma and reaching a height of at least 17 cells. The radial pitting on the tracheids is mostly uniseriate with contiguous or slightly separated rounded bordered pits. Some radial pitting is biseriate for part of the length of the tracheid with opposite or subopposite pits. The crossfields appear to bear up to approximately 6 small pits. This wood type is thought to have affinity with *Brachyoxylon*. The second wood type has uniseriate parenchymatous rays. The pitting of the radial wall of the tracheids is variable. Most tracheids have two rows of alternately arranged pits that are rounded or polygonal, although some have three rows. Some tracheids have two rows of opposite squarish pits, and others have single rows of rounded contiguous or slightly separated pits or compressed pits. Pits were not observed in the crossfields. This wood type can be placed into *Agathoxylon*. Lack of clear annual rings in the wood specimens suggests a climate without strong seasonal variation.

Floras from the Late Jurassic of Northeastern Thailand

Paul J. Grote
 School of Biology, Institute of Science
 Suranaree University of Technology
 Nakhon Ratchasima, Thailand







Ages

- ◆ Khok Kruat: Aptian – Albian (dinosaurs, freshwater sharks)
- ◆ Phu Pan: Norian – Cenomanian (palynoflora)
- ◆ Sao Khua: Late Jurassic – Early Cretaceous (palynoflora); Middle Jurassic (paleomagnetic data)
- ◆ Phra Wihan: Berriasian – Barremian (palynoflora); Early Cretaceous: fission track analysis

- ◆ Phu Kradung: Early Jurassic to Early Cretaceous (palynoflora); Early Cretaceous (fission track analysis)
- ◆ Nam Phong: Late Norian – Rhaetian (palynoflora)

Racey et al., 1994

Acknowledgements

- ◆ Varavudh Suteethorn and staff and students at Phu Kum Khao, Kalasin
- ◆ Wipanu Rugmai, Nareerat Boonchai, and Pratuang Jintasakul
- ◆ Suranaree University of Technology