THE STUDY OF THE BIODIVERSITY AND COMPARATIVE ANATOMY OF PETRIFIED WOOD IN THE AREA OF THE NORTHEASTERN RESEARCH INSTITUTE OF PETRIFIED WOOD AND MINERAL RESOURCES, THAILAND

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การศึกษาความหลากหลายทางชีวภาพและกายวิภาคศาสตร์เปรียบเทียบของไม้กลายเป็นหิน ในพื้นที่สถาบันวิจัยไม้กลายเป็นหินและทรัพยากรธรณี ภาคตะวันออกเฉียงเหนือ ประเทศไทย

นางสาวนารีรัตน์ บุญไชย

วิทยานิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปริญญาวิทยาศาสตรมหาบัณฑิต
สาขาวิชาชีววิทยาสิ่งแวดล้อม
มหาวิทยาลัยเทคโนโลยีสุรนารี
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THE STUDY OF THE BIODIVERSITY AND COMPARATIVE ANATOMY OF PETRIFIED WOOD IN THE AREA OF THE NORTHEASTERN RESEARCH INSTITUTE OF PETRIFIED WOOD AND MINERAL RESOURCES, THAILAND

Suranaree University of Technology has approved this thesis submitted in partial fulfillment of the requirements for a Master's Degree.

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นารีรัตน์ บุญไชย : การศึกษาความหลากหลายทางชีวภาพและกายวิภาคศาสตร์เปรียบเทียบของไม้กลายเป็นหิน ในพื้นที่สถาบันวิจัยไม้กลายเป็นหินและทรัพยากรธรณีภาคตะวันออกเฉียงเหนือ ประเทศไทย (THE STUDY OF THE BIODIVERSITY AND COMPARATIVE ANATOMY OF PETRIFIED WOOD IN THE AREA OF THE NORTHEASTERN RESEARCH INSTITUTE OF PETRIFIED WOOD AND MINERAL RESOURCES, THAILAND) อาจารย์ที่ปรึกษา : อาจารย์ ดร.พอล เจ โกรดิ, 235 หน้า

ผลการศึกษาไม้กลายเป็นหิน 23 ชิ้น จากบริเวณชั้นกรวดมหายุคซีโนโซอิกตอนปลาย ภายในพื้นที่สถาบันวิจัยไม้กลายเป็นหินและทรัพยากรธรณีภาคตะวันออกเฉียงเหนือ จังหวัดนครราชสีมา จำแนกได้เป็นพืชใบเลี้ยงคู่ อย่างน้อย 7 วงศ์ 10 สกุล 17 ชนิด รวมถึง cf. *Mangiferoxylon* sp. 1 and sp. 2, Anacardiaceae *gen. indet.* (Anacardiaceae), *Canarium* sp. (Burseraceae), *Terminalia* sp. vel *Combretum* sp., *Terminalia* sp. 1 and sp. 2 (Combretaceae), *Irvingia* sp. (Irvingiaceae), *Cynometroxylon holdeni*, *Cynometroxylon* sp., cf. *Cynometroxylon* sp. 1 and sp. 2, cf. *Millettia* sp. 1 and sp. 2 (Leguminosae), *Careya* sp. 1 and sp. 2 (Lecythidaceae), *Azadirachta* sp. (Meliaceae), and family *incertae sedis* พรรณไม้บรรพกาลที่หลากหลายมีความใกล้เคียงกับพรรณไม้ปัจจุบันที่พบอยู่ทั่วไปในป่าเบญจพรรณ ป่าเต็งรังและป่าดิบแล้ง แสดงถึงสภาพภูมิอากาศที่ร้อนชื้นสลับแล้ง (Aw) และร้อนชื้นแบบมรสุม (Am) เช่นเดียวกับสภาพภูมิอากาศในปัจจุบัน แต่มีความชื้นสูงกว่า ตะกอนที่พบไม้กลายเป็นหินเป็นลักษณะของตะกอนแม่น้ำแบบธารประสานสาย และท่อนไม้อาจถูกกระแสน้ำของแม่น้ำโบราณที่ไหลเชี่ยวพัดพามาตกจม และฝังตัวในบริเวณนี้

สาขาวิชาชีววิทยา
ปีการศึกษา 2551

ลายมือชื่อนักศึกษา _____
ลายมือชื่ออาจารย์ที่ปรึกษา _____
ลายมือชื่ออาจารย์ที่ปรึกษาร่วม _____
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NAREERAT BOONCHAI : THE STUDY OF THE BIODIVERSITY AND COMPARATIVE ANATOMY OF PETRIFIED WOOD IN THE AREA OF THE NORTHEASTERN RESEARCH INSTITUTE OF PETRIFIED WOOD AND MINERAL RESOURCES, THAILAND. THESIS ADVISOR : PAUL J. GROTE, Ph.D. 235 PP.

PETRIFIED WOOD/ BIODIVERSITY/ PALEOCLIMATE/ NAKHON RATCHASIMA/ NORTHEAST/ THAILAND

Twenty three specimens of petrified wood were collected from late Cenozoic gravel beds at the Northeastern Research Institute of Petrified Wood and Mineral Resources, Nakhon Ratchasima province, northeastern Thailand. They were assigned at least 17 species from 10 genera of 7 families of dicotyledons, including cf. *Mangiferoxylon* sp. 1 and sp. 2, Anacardiaceae *gen. indet.* (Anacardiaceae), *Canarium* sp. (Burseraceae), *Terminalia* sp. vel *Combretum* sp., *Terminalia* sp. 1 and sp. 2 (Combretaceae), *Irvingia* sp. (Irvingiaceae), *Cynometroxylon holdeni*, *Cynometroxylon* sp., cf. *Cynometroxylon* sp. 1 and sp. 2, cf. *Millettia* sp. 1 and sp. 2 (Leguminosae), *Careya* sp. 1 and sp. 2 (Lecythidaceae), *Azadirachta* sp. (Meliaceae), and family *incertae sedis*. The diverse paleoflora shows a close resemblance to the modern flora of mixed deciduous, dry dipterocarp, and dry evergreen forests, indicating that the paleoclimate was tropical wet and dry (Aw) and tropical monsoon (Am), corresponding to the present climate in the area but with higher humidity. The sediments show characters of a braided stream system, and the

logs were possibly transported by the strong water current and buried in an ancient river.

School of Biology

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Student's Signature _____

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Co-advisor's Signature _____

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Who would have expected me to dive into the world of fossils again?

Since I graduated B.Sc. with my project on vertebrate paleontology in 2003 and said, “I will not continue working with fossils anymore, because it is much too hot to do fieldwork in Thailand”. My mom always teased me while I was working on this thesis and often commented how difficult it was for me, cutting, polishing, and studying petrified wood. Ever since I was a child I have picked up some small pieces of wood-like stones from the ground while walking with my mom. I used to wonder how the wood could turn into stone, but I never thought that one day it would change my life and also become the title of my master’s degree study.

However, I have finally completed all this hard work, which makes me very happy. So I would like to express my sincere thanks to all the people who are behind my success. First of all, my thanks go to **my mom and dad** who have always stood beside me throughout my life. They have supported me in every way. They agreed to and inspired my paleontological study and even accompanied me in the field. I am also grateful to **my sister and brother** who care for and support me.

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He stimulated me to continue to study fossil wood for my master's degree, while letting me take a job during my study. Although these many jobs caused me to study for longer than I should have, I have learned many things from working with him.

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Nareerat Boonchai

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