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ธรณีวิทยาควอเทอร์นารีที่สัมพันธ์กับการสะสมตัวของแร่รัตนชาติในแอ่งบ่อพลอย
อำเภอบ่อพลอย จังหวัดกาญจนบุรี

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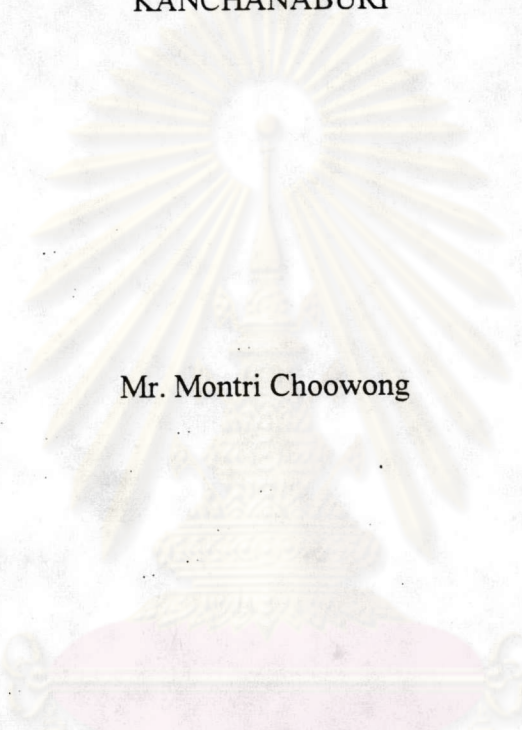
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QUATERNARY GEOLOGY RELATED TO GEMSTONE DEPOSIT IN
BO PHLOI BASIN, AMPHOE BO PHLOI, CHANGWAT
KANCHANABURI



Mr. Montri Choowong

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Basin, Amphoe Bo Phloi, Changwat Kanchanaburi
By Mr. Montri Choowong
Department Geology
Thesis Advisor Associate Professor Narong Thiramongkol, Ph.D.
Thesis Co-advisor Assistant Professor Thanawat Jarupongsakul, Ph.D.

Accepted by the Graduate School, Chulalongkorn University in Partial
Fulfillment of the requirements for the Master's Degree.

Sunti Thoongsuwan.....Dean of Graduate School
(Associate Professor Sunti Thoongsuwan, Ph.D.)

Thesis committee

Sompop Vedchakanjana.....Chairman
(Assistant Professor Sompop Vedchakanjana, M.Sc.)

N. Thiro.....Thesis Advisor
(Associate Professor Narong Thiramongkol, Ph.D.)

Thanawat Jarupongsakul.....Thesis Co-advisor
(Assistant Professor Thanawat Jarupongsakul, Ph.D.)

Payome Aranyakanon.....Member
(Payome Aranyakanon, Ph.D.)

พิมพ์ต้นฉบับบทคัดย่อวิทยานิพนธ์ภายในกรอบสี่เหลี่ยมนี้เพียงแผ่นเดียว

มนตรี ชวงษ์ : ธรณีวิทยาควอเทอร์นารีที่สัมพันธ์กับการสะสมตัวของแร่รัตนชาติในแอ่งบ่อพลอย อำเภอบ่อพลอย จังหวัดกาญจนบุรี (QUATERNARY GEOLOGY RELATED TO GEMSTONE DEPOSIT IN BO PHLOI BASIN, AMPHOE BO PHLOI, CHANGWAT KANCHANABURI) อ.ที่ปรึกษา : รศ.ดร.ณรงค์ ธีรมงคล ผศ.ดร.ธนวัฒน์ จารุพงษ์สกุล, 225 หน้า. ISBN 974-632-563-9

อำเภอบ่อพลอย จังหวัดกาญจนบุรี เป็นแหล่งพลอยไพไลที่มีชื่อเสียงมากแห่งหนึ่งของประเทศไทย การศึกษาในครั้งนี้มีจุดมุ่งหมายเพื่อ ศึกษาลักษณะตะกอนที่สะสมตัวในยุคควอเทอร์นารี สภาวะแวดล้อมของการสะสมตัวในอดีตและหินต้นกำเนิดพลอย และหาความสัมพันธ์ระหว่างลักษณะตะกอนกับการสะสมตัวของแร่รัตนชาติ และสุดท้ายเพื่อหาขอบเขตการกระจายตัวของแร่รัตนชาติ

ตะกอนที่ยังไม่แข็งตัวสามารถแบ่งโดยอาศัยโครงสร้างตะกอน และเนื้อตะกอนได้เป็น 8 lithofacies ได้แก่ massive gravels, foreset-bedded gravels, trough and wedge-shaped cross bedded sand, cross lamination sand, foreset laminated sands, planar stratified sand, horizontal laminated silt และ silty and muds.

จากสภาพธรณีสัณฐานวิทยา ลักษณะธรณีสัณฐาน ซึ่งประกอบด้วย ภูมิประเทศที่เป็น เขา ภูเขา และที่ราบ สามารถแบ่งออกได้เป็น 3 หน่วย คือ denudational, fluvial-colluvial และ fluvial

ผลของการศึกษาในครั้งนี้ สามารถสรุปได้ว่า การสะสมตัวของแร่รัตนชาติมีความสัมพันธ์โดยตรงกับธรณีสัณฐาน และตำแหน่งของการลำดับชั้นตะกอน พบว่า ลานตะพักลำน้ำขั้นต่ำและที่ราบน้ำท่วมถึง ได้รับการคาดหมายว่าเป็นธรณีสัณฐานที่เป็นแหล่งสะสมตัวของแร่รัตนชาติ โดยปกติแล้วแหล่งแร่รัตนชาติมักพบในชั้นกรวดและชั้นกรวดแนวลาด (foreset-bedded gravel) ยิ่งกว่านั้นหินบะซอลต์ เชื่อว่าเป็นหินต้นกำเนิดพลอยในพื้นที่ศึกษานี้ มีอายุตอนปลายไพลโอซีนและไพลโทให้เห็นในบริเวณเขาสันหม และห้วยน้ำพุ (ห้วยมะค่า) โดยสภาพธรณีสัณฐาน ชั้นการสะสมตัวของแร่รัตนชาติ และผลการหาอายุโดยวิธีคาร์บอน 14 สามารถสรุปได้ว่า ชั้นกะสะพลอยเกิดจากกระบวนการทำงานของทางน้ำในยุคควอเทอร์นารี พื้นที่การกระจายตัวของแร่รัตนชาติในชั้นกรวดอยู่ในทิศทางจากเหนือลงใต้ และครอบคลุมพื้นที่ประมาณ 100 ตารางกิโลเมตร

ศูนย์วิทยพัชกร
จุฬาลงกรณ์มหาวิทยาลัย

ภาควิชา ธรณีวิทยา
สาขาวิชา ธรณีวิทยา
ปีการศึกษา 2538

ลายมือชื่อนิสิต อนุชิต อนุชิต
ลายมือชื่ออาจารย์ที่ปรึกษา อนุชิต อนุชิต
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Bo Phloi district of Kanchanaburi province is one of the major famous source of blue sapphire in Thailand. It is thus the aim of this research is to study the characteristics of gemstone deposits, their paleoenvironment and source rocks and to investigate the relationship among the sedimentary characteristics, gemstone deposition and landforms of the area and finally the gemstone distribution will be delineated.

The unconsolidated deposits can be divided by its sedimentary structures and textures into eight lithofacies as massive gravels, foreset-bedded gravels, trough and wedge-shaped cross bedded sand, cross-lamination sand, foreset laminated sands, planar stratified sand, horizontal laminated silt, and silty and muds.

Geomorphologically, landforms in the study area, which consist of hilly and mountainous terrain and lowland area, can be divided into three main units as denudational, fluvial-colluvial and fluvial landforms.

From the results of this study, it can be concluded that gemstones are related directly to landforms and their stratigraphic position of the deposits. Low terrace and floodplain are found to be the gemstone depositional landforms. Gemstone paystreaks are normally found in the gravel bed and foreset-bedded gravels. Moreover, basalt is believed to be the main source of sapphire in this area. The age of the basalt is late Pliocene and crops out at Khao Lan Tom and Huai Nam Pu (Huai Ma Kah). Based on landforms, gemstone depositional deposits and carbon-14 dating, it can be concluded that gemstone paystreak developed by river processes during the Quaternary. The distributional area of gem-bearing gravel beds are delineated trending from the north to the south and covered about one hundred square kilometers.

ศูนย์วิทยทรัพยากร
จุฬาลงกรณ์มหาวิทยาลัย

ภาควิชา..... ธรณีวิทยา

สาขาวิชา..... ธรณีวิทยา

ปีการศึกษา..... 2538

ลายมือชื่อนิติ..... นริศ ฐอน

ลายมือชื่ออาจารย์ที่ปรึกษา..... นรงค์-ทาม

ลายมือชื่ออาจารย์ที่ปรึกษาร่วม..... นรงค์-ทาม



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ศูนย์วิทยทรัพยากร
จุฬาลงกรณ์มหาวิทยาลัย

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Glossary and Local Name

Local words which appear in this report were defined as follows :-

Local word	Synonymity
Amphoe	district, subdivision of province, secondary administrative centre
Ban	village, small community
Banka	percussion drilling by human force
Bung	large swamp
Changwat	provincial capital, city ; primary administrative centre
Huai	gully, creek
Khao	hill, isolated mountain
Khwae	stream, a principal tributary of a river
King Amphoe	group of village, larger than Tumbol but smaller than Amphoe
Krang	level of hard secondary sandy limestone
Paystreak	level of mining or level of gems
Lam	intermittent or perennial streams
Mae Nam	large river
Muang	town, city
Phloi	sapphire
Wat	monastery