

DRAINAGE SYSTEM OF INDAWGYI LAKE

Aye Aye Tun*

ABSTRACT

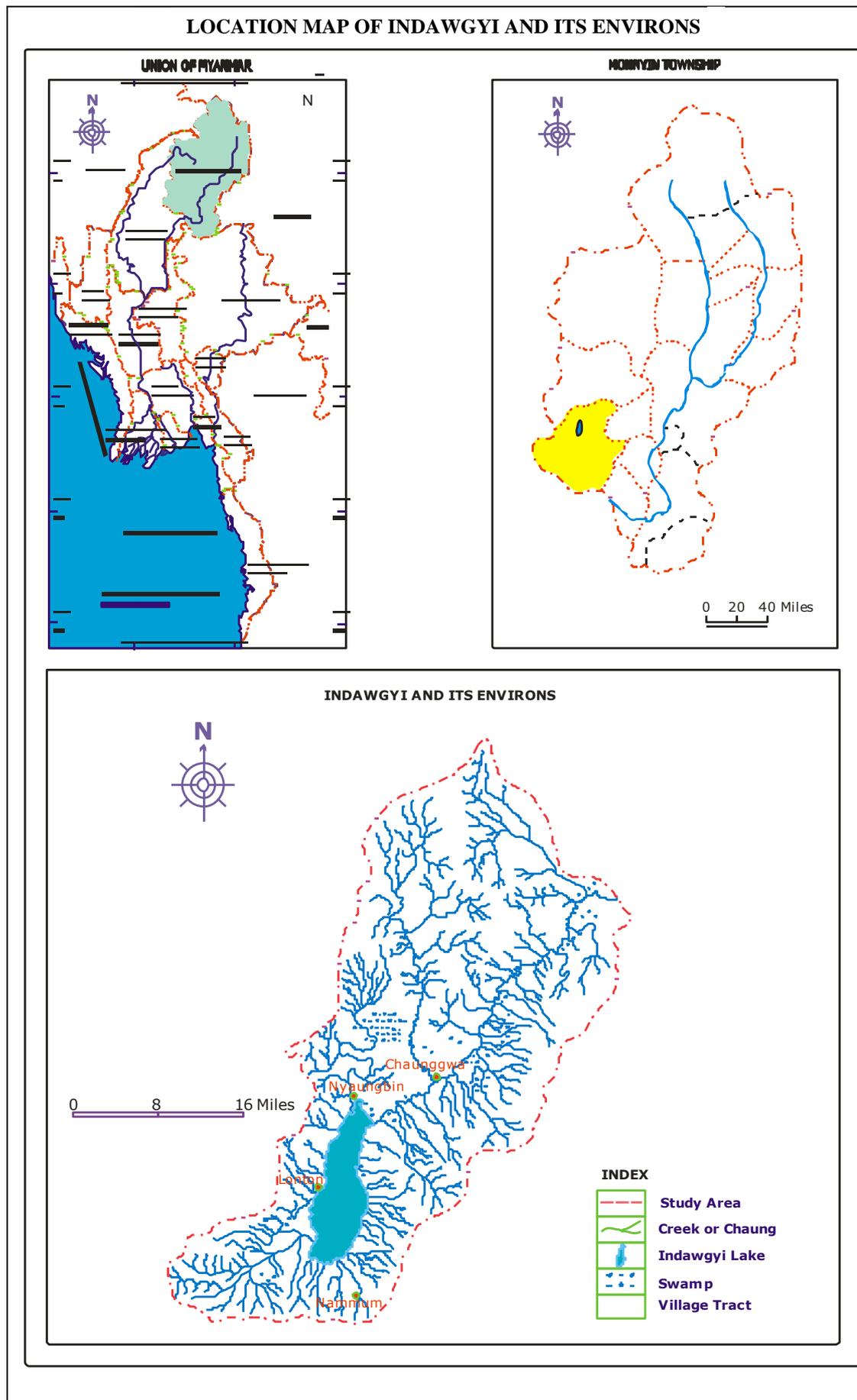
This paper presents the catchment's area of Indawgyi Lake and its tributaries. The study area is located in Mohnyin township, Kachin State. This area is analyzed by descriptive method. It's studied by the natural environment on the Indawgyi Lake and its environs.

INTRODUCTION

Indawgyi Lake, the largest lake in Myanmar, is situated in Mohnyin Township, Kachin State. The catchment's area of Indawgyi Lake lies between north latitude 25° 0' and 25° 45', and 96° 5' and 96° 44' east longitude. These areas are composed of 2013.86 acres or 314.67 area square mile. The Indawgyi region contains eleven village tracts, namely, Nammum, Mamonkaing, Lonton, Lwainmon, Nyaungbin, Lonsant, Maipok, Chaungwa, Panlap, Mapyin and Hepu village tracts. In the study area, the first seven village tracts are included in Indawgyi catchment's area (See- Map 1).

Indawgyi Lake is bounded in the west by the catchment's area of Uru river in Homalin and Kamai township, in the south by the catchment's area of Meza river in Mohnyin township, in the east by the eastern watershed of Namkin reserved forest in Mohnyin township, in the northeast by Mogaung chaung in Mogaung township and in the north by catchment's area of Uru river in Kamai township.

* Dr., Professor, Head of Department of Geography, Mohnyin Degree College



DRAINAGE SYSTEM OF INDAWGYI LAKE

I Drainage

The drainage system of Mohnyin Township is the detritic system but centripetal system can be found around the Indawgyi Lake (See-Map 2). Streams are short and swift, flowing down from the top of mountain during the rainy season. There are many streams in the Indawgyi Lake and its environs. It can be divided into two drainage systems; perennial streams and intermittent stream.

1.1 Perennial streams

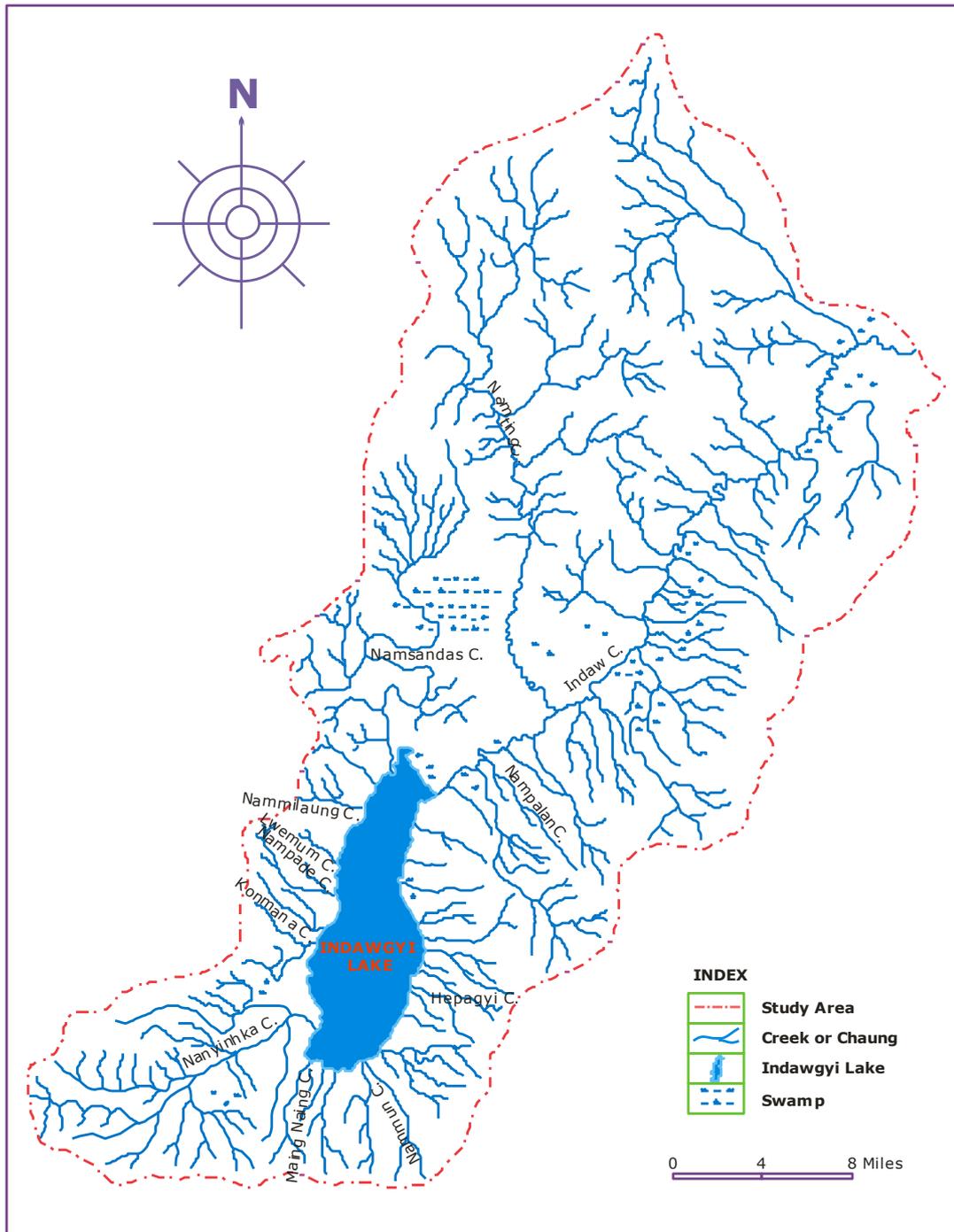
1.1.1 Lepon Chaung

Lepon Chaung takes its source from the area which is over 3000 feet above sea level and originates from the eastern part of the mountain or Indawgyi reserved forest. The headwaters of Lepon chaung drain as three streams-Lepon chaung , Hepaygi chaung (north latitude 25° 03' 501" and east longitude 96° 21' 597") and Hepalay chaung (north latitude 25° 03' 328"and east longitude 96° 21' 725"). Lepon chaung is the largest stream. During the three streams flow from east to west, the alluvial plain among Lepon chaung and Hepalay chaung and Hepaygi chaung has appeared and some places are associated with swamp. The three streams meet near Lepon village and it is also known as Lepon chaung and continues to west and enters Indawgyi Lake. In winter and summer, the Shan villagers and Kachin villagers irrigate water from the stream and grow Ya crop. The stream flows the whole season and it is known as a perennial stream. The length of Lepon chaung is 10 miles, 8 miles for Hepaygi chaung and 9 miles for Hepalay chaung .

1.1.2 Nammun Chaung

It lies at the point of north latitude 25° 00' 050" and 96° 21'702" east longitude. It is the second largest inlet stream in the Indawgyi Lake. It originates from the southern part of the mountain and it is over 3000' above sea level. Nammun chaung flows from south to north and it flows into Indawgyi Lake. The length

DRAINAGE PATTERN OF INDAWGYI LAKE



of the stream is 15 miles. While the stream flows to the north, it crosses the alluvial plain. In the winter, the water from the stream is irrigated to the farms to grow Ya crop. Near Nammum Village, the water is irrigated from the streams and used for hydroelectric power in a manageable scale. As the stream flows from Nammum Village to the mouth of Indawgyi Lake, the load is mostly deposited along the left and right side of the stream. There, an alluvial plain has appeared. At the mouth of Indawgyi Lake, the load is deposited down to the Lake. Nammum ones branches into small streams and enter the lake. It is known as braided stream (or) bird foot print drainage pattern. The stream flows as a perennial stream all the year round.

1.1.3 *Maingnaung Chaung*

It is the third largest inlet stream in the Indawgyi Lake. It lies at the point of north latitude $25^{\circ}3'988''$ and $96^{\circ}17'453''$ East longitude. It rises on the southwestern part of the mountain and flows from southwest to northeast. The length of the stream is 12 miles and enters the Indawgyi Lake. As the gold mining is being dug at the head of the stream, the color of the water is yellowish. It can be seen that the yellowish water and deposited load is now running into the stream, near Maingnaung village.

1.1.4 *Namyinkha Chaung*

It is the fourth largest inlet stream in the western part of Indawgyi Lake. The length of the stream is 13 miles and originates from the western part of the mountain which is built up of 2688 feet above sea level. *Namyinkha* stream flows from east to west. The small stream enters *Namyinkha chaung*, especially, *Naungpawng chaung* and *Lasaingkyu chaung*. It can be found between *Mamonkaing village* and *Lonton village*. It is a perennial stream.

1.1.5 *Namsanda Chaung*

It is the largest inlet stream in the Indawgyi Lake. It originates from the northern part of the mountain. The small streams surrounded by the mountains enter the Namsanda chaung. The stream flow from northern part of the mountain through Naungkwin into Indawgyi lake. In the rainy season, the headwater of the stream enters Naungkwin In. The middle course of the stream is under Naungkwin In. The lower course of the stream enters Indawgyi Lake, near Nyaungbin village. In the winter season, the water of Naungkwin In decreases and the swampy land appears in the lake. Nowadays, the length of Namsanda stream is 25 miles. It is a perennial stream. Namsanda chaung connects Naungkwin In and Indawgyi Lake. It can be considered that Naungkwin In was a part of Indawgyi Lake.

1.2 Intermittent Streams

1.2.1 *Namhkanhpan Chaung*

Namhkanhpan Chaung rises on the eastern part of the mountain which is built up of 3000 feet above sea level. It can be found at the northern part of Leponlay village. The length of the stream is 5 miles. The Namhkanhpan chaung flows from east to west and dries out in summer. It is known as an intermittent stream.

1.2.2 *Namtayin Chaung*

This stream has the source in the eastern part of the mountain or Indawgyi reserved forest. It can be found at the southern part of Hepu village. The length of the stream is 7 miles. It flows from east to west and enters the Indawgyi Lake. It is an intermittent stream.

1.2.3 *Hepu Chaung*

It originates its source from the eastern part of the mountain. Hepu chaung runs from east to west and enters Indawgyi Lake near Hepu village. The length of the stream is 8 miles. It is an intermittent stream.

1.2.4 *Lwein Chaung*

It rises on the eastern part of the mountain or Indawgyi reserved forest and runs from east to west. It can be found at the southern part of Natmaukkan village. The length of the stream is 9 miles and enters Indawgyi Lake. It is an intermittent stream. Mana chaung also enters Lwein chaung.

1.2.5 *Natmaukkan Chaung*

It lies at the point of north latitude 25 07' 706" and 96 22' 961" east longitude. It originates from the eastern part of the mountain. It runs from east to west and enters Indawgyi Lake. As Lewin chaung and Natmaukkan Chaung nearly parallel run at the mouth of the lake, the swampy land appears there. It is an intermittent stream.

1.2.6 *Shaukthi Chaung*

It can be found at the northern part of Natmaukkan village. It runs from east to west and enters Indawgyi Lake. It rises on the eastern part of the mountain. The length of the stream is 5 miles. It is an intermittent stream.

1.2.7 *Hkakyaing Chaung*

It originates from the eastern part of the mountain. It runs from east to west. Hkakyaing chaung can be found to be 2.5 miles away from Natmaukkan village. The stream runs across " *Phoneso* " land and enters Indawgyi Lake. It is an intermittent stream.

1.2.8 *Lonsan Chaung*

It is largest stream in the eastern part of the Lake. The length of the stream is 12 miles. It originates from southeastern part of the lake. It flows from southeast to northwest and enters Indawgyi Lake. It is an intermittent stream.

1.2.9 *Namkin Chaung*

Namkin chaung originates from the southern part of the mountain (or) *Maingnaung* reserved forest. It runs from north to south and enters Indawgyi Lake, near Onpankha village . Swampy Land can be found along the left and right sides of the stream and it is about two miles from the mouth of Indawgyi Lake.

1.2.10 *Hwehpase Chaung*

It originated from the western part of the mountain, near Hepan village. *Tonpye chaung* enters *Hwehpase chaung*. It runs from west to east near Nampaungzin village. At the mouth of Indawgyi Lake, the stream runs as a meandering stream, creating swampy land. It is an intermittent stream.

1.2.11 *Nammalaung Chaung*

It rises on the western part of the mountain.. The length of the stream is five miles and flows from east to west. The stream enters the Indawgyi Lake, near *Lonkaung* village. It is an intermittent stream.

1.2.12 *Nampade Chaung*

The stream lies at the point of north latitude 25° 09' 651" and 96° 17' 387" east longitude. It rises on the western part of the mountain and flows from west to east. Nampade chaung enter Indawgyi lake, near Nampade Ywama village. The length of the stream is 8 miles. It is an intermittent stream.

1.2.13 *Loimon Chaung*

It lies at the point of north latitude 25° 12' 87" and 96° 19' 536" east longitude. It originates from the western part of the mountain and flows from west to east, and enters Indawgyi Lake, near Namilong village. It is an intermittent stream.

1.2.14 *Aungywet Chaung*

It flows from south to north direction. At the point of north latitude 25° 13' and 96° 18' east longitude, the stream bends to the east, and enter Indawgyi Lake. Namkhokyin Chaung also enters to Aungywet Chaung. It is an intermittent stream.

1.2.15 *Namtaung Chaung*

It flows from north to south, and enters Indawgyi Lake. Today, Namtaung weir has been completed on the stream.

1.2.16 *Indaw Chaung*

Indaw chaung is the only outlet of Indawgyi Lake. It flows from the southwestern outlet of Indawgyi Lake to the northeast and enters Mogaung Chaung. It is a meandering stream, flowing through the plain area. It is about 25 miles long in Mohnyin Township. Swampy land can be largely found along the left and right sides of Indawgyi chaung. It can be considered that Indaw chaung was also a part of Indawgyi Lake.

Generally , Indaw chaung area, Naungkwin In and Indawgyi Lake were once a lake in these areas. During the Pleistocene period (25,000year), the sea level decreases four times in the geological scale. When the water retreats from the floated area, the Indaw chaung area remains with land mass. At the secondary stage, the Indawgyi Lake and Naungkwin In were once a lake during tectonic force, the Himalaya mountain building system, some landmass are to uplift and some landmass are depression. The small mountain uplifts between the Naungkwin In and Indawgyi Laked. It is known as Shwetaunggyi Mountains (1157').

Indawgyi Lake

Indawgyi Lake the largest inland lake in Myanmar or Southeast Asia, is situated in Mohnyin Township, Kachin State. It lies between 25 5' and 25 20' north latitude and 96 18' and 96 23' east longitude. The widest length from east to west is 7.4 miles and 16 miles from north to south. In the rainy season, it is a fine stretch of water measuring about 8 miles in breadth and by 17 miles in length at the widest part. The lake is surrounded in all directions by mountain but on the north-east by lowland as a outlet stream. The shape of Indawgyi Lake is that of a long gourd.

Generally, Indawgyi Lake is 565 feet above sea level but varies in sea level from place to place. On the day of survey dating 21-24 January in 2003, the water temperature at the surface of the lake was 21.63 C. According to the survey, the water temperature from the surface to the depth of one meter is 20.4 C and 20 C to the depth of 2 meter of the lake.

Perennial streams that flow into Indawgyi Lake are Hepaygi chaung, Nammum chaung , Maingnaung chaung , Namyinkha chaung and Namsanda chaung . But there are many inlets streaming into Indawgyi Lake. In the rainy season, the streams flow into Indawgyi Lake and dry in summer, as intermittent streams. Indaw chaung is the only outlet stream in Indawgyi Lake.

Alluvial soil can be found up to four furlongs from the shore line around the rim of the lake , under 20 feet from the surface. Slate can be found at the middle part of the lake which contains impervious rock. As the slate controls the water, it is difficulty for water to decrease the water level of Indawgyi Lake.

CONCLUSION

This paper entitled, the "Drainage pattern of Indawgyi Lake" in Mohnyin Township is prepared from Geographical point of view. Indawgyi Lake is the largest lake in Myanmar or Southeast Asia, which is situated in Mohnyin Township, the Kachin State. The drainage system of Mohnyin township is dendritic pattern but centripetal pattern can be found around the Indawgyi Lake. Drainage system of Indawgyi Lake can be divided into two parts: Perennial streams and intermittent stream. Perennial streams are Lepon chaung, Nammum chaung, Maingnaung chaung, Namyinkha chaung and Namsanda chaung. All other streams are intermittent stream. The Indawgyi region contains eleven village tracts, namely, Nammum, Mamonkaing, Lonton, Lwainmon, Nyaungbin, Lonsant, Maipok, Chaungwa, Panlap, Mapyin and Hepu village tracts. In the study area, the first seven village tracts are included in Indawgyi catchment's area. Today, this lake and environs are threatening to natural environment. So the people will need to conserve natural environment.

REFERENCES

- | | |
|--|---|
| Bender Firedrich (1983) | <i>Geology of Burma</i> , EBERUDER BORNTRAEGER, BERLIN, STUTIGART.: |
| CHHIBBER. H.L.(1934) | <i>THE GEOLOGY OF BURMA</i> , MACMILLAN and Co., LIMITED ST. Martin's Street, LONDON. |
| Naing Naing Latt, Ma,1994 | <i>Economic Geography of Mohnyin Township</i> , University of Mandalay. |
| Nyi Nyi, Dr.(1967) | <i>Physiography of Burma</i> , Geology Association, M.A.S.U. |
| Department of Geography.
Mohnyin Degree College (2007). | <i>Physical Geography of Indawgyi Lake</i> |