

# Vegetation to Grip Stone-Hill Bukit Munggu Case; Tanjung Enim, Sumatera Selatan

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**INTISARI:** Penelitian botani mengarah ke ekotaksonomi telah dilakukan di hutan yang merekat bebatuan besar, Bukit Munggu, area penambangan batubara di Tanjung Enim, Sumatera Selatan. Bukit ini ditinggalkan untuk dieksplorasi disebabkan perannya dalam penyangga sediaan air untuk kota Tanjung Enim serta posisinya yang berdekatan dengan perumahan penduduk dan rumah sakit. Survey dilakukan pada bulan Mei 2008 sepanjang lereng bukit tersebut yang dibentuk oleh bebatuan ditumbuhi pohon lebat. Dengan bantuan penduduk setempat, pencatatan dilakukan terhadap pohon-pohon yang tumbuh di area lintas survey. Koleksi herbarium dilakukan dan diidentifikasi di laboratorium Ekologi Tumbuhan Jurusan Biologi FMIPA Universitas Sriwijaya, Hasil penelitian ditemukan spesies berikut sebagai pohon dan semak yang merekat tanah bebatuan pembentuk bukit tersebut: bayur (*Pterospermum javanicum*), gedang (*Artocarpus elasticus*), sunkai (*Peronema canescens*), madang (*Macaranga recurvata*), beringin hutan (*Ficus sp*), daun bersayap (*Trevesia burckii*), sirih hutan (*Piper aduncum*), rotan (*Dendrocalamus sp*), dan pandan hutan (*Pandanus tectorius*). Jenis tumbuhan tersebut dapat dijadikan acuan dalam restorasi hutan di bukit bebatuan.

**KATA KUNCI:** vegetasi, survei botanik, spesies, *grip stone hill*

**ABSTRACT:** A botanic survey had made at Bukit Munggu, a hill of Bukit Asam Company area, Tanjung Enim, Sumatera Selatan, Indonesia. These hill is remained and not be explored for coal industry because of its function for water resource and its location so close to hospital and community houses. Survey begin at low slope to top point of hill where the ground and stones had 50-60 degrees slope. Vegetation that growth there and grip the stones were noted and identified at Plant Ecology Laboratory during May 2008. Result of investigation was found the trees and bush plant species namely bayur (*Pterospermum javanicum*), gedang (*Artocarpus elasticus*), sunkai (*Peronema canescens*), madang (*Macaranga recurvata*), beringin hutan (*Ficus sp*), daun bersayap (*Trevesia burckii*), sirih hutan (*Piper aduncum*) rotan (*Dendrocalamus sp*) and pandan hutan (*Pandanus tectorius*). All of them should be consider as vegetation species for grip stone hill in order that strenght.

**KEYWORDS:** vegetation, botanic survey, species, grip stone hill

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## 1 INTRODUCTION

Most of rocky material in Sumatera island were emerged from sedimentation of the sea when this island still covered by ocean about 280 million years ago. Bukit Barisan mountain, as a cord of Sumatera island, was formed 60 million years ago, or at paleosen poeriod (Ashton, 1982 in [1]). Rightnow, at Sumatera Selatan region, exist circa 570.000 hectare limestone forest and circa 110.000 hectare of other stoned forest (FAO/MacKinnon, 1982 in [1]).

Bukit Munggu, is a hill located at Tanjung Enim vilage and Muara Enim district, about 200 km western ward of Palembang, the capital city of Sumatera Selatan province. Tanjung Enim village has 42 km<sup>2</sup> size

area and about 268 peoples/km<sup>2</sup> citizen<sup>[2]</sup>. According to Gunradi<sup>[3]</sup>, these hill is belong to 7 areas of deposit of coal industry that have been explored by Bukit Asam Company, a national company of coal industry in Indonesia. Measured deposit of coal of these hill ia 1,30 million tons, but it is notified the hill should not be explored because of location was so close to community houses and hospital. Other reasons were this hill has a strategic function for water resource of Tanjung Enim peoples; and at the top point of its, had been biult a tower of national telecommunication relay.

It is interesting thing, to know about vegetation that exist on that hill which had important function, to grip the stones that formed the hill. Picture 1 below, shows the condition of ground surface of hill where big stones



FIGURE 1: Stones hill, part of coal mining in Bukit Munggu

were arranged naturally and be gripped by the soil and vegetation on it.

Study of trees and bushes species of these area should help scientist and decision maker for considering the same species for same needs/function at other areas.

## 2 METHODS

Survey begin at low slope to top point of hill where the ground and stones had 50-60 degrees slope. Vegetation that growth there and grip the stones were noted and identified at Plant Ecology Laboratory during May 2008. Same native peoples were asked to help the collecting and forest observation. Identification of samples used of Tree Flora of Malaya books. Botanical study done on that species. Pictures of samples are made by photograph.

## 3 RESULTS

The results of investigation should be seen as in table 1 below. Here the information about species, vernonial name, and life form were shown.

Physiognomy view of Bukit Munggu from down slope shows that forest vegetation dominated by trees that have brownes leaves betseen green others. It is the bayur trees or *Pterospermum javanicum*. According to Whitmore<sup>[4]</sup>, *Pterospermum javanicum* is a medium to large tree to c. 42 m tall, and hundreds cm girth. Bark; grey; smooth. Twigs rusty brown pubescent; leaves with stipules 10 mm, stalk 3 - 6 mm, rusty brown pubescent; blade ovate 4 × 2.5 - 14 × 7 cm with apex acuminate, base permanently unequal and heart-shaped, papery, undersurface rusty brown pubescent; flower c. 6 cm long, axillary or terminal racemes, rusty pubescent, yellow; fruits 13 × 5 cm, cylindric, 5-angular, exist at all states of Malaysia

FIGURE 2: *Pterospermum javanicum*

and sumatera, java also borneo. In Sg. Tembeling, Pahang, it is restricted to alluvium soil.

*Artocarpus elasticus* is a member of Moraceae, medium -sized tree rarely reaching 45 m tall and 210 cm girth. Bark grey brown and sapwood yellowish white. Buds 10 - 17.5 cm long, covered by conical yellow stipules with silky brown hairs. Leaves; stalk 5 - 10 cm long, adpressed hairy, blade stiff and leathery, broadly elliptic, up to 22.5 - 55 × 12.5 - 30 cm, rough hairy on the upper surface. Flower heads on the leavy twigs; male heads 15 - 20 × 2.5 - 3.75 cm, finger like, yellow becoming brownish; female heads upright, barrel shape, 10 × 7.5 cm, green becoming cream colored, woolly or shaggy stout, recurved spines, stalk massive, dark green, 7.5 - 10 cm long. Fruit cylindric, 11.5 × 5.5 cm, yellow brown; seeds ellipsoid 10 × 6 mm.

*Peronema canescens*, small to medium size trees reaching a hight of 18 m and 120 cm girth, bark grey brown, inner bark brownish, twigs grey brown with 4-angled, leaves opposite with or without terminal leaflet, rachis 30 - 90 cm long and winged. Leaflets 4 - 10 pairs sub opposite or opposite, young leaves rich purple. Flower in large 30 - 60 cm long and wide terminal panicles, individual flowers small, 0.25 cm wide, greenish white, calyx with 5 teeth and corolla with tinylobes, stamens 2, ovary 4 chambered, fruit capsule and round, 0.3 cm wide pale brownish or grayish. These species common troughout Malaya in open country and secondary forest or near rivers and clearings in primary forest<sup>[5]</sup>.

*Macaranga recurvata*, small to medium tree to 30 m tall, 150 cm girth, growth at swampy forest, primary and secondary forest. Leaves oblong triangular, thickly leathery, big, often longer than 20 cm, secondary nerves more or less straight, leaf stalk glabrous at top, fruits 13 cm across., pedicel glabrous<sup>[4]</sup>.

*Ficus sp*, a common trees at Sumatera forest, a member of mopraceae family. Leaves oblong with

TABLE 1: Species of Vegetation commonly find at Bukit Munggu, Tanjung Enim

No	Species	Vernonial Name	Life Form
1	<i>Pterospermum javanicum</i>	bayur	Tree
2	<i>Artocarpus elasticus</i>	gedang	Tree
3	<i>Peronema canescens</i>	Sunkai	Tree
4	<i>Macaranga recurvata</i>	Madang	Tree
5	<i>Ficus sp</i>	Beringin hutan	Tree
6	<i>Trevesia burckii</i>	Daun bersayap	Bush
7	<i>Piper aduncum</i>	Sirih hutan	Bush
8	<i>Dendroca-lamus sp</i>	Rotan	Bush/liana
9	<i>Pandanus tectorius</i>	Pandan hutan	Bush



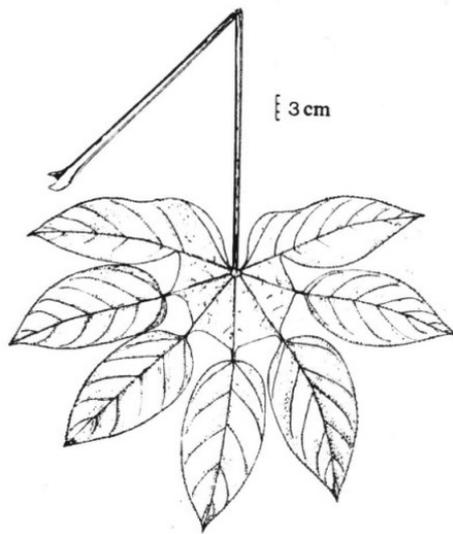
FIGURE 3: *Artocarpus elasticus*



FIGURE 4: *Peronema canescens*



FIGURE 5: Tree of *Macaranga recurvata*

FIGURE 6: *Ficus sp*FIGURE 7: *Trevesia burckii*

acuminated tip. Fruits round and yellowish.

*Piper aduncum* usually growth at secondary forest in our island. They could find at river bank, near the streets and forest area. Life as bush with specific piperaceae reproductive organ. The leaf have specific smell.

*Dendrocalamus sp*, a kind of liana, member of arecaeae family and have important value of economy. Their trees could be used for furnitures and others.

The last, *Pandanus tectorius*, is a member of pandanaceae family, with tall tree and broad leaves. They usually growth in forest of Sumatera.

#### 4 SUMMARY

Some trees could be considered as gripper of stones for making a hill, as Bukit Munggu case; they were *Pterospermum javanicum*, *Artocarpus elasticus*, *Per-*

FIGURE 8: *Piper aduncum*

*onema canescens*, *Macaranga recurvata*, *Dendrocalamus sp*, *Ficus sp.*, *Trevesia burckii*, *Piper aduncum*, and *Pandanus tectorius*.

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