

MALAY VEGETATION SKETCHES.

(Mr. Van Woudt has kindly supplied this abstract of his talk on September 16, 1945)

In 1861 a line was drawn between the western and eastern parts of the Indies on zoogeographic grounds - Wallace's Line between Celebes and Borneo in the north and between Bali and Lombok in the south. Afterwards, in this century after more was known about the distribution this line was altered into an eastern part under Australian influence and a western part under the influence of the Asiatic mainland, and an intermediate space of mixed origin.

A more or less similar division can be made from a botanical point of view.

The eastern part of the Archipelago has a pronounced dry season with dominant winds from Central Australia. This influence is felt as far as the eastern part of Java. Six months rain and six dry months alternate and a monsoon forest is the result; many trees and other plants are xeromorphic adapted to the dry season, amongst which are many acacias and others with affinities to the xeromorphic flora of Australia.

The western part has not the pronounced difference between the wet and dry season and a true tropical rain forest is the result, dominant in most parts of the Indies.

The heavy rains combined with the high temperature and consequent higher speed of chemical processes cause a very great leaching out of the soil as well as erosion. Consequently tropical soil is not rich in general, and areas cultivated after the forest is removed as a rule do not yield more than one or two crops and are deserted after that.

However volcanic material which was ejected centuries ago and is still rejuvenating the soil at present has given rise to the high fertility of the greatest part of Java, Sumatra and Northern Celebes. Javan volcanoes produce basic material, while that from the Sumatra volcanoes is acid; yields on Java are high and therefore 45,000,000 out of 65,000,000 people are concentrated on this island.

In Java we find the "Sawah" rice-cultivation, by which the soil washed down from the volcanoes is led from terrace to terrace on to the lowlands. In the other islands rice is cultivated in many cases after firing and clearing the forest.

Fires have brought along great changes in the vegetation. Most of them are caused by men, but also a number are due to lightning.

Originally 99 per cent of the Indies can be considered as having been covered by forest. Now there are big areas changed into grass steppes or savannahs and continually recurring fires keep them in that stage. Left to itself it will develop into a scrub and afterwards through secondary forest into the original forest though after 40 to 50 years traces of the succession stages can still be found.

Three important forest trees that have increased greatly owing to the fire providing light for germination are (1) Pinus merbussii of North Sumatra; (2) teak (Tectona grandis) which is confined to the monsoon forests of Java and the islands east of Java, is missing in Sumatra and Malaya but occurs again in the monsoon forests of Burma and Siam; and (3) Kauri, consisting of various species, not yet worked out properly but included at present under the collective name Agathis alba, and occurring in the north in Borneo and Celebes. Those trees were originally confined to earth-slides, lava streams and other open spots, but after the fire, because of their quick regeneration with sufficient light, they could spread and now there are enormous stands of Pinus merbussii on North Sumatra important for resin production and with a future for a paper industry.

More details were mentioned about the Pinus and other forest trees as well as about the position of the Dipterocarpaceae.

A classification was given about the rain forest ascending from sea-level to the mountain tops in girdles.