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Vegetation of Mount Kinabalu, British North Borneo
A Contribution to the Flora and Plant Formations of Mount Kinabalu and the Highlands of
British North Borneo. by Lilian S. Gibbs
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VEGETATION OF MOUNT KINABALU, BRITISH NORTH BORNEO

Gibbs, Lilian S. "A contribution to the flora and plant formations of Mount Kinabalu and the highlands of British North Borneo." *Journ. Linn. Soc., Bot.*, **42**, 1914, pp. 1—240, 8 plates, 8 text-figs.

The greater part of this paper is occupied by a systematic list of plants collected in the region investigated, but the introductory portion contains, besides many interesting notes on the botanical results of the journey, a summary of the plant communities of Mount Kinabalu, the highest mountain in the Malay Archipelago. The general level of the surrounding hills, which have no orographical connection with the mountain and its spurs, is from 3000 to 4000 ft., while Mt Kinabalu itself consists of a main buttress, forming a plateau about 1 mile long on the summit, and a subsidiary buttress running at right angles with the latter for about 4 miles—these two portions rise to the height of 13400 and 10000 ft. respectively. The conditions of topography and climate militate against the uniformity that would lead to a zonal distribution of plant formations, and a division on these lines breaks down in actual practice, hence the only course is to limit the formations themselves. The authoress distinguishes seven of these: (1) the secondary forest, 2500—4000 ft., subject to fluctuations in cultivation; (2) the primary high forest, 3500 to 6000 ft. on the main spur and to 5000 or 5500 ft. on lower spurs and ridges, but reaching a higher altitude in the more sheltered valleys; (3) the mossy forest, 5000 to 9000 ft.; (4) the scrub formation, apparently limited to favourable conditions of illumination and unfavourable edaphic conditions, being found only on the disintegrating serpentine of the exposed ridges, which is converted into a clay soil holding water tenaciously and forming a cold clammy substratum that limits all growth to shrubby plants; (5) the low sheltered forest, 9500—10500 ft., consisting of densely growing trees about 7 m. high, with little undergrowth and that suggestive of acid conditions; (6) the sub-summit dwarf forest, fully exposed to light and consisting of symmetrical dwarf trees in close association and about 3 m. high with no undergrowth but showing a shrub sub-formation where the trees open out; (7) the granite core, showing the open shrub-formation facies, limited entirely to cracks in the exposed granite, the plants chiefly shrubs of reduced stature, clipped by the wind to equal height while the great radiation from the rocks clips back the side branches.

ALPINE AND SUB-ALPINE VEGETATION OF SOUTH-EAST
SIKKIM

Smith, W. W. "The alpine and sub-alpine vegetation of South-east Sikkim." *Rec. Bot. Survey of India*, **4**, 1913, pp. 323—431.

This paper consists mainly of a systematic list of the species collected during the author's botanical exploration of South-east Sikkim, one of the wettest areas in the Himalayas, but in a brief introduction a general account of the vegetation is given, which with details drawn from other sources is summarised here.

Sikkim, a protected state of India, situated in the eastern Himalaya, comprises an area of about 4000 square miles mostly forming the catchment basin of the headwaters of the rivers Tista and Rangit, branches of which form on the south and south-east the boundary between Sikkim and British India, while on the west, north and north-east it is separated from Nepal, Tibet and Bhutan by a range of lofty mountains which culminate in Kinchinjunga (over 28000 ft.) and form a sort of horse-shoe, whence spurs project southwards gradually contracting and lessening in height until they reach the junction of the Tista and Rangit. The country is thus split up into a series of deep valleys surmounted by open plateaus separated from each other by high and steep ridges, and lies at a considerable elevation, rising from 1000 ft. at its southern extremity to 18000 ft. on the north. The vegetation of Sikkim as a whole is remarkably interesting, for though the country is small it shows a wide variation of climate and may be divided into