'LOST WORLD' BOTANIZING IN THE GRAN SABANA

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After Dr. Steyermark had terminated quinine exploration work in Ecuador and Venezuela for the United States government in October, 1944 (as reported in a recent issue of the BULLETIN*), he conducted two expeditions to collect botanical specimens for the Herbarium of the Museum, from October to December, 1944, and from February to May, 1945. The accompanying article relates some of his experiences.*

ONE of the unique New World areas yet to be completely explored scientifically is a portion of southeastern Venezuela, near the Brazilian and British Guiana borders, known as the Gran Sabana. Within this area, and in the adjacent Upper Paragua and Upper Orinoco River regions, lie isolated mountains of sandstone separated from one another by distances of from five to 200 or more miles.

Topographically they appear like huge truncated mesas protruding above the flat forested lowland or upland savanna. Their lofty summits, in some cases towering 9,000 feet or more above sea level, are separated from the virgin forests that envelop their bases, often as much as 6,000 to 7,000 feet of vertical distance, usually by sheer perpendicular sandstone bluffs of Roraima sandstone. These bluffs usually vary from 1,500 to 3,500 feet in height and thickness and, since they extend on all sides of these isolated mountains, usually obstruct any means of ascent. Only where a portion of the bluff has broken or weathered off to allow soil and woody growth to develop is it possible to reach the summit.

If one is fortunate enough to reach the summit of one of these mountains, one usually finds an entirely different world from that over which one has traveled below, for here on top may be rocky formations, of diverse shapes producing a barren rocky flat summit, or the summit may be broken up into undulating savanna-like or forested slopes alternating with bluffs along stream-laden valleys and waterfalls.

TWO 'LOST WORLDS'

The best known of these sandstone mountains are Roraima, Duida, and Auyan-tepui. Tepui is an Indian word for mountain. Mount Roraima has been termed the "Lost World," because so many unique plants and animals were originally collected on it. Auyan-tepui was called another "Lost World" and on its north side was recently discovered Angel Falls, considered to be the highest waterfall in the world.

Cerro Duida was not scaled until G.H.H. Tate of the American Museum of Natural History of New York climbed it in 1931 with the help of Indian-made ladders. Tate's collection of animals and especially of plants from the summit of Duida yielded one of the richest collections of endemic new species and genera ever to have been found in the New World.

The same was true of Mount Roraima when it was first scaled in the late part of the 19th century by Everard F. im Thurn whose botanical collections are at Kew. But the most interesting feature of these mountains is that each one thus far explored shows a partly endemic flora and fauna characteristic and peculiar to it.

The writer had the great privilege during his exploration work in Venezuela of climbing to the summit of both Roraima and Duida in 1944; the ascent of the latter was made *without* the use of rope or ladder. This represents the only ascent to the summit besides that made by Tate.

Because of his trips to Roraima and Duida, the writer, after his release by the government, lingered in Venezuela to continue the study of the flora of other sandstone mountains, and visited the group of Ptari-tepui and Sororopán-tepui about 100 miles northwest of Roraima. These had been explored previously for birds by Mr. and Mrs. William Phelps, Jr., and Mr. William Phelps, Sr. of Caracas.

LARGE COLLECTIONS OBTAINED

Several camp sites were established for one or two weeks at a time, and exploration trips made with Indian guides and carriers of the region. Nearly 1,700 numbers and about 5,000 specimens were obtained for the Herbarium. These include many specimens of trees and shrubs, and represent a far greater collection than has ever been made from either Duida, Roraima, or Auyan-tepui. They provide the herbarium with genera and species of plants hitherto unknown to it.

Curious insectivorous plants like sundews (*Drosera*), and *Heliamphora* related to and resembling our pitcher plants, grow beside *Bonnetia* with pink and white *Camellia*-like blossoms. There are *Luxemburgia* with bright yellow blossoms resembling a yellow rose, and curious members of the Rapateaceae with stiff erect iris-like leaves. Odd and beautiful large purple-flowered bladderworts also occur, their lower stems and roots submerged in the water found in the leaf-bases of the large bromeliad, *Brocchinia*. Other plants found are striking and endemic ferns of the genus *Pterozonium*, and lady-slipper orchids of the genus *Phragmopedilum*, many beautiful bromeliads, bladderworts, pipeworts (Eriocaulaceae), Rubiaceae, and Melastomaceae. Hundreds of other specialties make the flora of this and other adjacent mountains a true botanical paradise.

The collection, while showing relationships with the flora of Roraima and Auyan-tepui, has already been found to contain many highly interesting new species. As study progresses, the collection is expected to yield a considerable number of novelties.

FIRST POST-WAR EXPEDITION DISPATCHED TO PERU

The first step toward resumption of the Museum's world-wide expeditionary program, suspended since Pearl Harbor, was taken with the departure January 19 of Mr. Colin Campbell Sanborn, Curator of Mammals, to conduct the Peruvian Zoological Expedition-1946. This expedition will take up the survey by two expeditions carried on from 1939 to 1942, and interrupted by the war's advent.

COLIN C. SANBORN

Mr. Sanborn had returned to Chicago and his post at the Museum only a few weeks ago, following his release from the Navy as a lieutenant-commander after more than three years' service. He was a member of the previous Peruvian expeditions, and nine months of his naval service also was spent as an observer in Peru for intelligence purposes.

JUNGLES AND MOUNTAINS

Mr. Sanborn's first destination, after sailing from New Orleans, was Callao, port for the Peruvian capital, Lima, where he will complete organization of his project. The earlier expeditions worked almost entirely in southern Peru, and this year the collecting will be principally in the jungles of Amazonian Peru and in the mountains of the central part of the country. The work is done in co-operation with Peruvian scientists and, as in the past, Mr. Sanborn plans to arrange to have a local student accompany him.

The area to be covered this time will extend the scope of the Museum project which aims eventually at a survey of most of Peru, which has never before received adequate exploration from a scientific standpoint. The main objective of the expedition is the assemblage of a comprehensive collection of mammals, birds and reptiles. It is considered likely that a number of species not hitherto recorded will be found, and special efforts will be directed toward obtaining specimens of certain known rare animals.

Mr. Sanborn and his assistant will engage motor trucks for most of the travel and hauling of equipment into and specimens out of the interior, but the actual work of the expedition, when collecting areas are reached, will be done afoot, penetrating regions inaccessible in any other manner. Mr. Sanborn, it is expected, will complete his work and return to Chicago about the end of May.