

A GROUP OF TOUCANS COLLECTED BY MANDEL EXPEDITION

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The feeding habits, migrations, convergent adaptation, protective coloration, and various other elements in the intricate life patterns of certain birds are revealed in the Guatemala forest habitat group recently opened to the public in Hall 20.

Data, and specimens and accessories for the elaborate group, were collected in the dense tropical rain-forest of eastern Guatemala. A special expedition, organized and sponsored by Mr. Leon Mandel, of Chicago, spent six months in the field on this mission. The expedition collected also material for

interesting family may be found in forested regions from sea level upward to altitudes of seven or eight thousand feet.

Many factors are involved in the formation of natural associations of bird-life. Similarity of nesting or of feeding habits frequently attracts birds of widely separated families. Tropical fruit trees, such as the one reproduced in the present habitat group, are particularly important focal points for many species during the season of fruitage.

Birds which, in their search for food, ordinarily are widely scattered in the vast forests, become concentrated in and about these occasional sources of abundant food.



Toucans and Their Habitat

Photograph shows detail of one section of a group in Hall 20. The specimens were collected by the Leon Mandel-Field Museum Zoological Expedition to Guatemala, of which Assistant Curator Blake was a member.

two other habitat groups, one of the exotic quetzal, national bird of Guatemala, and the other of a nesting colony of oropendulas. These groups, exhibited in adjoining cases, were pictured and described in the September and December (1938) issues of FIELD MUSEUM NEWS.

Puerto Barrios, the Caribbean port of Guatemala, familiar to many travelers in Central American waters, was chosen as the ideal locale to be reproduced. The humid forests, luxuriant vegetation, and abundance of parasitic plants, so ably portrayed in this Guatemala forest group, are typical of the vast tropical lowlands of eastern Central America.

Featured in the group are two species of toucan, or "billbirds." More than fifty species of this fruit-eating family are known to science. All are characterized by enormous beaks which are of light, cellular structure internally. The colors of the beaks are generally brilliant and follow characteristic patterns. Toucans are restricted to the American tropics, but representatives of this

Bishop grosbeaks compete actively and successfully, as shown, with the larger and more voracious toucans. Tree-tops which ordinarily shelter only occasional accidental bird visitors, suddenly become alive with avian activity.

Something of the intense competition existing within the ranks of every related group of animals is suggested by the attack of a short-keeled toucan upon two smaller collared aracari which were monopolizing a berry-laden branch. Not until the tree is entirely denuded of ripe berries does the assemblage of birds scatter to forage elsewhere.

The very important biological principle of convergent evolution is illustrated in the group by a western barred wood-hewer and a chestnut-collared woodpecker. Although members of entirely different orders or major groups of birds, wood-hewers, as well as woodpeckers, are equipped with stiffened tail feathers which serve as a necessary support while the birds are perched in a vertical position. Field observations reveal

the basic similarity of the feeding habits of these unrelated species, and one concludes that the similarity of structure has, through evolutionary channels, been the natural result.

Also included in the exhibit is a northern wood thrush, representative of a large number of species which nest in North America but retire to the tropics each winter. Some, like the wood thrush, pause in Central America. Many others continue southward to South America or even fly directly across the Caribbean. Most of our insect-eaters are highly migratory, even the smaller species performing amazing journeys twice each year. Unfortunately, all of our songsters, of which the wood thrush is one of the finest, become relatively silent in winter. The tropical forest never resounds with the songs of North American birds.

The birds in the group, as well as the painted background, were prepared by Staff Artist Arthur G. Rueckert, and the accessories were made under the supervision of Preparator Frank H. Letl.

BOTANIST EMPLOYS MONKEYS TO COLLECT SPECIMENS

Stories of monkeys as botanical collectors always seem fantastic and incredible. Some time ago FIELD MUSEUM NEWS printed such a story and aroused critical comments from the incredulous. Here is another more detailed and documented one from a British source:

The *Kew Bulletin*, No. 7, 1938, quotes from the Annual Report of the Director of Gardens, Straits Settlements, an account of the use made of berok monkeys (*Macacus nemestrina*), widely used in the East by the Malays for gathering coconuts, to collect botanical specimens from tall trees. Two young beroks, Jambul and Putch, are at present employed; they understand twelve words of Kelantanese and can thus be instructed to pick specific twigs, and drop them to the ground. Mr. E. J. H. Corner, Acting Director of the Gardens, who obtained the team from Kelantan, states, "A berok upon the shoulder can be likened, in effect, to a falcon on the wrist; and its employment is recommended both to amateurs for its charm and cheapness, and to keepers of reserves where it is desirable to collect specimens repeatedly from the same trees without damage to them. Jambul and Putch are the first beroks to enter the government service."

Group of Geologists Visits Museum

Fifty members of the Marquette Geologists Association visited Field Museum in a body last month. They were conducted through the exhibits of the Department of Geology by Chief Curator Henry W. Nichols and Assistant Curator L. Bryant Mather, Jr.



1939. "Botanist Employs Monkeys to Collect Specimens." *Field Museum news* 10(3), 3-3.

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