The Barro Colorado Laboratory

W. C. Allee

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THE BARRO COLORADO LABORATORY

I HAVE just returned from two months' work on Barro Colorado Island, the site of the new station for tropical research in Gatun Lake, C. Z. Barro Colorado Island was the largest of the old hills rising above the valley of the Chagres River and consequently is now the largest of the islands in the man-made Gatun Lake. It is located about an hour's ride, either by outboard motor or by native boatman, from Frijoles which in turn is about an hour by train from Panama City. One can commute from civilization at Ancon and spend from 9:15 to 3:30 on Barro Colorado.

Comfortable living quarters have just been erected and equipped on the island so that a small party can now live and work with comfort in the jungle itself.

The jungle spreads over the five square miles of the island without natural openings. It is more dense on the more distant southern side than around the new building. The lower slopes of the hills around the margin of the present island were formerly under cultivation to a considerable extent and on the far side a few hectares are still under cultivation although all such work by natives is now a thing of the past. Remnants of the plantings of bananas, oranges, limes, guava, etc., are still encountered in the bush and the abandoned sites of several native huts can still be distinguished.

There has been some chopping above the cultivated region but, to all appearances, the central and higher part of the island is virgin although one hesitates to state that it has not been cut over in the four centuries during which the isthmus has been occupied by white people.

The jungle is of the rain forest type but its height and density is of course affected by the fact that the rainfall is only about a hundred inches annually. The usual height is about a hundred feet to the main jungle roof which is overtopped by scattered trees. The growth is so dense that one can rarely obtain a good view of the lake even from the hillsides near the water. On the southern side much machete work is necessary in order to make one's way, but on the northern side the growth is more open.

The "laboratory" just finished is admirably equipped for living in the jungle and to serve as a base for collecting and for field observations. It can readily be used for extended and much-needed studies in tropical life histories of animals living in rapid streams and in Gatun Lake as well as of the jungle animals themselves.

Ants and termites are the most conspicuous insects and offer excellent opportunities for the study of habits and for the collecting of commensals. Several new species of the latter have been taken in the short time since work began about the laboratory. *Peripatus* also occurs on the island, although it is not easily come by in the dry season, and the general physiology of this much talked of animal can be studied here.

The birds are the most noticeable of the higher animals, with lizards a close second. There is much need of life history work on these groups both of the older natural history type and of the newer type of studies into the physiological requirements during different stages of development.

Armadillos, conejos, nequis, peccaries, raccoons, night monkeys, white faced monkeys, and black howling monkeys are common and relatively tame. Tapirs, large cats and deer are also known to occur. Sloths, anteaters, etc., are found nearby and are probably on the island.

The station also affords an opportunity for the study of the physical conditions under which animals live in this sort of jungle and for comparison with life conditions in the dryer regions on the Pacific coast and the more moist jungles of the Atlantic side. In connection with such studies or independent of them one can readily work out the local distribution and association of animals in the manner that has become fairly standardized in making ecological surveys in temperate regions.

Probably the greatest value of this new station for

biological research lies in its ready accessibility and its nearness to the highly civilized cities of the Canal Zone. Perhaps after a taste of the tropics here and an introduction to tropical conditions and methods more zoologists will desire to venture into the less accessible tropical regions.

Official information concerning the facilities available at Barro Colorado Island can be obtained from the resident custodian, Mr. Jas. Zetek, Ancon, C. Z., or from Dr. Thos. Barbour, of the Museum of Comparative Zoology at Harvard. I shall be glad to answer personal inquiries to the best of my knowledge.

W. C. ALLEE

DR. WILLIAM JAMES BEAL

DR. WILLIAM JAMES BEAL died on May 12, at the home of his daughter, Mrs. Ray Stannard Baker, Amherst, Mass.

Dr. Beal was in his ninety-second year, the oldest citizen of his town and the oldest graduate of his college, the University of Michigan. He was also one of the earliest students of Louis Agassiz at Harvard College. He had a long and honorable career, having been for over fifty years a teacher of science, at an early time at the University of Chicago and later, for forty years, he was professor of botany at the Michigan Agricultural College. He wrote a number of important scientific works, the chief of which was an exhaustive study, in two volumes, of the "Grasses of North America," which remains a standard work upon that subject.

He was a pioneer in the new methods of scientific education, having gone to Harvard College after his graduation from Michigan University, where he studied under Agassiz and Asa Gray, and was in one of the early classes in chemistry taught by President, then Professor, Eliot. He took his degree at Harvard in 1865. He was one of the earliest teachers to use the laboratory methods of Agassiz. His "New Botany," published in 1881, inspired many a younger teacher of science. Not a few of his students have become distinguished botanists, horticulturists and foresters. He was an indefatigable worker, with the habit, almost the passion, for independent observation and study. He was like a child eager to open each new package that Nature presented, to see what it contained. He rarely passed a tree or a shrub or a flower without turning to see the other side of it. He infected his students with this enthusiasm to know nature, and to know at first hand. He had certain maxims which he kept constantly before them. Here are some of them:

"Merely learning the name of a plant or parts of a plant can no longer be palmed off as a valuable training."

"In the whole course of botany, the student trains for power more than for knowledge."

"Details and facts before principles and conclusions."

"An eye trained to see is valuable in any kind of business."

Dr. Beal was not only a careful and thorough scientist, but he had a keen interest in spreading scientific knowledge through organizations of every kind. He was one of the organizers and the first president of the Society for the Promotion of Agricultural Science, he was director for some years of the Michigan State Forestry Commission, he was president of the Michigan State Teachers' Association and an energetic member of the Botanical Society of America, the American Pomology Society, the American Association for the Advancement of Science and other similar organizations. He had degrees from three universities and was awarded honorary doctors' degrees by the University of Michigan, the Michigan Agricultural College and Syracuse University.

But among the students who passed through his classes in fifty years—and they were a legion—it is doubtful whether he had more of influence as a scientist or as a man. For he had qualities of unremitting industry, sincerity of mind, simplicity of habit, together with a characteristic dry humor, which left an indelible impression upon every one with whom, especially at the zenith of his long life, he came into contact. He was of pioneer Quaker stock, born in Michigan in 1833, when it was still a wilderness. He had to fight for an education, working every step of his way through one school after another, beginning with a backwoods seminary and keeping at it until he found himself studying marine biology with Louis Agassiz at Harvard and corresponding with Charles Darwin. He lived all his life with a kind of Spartan simplicity. He not only never used liquor or tobacco, but never drank tea or coffee. He always left the table when, as he said, "he could relish half as much more." He began early, when such things were rare in college, the deliberate and habitual practice of exercising, insisting until he was nearly ninety years old in running a few hundred yards every day, or sawing so many sticks of wood.

"I studied and labored industriously," he said, "because it gave me joy."

He was of a cheerful disposition, and his old age was full of tranquillity and happiness. He spent the last fourteen years of his life in a garden of Amherst. He was ill only three days before his death and even during that time suffered little. At the very last, when asked how he was, he remarked, "Getting better." He died peacefully in his sleep.

He leaves one daughter, Mrs. Ray Stannard Baker, four grandchildren and one great grandson. He will rest in the family cemetery near the scene of his long labors, at Lansing, Michigan.

R. S. B.