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BOTANICAL EXPLORATION IN PANAMA AND COSTA RICA

With the cooperation of the government of the Panama Canal, botanical field-work was undertaken in 1923 in the region of the Zone by Mr. Paul C. Standley, associate curator of the division of plants, U. S. National Museum, with the object of obtaining collections and data for a report upon the plant life, which it is planned to publish in the near future. Part of November, December, and most of January were spent in botanical exploration in and near the Zone. Nearly all parts of this area were visited, and 7,000 numbers of plants were obtained, represented by about twice as many specimens. These collections are now being studied and have been found to contain a number of species new to science, besides many not collected previously in the area.

The vegetation of the Zone is typical of that existing in Central America at low elevations, but it is here possible to study in close proximity the floras of the Atlantic and Pacific slopes, these floras being sharply differentiated in Central America because of differences in the climates of the two watersheds. The Pacific slope has well defined wet and dry seasons; on the Atlantic slope there is usually plentiful moisture throughout the year.

Although the original vegetation of the Isthmus of Panama has been greatly modified in many places because of long occupation by man, and especially because of operations incident to the construction and management of the Canal, there remain near the Canal extensive areas of virgin forest whose animal and plant life is of great interest. Advantage has been taken of this fact to establish recently a station for tropical scientific research on Barro Colorado Island in Gatún Lake, the island having been set aside for the purpose by the Governor of the Canal. Upon this island, largely as a result of the energy and enthusiasm of Mr. James Zetek, there has been constructed this year a laboratory building with accommodations for students, and trails have been cut to make the virgin forest, which covers several hundred acres, available for study.

The most striking botanical feature of the Canal Zone is doubtless the orchid garden formed by Mr. C. W. Powell of Balboa. In this collection Mr. Powell has assembled orchid plants from many parts of Panama, and he has in cultivation nearly all the species known to occur in the Republic. During the last ten years he has found over 300 species, about three times as many as were known previously from Panama, and many of them have proved to be forms unknown to orchid students.

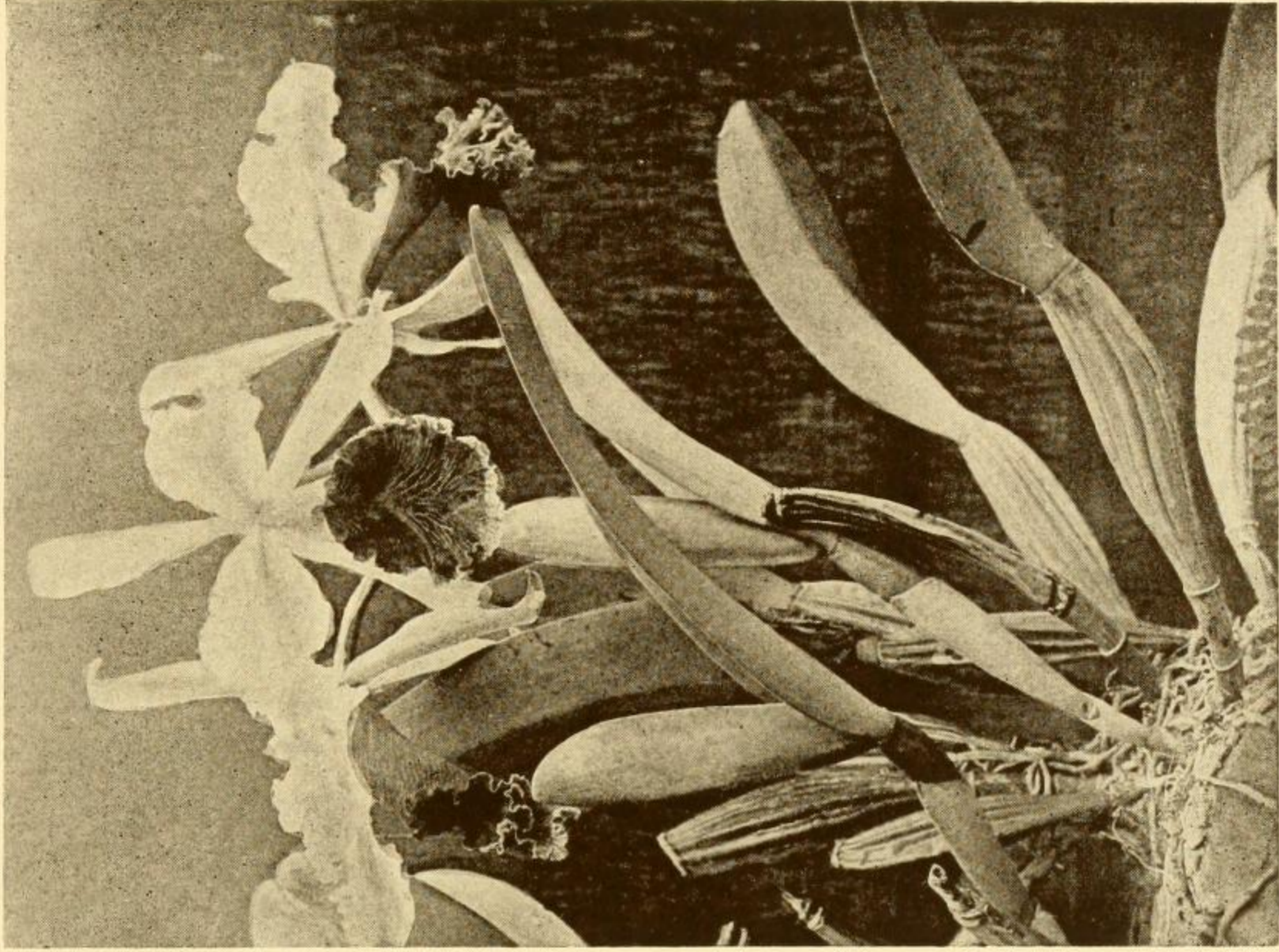


FIG. 62.—*Cattleya dowiana*, native of Costa Rica, probably the finest orchid of Central America. Sepals and petals pale buff; lip deep crimson with golden veins

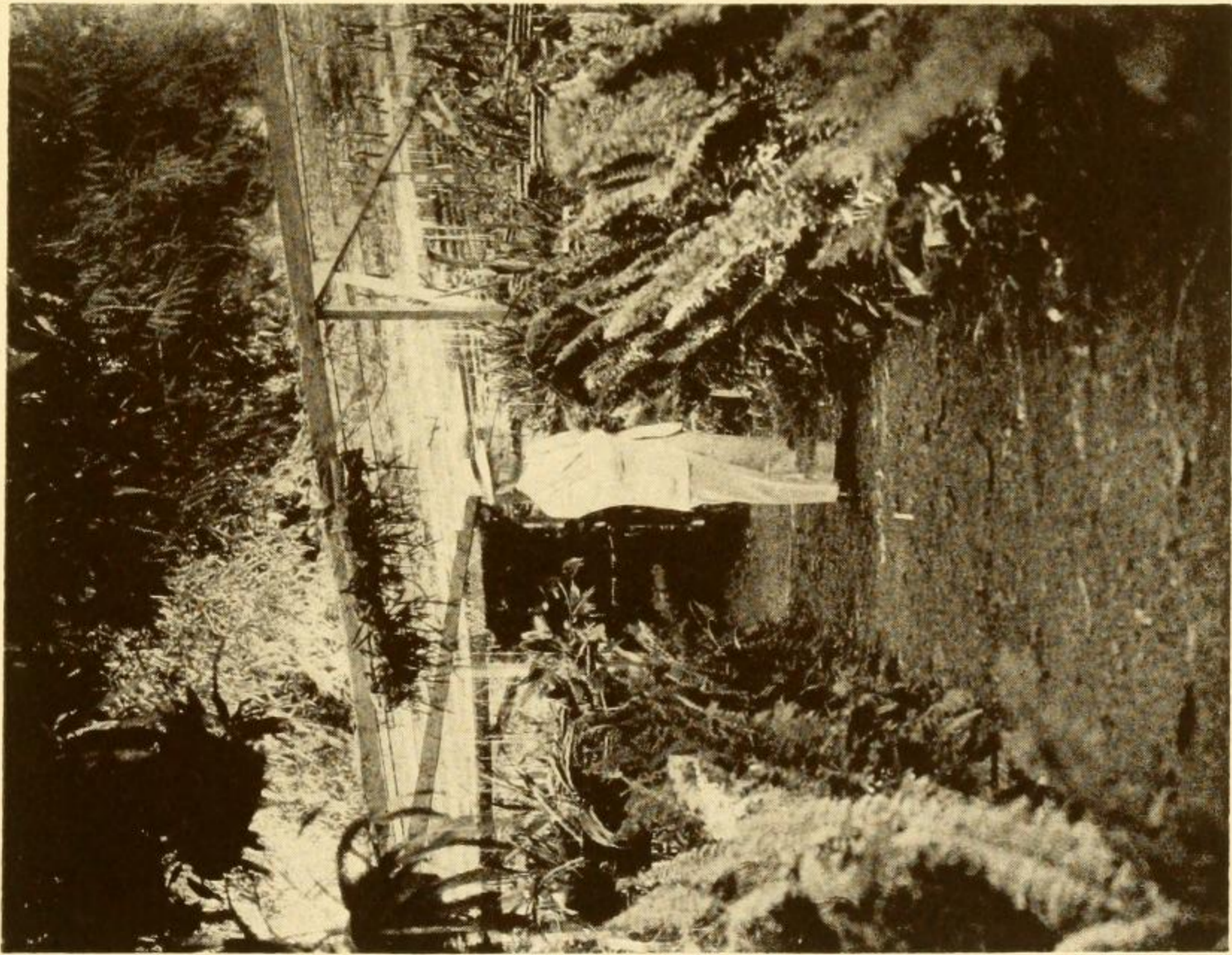


FIG. 61.—Orchid garden of Mr. C. W. Powell, Balboa, Canal Zone.



FIG. 63.—A patio of a Costa Rican home. Nearly all Central American houses are built about a courtyard, which is beautifully decorated with orchids, ferns, and other plants, making a delightful place in which to live. The tile floors of the corridors are frequently very elaborate and handsome. (Photograph by M. Gómez Miralles.)



FIG. 64.—*Cattleya skinneri* in Costa Rica, one of the handsomest of Central American orchids. Flowers purple. (Photograph by M. Gómez Miralles.)

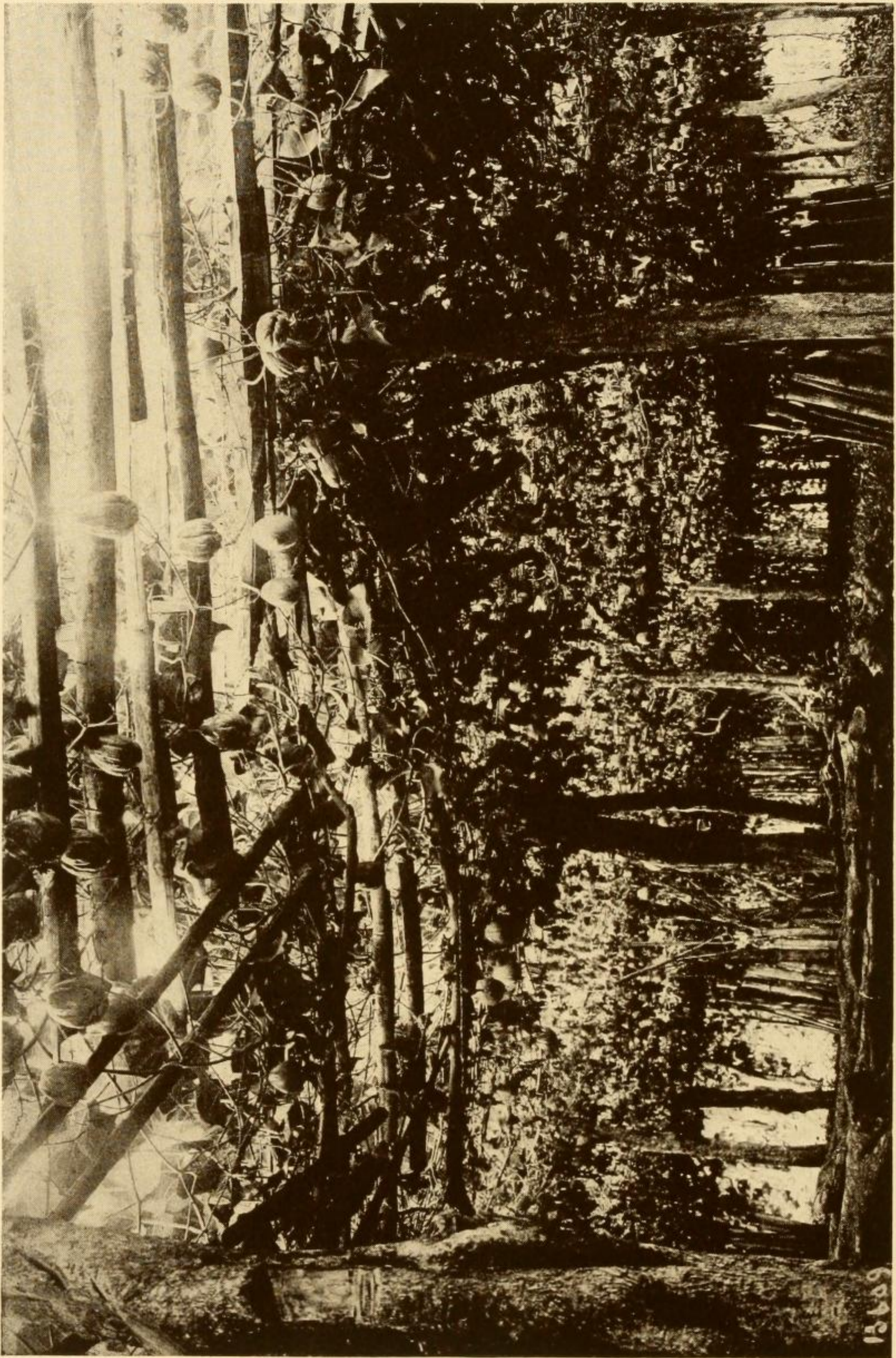


FIG. 65.—Method of growing the chayote (*Sechium edule*) in Costa Rica. The chayote, a relative of the cucumber, which it somewhat resembles, is one of the popular vegetables of tropical America. (Photograph by M. Gómez Miralles).



FIG. 66.—View along the Reventazón River, Atlantic lowlands of Costa Rica. The tall cane at the right is much used in the construction of houses. (Photograph by M. Gómez Miralles.)

At the end of January, Mr. Standley proceeded to Costa Rica, remaining there until the middle of April, when he returned to Washington. Costa Rica is botanically the richest part of North America. In the highlands, where the climate is temperate rather than tropical and where there is a heavy rainfall, the vegetation is extraordinarily luxuriant, and the variety of plants bewildering. Although large collections already have been made in Costa Rica, it will require many years of intensive exploration to gain an adequate knowledge of the plant life.

Mr. Standley's collection consists of 8,000 numbers of plants, many of which will doubtless prove to be new. Special attention was given to the orchids, of which about 1,500 numbers were obtained. These are now being studied by Mr. Oakes Ames, through whose interest the work in Costa Rica was undertaken. Of orchids Costa Rica possesses probably a larger number of species than any other portion of the American tropics of equal extent. Over 1,000 species have been reported from this small Republic, and it is certain that many more await discovery. While most Costa Rican orchids, like those of other countries, have inconspicuous flowers, some, such as the *Cattleyas*, are of unsurpassed beauty.

Visits were made to the Volcano of Poás, celebrated for its great crater, which contains a lake that erupts frequently; to the Volcano of Turrialba, whose forests are noted for their wealth of ferns; and to many other rich localities in the central highlands.

A short visit to the comparatively arid Pacific coast proved that the flora of this part of Costa Rica is relatively meager and uninteresting. Several visits were made to the wet lowland forests of the Atlantic watershed, where the vegetation is even more luxuriant than in the mountains and the species are almost equally numerous. Little is known of the plants of the Atlantic lowlands of Central America, although it is probable that no other region will better reward exploration.

BOTANICAL WORK IN SOUTHEASTERN NEW MEXICO

During part of August, 1924, Mr. Standley was detailed for field-work as a member of the Carlsbad Cavern Expedition of the National Geographic Society. This expedition, under the direction of Dr. Willis T. Lee, was engaged this year in a detailed survey of the Carlsbad Cavern, recently set aside as a national monument, and of its surroundings. The cavern is noteworthy because of its large size and lavish decorations, and is one of the most notable of the

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Fig. 64. — Cattleya skinneri in Costa Rica, one of the handsomest of Central American orchids. Flowers purple. (Photograph by M. Gomez Miralles.)

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