

Exploring for Orchids

***Ornithocephalus montealegreae* is described from Costa Rica**

By Franco Pupulin, PhD

"One hundred ninety new orchid species discovered in less than 10 years."

THIS IS NOT A HEADLINE FROM a 19th-century journal, but the surprising result of contemporary botanical fieldwork conducted by a few internationally recognized botanists in Costa Rica. The site is not some remote area of the Guyana interior or of the New Guinea mountain cloud forest. These 190 newly discovered species were found in the small, naturalist-friendly country of Costa Rica, renowned for its botanical biodiversity and regarded as an El Dorado for researchers. Many botanists may consider field exploration a thing of the past and not worthy of serious modern scientific research efforts.

This was exactly my opinion when I moved to Costa Rica from Italy some years ago to work at the Lankester Botanical Garden of the University of Costa Rica. With each new orchid described over the past eight years, I became more aware of the work still to be done and was convinced of its urgency and value. The discovery of 193 new Costa Rican orchids had a humbling effect on my Old World concept of the Neotropics and caused me to reprioritize the direction of my research. Of course, it is hard to believe that new orchid species could still be found in the hills around the capital San José or within the forest of La Selva Biological Research Station, where hundreds of botanists walk along the well-defined paths throughout the year. Yet, in Costa Rica, there still remain largely unexplored areas that deserve to be inventoried.

Now, every time we pack up our jeep and head toward a remote corner of the

country to update the inventory of Costa Rican epiphytes, I remind myself that exploration is still an integral part of botanical work and inseparable from our commitment as botanists. New plants and new orchids are waiting to be revealed to science and humanity.

In Costa Rica there are signs that indicate that orchid poachers (or the *materos* as they are called locally) have not visited a particular area. For example, large specimens of showy orchids, like *Oncidium* or *Stanhopea*, hanging untouched from easily reached branches along the roadside, usually means that the poachers have not yet been there. *Materos* generally collect before botanists arrive.

On May 3, 2002, we drove through the village of Grano de Oro, (3,600 feet or 1,100 m elevation) on the Caribbean slope of the Talamanca Mountains heading for Moravia de Chirripó. After passing Moravia, we continued as far as the jeep would go along the red mud road to the border of the Chirripó Indian reserve. We were excited to see branches laden with large plants of *Brassia* and *Cyrtorchiloides*. The road ended at a small creek that was not on our map. This site, with its general store, is called *Sipirí*, as we learned from the *Talamanca* Indians who were resting their horses there before returning to their homes in the forest. Due to the impending rain (which would make the road impassable) we spent only 1½ hours looking for material. During that time, we identified 56 orchid species in 38 genera, which is more than 20 percent of all orchid genera recorded in Costa Rica. In the genus *Ornithocephalus* we found a new species for which I propose the following name:



Above It is likely that the bright yellow spots on the callus of *O. montealegreae* mimic pollen, serving to attract pollinators to the lip apex.

Right As in most *Ornithocephalus* species, the plants of *O. montealegreae* grow upside down in very shaded conditions. At the type locality, *O. montealegreae* forms very large populations on the lower part of trunks and small, shaded branches.

Ornithocephalus montealegreae Pupulin, *sp. nov.*

TYPE: COSTA RICA. Cartago. Turrialba. Moravia de Chirripó, Platanillo, 9°49.4'N 83°24.5'W, 1,090 m, along the Quebrada Sipirí, lower montane rain forest, disturbed



primary vegetation, epiphytic in shade on understory vegetation and lower branches, May 3, 2002, *F. Pupulin, H. Montealegre, M. Bonilla and J. C. Cervantes* 3607 (holotype, USJ!, isotypes, USJ-Spirit!, CR!).

Inter species generis *Ornithocephali* foliis angustis, inflorescentia pilosa, petalis lineari-subfalcatis sepalorum duplo majoris, labello cymbiformi canaliculato elliptico, duobus callis triangularibus maculae flavae rotundae notatis ad apicem ornato dignoscenda.

Plant epiphytic, small, pendent, psygmoid, without pseudobulbs. *Roots* flexuous, slender, about 0.5 mm in diameter, glabrous. *Leaves* arranged in the form of a fan, laterally flattened, linear-subfalcate to narrowly gladiate, obliquely acuminate, 3.1–4.5 cm long, 2.5–3.5 cm wide (laterally), the base articulate with distichously imbricating sheaths provided with hyaline, scarious margins. *Inflorescence* one to two, each a slender, axillary, arched, many-flowered (eight to 11) raceme longer than leaves, to 7 cm long, the rachis fractiflex, the peduncle and rhachis hispid, with glandular hairs. *Flowers* small, spreading, the sepals and petals green, the lip white with two round, bright yellow blotches at apex. *Sepals* ligulate, rounded, glabrous within, the apex externally provided with stiff hairs; dorsal sepal 2.5 mm long, 1 mm wide; lateral sepals oblique, 2 mm long, 0.8 mm wide. *Petals* linear-subfalcate, somewhat pendent, obtuse, minutely apiculate, the apical margins minutely serrulate, 4.2 mm long, 0.9 mm wide. *Lip* cymbiform (boat-shaped), elliptic, acute, 2.8 mm long, 1.4 mm wide, abaxially keeled, with a large median channel minutely hirsute inside, the base provided with two erect, triangular-falcate teeth, the apex with two prominent pyramidal calli, blotched in front with two rounded, bright yellow spots. *Column* geniculate, the proximal portion wider at the base, 1–5 mm long, 0.5 mm wide, the transversal apex proboscis-like, about 3 mm long. *Anther cap* cucullate, linear-oblong, 3.5 mm long, two-celled. *Pollinia*

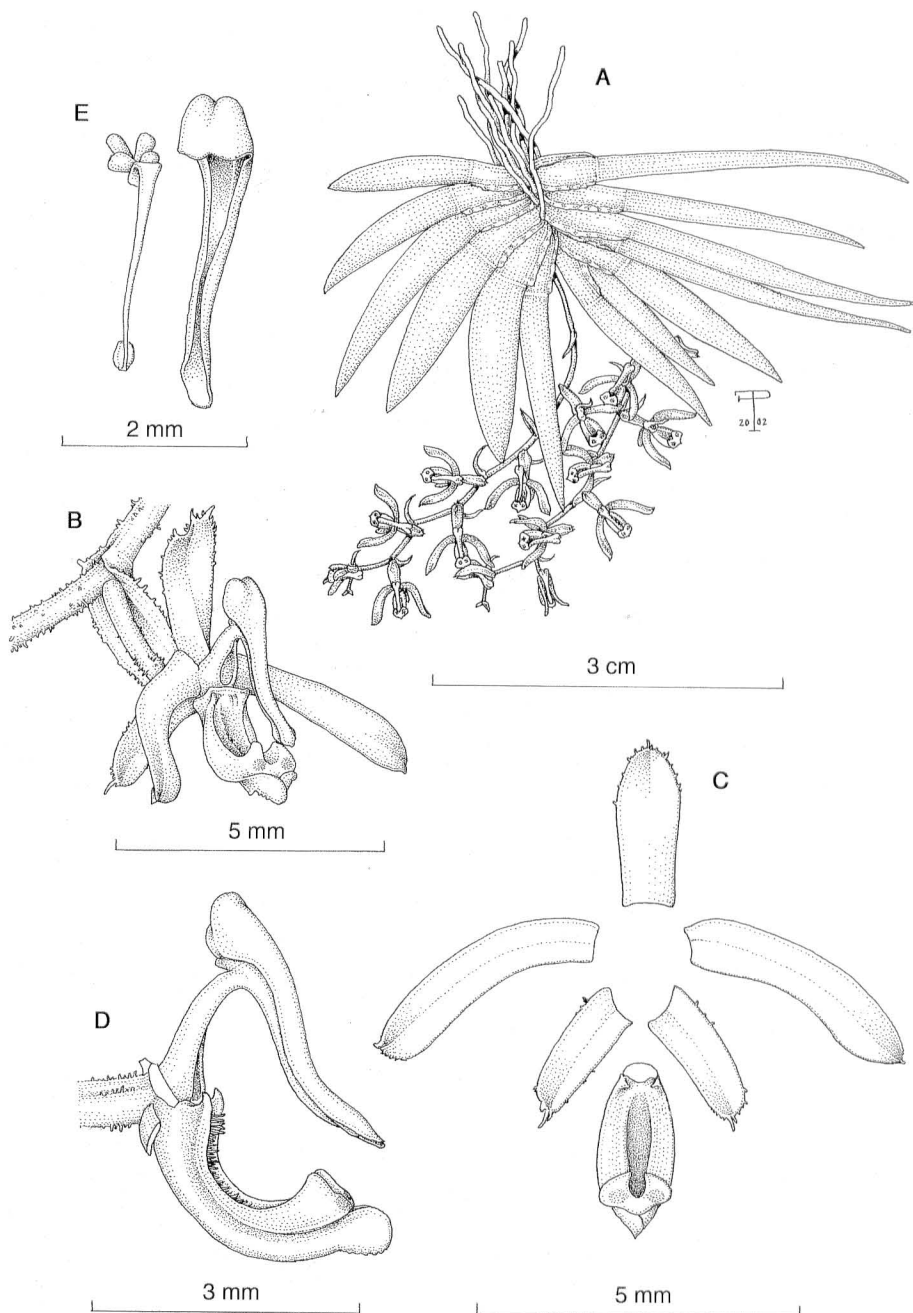
four, in two pairs, on a long, obtriangular, attenuate stipe 2.7 mm long; viscidium peltate.

Paratype: Costa Rica. Limón: Guapiles, San Valentín, area between Río Costa Rica and Río Toro Amarillo, approx. 10°10'N 83°50'W, 600 m, epiphytic on vine in the shade of tall trees, April 2000, flowered in cultivation, 20 May 2002, *A. Acuña* 9 (USJ-Spirit!).

Ornithocephalus montealegrae can be easily distinguished from other species in Mesoamerica by the long, subfalcate petals and the elliptic, boat-shaped lip, terminating in a bicallous apex with two bright yellow, rounded blotches. We do not know what these bright spots mean to the visiting insects, but, to the human eye, they resemble pollen masses. In fact, I at first confused the lip with the column, interpreting the spots as the anther on the column apex. At the type locality, *O. montealegre* is a rather frequent species in the understory, where it lives epiphytically on small branches and trunks in very shaded conditions. Flowering occurs in April and May.

I am pleased to dedicate this species to Hilda León Paez de Montealegre, research assistant of Jardín Botánico Lankester, who participated in the type collection. □

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Above *Ornithocephalus montealegreae*
 Pupulin, drawn from the holotype (Voucher:
F. Pupulin et al. 3607 (USJ). A. Habit. B. Flower.
 C. Flower dissection. D. Column and lip, lateral
 view. E. Pollinarium and anther cap.