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## Impressions of a fern trip to Fernando Póo

G. BENL

### SUMMARY

A preliminary report is given on the author's visit to Fernando Póo for the purpose of collecting and studying Pteridophytes.

### RÉSUMÉ

L'auteur donne un bref rapport préliminaire de sa visite à Fernando Póo en vue de collectionner et d'étudier des Ptéridophytes.

When in 1971 Dr. Antonio Escarré (Alicante) invited me to treat the pteridophytes for his "Aportaciones a la Flora de Fernando Póo", I agreed on condition that I could visit the island and collect ferns myself. This possibility was not given to me and my wife until January 1974.

Fernando Póo is part of a chain of volcanic islands in the Gulf of Guinea. São Tomé and Príncipe were Portuguese territories, Annobón (17 km<sup>2</sup>) and Fernando Póo (2017 km<sup>2</sup>) had been Spanish until 1968; then they became independent, forming—together with Rio Muni (26 000 km<sup>2</sup>)—the new state of Guinea Ecuatorial.

A lot of things have changed there since Dr. William Sanford gave us his interesting contribution on the "Orchid Flora of Equatorial Guinea..." (*Mitt. Bot. Staatssamml. München* 10: 287-298, 1971) in the course of the last congress, e.g. Fernando Póo must now be called Isla Macías Nguema, after the president actually residing; the capital is no longer Santa Isabel but Malabo, the former village Malabo being named now Moka-Malabo; instead of San Carlos they say Luba, instead of Concepción you may hear the ancient name Biapa.

At first sight the topography of the island seems to be simple. There are two massifs: the Pico de Malabo in the north, and the southern highlands with crater lakes and the Gran Caldera in the south-west. Both parts are separated by a saddle connecting Luba with Biapa. But the southern uplands show a very irregular topography, and like Tenerife—Fernando Póo has about the same size—numerous rivers and brooks diverge towards the coast cutting barrancos into the lava soil.

Where the coast is not too rocky, some vegetation is found. It is richer in ferns than has been reported before. *Acrostichum aureum* L. comprises considerable areas

in the mangrove swamps, dominating especially at the Mirupururú River. In the Playa de Carboneras an active marine erosion can be observed: the shore has receded at least 20 metres within the last 20 years.

The plantations of *Theobroma* are often stretching down to sea-level and form part of a coastal vegetation comprising different species of *Pteris*, *Thelypteris* (including *Cyclosorus*), *Ctenitis* and *Tectaria*, furthermore *Selaginella abyssinica* Spring, *S. versicolor* Spring, *S. vogelii* Spring and other terrestrial representatives.

About one hundred years ago the tropical rain forest reached the shore here; huge trees amidst the plantations are witnesses of the past, their buttresses giving a substrate for epiphytes, such as *Asplenium africanum* Desv., *Phymatodes scolopendria* (Burm. f.) Ching, *Platynerium stemaria* (Pal. Beauv.) Desv.

At the mouths of the Rio Tiburones and the Rio Musola there are *Raphia* swamps, in the back of which we did not only see terrestrial *Nephrolepis biserrata* (Swartz) Schott with fronds of 2.7 metres, but also *Pteris manniana* Mett. ex Kuhn, *Ctenitis lanigera* (Kuhn) Tardieu, *Diplazium proliferum* (Lam.) Kaulf., and many others belonging to the coastal vegetation here.

Behind the Bay of Concepción we collected *Pteris atrovirens* Willd.; at the banks of the Rio Ruma, scarcely 20 metres above sea-level, we took up *Pteris linearis* Poiré and *Tectaria barteri* (J. Smith) C. Chr.

In July 1973 Luba suffered from a submarine earth-quake, by which the bridges we crossed when visiting the Playa de Bokoko had been destroyed; here we found *Lygodium smithianum* C. Presl ex Kuhn right near the shore.

On our way across the island—east of Musola, 740 metres above sea-level—we met with *Nephrolepis pumicicola* Ballard, thousands of stocks settling upon an old lava flow covered with moss. They were mingled with *Arthropteris cameroonensis* Alston, as is often the case.

At an altitude of 640 metres, arborescent ferns had begun to appear, especially *Alsophila manniana* (Hooker) Tryon, but *A. camerooniana* (Hooker) Tryon as well. In abundance they border the way up to the craters of Biaó and of Loreto, mostly growing in shadowy ravines and gullies furrowing the slopes.

Tree-ferns form the surroundings of the famous “Praderas de Moka”, too, a grassland at an altitude of 1200 to 1300 metres. These ferns make part of the virgin forest which still covers large areas of the southern uplands and slopes.

In those woodlands and on their borders we found a lot of epiphytic pteridophytes, e.g. *Huperzia brachystachys* (Baker) Pic. Ser., *H. ophioglossoides* (Lam.) Rothm., big-leaved *Antrophyum mannianum* Hooker and masses of filmy ferns, such as *Trichomanes rigidum* Swartz, *Hymenophyllum hirsutum* (L.) Swartz, *H. splendidum* Van d. Bosch, *H. triangulare* Baker, *H. polyanthos* Swartz var. *kuhnii* (C. Chr.) Schelpe, with fronds up to 40 cm.

Beyond the fern-tree girdle around the Praderas towards the south, we came to the Iladyi waterfall, with impressive sceneries of its tributaries. From mossy stones we gathered *Xiphopteris serrulata* (Swartz) Kaulf. usually growing as an epiphyte only.

The Pico de Malabo was inaccessible to visitors because of the broadcasting station installed on its top. By chance we succeeded in mounting up to 900 metres on its north-eastern slope, and stated that here banana plantations have now attained altitudes of 800 metres. Beyond this limit, the mountain rain forest with a luxuriant

fern vegetation—*Didymochlaena truncatula* (Swartz) J. Smith with fronds of more than 3 metres, *Oleandra distenta* Kunze, many species of *Asplenium* and *Ctenitis*—seems to be undisturbed.

The best way up to the Pico begins at “Km 15” of the eastern coastal highway, which has been extended to Concepción in 1973, thus enabling us to visit rios and barrancos on the eastern side of the island, too.

One of the main results of our studies: Just like in other volcanic islands, the torrents and barrancos with their microclimate are thwarting the effort to pin up too many ferns to definite altitudes.

