

Update: Rio Mayo Plants

Howard Scott Gentry's book on the flora and vegetation of the valley of the Rio Mayo in Sonora, published by the Carnegie Institution in 1942, and reporting over 1200 species of vascular plants, was mine, free for the asking, when I wrote Carnegie in 1953. In the forests outside Alamos in southern Sonora are many tropical trees, species of strangling figs, burseras, lysilomas, amapa, brasil, and morning glory trees to name a few. Howard wrote about them with wonderful skill. When I moved to Tucson in 1957, one of the attractions was the dry tropical forests of the barranca country beginning just 200 miles south of the border.

I expected that southwestern universities would become a magnet for tropical ecologists seeking easy access to "selva baja caducifolia," parrots, barrancas, boa constrictors, Montezuma cypress, and euglossid bees. Ecology, like astronomy, would benefit by the regional environment and Arizona would be the crossroads of tropical ecologists.

Wrong! Cheap jet air travel out of Miami International swept up east coast biologists with a bent for tropical research and deposited them all over Central and South America. West coast Mexico and the Sonoran tropical outpost was left high and dry, too far from either Mexico City or Miami. Nevertheless, in recent years more and more field parties, both from Mexican and U.S. universities, have found their way into Gentry's Rio Mayo country. Dozens of trips have begun at the Desert Lab on Tumamoc Hill. Among the new discoveries are the endemic floras of "gossans," colorful altered outcrops often rich in minerals; tropic orchids appear in plunging barrancas whose dampness defies the burning sun of the dry season; they yield new records of many tropical plants and animals previously unknown this far north and even some new species of plants. The total inventory for the Rio Mayo region may be twice the number of plants that Howard Gentry found.

A recent paper by NPS ecologist Peter Bennett attributes the richness of plants and animals in the sky island mountains of the borderlands to topographic "roughness," with a large number of damp ravines alternating with dry exposed cliffs. I think Pete is onto something that may help explain why the Rio Mayo country is as rich as it is. To appreciate Pete's idea, it helps to have

seen Arroyo Verde in the upper Rio Cuchujaqui, a green riparian strip, even in late May whenever the evergreen oaks on surrounding hills are dropping foliage.

Ironically, as the number of field parties and researchers increases in Sonora, the number of threats to the land increases; mining companies prepare to turn the gossans into open pits, in the Sierra lumbering has eliminated virtually all old growth stands of pine, and in the lowlands ranchers clear vast tracts of natural forest to plant alien pasture grasses, especially the invasive buffel (*Pennisetum cilaone*) that has overrun hillsides throughout Sonora and on this side of the border is encroaching on Tumamoc itself. Free trade, we are told, will help mitigate environmental problems along the border.

From the air in a light plane the upper Rio Mayo, the Rio Guajaray, Rio Chinipas and upper Cuchujaqui reveal many thousands of hectares of plunging barrancas, uncompromising cliffs, and windswept ridges, mostly ungrazed and virtually uninhabited apart from a few tiny huts of the Warahio Indians. Hopefully, the terrain is too rough for pastures, too rugged for lumbering and too wild even for the drug trade. It looks like world-class wilderness to me.