

# Tropical Dry Forest Near Esteli, Nicaragua

Leland Smith (Nicaragua) photos of the author

**Approximately 14 kilometers north of the City of Esteli, Nicaragua, is an un-signed dirt road which is listed as Highway 35B on Google Maps. The section in question of my project starts at the Pan-American Highway at about 800 meters in elevation and goes eastward about 5.5 kilometers to where the road crosses the Esteli River at about 700 meters elevation. The area is tropical dry forest which mostly has not been clear cut or burned for agriculture. It is a land of shrubs and small trees, rock fences, and cattle foraging in rough terrain with little human population. (Figures 1 and 2). The immediate surrounding areas are savanna and pre-montane forest.**

When I first started my project to identify and document the native cacti of Nicaragua in 2010 I had a country list from the scientific literature of only 15 species for the whole country so finding 6 species along a few hundred meters of road really jump started my project. I have made several trips to the area both in the wet and dry seasons, with the wet season being less productive due to the smaller cacti being covered with seasonal growth.

The opuntias are represented by *Opuntia lutea* (Rose) D. R. Hunt, a tree form. Pictures show a juvenile form with a very narrow trunk which will later thicken and mature branches with the yellowish spines typical of new growth. (Figures 3 and 4). Sprawling *Opuntia decumbens* (Salm-Dyck) is often found near fence lines where it survives, the cattle on one side and the road crews on the other. (Fig 5).



Figure 1 The north road to Mirafior



Figure 2 Cattle and rock fence.



Figure 3 *Opuntia lutea* juvenile trunk





Figure 4. *Opuntia lutea* new spine growth



Figure 5 *Opuntia decumbens*



Figure 6 *Epiphyllum hookeri*

Epiphyllum are represented by *Epiphyllum hookeri* (Haw.) usually growing on rock fences, among rocks in shady areas, or on trees. (Fig 6). Plants growing on trees often are stunted and do not show the long round, then triangular, and then flat stem sections which distinguishes these from other local epiphyllums. Years ago I grew out cuttings to see flowers, fruit, and mature growth to identify them.

*Marshallocereus aragonii* (F.A.C, Weber) Backeb. (Photos 7 and 8) is found growing intermixed with trees and shrubs. Unfortunately, I have never been in this remote area at night to see the flowers in bloom nor the fruit. In another location I drove a considerable distance only to see that ants had gotten the fruit before I could document them. The plants in much sun usually have the shrubby, brownish, much branching growth form although in deep shade I





Figure 7 *Marshallocereus aragonii* mature plant





Figure 8 *Marshallocereus aragonii* new growth from downed limb.

found plants with thicker dark green trucks and branches. Based on limited experience in this and one other site location I think this difference is environmental, not genetic, but it bears more investigation.





Figure 9 *Acanthocereus hirschianus*



Figure 10 *Pilosocereus leucocephalus*





Figure 11 *Deamia testudo*

Nearby I found small specimens of *Acanthocereus hirschianus* (K.Schum.) Lodé (Fig 9) and *Pilosocereus leucocephalus* (Poselg.) Byles & G.D.Rowley. (Fig.10) s a photo of mature specimens of the “Old Man” at a location about 500 meters south of my subject area. On a later trip I found *Deamia testudo* (Karw. ex Zucc.) Britton & Rose for the first time in this area. (Fig. 11). It is locally common at higher elevations but a little water stressed at this site. That goes to shows the benefit of revisiting a site when possible. Who knows what else is there hiding in the bushes?

My most interesting find was a sprawling cactus I could not identify. When David Hunt visited in 2011 I showed it to him and he later identified it as what is now known as *Selenicereus escuintlensis* (Kimmach) D.R.Hunt. At the time it was listed as native to Guatemala and having white pulp in the fruit.





Figure 12 *Selenicereus esquirolensis* stem detail



Figure 13 *Selenicereus esquirolensis* stem detail



Figure 14 *Selenicereus escauintlensis* mature fruit



Figure 15 *Selenicereus costaricensis*





16 *Acanthocereus tetragonus* with immature fruit

Cuttings I planted grew out luxuriantly to cover a garden structure and later find their way up into a tree in my yard where they produce edible fruit with magenta pulp. (Fig 12-14). Whether the difference in pulp color is variation within the species as in *Selenicereus undatus* or due to other reason I am not able to say.

Also in this area I have found one *Selenicereus costaricensis* (F.A.C.Weber) S.Arias & N.Korotkova ex Hammel in a tree (Fig. 15) and several specimens of *Acanthocereus tetragonus* (L.) Hummerlinck with one displaying immature fruit. (Fig. 16)

I plan to continue to study this area. Over the years the area has not been damaged by human action and the road is currently well maintained. I will try to find more specimens and relocate 2 species that have disappeared from my original sites. I am also adding non-cacti succulents to my research such as agave and dry biome peperomias.