

Mexican Field-Notes (1)

by Christian Brachet, Michel Lacoste and Felipe Otero

These notes relate the field-observations made since 1988 up to this day by the authors in the course of a number of field-trips across Mexico.

Felipe Otero needs no introduction: he has one of the most extensive records of field-work in Mexico over the years. With his nephew Eulalio Hernandez, he has discovered such plants as *M. oteroi*, *M. hemandezii* and many others. Christian Brachet and Michel Lacoste, although young in the art of Mammillarias, have already covered a substantial number of miles on the pursuit of seldom seen plants. The notes and photos that are being brought to you are the result of the collective effort of this team.

An important purpose of these field-trips was to get to know in the field the largest possible number of species, in the light of the recent publication of many 'new' taxa, in particular by W. Reppenhagen. The fulfilment of our objective was helped by the circumstances: (a) the weather has always been splendid, and our pick-up van never broke down (well, nearly ...); (b) as D. Hunt wrote: "All Mammillaria species occur within a few kilometres of the main roads" (in fact, he did not write exactly that - I hope he will forgive our deliberate misquote, for those interested, please refer to JMS 11:35(1971)); (c) we consider ourselves extremely lucky to be able to benefit from all the work done by our society, its German sister, and their members, in particular by D. Hunt and by W. Reppenhagen; (d) we prepared carefully our trips by the filing on a computer of about 5,000 field-numbers and by a detailed search in the available literature; (e) our trips were exclusively devoted to the study of Mammillarias (to the point of nuttiness, would add an impartial observer!).

All in all, we have seen over one hundred different species or forms, including many of the 'new' Reppenhagen species. This is certainly satisfactory, but to us it was even more interesting to be able to get a better grasp on the variability of many species. We shall try to point out in the following notes whatever observations we have made that depart from what seems to be the generally accepted view.

We also had the opportunity to collect a substantial quantity of seed, which has been (or shall be) distributed by the Society under ML field numbers. To use Gordon Rowley's language, we strongly feel that only plants with status are really worth growing! Although this may not be the right place, we should point out that field-numbers are often misused: perhaps for commercial reasons, plants and seeds are offered in the same way with field-numbers when they have been collected or propagated from wild material, as well as when they are in fact second, third or nth generation plants; this, to say the least, is not very scientific! And we would find it more honest, as for instance the ISI does, to be more elaborate as to what is in fact behind the field-number of a label. We are sure that many 'Lau' plants or seed have never met Alfred Lau!

All names of sites conform to the spelling given by the Instituto Nacional de Estadística Geográfica e Informática in its 1:250,000 maps. Regrettably, we have restrained from giving exact sites, whenever we felt small populations could be put in danger by the collecting of wild plants.

During our first trip in Hidalgo, we started looking for *M. humboldtii*; it was for us a most desirable plant in view of its beauty and of the rarity of field-reports about it. We started with Ehrenberg's description in 1840, in which he states "Stamm einzeln oder vielkopfig, plattkuglich oder kuglich, die grossten einzelnen 3 bis 4 Zoll dick, die gehauften kleiner. Die beobachteten grossten Haufen batten 1.5 Fuss in Durchmesser, und bestanden aus etwa 15 Kopfen verschiedener Grosse ... Achseln mit ... langen, weissen, graden Borsten, welche bald lenger, bald kurzer, als die Warzen Bind ... Mexico, zwischen Yxmiquilpan und Mestitlan im Kalkgebirge im Januar 1840 entdeckt" (*Linnaea* 14:378(1840), fide E. Shurly), and with the additional information by the same author in *Beitrag zur Geschichte einiger mexicanischer Cacteen* (*Linnaea* 19:337-368(1846), fide D. Hunt, *Bradleya* 3 :67-96(1985); we learn that "As regards distribution, certain species are restricted to a small area, sometimes only part of one hill, valley or ravine, e.g. *M. humboldtii*... I was particularly delighted to discover one of the rarest of them, which I have called *M. humboldtii*. In one of those small barrancas leading into the larger barranca near Mestitlan . . . here on New Year's Eve, 1839, on a somewhat higher ridge, I found this charming plant. Small delicate clusters of tightly packed heads, shining white like freshly fallen snow, were studded with thousands of carmine flowers which glistened in the dew like rubies and diamonds ... *M. humboldtii* m.: Grows near Mestitlan in small many-headed masses, and is very rare". Please note already here the discrepancies between these two publications (a) on the plant itself [simple or caespitose from base on one hand, clusters of tightly packed heads on the other hand], and (b) on its site [between Metztitlan and Ixmiquilpan, or in a small barranca leading into the larger Metztitlan Barranca]. Since that date, there have been few interesting reports on these plants. Many authors have done no more than repeat Ehrenberg's data.

N.L.Britton and J.N.Rose, *The Cactaceae* 4:130(1920), dismiss this species as a synonym of *M. candida*, which clearly shows that they had never had access to good material or to field-reports. R.T.Craig, *The Mammillaria Handbook* 142-143(1945), repeats Ehrenberg's data, but describes the plant as "simple and caespitose from base, flattened globose to slender columnar", and adds "a photograph of a plant obtained from Sr. F. Schmoll in 1942". C. Backeberg, *Die Cactaceae* 5:32603261 (1958-1962) only repeats Craig's description ("Einzeln und auch von unten sprossend, abgeflacht-kugelig bis +/- verlängert"), and does not indicate if he had any first-hand knowledge of the plant. D.Hunt, *JMS* 11:10(1971) and *Bradleya* 2:92(1984), in *A new review of Mammillaria* names more prudently reproduces the original 1840 information of Ehrenberg. The confusion, already substantial, was increased by the lack of proper material or field reports, and one can find astonishing reports in the literature (J.W.P. Mullard, *NCSJ* 22:13(1967), J. Pilbeam, *JMS* 20:39-40(1980)).

However, clues to the unravelling of the situation can be found under the signature of C. Glass and R. Foster, *CSJA* 49:152(1977) and 50 :287(1978), where we learn about two forms of *M. humboldtii*, one from the barrancas near Metztitlan, collected by D. Guerra in 1972 (Abbey Garden Press #78-404 [later distributed as ISI 1175]), and one "from Queretaro~ (sic) (Abbey Garden Press #78-190), here again obtained from the Schmoli nursery. H. Sanchez Mejorada, in his *Manua lde campo de las Cactaceas y Succulentas de la Barranca de Metztitlan* 36(1978), mentions, with no further comments, three sites: 'near' Metztitlan, Gilo and Eloxochitlan. We than have a report by W. Reppenhagen, *MAfM* 8:74-78(1984) of his encounter of *M. humboldtii* in the company of H. Sanchez Mejorada in the "Gebiet zwischen Gilo und Almolon, Hidalgo" (his field-number REP 1942); unfortunately, he gives very little information about the plants he found, except to say that "*M. humbold(t)ii* dagenen erreicht einen Durchmesser von 10cm, bleibt aber moist viol kleiner". Single or caespitose, we have

no clue. He gives the local name of the plant, 'granizos', (mis-spelled as 'granitos') which means 'hail', but fails to note that, even in Mexico, hail of 10cm diameter would be large, and to deduct from that fact that he had not perhaps seen all that needed to be seen. Last, there is a field-number by A. Lau (Lau 1344, Ixmiquilpan-Metzitlan) on which we have no further information.

On our side, we have been able to find this species in three different sites:

(a) we have found "in one of the small barrancas leading into the larger Metztitlan Barranca", to quote Ehrenberg, a many-headed plant, with small heads (diameter not above 15mm), and, due to the fact that its axillary bristles are short and do not protrude, with a very smooth spine formation, quite similar to the spine formation of *M. herrerae* (ML 150). A clump, 7cm by 9cm, had approximately one hundred heads. It is reasonable to assume that this is the plant that was found and described by Ehrenberg in his 1846 paper, i.e. the "shining white like freshly fallen snow" *M. humboldtii*.

(b) between Gilo and Almolon, we have found a plant (ML 153) probably identical with REP 1942, mostly single (only rarely forming clumps of three to five heads, with very stiff protruding axillary bristles, giving the plant a spine formation quite similar in general aspect to that of *M. candida*. Single heads reach a diameter of 6 to 8cm.

(c) in a third site (all three sites are contained in a circle of a diameter of less than 35km), we have found a plant (ML 165) intermediate both in its spine formation and its growth habits between the first two, mostly forming clumps of up to ten heads, each of 4 to 6cm in diameter.

The photos included with this article show the main characteristics of populations (a) and (c). All grow in calcareous steep hills, at altitudes of about 1400-1600m, the first two in very crumbly ground, the last on more substantial rocks, and the general vegetation accompanying *M. humboldtii* is basically identical. In particular, *M. schiedeana* was found on all three sites, but, unhappily, no fruits.

Our observations clearly explain the discrepancies in the literature noted above: *M. humboldtii* is a very variable species both in its spine formation, due to the variability of the length of its axillary bristles, and in its growth habit; it is scarce, but is found in a reasonably large area, which, rightly, can be described as being situated between Ixmiquilpan and Metztitlan, Hidalgo (until further proof, we would rule out the existence of *M. humboldtii* in Queretaro, as we do not have a great degree of trust in locality reports by commercial collectors). The existence of an intermediate form between the two extremes clearly shows that we are dealing here with only one species, as does the fact that the three populations described here fall within Ehrenberg's 1840 description, even though the 1846 comments quite clearly apply to only one of them. We would be inclined to think that Ehrenberg had found in 1840 several distinct populations of *M. humboldtii*. Quite a feat!



Mammillaria humboldtii, at Lago de Metztitlan, San Cristobel, Hidalgo. Field number ML150.



Mammillaria humboldtii, at Milpa Grande, San Pablo Tetlapaya, Hidalgo. Field number ML165.