

## Mexican Field-notes (5)

by Christian Brachet, Michel Lacoste & Felipe Otero

In the scope of our travels within the states of Morelos, Puebla and Oaxaca, we have had the opportunity to observe in the field most of the taxa described by W. Reppenhagen within the Series Elegantes, as well as many others. We have also grown a number of them from field-collected seed (that the differences between the seedlings sometimes seem more visible than those between older plants: some useful teachings may be obtained from the study of these seedlings).

As we all know, this group is a difficult one, in view of the large number of populations with varying characteristics known in the field, and its approach has been made even more difficult by indiscriminate usage of names, old and new alike, with the end result that it is often near impossible to know what is meant under a name if it is not accompanied by precise field-data. However, what is to our mind quite clear is that we are in presence of a number of clearly distinguishable taxa which should not be brushed under the carpet with the statement: "Oh! Just another *M. elegans* (or *haageana*..)!" We are not in the position to make any final statements as to the proper solutions to a clear taxonomic definition of the Series, but as our small contribution, we would like to list our field-observations and present a few comments as to how these taxa differentiate themselves from one another. This is easy to do when one limits oneself to the spination, the flower, etc... but probably does not take enough in consideration the natural variability of such characteristics. What is more important, but so much more difficult to convey except than by a good representative photograph is the general appearance of a typical wild plant. As we all know, words have their limits... We shall not mention here *M. meissneri*, which we have already discussed, nor *M. dixanthocentron* and *M. flavicentra* on one side, and *M. crucigera*, *M. Huitzilopochtli* and *M. tlalocii* which will be the subjects of future articles. We will also leave for later times *M. reppenhagenii* (ML 297), *M. albianata* (ML 31) and *M. igualensis* (ML 29).

It is important to note here that we use most 'ancient names' in the meaning of W. Reppenhagen, as we dare interpret it. We understand perfectly well how D. Hunt will criticize this position, and fully recognize that there often is very little justification in making the links between these names and the populations to which we attach them. But the only alternative would then seem to practically abandon names to remain with only field numbers and/or geographical sites, and this does seem unduly cumbersome.

*M. elegans*- ML 17 - near km87 of MEX 125 from Tehuacan to Huajuapán de León (Oaxaca), alt.: 2000m. The typical plant at this site has 2-4 honey-coloured centrals and 20-21 radials; its tubercles are arranged in 21:34 series, which is unusual for the taxon. It could just as well be considered to be a dark-spined form of *M. elegans* or a pale-spined form of *M. conspicua* (but then W. Reppenhagen states that *M. conspicua* may have white centrals...)

*M. elegans*- ML 259 - near km97 of MEX 190 from Huajuapán de León to Oaxaca, about 36km south of the junction to Tlaxiaco (Oaxaca). This population was noted by Glass & Foster in their Mexico Logbook, CSJA 44:95- 98 (1972). The plants are large, reaching a diameter of 100-120mm, but remain very flat-depressed. The tubercles are unusually large

for the species, and loosely set. The flowers seem larger than usual for *M. elegans*. It has only 1 central, but 28 radials... For whoever is interested, this population has certainly one of the best claims for a new name !

*M. elegans* - ML 270 - San Juan del Estado (Oaxaca), alt.: 1960m. Here again large flat-depressed plants, but not so large (reaching a diameter of 80-100mm) and not so depressed as the above. Centrals: 2-4, brownish, with darker tip and paler base. Radials: 22-24. The flowers are rather large.

*M. elegans* - ML 239 - near San Marcos Arteaga, km37-38 of OAX 15 (junction to San Juan Rayes), alt.: 1550m, & ML 244 - near San Marcos Arteaga, km 31 of OAX(16, alt.: 1750m, (Oaxaca). The perfect 'tennis ball' plant, spherical, woolly, short-spined, small and tight-set tubercles. Centrals: 1-2, with just the most extreme tip black, very short. Radials: 18-23, varying from plant to plant. Abundant white wool in the axils. This plant is probably identical to Rep 871, which W. Reppenhagen has identified only as *M. sp. weiss*. Quite clearly, a new name here would be no more far stretched than many others already in existence...

*M. elegans*- ML 207 - Tamazulapan (Oaxaca). A send fish plant growing in company with *M. kraehenbuehlii*, with brown-tipped centrals, and nothing very particular.

*M. elegans*- ML 243 - Tonalá (Oaxaca), alt.: 1400m This is the site of *M. tonalensis*. The plants here have 2 honey or horn-coloured fairly long centrals, and an quite different of those observed near San Marcos Arteaga, which is only a few miles from there.

*M. elegans*- ML 184- San Pedro Nopala, Sierra Mixteca (Oaxaca), alt.: 2100m. The type of intermediate plant which has led most of those who have studied the group to madness ! Centrals: 2, long, orange-brown Radials: 18-20. Not really *M. flavicentra* (which is~ larger plant which will be found at slightly higher altitudes), but neither is it *M. conspicua* or *M. vaupelii*.

*M. elegans*- ML 180 - San1a Maria Ixcatlan (Oaxaca~ alt.: 2000m. Small plants, with a touch of *M. dixanthocentra* or of *M. flavicentra*?

*M. elegans* - ML 217 - Vista Hermosa, just south of Huajuapán de León (Oaxaca). Medium-sized plant very white: in our mind, a 'typical' *M. elegans*, as can be qualified ML 15 from Tehuacan or ML 207 from Tamazulapan.

*M. elegans*- ML 196 - El Campanario, Calipán (Puebla), alt.: 1200m. A stout, white cylindrical plant, with 4 fairly short central spines. One cannot avoid thinking of *M. noureddineana*. But, on the other side of the Rio Salado, not more than a mile away, grows a population of mostly short-spined *M. dixanthocentra* with yellow flowers?

*M. elegans* - ML 174 - Tecamachalco (Puebla). This is the well-known site of *M. pedinifera*. The plants here are small, and have tight white radials, but very dark contrasting centrals.

*M. elegans* - ML 15 - about 10km west of Tehuacan on the road to Huajuapán de León (Puebla). Further onwards on the same road, one will find both *M. conspicua* and *M.*

meissneri. Here, the plants are small, with 2 brown centrals aging into grayish- brown, and 21-23 chalky white centrals, with an overall white appearance.

*M. elegans*- ML 35 - Petlalcingo (Puebla), alt.: 1450m. A typical large plant: 55mm diameter, 110mm height, but most are smaller and spherical. The centrals are usually white, brown-tipped, but one can find darker spined plants, in particular amongst those growing under the shade of bushes. If we had to name one population as representing *M. elegans*, this is probably the one we would choose. But W. REPPENHAGEN would not probably agree with this choice, as he states that *M. elegans* should not be more than 60cm high and more than 40mm in diameter. If we accept this, none of the above-mentioned plants would be *M. elegans*, except perhaps ML 174 from Tecamachalco (Puebla), ML 207 from Tamazulapan (Oaxaca) or ML 217 from Vista Hermosa (Oaxaca)! As we know that *M. haageana* in the sense used by W. Reppenhagen is the plant from the Puebla-Veracruz border around Esperanza, the naming of all these populations remains under a thick cloud.

*M. elegans* var. *lupina* - ML 33 - Canon del Lobo (Morelos), alt.: 1350m. The Canon del Lobo is just south-east of the large city of Cuernavaca, and already shows many traces of human presence, including brush fires. The differences given by W. Reppenhagen in his description of this variety are not very convincing! Our field observations have not been very useful, as most plants had apparently been scorched by brushfire. As seedlings, they seem to have less closely set spines than *M. elegans*. Centrals: 2, the upper part brown and the lower one white. Radials: about 18, sometimes with the tip reddish-brown.

*M. elegans* var. *longicaudata* - ML 236 - Las Estacas (Morelos), alt.: 1000m. A clearly distinguishable population, giving birth to much larger plants than the average *M. elegans*, but naturally its appropriate taxonomic rank is open to discussion. Centrals: 2, chalky-white, with the upper third shading into a reddish- brown, up to 7-8mm. Radials: 20-22, white.

*M. elegans* var. *teyuca* - ML 51 - Teyuca (Puebla), alt.: 1550m. Like *M. elegans* var. *lupina*, the population of this variety we have found has been submitted to numerous brushfires, and only a few specimens seem to remain (July 17, 1989). This is a far cry from W. Reppenhagen's comments on his February 25, 1975 visit. Centrals: frequently only one, brown, with the lower third paler. Radials: 20-22, i.e. above the 15-20 range given by W. Reppenhagen. In the seedlings we have grown, the lower radials were the longest, but in the wild plants we have observed, it was the lateral radials!

*M. haageana* - ML 57 - San Jose Ixtapa (Puebla), alt.: 2550m in our opinion, it is not reasonable to lump *M. elegans* and *M. haageana* in the same taxon. The small, slow growing cylindrical seedling totally lacking central spines of *M. haageana* is a far cry from the spherical seedling of *M. elegans* and its varieties, in which the central spines are as long, or often longer than in adult form.

*M. conspicua* - ML 53 - about 14km west of Zapotitlan Salinas (Puebla), alt.: 1500m. In its typical form, this is a very easily distinguishable plant: stout, large (up to 120cm in diameter and up to 150mm tall), 16-17 white radials but of a less brilliant tone than in the case of *M. elegans*, 'picking up' more of the brown colour of the 2 dark central spines, but the difficulty is that in the same general area, there is a wide variety of plants intermediate with *M.*

meissneri: these intermediates (ML 220) are small plants which either remain single or form small groups of 3-4 heads (their radials may have dark-brown tips). it would be interesting to know what is the flowering and fruiting periods of these intermediates...

*M. conspicua* var. *vaupelii*- ML 245 - about 25km south of Huajuapán de León on MEX 190 (Oaxaca), alt.: 2000m. The attribution of this name is quite arbitrary! In any case, the plants here are dark spined, but much lighter in build than a 'true' *M. conspicua* Centrals: 2. Radials: about 18. W. Reppenhagen has indicated having found this taxa near Tejuapán, further south along the road to the city of Oaxaca. The population we have found there (ML 247) has whitish central spines, and we find it difficult to attribute in to anything else than *M. elegans*.

*M. monticola* - ML 52 - Puente Marques (Puebla), alt.: 1100m. A nice clean cylindric plant with a diameter of about 50mm. Centrals: 2, white with reddish-brown tipped, 4 to 6mm (W. Reppenhagen states Z-3mm). Radials: 20-24, very white. The comparison made by W. Reppenhagen of this taxa with *M. conspicua* is really without much interest.

*M. lanigera* - ML 265 - San Miguel Maninaltepec (Oaxaca), alt.: 2050m. This taxa can be found growing in a variety of different conditions and altitudes around the village of San Miguel Maninaltepec. The comparison with *M. huitzilopochtlii* is totally misleading. These two taxa just do not have any close relationship. We would suggest, if our kind readers have the patience to accept this, that this is the most northern of the southern *Elegantes* (*M. columbiana* et al.) Centrals: 4. Radials: 21-23, very fine.

*M. lanigera* var. *juxtlahuacensis*- ML 241 - Juxtlahuaca (Oaxaca), alt.: 2100m. Are the plants we have found really the taxa described by W. Reppenhagen? If this is the case, the reference to *M. lanigera* is, at the least, difficult to follow! Centrals: 2, reddish-brown, the lower third yellowish. Radials: 15-17, glassy white.

*M. donatii*- ML 55 - Morelos Canada (Puebla), alt.: 2350m & ML 272 - south of Esperanza (Puebla), alt.: 2300m. Are we correct in assuming that W. Reppenhagen has preferred this older name to that of *M. Collina*. But why has he rejected the latter as a synonym of *M. haageana*? This taxa, as we have observed it, is quite variable from one plant to another in the number of radials, from 16 to 23, leading to a large variability in the general appearance of the plant. Centrals: 2, brown, curved bodyward. Unhappily, the seed we collected as ML 55 gave us a zero germination result. Why? We would be interested to know if members who sowed this seed had better success.

*M. albidula* - ML 54 - about 14km west of Zapotitlán Salinas (Puebla), alt.: 1500m. As others before us, we have found in the middle of dense populations of *M. conspicua* a small number of plants with no central spines, therefore of entirely white aspect. Are they just freaks, or are they a distinct taxon? We have no answer to this question. Radials: 16-20, whiter would it seem than in *M. conspires*.

*M. lanata* - ML 261 - along MEX 190 south of Oaxaca, near Totolapán (Oaxaca), alt.: 1000m. Help! This is an abundant, easily found, nice looking taxon. But how should it be named? *M. lanata*, *M. supertexta* or *M. martinezii* all hail from further north. Steven Brack has used *M.*

albilanata for his SB578 from Mitla, and W. Minnich uses *M. albilanata* var. *martinezii* for his WM4520 from El Camaron, but then W. Minnich has also often used the same *M. albilanata* for some Tomellin Canon plants which, in our mind, are undoubtedly *M. dixanthocentron*. The best we can suggest is perhaps *M. noureddineana*, in a smaller sized format than the plant described as such by W. Reppenhagen. Centrals: 4-6, white with a tiny brown tip, about 5mm. Radials: 19-25, chalky white, very fine.

*M. ignota* - ML 37 - Tomellin Canon pass (Oaxaca). The first of the two members of series *Elegantes* to be encountered near the highest point of the so-called new road between Tehuacan and Oaxaca City. its semi-globose growth habit make it quite distinctive in the field. It grows in humus under the protection of a mixed oak/pine forest. Centrals: 2~, glassy yellowish- white, only slightly thicker than the 26-28 radials.

*M. halbingeri*- ML 257 - Tlaxiaco junction on MEX 190 (Oaxaca), alt.: 2300m. This attribution is one of those which owes more to faith than to science. However, this taxon exists and is well known. Tiny spherical plants of about 30 to 40mm in diameter, with very closely set spines. Centrals: 1 (-2), with just the tip brown. Radials: 20-22.

*M. noureddineana* - ML 38 - Tomellin Canon pass (Oaxaca). A most distinctive plant, stout cylindrical with a diameter reaching 100mm and a height of 200-250mm, growing in dry calcareous areas, in company of prickly bushes and palms, a habitat quite distinct from that of the nearby *M. ignota*. Certain plants take on a *M. muehlenpfordtii* appearance. Centrals: 4-6, with some plants with exceptionally long spines. Radials: 23-25, short (we have found both in *M. ignota* and in *M. noureddineana* more numerous radial spines than the figures given in W. Reppenhagen's original description.

*M. eriacantha* - ML 233 & ML 278 - both in the area of Cerro Gordo, about 25km south-east of Jalapa (Veracruz), alt: 850m. We find most interesting W. Reppenhagen's suggestion for placing this distinctive taxon in series *Elegantes* rather than in series *Polyacanthae*. Growing in tropical humid conditions, the wild plants are not always very handsome. In cultivation, there seems to be some degree of variation in the colour of the central spines, and therefore in the general appearance of the plants (see Lau 1104 & 1105).



ML 236. *Mammillaria elegans* var. *longicaudata*. Las Estecas, Morelos.



ML 38. *Mammillaria noureddineana*. Near km. 161 of MEX 131 from Tehuacan to Oaxaca, Tomellin Cañon, Oaxaca.