

Huitzilopochtli



July 2009

Miscellaneous Mammillaria musings, brought to you by the left-handed postman

Thanks again, especially to Chris Davies, Mark Masterson and Bob Stanley, for your feedback, ideas and photos which, besides providing plenty of food for thought and topics for discussion, are helpful in re-directing my normally very short attention-span back to our troublesome genus! Now that we are, I think, all in favour of trying to produce a booklet on the Lau collections, we have to decide on the best approach, or at least one that is likely to get results. As a taxonomist I am naturally attracted to the 'systematic' method, i.e. to looking at the plants group by group, and prompted by the discussion on Lau 1096, my own homework on *M. guerreronis*, and then by a batch of images of plants of this series sent to me by Mark Masterson, it seems to me we might start by focussing on series *Polyacanthae*. As a preliminary, however, I have felt the need to begin collating and reconciling the information on Lau's *Mammillaria* collections as a whole that can be gleaned from his own revised 'Feldnummern-Liste' and notes published by AfM in 1992 in combination with the data-sheets he had earlier sent me and the data I obtained from the survey project I initiated in the *Mammillaria Society journal* in the 1980s. To these basic sources, we can add references to individual plants mentioned in Lau's correspondence or in books or journals, along with photos where available.

The Lau *Mammillarias*: towards a definitive catalogue

As I pointed out when launching the *Mammillaria Society's* project to compile 'A Checklist of Lau and Reppenhagen *Mammillarias* in Cultivation' (JMS 24(4): 60-62. Aug 1983), there are several snags associated with using the various numerical lists that have been compiled hitherto. The hazards include dubious identifications, muddles in numbering (by the collector himself), ambiguous locality-names, and more. Most recently, Bob Stanley has asked me about a plant he has that is labelled "Lau 1529 *M. obscura?*", a number which does not appear in Lau's AfM list or in the one at the back of John Pilbeam's book. "I do have it on a list that Lau sent me and the details are the same that De Herdt gave", Bob writes, and yes, there is such a number (see *next page*), though the identification is certainly (as one might say) 'obscure'. 1529 was one of quite a few of



Lau 1529 Bob Stanley's photo of his plant of this number (see description on next page).

Lau no.	Identification		Series	
1529	Mammillaria sp. (obscura?)		Macrothelae	
State	Nearest town	Village	Latitude	Longitude
Zacatecas	San Juan Capistrano		22° 45' N	104° 05' W
Altitude	Substratum	Date of collection	Photos:	Material:
1000 M.	clay and gravel	DAY 30 MONTH 3 year 84	Habitat Plant	Seeds Plants
Description of habitat			Date received	
In a vast and wide, hot valley on clay and mineral deposits, often exposed, but mostly in semi-shade in the xerophytic vegetation. I have found many new species of cacti here.			Accession no.	
Other cacti present			Vouchers:	
Echinocereus pamesiorum, Echinocereus spinigemmatum Echinofossulocactu sp., Coryphantha sp.			fruit	seed
			flower	veg
			Published date	

Data form completed by Lau for L. 1529. Bob Stanley has kindly contributed a description of his plant (see image on previous page) in my preferred (NCL) format, as follows: **Bo** simple, 130 x 80 mm; **tub** 4 sided/conic, 15 x 15 mm green; **ax** with white wool, **csp** 2, 10-20 mm, recurved, pinkish brown tipped brown; **rsp** 7, 2-9 mm, uppers shortest, white tipped brown; **fl** 18 mm diam.; **otep** white with reddish brown mid-stripe; **itep** white with pinkish brown midstripe; **fil** white; **anth** yellow; **sty** dirty white; **sti** 6-8, green; **fr** clavate, 20 x 5mm, pinkish carmine; **sd** brown. [Stanley 1614 ex De Herdt 1989 (seed).]

his numbers that did not get into circulation until after my lists of Lau plants reported or not reported in cultivation were published (JMS 25(1): 5-7. 1985). Incidentally, Mark Masterson has recently published a note in the German Mammillaria journal (MAfM 33(3): 167. 2009) drawing attention to our revived survey and requesting the participation of AfM members. He somewhat misquotes my statement in Huizilopochtli (March 2009) that 'out of 364 relevant Lau numbers at that time, 153 *could be found in UK collections*' (italics mine). What I actually said was '... were reported as present in one or more collections'. As I said at the beginning of my article, 'A total of 70 lists were submitted in response to my request for information... 36 from the UK, 16 from W. Germany, 5 from E. Germany, 4 from the Netherlands, 2 each from Belgium and Switzerland, and 1 each from Australia, Canada, France, New Zealand and the USA.' Several members of the German society had in fact already responded to my original article before it was publicized in their own journal, to which (MAfM I/84: 24-31) I contributed an extended version (discussing the value of documented plants etc, and translated by Klaus Schuhr) of my progress report in JMS 24(1): 13-14 (1984). This stimulated more of our German friends to submit lists, and Herr Schuhr (MAfM VI/84: 203-213) published a transcript of my subsequent reports for them.

The number of supposedly relevant numbers (364) quoted from my 1985 article also needs amending. According to Lau's own lists, 5 of the numbers reported for plants in cultivation (my Table 1) were either not listed by him (665a) or not assigned to a Mammillaria (731, 732, 1086 and 1159)! Similarly a total of 6 numbers 'not reported' (Table 2) were not of Mammillarias (601, 781, 1004, 1350, 1351 and 1352) and several others were apparently omitted. Subsequently he made about 20 more numbered collections, bringing the total to almost 400 (397 according to my records as of now), though he did not send me data-sheets for all of them.

Focus on the *Polyacanthae*

If I have found all of them, Lau (AfM list, 1992) identified 19 of his numbered collections as belonging to this series, of which 10 were reported in cultivation in 1983/4 (the number of reports is given here after the identification):

668	<i>rekoii</i>	.....1	1106	<i>pilcayensis</i>	.....1
670	<i>rekoii</i> f.	.....2	1107	<i>wuthenauiana</i> (<i>nunezii</i>)	... 1
673	<i>rekoii</i>	.....0	1124	<i>sanjuanensis</i>	.....0
674	<i>rekoii pulliamata</i>	.....1	1155	<i>xaltiangueensis</i> [<i>aguilensis</i>]	. 3
761	<i>bambusiphila parva</i>	.....31	1194	<i>magnifica</i>	.....0
1055	<i>rekoii aureispina</i>	.....48	1201	<i>nunezii</i>	.....0
1057	<i>mitlensis</i>	.....0	1314	<i>rekoii leptacantha</i>	.....3
1058	<i>mitlensis</i> f.	.....0	1438	<i>matudae</i>	.....0
1096	<i>guerreronis</i>	.....1	1506	<i>duoformis</i> ["1503"]	.....0
1104	<i>eriacantha</i>	.....8			

Lau originally used Helia Bravo's name *M. mitlensis* for his 668, 670 and 673 but retained it for 1057 and 1058, though Helia herself concluded it had been a re-naming of *M. rekoii*. The only slide of *M. mitlensis* Lau sent me (*right*) was from E of Mitla but unnumbered and he did not respond to my request for the number.

Apart from this the only photos he sent me of the *rekoii* group were of the two extreme forms he called *aureispina* and *leptacantha*, later treated by Reppenhagen as separate species.



Lau's own photos of his yellow-flowered L.1055 and *M. rekoii leptacantha* L.1314



So far as I know these two taxa are only known from the original localities. With 48 records, *Lau* 1055 this was the most commonly reported Lau plant 25 years ago, but oddly enough the photo he sent me shows it with yellow flowers (p.19, bottom left).

In response to a letter from me (13 Aug 1980) about this photo, Alfred responded (19 Sep 1980) "I found only one single clone of 1055 with yellow flowers. I examined thousands of plants in the habitat collecting seeds, and only one had yellow flowers. Flowers and seeds occur at the same time. I have sown the seeds and will later send you seedlings [He did not – DH]. The yellow-blooming plant grows among the others with red flowers. The locality is slightly below Quiotepec near Yolox at 2000 metres altitude.

M. pullihamata Repp. seems to me just a dark-spined form of *M. rekoj* and *M. sanjuanensis* Repp. simply another renaming of *M. rekoj*, like *M. krasuckae* Repp. and *M. albrechtiana* Wohlschlager.

Lau 761 is or was another widely distributed introduction, and the subject of remarks to me in his letter dated 17 March 1976 I quoted earlier (p. 12), along with his number "1165", later corrected to 1155. Having collected them at the same places in the state of Michoacán as Lau, Reppenhagen later described the plants as *M. bambusiphila* var. *parva* and *M. xaltiangensis* var. *aguilensis* respectively, though the localities on the pacific slope of the Sierra Madre del Sur are not very far apart and the supposed distinctions between the two species questionable. Prior to the publication of the 2nd edition of the *CITES Cactaceae Checklist* (CCC2) I proposed combining them as subspecies of *M. xaltiangensis*.

One of the features emphasized by Reppenhagen in his classification of the Polyacanthae was the difference in the maturation time of the fruits. Most of the taxa ripen their fruits a year or more after flowering, but Reppenhagen claimed that those of what he called *M. gasterantha* (Repp. 934), *M. isotensis* (Repp. 771) and *M. bambusiphila* (Repp. 748, 663) ripened within 3–5 months (and incidentally he said 5-7 months in the original description of *M. xaltiangensis* var. *aguilensis* but omits mention of the feature in his Monographie). Delayed fruiting certainly seems to differentiate the Polyacanthae (and Supertextae) from the Heterochlorae, so is a significant feature, but the behaviour of *M. gasterantha* etc needs confirmation.

To digress somewhat, the 14–18-month maturation period quoted by Reppenhagen for his *M. compacticaulis* seems to have influenced my provocative decision to refer it to *M. matudae* in CCC2 rather than *M. xaltiangensis*, to which I had earlier allied it (MPo 6: 4. 1997). Anyway, nothing like sticking your neck out to get someone else to do the work for you, and Bob Stanley eventually retorted with a closely argued article (JMS 42(4): 46–50. 2002) politely suggesting I had got it wrong. I felt at the time the jury was out on the matter, and responded to him, questioning the pedigree of his plant (since his photo didn't look much like Reppenhagen's) as well as giving counter-arguments. Bob stuck to his guns, and the matter seems to have rested till after the publication of NCL, where (as Bob was quick to point out) *M. compacticaulis* is actually referred to *M. xaltiangensis* ssp. *bambusiphila* on p. 153 and to *M. matudae* on pp. 303 and 353! Very confusing, not to say bamboozling! Somewhere along the line I must have fallen off the fence on Bob's side, but (as in a few other cases) neglected to amend the database for the appendices.

To return to the Lau collections, the next on the numerical list is *Lau* 1096, which has been under discussion in the two previous issues of this Newsletter. As of now, I think Alfred was correct to identify it as *M. guerreronis*, and that the pedigree of the plants illustrated is OK, but that my referral of *M. bella* to *M. nunezii* was a(nother) mistake!

Next, *Lau* 1104 *M. eriacantha*, collected at its classic locality in the state of Veracruz, where I also collected seed (H. 8570), distributed by the Mammillaria Society in 1974 (more about this

later). Reppenhagen thought this species should be referred to ser. *Supertextae* but I'm as sure as I am about anything that he was wrong. Though it occurs on the opposite side of Mexico I have long believed it to be the sister-species of *M. xaltiangueensis* and am delighted that it has recently been discovered in Guatemala (*M. eriacantha* ssp. *velizii*). More on that, too, later.

Lau 1106 M. pilcayensis is likewise unproblematical, unless you doubt its close affinity to *M. spinosissima*. For an illustration of Alfred's collection from Pilcaya, for which he gives the elevation as 600–800 m, see the photo by Bill Weightman in NCL, pl. 432.2. When Hernando Sánchez-Mejorada took me in 1974 (see p. 6), we recorded the elevation as 1350 m, corresponding more closely to that of the type collection by Eizi Matuda, recorded as 1400 m. Like most other Polyacanthae wildings, it is camera-shy, but I've done my best to enhance what was the only shot I could get of a sizeable plant.



M. pilcayensis on a conglomerate bluff in the Barranca de Pilcaya, 1350 m, 9 Oct 1974 [DH 740914]

That leaves *M. wuthenauiana* Lau 1107, from Taxco, a name which I think is generally agreed to be a redescription of *M. nunezii* (originally from Taxco); *M. magnifica* Lau 1194, *M. nunezii* Lau 1201 and *M. matudae* Lau 1438, all presumably OK, though not seen by me, and likewise *M. duoformis* Lau 1506, though I think what I called the 'M. duoformis sub-group' (MPo 4: 21. 1992) requires more study and discussion in the light of the Reppenhagen's and other introductions.

Feedback, please!

As I've said, your feedback is a helpful stimulus to me to get writing, and provides plenty of food for thought and topics for discussion. So I plan to fill one or two pages in future issues with your comments on anything I've written, and maybe some answers. So please keep writing and I shall assume you've no objection, unless you tell me, to my quoting you. And, of course, more pictures of documented plants, please!

What is H. 8504?

Earlier this year I was surprised to receive a photo from Mark Masterson of a plant I had raised from seed more than thirty years ago. I had collected the seed during a holiday trip to Mexico in October 1973 and the plant is one of several I kept from a batch of seedlings raised the following year when studying the *M. rhodantha* group. Later (1982) I gave my whole collection to Kew, where about 40 of my 400 or so Mamms have survived. The plant now in Mark's collection is one of three plants of H. 8504 that have done so, and has been given to Mark by Kew with several other plants of mine to help him develop his *ex situ* reference collection of the genus.

I wrote up my fieldwork on *M. rhodantha* and its allies for *Cactáceas*, the journal of the Mexican C&S society, where it appeared in three parts in 1974/5. One of my photos of H. 8504 (or rather a plant in the population from which I collected the seeds) was used on the front cover of the issue containing the second part of my article. The photo wasn't returned to me, but the two I am reproducing here show the plant and its habitat, which is on a Cerro within the limits of Mexico City and only 100 m or so from a densely populated area. Judging from the Google map it may still be hanging on there, but at least there can't be much doubt Mark has the right plant!

My Mexican friends called these plants *M. aureiceps*, following Britton & Rose's application of the old name from Lemaire and, as I said in my article, I felt the identification was justified. But, I added, "whether or not *M. aureiceps* should be treated as a variety of *M. rhodantha* or a separate species is another question, to which I shall return in the final part of my article...". I duly did so, but without drawing any firm conclusions, partly because my observations were too few but also perhaps for "diplomatic" reasons! I noted, however, that "no one character adequately distinguishes *M. pringlei* from *M. aureiceps* and that it would consequently be very difficult to defend *M. pringlei* as a distinct species". I also noted that three of the four yellow-spined relatives of *M. rhodantha* I had observed, including the putative *M. aureiceps* and *M. pringlei* at its type locality had milky sap in the stems, whereas all seven populations of *M. rhodantha* and *M. fera-rubra* (brown-spined) did not. I might also have noted the dichotomous habit of the H. 8504 plants, also a conspicuous feature of *M. pringlei* (see NCL pls 428.3 and 428.4).

If *M. aureiceps* and *M. pringlei* were combined, *M. aureiceps* would be the correct name, which would be unfortunate and unpopular with everyone, I think, especially as the name *M. aureiceps* has no type and the colour of the spines is not what most of us think of as 'golden' (*aureus*). So (though I did make the combination *M. rhodantha* ssp. *aureiceps* (Lem.) Hunt 1997/MP 6: 7 alongside ssp. *pringlei*) the name is best dissociated from H. 8504 and 'dumped' (as in NCL).

What then should we call H. 8504 -- and the population from which it hails? Well, whatever you choose to call my seedlings you should add 'H.8504' (plus something if they are 'next generation') to identify the source. Naming the natural population is more difficult. For the moment, *M. aff. pringlei* DH 730113 would be my choice. This refers to my photograph, for which the documentation Mexico, DF [Distrito Federal], Cerro del Chiquihuite. If you look for this on Google Earth, the coordinates for what I think is the actual site of the population are approximately 19:31:30N/ 99:07:42W and the alt. 2450 m. According to my notes there is a road leading to a microondas site on the summit at 2650 m.

Conservation

So close to dense urban sprawl, this conspicuous and attractive plant, if still surviving 36 years since I saw it, must surely be highly vulnerable or endangered. So far as I can judge from the satellite image, the rocky Cerro does not seem have been developed much since my visit. Maybe it is simply unsuitable for housing etc, but it is certainly accessible on foot and attractive for walking and rock-climbing etc. Maybe it is protected in some way. I must try to find out.



Mammillaria aff. *pringlei* growing on the volcanic outcrops of Cerro del Chiquihuite, Mexico DF, 27 Oct 1973. The inset shows a red fruit trapped by spines. (Felipe Otero had told me the fruits were green!)



Without an individual name, interesting populations like this are off the conservation radar. *Mammillaria pringlei* itself currently falls into the category 'Least Concern', which may properly reflect its status at Tultenango (see NCL pl. 428.3). So, until there are better ways of protecting natural populations, cases like this could be said to be a 'Splitter's Charter'. The name *Mammillaria san-angelensis*, for instance, was proposed largely in hopes of drawing attention to the dwindling population of *M. aff. haageana* on the pedregal at San Angel in the south of Mexico City. And there was a precedent: Albert Buining admitted (to me at least) that he had named numerous South American species to draw attention to individual populations, though he realised they were at best just forms or "varieties".

In situ conservation action is mostly up to the Mexican authorities but we can do something about it *ex situ*, i.e. with plants in cultivation. In view of their dichotomous habit, the H. 8504 plants do not offset freely and so may not be readily propagated vegetatively. I am not sure if they are or are not self-compatible (I hope Mark will test this with the one plant he has), but it is always wise to keep at least three seedlings so that even if one plant is lost one can hope to obtain seed by cross-pollination and hence preserve some genetic diversity. Otherwise, in the way of all flesh, including the vegetable kind, *ex situ* will sooner or later lead to the *Exit*...



Photos from Mark Masterson of one of my H. 8504 seedlings (sown 1974), given to the Royal Botanic Gardens Kew in 1982 (accn 001-85.00253) and now in the collection of Mark Masterson, Rothesay, Scotland. The picture above was taken in March 2009 and that of the plant in flower on 9 June 2009.

