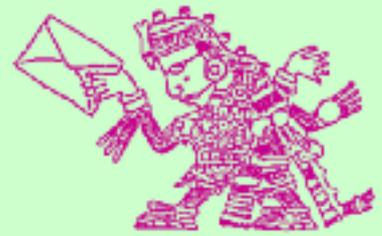


Huitzilopochtli



December 2010

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

Christmas comes but once a year, but it does seem to come round increasingly frequently! The mapping project I mentioned at the start of Huitz (for short) 4 has taken me to Germany no less than six times this year, and I have been at what you might call my Huitz-end in helping to bring that project to completion (alas still some way off). Much progress has been made, but much else has had to be put on hold. However, partly thanks to the unusual European freeze-up in the last few weeks, there is just time to 'take stock' before thinking about New Year Resolutions!

Lau stock-taking

I'm embarrassed (especially having said 'No need to wait months for your comments to be published' in the first issue!) that I failed to mention in the last issue the work that Mark McCormack had done in the summer of 2009 on a re-run of my 1984 survey of Lau's *mammillarias* in cultivation. He duly sent me lists from a dozen or so contributors but I have only now got round to comparing them with the 1984 responses.

As I noted in Huitz (March 2009) for the '84 survey 'I received a total of 70 responses and duly listed the results in JMS (25(1): 5–7. 1985). In summary, 153 of the 364* relevant Lau numbers were reported as present in one or more collections. The 17 most commonly represented numbers accounted for half the grand total of 824 records.' [*Later amended to 397 (Huitz: 18. July 2009); this figure may again need slight adjustment.]

Up to now Mark has only received 12 responses and a total of 310 records, but thanks in part to his efforts to obtain a complete a 'set' of the available numbers, almost 150 are represented. Surprisingly, perhaps, these include 60 numbers not reported in 1984, but do not include 68 that were reported in 1984. It follows that further responses now might increase the tally to well over 200 (at least 149+68=217, less any that have been lost to cultivation). Has no one got the famous *Lau 777* (*haudeana*) any more, for instance?

Perhaps I had better list all the 68 'missing numbers'. They are:

5 dioica f.	642 sp.	1010 densispina	1166 trichacantha f.
8 pondii	649 barbata	1021 plumosa	1176 gasseriana
11 setispina	668 rekoi	1026 albicoma	1177 pennispinosa
23 brandegeei	670 mitlensis	1033 pachycylindrica	nazazensis
27 blossfeldiana	674 pulliamata	1038 napina	1199 rubrograndis f.
28 glareosa	679 lanata f.	1041 carnea	1211 arida
37 fraileana f.	680 flavicentra	1042 wrightii f. wolfii	1220 rubrograndis
38 slevinii	698 barbata	1049 jaliscana f.	1250 longiflora f.
46 peninsularis	701 grahamii	1060 sanluisensis	stampferi
48 schumannii	707 denudata	1062 gigantea	1271 supertexta f.
51 pacifica	711 herrerae	1078 garessii	1283 kraehenbuehlii
61 lanata f.	753 rhodantha	1106 pilcayensis	1321 dixanthocentron
63 dixanthocentron	764 beneckeii	1115 sp.	1347 camptotricha
64 senilis	773 mazatlanensis	1119 sp. obscura f.?	1353 pringlei f.
65 crucigera	777 saboae v. haudeana	1120 sp. gigantea f.?	1364 rubida
67 dixanthocentron [a]	778 wilcoxii	1121 trichacantha?	neoschwarzana?
606 sheldonii	787 gummifera	1154 heidiaie	1436 leona (pottsii)
618 tesopacensis v. rubriflora	1005 mystax	1165 [bocasana f.]	

When it comes photos, my principal source to date has been Bob Stanley, who sent me jpegs of more than 50 Lau introductions, some with more than one image. There are also 29 images of Lau numbers in my *New Cactus Lexicon* (NCL), contributed by Graham Charles [GC], John Pilbeam [JP], John Trager [JT] and Bill Weightman [WW]. Other contributors include Robert Bader [RB], Chris Davies [CD] and Mark Masterson [MM]. Mark has also sent me some from internet sources [int] (contributors not named). Some have the same Lau numbers as some of Bob's, but the combined lists (see *next page*) cover nearly 90 numbers in all, which is not a bad start. (Those with an (H...) suffix are illustrated in this 'blog' on the page no. indicated.)

On pages 40-44, with his kind consent, I am reproducing 'thumbnails' of 54 of Bob Stanley's images, plus half a dozen from Mark Masterson. This is in hopes of encouraging you to send me whatever images you can of Lau plants, especially if you can fill a gap or gaps in the catalogue, or your plant 'looks different' (even slightly), or the photo shows it in flower. Even if yours looks the same, it will help to establish that the plants of that number in cultivation are uniform.

Problem plants

Though opinions may legitimately differ on whether to accept them as species or subspecies etc, the majority of Lau's collections in cultivation could be said to be *unproblematical*, in the sense that the plants grown under a given number look more or less alike, within the normal variation acceptable in a batch of seedlings from a single source. In other words, they are a known taxon whose identity is not seriously in doubt. When substantially different-looking plants are being grown under the same number (i.e. they appear to be different taxa), however, we may have a problem deciding which is the original and which the imposter. There are also examples where we have uniform plants (i.e. a single taxon) but as yet no positive identification, and some cases where Lau got in a muddle with his numbers (see for instance pp 12-13 in this series for mention of his numbering mix-up in the 1150s and 1160s).

We have already considered a number of such 'problem plants' and I want briefly to re-cap on these before moving on. First (pages 3, 10, 13), there was the case of *Lau* 1134 and 1135. Then there were *Lau* 621 (pp. 3-4), *Lau* 1096 (pp. 4-5, 14, 31) and *Lau* 1170 (pp. 26-28). And I also want to re-visit *Lau* 1529 (pp. 17-18) in more detail.

The case of *Lau* 1134 and 1135 exemplifies the difficulty of coming to any sensible conclusion about the mammillarias of what I have called the *M. standleyi* group until we have far more and reliable data from fieldwork in the as yet almost roadless Sierra Madre Occidental. It must be remembered that the coordinate data quoted by Lau can only have been approximate (no GPS then!) and (as I also doubt he carried an altimeter) his altitude estimates are likely to have been made from maps or a gazeteer. However, he did state that 1134 was at 2200 m and had "much larger and more robust spines than the forms near Río Urique further down" (i.e. 1135, presumably) and this should be useful information for anyone lucky enough to go plant-hunting there. Lau's photo (H13) certainly had larger and more robust spines than Bob Stanley's, so does anyone have *Lau* 1134? Until we have more evidence I think we should we call plants like Bob's *Lau* 1135b (or 1135bs)

The case of *Lau* 621 points to other difficulties. When you look at Bill Weightman's photo in John Pilbeam's book (page 182) there seems no reason to question Alfred Lau's identification. But as I asserted (perhaps too boldly) in my previous comments (page 4), Bob Stanley's plant cannot be identified as *M. marksiana*. Given that Lau's collection locality, Bacuberito, was the type locality of Backeberg's *M. rubida*, it seems likely there was a mix-up somewhere along the line. The shape and reddish tinging of the flowers, and something about the general appearance of the tubercles and spines, persuades me that Mark may be right that Bob's plant is *M. bocensis*, if that is distinguishable from *M. sonorensis* (another problematical entity!). (continued on p. 36)

Source-list of images of *Lau mammillarias* in cultivation (as of December 2010)

- 027** *blossfeldiana* WW NCL 404.1
035 *fraileana* RB
036 *slevinii* BS
044 *dioica* BS
052 *petrophila* BS, int
053 *armillata* BS, MM
055 *armillata* GC NCL 403.5
066 *huitzilopochtli* BS, int
068 sp. [*supertexta*] BS
086 *standleyi* (*hertrichiana*) BS; MM; JT NCL 446.3; int
094 *hertrichiana* BS
099 *multidigitata* BS; WW NCL 406.6
617 *mainiae* WW NCL 406.5
612 *miegiana* int
621 *bocensis* (as '*marksiana*') BS JMS 46(3): facing page 72, fig. 5. 2006); MM
635 *marksiana* MM
653 *egregia* BS
673 *rekoii* RB
694 *moelleriana* BS; MM
696 *mercadensis* BS, int
772 *rubida* BS
774 *tayloriorum* BS
777 *saboae haudeana* WW NCL 410.1
783 *saboae saboae* WW NCL 410.2
1026 *albicoma* GC NCL 420.6
1034 *heyderi gaumeri* WW NCL 442.3
1042 *wrightii* f. *wolfii*. Kurt Schreier (H30); GC NCL 403.2, int
1044 *jaliscana jaliscana* BS; GC NCL 415.1
1046 [as '*gilensis*', but cf. *bocasana*] RB
1047 *densispina* BS
1048 *zacatecasensis* BS, int
1050 *jaliscana* f. int
1055 *rekoii aureispina* (yellow fl) Lau (H19); BS; MM; WW NCL 431.5 magenta fl
1059 *dixanthocentron* BS
1063 *picta* BS
1069 *wintera* *aramberri* BS; CD; WW NCL 447.4
1073 *papasquiarensis* BS
1087 *dixanthocentron* BS
1096 *guerreronis* CD (H14); BS, MM
1103 *carretii* WW NCL 400.5
1104 *eriacantha* int
1106 *spinosissima pilcayensis* WW NCL 432.2
1108 *halbingeri* (*ignota*) BS
1116 *supertexta* BS, int
1118 *petterssonii* aff. BS, MM
1128 *albilanata oaxacana* (*lanigera*) BS
1132 *haageana* int
1133 *aureilanata* WW NCL 421.2
1135 *lindsayi* f. Lau (yellow fl) (H13); BS (magenta fl) (H13), MM
1139 *baumii* BS
1141 *mazatlanensis* [as *patonii sinaloensis*] int
1144 *guillauminiana* BS
1155 *xaltiangueensis* BS
1163 *antesbergeriana* Lau (H39); BS, RB
1165 *bocasana* Lau (H12)
1170 [as *roseoalba*] Lau (H27); BS (H27), CD, int
1171 *loui* BS; WW NCL 422.1
1186 *glassii* (*nominis-dulcis*) GC NCL 421.6, int
1186a *glassii* BS
1199 *melanocentra rubrograndis* WW NCL 444.3
1203 *rubida* RB
1218 *compressa centralifera* [*centricirra*] CD
1222 *loui subducta* BS
1223 *carmenae* WW NCL 421.3
1224 *loui dasyacantha* WW NCL 422.2
1231 *decipiens camptotricha* WW NCL 426.1
1234a *bellisiana* BS
1249 *scrippsiana* BS
1250 *longiflora stampferi* WW NCL 409.2
1256 *canelensis* BS
1272 *evermanniana* WW NCL 441.5
1277 *sphaerica* WW NCL 401.4
1314 *rekoii leptacantha* Lau (H19)
1322 *glassii siberiensis* BS
1332 *anniana* JP NCL 418.2
1334 *moelleriana* MM, int [purple fl]
1337 *brachytrichion* BS, CD, int]
1363 *carmeane* (pink) BS
1366 *moelleriana* BS, int
1374 *albicans* BS, int
1401 *alamensis* BS
1427 *formosa* RB
1434 *johnstonii* BS
1445 *pennispinosa nazasensis* WW NCL 417.1
1447 *rubrograndis* BS
1495 *huitzilopochtli niduliformis* BS. int (2)
1496 *loui* f. [*dasyacantha*] BS, intr
1500 *huitzilopochtli* AG (2), BS, CD
1507 *columbiana yucatanensis* WW NCL 433.4
1529 *obscura* BS (H17); MM, INT
1539 sp. BS
1545 *miegiana* MM, int
1557 *huitzilopochtli* BS
s.n. *albicans fraileana* GC NCL 403.4
s.n. *rekoii* Lau s.n. (H19)
s.n. *melanocentra rubrograndis* Lau (H28)

On a brief visit to the Zürich Sukkulente-Sammlung on 17 Aug 2009, and by courtesy of the curator, Dr Urs Eggli, I took the opportunity to examine and photograph the authentic material of *M. marksiana*, pickled and live (see below). We can take it on trust both specimens are from the original Schwarz introduction described by Krainz in 1948, but it is doubtful that the pickled one can be rightly claim to be the 'holotype', since the label implies that the specimen was not preserved until many years later! The original description only states '*Typus* Nr. 733 lebend [*living!*] in der Städt. Sukkulente-Sammlung Zürich', but a living plant is not acceptable as '*Typus*'; it must have been preserved at or before the name and description were published.

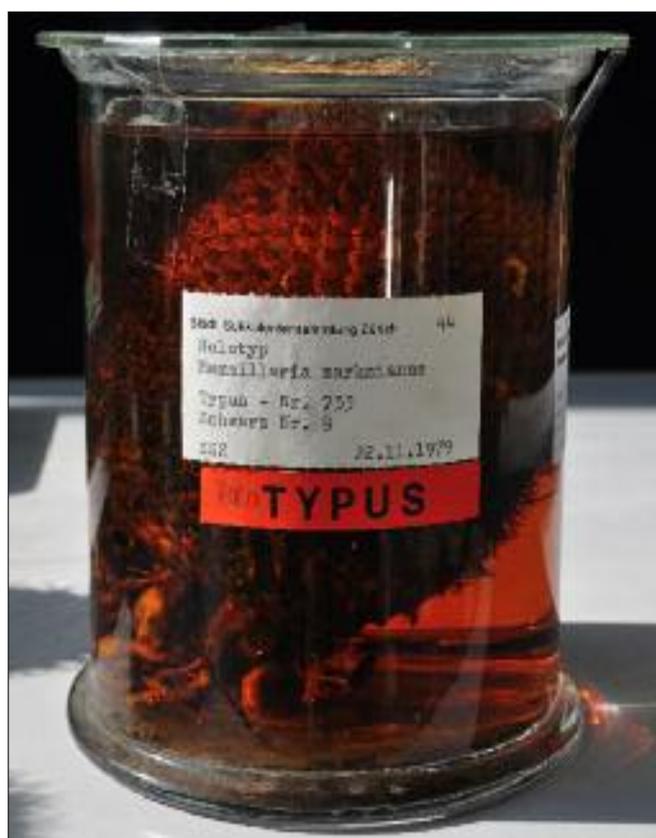
According to the ZSS database, the pickled specimen was 'presumably preserved c. 1957/1959' and later 'transferred into a new jar', but it can now only have the status of an '*epitype*'. In the absence of preserved material at the time of description, the *lectotype* of the name *Mammillaria marksiana* has to be the rather poor but identifiable photograph by Krainz accompanying the protologue.

The same status applies to the photograph of *M. pennispinosa*, described and illustrated by Krainz in the same article from a living plant not preserved till a decade or so later.



Bob Stanley's plant, received from Lau as seed of *Lau* 621 in 1987 and raised the following year, but difficult to reconcile with *M. marksiana*.

(photo: Bob Stanley)



Left, the preserved specimen of Schwarz Nr. 9, presumed to be from the original introduction of *M. marksiana*, but not admissible as the 'holotype' because it was not preserved at the time the name was proposed. Above, a living specimen of *M. marksiana* at ZSS, also believed to be from Schwarz's original introduction.

As for *Lau* 1096, I'm content to believe that the plants of which I have seen images are 'genuine' and a form of *M. guerreronis*, Lau's own identification. But the discussion has raised doubts as to the status of *M. meyranii* and *M. bella*, which (as the original populations are widely scattered) will need more observations (and perhaps DNA data?) for their resolution.

A good deal of hot air has been circulating concerning *Lau* 1170 and *M. roseoalba*. For me *M. roseoalba* is an open and shut case. The type locality is precise, and Michel Lacoste's image (ML 463, see p. 28), photographed there, though not in flower, seems to me the genuine article. I can also accept *Repp.* 1279 as *M. roseoalba* but although *Lau* 1170 was supposedly collected in the same general area I find it difficult to believe the plants, both wild and cultivated, could be the same species as ML 463 and the Bödeker original. More fieldwork (and footwork) needed!

Lau 1529

This number (see image p. 17 and data sheet, reproduced on p. 18), to which Bob Stanley alerted me, has the double distinction of being absent from the AfM list and from John Pilbeam's list (his book, page 344).

Lau's tentative identification of the plant as '*Mammillaria* sp. (*obscura?*)', a name preferred to *M. wagneriana* by Craig in the *Mammillaria Handbook*, which he treats as a synonym (p. 60), certainly places it in the right group. Having looked again at the original photos of these plants, I have to admit the one of the shorter-spined *M. wagneriana* itself (Boedeker's photo, not Craig's, and not the one of the longer-spined plant Craig called '*M. obscura* var. *wagneriana tortulospina*') could be said to be a 'dead ringer' for the one of *M. obscura*. From the outset, however, the problem with *M. obscura*, proposed by the nurseryman Hildmann in 1891, has been that its source (apart from 'Mexico') is unknown, except that it had been introduced to Germany by Droege several years earlier. Neither Schumann nor Britton & Rose knew it, except from the Hildmann description and photo. But it closely resembled two other plants distributed by Hildmann, *M. petterssonii* Hildm. (1886), also introduced by Droege (without locality) and *M. gigantea* Hildm. Cat. 1888 (name validated by Schumann in 1898), of which the original collection, from Guanajuato, is attributed to MacDowell.

Craig's adoption of the epithet *obscura*, in preference to *wagneriana*, though his description was evidently based on Bödeker's of *M. wagneriana*, may explain its occasional occurrence in subsequent publications, but its precise application is better treated as uncertain (as I indicated in CSJGB 33(3): 68. 1971 and JMS 13: 24. 1973 and *Bradleya* 5: 36. 1987). This leaves *M. wagneriana* as the preferred name, but in possible contention with earlier ones, especially *M. petterssonii*, for plants of this ilk from the states of Guanajuato, Jalisco and Durango. As I indicated in my note in *Bradleya* (l.c.), I could not agree with Glass & Foster in thinking *M. wagneriana* close to, perhaps not separable from, *M. gummifera*, though at that time I thought it looked more like *M. zeyeriana* (another unlocalized and untypified name best dumped!), especially the plant known as *M. tesopacensis* var. *papasquiarensis* (*Lau* 1073).

As I said in 1987, further fieldwork in N Zacatecas and E Durango will be needed to delimit the species of this group. But first, as I implied in 1973, we first need to clarify the type locality of *M. wagneriana*, 'Staat Zacatecas und dort bei San Miguel del Mezquital'. There are San Miguels in most states, including Zacatecas (including one NE of Valparaiso on the map, next page), but none in my sources that are 'del Mezquital', implying that the town or village is an in area called 'Mezquital' (a vegetation type characterized by mezquite trees, *Prosopis* spp.). And it so happens there is a large area in E Durango marked on the map as 'Mezquital'. One of the larger settlements there is actually called Mezquital (23:34N/104:22W, further north and not on the section of the map shown). Quite often the saint's name, by which Mexican town and village names are often prefixed, gets dropped (on a later map I have, San Juan Capistrano is just 'Capistrano', so perhaps Mezquital might earlier have been 'San Miguel del Mezquital'? Perhaps Fitz & Betty Fitz Maurice (who demolished my theory that *M. stella-de-tacubaya* came from the Tacubaya near San Pedro del las Colónias near Torreón) might be able to settle this one for us? [Some years



Lau's approximate collection sites (●) close to the boundaries (---) of Zacatecas, Durango, Nayarit and Jalisco, for *Lau* 1529 etc (see coordinates below). Reppenhagen also collected at four of the same (or approximately the same) sites (●), calling three of the plants *M. wagneriana*, and the fourth (the one from El Salto, near Mezquitic) *M. apozolensis* var. *saltensis*. [From AGS 1:1,000,000 map (1940)]

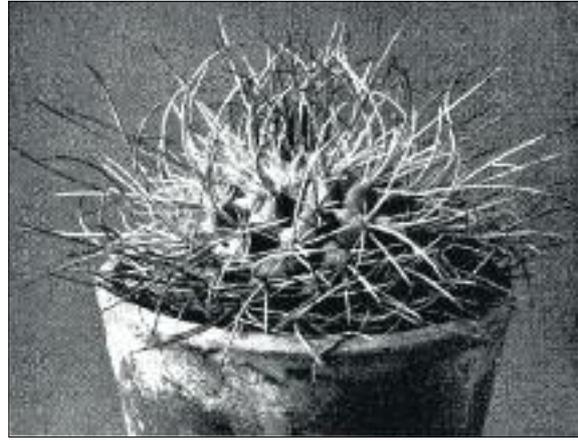
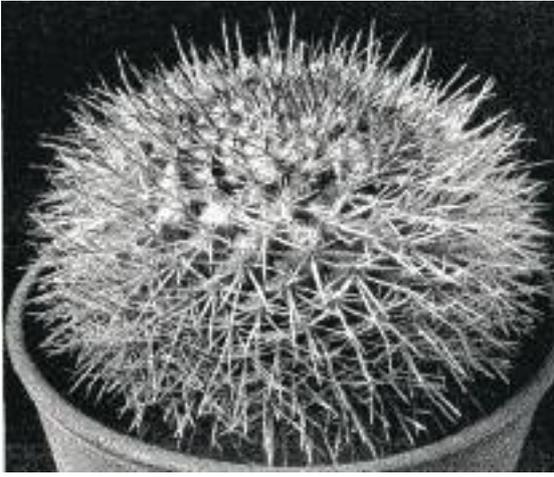
ago, by the way, I was told that San Miguel del Mezquitil was the one now known as Miguel Auza, near the border of Zacatecas and Durango, ENE of the city of Durango. This not only seems an improbable name-change, but a less plausible source for the plants illustrated by Bödeker as *M. wagneriana*.]

Apart from *Lau* 1529 (Zac: San Juan Capistrano, 22:45/104:05; 1000 m), several Lau numbers relate to the *M. petterssonii* group and the approximate collection sites (findspots) are indicated on the map above.

Lau 1045 ("*M. petterssonii* form". Zac: Monte Escobedo, El Salto, 22:20/103:30; 1600 m). This is almost the same locality as **Lau 1357** (Jal: Mezquitic, 22:30/103:50; 1800 m) and that of *Repp.* 1510 (type no. of his *M. apozolensis* var. *saltensis*), *Repp.* 1753 (the same) and *Repp.* 1755 = *Lau* 1357). Pilbeam (pp. 224–225) illustrates *Repp.* 1753 and a plant at El Salto photographed by Michel Lacoste, both as *M. petterssonii*, and I think this name is probably to be preferred

Lau 1118 (Jal: Huejuquilla, San Juan Capistrano, 22:35/104:00; 1000 m) and **Lau 1119** (Jal: Huejuquilla, 22:35/103:55; 1600 m), both as "*Mammillaria* sp." Reppenhagen also visited these sites, with Lau or independently: *Repp.* 1508 = *Lau* 1118; and *Repp.* 1756 = *Lau* 1119). We only have an image of *Lau* 1118 as yet (see p. 42). The spination suggests *M. wagneriana*.

Lau 1120 ("probably a form of *M. gigantea*". Zac: Jerez, 22:40/103:10; 2200 m). No image available (not in cultivation). This was further east and at higher elevation and I would expect it to be *M. petterssonii*.



Actual-size reproductions of the photographs of *M. wagneriana* in Bödeker's protologue (MDKG 4: 199–200. 1932). They were said to be half-natural size, so the plant on the left would have been approx. 14 cm \varnothing including the spines.

Lau 1163 (Dgo: San Juan Capistrano, Canoas, 22:40/104:10; 2100–2300 m; type of *M. antesbergeriana* Lau). This was described by Lau himself in the US journal and compared with *M. gigantea* and *M. petterssonii*. The type was cited in error as 'Lau 1136' (and the error perpetuated by Pilbeam (with a '?') and in NCL) but that number was apparently an *Escobaria*. Lau illustrated his article with photos of two rather dissimilar plants, which one could be forgiven for thinking might be different species. I have not examined the specimen preserved as holotype at ZSS, so cannot say which of the two (if either) it might be. The half-tone one in Lau's fig. 1 certainly looks like *M. wagneriana* (to which the taxon is referred by John Pilbeam and myself), but his fig. 2 (see below) has fewer, shorter and darker spines (not covered by the description!) and one has to wonder if the plants really came from the same place! (Bob Stanley's plant, see p. 42, also "looks different").



Lau 1163. The cultivated specimen of *M. antesbergeriana* illustrated by Lau as fig. 2 in his article proposing the new taxon in CSJA 63(1): 17–19 (1991) and here reproduced from a slide received from Lau with a letter dated 1 July 1980, annotated '1163' and 'Canoas'.



036



044



052



053



066



068



086



094



099



653



694



696



772



774



1044



1047



1048



1055



1059



1063



1069



1073



1087



1096



1108



1116



1118



1128



1135



1139



1144



1155



1163



1170



1171



1186a



1222



1234a



1249



1256



1322



1337



1363



1366



1374



1401



1434



1447



1495



1496



1500



1529



1539



1557



086



621



694



1096



1529



1545

Below, 6 images by Mark Masterson