

# "Jungle Spice" - Mystery Alkaloids of Mimosa Root Bark

by Entropymancer

*Synonyms* - Jungle DMT, red spice, red DMT, dark spice, dark DMT, etc.

## **So just what *is* Jungle spice?**

Jungle spice is one of many names that have been applied to an intriguing non-DMT alkaloid fraction that can be isolated from much of the commercially available Mimosa root bark (See *V. Botanical Confustication*).<sup>10,11,17</sup> In the most general terms, it is the alkaloid fraction obtained from the aqueous basic phase of an extraction by pulling with xylene or toluene after DMT ceases to be pulled by an aliphatic hydrocarbon solvent (naphtha, heptane, etc.). This product will almost always contain some N,N-DMT in addition to the more mysterious alkaloids; some extractors choose to remove the DMT in a hot naphtha wash to obtain a pure "jungle" experience, while others use the jungle/DMT mixture as it is.

There is a great deal of ambiguity surrounding jungle spice, owing to a wide array of factors. First and foremost, there appears to be a great diversity of compounds which can be isolated by extracting the aqueous basic phase with xylene or toluene.<sup>15,19</sup> Which compounds are actually isolated depends on some several of the following factors: the source and botanical identity of the root bark, the conditions of cultivation/harvest, and various pH, temperature, and airflow considerations throughout the extraction process.<sup>10,11,24,26</sup> About all that *is* certain about it at this point is that it contains some psychoactive material that isn't N,N-DMT.

There has been a lot of speculation going around that this compound may be yuremamine, the novel phytoindole isolated from *Mimosa tenuiflora* and characterized in 2005.<sup>8,20,24</sup> Looking at the evidence, this scenario appears exceedingly unlikely based on yuremamine's known instability to base and speculated instability to heat.<sup>8,24</sup> It can't yet be ruled out completely, but there remains a substantial body of evidence against this identification. Until an LC-MS of jungle spice emerges with a molecular ion at 477.1 m/z, I think it's safe to assume that yuremamine is not the red alkaloid that has been isolated by home extractors.

That said, I hope that the ensuing analysis can shed some light on the subject, and clear the way for future investigators to finish unraveling this mystery.

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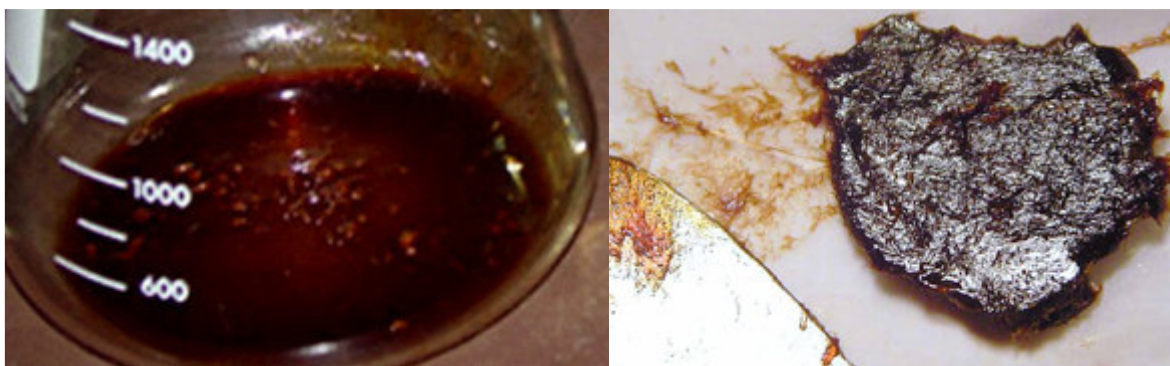
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## I. Diversity of the Extracted Compounds

Probably the biggest issue complicating the mystery of jungle spice is the sheer diversity of compounds that can be extracted using apparently identical methods.<sup>14,15,17,19,22,24,26,30</sup> Based on their physical properties, we can classify three distinct types of material that can come from the xylene/toluene pull. Considering the reported pharmacological activity of these materials in human subjects, the picture becomes much more complicated.

### I.1 Red/Brown Crystalline Goo



**Figure 1.** Red/brown jungle spice goo from Critical Switch Tek (left), another specimen (right)

*"After doing two pulls with naphtha I did two pulls with toluene, evaporated the toluene, and washed the solids with naphtha which made them dark red."*

Entheogenist<sup>14</sup>

*"Could you describe the material? My friend's has the consistency of a soft crayon and is brick red."*

Noman<sup>14</sup>

*"The junglespice I got is just like a piece of a red crayola crayon. After evapping it looked like crystals on the dish, but when scraped up with razor blade it all stuck together to make this waxy homogenous stuff. It has a strong smell of indole when burnt, but otherwise it has a similar smell to DMT, but with a fruity kind of a smell."*

QuantumBrujo<sup>14</sup>

*"SWIM succeeded in pulling the red spice. It's a dark , deep crimson color , almost the color of dried blood."*

Spicemeister<sup>17</sup>

The reddish brown crystalline goo that one can find pictures of floating around the internet are what I tend to think of as jungle spice, but washing this goo can yield a surprising diversity of products. As the above quotes indicate, in some cases washing the dark gunk with naphtha leaves behind a red solid which is insoluble in the naphtha (Figure 1). This red material has been isolated both by straight-to-base extraction and by acid/base extraction.<sup>14,19,22,24,26,33</sup>

The crude extract is invariably an impure mixture. In most cases, pulling the alkaline aqueous phase with xylene extracts a bright yellow color into the solvent; the red pigment isn't seen until the solvent is evaporated.<sup>24,28</sup> When the DMT and other impurities are removed from the crude extract by a warm

wash in an aliphatic hydrocarbon (naphtha, heptane, etc.), several extractors report that the recovered DMT crystals remain stained yellow.<sup>17,24</sup> This yellow fraction of the jungle spice that's soluble in warm naphtha could be several different things (see *I.4 Yellow Oils*).

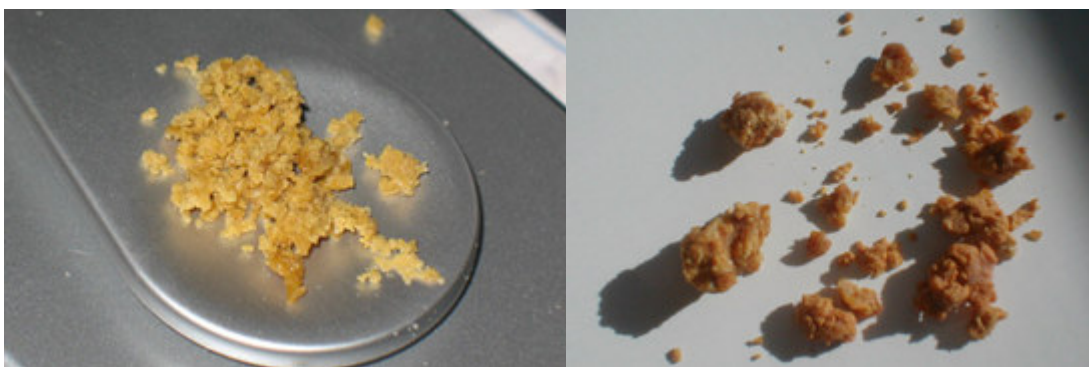
It is important to note that some people obtain an explicitly brown goo from the xylene pull, with no indication of red coloration whatsoever (Figure 2).<sup>24,17,22,24</sup> Although they may appear similar to the crude red/brown goo on initial inspection, exclusively brown extracts appear to yield a different product, distinct from the red material (see *I.2 Tan Waxes*). The lighter of the two tan waxy specimens (Figure 3) is the final product that was obtained from Figure 2 after the goo was washed with hot naphtha.<sup>24</sup>

Of course, we can't rule out the possibility that the red material may be a mixture of multiple alkaloids. For example, it seems plausible that the red material might have essentially the same chemical composition as the tan waxes, with the addition of a small amount of a red pigment that's responsible for the differences in appearance (color and consistency) between the red material and the tan waxes.



**Figure 2.** A brown goo lacking any reddish tint

### I.2 Tan Waxes



**Figure 3.** A couple of tan waxy specimens.

*"[A] xylene pull of a basified acidic extract of this material yields a crystalline slightly orange waxy substance that smells of tryptamines and glows orange under a blacklight."*  
Archaea<sup>17</sup>

*"[E]nded up with tan waxy non oily stuff that is stronger than hell (10-20 mg) and terrifying. It's not just residual DMT, its too strong for that."*  
Noman<sup>24</sup>

The name and the pictures say it all. This fraction is a very waxy solid, with coloration ranging from a light yellow/orange to a much darker brown. The exact color of this fraction appears to vary widely from extraction to extraction.<sup>33</sup> It is obtained exactly the same way as the red material above; an aqueous hydroxide solution containing mimosa alkaloids is extracted with several volumes of naphtha until no more N,N-DMT is pulled. The spent solution is then extracted with a few volumes of xylene or toluene to obtain the crude jungle spice. Washing this crude material with hot naphtha yields a waxy solid, ranging in color from tan to orange to brown.<sup>24,15,22,17</sup>

This material has been isolated from both acid/base and straight-to-base procedures.<sup>24,17,33</sup> Its isolation has also sometimes been positively correlated with heating the naphtha pulls prior to the aromatic pull, but unless further evidence corroborates it, this will be considered to be coincidental.<sup>24</sup> Again, we'll run into some further confusion when we look at the reported pharmacological activity of this material, indicating that there may be more than one compound here. Specifically, this is the fraction of jungle spice which is most frequently reported to change activity over time, indicating that some chemical reaction (presumably oxidation) is occurring.<sup>25,15,13</sup>

### I.3 "Kokusaginine"

When browsing around threads discussing jungle spice, inevitably you start running across people claiming that kokusaginine is likely the chemical responsible for Jurema's reported oral activity.<sup>9,17,24,31</sup> Generally these posters cite the 1999 [Entheogen Review article](#) where Jonathan Ott and K. Trout are asked their opinions on the matter.<sup>6</sup> Unfortunately, these people seem to have read no further than the second paragraph before leaping to this completely unfounded conclusion. To summarize:

The article begins with a question from a reader, "J.S, OR":

"Jonathan Ott seems to think that Mimosa hostilis is active without MAOI added. The ingredient, kokusaginine, which is morphine-like in structure, may possess MAOI properties... I would suggest that the kokusaginine, supposedly insoluble in water, is nonetheless extracted enough... Does anyone know, for certain, what the effects of kokusaginine are?"

K. Trout was asked about this, to which he replied

"I have only heard of kokusaginine reported from the Rutaceae. I know nothing about its activity except for the fact a related compound was reported to be antagonistic to Ditan... I did notice a very strong stuporous component with one bioassay of *M. tenuiflora* root-bark and a MAOI, that I did not in the others. Jonathan would be the best one to talk with about this."

So the folks at Entheogen Review asked Jonathan Ott, and here's what he had to say:

"I've no idea whence derives the querist's notion that kokusaginine occurs in *M. tenuiflora*, and I am in agreement with K. Trout's remark in this regard, while it is a mystery to me why it would be assumed this compound possesses MAOI activity, nor indeed how this compound - or moclobemide, with which it is structurally unrelated - is "morphine-like," none of which has anything to do with the recondite pharmacology of jurema preta/ tepescohuite, in any case.

Perhaps there is some confusion here between the rutaceous kokusaginine [found in New Caledonian *Dutailleya* spp., among others] and the so-called "kukulkanins" reported from powdered stem-bark of Mexican tepescohuite [misreported as *Mimosa tenuifolia* L. (sic): *Journal of Natural Products* 52(4): 864- 867, 1989], also of obscure pharmacology. There is no reason to suppose this compound or any of the diverse saponins likewise reported from bark of Mexican tepescohuite show MAOI activity, and **at least five phytochemical analyses of Brazilian jurema preta [mostly unpublished] have failed to show presence of  $\beta$ -carbolines** (*Editor's note: Emphasis mine; I find this comment significant in light of some claims on the internet that the identity of the red pigment has been established firmly as a  $\beta$ -carboline*) nor any other category of potent MAOI. Moreover, pharmacologically and pharmacodynamically, the psychoptic effects of cold-water, hand

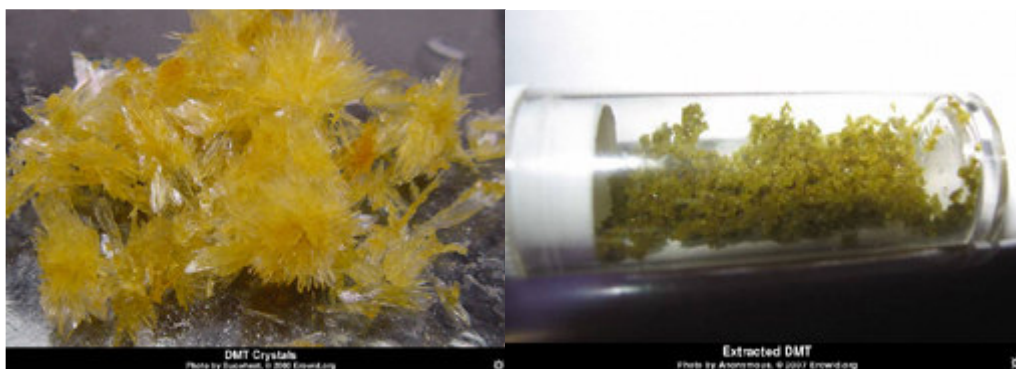
squeezed and short-time-infused, aqueous extracts of simple pounded jurema preta root-bark prepared according to the traditional manner as documented in several Brazilian reports, bears no relation to the - to me - well-known pharmacology of the  $\beta$ -carbolines and other MAOI...

Preliminary chemical evidence reveals rather the presence of several novel and yet-unidentified DMT adducts in jurema preta root-bark, apart from free DMT itself. Either these compounds show oral activity per se, not being substrate to gastric MAO, or rather show a higher affinity for the enzyme[s], serving thus as competitive inhibitors respective to DMT for its active site[s], in the manner that the  $\beta$ -carbolines do. My current work strongly suggests the former conjecture is the more parsimonious."

It'd have been nice if Mr. Ott explained why he feels the former explanation to be more parsimonious, as the isolation of yuremamine, with its intramolecular H-bonding, would appear to substantiate the latter explanation.<sup>8</sup> Regardless, I hope that this can put to rest the idea that the soporific component that has been isolated from Mimosa root bark is kokusaginine.

Based on physical descriptions as well as reports of its effects, it appears that the compound that people have typically been calling kokusaginine is identical with the tan waxy material, and is usually described as being very hard.<sup>17,24</sup> Particularly with this fraction, it's been reported that as the chemical ages, the stuporous effects dissipate, and are replaced by a fully psychedelic activity profile.<sup>11,13,17,24,26</sup> (For an account of the isolation of this fraction, see *III.3 Isolation of "Kokusaginine"*)

#### I.4 Yellow Oils



**Figure 4.** Two samples of DMT containing significant yellow impurities, courtesy of [Erowid.org](http://Erowid.org)

*"The yuremamine which was evaporated out of the filtered xylene defat of the powdered root bark was a yellow creamy color prior to purification, and a translucent orange-colored almost oily residue which would not dry to a hard substance."*

Lycaeum Member<sup>26</sup>

*"It's yellowish. Even a yellow crystal. Smells the same as DMT with a musty overtone."*

Heyoka<sup>16</sup>

*"After two recrystallizations on the N,N- that came out with [the jungle spice], SWIM tells me it is irretrievably stained yellow and resembles egg yolk."*

Spicemeister<sup>17</sup>

This is by far the most ambiguous fraction that comes out of the xylene/toluene pull. Some of the yellow oils that have been isolated from Mimosa have been speculated to be plant fats and oils; another fraction

of yellow oil is suspected of being an oxidation product of DMT.<sup>9,12,16,24</sup> When spice is extracted with xylene/toluene or diethyl ether (without using naphtha first), it also tends to come out with a bright yellow-orange discoloration.<sup>13,15,17,24,28</sup> The most substantial evidence that there is more than one compound in the yellow oil is the ambiguous solubility of the material. Yellow oil is separated from jungle spice based on its solubility in naphtha, while at the same time a yellow oil can be removed from DMT (extracted by standard straight-to-base methods) based on its insolubility in hot naphtha. Clearly these must be different yellow oils.

To further complicate the issue, it's very difficult to isolate the yellow oil on its own. This is evidenced by the fact that many people doing otherwise normal extractions report obtaining a yellow-colored product when the naphtha pulls are done heated.<sup>9,16,24</sup> These yellow crystals are sometimes reported to be qualitatively better in terms of effects than pure DMT.<sup>16,28,32</sup> Also, when washing the crude jungle spice extract with warm naphtha, some extractors report that any N,N-DMT they recover from this process is strongly yellow-colored, and that this pigment seems impossible to remove by typical purification methods. Unfortunately I haven't been able to find any experience reports specifically using such yellow-stained DMT.<sup>17,24</sup>

Investigating the possibility of the yellow oil being DMT N-Oxide, I found a 2005 paper reporting the isolation of this compound from a methanol extract of *Acacia confusa*, but it contained no description of the physically observable characteristics of the compound (such as color), only the measured NMR data.<sup>3</sup> This is only useful in that someone with access to proton NMR spectroscopy who obtains a sample of yellow "oxidized" DMT could use this information to conclusively establish the identity of this material. One home extractor who did some TLC analysis on whole and purified extracts of *Mimosa* root bark described DMT N-oxide as a yellow oil, though I can't corroborate this description in the published literature.<sup>12</sup> On a related note, one home extractor has discovered a method for reliably converting bright white spice into a yellow oil (without using any synthetic reagents); the nature of the process indicates that the yellow oil it isolates is in fact an oxidized derivative of DMT (see *III.4 Delafonze19's Preparation of Yellow Spice Oil*).<sup>32</sup>

Looking at the Radio879's LC-MS of a crude xylene pull of jungle spice reveals a peak at 205.1 m/z, which corresponds to the expected molecular ion of DMT N-Oxide, so it seems like a pretty good bet that this chemical is generated as a side-product of the extraction process.<sup>19</sup> It may exist in the bark as a trace component (there is a barely perceptible peak at 205.1 m/z in the Vepsäläinen paper reporting the characterization of yuremamine), though it's possible this trace peak was an artifact of the isolation process as well.<sup>8</sup> It's also possible that the sample analyzed in the paper was from a different subspecies, or even an entirely different *Mimosa* species than is typically purchased as root bark (see *V. Botanical Confustication*).<sup>19,29</sup>

### I.5 General Comments on "Colored Spice"

*"So I'm wondering... The old-school heads at the festivals keep talking about red or orange DMT from back in the day, and how strong it was. I'm wondering if that old-school spice was actually just a mixture of the 2 alkaloids in one product... because as far as I can tell, pure DMT is white or clear crystals."<sup>24</sup>*

*"I have had the orange DMT that Terrence and old heads speak of. It is DIFFERENT than the snow white DMT people extract these days. People will say things like "it's impure, clean it" blah blah blah. No. They've never had it then. It is the most ridiculously potent DMT SWIM has ever smoked."<sup>24</sup>*

*"Since 1999 there has been the reds also called purple by some, yellow, orange, and white spices available at music festivals, and have been kept underground till recently. At the last SCI shows in Red Rocks CO there was all colors available, being offered quite openly. You could smell that sweet plastic smell every few 1000 feet while walking the lot."*<sup>24</sup>

There has been a great deal of discussion and speculation on "yellow DMT" and "orange DMT", some of which has been reported to be subjectively different than ordinary white DMT.<sup>11,13,16,17,24,27,28</sup> This turns out to be a rather thorny issue. There are several unrelated factors that can lead to yellow or orange spice; sometimes these colored spices are reported to be more potent than DMT, sometimes less potent. The discussion will be organized based on the reported origins of the colored crystals.

### 1.5.A Old Spice

*"The yellow oils oxidize to a ruddy-orange colour when stored at room temp for a month in a metal container. This is not good to let go any further, it's degrading as the colour goes yellow to orange ... I have thought that this 'aged' yellow spice, that becomes 'orange' looks like what the T. McKenna's spice must have been; a reddish and smelly mix oils and clear crystals... But beware! it keeps oxidizing and definitely goes 'off'. It becomes blackish-rusty-red, smells different - when this happens it does not launch you... you get dragged behind the hyperspace shuttle... Bleah !"*

El Ka Bong<sup>15</sup>

Probably the simplest form of colored DMT comes from samples that were originally pure white spice. As the samples age, they turn orange and waxy over time.<sup>16,18</sup> There seems to be substantial disagreement over the amount of time necessary for this process to occur.<sup>16</sup> Some people report a change in color become noticeable after several weeks to a month, while others have samples that are over a year old and still without discoloration.<sup>16,18</sup> One potential determining factor is the amount and type of impurities present in the sample. This is corroborated by differences in the DMT's shelf-life positively correlating with differences in the clean-up process used to extract it; multiple samples which turned color rapidly with age had not been washed with ammonia or bicarbonate, while the year-old sample had.<sup>16</sup> This would tend to indicate that either residual hydroxide from the extraction, or perhaps some trace phytochemical that the alkaline polar wash removes, is responsible for the change in the DMT as it ages. Anecdotal evidence indicates that higher temperatures speed this degradation process.<sup>13,18</sup> It is unknown whether environmental factors such as air moisture may play a role in the rate of degradation.

Since this orange spice forms from fresh spice when exposed to environmental conditions for a long period of time, it is tempting to label it an oxidation product of little consequence. Unfortunately, it's not quite that simple. We've already fingered a yellow oil as the most likely candidate for the simplest DMT oxidation product (DMT N-oxide). The orange color must come from something else, since a yellow oxidation product couldn't turn a translucent crystal orange.

The simplest explanation that fits the available information is the following: When stored at room temperature for a long period of time, a small amount of the DMT begins oxidizing to DMT N-oxide. This small amount of DMT N-oxide is now also being exposed to environmental conditions for a long period of time, and begins breaking down into its degradation product, which is either deep orange or red. This would mean that starting with a crystal that contains a trace amount of DMT N-oxide may be one of the factors that will lead to a more rapid orange-ing of the spice. This explanation is consistent with observations that have been made on yellow oil, but at present remains entirely speculation.



On the other hand, it's very possible that the orange-red degradation product forms independent of the yellow oil; there isn't enough information to draw any hard conclusions (anyone want to run some TLCs of your old orange spice that started out white?). But to the people who are smoking it, the more important issue is what it does, not what it's made of. Combing through the scraps of anecdotal reports on the issue, there seems to be a general consensus: As the spice turns orange over time, it begins to be qualitatively "different" in terms of the experience (but not any less potent), then gradually the sample loses potency and becomes qualitatively unpleasant.<sup>18,24</sup> It has been suggested that the difference between fresh spice and very old spice is like the difference between fresh spice, and the residue that can be scraped from the inside of the freebase pipe used to smoke it.<sup>13</sup>

Reports of more drastic changes in the appearance and effects of DMT due to exposure to higher temperatures are covered in *II.5.A Experiences with Old Spice*.

### *1.5.B Other Considerations, Botanical and Synthetic*

When talking about old spice from back in the '60s, '70s, and '80s, it's important to recall that we're not necessarily talking about the beautiful snowflakes of DMT that any Joe Blow can now extract from *M. hostilis* root bark. It was only in the winter of 1996 that the Entheogen Review reported *Mimosa hostilis* as "a potent new ayahuasca analog."<sup>5</sup> Most extraction processes purveyed on the internet in the early- to mid-'90s were aimed primarily at obtaining a smokable DMT goop. As far as I know, there isn't a lot of clear information on whether the DMT circulating in previous decades was of synthetic origin, or extracted from plant materials. These are important considerations, as the initial purity and the chemical properties of the contaminants are key factors in determining how the material ages. Most of the discussion here assumes that the extraction was done by processes which have been popular among internet extractors.

### *1.5.C Evaporated Spice*

Another very common form of colored spice results from people evaporating their nonpolar solvent instead of freeze-precipitating.<sup>9,28</sup> The yellow pigment contained in spice that has been extracted with an aliphatic hydrocarbon and collected by evaporation appears to just be inconsequential trace impurities. Most likely these are fats from the root bark. It is reportedly harsher to smoke, but roughly the same potency as white spice.<sup>9,28</sup> This yellow fraction can be removed from the spice by recrystallization.<sup>24</sup> There doesn't seem to be any indication that this sort of yellow spice has any biologically active chemicals besides DMT.

It appears that there is another form of yellow spice that can be obtained by evaporating off the solvent, depending on the evaporation conditions. People report a much more yellow oily product when the solvent is evaporated with high airflow from a fan, particularly with warmer temperatures.<sup>9,24</sup> Others have obtained yellow crystals by melting off-white spice in an attempt to do a "solvent-less recrystallization".<sup>32</sup> Yellow crystals obtained in this fashion are reported to be qualitatively different than plain spice, and slightly more potent.<sup>9,28,32</sup> Based on this information, it sounds like these methods are producing DMT which contains the type of yellow oil I suspect to be DMT N-oxide. Delafonze19 has reported happening on a method for reliably converting white DMT to the potent yellow oil (see *III.4 Delafonze19's Preparation of Yellow Spice Oil*).<sup>32</sup>

### I.5.D Alternate Solvents

Heptane and naphtha have not always been the solvents of choice in DMT extraction. Some of the older teks recommend ether, or dichloromethane (DCM), or aromatics like xylene and toluene.<sup>24,28</sup> It's also entirely conceivable that decades ago, extractors might have used benzene as their nonpolar solvent. All of these are effective extraction solvents for pulling DMT, but as we've seen, they're less specific and pull other fractions. All have been reported to yield yellow or even orange spice.<sup>11,17,24,28</sup> It will be easiest to consider each solvent separately.

#### Xylene and Toluene

Both of these solvents are known to pull a mixture of DMT and "jungle spice" when used on a nonpolar soup that's been exhausted of spice with an aliphatic hydrocarbon.<sup>19,24,14</sup> It's therefore reasonable that they could be used as the primary extraction solvent to pull a similar mixture, but containing a great deal more DMT.<sup>19,28</sup> One experimenter did just that:

"SWIM just decided to extract 100g of MHRB with Xylene and evaporate, just to see the difference between that and a naphtha/freezer precip. After collecting 3 Xylene pulls he had about 130ml of PISS YELLOW Xylene. He evapped that to leave the same circular patterned yellow spiky crystals as the picture. (*Editors Note: This refers to the picture on the left in Figure 4.*)

Oh... my... god! SWIM just finally sampled this batch and for the first time in almost 1 year... the REAL DEAL. He has been searching and searching for this... SWIM tried just about EVERY known vendor of MHRB and it was all the same... NOT what DMT should be like. So he emailed an obscure, little known vendor asking for a sample. The vendor sent 100g. Well, he finally got a chance to extract and, holy shit, is he satisfied. Entities, geometry, self-transforming machine-flowers. Blown away.

He will always extract the same way from now on... pull with Xylene and evap all the way down, wash with ammonia, and blast off."<sup>28</sup>

Although we can't rule out the possibility that there may have been something idiosyncratic to the bark going on here, this report carries a strong recommendation for using xylene as an alternate extraction solvent if you're looking for some orange spice that apparently has something that the white spice lacks. Another extractor also obtained an orange material using xylene as the extraction solvent, and had a sample of this analyzed by LC-MS; this has allowed for some discussion of the identity and abundance of the other compounds extracted by this solvent (see *IV.1 Mass Spectrometry Analysis*).<sup>19</sup>

#### Ether

There have periodically been reports of using ether, or a binary solvent of ether/heptane, as an extraction solvent.<sup>17,24</sup> This invariably leads to a product with yellow discoloration. Since the ether is evaporated to yield spice, it's not surprising that the product is yellow; we might expect some plant fats or other impurities to extract into the ether. On the other hand, ether/heptane (8:1) is known to extract a brown waxy compound along with the DMT, so it's possible that the yellow color in ether extracts is a trace amount of that jungle spice fraction. Based on reports of ether extracts smelling "strongly floral", it's also quite possible that the ether is extracting some skatole (see *IV.1 GC/MS Analysis*). It is curious to note that, while ether, dichloromethane, and aromatic solvents have all been reported to pull jungle spice, ether is the only one of these solvents *not* reported to produce orange crystals when used alone as an extraction solvent. This is particularly interesting when one considers that ether is also the solvent associated with the hard tan wax some have called "kokusagine", and has never been reported to extract a red product when used as a solvent to obtain jungle spice.<sup>17,24</sup>

## Dichloromethane

This solvent is recommended by some older teks. Recent literature suggests that using DCM as a defatting solvent most likely allows for the formation of N-chloromethyltryptamine, a chemical of unknown pharmacology.<sup>2,3</sup> It is unknown whether this compound might form when using DCM as an extraction solvent. Orange crystals that result from the use of DCM could be colored for the same reason as the orange crystals extracted by xylene. There's also the possibility that the color results from a pigment pulled specifically by the DCM. Finally, there's the possibility that spice extracted with DCM could contain some quantity of N-chloromethyltryptamine. According to a 2008 publication, "DMT was found to be reactive towards dichloromethane, either during work-up or long term storage therein, which led to the formation of the quaternary ammonium salt N-chloromethyl-DMT chloride."<sup>2</sup>

I was unable to turn up any reports on the qualitative effects of orange spice extracted with DCM. This compound is unlikely to be psychoactive based on its presumed low bioavailability; potential toxicity concerns are unknown. One extractor decided to perform some experiment to establish whether the orange color was extracted from the plant, or whether it might be the rearranged N-chloromethyl-derivative. After obtaining an orange material from a Mimosa root bark extraction with DCM, he tried extracting Chacruna leaves by the exact same process, also using DCM, and found the result in the latter case to be pure white DMT.<sup>11</sup> This result strongly indicates that the formation of rearrangement products is not of major concern when using DCM, and the difference in the product using this solvent is a result of its lower selectivity as compared to typical alkane solvents.

### 1.5.E Odds and Ends

The use of plants other than *M. hostilis* as sources of DMT was alluded to above; this provides another possible source of reported orange DMT. Many species of Acacia, for example, can yield an orange crystalline product on extraction. While some of this color could indeed be plant fats, Acacias have been shown to have a richly diverse chemistry, so it seems entirely possible that some of this color could potentially come from an alkaloid fraction in the bark.<sup>3,24</sup> Specifically, some of the color might even come from 5-MeO-DMT, which is substantially more potent than DMT by weight. Further, a colleague who recently encountered some bright red DMT inquired and found that it had been extracted from a species of phalaris grass.<sup>36</sup>

A few other comments on colored spices: I have seen two unrelated references to a "purple spice". One of these was accompanied by a blurry photograph which showed spice which was unmistakably purple. I cannot conceive of this coloration having come from any of the materials discussed above. Until some experiences come in with this material, I'd say it's probably best to recrystallize any such spice you happen to run across.

I have also seen infrequent references to "green spice". This is a mystery that I think I can put solidly to rest. It is only known to have been isolated by evaporating the solvent to collect the spice; further, it's only been reported in cases where the extractor used unsavory brands of naphtha (like Sunnyside). In at least one of these circumstances, the extractor evaporated a clean sample of their nonpolar solvent and discovered that it left a blue residue. Thus it appears that the green spice comes from yellow spice plus a blue non-volatile solvent-additive: yellow + blue = green. Long story short: avoid "green spice" like the plague.

## II. Experiences

Below are a collection of experiences that people have had consuming the jungle spice. By and large, the method of administration in the reports was smoking, but there are a few reports of oral consumption of the jungle spice (either by itself or in an attempt to potentiate DMT). The reports do not yet allow us to paint a conclusive picture about the activity of these compounds, mostly owing to the tremendous variability in the extracted material. Where they have their values is in providing the real heart of the evidence that there is an as-yet unidentified psychoactive compound at work here. The sheer volume of reports detailing different or stronger effects at lower dosages than are used with ordinary DMT is overwhelming evidence that there is an unsolved piece in this puzzle.

I've tried to preserve all their original form and content, but I have made a few edits for punctuation, spelling, and grammar.

### II.1 Experiences Smoking the Red Crystalline Goo

"EASY DOES IT. 10-15 mg's of this stuff is insanely potent and just a bit more scary/intense than N-N DMT."<sup>24</sup>

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"I took 3 full tokes from the red oil, the effects were a lot like regular DMT but there was something different. It seemed to be missing the loving presence, the "other place" hallucination was there but the colors were not, or at least they were very dark & dull. My friend & I both felt like we would much rather stick to the regular, definable, loving, white DMT."<sup>35</sup>

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"There is a distinct difference between DMT and the red spice for me. When smoking DMT, I want to smoke as much as possible, but after a few puffs, I was completely revolted. The anxiety and intensity of DMT was not present, but it was very odd and frightening. It's flavor was a spicy barbecue sauce, which was more or less tolerable. The effects of it were much more subtle with an 'easing in' instead of a blast off. The room became twisted, a more grotesque version of itself, some out of Nightmare Before Christmas. It felt like a graveyard and that I was alone (in a bad sense), but then some beings started to appear. They were black, fuzzy balls of energy, about 1'5" tall and 1' wide, with an aspect of children. They were quite friendly and investigative of me (like children). However, the experience made me draw up into myself and I was quite dissatisfied with the feelings. I would like to note that subsequent DMT use (30 min-ish later) brought me up to a BAD part of the 'city,' with clown (not jester/joker-ish) beings of intense negative emotions and ideas who did not like me at all. They also beat up my Guardian when he tried to protect me from them."<sup>22</sup>

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"This Red Jungle Spice is THE BEST THING I HAVE EVER SEEN. Terence McKenna MUST have been smoking the jungle spice thinking it was DMT. I've smoked a lot of DMT and read a lot of Terence McKenna, and I have NEVER seen anything like what he describes. But, two tokes of this red jungle spice and I had his trip WORD FOR WORD. This stuff is SOOOOOO much better, stronger, deeper, more meaningful, and more pleasant to use than DMT. (*Editors Note: Terence McKenna described DMT as "orange, looks like earwax, and smells vaguely of mothballs" when recounting his first DMT experience, which could substantiate this notion.*)

I smoked it with my eyes open while watching Shpongles on stage. The stage began to morph and change, and suddenly a Self Transforming Machine Elf ripped the stage in half and jumped out to dance on top of the ravers. He was made out of what looked like shiny glossy molded plastic like a kid's toy, but he was so colorful, changing shapes and dancing. This was with my eyes open. I had my rational mind intact; I knew I was at a Shpongles show smoking jungle spice. I could not believe my eyes. I even squinted at the stage in disbelief, trying to make things return to normal. If you smoke it with your eyes open, it completely transforms reality before your eyes. This is absolutely the most amazing chemical I have ever encountered,

and everyone at the Shpongole show agreed with me. I passed out about 3 grams of the stuff in individual doses, and everyone agreed that it just blows DMT out of the water.

The second time I smoked it I closed my eyes. I was shot like a laser beam into God-consciousness. I was GOD. I created the universe and spawned life on earth. I saw the beginning and the end and everything in between. I beheld every thought that had ever existed in one instant. then I came back to reality and was back at the rave. BUT, I still thought I was God. I was walking around telling people I was the reincarnation of Jesus, Buddha, Terence McKenna and Tim Leary rolled into one. I truly believed this at the time. I felt omnipotent. I knew everything. But this began to fade and I started to feel stupid for walking around saying I'm Jesus and believing it. So then I started experiencing karma. I left the concert area and hid in the dark to meditate. I thought the people at the rave were going to crucify me. I thought they had already killed my son and were coming for me. I accepted this though, and embraced my imminent death. I knew I was going to die that day and it was OK. It took about 30 minutes for the jungle spice to wear off, and by that time I was a new man. My ego had been lifted up to the point of thinking I was a walking GOD, and then it was crucified. This stuff makes DMT look downright boring.”<sup>24</sup>

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“The reddish oil was not as visually overwhelming as the white crystals but was far more intrusive on my psyche and I usually did not go back for more at a sitting. Almost a nervous hangover from it where N,N- leaves a pleasant afterglow.”<sup>19</sup>

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“It is active in tiny smoked doses like 5MEO and there are no visions, just that crazy tryptamine look to everything. SWIM was not prepared for what was coming and the trip was indeed dark and scary. SWIM will try again once the negative vibes have abated.”<sup>11</sup>

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“I'm traveling through their world now. I cannot interact with them and they are not aware of me, but I can affect their environment. [They are] solitary, lonely beings, living out their existence. They are oddballs, such as one being is a floating bust of an angry man and another is a pastel red colored 'cat' with a bejeweled back. This land was not overtly unfriendly, but definitely an uncomfortable place to be in. A short-lived experience due to purposeful grounding.”<sup>22</sup>

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“This is my experience with Red DMT: On my first attempts to extract DMT (which were barely successful) I was using Chloroform and I would get this Red DMT extract (plus DMT I suppose ...) I smoke the lot. I was dosing low because I didn't know what to expect. Almost all the experiences were fantastic, like an enhance mushroom trip condensed into 5 min. Never a break-through (low doses) Once I smoked a Syrian Rue extract (salt precipitated) and then smoked a very low dose of this extract and I was in pure ecstasy. Never felt like that before (not even on e). It was like a spiritual orgasm. I think what you expect from the trip influences it a lot. I say this because when I tried it I knew nothing about red or jungle DMT. I never read it could be a dark or scary trip and I am sure that is why it wasn't (a bit shocking though Shocked ) Anyway, free your minds, don't be afraid and you should be alright.”<sup>24</sup>

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“Just start with a small dose first to see. Try between 5 and 10 mgs. I think that 15 mgs of this stuff is probably as much as I would do if I was to do it again. I wouldn't recommend doing over 25 mgs of this stuff whatever it is. It definitely feels like a tryptamine.”<sup>14</sup>

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“SWIM once made a batch of a reddish-brown DMT from MHRB- I'm not sure how but it was qualitatively different from the white-yellow from the subsequent batch of extract. At first it was her favorite colour to smoke over white or yellow, but as it aged, and became darker red, blacker, the effects did become "evil" ... opening only to black spaces, twisted hyperspace. It was as though the DMT in the red spice had deteriorated and oxidized, leaving mostly mystery alkaloids that were having a greater effect.”<sup>15</sup>

## II.2 Experiences Smoking Tan Waxes

“For the amount smoked, not that much at all, the effects were outstanding. I'm not sure if it was a breakthrough or not - or even if that has any relevance for dark DMT goo - but I was traveling - with no control - through a strange landscape with subdued colours and slightly blurry landscape. I can't remember that much now but I do remember that at the end I (though I didn't have that concept of 'I') came to a box or door - brown colour- but couldn't go any further. When I woke up/opened my eyes I was still getting some visual effects - very bright colours, greenest plants ever & my walls were incredibly yellow - though with some distortions, the patterns on my ceiling were moving about, the angles and distances in my room appeared distorted too. This continued for about 5-10 minutes lessening in effect.”<sup>31</sup>

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“The material is tan and has the consistency of wax without being oily. A friend was over and wanted to try it. Not wanting to yuk up my DMT pipe and thinking that the stuff was shit anyway, I threw a few crumbs on top of a bowl of bud, 20 mg max. I really figured that it would just mostly taste bad. My friend took a hit, fanning the bowl with a butane torch and then he passed it to me. The bud was still burning and I just hit the top with a Bic, figuring that he had gotten most of it.

PUT IT DOWN PUT IT DOWN PUT IT DOWN!!!!!! Fuck, I couldn't get rid of the pipe fast enough. I leaned back in my chair - Why did I do that? Fuckfuckfuckfuckfuck. NO NO NO I DO NOT WANT THIS I DO NOT WANT TO KNOW THIS!!! Please just let me out I'll never come back just make this stop.

I don't know what I was reacting to, I was aware of no sensory input, hallucinogenic or otherwise, just that horrible feeling of NONONO. That went on forever and an instant and then I started to become aware again of my body and myself and I opened my eyes trying to pull out of that horrid fuckhole. Nope. Horrid fuckhole out there too. I had that crazy DMT vision where everything is fuzzy and lit from within and exists standing apart in it's own dimension but rather than the jewel-like beauty of each atom, I was aware of the ugliness and nastiness of every line, shape, color, and texture. Everything was made of puss and overlapped and falling and oozing and suffocating and vomiting on me.

I closed my eyes again and I became the ugliness. I opened them and settled for just being suffocated by it.

Around this time my hearing came back on line and I realized that the Tool album that we were listening to was no ordinary Tool album but a direct communication to me to reaffirm just how rotten and horrible every aspect of existence is. This came not as a paranoid flash of conspiracy like on MJ or acid but just as a fundamental understanding - like info gained from mushrooms. How can this be? How? How did they know that I'd be listening to this exact song right now? Despair washed over me as I realized just how horrible and squalid a thing everything that I'd ever known or loved was.

The psychoactive was wearing off. I white knuckled it back, said goodnight to my friend, and went to bed. The next day, it was still there. Nothing overt, just wearing a wet blanked of sorrow and despair about nothing. Beautiful things made me sad because I knew now what a lie it was. Nothing was nice. Everything had sharp teeth and wanted to bite.

The feeling faded over the day and now (T+2 days) I have to think about it to bring it back. But it's still there.

This could very well be merely a DMT trip gone bad. The substance was definitely used with inadequate preparation but I've used DMT under less than ideal circumstances before and never had it go that sideways. Such a small dose too. I'm sure that the total quantity in the bowl was less than 25 mg, my friend hit it first, I only had one toke, and in the morning I discovered that there was still some in the bowl. 25 mg of pure DMT doesn't get me as high as that shit did. It seems like it lasted longer than a DMT hit too, but I couldn't say for sure as I was too out of my mind to take note.”<sup>25</sup>

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“The effects of the "red" spice were body only, no visuals. However SWIM found it very nice to put a nice chunk of the red behind the N-N in the pipe. Two large hits of N-N , and the third being the red. It seems to make the N-N extremely more potent, and much longer lasting. "Really nice effect"!!! Highly recommended, he said”.<sup>17</sup>

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"SWIM once extracted some stuff using limonene and everclear that had no real psychedelic effect worth mentioning, but did have a long-lasting body high effect that felt really good, kinda like rolling or maybe a 10,000 X blue lotus extract or something. He smoked it with two chicks - he and one of the girls ended up falling asleep, while the other girl stayed awake for ~5hrs and continued to feel it the whole time. It felt good, but to use her words it was kind of like a "sinking spell"... he thinks this is the one people are mistakenly labeling kokusaginine."<sup>15</sup>

### II.3 Experiences Smoking Colored DMT

There don't appear to be any experience reports by folks who've extracted and purified a yellow oil. However, there are some experience reports available with orange or yellow "colored spice", which are discussed in *Section I.5*.

"SWIM melted his big hunk of red/orange waxy xylene extraction in hot naphtha and then freezer precipitated what spice he could out of it. Spice came out yellow crystals. He's smoked the yellow crystals three times now. In fact it worked so well that after three or four pulls on the pipe, he found himself in a different house! With different furniture, trim, etc..... but the plant spirits in the yard were the same! Holy mother of God! He's pretty sure that something else came through in the naphtha, hence the yellow color. In any case, it's almost prohibitively strong."<sup>28</sup>

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"20mg of the mysterious crystal was smoked, a very strong and powerful body load came on quickly, there were basically no visuals at all, no light, darkness behind closed eyes, the exterior world was altered and distorted, black outlines, more definition, distance and size were screwed."<sup>[ref. lost]</sup>

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"In terms of the subjective effects, breakthroughs could routinely be achieved with 30-35mg. I also never noticed any of the dirty visuals or other unpleasant effects that seem to be plaguing most of the commercially available "MHRB" these days."<sup>27</sup>

### II.4 Reports of Oral Activity

"I have eaten capsules packed full of this extract and its definitely active without an MAOI - seems those other alkaloids in there will work as MAOI's enough to activate the DMT for an hour or so - it just feels like DMT and nothing else. But if I ate some harmaline extract or moclobemide beforehand, those other alkaloids do work orally and really ruin the DMT experience."<sup>19</sup>

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"Also it does make DMT orally active, I can put 2-300mg's in a capsule and eat it, and it will feel like a weak-ish dose of DMT, and not last that long, and I don't feel the other alkaloids. But if I do take harmaline, it tends to activate these nasties and make the experience, well, suck completely."<sup>20</sup>

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"Hey, SWIM said to pass along the word that the red spice IS orally active. He filled a small gel cap with it and dosed it about 10-15 minutes before downing a 10 g brew of Seattle strain *A. muscaria*.... Very freaking nice. Wow... man that stuff did something... don't ask what because what little he remembers, he couldn't put into words. Felt like he was chained down with iron weights though. Hardcore body-buzz from the red stuff. SWIM did not properly weigh/assay amount, he just eyeballed but it was a standard sized vitamin gel cap packed tight."<sup>17</sup> (*Editor's Note: Obviously combining the material with *A. muscaria* undermines the applicability of this report, but it's been included for the sake of completeness*)

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"SWIM informs me that he has just taken an oral dose of 150 mg. This shall see if this is orally active without the use of an MAOI, this was taken on an empty stomach.... no additives, he is on no medications prescription or otherwise... SWIM knows this is probably a very large dose if active and as potent as people say, but SWIM couldn't measure it very well, when he tried to scrape it up, it turned into dark orange goo, he could not put that shit on a scale, so he weighed an empty capsule and then dabbed some in and weighed it again, at first it was like 300+ mg... SWIM took out as much as he could, but could only get it

down to about 150.... at this point he said, "fuck it" and popped the capsule. It has been nearly 3 hours since SWIM consumed the capsulated dose of "yuremamine".... SWIM reports minimal results, slight body-buzz, mental cloudiness and very, VERY slight visual disturbances."<sup>17</sup> (*Editor's note: This report, from a different subject, is likewise problematic, in that his description of the weighing process indicates that the dose may have been substantially smaller than reported, based on operator error*)

## II.5 Reports of Changes in Alkaloid Activity with Age and Heat

Again it will be convenient to organize these reports by the starting material. Since most or all samples of jungle spice appear to contain some residual DMT, it will be useful to first address changes in activity over time observed in "pure" (white) spice over time. The preliminaries of this issue were discussed above (see *I.5.A Old Spice*), so the subsequent discussion will be confined to the drastic change in activity that seems to occur when mild to moderate environmental heat is involved. After that, we'll consider the reports of changing effects over time as they pertain to the jungle spice. No reports could be found on the effects of the red crystalline form of jungle spice changing over time, but the phenomenon was reported several times with the tan wax fraction.<sup>11,17,24</sup>

### II.5.A Experiences with Old Spice

"A few weeks ago, SWIM (not thinking) left a vial of DMT in an automobile for approximately 35 minutes while inside the bank, it was a pretty hot day out. When SWIM returned home, later he decided to take a hit... to his dismay, the vial full of white DMT crystals was now a 1/2 full vial of brownish beige shit that was melted together and also to the inside of the vial... he had to use a poker to scrape all the shit out of it and then chopped it back up with a razor blade....it was much dryer than before and much denser he/she noticed when it went on the scale....the same weight seemed to look like half as much as it did before....

Anyway, SWIM decided to smoke it anyway and found the effects to be more akin to salvia than DMT....the "coming up" and the "after effects" were all but non-existent...the experience rendered the room unrecognizable and SWIM was definitely somewhere else instantly, then returned to normal just as quickly with no residual visuals or euphoria.... he later tried a smaller dose and before he could get well into the second hit - things around the room began to bounce back and forth as if being tossed around by an unseen force, he heard chuckling and had to stop his/her hit and just stare at what was happening...it was NOT very DMT like, SWIM knows DMT and it came on much too quickly and was very bizarre, but in a different way than DMT....literally there was no "coming up" he/she was hitting the pipe once, held for maybe 20 seconds, went to take another and maybe 2 seconds into it- everything was ping-ponging (well, not everything...but the alarm clock, lizard cage, etc...other things remained the way they were...) this happened much too fast for DMT and the absence of any after effects leads him to believe that the crystals left in the car somehow transformed into something else that, while very interesting, is not N,N-DMT....

SWIM didn't care too much for it by itself....but mixed about 70/30 (new/changed) with a new batch is quite interesting....brings back the colors/richness and euphoria, but keeps some of the weirdness...."<sup>18</sup>

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"The subjective effects of DMT are most certainly affected by exposure to light and heat. I won't waste time speculating on why, but it absolutely DOES happen. Obviously, to preserve the quality of your spice, its best to keep it in the freezer in an amber vial at all times that its not in use. SWIM even has a little zipper lunch sack with two ice packs for when he brings it to a remote location because of his experience with its degradation."<sup>18</sup>

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"SWIM agrees. He once decided to hide about .75 of a gram of spice contained in an airtight glass vial somewhere under the hood of his car . He thought "the engine is cold and its less than two miles, the spice will survive." The spice melted and turned to rock. Effects were different. Very abrupt onset and downfall. Straight to almost unconsciousness without the lucidity. SWIM has melted and heated, and played around



with spice many times since and yes, he thinks something is going on.. certainly degradation but not limited to such."<sup>18</sup>

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"Take some white/clear crystals and melt them down gently to form a nice little rock. It will probably turn off-white if not yellow. Start with yellow and you'd probably end up with something orange-ish that, while probably harsh, will blow your top off."<sup>[ref. lost]</sup>

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"Ok, SWIM doesn't even know where to start with this one. SWIM had a few days break from the spice and when he came back to it.. well... it isn't spice at all [but instead] multi colored , non formatted crystals.. So he is thinking to himself, good time to recrystallize all this to make it nice and uniform. SWIM did re-x and wound up with significantly less solids than he did when he began.

The spice put into the re-x was good. Very nice.. fully visual etc.. now SWIM isn't a chemist so he has no idea what happened. That's why he is putting this out there.. perhaps someone can shed some light. Ammonia was added to some solvent of diethyl ether and heptane.. shaken vigorously , this made a nasty looking layer between the solvent and ammonia.. the solvent was removed and was supposed to be cleaner than before. The smell of the solvent was not changed by the ammonia... anyways.. SWIM dissolved over low heat his spice into the solvent... placed in freezer just like always ... precipitated beautifully yielding uniform slightly yellow crystals. The crystals were laid out to dry.

SWIM now thinks the crystals were not fully dry! A situation arose, were everything had to be put up quickly. Anyway they were placed in a lightproof, snap top tube and placed in the freezer. There they sat for 5 or six days... when opening the tube the spice reeked of ether ... so the tube was left open for about 20 hours and then placed back in the freezer another day or so.

SWIM removed the crystals ... yesterday afternoon.. preparing to smoke some in the early morning hours.. a little background on the situation is required from here .. SWIM works alone on top of a mountain.. guarding heavy machinery... all night.. to sit , sleep or smoke spice... alone. SWIM breaks out his pipe... loads a small amount of the stuff and proceeds to toke (its dry now , no ether smell at all) .. SWIM almost pukes .. the stuff nearly ripped the tissue from swims chest it was so harsh.. SWIM thinks what the hell.. and tries again.. same thing... much more plastic tasting.. like smoking.. well some horrible chemical from the abyss of Hades.. SWIM manages to hold the second toke ... at a cost of tasting blood after he blows it out.. SWIM feels nothing.. damn what happened to his spice?! No visuals .. no body load.. nothing ?

SWIM waits a couple of minutes.. raises up to grab his cigarettes and curse under his breath.. kicks his headlights on .. and what does he see? Why two yellow colored demons copulating on top of a bulldozer .. SWIM is dumbfounded.. he has never had a hallucination with such texture.. he steps out of the truck.. completely sober .. except for the vision of these two copulating demonoid creatures and approaches them.. when he gets really close , maybe a distance of ten feet .. one of them looks at him.. and screams in this horrible voice.. "go back from whence thee came and mind not us slugs \_ \_ \_ \_ "(insert name) ...SWIM looks all around .. no visuals whatsoever of anything.. no shapes.. odd colors.. no movement of objects .. nothing.. Then what happens ??? Well since you guys probably think SWIM is crazy already .. why not ? Well lights kick on .. on all this machinery around SWIM.. the stereo starts making this horrible static noise .. his cell phone makes a loud popping sound and goes dead (will still not power on) SWIM hears engines starting up all around him.. SWIM is terrified.. and jumps back into his vehicle.. SWIM watches the lights continue to go on and off all around him , and still , these things are now fighting one another.. one appears to be trying to eat the other .. it did eat the other.. the moment it consumed the other .. the lights went off.. the sounds of the engines died... and the other creature faced towards SWIM.. he simply takes his hand(?) and cuts/draws a hole in the air and climbs through it. Its over ...

No strange tryptamine landscape.. nothing... not that there ever was any tryptamine landscape because their wasn't ... SWIM is dumbfounded and he realizes his nose is running.. and so are his eyes.. when he reached up to dry the moisture from his eyes.. he realizes there must be half a quart of liquid running from every orifice on his face... SWIM tastes blood in his throat and chest .. and his chest hurts horribly.. .. he does not understand what he saw.. he knows of no such effect on mucous membranes by any tryptamine.. this was not DMT .... what the fuck happened to swims spice.. What the fuck happened to SWIM?!!"<sup>13</sup>

## II.5.B Experience with Tan Waxes Over Time

"The effects of K (*Editor's Note: K here refers to "kokusaginine", the name used by this individual to refer to tan waxy jungle spice*) are amazing to say the least ... SWIM has pulled it several times and every time it has been the same... It changes radically with oxidation, becoming way more potent.. and different as time passes.. If used within the first few days of pulling it... smoked of course... it produces a heavy body load .. feeling like you've been shot with elephant tranquilizer... lasting about 15 minutes. NO pronounced mental effects of any kind. However upon repeated exposure to air... this substance .. given a few weeks is the absolute most "trippy" substance which he has ever encountered. Producing wild hysterical laughter .. massive size distortion in objects.. insane colorful hallucinations of things like cotton candy... pink clouds.. puffy pink dragons and giant blue marshmallows. I know this sounds like total bullshit.. I probably wouldn't believe it either . It is true. It is very easy to find out. I highly suggest everyone try the K at least once."<sup>24</sup>

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"The rock stuff SWIM pulled, what was considered to be kokusaginine carried only a heavy body load. After several weeks the substance got harder and harder, and darker in color. It also changed in smell. SWIM smoked it maybe 5 times during the first week to week and a half after pulling it ... like he said, only a heavy body load. No head effects... nothing trippy whatsoever.

Well, SWIM tried it again when he was bored after a couple of weeks and found that it had went through some serious changes... aside from the change in texture and color. It became really trippy... no real mental breakthrough or extreme DMT visuals or anything like that ... but it carried this INSANELY PLEASANT laughing .. singing .. trippy as hell load. No more heavy body effects. SWIM smoked it on his bed .. took 5 hits ... had difficulty getting the 5th one because he was laughing so hard. The next thing SWIM knows, he is raising up and down off the bed like Linda Blair in the Exorcist, laughing his ass off in this INCREDIBLE "very tryptamine like" state. Lasted at least a half an hour .. SWIM wined up smoking about 20 hits over a 4 hour period and it was GREAT! SWIM smoked all he had left the next night ... whatever it was it was phenomenal, wonderful!!!"<sup>17</sup>

## III. Isolation Techniques

None of the following extraction methods are mine. Credit is given wherever possible.

### III.1 Entheogenist's Jungle Tek<sup>24</sup>

"This process will not only produce very potent Jungle Spice, but it will also pull out any DMT that has been left behind in the basified solution.

After you have done your nonpolar extraction ala Noman's or Marsfold's TEK, save your basified solution. Now, for 500g of bark, use 500ml of Toluene. HEAT it in a water bath until it's steaming. Add the toluene to your basified jug and tilt for 5 minutes. It's best to divide the toluene into three or four pulls. While waiting for the layers to separate, put the toluene jar back in the water bath to keep it hot. After you have siphoned off the toluene layers, evaporate the toluene and let the solids dry. This material contains the jungle spice, but there is usually quite a bit of "regular" DMT also. Scrape up this material and put it in a test tube. (you can get test tubes and test tube clamps at hobby lobby next to the chemistry sets.)

Now heat some Heptane/Bestine in a water bath and fill up the test tube with hot heptane and agitate the mixture until the heptane clouds up and an oily layer forms in the bottom of the tube. Let this mixture cool for a minute or two so the oily layer will thicken a bit. Now quickly pour off the heptane onto a plate for evaporation, making sure the oily layer stays in the test tube. When the heptane evaporates you should be left with pure DMT (you will want to recrystallize this product). Add more hot heptane and evaporate one or two more times until no more DMT is being pulled out.

You should be left with a thick, deep red oil in the bottom of the test tube. This is your pure Jungle Spice. To get it out of the test tube, I first place the test tube in a water bath. This will cause the oil to pour more easily, and evaporate any remaining toluene. When it's nice and hot, remove the tube from the bath and immediately pour it out on a plate. (Some oil will still stick to the test tube, which you can rinse out with a

VERY SMALL amount of HOT toluene and pour out for evap on a different plate. It will yield slightly less pure jungle spice.) The oil you poured off will slowly harden into a waxy solid. It takes quite a while to dry out, but you can speed the process by smearing it around with a razor, then scraping it up and smearing it around again and so on. Make sure all the toluene has evaporated before you bag this stuff, or it will turn to oil again in the bag.

This Jungle Spice is VERY POTENT at 25mg, as opposed to 50mg of pure DMT. In my experiments, I have not found a way to purify it any further, but if anyone can refine this process I'd like to hear suggestions.

As to the water bath temperature, heptane boils at 98.42°C, so as long as the water bath is not boiling, you'll have no problem. It won't ignite in a water bath. Just burp your jar periodically so the pressure doesn't build up. It needs to be hot so it will melt the insoluble Jungle Spice and pull out any DMT that is trapped inside the insoluble solids. Shake up the test tube so the red oil goes all through the solution and then settles again at the bottom. At this point I would set the test tube in the water bath for a moment to help the layers separate, then pour off the heptane on one plate and the red on another plate. The heptane will evap very quickly since it is hot, leaving white DMT. The oil will slowly harden into pure red jungle spice.”

### III.2 Critical Switch's Tek<sup>19</sup>

The very first tek known to describe the isolation of jungle spice was posted on Vovin's boards by Critical Switch. These boards have since gone down, and as far as I know the discussion of jungle spice that took place there has been lost. Fortunately Marsofold still had the tek. As he notes, it is needlessly lengthy, so I'll paraphrase a bit throughout. It also doesn't report pH at any point through the process, making it difficult to duplicate precisely. Further, it seems to be generally agreed upon that a more effective way to obtain jungle spice is to extract all the DMT with naphtha as usual, then do a xylene pull; this tek is included primarily for historical relevance.

“#1-9 - [Do an acidic extraction with hydrochloric acid]

#10 - [Basify the mixture with hydroxide.]

#11 Pulling the DMT from basified solution with Non-polar solvent - If you want the “jungle DMT”, then you will have to use xylene (lab grade or distilled). You will be performing three (or four if your obsessive) solvent extractions on each basified carboy... I swirl them every 5 minutes for an hour. Once this is done you need to siphon base solution out from under the solvent.

#12-13 - [Notes on emulsions, sodium carbonate wash, construction of a homemade still]

#15-16 - [Evaporate xylene and collect the dried product]

#17 - Recrystallization is needed here for a few reasons. You can smoke the DMT as is but it will be a little worse tasting and the actual high is not as smooth. I put all the DMT into a flash and wash it with a nonpolar solvent until all that is left is a puddle of dark red. You now decant off the solvent and evaporate it or freeze separate it. Freeze precipitating will get a more pure product and this is what I will illustrate.

**#18 - JUNGLE DMT (Alternate Alkaloid)**

*You now decant off the solvent and evaporate it or freeze separate it to obtain the DMT. Freeze precipitating will get a more pure product and this is what I will illustrate. Now if you want the alternate alkaloid, the stuff you see in the flask above will crystallize and look maroon. This product is the jungle DMT alternate alkaloid and I advise you to take caution if you decide to try it. It won't work without using xylene or DCM as a extraction solvent. The washes must then be done with heptane or naphtha to remove the DMT, but leave behind the alternate alkaloid, which forms bright red crystals once completely dried out as seen the picture.*

#19 [Freeze-precipitate to recover DMT].”

### III.3 Isolation of "Kokusaginine"<sup>24</sup>

As discussed above, this fraction is almost certainly not kokusaginine, but it is psychoactive. This isolation process is fairly unique in its use of a binary extraction solvent. From the available evidence, it seems reasonable to assume that this heptane/diethyl ether solvent is pulling a fraction which is also pulled by xylene or toluene, though there is some evidence it may leave behind the red material that aromatic solvents will pull.<sup>17,24</sup> The original author is unknown to me; this was cross-posted by Implants.

"As far as SWIM knows he is the only kitchen chemist who has succeed in the extraction of Kokusaginine from MHRB (simply because no one else has tried as far as he knows). It is documented to be present in the bark by reputable lab research ...

Anyways its considerably more tricky to get this stuff. It requires the use of Diethyl Ether and heptane as a binary solvent, mixed "roughly" 8 parts DE/ 1part heptane. This is the solvent SWIM used to achieve success with this experiment more than once... You will also need naphtha and acetone.

You do everything you normally would to obtain your N,N-DMT except you use the binary solvent of diethyl ether and heptane. Freeze precipitation for crystallizing is a must here. Your spice will be "very" yellow. Some of this yellow tint is natural oils and fats .. some is oxidation caused by the extraction process and more still is "kokusaginine." The yellow you see if you used only naphtha is only the former two ... no kokusaginine will come out unless you use diethyl ether!

Pull all of your spice from the bark. Now you have a nice big pile of yellow spice. Time to recrystallize in the freezer and get your K. Pour all of your spice into the container which will be used for recrystallization... this needs to have an absolute flat bottom. Place it on the stove on its lowest setting (electric stove or hotplate only!), cover your spice with naphtha and proceed to dissolve it into the naphtha .. adding only 1 drop of acetone for every 10 ml's of naphtha you use. Add the acetone after the spice has dissolved into the naphtha . Make sure it is all dissolved and you have ample but not too much solvent . You should note a thick yellow oil looking substance coat the bottom of the container.. this is your kokusaginine. use a small dropper or syringe / whatever to remove all liquid solvent (which contains your DMT) and place in a separate container for freeze precipitation.

Now you have a glass in which the bottom is coated with K . It takes forever to dry.. so before it does.. lets clean it a little further... drop some more naphtha on it.. while still hot (place back on stove if needed ) no acetone is needed here. Stir , stir , stir... traces of DMT will come out of the oil at this point and migrate to the naphtha which if you don't mind yellow spice.. put it in with the rest that you just removed. Ok so let this stuff dry in the bottom of the container... scraping it around helps tremendously... you should wind up with something hard as a rock."

### III.4 Delafonze19's Preparation of Yellow Spice Oil<sup>32</sup>

This process was described to me in a communication from Delafonze19.<sup>32</sup> I have paraphrased very liberally, but the informational content is essentially unchanged.

After freeze-precipitating the DMT, the naphtha was poured off and the solids allowed to dry in a jar. Hot water is then run over the jar, melting the spice. This process promotes the conversion of the white crystals into a yellow oily crystal which is reportedly more subjectively enjoyable than white spice. If the yellow oily crystals are left out with moderate exposure to air for a week, the process appears to proceed further towards completion, turning the material into a yellow goo.

### III.5 Alternate "Dark Spice" Isolation<sup>26</sup>

The original author is unknown. This was cross-posted by Orbit:

"This is not conventional because it does not use the A stage to defat but it has been reported to work wonderfully well. I found it on the net with pictures showing the whole process. The extract from this process without an A/B defat was so pure it formed a crystalline deposit. The web site has since been taken down along with the tek, but I saved it. Good thing! Unfortunately, all I saved was the text.

This tek is different than the standard acid-base defat process because the plant material is not soaked in an acid such as five percent vinegar to turn the alkaloid into a salt so that solvents can be used to remove fats, instead, because the raw plant material is acidic to begin with the material (MHRB in this case) is powdered and soaked in xylene without added acidification, washing it through three times with solvent alone to remove fats and then dried before adding it to basified water using NaOH. The fats removed from the powdered plant material using nothing but xylene solvent alone without water or adding acid was found to contain very little alkaloid so there is no fear of losing much to the xylene allowing a defat without the strong water-acid stage of an A/B process.

MHRB has been reported by many individuals to be so fat free that a defat is not needed but yet the author of this tek claims that although the extract may appear to be very clean it can contain a percentage of unwanted fats making the extract far softer than it should be for normal room temperatures. For more on this read below:..

1. Break and then crush dried root bark using a heavy steel pipe in a small clean steel trash can. Make sure the can is sitting on a cement floor or you will damage a wooden floor.
2. Further powder the material with one of those small coffee grinders with a blade that spins around in it.
3. When using a coffee grinder the RB will separate into a pink powder and a wooly wood fiber. If you only want to use the pink powder use a kitchen sieve to separate the two, saving the wooly woody stuff for another time.
4. To defat the powder put it in a ceramic or steel bowl and pour lots of xylene directly into the powder, stir for a few minutes and pour the liquid out, pour more in and do it again. Do this three times, saving the xylene in a separate container from the powder.
5. After you have poured all of the xylene off place the powdered root bark in a glass baking pan and let it completely dry outside in open air but make sure it is a fairly calm day or all of the powder will blow away if the wind kicks up.

The xylene poured off of the root bark will have a cloudy look from extremely fine particles of MHRB powder which can take hours to settle out. Rather than going to the trouble of filtering the last of these fine particles out of the fluid I just let them settle to the bottom of the container overnight and then pour the xylene off of the sludge in the bottom, collect and then dry the powder and combine it with the rest of the MHRB powder to be extracted.

Even though 99% of the particles will have settled to the bottom of the xylene in a few hours it will still have a light cloud to it. Normally, you would probably just throw the xylene away at this point but if you are interested in the yuremamine it contains the solvent can be further filtered to remove the last of the particles using a glass tube and cotton balls or paper towels balled up and inserted into it.

Once completely filtered and a clear yellow liquid (which may take several filterings until completely clear) the xylene can be evaporated down to a waxy yellow substance which is yuremamine and other fats from the plant. This extract has been confirmed to contain less than one percent of the total alkaloid contained in the mimosa hostilis root bark so don't sweat throwing it out if you don't want the 'yuremamine'.

6. After all of the root bark powder is dry (from both the settling of the xylene and the solvent wash to the powder) place it all together in a large ceramic or stainless steel bowl.

7. Fill a glass jar with cold water and slowly mix NaOH into it until you have five teaspoons of NaOH per 250 ml of water. Pour the water you have prepared into the bowl of root bark powder until you have a ratio of 1/2 plant material to 1/2 base-water. Stir, stir and stir for 15-20 minutes.

8. Pour naphtha (Shellite) into the bowl with the plant material and water, stir for 30 minutes, cover and place in a dark cool place for an hour. Come back and stir for another 30 minutes. If the naphtha becomes foamy and won't settle out after a few hours the soup is not base enough, pour more of the water/NaOH you made into the solution.

VM&P Naphtha found at paint stores is usually very clean, before use evaporate a cup of it in a clear glass bowl to check for residuals. Camp stove fuel is also naphtha but always has rust inhibitor in it making it unsuitable for this purpose. Naphtha works great but a product called Bestine which is hexane works better if you can find it at an art supply store for use to thin rubber cement.

9. After you have stirred the naphtha into the soup for 30 minutes or more (longer is better) carefully pour the naphtha off so that none of the dark liquid comes out with it too. Don't bother getting every last drop of the naphtha out each time because you will be able to get the spice it contains by adding more naphtha to the bowl for a long term soaking of a day or more, stirring twice a day for a few minutes each time.

10. After the initial 30 minute extraction you can evaporate the first naphtha draw right away to net some alkaloid but be sure to extract the bowl of MHRB soup at least three times. If you are in a hurry you can go ahead and extract the soup three times over all in one evening by adding naphtha and stirring it in for 30 minutes each time and collecting all of the solvent together for evaporation right away but I find it easier to wait a day or more between each naphtha extraction to get the bulk of the goodies without so much attentive work all at one setting.

Evaporate the naphtha in as large and broad a glass baking pan you can find and have a fan blow air across the surface of the solvent to make quick work of it. It may take a few hours for crystalline structures to show up so don't fret it if it only looks like a clear film at first. Smell it, if it has a strong methyl-plastic smell to it you have what you were after.

If the extract is yellow it is very high purity as is but reworking the material using the A/B process with strait 5% white vinegar for the A and NaOH in water for the B in the same ratio as above can remove the last of the yellow coloring and small amount of remaining fats to produce a brilliant white extract but is usually not necessary, especially if having run the powdered MHRB through a triple wash with xylene first (then drying before extracting, of course).

Although many have reported that MHRB has so little fats that it is not necessary to defat this plant material I have found that when doing so the extract is much drier and not so soft indicating a higher purity. Because of this I believe that the extract produced without a defat stage probably has fats in it, even if it is pure white and mostly crystalline in appearance.

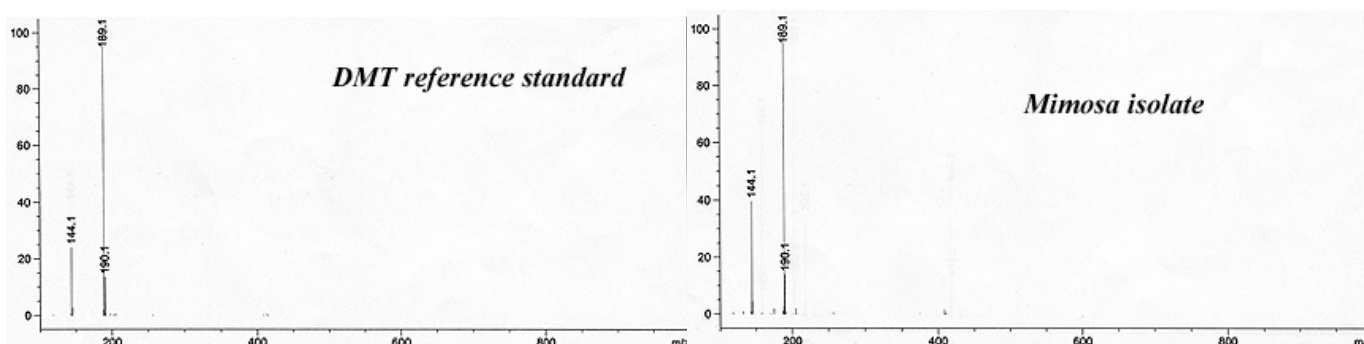
If you are getting less than expected yield add more NaOH (Lye). If the pH is not up to at least 13 your yields could be too low. Paper pH indicators might be very dark at a pH of only 10 and still have too low of a pH so if things are not working out try adding more base to the mix and see if it boosts the amount of alkaloid you are able to pull out of the soup the next time you add naphtha, if too low before it should make a huge difference in the amount of alkaloid you get from each pull.

If you do this don't use naphtha for the defat, only xylene because I don't know if using naphtha will pull the alkaloid out of the plant material or not but according to the author of this tek the xylene defat washes of the powder will pull out less than one percent of the desired alkaloid, so little as not to be a concern for such a clean yield."

## IV. The Hard Data

Attempts have periodically been made to shed light on the nature of jungle spice by use of GC-MS, LC-MS, or TLC.<sup>12,13,19,31</sup> While the evidence is very limited at this point, preliminary data substantiates the idea that some people are isolating DMT oxide, and *possibly* a degradation product of yuremamine.<sup>13,19</sup> The other major conclusion that seems to have come out of these attempts is establishing that no unique chemicals besides DMT can typically be seen in GC-MS analyses, while LC-MS shows a wider range of compounds.<sup>8,19,31</sup>

### IV.1 Mass Spectrometry Analysis



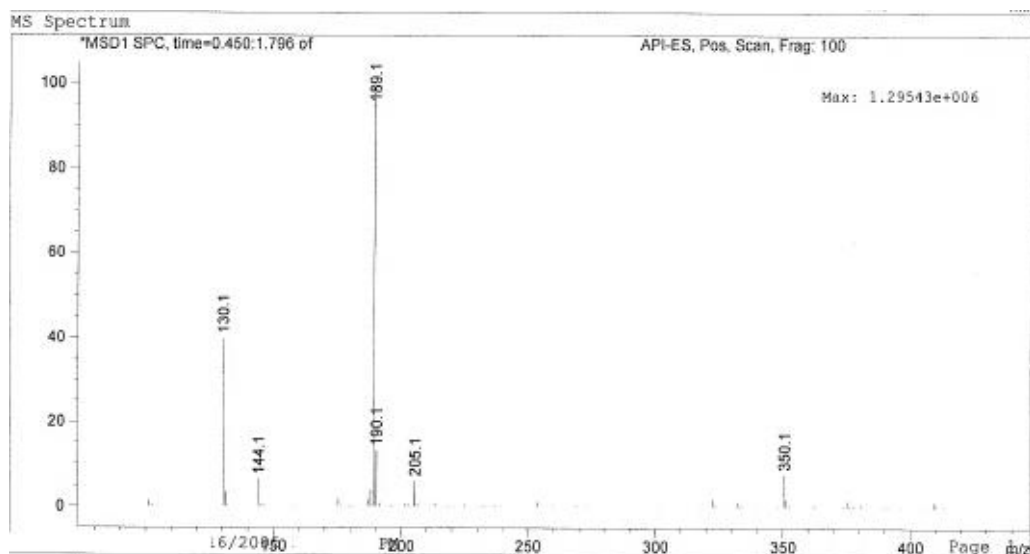
**Figure 5.** MS of DMT reference standard (*left*) and Brazilian *M. hostilis* A/B extracted at pH 1 (*right*) (from Mambo Pachano's *Entheogen Review* Article - See [Trout's Notes A5](#))<sup>7</sup>

Let's first consider the case of a "clean" extraction. In the *Entheogen Review*, Mambo Pachano developed an "extreme condition *hostilis* extraction" and had GC/MS analysis performed on the resulting product alongside a DMT reference standard (see Figure 5).<sup>7</sup> The initial extraction was done with aqueous ethanol acidified to pH 1 with citric acid. The extract was evaporated, taken up in warm water, and defatted with xylene (presumably removing any jungle spice). The water was basified to pH 14 with hydroxide, extracted with toluene and the spice recovered by evaporation. "This has reliably produced a yellow waxy-crystalline massive solid that crushed to white powder."<sup>7</sup>

The DMT reference standard is very clean. There's an abundant molecular ion at 189.1 m/z, and a less abundant peak at 144.1 m/z indicating the loss of the dimethylamine moiety. I'm curious what the trace just above 400 m/z is since the same trace appears on the analysis of the extracted sample, but it's likely of no particular consequence.<sup>7</sup>

The extracted sample also appears to be fairly clean. Extremely clean when we consider that it was collected by evaporation instead of freeze-precipitation or recrystallization, and using toluene, which is known to be less selective than the usual alkane solvents. There is a small impurity (abundance ~2) at 205.1 m/z, which could easily be accounted for by DMT N-oxide. This helps to substantiate the idea that the yellow oil is DMT N-oxide, since the product was collected by evaporation, and was described as "a yellow waxy-crystalline" material.<sup>7</sup>

Next we consider a crude extract of the "jungle" alkaloids. This analysis was communicated by Radio879 from the Nook.<sup>19</sup> In his own words, "I *think* this was the one where I did use xylene instead of naphtha, but I did not wash it with naphtha... In that sample it looks like there's 86% DMT, then 4 other unknown compounds."<sup>19</sup> (See Figure 6) There actually only appear to be three unidentified compounds in this spectrum. I assume that the "fourth compound" is the peak at 144.1 m/z, which actually comes from DMT (see above note on the reference standard). For all three of the unidentified peaks, I believe I can propose some reasonable assignments.

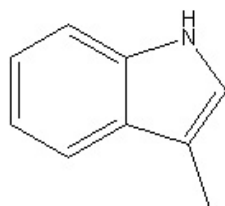


**Figure 6.** Radio879's LC-MS of an unpurified xylene pull, extracted by an acid/base process.<sup>31,19</sup>

### 130.1 m/z

This peak had me mystified for the longest time. Too small to be a tryptamine; barely large enough to be an indole. But reading through [Trout's Notes A5](#), I saw that one of the largest issues they were concerned with in the extraction process was trying to eliminate an indole alkaloid called "skatole" (see Figure 7).<sup>7</sup>

"Alkali solutions of pH 14 will destroy skatole, the strong smelling compound that many people mistakenly think is the smell of DMT - the more pure DMT is the less smell it has."<sup>7</sup> (*Editor's Note: This description may shed some light on the floral aroma that has been reported when using less selective solvents*)<sup>13</sup>



**Figure 7.** Skatole: 3-methylindole

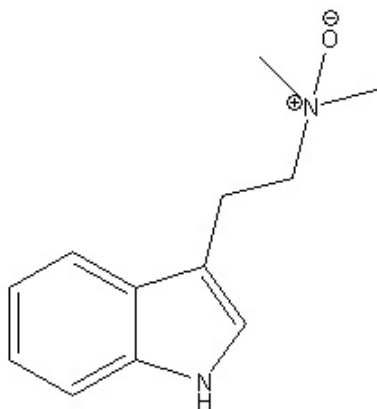
Skatole, whose chemical name is 3-methylindole, is a white crystalline compound which turns brown over time, and has been described as "mildly toxic". It has been shown to cause pulmonary edema in some lower mammals, apparently targeting Clara cells, which are the major site of cytochrome P450 enzymes in the lungs. These enzymes convert skatole to a reactive intermediate, 3-methyleneindolenine, which damages cells by forming protein adducts.<sup>4</sup> It is also added to cigarettes as a flavoring agent.

I have been unable to find any source that explicitly verifies skatole as a known compound in *M. hostilis*, but it certainly seems conceivable. It could explain why people sometimes get a material that looks like spice and smells like spice, but lacks the effects of DMT when smoked. Regardless, the 130.1 m/z molecular ion corresponds perfectly with a methylated indole; This issue requires further analysis to confirm the identification, but it seems entirely plausible. Especially if Pachano can share his source that identifies skatole as a component of *M. hostilis*, I am satisfied with the identification of this peak as a methylindole.



### 205.1 m/z

This is the same peak that was seen as a trace component of the "clean" extract's GC-MS. Being exactly 16 m/z higher than DMT's molecular ion immediately suggests that this could be an oxide of DMT (the most reasonable place being at the tertiary amine). Since the sample was obtained by evaporation and not cleaned with alkanes, we would expect some of the yellow oxidation product to be present. The issue requires further study be put cleanly to rest, specifically someone running GC-MS and NMR on the purified yellow oil. Until then, I am fairly comfortable with the assignment of this peak as DMT N-oxide (Figure 8.). Incidentally, DMT N-oxide and DMT have been shown to enzymatically interconvert in lower mammals.

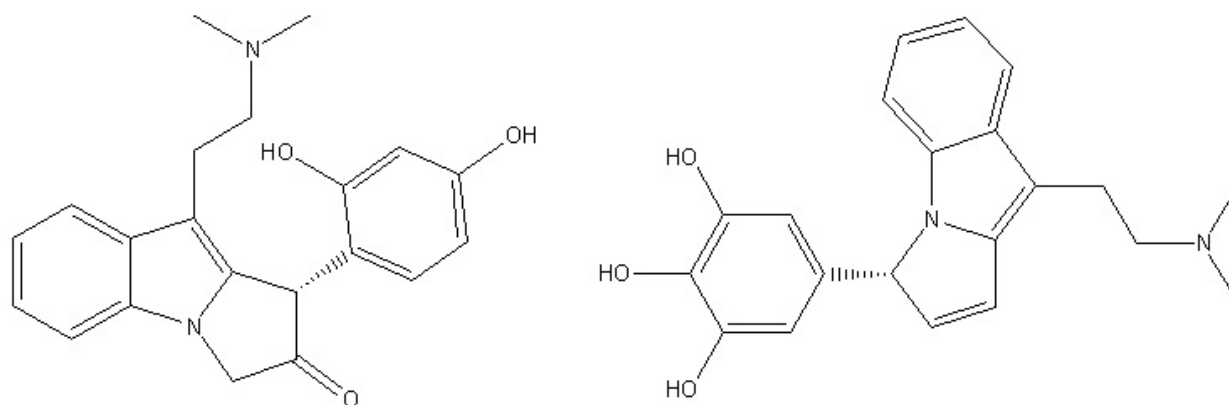


**Figure 8.** DMT N-Oxide

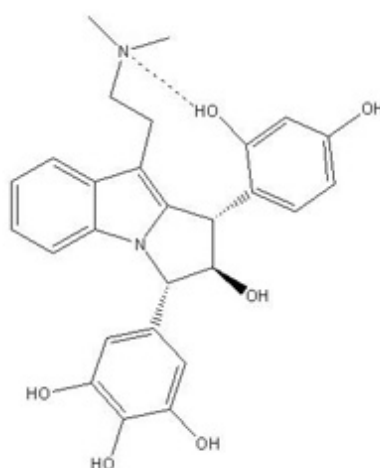
### 350.1 m/z

This one is a doozy, and is the primary evidence in suggesting that people may have been isolating a breakdown product of yuremamine. The peak is substantial, less abundant than the proposed methylindole, but more abundant than the DMT oxide. It's substantially heavier than DMT, but also very substantially lighter than yuremamine. And besides, it hardly seems possible that yuremamine could survive the extraction process.<sup>8,20,24,26</sup>

But I got to thinking: When the yuremamine is degraded during the extraction, it's not as though it just disappears. And unless it loses the ethylamine moiety, the breakdown product still ought to be amenable to acid/base extraction. Some quick calculations indicated that the loss of either hydroxylated phenyl group could get the molecular mass in the ballpark of 350 m/z (Figures 9, 10). And there's that handy hydroxyl adjacent to each of them that could participate in the degradation chemistry. In the end, I came up with two plausible degradation products which would give rise to a molecular ion at 350.1 m/z. Unfortunately, the peak is not abundant enough to analyze its fragmentation pattern. I should also note that I'm not particularly qualified to propose a mechanism to either proposed 350.1 m/z compound, so it's difficult to tell how reasonable the assignment may be. Nevertheless, it would not be surprising if the molecule giving rise to this peak turns out to play a critical role in the psychoactivity of the jungle spice.

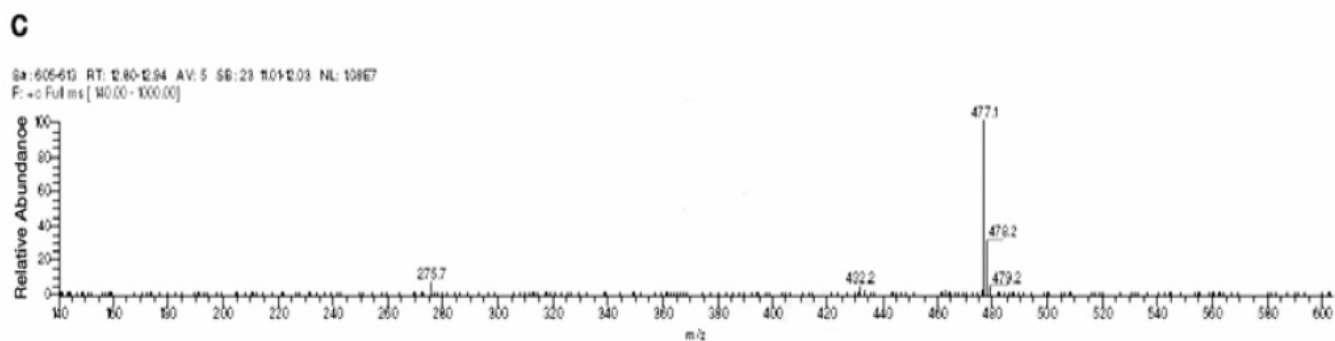


**Figure 9.** A couple proposed breakdown products of yuremamine of molecular weight 350.



**Figure 10.** Yuremamine

It's also worthwhile at this point to discuss what we would expect to see if the jungle spice were in fact yuremamine. Yuremamine has a molecular ion at 477.1  $m/z$ .<sup>8</sup> This peak has been clearly absent from every attempt to analyze the jungle spice. It also was not seen in any of the analytical work on *M. hostilis* root bark or jurema wine that was conducted during the 20th century.<sup>8</sup> This has led to the speculation that yuremamine is subject to degradation under most extraction conditions, particularly under high temperatures or alkaline environments.<sup>8,20,24,26</sup> Vepsäläinen et al obtained an LC-MS spectrum of yuremamine, presented here for comparison (Figure 11).<sup>8</sup>



**Figure 11.** LC-MS of Yuremamine (from Isolation and Characterization of Yuremamine)<sup>8</sup>

Finally, we have a more recent report of GC-MS analysis run on the red spice:

“Some guy I don't know well told me he can run GC-MS on this compound. He believes he has some of this so-called jungle spice. It is a red crystalline thing that was originally oozy. After recrystallizing white crystals out of it he saved this other stuff. He believes if his bad memory serves him right that it came from toluene or diethyl ether pull from an acid base extraction. He was wondering what it could have been.

GC-FID and GC-MS main compound = spice (nothing else in GC-MS) (minor peaks in GC-FID). It is curious because yea the whole reason this guy has some of this stuff is because it was not soluble in the hexane.”<sup>31</sup>

This is a confounding result. The material was a red crystalline solid isolated based on its insolubility in hexane, which certainly sounds like jungle spice.<sup>19,24</sup> We would expect very little of the material to be DMT due to the hexane wash, but it was still the primary peak in the sample.

There are a handful of possibilities, most of which Burnt himself pointed out.<sup>31</sup> It's possible that the material analyzed was not the same material that others are calling jungle spice; this seems unlikely since it matches the same physical description and was isolated in the same fashion. The material was also reportedly stored for several months prior to analysis, so it's possible that the compound(s) of interest degraded during that time.<sup>31</sup> Or for whatever reason, the red component may not be amenable to GC-MS; based on the presence of more diverse peaks in LC-MS spectra, I tend to lean toward this possibility.

There are two other possibilities, if we take the spectra at face value and assume that DMT is overwhelmingly the main component in the red spice. The first of these possibilities is that the red coloration comes from a biologically inactive tannin, and the activity of the red spice is solely the result of DMT.<sup>31</sup> I don't consider this possibility to be very likely, based on the wealth of experience reports reporting breakthroughs on significantly smaller doses than DMT could provide.

The other possibility, assuming that DMT is overwhelmingly the main component in the red spice (which I'm not necessarily convinced of), is that the trace impurity responsible for the red discoloration *is* biologically active and accounts for the reported effects of smoking red "jungle spice".<sup>31</sup> If this is the case, it could either be acting as an agonist in its own right, and adding its effects to the effects of the DMT, or it could be potentiating the DMT in some fashion. Since no trace components were identified in this particular analysis, it is impossible to speculate further.

## IV.2 TLC Analysis

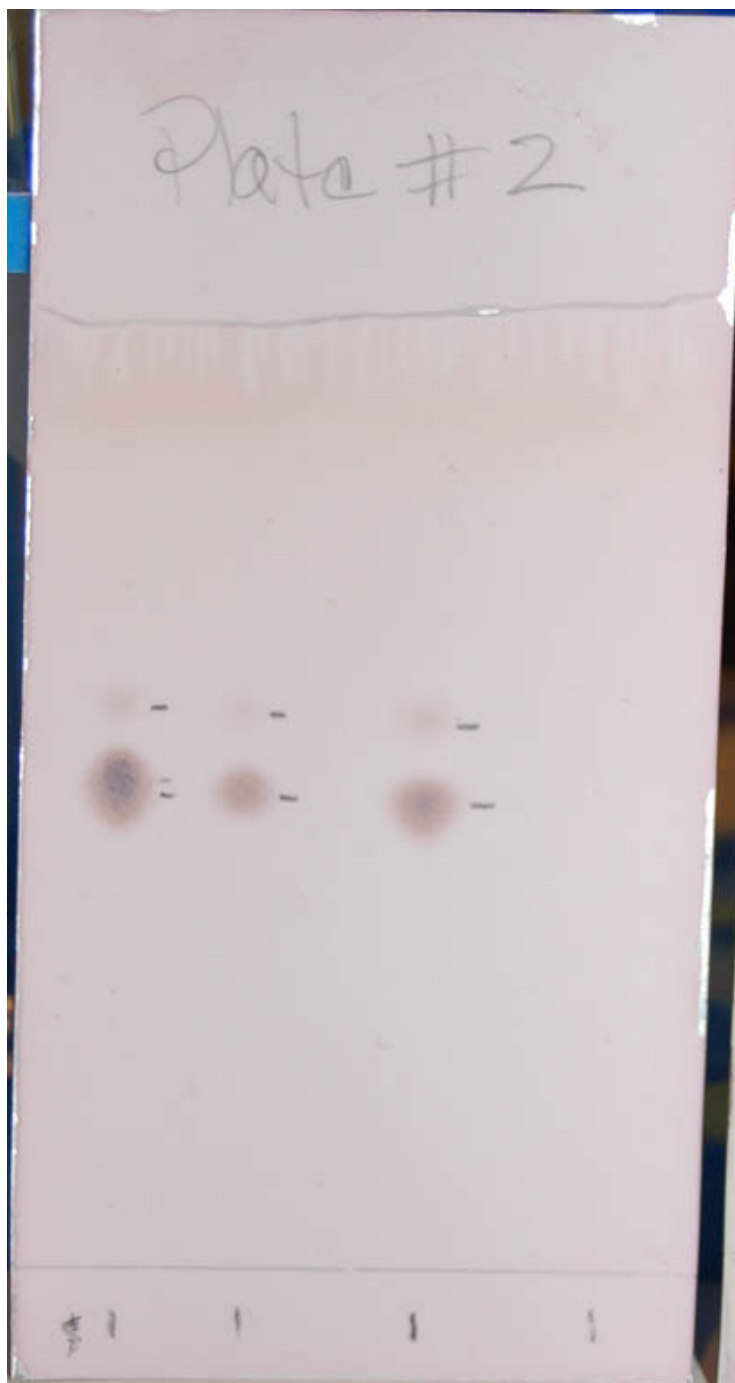
“I did some tests (TLC) recently that showed at least 3 compounds in a MHRB extraction. #1 is DMT, #2 is 5-MeO-DMT and I suspect #3 to be either DMT Oxide or 5-MeO-DMT Oxide. I need to run some further test to be sure of the #3. None of the spots showed up as what I would consider trace amounts. The main point here is that what is being extracted IS most likely a mixture. (Edit: It is NOT 5-MeO.)

Well, I was waiting till I came up with an explanation for some other findings on this, and acquired a reference sample for 5-MeO before I posted any more. Further TLC runs on this same extract failed to show the blue spots (after 4 days). This is NOT 5-MeO DMT as I thought that it was. The compound on the plate is unstable and disappears. A recent post on the Ayahuasca forum leads me to believe that this is Yuremamine and not 5-MeO. In the above solvent system it shows the same  $R_f$  and color reaction to Xanthydrol as 5-MeO. Attached is the first plate showing what I now believe to be Yumamine [*sic*]” (see Figure 12)

(Another forum member asks: "What solvent did you use for the extraction?")

"[I used] the standard 'net' A/B extraction for the first lane, and Toluene for the 3rd lane. I'm interested in the red/pink/purple coloration that is common to many tryptamine bearing plants. It comes from tannins (lots in this case) and I also believe an oxidized tryptamine. Its the oxidized compounds that are tricky...

I ran some other tests on this same extraction (after the blue spot no longer showed up). I used a different developer for the plates (that resolves 5-MeO/DMT better). No blue spot (as expected), but the one trace in the original plate remains. I ran this against on oxidized sample of the initial extraction, and the trace is not DMT-Oxide (shows as a very different  $R_f$ ), its yet another trace compound. Not sure what yet. The oxidized sample, when left to evaporate yielded a yellow oil that smells very floral. It did not want to crystallize."<sup>13</sup>



**Figure 12.** Dozuki's TLC plate analyzing normal acid/base extracts and fractions extracted with toluene

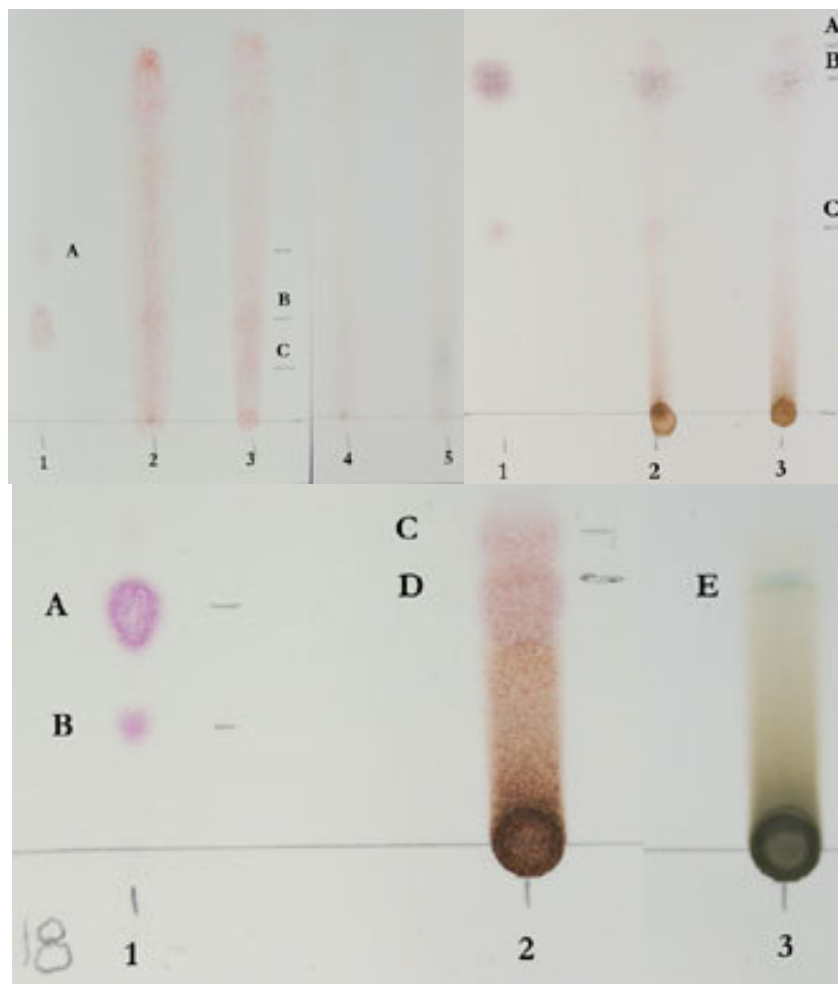
A few days later, he's run some further extractions and plates, and posts the following:

“Here's the preliminary highlights from this weekends Thin Layers

Trying to get to the bottom of what is in the extractions of MHRB and where the yuremamine is in these extraction was the main goal. A review of the tannins thread (in a nutshell) shows that yuremamine shows up in an MeOH extraction and that it seems not to show up in a standard A/B extraction. That Yuremamine is decomposed under alkali conditions and these decomposition products are likely to be the ubiquitous 'Jungle DMT' or what I will refer to as YDP (Yuremamine Degradation Product). Published bio-assays (The Entheogen Review) indicate that MHRB as a cold H2O extraction are orally active, and yuremamine is the suspect for the oral activity.

For the samples: 2 g MHRB (ground) was extracted for 1 hour in 10 ml H2O. This was done twice and the extractions combined. Another 2 g MHRB (ground) was extracted for 1 hour in 10 ml MeOH. This was done twice and the extractions combined. Both were done at room temperature. These extractions were spotted directly on the plates. The first lane was the control. This was a standard A/B extraction done earlier (Same sample as in the 'DMT Melted' thread). Visualization was done with the bare plate, and xanthydrol.

Plate #14 is run in an acid environment, so as not to degrade the yuremamine. Lane 1 is the control showing DMT ( $R_f$  @ B) and a YDP ( $R_f$  @ A). Lane 2 is the H2O extract and Lane 3 is the MeOH extract both showing DMT (B) and very likely yuremamine (C). Lanes 4 and 5 are lanes 2 & 3 before visualization with xanthydrol. What's interesting here is that the pre-viz lanes show the C spots as blue and the spots as purple after visualization. The YDP does not show up in lanes 2-5 (the pencil lines on the right just indicate \*ALL\*  $R_f$  positions).



**Figure 13.** Dozuki's TLC plates, #14, #12, and #18

Plate #12 is run in an alkali environment. The layout of lanes 1-3 remains the same, but we see a reversal of yuremamine and the YDP  $R_f$  values in relation to DMT. However, since this is run in an alkali environment, we see the YDP showing up in lanes 2 and 3 as the spots travel up the plate and degrade the yuremamine which now only shows as a smaller trace component. By the time the plate was fully developed the blue spots on the plate before visualization had disappeared. They remained for about 1/2 of the run and then were gone by the time the plate finished.

So, Plate #18 is the reference in lane 1, the visualized MeOH extraction in lane 2 and the pre-visualized MeOH extraction in lane 3 run in an alkali environment for 1/2 of the plate (1/2 the distance to reduce the time spent in the alkali environment). Here A is DMT, B is the YDP, C is yuremamine, D and E I believe are yuremamine being broken down and have not had a chance to settle into a true  $R_f$  value as the plate run has been shortened. Edit note: The blue E spot in lane 3 is a tannin.

So, conclusion are thus: The both MeOH and H<sub>2</sub>O at room temperature will extract \*BOTH\* DMT and Yuremamine, and that a trace component found in standard A/B extractions is a YDP. Yuremamine is visible on the plate without a visualization agent (Edit: now unsure of this statement), and I suspect that it fluoresces (will have to get a black light). That the oral activity of a cold water extraction could very well be that yuremamine is acting as an MAOI making the DMT orally active (since it's being extracted) and it could well be active in and of itself. Also, H<sub>2</sub>O will extract DMT, MeOH seems to be a little more efficient. And lastly that the tannins are hard to deal with and it would make reading the plates easier without them (they are the red streaking).<sup>12</sup>

And some further comments:

"I ran about 10 plates with these particular extractions (H<sub>2</sub>O&MeOH) in 6 different eluent systems as well as one 2 dimensional plate. Plate #14 is run in: IPA:AcOH:H<sub>2</sub>O (9:1:1 - 91%:30%:100%) All easily acquired solvents. Plates #14 and #18 are in IPA:NH<sub>4</sub>OH:H<sub>2</sub>O (9:1:1 - 91%:10%:100%). The streaking is tannins, not all of the tannins, but a vast majority of them. And yes, it's overloaded. At about 29% of the makeup of the original material it's a little hard not to overload the tannins if you want the other compounds to show up. The samples are spotted at ~ 2-3 micro liters. Doing less than this and you miss some of the other compounds that are present (it's possible to miss some even at this low of an aliquot). I have ran some plates on this same extraction with most of the tannins removed at an aliquot of 10 - 12 micro liters and more compounds become visible (will post these at a later time). The reference sample is from a standard A/B extraction of MHRB using naphtha as the NPS. The plates are Silica GF @ 200 microns (Analtech plates).

As for Ehrlich's, I didn't really find that the color was good for determination between the genotypes (G,M,T) of Phalaris, with spots showing basically the same color (purplish blue) for all three. Xanthydrol is a better colorimetric agent according to the literature (pink-G,blue-M,purple-T). Also, 5-MeO and DMT generally show the same  $R_f$  with n-Butyl:AcOH:H<sub>2</sub>O, and the IPA:NH<sub>4</sub>OH:H<sub>2</sub>O is supposed to resolve these two compounds a lot better according to the lit. I haven't gotten far enough away from MHRB yet to find out if this is so, but so far I'm impressed with this system (tight spots, wide separations). The ratios can be tweaked as well so that the NH<sub>4</sub>OH doesn't degrade the yuremamine as quickly, allowing longer runs (more accurate  $R_f$ s), but there is a little less separation.<sup>12</sup>

## V. Botanical Confustication

I'll say right off the bat that this section is less than satisfactory in terms of drawing any concrete conclusions. None of the vendors I contacted had any idea what color flowers were produced by the trees our root bark comes from, though some said they'd send the question down the line. At the very least, I can outline the various issues that seem to be confusing the issue.

### V.1 Hostilis? Tenuiflora? Verrucosa?!?!

The very first issue that I'm not satisfied with is the extent to which *Mimosa hostilis* and *Mimosa tenuiflora* are identical. It's certainly well established in the literature that these Latin binomials are synonymous. There is no doubt that *M hostilis* and *M tenuiflora* are both legitimate names to apply to the white-flowering tree from which the bark is theoretically being harvested.<sup>6</sup> On the other hand, there are some indications that the term *M tenuiflora* may sometimes be applied to another *Mimosa* tree which does not have white blooms.<sup>19,29</sup>

In Mexico, following some catastrophic events in the '80s, the tannins in *M tenuiflora* root bark, called "tepescohuite", were hailed as a miracle-treatment for burns when applied as a topical ointment. This seems to have given rise to a proliferation of tepescohuite throughout southern Mexico, and it seems likely that some sources distributing Mexican root bark are probably distributing bark from the tepescohuite. The problem is, I'm not convinced that all of this tepescohuite is actually *M tenuiflora*.

There are several vendors peddling *Mimosa* tannin-based ointment who seem to indicate that their *Mimosa* has a bright yellow flower, though it's still claimed to be *Mimosa tenuiflora*. Less frequently, there are vendors distributing similar preparations who identify their *Mimosa* as having a bright pink flower. It seems reasonable that, since there was such a high demand for the ointment, and several *Mimosa* species have similar appearances, someone may have unknowingly or unscrupulously begun propagating another species as tepescohuite (Figure 14). On the other hand, I've seen some popular speculation that the Mexican root bark has a higher alkaloid content, so the possibility of a misidentification doesn't necessarily mean an inferior product for extracting purposes.<sup>28</sup>



**Figure 14. Images associated with Mexican tepescohuite**

Also casting doubt on the identity of the root bark are the seeds. Consider what Torsten of Shaman Australis had to say a couple years ago:

“Mimosa species can contain some nasty alkaloids, which is why correct identification is paramount in my opinion. That is why I am so appalled at the callous nature of MHRB farmers, distributors and retailers. I am also a little surprised at the ignorance of the customers. I mean seriously, you folks seem to only care about the fact that a plant contains DMT regardless of what else you might consume along with it.

So is there a conspiracy to supply dodgy material? I don't know. All I know is that two of the largest MHRB farmers also supply seed from their plantations to various wholesalers and retailers. I have purchased plenty of this seed for my own shop and have bought seed from most major retailers. NONE of it has turned out to be *M. hostilis*.”<sup>19</sup>

The seeds which have been distributed as *M. hostilis* seem to almost invariably produce plants that are of the genus *Mimosa*, but are definitely not *M. tenuiflora*.<sup>19,20,34</sup> At present, though at least one vendor has begun selling seeds that actually give rise to a *Mimosa hostilis* tree, most of what's available produces other *Mimosa* species, particularly *M. verrucosa*.<sup>29,34</sup>

*Mimosa verrucosa* is the "Jurema branca" used by some indigenous South American populations (in contrast to "Jurema preta", which is our old friend *M. tenuiflora*). However, it appears that nomenclature varies among indigenous populations in South America, which may be causing misidentification by miscommunication.<sup>1,21</sup> Consider the following quote from a [1998 MAPS Newsletter](#)

“After interviewing many people, and participating in different Jurema rituals with the Indians, I also realized that the Jurema they drink in their brew is not *Mimosa hostilis*, but the root bark from *Mimosa verrucosa*. Different tribes will call *M. hostilis*, the Jurema Negra and *M. verrucosa*, the Jurema Branca, as well as other tribes call *M. verrucosa*, the Jurema Negra. That means that when they say that they drink Jurema Negra, it does not necessarily mean they are drinking *M. hostilis*, but *M. verrucosa* which is called both: Jurema Branca and Jurema Negra.”<sup>1</sup>

In years past, there were misidentified seeds that produced *Mimosa pudica* or even *Mimosa scabrella*, but these appear to have faded from the marketplace.<sup>34</sup> Sometimes genuine seeds have been acquired through trades with people in possession of genuine specimens. Live cuttings of genuine specimens are also sometimes traded amongst the ethnobotanical community.

The scarcity of genuine seeds and the concurrent abundance of misidentified samples begs the question: Have the imported root bark samples been similarly misidentified? After all, it doesn't make much sense that a vendor would be able to acquire legitimate *Mimosa tenuiflora* root bark, but unable to acquire legitimate seeds from the same source.<sup>20</sup> On top of this, Torsten of Shaman Australis reports having seen a photo of the *Mimosa* plantation from which a major vendor obtains its root bark, and the flowers on the trees were pink.<sup>19,21</sup>

*Mimosa tenuiflora* has white flowers. It does not have pink flowers, or purple flowers, or yellow flowers. Any botanical reference will confirm this fact. Theorizing about a pink-flowering subspecies of *tenuiflora*, as some forum members have, is entirely inconsistent with the established botanical definitions.

As you can see, this leaves us with a nicely jumbled picture that casts a significant shadow of doubt over the botanical identity of the root bark that's being imported.



## V.2 So what have people been extracting from, and does it matter?

Considering the evidence, I think we can say with a fair degree of confidence that the root bark that everyone has been extracting is Jurema. The question is whether it's Jurema preta (*M. hostilis*) or Jurema branca (*M. verrucosa*).<sup>1,21</sup> I have a hard time imagining that 100% of the vendors have been sold the "wrong" species of Jurema, so I'd wager that at least some vendors are probably selling legitimate *M. hostilis* root bark. But considering the scarcity of genuine seeds, I'd be hesitant to speculate that genuine *M. hostilis* root bark is prevalent on the market.<sup>19,20</sup> Further, it seems very likely that some of the root bark available online is in fact *M. verrucosa*. Unfortunately, unless vendors can find out what color flowers their suppliers' trees produce, it is impossible to speculate on the degree to which *M. verrucosa* is being sold as *M. hostilis*.<sup>20,34</sup>

This brings us to the second question, does it really matter? Despite all of the indications that some of the bark may not be from *M. hostilis*, I've only heard a few reports of bunk batches of bark being sold a few years ago. These would extract to yield a clean white material with the physical appearance of DMT, but produced no effects when smoked, possibly indicating that the root bark used was from another species.<sup>19,20</sup> We're all familiar with the periodic reports of low-yielding bark from various vendors, but these samples still seem to contain N,N-DMT in significant concentrations (>0.2%). It is worthwhile to note here that at least one vendor (JLF) candidly admitted to selling *Mimosa hostilis* stem bark, which is of a substantially different chemical composition than the root bark.<sup>21</sup>

So for those who are concerned solely with extracting the N,N-DMT, the short answer is: No, it doesn't really matter whether the root bark you've been buying is actually *M. tenuiflora*. Whatever it is, it serves as an effective source of DMT, with minimal fat content to contaminate the extraction product.

There has been some speculation about the possible dangers of a misidentified root bark, and the most frequent concern is that the unknown bark may contain mimosine, a toxic clastogen (chromosome-breaking chemical). Mimosine has been isolated from *M. pudica*, as well as a few other species. According to K Trout, no studies have been done to establish the chemical makeup of *M. verrucosa* root bark, so it is impossible to speculate one way or the other about whether mimosine may be present in popularly extracted root bark.<sup>7</sup> If we want to assume for safety's sake that it is present in the bark, it appears easy to make certain it doesn't end up in the final product. Mimosine is much more polar than DMT, and is practically insoluble in higher alcohols, ether, benzene, chloroform, etc. This means that very little mimosine is apt to end up in the nonpolar pulls when you extract the DMT freebase. Since mimosine is substantially more soluble in water than in nonpolar solvents, the sodium carbonate wash (as described in Vovin's tek) ought to remove any residual mimosine.

So that's all well and good for the average spice extractor, but what about the folks pulling jungle spice? It is certainly tempting to claim that some of the variability among different jungle spice extractions can be accounted for as the result of different species of *Mimosa* being sold as the same product. Unfortunately, such a claim would be completely indefensible. The truth is, we don't know how much of the root bark on the market comes from which species. It's entirely possible that misidentified root bark is a significant factor in jungle spice extraction, but until someone runs extractions of jungle spice on confirmed samples of *M. tenuiflora* and *M. verrucosa*, we simply don't know.

There is also the possibility that a large amount of the variation in the jungle spice may be accounted for by differences in environment or harvesting conditions.<sup>10</sup> Maybe the tree needs ample access to a particular nutrient in the soil to produce a good portion of jungle spice. Maybe the quantity of this alkaloid fraction varies with the time of year, or even with the time of day. Maybe the tree must reach a

certain age before it begins producing it. Or a million other things. Or maybe all of the variability has to do with unrecognized nuances in the extraction process. As I said, this section is far from satisfying, and leaves open a lot of loose ends, but that's how it stands today.

It is also worth mentioning that this confusion over the botanical identity of the available root bark may explain why a few people have been unsuccessful in attempting to verify Jonathan Ott's claims that jurema is orally active without an added MAOI.<sup>6</sup> The individuals who were unsuccessful may have been using *M verrucosa* while Ott was using *M tenuiflora*.

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