Interview with Sasha T. Shulgin in San Francisco (Lafayette) at his home on July, 11th 2001

Claus: The first time I hit upon your name, was when I became interested in 2,5-dimethoxy-4-methyl-amphetamine (STP, DOM), and found an article authored by yourself. Once I had found your name, I looked for other publications by "A. Shulgin". When I had found a few, I thought it rather strange, that some publications gave a DOW chemical company address, and other articles gave a private address in Shulgin Road, in Lafayette/CA.

Alexander: Yes that is interesting, that was around 1968-1970. That was a funny period; I was at Medical School at San Francisco, University of California. I would be wandering through the Haight-Ashbury and everyone around me was stoned on either LSD or who knows what it was called, STP or whatever, that day. And the crowd was turned on: music, love, and happiness. And I was 3 blocks away, memorising the Circle of Willis, and I was wandering about not realizing that the stoned-ness around me that I had invented about 10 years earlier. I did not realize what STP was; I did not know it was DOM. It took 6 months to unravel that.

Claus: Do you know that there was a rumour around the day of the festival; the day 2,5-dimethoxy-4-methyl-amphetamine hit the street for the first time, that this was a chemical that came from DOW Chemical Company?

Alexander: I never heard that. That makes sense though: I gave a seminar at Johns Hopkins and I talked about the chemical and there were some scraggy people, long hair, beards, stoned. Somehow they had not locked the door. At that time I was still working at DOW. So it could make sense. Because they must not have read the patent at the time: the first tablets on the street were 20 mg. And then it would not work the first 20 minutes and they would take another one or two, thinking it was bad acid (LSD). LSD gets absorbed in the tummy, not from the gut. You can often tell how much LSD a person has taken, by the induction time before it begins. If you are aware of it, it can come on in 10-12 minutes.
So then these people would have 40-60 mg of DOM in board, with 5 mg being a fine, full dose. And the Haight-Ashbury Free Clinic was functioning at the time and then they went there, and that is how the whole thing got out. I cannot remember who identified the structure of the material. The material came from the Haight-Ashbury, though. After that incident, they cut the tablets first to 10 mg, then to 5 mg apiece.

Claus: What about electric bananas?

Alexander: I cannot remember the name of the guy who worked on that, but when I first heard about it, I called it bananaine, the alkaloid of the banana-skin. There was a phase when people would take the inside of the bananas off, and then dry it and

smoke it. It did not work of course; it is not hallucinogenic. But I gave it the name bananaine anyway. There is nothing there, of course.
Do you know that the seeds of bananas are probably the worlds most concentrated source of Serotonin? The seeds have individually no weight whatsoever.

Claus: How would you define the term or concept of an LSD flashback?

Alexander: The first thing you should ask is, is it fun or is it not. Then you should ask why you connect your abnormal mental state to the LSD? What brings the flashback & LSD into the same sense, as it were?

Claus: Now my answer to that would be, that it is because the person is experiencing the same mind-state that he experienced when he took or was on LSD. That would be the connection: the person is tripping without having taken a trip.

Alexander: If that is the case, my guess is that when the person first took the LSD, at some point - in timing perhaps - you would see a flash on a windshield of a car while on an LSD trip. And then - some time later - he would see a flash of light on a someone's windshield. No connection whatsoever. And then you remember, on some unconscious level the connection between it and the LSD experience. So I am wondering whether the flashback might be a trigger, from some absolutely unimportant thing happening during the LSD-experience.
Some years ago, an owl made a hooting sound, maybe at 5 or 6 o'clock in the morning. I was absolutely petrified. Mind you, I have heard owls many times, but this one had just the sound of when I heard of the death of a great dear friend. And I had this fear "who died?"

Claus: So that to you is a flashback? More a "remembering"?

Alexander: It is what you do when you recall your LSD experience. It is not releasing LSD from the frontal lobes; it is a recall.

Claus: This kind of flashback would only last seconds, maybe minutes, not days?

Alexander: That is correct. I wrote chapter in my book TIHKAL titled "Flashbacks". I experienced a non-drug-related flashback: but I did not know what was going on. I play the fiddle. We had a concert and this was the final rehearsal, checking out the microphones and all. It was a warm day; we were sitting outside, and playing something from Duke Ellington. Suddenly I felt a chill; in fact I put my hand behind my neck, because I was looking for something wrong. And what it was was this: my first hearing of the piece we were playing - "Black, Brown and Beige", it was written in the late thirties by Ellington - was in 1941 in downtown Boston. I was totally unfamiliar with the sprinkles of snow they have on the East Coast. It does not snow

very often in California. And I was unaware of the fact that snow gathered in the hair, and would stay snow, until you went inside. It was freezing outside. I went inside and was just in time to get to my seat and the music was starting and the goddamn snow melted! And I was noticing that it was running down my hair and down my neck. Cold water. I could not shake my head, because people were sitting on both sides of me. That would not have been nice. So all I was able to do was kind of mop it up. So I had cold water running down my neck. In this warm rehearsal. It was a total flashback to the event in Boston, maybe 50 or 60 years earlier. Now that to me is a flashback. I analyzed what it was, thought, "Oh this is neat" and continued to play.

Alexander: I call it putting down little red flags when I lecture. I have a whole collection of little red flags, but I alone can see them. And so if I am lecturing and I veer of the path and go off on another direction, I put a red flag - invisible - on the path, and I go off up that way, up on the wall, across the ceiling and I know where I left. In my class. And the class is just about to say, "I think, he has lost it". But I go right back to my flag, I know where it is, and continue and pretend it is my lecture. *(This was said out-of-context. It could be put in somewhere else, more appropriately. Claus)*

Ann: We have tended to dismiss most flashback problems, because there is at least one psychiatrist in New York making a living from it. He makes his livelihood out of flashbacks. He takes people into his clinic, and takes brain scans and such like & calls it working on people's flashbacks.
The fact is, that most of the flashbacks are enjoyable. This is something that most of us do our best to encourage: to be able to re-capture the altered state without having to take a drug. In doing therapy with these materials, almost all of the therapists, at the beginning of therapy, start by taking the drug (if it is MDMA, especially) together with the patient. After a while the therapist learns that I am wasting a drug for myself, because I cannot enjoy my own trip, because my job is to be attendant and alert to the patient. So it is a total waste for me to take it.
And the reason they take it originally at the beginning is because the therapists tend to think that I am going to have more insight into the patient if I take MDMA.

Claus: The therapist takes a lower dose than the patient? I think that was the original concept.

Ann: Yes, but not always. It is more than a symbolic dose, at least with some patients.
Then you find out that the drug did not give you the insight, but it opened up the insight that you had. You have all the insight you need. MDMA does not carry insight. It allows it; it catalyzes it. Before very long, you discover also that you can move into that MDMA state when the patient does, because you remember what it

was like and you can recapture that, you know how to go into it, basically. There is a wonderful psychiatrist who used to be the head of transpersonal psychology and who is a hypnotherapist. And what he does is that he helps people who used to take MDMA and who now - because it is illegal - cannot get it and he teaches them how to recapture the MDMA state through the hypnotic trance.
The point is that recapturing altered states is a very complex thing, and that some of the experiences that the people call flashbacks might indeed be negative. But I suspect that those who come up with negative reports probably are the same people who had a difficult or negative trip in the first place. It is something to think about. Flashbacks are in a sense re-enforcing. The fact that they were victimized by this dangerous, negative drug. So you have to kind of look at a lot of different things: what are the fears what are the agendas, before you can be sure about what you are looking at in the first place.

Alexander: I was at a NIDA meeting where this guy gave a talk about his clientele. I was a little bit uncomfortable because it was clearly a specialty that he alone had gathered together and was making a moderately good income from it. (This was the guy from NY mentioned earlier. Shulgin could get his name. Claus). He showed a picture of the localization of radioactive LSD in these chronically flashbacking people's heads by PET or something to find out why they are different from other people. It was a scam & I was very uncomfortable. I was one of the three "old guard" there. Which is always nice, to be kind of in your ancient role, you can kind of get away with things you could not get away with any other way: I asked him: "What was the isotope?". He says radio-iodine I-131 or I-135, he wasn't sure which. I said "This is interesting because there is no iodine in LSD", I said. "Well actually, we also did some other work with carbon-labeled methyl group". "How did you get the methyl group on. C-11 only has a quick half-life", I said. "Well actually, we put the methyl group on the nitrogen", "Well, I know. But which nitrogen", I said. "The one on the indole", he said. But LSD has not got a methyl group there. So you are looking at the brain with gamma-emitters, which have nothing to do with LSD. Using that as a showing the difference ..... you know it was pretty clear that I was not particularly buying the thing. And there was a general nodding around the table. So he finished talking, sort of withdrew, because it was jeopardizing the very neat position he had.

Claus: I buy the iodine thing as not being comparable, but 1-methyl LSD is hallucinogenic...

Alexander: Why do you buy the iodine?

Claus: Iodine is big & bulky & electronegative. But I don't buy the indole-methyl thing because 1-methyl LSD IS hallucinogenic.

Alexander: Fine but there is a methyl group up there in LSD, but not down here.

Claus: The methyl group on the indole nitogen: if you put a methyl group there, that compound is hallucinogenic.

Alexander: But it is not LSD.

Claus: It is not LSD, but it is hallucinogenic.

Ann: He is making his living on LSD. The whole point is that it is not the same drug.

Alexander: If you muck up the other methyl group, you get into areas that are fascinating: you get the methyl group off, you get nor-LSD, then put on a ethyl or an allyl or a butyl or a propyl. All of them are active & a couple are more potent than LSD.

Claus: You have done that?

Alexander: Yes.

Claus: And what if you branch them off?

Alexander: Getting into areas that have not yet been published by David E. Nicholls. And I don't want to talk about it. On the record. The NOR's have all been published. They are all in TIHKAL. Do you know David E. Nichols?

Claus: No. Who does he publish with?

Alexander: He is the..... usually the main chemist, professor, professor of chemistry, Purdue University, Indiana. But he is a major chemist in this area. But he works through the academic world. He gets grants. One of the few grant-getters for doing chemistry in the psychedelic area. I find him a very interesting person.
My world with David Nichols has been a very very good, close, relationship. Interestingly the whole publication started about ..... DOB .... I published in DOB in the early sixties. I was interested to tell you how we met, in a sense: he & I and a third person down in Chile had all independently worked out that DOB was a very logical compound, which might be psychedelic. We all three synthesised it independently not knowing from one another, and I happened to be the first to publish. So I heard from the other two that they had agreed to what I said was valid. Had we known we would have co-published. But we didn't know each other. And this was really the first introduction. I guess it was probably in the early sixties, somewhere around that.

Ann: So the other two, who.....

Alexander: Casell in Santiago & David Nichols. He was working in Iowa, getting his PhD. With Barthneck in Iowa.
Heffter was the first person to isolate Mescaline from Peyote. Germany, eighteen ninety something. And there is now a Heffter Research Institute (http://www.heffter.org). David Nichols is the founder of that. Actually it is located in Santa Fe, in New Mexico, but Nichols is in Indiana.
It is an institute that is getting funds, quite a few funds are being donated to do work with psychedelic drugs. Work which is completely above board, kosher, legal, all government permission. And actually getting some government grants to do some of this work. Which is a nice change from 30 years of daemonisation to see it coming out. The parallel is MAPS. MAPS is a multi- disciplinary association for the study of psychedelics. Lots of funds coming into it and as much as it can will fund research projects in this country but it is almost impossible to do it here. But currently working with MDMA in Spain in post-traumatic syndrome. One is being set up for a study in Israel. The work of Bullenweider in Holland, in Z• rich. Some of that is funded by MAPS. Work that should be done here, won't be and it can't be.

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This is a superb source of information. I just wrote a letter to a person in England. Morris or Harris or something is putting together a website. It is drug site that is geared to available only to the press and reporters for information. So you could get into it with a keyword, such as "Holes in the Brain" and then find out who says that MDMA does cause holes in the brain, who says it doesn't and evaluate the properness of this before you write your article.
They 're not for information in general or background deep information, but answer specific queries.
There is a hearing, a senate, a government legislative hearing, asking whether they should change the penalties associated with MDMA & Darwin / Darbon (? Claus) and other drug policy activists had fruitlessly testified before the sentencing commission about MDMA's risks and benefits. Opposing this increase in penalty .....
The next day the testimony presented to the senators in Ecstasy was linked with poison, abuse, death, brain damage, addiction, violence, damage to dopamine and serotonin brain cells, rotting flesh falling of the side of the users face, holes in the brain, a high-school cheerleader unable to make it to practice since she was "enthralled" (that is their term) to ecstasy and would be lie, cheat and steal to buy more and a generation of young people who thought MDMA was harmless, even though it insidiously robbed them of their mental abilities and moral sensibilities.

Claus: This is from the 30's?

Alexander: No this is two months ago. And congress bought it and they upped the penalties for MDMA, so that they now exceed those for heroin. I mean, that kind of thing.....

Claus: You always come back to this Sasha, also on the other interview. I don't blame you.... I mean the demonization of these drugs by your government, which of course is far ahead of any other western government, although others are following. But you always come back on these things, and I always wondered: do you ever fear your house is being bugged?

Alexander: I assume my phone is.

Ann: Oh no, if we really believed our house were bugged we would probably leave. That does not mean our phone..... Of course e-mail is by definition.....
Whatever we say in private, we say in public. There is no hesitation about that. The government is not fond of either of us, because that is what we lecture on, ... we are not alone, us. I mean, even George Schultzes was at that recent meeting. "The war on drugs" is no longer popular. The media is, except for the extreme rather far right.....
It is generally accepted to be a failure and a total waste. But it's so well established, it is making such good money, for the warriors against drugs.

Alexander: There are three measures / majors (?) of control, that's money, political position and, well, control, basically. They are all tied together. Who benefits? That was the chapter "Qui Bono" in TIHKAL. Who benefits? To whose benefit, actually. And you begin to spell it out the identities of these people in their position: the governement bodies, the people who build prisons, who on-and-on-and on. Becomes almost a trillion dollar size industry. Not counting the cost of the drugs. And people want to maintain it.

Ann: There is another thing also. If our house were bugged it would probably be without a warrant, because with a warrant there is a time limitation. And they had to be really good reason to do it. Therefore if there were bugs in the house, which were put in without a warrant, they would be unusable by anybody.

Alexander: That is ten years ago, not today. If they can go get the evidence of the commission of a crime, even though act getting there was an illegal one, the evidence will stand by itself.

Ann: Yes, crime sure.

Alexander: Well, posession of Marijuana is a crime.

Ann: Yes but we don't have Marijuana.

Alexander: No, we don't have Marijuana. No that it if. If they came and they felt that we had pot tucked under the table, and if we didn't they would put pot under the table.

Ann: Look, so far they had every opportunity to plant things, and they have not done it. So I don't think they ..... You are too high-profile right now.

Alexander: That is my saving grace.

Claus: You certainly have increased in profile. Hardly anyone knew you 30-40 years ago.

Ann: Well, let's see. Why ... how did that happen?

Alexander: ..... publishing the first book. Maybe MDMA.

Ann: Which is funny, because that is the least of our interests. You know, that is way in the past. He is into new things. But the only time anyone interviews us, which quite often.

Claus: You are being interviewed often, are you?

Alexander: Yes, quite a bit.

Ann: Well what happens is that we give..... I don't know what that one before the NCC is or was, but right now it is because of the..... It was a Time magazine cover story, and then you and Bob Wallace and Reg Doblin had little pictures. So immediately, whoever is included in that becomes a focus of somebody's.... Go out and find out what this guy is about. Then that died down and I made the mistake of saying yes to NBC and CBS - and I will never do that again - we escaped disaster by the skin of our teeth.

Alexander: Yes, that is an interesting point there. There are people who interview us and there are people who are reporters who carry on the questions. Entirely different scene. The dialogue back and forth.

Claus: What is the difference?

Alexander: E.g. you ask what is the difference between a reporter and an interviewer. Very nice question. What if you ask the question: how do you feel for your responsibility for having caused so many deaths amongst.....

Claus: That is a bit of a loaded question, isn't it?

Alexander: But that is the way it is. They will ask that sort of thing.

Ann: Actually that is not really accurate.

Alexander: No, but that gives the spirit of it. And of course the answer to that is, what I have said 2 or 3 times already - which of course turns off the question entirely 'cause they did not say it at all before, but they cannot replay what has not been said, so unless.....

Claus: No, I did not catch all that. So, what is your answer to that question?

Alexander: As I said two or three times earlier. At which point you have in essence defused the question. But you hadn't.

Ann: But Sasha, you didn't do that!

Alexander: Yes but I was told later that I should have.

Ann: Yes but you didn't.

Alexander: And I don't talk to reporters any more.

Ann: No we talk to people but not those from the establishment, because they have a particular agenda. The latest flurry of interest has been..... (Inaudible) There is a magazine called NCC, is it. And we gave an interview for that, which must have been interesting, but when we got our copy it is in German, so we can't review what we said. But for some reason that seems to be...

Alexander: Yes and then they sent over the radio / audio people from Germany ...(inaudible) and Paris. Most of it from Europe. I just assumed (inaudible)

Ann: No we were pretty well unknown in this country, except in the psychedelic community. (It is a European thing.) Yeah, I got a call - how many years ago - from a psychiatrist we know in Spain who said: Your husband is all over the television here and the newspapers. I said, what's he done know? And it was because of the MDMA trial.

Alexander: That was an interesting event. That was about 5 years ago. Spain has a different legal process. Instead of having a jury over there you have one or many magistrates. And they in essence ask the questions. You have a defence lawyer, a barrister and a prosecutor. But they don't really want the magistrates say: may we ask the questions? But they say "absolutely". And the witnesses there - the expert witnesses - are always in two's. One basically chosen by the prosecution, one basically chosen by the defence. And the questions asked - and they both answer the questions back and forth - until they kind of agree on an answer. And they go on to the next question. It is kind of an interesting approach. Of course, it is not foolproof, because the prosecution tries to get one of his men in as a defence man so that they both have the same opinion.
Anyway, the question was: MDMA was seized, this person was selling MDMA. Is it a hard drug or a soft drug? The Marijuana type softness or..... Basically is it dangerous or not dangerous. And I was brought in by the defence, as use in England as use on the Continent. And it was kind of humorous. They had just gotten a quotation from a book that they had gotten through the law enforcement wing, that came down from the prosecution side of things and they wanted to put it as evidence.... I forgot what it was, it was something out of PIHKAL, about MDMA, and I was asked whether I was the author, and I said "yes I wrote it" and that was in the book and I wrote the book also and suddenly my believability level just went up a little bit. And the question that I finally answered was, "do I believe MDMA is dangerous drug?" And the answer is very straightforward: any drug used by a million people in England a week and virtually without directly ascribable deaths at all - or even if there was one death a week - is probably one of the safest drugs I know of. And that was more or less the end of that and then we went across (inaudible)

Ann: It wasn't at the trial time you got the publicity, it was when the verdict came down out which put MDMA in the non-dangerous category.

Alexander: But right now that is no longer really.... because Spain has joined the majority of the European countries, that personal possession for personal use is not a pursuable crime. England is moving that way.

Ann: Spain is still sensible, isn't it?

Alexander: Actually possession of low Marijuana say for personal use. All countries in Europe except for four will observe that. England is sneaking around in that direction.

Ann: Spain, they are so sensible, they are so rational. I think it is because they went through a dictatorship and never want to go through that sort of thing again. If you ever have a chance to go to Spain, go to Barcelona, one of the greatest cities in the world.

Claus: What I would like you to do is to give a summary of the chemistry and the psychopharmacology, QuSAR - Quantitative Structure Activity Relationships - of the phenylethylamines. As far as I see it, you got substitutions on the nucleus, then you can alter the side-chain - you can put an alpha-methyl on it and you make hallucinogenic amphetamines. You can put substituents on the Nitrogen and then of course you can make two rings, like in MDMA. If we can start of with the substituents on the nucleus. When did you get involved, what was the first thing you did synthesize, why did you do it, out of what motives what work had been done before.....

Alexander: Well my first entry into the area was Mescaline. Which is a phenylethylamine with 3 methoxy-groups on it. At the time I was involved ....., it caught my attention, that was what brought my entire energies into this area of chemistry and pharmacology. What was known at that time? It was probably late fifties: LSD was known, MDA was known, Mescaline, Marijuana, THC had not been pinned down structurally.

Claus: Just stick with the phenylethylamines. I think TMA was made in the fifties.....

Alexander: I was one of the makers of it.

Claus: What was the first thing you then ever did, Sasha.

Alexander: Well first of all I came to peace with the fact that Mescaline is a - I used the word a while ago - a catalyst not a doer. These things are catalyzing things occurring.... I mean 350 mg of a white crystal solid cannot carry with it, the interpretation, and the mindset of a bee as it takes honey out of a blossom. The remembrances of your own past when you were a child. All those little things are not in the chemical. They are in you. And the chemical allows them to be remembered or be seen. So I said, my first thought was, if this is so, this phenylethylamine, what would the amphetamine be?

Claus: So that was you entry into the whole field?

Alexander: Yes, put a methyl group onto the alpha-position.

Claus: And you were one of the makers of TMA.

Alexander: Well, actually I found it was in the literature that done by a couple of people in Canada. Who had found that this material, TMA, caused the intensification of colours seen with a stroboscope. Which I thought was kind of a silly waste of a chemical, but that is what they published. And I made the material and confirmed

that it was more potent and it was less pleasant than Mescaline. Thoroughly unpleasant. And so as I may have written in PIHKAL..... (change of side of audio cassette)..... And then the next thing was to introduce the ethyl group, propyl group, butyl group, amyl group, hexyl group, heptyl group, octyl group et cetera. And the ... properties change as you lengthen the side-chain from zero to one and the potency goes up, obviously too the ethyl-group will be certainly more potent and might be interesting. What I did, I made them all the way - I did not make the 7 because I could not find any appropriate nitro-alkane - so I made the 6 & the 8 but also the 5 and the 4 and the 3 and two. And by the time I had made the outer ones, the further out-ones, I had assayed the inner ones, namely the alpha-ethyl and it was not active! Total ..... (inaudible) .....activity. So the other ones was kind of a waste of time, so I dropped ... I stopped with the ethyl.

Claus: This was in your DOW period, you were at DOW?

Alexander: This was still DOW.

Claus: What were your thoughts then?

Alexander: Since you lengthen those things and doesn't .....(inaudible)... more potent thing (potencies), the alpha-methyl, you have 3 Methoxy's and there are 6 ways they can be arranged on a ring. 3,4,5- is one of them, so I made the other five.

Claus: I am sure other people worked on that as well though. It is a long time since I've had the papers.

Alexander: I think I co-published with the other isomers. I made all the different possible isomers. And I assayed them all. The most interesting one was the 2,4,5. Not quite as interesting, but certainly worthy of pursuit, is 2,4,6. So I looked ..... essential oils things that have methoxy groups in nature and 2,4,5 is almost unknown. Only one natural essential oil, which is Asarone carries it. 3,4,5 is everywhere. But 2,4,5 was substantially unknown. Now it is in everyone's lexica, because it is an active amphetamine, therefore they tried it in their own studies, but at that time very little study had been done with it. And it was the most active. And it was the nucleus from which I pursued what was going on. If I had another lifetime, and I get rid of indoles and iso-quinolines and so forth, I would chase 2,4,6 and pursue the whole thing with it, too. Because I have done a little bit with it, and they are active compounds. (Inaudible) they are active.
Whatever I did with 2,4,5, I would do with 2,4,6. I have done 2 or 3 of them, explored them, halides, sulphur and they are active.

Claus: So you would have a methoxy group on the 2 and the 6 and on the 4 you would put whatever. The 4 would be the primary target?

Alexander: Yes, chemically more difficult to do: in 2,5-dimethoxy-phenethylamines 4 is the position of attack. If you have a 2,6-dimethoxy phenethylamine 3 is the position of attack. And I wanna go in 4, so it takes a little bit more chemical manipulation, but it can be done.

Claus: Go on.

Alexander: That was the beginning of this. I settled on the 2,4,5. Then began to explore other types of substitution patterns. What I had also done, was to changed some of the substituents, mainly the 3,4,5, and when I was still working in the 3,4,5 I made the 4,5,-methylene dioxy at that position.

Claus: Why?

Alexander: Because nature had already prepared the starting material in the form of myristicine, which is found in a lot of essential oils, because it has automatically it has the 3 carbon chain built in. And so I if I could get the myristic acid .....

Claus: You mean buy it somewhere as a precursor?

Alexander: I wanted to get the corresponding acid, which would be myristinic acid.

Claus: So your thoughts were rather more along "What can I buy in the shop" rather than "There is such a thing as myristinic acid, hey.....

Alexander: If you can buy it, don't make it, is the rule of the chemist. That saves time, and someone else will pay the bill, maybe. Anyway, at that time my mother's death, (inaudible) and my late way and my son, my father, into France, and I noticed there was commercial availability of - what they called - myristinic acid, which actually was myristic acid. They had renamed it. And I don't want an 18-carbon chain acid; I wanted a 1-carbon acid, that I could put the methylene-dioxy group. So I ended up - when I came back - getting oil of nutmeg and I got maybe 5 or 10 pounds oil of nutmeg.

Claus: 5-10 pounds, like in kilos? But you were working at Dow at the time. Weren't questions being asked?

Alexander: I had free hand. I was free to do whatever I wanted. It is you who has the invisible red flag. What gave me carte blanche at Dow: when I first went to Dow, 1956 maybe, I was employed as an organic chemist, and I published quite a few papers already in chemistry so I had some documentation as a chemist. And they said: "Well what we have is 3 compounds that are virtually unknown but we can

(Inaudible) if you can find a use for them, that's what we like you to work on". Yes there were 3 compounds, and one of them was meta-tert-butyl-phenol. Virtually unknown chemical, because if you have the tert-butyl you can't put the -OH on meta-position. And if you have an -hydroxyl group on the ring, you cannot put a tert.-butyl on there. You can get it on para, but not on meta. And they said, "We can make ton amounts of this, if you can find a use for it".

Claus: And this was good from a patent point of view?

Alexander: Right. So then they had the unique ability to get to it and what comes out of it. And I said "Well, that's the same ring-system that you can find in physostigmine". With the tert-butyls out over here, ... circle Nitrogen..... put another Nitrogen over here and you have physostigmine, which as a phenolic carbamate is a very, very potent compound in man and in animal. ..... make a good insecticide. And they said: "Well, why don't you make it". So I played with that and what I did, fortunately, I had the idea of taking the t-butyl group and putting maybe it or both methyl group on both sides, put the nitrogen in between or alongside, put an alkyl-group on the Nitrogen, make a carbamate. And I said, "I think one of these will be an insecticide", and put all these ideas down on paper (I still have.....2 minutes hookii) and I had the good wit and imagination to have it witnessed. And it turned out that the 3,5- dimethyl and the N,N-dimethyl...carbamate went commercial as an insecticide.

Claus: This was the Mexacarbate, the Zectran.

Alexander: Zectran, right.

Claus: Is that you claim to Dow-fame? Did that make them so happy and so rich that they .....

Alexander: If you can look at a structure and make a guess like that, once you look, you look at whatever you want to look at. It was a carte blanche to do whatever if my imagination.....

Claus: But it still boggles the mind Sasha, you must have had a supervisor who looked over your should and said "Let me see what you are doing?".

Alexander: Oh sure, I am making psychedelics, all these will become drugs which will make very well, can find a market, you buy this industry buy that industry, you don't know what the values are going to be until you make them.

Ann: MMDA when it was...did not have the slightest idea of what was going on

Claus: Sure, but here we have a guy, doing this for years and years full time.

Alexander: Oh no, I was only doing this for 5 years. I was there 10 years altogether, this was 5 years into it.

Claus: So five years you spent doing hallucinogens?

Alexander: They became more and more unhappy with it. And they eventually asked me whether I would publish my home address instead. But meanwhile everything I do, they patented, so they kept getting patents out of it.

Claus: So this is where all these hallucinogenic patents came from? So they are Dow patents? And you got a dollar for each?

Alexander: No. On average I got a dollar. Because the patent officer would always flip a coin and we would get 2 $ or zero $. You average one dollar per patent, but you get maybe 2 $ for this patent or zero $ for that. Silly symbolic thing anyway, we'll match it with a coin and take either all or none.

Claus: Basically you made them so happy with that one patent that they gave you carte blanche?

Alexander: And as they were getting more and more unhappy with the direction I was going, I was taking off more and more time, finishing my pre-med odds and ends and I wanted to go to medical school anyway, so I left.... and went to medical school.

Claus: And after that you never worked again?

Alexander: Being unemployed or retired or being a consultant are just different ways of looking at the same sort of thing.

Claus: Well, we will have another five minutes before we come back to the red flag. The consultancy business, what did you actually do, do you mind talking about that. To support yourself in the consultancy business, you either must be very expensive or done a lot.

Alexander: The consulting was using my knowledge of psycho-pharmacology, pharmacology, little bit of medicine, little bit of chemistry, biochemistry and going in for example, I was a consultant for several years at Lawrence Radiation Laboratory at Berkeley (Ann in Background: "And expert witness"). But at Lawrence Radiation Laboratory they wanted to find ways of incorporating positron emitters into compounds because they had the PET scanning. Do you know that the E originally stood for equatorial? And they had the journals and on this and that and painted on the doors.... (tape defect)..... ass who called it equatorial it is axial. And so they could not change the E to and A and they made "emission"; they changed the word instead.

Claus: So you worked for them (Lawrence Radiation Lab)?

Alexander: As a consultant. I did not work there. I charged them by the hour or by the day. I also worked as being an expert witness at trials, where they needed the facts. Drug-related trials.

Claus: Give me an example.

Alexander: I will give you an example, which is not too far back. What is an analogue?

Claus: I know what you are getting at. I guess the legislators make it to mean anything they want it to mean.

Alexander: It is called a vague law. And they are experts at it. Which means that if I don't like you I can interpret it this way and get you. If I like you I interpret it that way and you are free.

The analogue drug bill was passed in 1985, 1986 or 1988. 1986 was the emergency scheduling of DOB. All anti-drug laws are passed on an even number of years, because that's when congress is up for re-election and they want to a bit hard on drugs so they forget laws to get re-elected.

From the chemical point of view, an analogue is something, which resembles something. A homologue is something which is one carbon more or less than...(mumbles). An analogue is not a homologue but something, which kind of resembles. The analogue was defined legally as being something that is (A), (B), or (C). There is no "and" or "or" between (A) and (B). There is just a comma. So it's vague in that sense. You don't know whether it is "(A) and (B) or (C)" or "(A) or (B) or (C)". And finally an appeals court had to meet 2 out of the 3 requirements.

So the requirements being an analogue is something that (A) has a structure is substantially similar to a Schedule 1 Drug. And that is the issue, which I will often be in court: "What is substantially similar mean?"

Claus: I have no idea.

Alexander: Nor do I. Nor does the prosecutor, nor does the defence lawyer, nor does the judge. (He shows Claus 2 leaves from two different species of trees). Are those substantially similar?

Claus: They are substantially similar in that they are both leaves.

Alexander: That makes them similar. If you like look through the eye of an leaf man, that is your window, they are similar (unclear). And if you are a botanist, however, this comes from an oak tree and that comes from an ash. From the botanical point of view they are totally different. They are similar, as you said, which is the same as saying they are substantially the same. Then what does substantially similar mean? But that is what the law says. That's their definition.

There was this one case I got in Ventura and they'd drawn a structure of MDMA. California did not have MDMA illegal until just about earlier this year. They had not gotten around to it. They had an analogue drug bill, and so they used the analogue drug bill to prosecute people with MDMA. And I was involved. One of the trials was that: they drew a structure of methamphetamine with of course the feet in the air, the amine group, the chain and the alpha-methyl up here, obvious, and down here it didn't have a Methylene-dioxy or it did have methylene-dioxy. So it was MDMA or

methamphetamine and the question was do these two have structures that are substantially similar?

And it is nice to come in sometimes, being a person on a cane, with white hair, a little hard of hearing, harmless, (mumbles). And I turned to the judge. And the judge can be your ally when you are kind of his age. And I said, "Your Honour, I don't understand the question". And the prosecutor asked the question again. And I said: "I am sorry, I don't..... Could you rephrase the question?" And the judge asks the prosecuting attorney. Well, he couldn't rephrase the question, because then it is sidesteps the letter of the law. He has to ask it the way the law is written; otherwise my answer is not applicable.

And so he said, "Well, no". And he asks the same question again. "Just leave that alone. Let's talk about the pharmacology of methamphetamine, the pharmacology of MDMA. Do those two compound have pharmacological effects on man that are substantially similar?" "Your Honour, I am sorry, I do not understand the question. Could you rephrase the question?" He couldn't rephrase the question. Because the second of the three requirements for analogue identification is that it has a pharmacology that is substantially similar to a schedule one drug.

And the third entry of the definition of an analogue is "and it is given to a person with the intent of generating an equal or greater amount of response than a Schedule 1 Drug would generate". But the first two criteria are both (inaudible) "substantially similar". I could not answer. And so I collected my fee. They love asking question: "Are you being paid for your evidence or for your opinion?" The prosecutor often asks questions like that. The answer is "Of course! I am here to earn money" But they will ask it, so that the jury thinks you are giving paid testimony. Ugly. Instead of being paid for giving honest testimony, which they would not say (?). And then immediately they'll ask (inaudible) questions, predictable: "How much are you being paid?" The answer is "I don't know how much time I am going to spend here." And then they get on to other questions.

I was asked to leave; I dropped out of the court entirely, because I couldn't answer the questions! I didn't understand them. And they brought in a young girl, forensic chemist, up the valley a-ways, and in addressing this question, she was asked: "Do you know what is meant by the term 'substantially similar'?"

Her answer was: "Everybody who has any scientific background can answer the question 'yes'. It is very clear in the scientific area what is meant by substantially similar". And they said: "When are two things 'substantially similar'?", "If they are over 50% identical". That was her answer.

(Points at his two leaves) Are these 50% identical?

Claus: No.

Alexander: Depends on what glass you are looking through. How much are they identical: 16, 65%?

Ann: They didn't throw him out, but...

Alexander: Over 50% identical...(inaudible) ... in prison now.

Claus: He is in prison? So they did it? What non-sense.

Ann: It is non-sense. But as a jury does not understand....

Alexander: Jury... The whole interaction with the jury, something I learned very early in the process.

Claus: Let me just interrupt you here. So who chose methamphetamine?

Alexander: Well they took as much as the molecule which was known to be a scheduled drug.

Claus: So at that time they had no nucleo-substituted amphetamines or phenyl-ethylamines?

Alexander: I think they chose it ..... California laws has been well-established. Everyone knows it's an ugly compound. And behind every house there is a barn, and in the barn there is an Methamphetamine Lab... (Claus laughs)... I shit thee not.

Claus: So you made your made your money by attending in court, doing work for the cyclotron...

Alexander: I did a lot of work at Donner labs. That was at Berkeley. Mostly we worked there ...gamma. We had the run of the place. I was doing - consulting on the other hand - I was working with people who were co-publishing. They got the salaries and I charged consulting fees. But such things... it was the first time we discovered the target of DOB in the body. We labelled it with Bromine-77 or ...(inaudible)... Bromine-82. So the gamma-emitter is not clean. But long enough to be able to - 30 hour half-life, one set 50-hour half-life. So you put the radioactive bromine in there as the "seeing capability" and we had what they called gamma-body-counters. You lie on a little cart and a bunch of gamma detectors, maybe 30 or 40, (inaudible) are all focussed here, and you lie down there and you wheel the person headfirst over this little thing and on the oscilloscope comes up a line by line image of where the gamma things are. So you see head, you see the body, you see where it is that ... First thing you see is a little .... You make an injection; it's kind of a sloppy injection so you have a little bit of shit around where the needle went in. And the first thing you see is a little ping-pong ball which is the bladder, which becomes a tennis-ball, which becomes a (inaudible - "candle-oh") as the radioactive stuff accumulates. So you know where you are in the body.

And we expected it to go into the brain. Some of it to go into the brain. A few percent maybe. 3 or 4 percent. None!

Claus: Oh yes, you talked to David about this.

Alexander: It went to the lungs. And from the lung it went into the brain. But that is the kind of work we could do (inaudible)

Claus: But how come the University paid an extra consultant. I mean, I have never heard of the concept for this. I mean, as far as I know, in England, as far as I know, in Germany, in Denmark, if the researchers had any problems their superiors would tell them to pull themselves together. And come up with a solution. So, they bought you in as the man to fix it? And this is sort of a common thing here in America to do?

Alexander: Quite common, yes.

Ann: You also taught classes there?

Alexander: I taught classes there. Not only there (mumbles) graduate school psychology, San Francisco State, Berkeley....

Claus: I think the system must be substantially different ... substantially dissimilar... I am sure they don't do that in Europe that they buy consultant in.

Alexander: I truly do. I truly do. You probably find it more in industry or in government.

Claus: But you are much more expensive than these poor sods who work for pittance.

Alexander: Oh yeah. On the other hand I work a day a week, or a day a month. So I am cheaper. Except, I am not around much. NASA was my first great big consulting job, was to go down to NASA who are presumably there, working on space stations, men in space and all. And they had a little chemistry group down there, and I was asked to be a consultant to the chemistry group, primarily for ideas, for that kind of thing, for they wanted, they said, to evolve a drug that would imitate being weightless in space, say, on a trip to Mars or something. Where you could train the astronauts....

Claus: So they hit on you? "Dr Shulgin must be the man to ask this question?"

Alexander: And so we are picking out, how do you get a person to experience isolation from one thing (mumbles) and still remain conscious. So we were playing around... structurally... (inaudible).

Claus: When was this?

Alexander: 1971.

Claus: 1971? The idea sounds completely whacky. Absolutely whacky.

Alexander: Yeah, It was. ....(inaudible)... they think I might be a contributor to it. See, 1967-69 I was in medical school two years. And in 69 to 71 I was the in Langley Porter Psychiatry thing for two years interviewing, seeing people, doing all kind of neat things. Have you ever heard of mauve-uria or Hoffer in Canada, Saskatchewan?

Claus: We spoke about it earlier.

Alexander: Hoffer invented the term, the disease mauve-uria. So that was the kind of thing I did at Langley-Porter. Consuming 300 mg of Chlorpromazine and seeing whether I became mauve-ureic. Which I did. But I dropped out of the psychiatry department entirely when I got this offer from NASA as a consultant. That got me out of academia and into - what I thought at the time - serious science. And then I was down there for about 3 or 4 months on Mondays and Wednesdays, kind of running the chemistry lab - not as an employee but as a consultant. And I would give them a bill each week or each month and they paid it happily. And then they asked me to sign a red, green or purple clearance card. And I said "Why?". "Well, everyone is doing it. We are getting everyone in the chemistry group to do it", they said. It restricted the information I could reveal, some control or secrecy thing. And just I said "No, I won't do it" and they said "Well you are no longer a consultant then" and I said "goodbye" then and that was the end of my relationship there. Later on I discovered it had nothing to do with space travel whatsoever, but it was about chemical warfare.

Claus: There was a problem with LSD and its use in chemical warfare, the instability of it. Did they want to solve that problem?

Alexander: LSD is totally stable as long as you do not mistreat it. You take the bi-tartrate-di-methanol-ate crystal, which you get if you recrystallize from methanol. In the first recrystallization from methanol you lose 30%. Then you recrystallize again from methanol, you lose 4%. You recrystallize three times from Methanol you almost can't get it in solution: as it gets purer it becomes insoluble in Methanol. You keep that in the dark, away from air, but especially away from light. I like to wrap a little aluminium around the glass. You keep it cool, a fridge would be perfect, but if you keep it under Nitrogen atmosphere I don't think you could pick up decomposition in it. Just eliminate impurities, air, moisture, and light.

Claus: Let us go back to DOW. You left DOW in 1967. You told me you fused the second ring in the phenyl-ethyl-amines. I never quite understood why you did that?

Alexander: Nature told me. Have you ever looked at the structure of the essential oils? They all have phenolic-groups and/or methoxy-groups and/or methylene-dioxy groups.

Claus: Why did you need 5-10 kilos of the precursor?

Alexander: Because, if I had to do a careful distillation, I might as well see what else there is in there and get pure material. I forgot the name of the person who invented the distillation plate. It is a porous plate, like a sinter-glass plate. You speak of a column having so-and-so many plates "efficiency". It was a 75-plate column I was using, it was about 20 feet tall. Initially under atmospheric pressure and then under a vacuum. To distil that 5-10 kg of Nutmeg took about 4 weeks. And I fractionated off 20-30 ml distillate at a time, analyzed it by Gas Chromatography, Mass Spectrum, and NMR. And I would get a fraction, instead of getting a mixture of things. So 3 or 4 fractions would be pure material. And out of that I got I don't know how many grams of pure Myristicine, almost unknown. I found a new compound, which I called Methoxy-Eugenol. This Eugenol is 3-methoxy-4-hydroxy-allyl-benzene. I found 3-methoxy-4-hydroxy-5-methoxy-allyl-benzene. Never been seen in nature before. So I put a note in the paper: "Methoxy-Eugenol is a minor component of Nutmeg". But I

got out of that my Myristicine, which allowed me to make MMDA, not MDMA: 3-Methoxy-Methylene-Dioxy-Amphetamine. And it turned out to be even more interesting and more active than the tri-methoxy compound.

Claus: Why did you go into amphetamines from phenylethylamines at that point?

Alexander: Because TMA is more active than mescaline. I was going for activity, for potency. Later I went back to the phenyl-ethyl-amines again. But what I did, was that I got the development of the types of substituents on the ring at the amphetamine level, but then I thought "what are the phenyl-ethyl-amines going to be like?", so I re-did a lot of that, going back to the phenyl-ethyl-amines. That was probably in the 1970's. One of the first ones I went back to was the phenyl-ethyl-amine that corresponded to DOB.

Claus: Going back to the Myristicine. You synthesized MDMA. How did your thoughts go from there?

Alexander: In how many ways can you put a methylene-dioxy-moiety and a methoxy-group on an aromatic ring? Six. So I made all, except one, 2,3-methylene-dioxy-5-methoxy-amphetamine. I have never found out how to make the one I couldn't make. In fact, no one has ever made it yet, I don't think. There is no obvious way there. So I didn't make it, but I made the other four, to a total of five. I assayed, and the only really one of interest was the 2-methoxy-4, 5-methylenedioxy-

compound. And that was the one I called MMDA-2. It was the second one I made, it corresponds to TMA-2.

Later on, I got more and more serious. I wanted to know which of the positions, if one of them, was calling the major shots. And this I learned by going back to the most potent that I was working with, the 2,4,5-Trimethoxy-compund and making each of the methoxy-groups into an ethoxy-group. And the only one of interest was the 4-ethoxy-compound, i.e. 2,5-methoxy-4-ethoxy-amphetamine. The 4-propoxy compound was active also, but if I changed the other positions I lost activity. So that put the emphasis on the 4-position. And the emphasis belongs there, as it does in the 4 or 5 position in the indole-ring.

And that is when the thought occurred to me to put other things in the 4-position. The first thought I had on that was to put a substituent that cannot easily be metabolized off. The methoxy or ethoxy-substituent is going to be easily hydrolyzed to phenols, but a methyl group can't. So I put a methyl group on, because it could be oxidized to a carboxylic acid, perhaps. That was in the sixties, I was at DOW at the time. DOW has a patent on that. That compound was DOM; the acronym stands for des-oxy-methyl. I also made the des-oxy-ethyl and des-oxy-propyl compounds, DOET and DOP and longer chains.

Claus: How did it evolve from there?

Alexander: I thought that if the methyl is active, so would the bromo-compound. DOB. I went to the iodine-compound DOI, a little trickier to make, but I made it.

Claus: How did you make the jump from the methyl to the electronegative substituents?

Alexander: I don't know what I thought. All I knew was that the 4-position is the sensitive position. But I don't know why. I put on tri-fluoro-methyl, anything and everything. I made the chloro and the fluoro-compounds but they were not interesting. The fluoro is not even active. So the substituent had to be big and heavy. I don't know why. Around the time I made the bromo-compound I left DOW and went to my own lab out in the back of my own house.

At this point I am doing a lot of my chemistry in my own lab but also at the San Francisco Medical School. I formed an alliance with the professor of medicinal chemistry, Neil Castagnoli. I published quite a few things with him.

Ann: We called him Chestnut in the book. Castagnoli as I remember, means chestnut.

Alexander: I did a lot in San Francisco, because I was again now a consultant to Neil Castagnoli, 4th floor, San Francisco Medical School.

Claus: So on top of the fun, you also got paid for doing that?

Alexander: Oh yes.

Ann: You see what everybody wants to know, but they never ask him is "If you never sold drugs, or are part of the underground or otherwise, how did you pay for your living?"

Claus: I never assumed you were dealing drugs, but it did occur to me that there is not a lot of money in...

Ann: If you look at the kitchen floor you will realize that this house is not only old, but it is ancient. If we had any money that kitchen floor would be nice linoleum. The house is paid for, it belongs to his family, so we don't have to pay mortgages. We don't have to pay rent, and when we get something nice, like I just got that table for our 4th of July wedding anniversary, we got it for a very nice sale price.

Alexander: I have been a consultant for more than 10 years with the Department of Clinical Pharmacology at San Francisco Medical School. And I was in there every Monday. They paid me something like $800/month, just to be in there on Mondays. And why am I there? I don't know anything about clinical pharmacology, but I do have ideas. I am a source of ideas, an idea-man. These ideas are related to pharmacology, chemistry, medicine. My work at the clinical pharmacology group is almost entirely with nicotine.

Claus: Tell me more about things you did which do not have anything to do with hallucinogens.

Alexander: Nicotine? I published half-a-dozen or a dozen papers on different things. The chemistry of nicotine; you know it gets metabolized to Cotinine, which in turn gets metabolized to 3-hydroxy-Cotinine, which is the major metabolite (end of tape)

(Start of Tape 2, side A)
Claus: Cotinine. Are you talking about the urine-analysis, the thing insurance companies do in order to see whether people smoke or not?

Sasha: No you cannot do that, because you can get Cotinine from a patch; because you metabolize Nicotine into Cotinine. Hydroxy-Cotinine – in fact, I was not the first to observe it as a metabolite, but we were the first to observe it in man. And we published on it, how we synthesized it, and how we determined it, and worked out an analytical tool for it. And so that helped to account for a degree of the percentage of the original nicotine taken in. Another thing I have worked on was N-methyl nicotine. Nicotine is a totally aromatic pyridine ring with a Nitrogen atom. But if you put a methyl group on that Nitrogen, you get a plus charge; this is known as a quaternary salt. Nicotine gets metabolized to the n-methyl-quaternary salt, i.e. N-methylated nicotine. But you cannot actually isolate it from urine, because it is a salt. So I worked out a method of analyzing it, where we do not have to isolate it. So I get involved in little tools, little chemical manipulations as a consultant for the medical school.

Claus: And they paid you. Do you know why they were interested?

Sasha: The people wrote for grants on nicotine, its behaviour, its influence on carbon monoxide levels, its metabolism, its distribution, what you get through passive smoking. All these sort of things. The group at the Medical School gets grants from

this government agency and that government agency – they have a tremendously good reputation. And I often get written on the grant application as a consultant. To some extent, the better I am known, the higher the chances are that they get the grant. I teach; I talk quite a bit at Berkeley.

Claus: Don't the post-docs teach?

Sasha: They do the research. And their professors - who are their overseers - as graduate advisers get grant money from the government to subsidize their students doing project work. Who teaches? There is no one left to teach!

Claus: I wonder whether this is different in Europe

Sasha: Oh no. Certainly down in London, for example. Same principle. Research money at University comes from grants; and the grants come to a professor, right? And the person spends his time doing what the grant says he should do, right? Who teaches? Graduate students? And I teach, I don't go in as a professor; I've never had a professor position. But the most elegant position, in almost all Universities, is what they call lecturers: you have no obligation, you have no tenure, and you have no stability. On the other hand you teach, if you want to teach, and they will ask you to come back next year if they like the way you teach. And you are a lecturer again for a year or for a semester.

Claus: What other work were you engaged with after DOW - apart from hallucinogenic drugs?

Sasha: Teaching was a big chunk of it. Other chemical work? No, it went almost totally into psychedelics. My lab was totally self-sufficient. The only thing I don't have are expensive instruments: I have one expensive instrument, and it doesn't work! But one reason I like being a consultant at the San Francisco General Hospital is that they have a collection of Gas Chromatographic Mass Spectrographs. So I can go in there and run the spectrum, if I want.

Claus: Let us go back to your psychedelic work then. You took the jump from mescaline to the amphetamines, and then you jumped back to the phenylethylamines again. Had you done everything on the amphetamines and wanted to move on?

Sasha: No, no, I was still working on those – there were a lot of things going on: you discover new phenylethylamines, you make the corresponding amphetamine. The two are hand in hand. The substitution pattern: if you have a phenylethylamine and an amphetamine with the same substitution pattern on the aromatic ring, as a rule, the phenylethylamine is perhaps a fifth or a tenth as active. There are certain general rules: the phenylethylamine is more benign, it's more acceptable, it's more friendly.

Claus: When did you start working with the aliphatic amino group of the phenylethylamines?

Sasha: I made about a dozen compounds, usually N-methyl's. I have never made a morpholine ring on the phenylethylamines; I have on the tryptamines. Because anything you substitute the nitrogen with on the phenylethylamines spoils the activity. The activity goes. Now I'm beginning to realize I was presumptive in that. I think some of these compounds are active, but they are chewed up by the Mono-amine-oxidase systems. That is where I am really learning a great deal from cacti.

Claus: What about hallucinogens and psychotherapy?

Sasha: That would be in Ann's quadrant.

Ann: Let us look at MDMA before it was made illegal. It was still not accepted medical procedure. So it was something that was kept very quiet. All the psychiatrists and psychologists who were using MDMA intended to publish eventually, but it was going to be eventually. They knew it wasn't accepted, it wasn't even known about it. The American Medical Association, the American Psychiatric Association, nobody had ever heard about the stuff. So they were a little bit ahead of their time and they walked extremely cautious, and they wanted to have a good number of patients that they could refer to. And some of them were just playing chicken, but that is understandable. Among many reasons is that the use of MDMA or any real psychedelic drug (MDMA is not a psychedelic, but e.g. 2-CB, LSD) immediately throws out of the window the 50-minute hour. The minimum amount of time you spend with a patient will be 6 hours. You can see that that disturbs a lot of things, you cannot possibly make a living by doing just this sort of work because 1 patient will be a whole days work. And you don't want to charge any one patient so much that it becomes a rich mans psychotherapy. So there were a lot of things to consider: before the illegalization of MDMA – that was the drug that was being used most of all – LSD or grass was being used. But the real push came with MDMA because it was so extraordinarily good to use in therapy. I mean, all of us thought of it as a therapeutic drug, because it is an insight-drug: it gives you the extraordinary mixture of being able to get insight into your own unconscious agendas and into the shadow part. For shadow work it is unbeatable. But at the same time it removes the guilt, and the self-rejection and the self-hatred that ordinarily would come along with seeing this stuff. It is not that everything that you see is negative. In fact a lot of it is extremely positive. But it removes the thing that prevents most people from gaining that sort of insight in ordinary therapy, because there is such fear of seeing something about yourself that you can't stand.

Claus: What would be the structure and duration of that kind of therapy?

Ann: It usually takes at least 6 months. The therapists would say that using MDMA - even just one session of MDMA - could save both the patient and the therapist 6 months worth of time and money. Because in one session it can do that which you are trying to do for at least the first, initial 6 months. It is not only about establishing communication; it is making it possible for you not to hate yourself. Not to reject those parts of yourself that you are seeing. The shadow is the Jungian concept of the dark side, the beast. I did my best to put as much of that stuff in the second book, TIHKAL.

Anyway, so here is this miraculous drug and also one of the things it is great for is marital therapy! You have a husband and wife who have started what we call "book-keeping": "you did this first…" and "I wouldn't have done that, if you hadn't…" etc. "Which of us has made the most mistakes here? You made more mistakes than I did". Its become a blame-game, resentments etc. and in one session – we saw it happen with very dear friends of ours, who really got into a bad place: they started at opposite ends of the couch and by the end of the MDMA-session they were holding hands in the middle again. And it turned out in their case to be an absolute blessing because they came together just two weeks before their oldest son was diagnosed with leukaemia. The marriage eventually – after he died – they did split, but they were able to hold it together, during the time. They are still very much friends now.

My feeling always was that MDMA would be most valuable; it would have tremendous value in PTSD.

Claus: Do you know anyone who has worked with MDMA in PTSD?

Ann: Well, there are studies, there is research now in Spain and I gather Israel. Except that Israel is waiting for FDA to bless it – but I don't know why. They are waiting for some sort of approval from the FDA for its use. But I am very happy about them using it for that: I always thought about it mainly for war veterans. It isn't just the sights and sounds and the horror of war, but some of them, for instance, come back now… what if they find themselves in a situation where they have to machine-gun a whole lot of people and what if in the middle of doing that they find out they are enjoying themselves? And if it is all over, how do they assimilate that one? I mean these are kids brought up in usual religious homes, maybe lower middle-class, middle class, what do they do with that? I mean, does this make them a monster? They are left on the streets or trying to deal with normal life, with these things unresolved. With MDMA they would be able to go back to the situation, get into the murderous-goddess-Khali, the hunter and the killing and understand why it doesn't mean that they are axe murderers, it doesn't mean that they are abnormal. But that this is a natural part of (especially) the human male, we are wired that way. MDMA – in a way we have no way of understanding - allows that kind of insight

without the terror of what you are about to see. It gives you this self-acceptance, which also of course extends in marital therapy to other people also. So there is an allowing-of-things-to-be as they are, there is an acceptance-of-things, and there is an acceptance of one's self – all these different levels of one's self. And so it is the most extraordinary drug for that reason. But again, all these therapists would have maybe one or two patients. The one I worked with is a hypnotherapist and when the patients had done their work with her and gone through the usual hypnotherapy, and had resolved their presenting problems - if they were a certain kind of person who she felt was not emotionally or psychologically fragile, they are pretty strong, and they had this urge to kind of explore life and themselves further. I mean some people are drawn to that, they are excited by the human mind, and there is just something that drives them: if they don't become psychologists themselves they might become writers. With those kinds of people she might broach the subject "Have you ever heard about this thing called MDMA?" because it wasn't called Ecstasy then and if the response to it was positive, then she called me in and I would go to her place about twice a week and we would work with these people. We also used mescaline, we used 2-CB, but usually not as the main part of the work, that was usually done with MDMA. These others might be used a couple of times in quite a few months worth of work with MDMA.

Claus: What is the difference between these drugs, Ann?

Ann: A tremendous difference. MDMA is not basically a psychedelic, so you have a minimum amount of visual changes. A very definite definition of hallucinations and you do not get hallucinations with MDMA. Most psychedelics, for that matter – at non-overdose levels – you don't have hallucinations you have visual changes, visual effects, but you know it's a drug effect. As long as you know it is a drug effect, it is not a hallucination. If you totally lose sight of the fact that you have taken a drug and you think it is actual reality – the Scopolamine-World – then that is a true hallucination. But it's not only that the visual changes and effects are minimal, you don't have walls moving and curtains waving. MDMA is not a psychedelic, it does put you in an altered state, but there is total control, there is no amnesia. There is a tendency to feel free to talk, you tend to loosen up, you trust others and you trust yourself. Well, it is easier to trust. Some people don't trust others under any circumstances, but it is easier to bond with people, to share with them. That is why I have a totally different take on raves: I think they may have a very good side. When you consider the fact that most raves are not far from very large cities, they are usually right outside of large cities. When you consider the second fact, that most people, young adults, who grew up in large cities, or who are living in them, learn that if they are going to survive there are certain things they must and must not do. If it is in a city like New York, you do not meet people's eyes when you walk down the sidewalk, because that is taken as a challenge for certain people, there are certain parts of the city you stay away from, you keep your money and your wallet out of

sight, etc. You learn caution, which approaches paranoia. But if you don't have that kind of caution, you are going to get hurt. So they grow up with this basic distrust of people they don't already know. You "never leave your door unlocked in a large city", these days anyway. You always see who is at the door, before you open it. We take those things so much for granted; we don't realize how abnormal it is! You go to a rave and you have something like MDMA – or say MDMA, because there is nothing like it – on board. And everybody else is in the same state whether they have taken a drug or not. Everyone knows what to expect and everyone is there. You can touch people whom you have never met before, you can hold hands with strangers, you can dance with people whom you don't know, you can talk all you want, and laugh, and have a great time with people that you ever met before, and you can experience a little bit of euphoria, a really good feeling, and may be the only time in your life, that you have been able to feel that way and I think that it's a very healthy experience.

Sasha: Was it Nicholas Saunders who mentioned about the soccer games in England or across the channel, in Belgium, usually ends up that the looser get to fight the winner, and the alcohol would flow, and it would end up with damage. And then they began using MDMA as a way of celebrating over there after the soccer games and they actually communicated with the other side afterwards. There was no more damage, it was a party! Quite a total change of outcome.

Ann: It is very hard to be angry on MDMA. If you do run into that sort of thing, you can get a sense of why you are angry, the insight is totally non-threatening so you can kind of see yourself, and see what your agenda is. Anyway, those are the benefits that psychologists and psychiatrists were seeing. Unfortunately, tragically it became illegal in 1985: it was a loss – it was a world where Penicillin had suddenly wiped out most infections, and somebody took Penicillin away and there was nothing to take its place. That is the way it felt. And so what happened then was that a good many of the therapists that had not published anything, had not spoken too openly about any of this, in other words they had a low profile, went on using it, underground. So suddenly you had a new class of criminals, which were psychotherapists. Now I don't know how many of the ones who were using it before it was scheduled, how many are still using it, but I assume it is quite a high percentage. But it is underground, it is dangerous. You never use MDMA – or any other psychedelic – with a person who is psychotic or pre-psychotic. Just people who are normal, healthy, neurotic.

Claus: What about obsessive-compulsive disorder?

Ann: That is very interesting. I had a patient who had OCD, and it did not seem to help.

Sasha: Do you remember a letter you got 25-30 years ago from a person who had OCD and they had taken MDMA and realized why they were, what they were? It was a very interesting letter. It was a fan-letter, telling about who they really were and what they…

Ann: It has helped individuals. The thing that is most exciting, that nobody seems to have picked up, which is Parkinson's disease.

Sasha: I remember the report, I think in the British or European edition of Time Magazine. One fellow with Parkinson's had taken MDMA. He could barely move, and he is doing somersaults! For him, it just dissolved the blockade that was being expressed as Parkinsonism. It was not irreversible: he went back to the difficulty again, but for the period that block was removed. I have it in my files, it did not appear in this country at all.

Ann: George Rikahrdae *(? spelling)* who is famous for using government grants to find everything possible that is dangerous about MDMA... It seems to me that at least the initial work that was done by scientists with government grants - there seem to be certain questions about incentive with government grant money – that these scientist would use dosage levels on animals that nobody in his right mind would use in therapy. They never seem to use anything equivalent to 100 or 120 mg, which is what you use in therapy. So you can see why we are not that enthusiastic about some of those results.

Claus: You are talking about neurotransmitter depletion, brain damage. But what about those case-control studies in humans, comparing cognitive function profiles of groups, groups that have taken many MDMA trips in their lifetime vs. groups that have taken little, or none?

Sasha: A little bit has been published in England: they had to combine the occasional user with the non-user and compare that with the heavy user, in order to get believable, statistically significant results. They had to combine groups, instead of comparing the three groups; if they compared the three groups it didn't hold together. So there was a little bit of manipulation of the data, and that was one of the reasons it was criticized to some extent.

Ann: Well, you see, for instance even if it weren't illegal I can't I can't use MDMA any more…*(accidental voice activated tape break)* I took it to write, it was the most fabulous. It put me in a state where it simply flowed and I did a good part of my writing in PIHKAL, the first book, on MDMA. It wasn't until several years later that I realized that I was to get the effect – or even close to the original effect, I was taking 250 mg – …*(accidental voice activated tape break)* an hour-and-a-half of 100 instead of 40 or 50 and it occurred to me "This is not too good, it means I am

becoming awfully tolerant". So then I stopped for maybe 6 months and tried it again, and I was still too tolerant. I stopped for about a year or a year-and-a-half and then took it again, and the effect was depressant.

Sasha: The magic goes.

Ann: It was gone. So if you have people in a study who "have taken a lot of MDMA", have they taken enough so all they are getting is the stimulant effect? I mean, what are they getting?

Sasha: They cannot give MDMA to these people, because that is against the law. So they have to say, "we want people with a past history of much, some or no intake". It is not done under the influence of MDMA, otherwise they will be in a lot of trouble.

Ann: There are some idiots who take MDMA every day.

Sasha: Well, then they would not be eligible, because you have to be drug free for 72 hours or so. That is why I like Dr F.X. Vollenweider in Zürich, because he gives it to naïve people with aggression, as a medical experiment, not a legal one. He would be a fabulous person to interview; he is in his thirties. He is in medical research, not in legal odds-and-ends. He has the permission of the medical fraternity, the medical board in Switzerland. E.g. he answered a question I have been asked by many people and I did not know the answer. I could guess, but I did not know the answer. Are you familiar with mushrooms, psilocybin and psilocin? The difference between them is a phosphate group. Is psilocybin itself active, or does it serve as a pro-drug? In animals the phosphate comes off right now. And in man? The answer is that it comes off right now. Because he did the experiment. He gave psilocybin and took blood samples, and assayed them for psilocin, and it was there. He was doing that work also on naïve people, which I think is delightful. Hopefully, you can get the more or less not drug-oriented history, but a person who has never used MDMA, and then uses it, gets kinetics, body-levels, blood-levels, urinary levels, metabolic fate. But he also asks psychological questions and really get a very first hand responses to a person who has not used the drug ever before. Very, very nice work.

Claus: How would one know what is an appropriate dose for mice, rodents?

Sasha: I will answer your question with a question: what does a mouse do, when he hallucinates?

Claus: It behaves differently.

Sasha: Ah, but that is behaviour. You didn't say motor behaviour, or *(unintelligible)* tail, or sleeping or moving around. I can't tell you when a mouse hallucinates. I can't

tell when a mouse is having a psychedelic experience. All I can do is *(unintelligible)* runs a lot faster. That may be a stimulant. Drop it on a hot plate and he doesn't drop off quite as fast, therefore he is numb or maybe he is paralyzed. Or sedation: if he is upright, will he fall over again, if so, he is still sedated. My point is that I don't know how to test psychedelics or hallucinogens in animals. We can't see the effect.

Claus: Using that argument however, you are also unable to say that the dosages in the MDMA-mice studies is too high…

Sasha: No, I was just making a statement, that the level of use in rodents or primates or such is much higher than would be used in man. You put 10 mg in a man, you put 10 kg in an animal. Rats and mice are radically different. E.g. the lethal level of most psychedelics in mice is 150-200 mg/kg. In most rats it runs about 5-10 mg/kg. And hence, a lot of the work that is done in rats is almost pretty lethal, whereas in mice you see behaviour, which is not affected by toxicity. But you are not seeing like self-image. We can't read these in animals.

Ann: Empathy, philosophy, relationship with the god-mouse…It's a subjective experience.

Sasha: I finally found the origin of the belief, which is a myth, that MDMA causes a loss of spinal fluid. What it is, some hairy work that Perucca *(name, spelling)* did, was taking spinal taps. And of course to get to the level of Serotonin, you don't go into the brain, you go into the spinal fluid of a person and to take a spinal tap you use spinal chord fluid. MDMA was taken you use spinal fluid. That, believe me, was the origin of that myth. *(Unintelligible)* Not only does MDMA cause holes *(unintelligible - does he say "forebrain")* in the brain, but also these holes are caused by the loss of Serotonin. Have you ever seen the holes in the brain? What you do, is you have a PET scan, and then you give a radiolabelled agonist of some kind that goes searching for the Serotonin system. And you turn the gain down on the PET *(unintelligible)* is dark. And it came out having *(unintelligible)* as advertising: "MDMA causes holes to the *(unintelligible)* of the brain" because "here is a brain without and here is a brain with MDMA". In the control subject they kept their hands off the volume-control, and you won't see it. Anyway, the *(unintelligible)* one was this is due to the loss of Serotonin and the complication is that Dopamine floods these holes and after being attacked by hydrogen peroxide causes rusting. That was in a newspaper!

Claus: Well, this is America, isn't it?

Ann: This is America on drugs!

Sasha: *(unintelligible)* when it came out about a year-and-a-half ago in the Lancet. The title was "MDMA and hepateo something or other damage". And the entire article dealt with MDA, but the title had MDMA in it *(I don't know what Shulgin is referring to, maybe Lancet 1998 Oct 31;352(9138):1433-7 Positron emission tomographic evidence of toxic effect of MDMA ("Ecstasy") on brain serotonin neurons in human beings.McCann UD, Szabo Z, Scheffel U, Dannals RF, Ricaurte GA The article caused quite a stir at the time, but on looking up the reference it bears some but not much resemblance to what Shulgin describes*). "Damage, liver, MDMA" that is always quoted as the title. Off it goes into the newspaper. There is no MDMA in any of the patients. The difficulty is, that most of the patients who come in, they take bloodsamples, they take urine specimens, but they look for bloodcount and this and that and the other but they don't look for the drug. They don't document the fact that the drug is in the person. While they take the word of the person who brought them in. This guy took speed, ecstasy pills and *(unintelligible)* twitching, so the twitching is due to the MDMA, but they don't look in the body for the presence of MDMA.

Claus: Currently, when pharmaceutical companies do pre-licensing phase 3 trials with psychotropic drugs under investigation, the company does not have to measure plasma levels of their drug in the patients to check whether there is any drug on board or not. The company relies on the patient's statement that they have taken the drug. There are no statutory demands for them to take plasma-levels, and some patients don't take the drugs, naturally. *(Tape 2, side A ends)*

Claus: Let us talk about Adrenochrome (INN). There were reports in the sixties that this oxidation product of adrenaline is hallucinogenic. It was then hardly ever heard of again. Is or isn't it hallucinogenic?

Sasha: It is hard to say. *(Unintelligible. "Michael something" says Ann)* he is the one who gave LSD to Aldous Huxley. The one who coined the word psychedelic. Anyway, this was the rage of a small group in Canada. What they did, they took adrenaline; it was exposed to the air and to the various elements, and the occasional x-ray and one thing or the other. It tends to turn pink. And the pinkness is due to the cyclization to an Indole. Adrenochrome was the name of the structure that was made. And if it's reduced it becomes what is called Adrenolutin (INN). And they were consuming the pink Adrenaline, as opposed to Adrenaline-Adrenaline. And that was giving them some visuals and other odds and ends. They published a book on the matter, it is an about 250 page book on hallucinogens of which about 150 pages were just devoted to Adrenochrome. They had a very good chemist in Nova Scotia, approximately, whose name I can't call out of memory, who actually synthesized Adrenochrome and stabilized it as the phenylhydrazine (*Adrenochrome has been stabilized as oxime sesquihydrate, monosemicarbazone, and as the thiosemicarbazone)* or something of that ilk and it was tested in lots of animals and

not found to have any action whatsoever. But it wasn't Adrenochrome! It was Adrenochrome coupled with phenylhydrazine: so the compound itself has never been isolated and taken in its own right. It was always in the presence of Adrenaline. It dropped out of the fad, and other things came around and the word is almost unknown now.

Claus: Nutmeg: Malcolm X wrote in his autobiography that they took Nutmeg in prison. I am unconvinced that it is mind altering. Can you comment?

Sasha: It is very interesting. I almost lost a friend. Not lost as a body-death, but as a friend. He was the head of Psychiatry over at Langley Porter in the research department. This was approximately 1968. He said, "you have been talking about nutmeg (and I had published several papers of what's in nutmeg) so I took 20 g of it" or something (it was from him I learned the word poikilothermic) and he said "my temperature began going down and I was scared shitless". Fortunately it stopped – but it was down to about 93 or 92. It really went down. He was so scared, he didn't really remember there were any mental effects at all. I have heard it is being used in prisons, because it is an intoxicant. I have never gotten anything sparking out of it.

Claus: You have isolated the constituents of nutmeg oil. Have you tried them?

Sasha: No, what I do, I add ammonia to it. And that gives me my amphetamines. I have only taken it as such in very small amounts. I had no mental effects at all. I saw no value in taking more. People complain about feeling poisoned, they complain about dropping in body temperature, they complain about a sort of irrational-scary behaviour. I saw no virtue in it. But one thing I found was interesting, and was not pursued; this was when I was kind of involved with Neil Castagnoli in San Francisco: I was with the husband of my girlfriend at the time over in Germany, and they had set up an in-vitro rabbit heart prep. And you put in this prep-system Myristicine at the top and you get MDA out at the bottom. Apparently, the heart prep has a way of adding Ammonia to that molecule. They observed it. I mentioned it to Neil Castagnoli, he said "Bullshit". I said: "Why don't you at least try it?", "Ah, nonsense, that's just silly". And to my knowledge no one has ever tried it. But they identified its presence spectroscopically. So, conceivably there is a system that might be able to add ammonia, at which point you take something like essential oils, and you make them directly into psychoactive amphetamines.

Claus: How do you convert Myristicine in the lab to amphetamines?

Sasha: The easiest and most direct way is either to move the double bond into conjunction with the ring, that is going from Myristicine to iso-Myristicine and then that itself can be reductively aminated – you get a bromine in there with HBr and then replace the bromine with an amine. A more direct way – which was used at least

until about 10 years ago in illegal MDMA synthesis – is taking the iso-compound and oxidize it with formic acid/hydrogen peroxide. And that goes to the ketone. The ketone then gets reductively aminated…

Claus: … by the Leuckart method. What about *Salvia divinorum*? What does it contain? Is it hallucinogenic?

Sasha: Salvinorin A *(spelling?)*. I gave a longish talk on that at a symposium up in Oregon about two or three years ago. Do you know what a terpene is? Basically something with 10 carbons: two isoprenes hooked together this way or this way. A third isoprene gives you what is called a sesqui-terpene *(spelling?)* -15 carbons. The fourth isoprene is what is called a diterpene, 20 carbons. If it is not really a specific terpene by *(unintelligible)* terpene rules, but it is 20 carbons and it's kind of made up that way it is often called a terpenoid compound. *(unintelligible)* the word terpene but terpenoid. And the active component – which is probably the only active component, because it has the activity of the whole (and the other components which have been isolated are not active) is what they call a neo-cleradene-diterpenoid *(spelling!)*. It isn't an alkaloid. No nitrogen at all: carbon, hydrogen, oxygen only. My only consumption of it was 25 years ago and I didn't get anywhere, but I swallowed it, because I was told it was used orally. But what they meant by orally, was hold it in your mouth for 10 minutes, which is another form of oral I guess.

Ann: We have only lectured on it and neither of us have taken it. That was so nervy: we went to a Salvia divinorum symposium – they invited us. I was supposed to talk about Salvia divinorum in therapy. Can't imagine using that in therapy in a million years.

Sasha: The action is much more Ketamine-like, than hallucinogenic. The effect of Ketamine is very much like you are in outer space, you are joining the cosmos. As Neil Castagnoli said one time of his first real, deep, i.v. Ketamine trip (Ketamine is so nice i.v. because you can stop it when you want to): I was just really, really observing. The answer to all the questions in the Universe was not 42, it was the sole of that old shoe. He really saw the profound cosmic significance at the bottom of a shoe. It not only carries tracks of where you have been, but it leaves tracks of where you are going and that is the profoundness of the universe. And then he said also: "and I knew one person in the universe who really had a full bladder, but I couldn't give a shit about it. I didn't want to even bother". He had a full bladder.

Salvia divinorum, now, has much of that in-the-cosmos, out-there feeling. People take it in five or six different ways. Probably the major use is what is called 5X. X is for extract, in which they take the leaves, dry the leaves, make an extract, fortify the extract 5-fold, with *(unintelligible)* leaves, and then smoke the leaf-extract. And then you get a Ketamine-like effect.

Claus: What about Salvinorin A *(spelling!)*?

Sasha: It has to be smoked. It's a white crystal solid. 500-700 μg. This is where I was in the 7th or 17th floor of the hotel in Madrid when our friend with the funny coloured hair smoked it. What you do is you take a Pasteur pipette and you draw up a certain volume in *(unintelligible- "dichlora", a solvent?)* and let the *dichlora* (?) evaporate, so there is a little white coating on the inside of the end, the small part, of the Pasteur pipette. So you take the big part of the Pasteur pipette in you mouth and you put a cigarette lighter underneath the small part and as you are drawing it in, it goes pop. How are you going to smoke 500 μg of a material? You have to do something about it. Anyway, she took it in there, and I was watching this, and her eyes went back a little bit, and she looked over her right shoulder. Which is a very common thing that is done: something's behind you, but you don't know. You get the feeling there, and you keep looking back there. And she gave up on that. And I gave her about 7 or 10 minutes probably, and then she clearly back with us. And I asked her "what was it like?" "Well," she said "I guess it is really kind of fun if you enjoy watching boxes of corn-flakes, falling off of the shelf". That was her whole thing, where boxes of corn-flakes falling off of the shelves and tumbling. No profoundness. Down at Palenque *(spelling?)* 1 out of 52 experiments really got quite violent. One went very badly.

Ann: Because most people can't move during the few minutes that they are out. They are on a bed; luckily she had about 3 other people in the room. The 52nd not only could move, he became extremely violent, very aggressive. Apparently this is not the first time he has done that, he enjoys that, which means he has a real shadow problem, and attacked her verbally. In fact, she stopped the entire thing; she was being so hurt by it. Attacked her verbally, and tried to attack her physically and it took four of them to hold him down.

Sasha: Did he remember attacking her?

Ann: He must have remembered some of it. He brushed it off, as "that was his trip". She was very upset; she had been doing 52 sessions without any pay. So she was just doing it for people; she also did very well on *(unintelligible – a boys given name)* who had a great time, remembered the whole thing, and loved it. And this is why I have never taken Salvia divinorum, because the reports go from total nightmares to "the greatest thing in the universe."

Sasha: Actually, I am going to try it once this plant grows up, because I found out from a good source, that the best way of doing it is without smoking it. Taking about 10 or 12 or 14 fresh leaves. Grind it up, and make a kind of milkshake out of it. You can get that in your mouth and just hold it there, keep it under the tongue and the

whole buccal area. In about ten minutes it starts working. You just spit it down the sink, and wash your mouth out, when the effect starts. Don't swallow it. That is the way I am going to try it.

Claus: After you left DOW, you recreated the work you had done with the amphetamines onto the phenylethylamines?

Sasha: A lot of it was expanded far further than I did with the amphetamines. E.g. my first sulphur-compounds were the methyl-thio in the 4-position. And then I got into the phenylethylamines, and I then began adding methyl-thio, ethyl-thio, iso-propyl-thio, propyl-thio, and made about 20 of these compounds. *(Unintelligible)* They were all 2,4,5 (? *Shulgin is talking about the aromatic substitution pattern*). They are called 2C-T's.

Ann: I think they are sort of the most successful families you have ever done.

Sasha: They are violently commercial in Holland and now they are coming over into this country.

Ann: Somebody else is always makes money off these things.

Claus: So you did the 2C-T's, i.e. sulphur-substituted phenylethylamines in the 4-position. Did you ever repeat this in the amphetamines?

Sasha: No, I gave up at about the thio-ethyl, because it had begun to get into very strange *(unintelligible)* unfeeling areas, no emotion. And you should have emotion. I don't care whether it is bad or good, or sparkling - but no emotion!

Ann: Flat emotion means we don't take it again, and no one else does either.

Sasha: I dropped the amphetamine thing because they began being without any life at all. You were obviously stoned, but not in a good emotion – no emotion! No humour, no sadness, no laughter, communication with no subtlety, completely devoid of this. The phenylethylamines were not as nearly as potent, but they all had their own visuals and interesting properties.

Claus: What other things did you explore in the phenylethylamine range, which you had not previously explored in the amphetamines?

Sasha: Well, I began re-exploring in the phenylethylamines the 2,4,6-, as opposed to the 2,4,5-substitution pattern. And that area I would love to have pursued, except that I got deeply into Tryptamines about at this point. I probably shouldn't use his name, the chemist I learned a lot of my tryptamines chemistry from, Dave Nutt Nicholson

(? unintelligible) and he and I didn't work together but we compared what we had found out and *(unintelligible – "grew"?)* upon each others work. He has published a little bit in the area, I have co-published with him a little bit, then the company he works for got real unhappy with him.

(Much disorganized talk at this point – some of the facts integrated below)

When I began working with Tryptamines in the early eighties, I started with N-alkyl and N,N-dialkyl-tryptamines with nothing on the aromatic ring. N,N-dipropyl-Tryptamine was made by Stephen Szara in the nineteen fifties. E.g. what I would do is, I would put branches, different things out there. There's some place I would put a pyrrolidine ring or the morpholine ring or the piperidine ring. The most dramatic of all those was the N,N-di-iso-propyl. It was the one that caused the auditory hallucinations. Now, the 5-methoxy counterpart of that has no auditory effects at all. Basically the areas I worked in were different oxygens around the indole ring in the 4, 5, 6, and 7 positions, methylenedioxy-groups (worthless); anything with two oxygens is worthless. But one oxygen on the 4-position or one oxygen on the 5-position would produce active compounds. And the one's I really worked with mostly were 4-hydroxy and 5-methoxy-substitutions. The 5-hydroxy compounds were basically Bufotenine (INN)-like things and they are not good compounds. But the 5-methoxy is again about several times the potency of the un-methoxylated – more of the potency of the 4-hydroxy – and anything larger than N,N-di-methyl, they become orally active. Which is very nice, as it avoids parental administration or smoking. What I am working in right now – which I am just not covering – are things like the N,N-di-allyl's and N,N-di-propenyl's *(?)* and I don't know where they are going to go. There are no tryptamines in the cactus world, there's just strictly phenylethylamines and iso-quinolines. The iso-quinoline world has pretty well been a disappointment, because I am not finding active materials, I am finding the potential of their activating other materials.

Claus: This is the most recent thing you are doing. But you have also worked with lysergic acid – what were your main findings? And was that after the tryptamines?

Sasha: No, that was kind of with the tryptamines. The main thing was the removal of the methyl-group on the "D" ring *(of LSD),* and replacing it with alkyl-groups. *I published this with a friend in the mid-west, and did the pharmacology: (We made)* Ethyl-LAD, propyl-LAD, butyl-LAD, *(and)* allyl-LAD. We called these compounds LAD's just to give them a common suffix, similar to the acronym LSD.

Claus: I believe 1-acetyl-LSD is still technical legal in England.

Sasha: *Going back to the tryptamines:* On the Internet they are selling some of these 4-hydroxy compounds as the O-acetyl ester. And I tried these. E.g. the N,N-di-iso-

propyl-4-acetoxy-tryptamine – I do not mention it in TIHKAL, but I mentioned the 4-hydroxy *compound* – and it is faster onset and smaller dosage. Which gives me the strong suggestion that the acetoxy group is not a blocking agent, but is taken up into the brain directly.

Claus: Did you do any chemistry yourself in the Lysergic acid world?

Sasha: No, I usually followed the published information. No creative thinking.

Claus: What happened after the DEA took your license to work with scheduled drugs, away?

Sasha: They didn't take my license away from me. *I handed the licence back.*

Ann: It seems like a small point, but it isn't.

Sasha: *Since then* I have no scheduled drugs, I have no reason to do analysis on scheduled drugs.

Claus: So when this happened, was it then that you went into plants?

Sasha: Oh, I have been in plants all along: essential oils, all these things, which were plants…

Ann: Oh, not really. There was a time when I first knew you when you sneered at plants. Well you didn't sneer, but you were *(inaudible;? lacking)* respect.

Sasha: Well, I learned to respect them. 5 years ago I didn't know a cactus from a Mycimbriantum *(? spelling).*

Ann: And now the Latin names roll of the tongue.

Claus: Plants are not illegal; you could do that after you handed in your DEA licence.

Sasha: Well, the thing is, I really have done nothing illegal, before the license *(was handed back).*

Ann: What Sasha means is that he wasn't actually doing much of any work with scheduled stuff even when he had his licence to do so.

Sasha: I *(inaudible)* do any scheduled work at all.

Claus: Then again, after the Anti Drug Abuse Act from 1986 it became unclear which drugs were and weren't illegal.

Sasha: Pretty much so.

Ann: But again, until you have taken a brand new compound, you haven't the slightest idea of what it does. It's like MDMA and MDA: people who aren't familiar with the whole *(inaudible)* people say "What's the difference. It's just one letter, like?". Completely different effects. Absolutely different. I can't stand MDA, and MDMA was one of my favourite anything's. MDA for me is just stoning, which I hate. And it's physically uncomfortable and a totally different drug.

Claus: Let us talk about people. You didn't like Professor Timothy Leary; he was an egocentric you said?

Sasha: Oh no, he is a wild, nice guy. But then that doesn't bar liking him.

Claus: Did he remain an egocentric till he died?

Sasha: Yeah, pretty much.

Claus: In the mid-sixties, Leary co-founded the League for Spiritual Discovery (LSD), and they had access to this 64-room Villa in Millbrook, New York. While there, he took an LSD trip, and remained immobile, not speaking, for a week. His friends at this stage were convinced they had "lost" him. After that particular trip he apparently started preaching his famous "turn on, tune in, drop out". Have you heard that story?

Sasha: I didn't know him very well. But he and *(Richard)* Alpert would often *(voice activation switched tape off)*….

Claus: Another question: the trend in the last 40 years has been towards ever more safer drugs. Pharmaceuticals - a good example is Prozac® - do not have to be particularly effective to get licensed, but – above all - they have to be very, very safe drugs. I am unable to see that hallucinogens – by virtue of the intrinsic unpredictable nature of their mental actions – will be allowed for use in psychotherapy in our time.

Ann: Because you have the risk-benefit idea of the pharmaceutical companies. The whole mindset is that you are using a drug to treat an illness. Of course these drugs you don't use to treat illnesses. I th ink the only way they are got to be accepted is as spiritual tools. Which is their original use anyway. And that would take a heavy re-thinking of what is meant by "what is the psychedelic trip?" To me it is always a spiritual experience. How do you define "spiritual"?

Sasha: Others just do it for the fun of it.

Claus: I can't see them getting a license "for the fun of it". You must have this very far vision…?

Ann: We have to. Sure. The idea is that pharmaceutical companies will never get into this field, basically. But, they have been used for 50.000 years without pharmaceutical companies.

Sasha: And not everyone responds to his own liking, but in an acceptable way. You have other things. The dream of the psychedelic purist is: if you have someone who is not well accommodated in society, who is pathological, sociopathic, psychedelics will make him a good person. Nonsense! Psychedelics will make him quite satisfied with being a sociopath!

Ann: And they are not spiritual tools for those who are not interested in evolving in this particular direction.

Claus: Examining one's self.

Ann: Yes, but they are for those who do want it. Our only argument is that they should be available for those wish to use them. My argument is "yes, but they have to have education". There has to be education.

Sasha: Also, as you increase the population of people who are using or given drugs, the property of the drug changes. What is this business in the Orinoco basin and in the Amazon basin that tobacco is a sacred drug, which cures illnesses? But now everyone smokes! It is no longer a sacred drug that cures everybody's illnesses. So the popularization, the broadening of the population base *(changes the properties of the drug).*

Claus: Ken Kesey once said "I take drugs in order to see whether I am still doing the right things in life"…

Sasha: That is good. I am at peace with that very much. Did you ever hear about our ride with Ken Kesey from Portland Airport about 2 or 3 years ago? They pulled up, they were going down to Brighton Bush to a conference on mushrooms. *The bus is a* reconstructed *version of the original bus,* paint clip by paint clip, right down the line, to an ends that it doesn't work very well, and uses too much gas and burns oil.

Ann: *(unintelligible)* every inch of the inside, including the *(unintelligible)* and everything is painted.

Sasha: And the driver and Kesey and a couple of others came to pick up about twelve of us at the Portland Airport to drive us down to Brighton, which is just East of *(unintelligible)* in Oregon. He lives in central Oregon. And there is this monster coloured thing called *"Furthur"* pulling up at the Airport and of course all people began looking and pointing and photographing and the poor policeman who tried to keep this area moving, says "You can't park there" and the driver says "I don't even know I can get this thing started again". Then they had to find a gas station and they didn't know how far it was, and whether they had enough gas to get them five blocks, and "we may not have enough gas".

Ann: We had a bus full of people on Persian rugs – there were about 5 seats there, which we occupied. Kesey had the microphone…

Sasha: …and the radio going. It has a little short-wave radio station: only picks the cars 2-3 miles behind and 3 miles ahead, plays music, talks to people as they drive by. He has the frequency *(written on the back?)* the bus. It is a regular FM, I think; it just does not have enough power to *(unintelligible)* the authorities. It is very quiet and *has a* very small range…

Ann: …and he went through all these little, teeny towns in Oregon *got off the freeway* and everyone sort of gaped at this unbelievable sight and dashed for their cameras, when they had them. It was ridiculous. Andy Wiles *(spelling?),* Ken Kesey, a whole bunch of them, including several of the original crew, "The Merry Pranksters" – all grey hair – *were on that bus.* That was so wild, I think I laughed the entire tour *(unintelligible).* Just hilarious. And then he parked it at the Brighton Bush *Conference Center,* which is a place we decided we'd never to go back to. They have vegan meals, not even eggs…

Sasha: …and they raise their own food and it's horrible *(unintelligible)*…no pepper…

Ann: …no coffee and no sugar…

Sasha: … so everyone made up for it by sneaking in their own wine. I think, we probably had 50 cases of wine.

Ann: Most places, when you refer to your "stash" it means, you know, a little marijuana somewhere. But in this place, when you refer to it, it would refer *to your stash of* wine. When I asked *Ken Kesey "are you* still writing?", he said "No, I gave up writing". Ken Kesey, you know, author, famous, famous, he is not interested in writing any more. What he does is he takes this bus with his Merry Pranksters, and he goes to Europe and he puts on little plays, Shakespeare or things like that, for little

villages, *which* have no drama, no connection with the theatre and he sort of introduces the children of the village to drama, and to plays. And he loves doing it, and he said "I'll do that for the rest of my life, that's were my creative juices have gone". He is a funny man, he has a great sense of humour and he is very likeable for one thing, and that is – I think he probably always was this way – he is not afraid of saying anything. He is not afraid of the authorities. I think he is one of those people who talks openly about the fact he uses LSD. The authorities leave him alone, I mean, what are they going to do to him? So, I rather like that, you know, he is not cautious, as we have to be. He is who he is and he enjoys himself and, you know, "what you see is what you get". I don't think, I'd ever want to live with him for more than 5 minutes.

Claus: Do you want to say why?

Ann: Well, most people I can think of, I wouldn't want to live with! He is just not my type.

Telephone rings, Sasha takes it, talks, and comes back.

Ann: Who was that?

Sasha: The person who sent these blotter papers to be signed.

Ann: Did you get those done?

Sasha: I didn't get them done. There's people who *ask for autographs on blotter parts and those kinds of things. (Largely unintelligible)*

Claus: In Albert Hofman's autobiography, he refers to the pharmaceuticals he has created for Sandoz as his "children". Which of the chemicals you have created, do you regard as your favourites? I could think of the now discontinued Mexacarbate, the first biodegradable insecticide. Or DOI, which is a potent serotonin agonist, and which – with radiolabelled iodine - is used as a probe in neuroimaging studies…

Sasha: Well, I was very happy with the Ariadne *(end of tape)*