

CULTURE, DRUG, AND PERSONALITY -- A PRELIMINARY
 REPORT ABOUT THE RESULTS OF A FIELD RESEARCH
 AMONG THE YEBAMASA INDIANS OF RIO PIRAPARANA
 IN THE COLOMBIAN COMISARIA DEL VAUPES

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ABSTRACT

During a seven-month field investigation among a group of Yebámasa indians on the middle Piraparaná, Comisaría del Vaupés, Colombia, the author has collected data about the cultural dimension or context of the consumption of the hallucinogenic drink „cají”, which most probably is made of various *Banisteriopsis* spp.. His initial hypothesis is that the individual drug experience is patterned and standardized by learning processes and by the ceremonial circumstances of the consumption of the drug. „Cají” is for the Yebámasa a vehicle of spiritual qualification. Every male Yebámasa strives for higher spiritual ranking, i.e. he wants to be a “kumú”, a shaman. To reach his aim he must again and again drink cají and hope to produce the correct and desired reactions. The criteria for these reactions, both physically and psychically, are set up and defined by the experienced men, above all the higher ranking shamans. Thus there is, indeed, little space left for individual variations of established patterns, the more so as the drug is never taken outside religious feasts and outside the context of collective action. Yet, the author has to modify his hypothesis: he underestimated the influence of individual psychic disposition: anxieties, hopes and aspirations rooted in a man's life history which may considerably condition the basic character of a man's experiences. The author holds that most everything connected with the drug is part and parcel of a general and comprehensive design for effective control of the drug effect and he is convinced that elements of this system of social control of drug consumption, which has enabled the indians to integrate a strong hallucinogenic drug into their culture and live with it for millennia, may well be used in the control of drug addicts in industrialized societies. He consequently has submitted his proposals to the Colombian National Board of Narcotics and plans to submit a similar paper to the West-German Ministry of Youth, Family, and Health in due time.

THE STARTING POINT

It is evident that the continuous consumption of hallucinogenic drugs produces grave disturbances in industrialized cultures. Those disturbances are of a double kind: severe psychic and behavioural problems in individuals taking hallucinogens, and

dramatic social, medical, and cultural problems generated by the existence of drug takers in their respective societies. It is not significant, in this respect, whether the drugs taken belong to the kind which produces physical dependence in the strict clinical sense or not. What is significant is the difference between drugs with and without hallucinogenic effect¹⁾.

It is likewise evident that many Indian groups of the tropical rain forest regions of South America have been taking very effective hallucinogenic drugs, and are still doing so in these days, without any noticeable negative effects in the personal or social spheres²⁾. The main effective chemical principles contained in those drugs are Dimethyltryptamine (DMT), various derivatives of harmala acid, scopolamine, psilocybin, mescaline, and LSD. Virtually the same chemical compounds are used, mostly in their synthetic form, by drug takers of industrialized cultures.

Why then is it that the Indian could take those drugs through millennia without suffering psychic and social breakdowns, whereas such negative consequences seem to be inevitably connected with the use of hallucinogenic drugs in industrialized societies?

RESEARCH HYPOTHESES

Comparing the use of similar hallucinogenic drugs in different Indian cultures it seems unlikely that the experiences of any given individual are determined or patterned by properties of the drugs only. This view is corroborated by a shift of scientific opinion in the investigation of the drug problem in industrialized societies: many scholars think today that problems are not necessarily produced by the properties of a drug but by the structure of the personality of the consumer. This view has most wittily been expressed by the American psychiatrist SIDNEY COHEN. Asked by one of his students, how it could be explained that ALDOUS HUXLEY took mescaline and had such marvelous visions while the young man had taken LSD several times and had only bum trips, Cohen answered: „I suspect that there is more difference between ALDOUS HUXLEY and you than between mescaline and LSD.” (COHEN, ALPERT, SCHILLER 1966:33).

Evaluating data contained in the works of R. KARSTEN, and M. HARNER about the Jivaro, of G. REICHEL DOLMATOFF about the Tucanos, and of N. CHAGNON, O. ZERRIES and others about the Yanoama I arrived at the conclusion that there

must exist special mechanisms in the social and cultural systems of tropical rain forest indian groups, by means of which the indians manage to pattern and standardize the effects of the drugs in question ³). These mechanisms are responsible – in my view – for two effects:

- A) For a relative similarity and homogeneity of individual experiences within a culture-group, and
- B) for a significant distinctness of ideas associated with the consumption of the drug from group to group.

I was expecting these mechanisms to be a system of interrelated learning processes as part of the socialization process. My empirical investigations were therefore designed to discover these possible factors in the cultural and social life of a group of tropical rain forest indians, which might bring about a culture-specific reaction of individuals to the effects of a hallucinogen – both physical and psychic.

The investigation was designed to produce answers to the following questions:

1. What kind of hallucinogenic drugs do the indians take?
2. What are the raw materials?
3. What are the ways of preparation?
4. What are the active chemical principles in the drug?
5. On what occasions, under what conditions, by whom, and how are the drugs taken?
6. How much and how often do takers take the drug?
7. What are the physical effects produced in the drug takers by the drug?
8. What are the psychic effects produced?
9. What ideas are connected or associated with the drug?
10. What normative ideas are associated with the drug?
11. Does drug taking underlie any rules? Which are these?
12. Are there any processes by which proper reactions – be they of body or of mind – to the effects of the drug are learned? Which are these?
13. What do indian drug takers experience while under the effect of the drug?
14. What is the relation of these experiences to the main themes of the culture of the group?
15. How does the – non-indian – anthropologist react to the hallucinogenic drug of

the indians, both physically and psychically and what does he experience within an indian setting and outside of it?

I was able to answer some of these questions to a certain extent, some satisfactorily, others only superficially. Some new questions resulted from the investigation. On the following pages I shall give some of the results of my research. I shall not enlarge on methodical questions. This I shall do in a later more explicit publication. Nor is this the place for a detailed presentation of my field data.

TECHNICAL FEATURES OF THE FIELD RESEARCH

The investigation was carried out among a group of indians who belong to the Tucano linguistic group. They live in a site called „San Miguel” or „El Remanso” on the middle Río Pirapará. The group had been under the influence of the catholic mission of Mitú, capital of the Colombian Comisaría del Vaupés. Because of severe conflicts between missionaries and indians the mission had to quit about one year before our arrival. So we found the indians in a half-acculturated situation: while most of their traditional ways of life were still being maintained they possessed many goods of white manufacture like cooking pots, knives, machetes, clothing, boots, hooks, a transistor radio, and a 5 HP Yamaha outboard motor for which they had neither gasoline nor oil. Some individuals spoke sufficiently well Spanish to serve us informants and interpreters. While many decorative and symbolic elements of their culture had, it seemed, long since vanished, the custom of taking the hallucinogenic drug „cají” appeared to be untouched by culture-contact. During our stay with the indians we gradually learned that they had consciously rejected the teachings of the missionaries and any further assimilation to the „white man’s culture”. They had deliberately chosen to take up the thread of their own cultural tradition again. Their spirit of revitalization led them to lay even more stress on the taking of the hallucinogenic cají, since it was only by means of the holy drug that they left themselves capable of learning and memorising those endless songs and texts of their mythic traditions⁴⁾.

Together with my coinvestigators KARL-GEORG SCHEFFER, GERMAN GONZALES and an indian friend, PEDRO NUNEZ CHIPIAJE from Chololobo, Vichada, I lived with the indians of San Miguel during six months from February to September 1977 spending an additional seventh month with them without my companions

during the entire month of November 1977. The whole field investigation, then, lasted a total of seven months.

The people of San Miguel are divided into three families defined by marriage and consanguinity. In terms of the indian's idea of kinship the three families constitute one single family: the Yebácomíamasá, who together with eight similar families form the exogamous patrilineal and virilocal clan of the Yebámasa ('People of Yebá'), 'Yebá' being the culture-hero and mythical ancestor of all Yebámasa.

Staple food are casabe and fariña both of which are produced from sweet and bitter manioc grown and processed by the women. Protein is derived from fish caught in the rivers by men and from animals of the forest hunted by men.

The data obtained during the field investigation were collected in the following ways:

1. Observing behaviour in an informal way, that is: just hanging around and smoking or chatting or helping somebody do his work, or taking part in some activity like hunting, fishing, collecting coca leaves, or participating in a dance- feast.
2. Formal observation of behaviour, that is: taking notes with paper and pencil visibly in one's hands, or taking pictures.
3. Verbal information, that is: asking people in structured but not standardized interviews and taking down texts of songs, mythic tales, or asking about drug experiences. Recording with a tape recorder.
4. Letting drug takers make paintings of their hallucinogenic experiences and note their comments on the painting.
5. Take the drugs of the indians oneself, paint paintings of the experiences, and write reports.⁵⁾

SOME RESULTS

Question 1 – 4

The indians use six vegetal ingredients for the preparation of the hallucinogenic drink „caji". Each of these components they also call „caji" distinguishing between the different kinds by using adjectives or other descriptive qualifications. Normally –

I was told – the drink is prepared by mixing together at least three of the cajís, but eventually a single cají can also be taken without any further admixture.

The six cajís and their most important properties, as the indians see it, are:

cají ríama ⁶⁾

Most powerfull one of all cajis. A few drops are enough to produce strong hallucinations. It is made from the bark and the leaves of a small shrub. The indians say that this cají produces sounds and noises and makes things speak to one's mind. It announces future things and events and makes one aware of things which happen in a far away place. It is considered to be dangerous. It can kill a taker if he is not strong⁷⁾ enough. It is above all the shaman's drug. He who can handle this drug proves that he is capable of being a shaman.

méné cají má

The second important and powerful cají. 'méné cají má' means 'cají of the guámo', guámo being a leguminous tree. Its green and ablong fruits permits the association of snakes. The drug is said to produce visions of green snakes. The green snake, „la culebra del cají”, is a standard item in cají visions. This drug, too, can kill a consumer, who is too weak to handel it. It can show to the mind future and hidden things. Besides green snakes the drug produces impressive pictures in bright colors.

yáiya suána cají má

The „cají of the red jaguar” ranking third. Produces the color red. „Makes everything red”, say the indians. Neither is it considered to be dangerous to the life of the taker nor to be able to teach future or hidden things.

cají vaíbucura rijomá

The cají of the monkey head. Produces visions of howling monkeys and the sensation of hearing their howling which sounds like roaring wind. It is not considered to be dangerous.

cajúuri cají má

Weakest of the truly hallucinogenic drugs. Does not have a proper effect but is said to „help the méné cají má”.

cají somomá, also: cají uco

The „cají that makes you vomit” or „remedy of the cají”. Not a hallucinogen but added to the drink in order to produce vomitus. We shall see why.

The méné cají má, yáiya suána cají má, cají vaibucurá rijomá, and cajúuri cají ma are all woody climbers and the part used in the preparation of the hallucinogenic beverage is in each case the bark. According to my botanical knowledge and compared with the drawings and photographs published by R. E. SCHULTES the four plants all belong to *Banisteriopsis* spp. yet this remains uncertain. The cají uco is a shrub and the parts used are the leaves.

I have sent voucher specimens in alcohol to R. E. SCHULTES of Botanical Museum of Harvard University using the American anthropologist JOSHUA REICHERT, whom I happened to meet in the field, as a messenger. I do not know, however, whether these specimens reached their destination. I was lucky enough to obtain living plants from the Indians. I planted specimens of the five hallucinogenic plants into cuyas and was able to carry them under enormous difficulties to Cologne in the Federal Republic of Germany where they are presently kept in a locked compartment of a greenhouse. One plant died. The other four have survived the transport through three climate zones and are presently growing new sprouts and roots. If we can grow a sufficiently large number of these plants in the greenhouse, a detailed analysis both taxonomic and phytochemical will hopefully be possible. There is doubt, however, that a chemical analysis of the greenhouse plants will give insight into the active principles, since, most probably, these substances are produced by the plants in a sufficient quantity or concentration only in their natural habitat and under certain climatic conditions. Still there is hope, since we also brought along some bucketsfull of the original soil⁸⁾.

If a guess is allowed I would assume that all the climbers contain one of the derivatives

of Harmala acid. Yet I do not have the faintest idea of what the strongest cají, the cají ríama, may contain.

On most occasions the cají-drink was prepared from all of the six plants and by the same man, who was said to be the most capable one to prepare it. We were told that if he made the cají, it turned out to be best in quality, i.e. it produced fine visions and was strong but yet smooth in its effect: Not like knocking but like pushing you. The preparer of the cají went to the chiefs' chagra and cut some of the different cajís. The stems of the climbers were pounded in a narrow wooden trough of about two meters length. After some pounding the bark split open and the woody core was sorted out and thrown away. The twigs of cají ríama were also peeled and only the bark was used. Bark and leaves of cají ríama and leaves of cají ucó were now added and all this was pounded for about fifteen minutes. Then the mash was given into a clay pot or aluminium vessel. An approx of three liters of river water was added and the liquid was stirred for about ten minutes interrupted by frequent squeezing with the hands of the more solid residue of plant parts. From time to time a test was made with a leaf of cají ucó: a few holes were made into the leaf which was then stuck into the liquid. A film of liquid filled the holes. The tester held it against the light of setting sun and said: "It's still too weak. It doesn't show pictures." Finally he said: "The cají is good and strong. It shows a fine picture now." - Then the cají was filtered with the help of two other men using a flat basket (balais) holding it upside down letting the beverage flow directly into the holy cají pot. The cají pot is made of clay and has a special form which appears in no other piece of pottery. The pot is or ought to be painted with special designs. The pot of the people of San Miguel was not painted. The paint had been worn off by usage and the man who, in the eyes of the indians, was best suited to paint it anew was sick and did not feel strong enough to do this work. The painter must be in a good physical and psychic condition or else he might do a bad job on the painting and thus affect the cají.

Questions 5 and 6

The drug is never taken "for kicks", that is: for private purposes only. Its use is strictly limited to a certain type of dance-feast. The indians have dance-feasts which are just for fun. On these occasions only the „pan pipe dance“ which they call „wéwobasá“

is danced. No songs are sung, nor do they recitate passages from the mythic tradition. In contrast the other type of feast is of a solemn character. Only some men dance – those who wish to drink the *cají*. The dancers wear the full feather adornments and various other paraphernalia like the jaguar tooth belt or the ceremonial loin-cloth. The solemn type of feast is celebrated on the occasion of the harvest of various wild fruits, of the spawning of certain river fish or when the holy *yurupari*-instruments are blown. Finally this type of feast is held whenever the indians consider it necessary to take the drug in order to deal with their metaphysical and even their most earthly problems. As a rule the men who want to drink *cají* ought to abstain from eating meat or fish on the two preceding meals, but the rule is not observed too strictly. I have witnessed four solemn feasts which lasted from one night to two and a half days and nights long. Extremely long dances alternated with extremely long songs and extremely long recitals of mythic lore. I witnessed one case when an fun-feast with pan pipe dance had been planned and plans had to be changed from one minute to the next as a group of men came in from another *maloca* bringing along their *yurupari*-instruments. As the women are not allowed to see the *yuruparis* they were driven out of the *maloca*. One man hurried to the chief's *chagra* to collect some *cají*. *Cají* was made and the *yuruparis* blown. Then the holy instruments were hidden outside the *maloca*. The women were called in again and allowed to join in the dances of the men. The dancers took *cají* and the feast lasted all night long.

I also witnessed a case when the chief of the group held a feast in order to teach the mythic traditions to his younger brother and eldest son. I was told by several of the men that these traditions can only be learned with the help of *cají*. One of the men held a different view, though. He said: „Why can't we write these words down on paper? I can write. I can read. I could learn the texts by reading them again and again. And I need not drink *cají* for learning them. White men learn the same way.” Most other men did not share this opinion. They insisted that this was no proper way to learn the mythic texts: „You cannot learn these stories unless you see the things of which they tell!” The chief of the group was the only man who still knew by heart most of the traditional lore, although he admitted sadly that much had been lost already. The men of the group were convinced that several of their relatives had been killed through black magic by a famous shaman from the upper *Cañón Colorado* (*Oco suaña*)⁹. All the victims had been in a way exponents of the spiritual culture of the group. „He wants to finish us. And the chief will be the next one to die.” So they felt an urgent desire to pass on the knowledge of the chief to some other men.

In the course of the feasts the *caji* was served to those who wanted to drink by a man who played the role of a waiter. If a feast began at about 18 h in the afternoon the first „*cuyita*” (i.e. „small *cuya*”) was served at about 19 h. On each turn the drinker of *caji* was served a quantity of 50 to 100 cubic centimeters. I checked the quantity various times with a syringe. Four to seven *cuyitas* were considered to produce a full effect depending on the strength of the *caji*. The drink was served in the pauses between dances. After drinking the *caji* the drinker was offered a bit of *chicha* „to clean his mouth and for better vomiting”. The *chicha* was also considered to smooth the effect of the *caji*. On an average the drinkers drank about ten *cuyas* of the hallucinogenic drink in the course of one feast. They thus ingested a dose of between half a litre and one litre of the liquid. This permits no conclusion as to how much of the active principle was taken. Also the men vomited after the third or so *cuya* thus emptying their stomachs and stopping the growth of the effect. We may say that the earlier and the more often a man vomited the more *cuyas* he would have to take in order to have a sufficiently strong effect. This means, however, that the number of *cuyas* ingested does not say anything about the intensity of the effect in one man.

The drug must never be taken by women. One exception is made from this rule: during several feasts the highest ranking woman of the *maloca* plays a ceremonial part in various dance producing a high tone holding it for as long as she can. The indians call this woman a „singer” and allow her to drink from the *caji*, too. Young men who have not yet taken part in their first *yurupari*-ceremony must not drink the *caji*. At the age of ten a boy is supposed to participate in a *yurupari*-feast for the first time in his life. By this he acquires the status of an adult man. A *yurupari*-feast, however, is a very complicated thing which needs a lot of organization and can only be directed by a shaman of supreme rank. Also it is not worth while to arrange such a feast for only five or eight youths of one single *maloca*. Therefore the indians of a number of *malocas* organize the feast together waiting until a sufficiently large number of novices has accumulated. This makes for considerable differences in the age of the participants. As a consequence on the occasions of feasts there will be youngsters of eight who may take *caji* and young men of fifteen or even eighteen who may not.

Caji is never taken outside a feast, which means: outside the coordinated ceremonial activities of a group of people. It is never taken by one man alone. It is never taken in a situation of psychic or social isolation. It is never taken in a purely profane way. Only the qualified shaman can take the drug individually – not only can he do this but he must. He is the spiritually independent one, the mature one, the secure

one, the one who can afford to face spiritual perils without loosing his soul, without perishing.

Questions 7 and 8

We did not make medical examinations of persons while they were under the influence of caji. Even with the help of a physician this would not have been possible. The delicate balance of mutual trust and mistrust, respect and disrespect, understanding and misunderstanding in which the indians and we, the anthropologist, lived together would have been abruptly and brutally destroyed by any such attempt. The indians would surely have regarded any such step on our side as tactless approach to the most intimate sphere of their cultural and individual psychic life. While people were under the effect of the caji we were not allowed to take pictures using the flash light. From this we may conclude that the drugs produces an increased sensivity of the retina or perhaps only mydriasis and consequently a diminished capacity to react to a sudden rise of light intensity. That the eye is in fact more sensitive to bright light I found out later when I was allowed to take the drug myself. Since the drug is always taken in the dim light of the interior of the maloca and mostly after sunset with only a chip of wood burning, it is extremely difficult to observe physical reactions to the drug effect. We could see, though, that drug takers vomited between two and six times per feast, during caji time. The strong diuresis which we could observe was most probably due to the chicha rather than to the caji time. I tried both ways: with chicha I had to urinate as frequently as the indians, without there was no need to.

Some physical symptoms I could observe on myself. I do not know how far they may be generalized with respect to the indians. Before the proper hallucinogenic effect began, a certain sleepiness overcame me. I had to yawn frequently and felt an intense desire to go to my hammock and sleep. The indians said to me: „Yes, that is what the caji is like. It gives you sleep.” But they themselves did not seem to be tired at all. They danced all night through and showed no signs of fatigue. At first, therefore, I considered my reaction to caji as weak and thus not desirable. But I was wrong, as I learned later. I shall come to this.

I also observed on myself a certain numbness of the body especially of arms and legs. Later in each experience this changed into a general analgesic effect. On the first two

occasions I had difficulties during the whole experience to maintain my equilibrium. I walked like a drunken man. But my head was not confused like a drunken man's. Several times, when I had taken the drug, I had a feeling like being under high pressure or as if I were close to a heart-attack. But when I checked my pulse I always found it to be quite normal. These were about all the physical symptoms I could observe.

In the course of one feast the chief's eldest son broke down. He fell to the ground of the maloca rolling around groaning and weeping, crying: „Father, help me! I am dying!” The father reacted with concern and shame saying: „Don't worry, son. It is only the *cají* which is doing all this to you.” Other indians told me that occasionally the *cají* had „knocked them to the ground” or that it would do so with me.

The highest ranking shaman of the group told me that there are three main phases through which the *cají* experience develops its effect:

First *cají* phase:

You see the things surrounding you in brighter colors. Then you start seeing the „*dibujo del cají*”. This consists of colored lines which appear in the field of visions as independently moving motifs or on the contours of real things.

Second *cají* phase:

You see things which are not really there, or persons, or plants, or animals. These appear to you as real as the other things which you see. Or even more real. The indians say that the *cají* „is showing” them all this. They also say that the *cají* „teaches” them something.

Third *cají* phase:

This phase gives you true visions. It makes you „see” the mythical heroes, the gods and demons of mythical history. *Cají* in this phase lets you travel across the universe. It reveals to you the secrets of the world.

My own experiences conformed to the division given by the shaman. The shaman had also told me that the effect of the drug would not grow continuously. There would

be ritardandi. And so it was. The effect grew in waves. In the trough between the crests the effect almost disappeared. But then it came back even more powerful.

In my personal experience the first two phases were interesting, funny, even breathtaking, like watching a wonderful sunset or looking at some exceptional piece of art. But it was nothing essentially different from all other experience. It was still I who looked at things; there was still the cognitive distinction between subject and object of the perceptive process. I was still seeing with my eyes. To see was still: to look at things.

In phase three I experienced a different quality of perception and cognition. The concept of 'seeing' was now only a metaphor of a totally different relation between me and the things I experienced. My ego was split into three sub-egos: a body-ego, a soul-ego, and, strangely to say, a spiritual-ego. The body-ego did not actively take part in the events. The soul-ego possessed all my sentiments, feelings, emotions, and passion. He was joyfull, happy, he suffered, and despaired. But he was not the master of it all. Soul-ego was the I who spoke with the demons, who was being led into temptation, who negotiated with the devil. But he did so like a general is sent to war by a king to meet the enemy or like an ambassador goes to a foreign country for his government: both may act freely and responsibly within certain limits, but the final decisions, and the ultimate responsibility rests with the king or the government. Likewise government was always in the hands of my spiritual ego. This spiritual part of my self steered the boat of my mind through the perils of my visions. My spirit was always in full control of the situation, reflecting the events and commenting on them, agreeing or refusing.

I was „seeing” with my brain directly, not with my eyes. Or more adequately: I was seeing with my mind. And what I saw was of pure spirit by nature. I said to myself: „Gee, this is pure spirituality.” And I understood those mystics who had written about the „marriage of the soul with god”. I even thought that perhaps this is the secret of the doctrine of trinity in christian faith. Not being a religious man I had to admit though that there were striking parallels with established christian mysticism – and mysticism in general.

Questions 9, 13 and 14

We must distinguish between the ideas ideally connected with the drug and its consumption and the things which the indians really experience when they take caji. Every indian – we have not found one exception to this rule – wishes intensely and sincerely to experience certain things, to have visions of a certain kind and structure and to avoid others which are not favourable under certain aspects. In very general terms we may say that every indian wishes to have visions of scenes from the myth of creation, namely of Yebá, the culture-hero and fore-father of all Yebámasa. Why? Because by having the correct visions and, in general, the right reactions to the drug effect the male Yebámasa requires the spiritual qualification of being „kumú”. We might define „kumú” as ‚a spiritually qualified man’. The Yebámasa distinguish five classes of kumús of which the three highest ones conform to the anthropological concept of ‚shaman’. For these the indians also use the Spanish term ‚payé’, when speaking with whites.

A boy's and young man's education is aimed both at teaching him the techniques which he needs in order to master practical life and at giving him the capacity to climb up to higher degrees of spiritual qualification, i.e. to be kumú – albeit the lowest grade. A man who never reaches a grade in this hierarchy of spiritualism is very likely to have a low status in his group. However, it is not by means of the drug that he can qualify as a kumú. A man is already qualified to be a kumu or he is not. The caji is only a test which brings his spiritual capacities to light, which makes manifest what his soul, mind, and body is like – not entirely unlike the psychology of the „acid test”, though almost completely lacking any sense of performance and competition. A man is what he is – caji can only bring out his spiritual talents but it cannot give him any. If you are not made to be kumú by nature you can swallow as much and as often of the drug as you wish without ever becoming one.

Beginning with the lowest one these are the five grades of kumú-ship:

The masári masí:

The so-called ‚cantor’ or ‚singer’. Knows the ritual dances and the accompanying songs, the texts of which are constituents of the mythic lore. He leads dances on feasts and plays the role of a precenter. He has no magic power, does not know how to cure, and can not practise black magic.

The ñangúri masí:

The so-called ‚hablador‘ or ‚speaker‘. Knows much of the mythic tales of his group or all of it, thus rendering to his group the important service of preserving the cultural tradition. No man can be chief (‚capitan‘) of a local group unless he is – at least – a ñangúri masí. During the religious feasts he leads the recitals of mythical texts above all of the myth of creation. He, too, has no magic power, nor can he cure.

The baséri masí:

Lower grade of curer or healer. Can cure certain diseases but only by the techniques of blowing with tobacco smoke and of sucking. Knows medical plants and uses them in the treatment of diseases. He has magic power, can see future things, and influence people or situations by the pure power of his will. He can do black magic and kill people by the power of his will. May also serve as an assistant to the higher therapeutic shaman.

The masíni masí or oco yuéri masí:

Higher grade or curer. Can do everything which the baséri masí can do. In addition he is capable of the highest technique of healing, the art of „throwing water“ („botar agua“ – „echar agua“).

The jé-yái:

Literally: ‚yurupari-jaguar‘. He is not a healer but a rather a priest. It is his task to protect the entire group against evil powers both in a physical and in a metaphysical sense – if this distinction is not altogether inadequate. His special concern is for the cají. He is the one who looks after the plants used in the preparation of cají. And it is he who makes the hallucinogenic drink – if such a man there is. The people of San Miguel had no jé-yái. I was told that it is very difficult to reach this level. Many years ago almost every group used to have their own jé-yái but in these days fewer and fewer men succeed in qualifying for the highest rank of shamanism.

The rimá- kumú:

The ‚poison-shaman‘. Every true shaman, i.e. baséri masí, masíni masí, and jé-yái, can

be a good shaman or a bad shaman. The difference is not one of capacity or power, it is one of moral. Like every man also the shaman has to make the moral decision of whether to use his knowledge for good or for evil purposes. Many shamans are ambiguous in this respect: a good shaman for one's own people, an evil one for the enemy.

As G. REICHEL DOLMATOFF has admirably explained there is a *unio mystica* between the shaman and the jaguar¹⁰⁾. When a powerful shaman dies he becomes a jaguar – if he was a black magician he may become a man-eating jaguar. But also the living powerful shaman can transform himself into a jaguar. He also can see whether a particular jaguar is just a jaguar or whether he is „tigre-gente” that is: a jaguar who only appears like a jaguar but is a shaman. He can talk with these jaguars and also with the natural jaguars, who are nothing but animals. ‚paye’ and ‚tigre’ are – in a supernatural sense – synonyma. With the little difference that in the Yebamasa view of the universe there is nothing more natural than the supernatural.

Beginning with his first yurupari-feast the male Yebámasa takes the cají again and again struggling for the desired effects and the proper visions by which he can prove his qualification for a kumú grade. His case is hopeless if the drug does not produce any hallucinogenic effect in him. This is what happens to quite a number of indians. Among the Yebámasa of San Miguel there were – of a total of eleven men who could drink cají – two who admitted that they had never had a real vision, i.e.: reached phase two¹¹⁾.

To be a kumú one must at least three or four times – there was no consensus about this among the men – have had visions which were more than mere optical light effects. „It is not enough,” said the masíni masí, „that you see dibujos. If you see only dibujos you are still very much behind.” To be kumú a man must reach phase three in his experiences with cají and have visions of scenes of the mythical past. He must see Jéhino, the supreme being, or Rómikumu, a goddess and first shaman who created the world, or Váihino, the mythical anaconda and master of fish, or else Yebá and his wife Yavira from whom all Yebámasa sprang off.

There are other topoi which, seen in a vision, qualify a man for kumú-ship. An old man may appear in one's visions who is still strong offering things to the visionary: he may offer coca and tobacco and say: „If you eat from this coca and sniff from this tobacco you will gain the power to see future things”, and if the visionary then accepts the goods this will help him to live a good life and do good to the community.

But the old man – who is always a shaman – may also offer a knife or poison and say: „Take this and kill.” and if the visionary takes it he will become a killer or – as kumú – a black magician. Any such experience, no matter whether of a morally good or evil character, demonstrates that a man is gifted to be a kumú. However, it does not automatically make him one. In order to function as a kumú he would have to learn the technical knowledge which corresponds to the respective degree.

Of the men living in San Miguel only one was masíni masí, one baséri masí, one ñangúri masí, and one masári masí. The masíni masí was not a Yebámasa but a Tatuyo, who, in contrast to the rule of virilocality, lived in his wife's maloca. The baséri masí was a miserable man who suffered, amongst other diseases, from a very bad filariasis, was constantly in a rather deplorable shape and thus unable to function as a shaman. All the other men had not yet gained any qualification as kumú. Some of them were having serious problems with cají. The chief's son and one of the chief's step brothers were afraid of it. A young man from one of the other families said that he felt unpleasant with the drug and that it gave him only „dibujo”. When I let the men paint what they had experienced with cají, most pictures were dominated by diffuse and unstructured colored lines: the dibujo. Those men, however, who had already made some progress in their striving for spiritual qualification as well as those who had already reached a degree painted symbolic motives alluding to events or personalities of the myth of creation or they painted mythic events as if they had witnessed them in „real” reality – again a conceptual distinction which constitutes a violation of the Yebámasa concept of reality.

Physically the reaction of the men appeared to be disciplined and controlled. With the exception of the chief's son who fell to the ground I could never observe that the cají drinkers behaved any different from non-drinkers. They were perfectly capable of singing and dancing hours and hours without stumbling or false tones. If anyone had difficulties with the drug effect the other men, namely the masíni masí and the chief, helped him as well as they could providing psychic and physical support.

After a feast or even during the feast when the effect of the drug faded away the men reported to each other about their visions or reactions. It was then the task of the kumús namely of the more experienced ones to interpret the other men's visions and explain their meaning.

Questions 10 to 12:

I asked the *mas'ni mas'*: „How should a man behave when he takes *caj'í*?“ – „Seriously, earnestly!“, he answered. This is the basic attitude a man should assume towards the consumption of *caj'í*. I never saw anyone behave in a different manner. The *caj'í* drinker is expected to let his mind be affected by the drug but not his body. If an average man falls to the ground, this is looked upon as a sign of spiritual weakness. They would perhaps say: „Ah, look, he still doesn't know how to handle the *caj'í*.“ But nobody would blame him for that. Being knocked to the ground by the drug can also be a favourable reaction, if the man is considered to be talented for being *kumú* and if the dose he took is much above the normal. In this case the men might comment: „He is fighting hard and he may die, but if he survives he will become a great *kumú*!“ The shaman who dares to expand the frontiers of his spiritual knowledge exploring new dimensions of the mind – of the universe – is constantly in danger of his life. The average man is expected to overcome the leaden sleepiness originated by the *caj'í*. He must be able to dance on and sing on and the best he can show is a conduct no different from his normal one. A man who is made to be *kumú*, however, may stop dancing, go to his hammock, lie down and concentrate on his visions. On the other hand he would be regarded as spiritually blunt and indifferent if he fell asleep.

If a man unacquainted with the ways of the *Yebámasa* entered a *maloca*, while people are dancing, he would not be able to judge whether the dancers are under the influence of *caj'í* or not. A man must not be dominated by the *caj'í* but dominate it. This is true both for the body and for the mind: If you cannot coordinate your body movements while on *caj'í* you cannot dance or sing; you would not be able to participate in the feast any longer; you would destroy the ceremonial framework which is part of a joint effort to increase the spirituality of the group¹²). If you cannot dominate the mental effect of the *caj'í*, the demons of the drug will manipulate your mind and make you their slave. A shaman must use the power of magic for his purposes and not to let himself be used by it. If you cannot master the *caj'í*, it will annihilate your mind instead of giving you freedom and wisdom. Thus think the Indians.

These prescriptive ideas are never explicitly told or taught to a boy or young man – at least this is what the *mas'ni mas'* told me. Only on one occasion the young man is given verbal instruction with respect to *caj'í*. Before his first *yurupari*-feast the boy is given some advice by his local highest ranking shaman: „Now the day is near when

you will see the yuruparis. Then you will also drink cají. Look out! The cají yái may appear in your visions and offer you good things or bad ones. Accept the good ones and refuse to accept the bad ones!" He also is told that he may at first see only dibujo. „If you try the cají again and again it will finally show you fine things. You will see Yebá and all the ancients. Then you, too, can become a kumú.”

As a rule he who wants to drink cají should not eat meat or fish the day before. In practice this is observed only on the very day of the drug taking. One may eat casabe and „mécá”, the big colonist ants. These have been once and for all blown upon by Jéhino, the primeval anaconda. Therefore they cannot harm the drinker of cají whereas other food can. On the day after a feast the shaman has to blow on practically every food before the cají drinkers can dare to taste from it.

There exist an unofficial pressure upon every adult male to take the drug: he wants to avoid being looked upon as weak or spiritually impotent. One of the men was highly critical of the custom of drinking cají. He said: „It simply is not true that we can learn with the help of cají. We could learn much better if we concentrated on the texts repeating them frequently. We must learn like we did in the school of the missionary.” Another young man said: „I do not believe in the power of cají. I do not think that those things which we see through cají are real. The shamans are all liars.” Yet both went to take part in the feasts drank their cají, and talked about their visions.

Although there is little explicit teaching and learning in the process of socialization of the Yebámasa man, it would be erroneous to conclude that the reactions of the drug takers are highly individual or that a certain similarity of individual psychic and physical reaction is only due to the properties of cají as a pharmacon. On the contrary: from the very beginning of his conscious life a young Yebámasa learns continuously about cají – but he learns the Yebámasa way. This way is very much different from the way white people learn. Perhaps with the exception of our mother tongue we learn by explicit verbal instruction. This method functions on a relatively well developed capacity to think abstractly, using concepts instead of imagination. The Yebámasa indians learn by observation and participation. We rarely heard a father explain to his son, how a basket is made. He makes a basket and the son watches. I watched a man who was trying to learn basketry from an other man. When he had to stop because he did not know how to go on with the work he did not ask the other man. He went to show him what he had done and the other man showed him

how to proceed. From time to time I used to play cards with my coinvestigators. Some of the indians saw this and said they would like to learn the game. We tried to explain the structure and the rules of the play to them but in vain. They did not seem to understand. Then the indians suggested, we allow them to stand by, while we were playing, so they could watch closely. After having watched six or seven rounds the indians could participate in the play.

The full significance of this method of learning can only be understood – with respect to *cají* – if we take into consideration that an indian child takes part in practically all activities of the adults, be this sexual intercourse or religious feasts. To avoid misunderstanding: children normally cannot see that adults copulate, because it is dark, but they can hear it. There is no secrecy in a maloca, which consists of one large room and several sleeping compartments, which are made from palm leaves and do not constitute an acoustic screen – not even an optical one. Also, if sexual intercourse takes place in a hammock, the vibrations can be felt almost everywhere in the maloca, if one touches a pole. Children see and hear, what grown-ups do all day long. They listen to adult conversation, to their jokes as well as to their quarrels. They see that the husband beats the wife and that the wife beats the dog. They listen to the songs of old people and to the prayers of the shaman. During feasts we always saw many kids. Mothers danced with their little ones on their hips. Older children joined in the dances probing the dance steps and trying to accompany the singers. They stand by and watch, when *cají* is made, sometimes lending a hand to hold the trough; when it is filtered; when it is served; when drinkers vomit or fall to the ground. They hear the other men's comment on certain forms of behaviour or reaction to the drug effect. And after the feast they listen to the discussions about the meaning of the visions and to the words of the shaman, when he comments on the spiritual status of the other men in the group.

Thus, though there is little verbal indoctrination, a ten year old boy must develop quite concrete ideas of how to behave under the effect of *cají* and of what to expect from the drug. He will normally try to conform to the socially approved ways of action and wish to be like the other respected men of the group. He will therefore imitate their behaviour to a very large extent.

It should perhaps be stated explicitly that I am not a drug apologist. Nevertheless I had tried various drugs because I was curious. I do not think that scientific recognition is much helped by the personal individual experience of an individual scientist, since he, the scientist, represents only one case in a series of cases¹³). When I came to the field I did not have the intention to take the drug of the indians, unless there be need to do so. I did, therefore, never ask the indians for their permission to drink *cají*, although I could not hide my interest for the drug and for everything related to it. When the indians of San Miguel offered me to take *cají* with them, I was, at first, afraid. I feared I might loose control, have bum trips, or even turn psychotic. But I was also very curious and so I took the drug. I did so five times during my stay with the Yebámasa and every experience was of outstanding importance to me. There were experiences during which I was enjoying a superbly non-material spirituality combined with – as it seemed to me – a refined intellectuality and a cuttingly sharp logic. There were experiences in the course of which I was attacked by what appeared to me to be satan or witches or evil demons. I had to defend myself and I did so successfully. There were experiences which made me see strange insects. I also travelled across the universe and inspected my own self analysing self-critically the brighter and darker sides of my character. I was both surprised and irritated by the positive character of my drug experiences. During the most terrifying events which happened in my visions I never lost my good temper. I could die – spiritually I presume – and witness my own death and find it all very amusing.

I reported about my experiences to the *masíni masí*. I tried to relate as adequately as possible what I had „seen”. I also painted pictures which, in a more or less symbolic manner, expressed parts of my visions which had most impressed me. When I took *cají* for the fourth time, the shaman wanted to blow on it and to blow tobacco powder into my nose, before I could take the *cají*. I did not consider this to have any special significance since I had been given snuff tobacco on various occasions. Later I found out that on this special occasion I had been given by the shaman a tobacco soul which was to enable me to become a shaman myself. The *masíni masí* then told me that immediately after my arrival he had recognized that I had come to be a shaman and accepted the responsibility for my proper guidance. That I had left the dancing men to lie down in my hammock was – to them – a demonstration of my vocation as a shaman. The *masíni masí* then interpreted all my visions in terms of the indian culture. My „devil” was the „*cají yái*” of the indians; my „strange insects”

were animals who are traditionally regarded as causing certain diseases and who introduced themselves to me in order to tell me that from now on I had power to cure those diseases; my travel „through the universe” was the „travel of the shaman to the beyond”. In short I had visions most perfectly conforming to the indians’ ideas of what a man who is to be a *kumú* ought to see. That I was capable of recalling in exact detail what I had seen in my visions expressing it with words and with the help of pictures, was a further proof of my vocation. I was fit to be a *baséri masí*¹⁴⁾.

At first I could not believe, what the *masíni masí* told me. I said: „I cannot believe all this. You are fooling around with me.” Then the *dueña* of the *maloca*, the woman of highest status, approached me and asked me to blow on her and to suck her. She wanted me to cure her using traditional indian techniques. She did so in a very earnest manner and in front of almost all the inhabitants of the *maloca*.

CONCLUSIONS

Cají and its consumption are intrinsically woven into the cultural system of the *Yebámasa* indians. In this system the drug has the function of a vehicle or bridge which connects two states of consciousness and the two corresponding dimensions of reality. Not every man reaches the highs of spiritualism, although everybody tries to get there throughout his whole life.

The young boy learns what to expect of the drug and how to react to it to a lesser extent by verbal indoctrination, to a greater extent by what may truly be called participant observation. Moreover the drug is never taken in isolation but always in a group. So the individual consumer is never left alone with the effects of the *pharmakon*. Action, while under drug effect, is highly ceremonialized¹⁵⁾. The dances, songs, and recitals do not leave much liberty to the individual for private reactions. The group situation does, however, not simply set limits to individuality. It also offers a great advantage: physical and – still more important – psychic support.

So far the evidence corroborates my initial hypothesis that the individual experience is patterned by learning processes as well as by the social and cultural context associated with the consumption of the hallucinogen. The evidence also shows, however, that my hypothesis is partly incorrect: I underestimated the role of the individual psychic structure. There certainly is a culture-specific standardization of

the hallucinogenic experience, but there can be no doubt that considerable variations from the modal experience occur depending on the psychic situation of the consumer, on his anxieties, hopes, and aspirations.

The indians are fully aware of the fact that *cají* is potentially dangerous. It is therefore only consequent that they invented certain measures by means of which they can control the hallucinogenic effect. This applies not only to the psychic and social problems which the drug might generate but also to the possible somatic complications, as is demonstrated by the use of *cají ucó*: once the drug has entered the human body it is impossible (for the indians) to stop the hallucinogenic effect from intensifying more and more, if you cannot remove the drug from the metabolism. This is achieved by vomiting it out again, ingesting more and vomiting it out again and so on, until they feel that the effect is strong enough. The experienced drinker of *cají* can decide by himself when he has had enough. For the inexperienced one the waiter of the *cají* or the shaman may make this decision.

In my view it is because of these mechanism of control that the indians could consume hallucinogenic drugs for millennia without committing social and cultural suicide. I am convinced that several of these control mechanisms could also be used to control groups of addicts in industrialized societies. I have already submitted a memorandum about these aspects of my investigations to the Colombian National Board of Narcotics¹⁶⁾ and shall in due course submit a similar paper to the Federal German Ministry of Youth, Family, and Health¹⁷⁾.

NOTES

- 1) We might for all practical purposes count the opiates among the hallucinogens, since no addict ever takes heroin e.g. in order to become physically dependent on a chemical substance but in order to alter his state of mind.
- 2) There is not the slightest evidence for the existence of addiction in the strict clinical sense among the indians – as long as the drugs are taken within the traditional context. There is no marked desire to take the drug more often than the occasion of feasts permits. I could never observe any symptoms of tolerance or withdrawal. Rather, the indians hold that if a man has some experience with the drug he may take smaller doses and still have a strong hallucinogenic effect.
- 3) See my unpublished manuscript „Die kulturelle Dimension der Halluzinogene...“.

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- 3) See my unpublished manuscript „Die kulturelle Dimension der Halluzinogene...“.

- 4) In fact, the indians were well aware of the imminence of their cultural and biotic extinction.
- 5) The term 'participant observation' is often used very carelessly. Some anthropologists – it seems – think they are already practising participant observation when they live in the same place with the people they wish to observe. This is a grave misunderstanding of the ideas of FLORENCE KLUCKHOHN.
- 6) All Yebámasa words are written in Spanish orthography. The 'r' is retroflex like in Cantonese Chinese; the 's' is pronounced like 'ds'; 'w' sounds like 'w' in Kiswahili; 'y' may be spoken like 'y' in 'yankee' or like 'j' in 'jump'; 'u' like the Russian ~~u~~. The accent marks the stressing.
- 7) „Si no tiende fuerza.”.
- 8) This may sound incredible to US-American ears. I wish to thank all those understanding officials who made it possible by not insisting on the strict regulations.
- 9) The man is named PEDRO BOSCO. He is a very ambiguous personality and well known to Mr. and Mrs. HUGH-JONES from Cambridge University, England.
- 10) In his book „The Shaman and the Jaguar”.
- 11) Both Mr. SCHEFFER and Mr. GONZALEZ tried the cají. None of them had any hallucinogenic effect. Mr. NUNEZ, the indian, drank at two occasions. I could not find out about his experiences. He refused to drink a third time.
- 12) For: if only one man increases his spiritual potential this enhances the spiritual standing of the whole group.
- 13) There is a qualitative difference: as long as I watch others taking the drug the observer himself is not affected by the drug. When the observer and the drug taker, however, are one and the same person, we cannot hope to get data of the same relevance.
- 14) In the words of the masíni masí: „Ud. ya está capacitado para ser kumú.” I have the words on tape.
- 15) Avoiding the term 'ritualized', as I do not know what this term means.
- 16) Consejo Nacional de Estupefacientes.
- 17) Bundesministerium für Jugend, Familie und Gesundheit.

LITERATURE

- ALPERT, RICHARD, SIDNEY COHEN, and LAWRENCE SCHILLER, LSD, New York 1966
- DELTGEN, FLORIAN, Breve resumen de los resultados preliminares de una investigación antropológica del contexto cultural del consumo de drogas alucinógenas realizada entre los indígenas Yebamasa del Río Piraparana, Comisaría del Vaupes, Colombia, considerando especialmente la posibilidad de aplicar técnicas indígenas en el control de grupos de adictos de drogas en las sociedades industrializadas. Bogotá 19 Octubre de 1.977 (Xerox of typed manuscript)
- DELTGEN, FLORIAN, Die kulturelle Dimension der Halluzinogene – dargestellt am Beispiel dreier südamerikanischer Indianerkulturen. Köln, unpublished typed manuscript.
- KLUCKHOHN, FLORENCE, Die Methode der teilnehmenden Beobachtung. In: R. KÖNIG, Beobachtung und Experiment in der Sozialforschung. Praktische Sozialforschung, Bd. 2, pp. 97 - 114, Köln 1965
- REICHEL-DOLMATOFF, GERARDO, The Shaman and the Jaguar. Philadelphia 1975
- SCHULTES, RICHARD EVANS, The Plant Kingdom and Hallucinogens, part 1 - 3. Bulletin on Narcotics, vol. XXI, no. 3 and no. 4; vol. XXII, no. 1, 1970