Pharmaka, philtres, and pheromones. Getting high and getting off

An anonymous 16th-century Italian manuscript, Ricette magiche e afrodisiache [Pezzella 1978], gives special emphasis to philtres or love-potions, stimulants to venery, and points the way to a modern science of aphrobiology. One recipe, "for venereal pleasures," posits the preparation of a potent alcoholic extract of black truffles, Tuber melanosporum, which is concentrated and made into an elictoryt or comfit with sugar and amber. A second, "a venereal balsam for the impotent," confects in olive-oil large quantities of betel "nuts," Areca catechu, and oil of nutmeg (Myristica fragrans), with animal ingredients: ants, Spanish flies, civet and "oriental" musk (pheromone-rich, sexual-attractant secretions from the civet cat and the Asian musk deer). The third, "for he who cannot make use of women," consists of oil or pills made from the powder of dried Cannabis, moistened with "a good white wine." Here we see echoes of the use of alcohol and wine rather as solvents than as active principles in the composition of philtres, not to mention of the proper way to make truffle-candies, and I have chosen these three recipes of the 27 in the manuscript to highlight the most promising directions for a modern pharmacology of philtres: 1) phero- Pharmaka, Philtres, and Pheromones; 2) stimulants (betel nuts); and 3) visionary inebriants (Cannabis). I will examine hereunder each of these three categories of 16th-century Italian philtre-formulations in some detail.

Pheromones, The Quintessence Of Philtres

Although the truffle might seem out of place here, in fact it was shown in 1981 to be a potent source of androstenediol, known since 1944 to be a component of boar-testes, and patented in the early 1970s for use in artificial insemination of sows [Maugh II 1982]. In 1974, androstenediol was discovered to be a component of human male axillary perspiration, and later to stimulate sexual interest in human beings. Truffles are one especially rich source, which accounts for their "musky" aroma, and here they are compounded with "amber," in reality ambergris, a pheromone-rich secretion of sperm whales, Physeter catodon, like sperm-whale spermaceti, used in perfumery and cosmetics. These pheromonal ingredients lend verisimilitude to the first of our Italian philtreformulæ, the second of which features musk, both of the civet cat (various species, family Viverridae) and the musk deer (Moschus moschiferus). Musks, likewise from the North American musk ox (Ovibos moschatus), derive their name via Latin and Greek, from the Sanskrit muska, "testicle, scrotum," and consist of oleaginous secretions of special glands that produce sex-attractant pheromones (pheromones are hormone-like substances acting especially between members of the same species, here in mating, thus being allomones, of benefit to the emitting species; they can also serve as kairomones, or of benefit to another, or a receiving species, who might exploit them as attractants to predation). Musks have a long and storied use in perfumery, again as sexattractants, and the discovery that androstenediol appears to be a human sex-attractant pheromone has now led to its use in male colognes and after-shaves, often touted in skinmagazines as infallible female lures. Similarly, the masculine pheromone androstadienone is said to attract women; the female pheromone estratetraene, to attract men [Holden 1999]. I have known women who occasionally rub a bit of their own vaginal secretions behind their ears, when they feel the need of such "passion-perfume" to "infiltrate" some man or other. This points to the urgent need for concerted research into our human pheromones, which of course militates against the absurd superstition of the Judaeo-Christian world, that human beings are not, after all, animals. But we do indeed, like all mammals, possess non-olfactory vomeronasal neuroreceptors believed to respond to pheromones, and encoded by some 100 genes in rodents [Hines 1997; Holy et al. 2000]. Interestingly, neural signals from the binding of pheromones to these receptors bypass those ordinary olfactory pathways, and possibly the so-called "higher cognitive centers" [Dorries 1997], and go thence to the amygdala and the hypothalamus, in the so-called midbrain, which separates the brain-stem from the cerebral cortex (connecting to an accessory [posterior] olfactory bulb attached to the cerebral cortex) [Keverne 1999]. As might be expected, both the amygdala and hypothalamus are thought to control our emotional responses.

Human menstrual blood and other vaginal secretions were used as ingredients in philtres or "love-potions," believed to incite both love and lust [Birchler 1975; Mueller- Ebeling & Rätzsch 1986]. There has been limited research of female human pheromones, but one such study of 50 healthy young women who wore special tampons showed their vaginal secretions contained an extensive complement of simple compounds like acetic, propanoic, and butanoic acids, which are called "copulins" [Michael et al. 1974]. These are known sex-attractant pheromones from the vaginal secretions of rhesus monkeys, which stimulate male sexual activity, and they also occur in such secretions of many other primate species. Interestingly, the levels of these human pheromones varied according to the menstrual cycle, being at their highest concentrations in the phase corresponding to maximum fertility.

Philtres were employed to induce someone to fall in love, and were supposed to provoke so-called "love-sickness." Here in México,
people especially fear toloache (Datura species) as such an amatory "toxin." Until the mediaeval period, men were allegedly primary victims of "love-sickness," although more recently it became rather a supposititious female condition—as in the "hysteria" of the Freudians. There was even posited a so-called virus amatoriorum in menstrual blood, and even modern textbooks of gynecology (such as the sixth edition of Geburtshilfe-gynäkologische Prädéutik und Untersuchungslehre, Leipzig, 1967) there survived belief in the existence of an infectious "menotoxin" in human menstrual blood!

But to return now to the truffle: as Valentina P. and R. Gordon Wasson showed in their seminal book Mushrooms Russia and History (which, together with a pair of popular articles in 1957 launched the so-called "Psychedelic Age" [Wasson & Wasson 1957; R.G. Wasson 1957; V.P. Wasson 1957]), truffles were long known in Europe as stimulants to venery; indeed, they are known as "testicles" in various languages, such as the old Castilian turmas de tierra or criadillas de tierra, "Earth's testicles," and when the potato first appeared in Europe, it acquired that reputation of the truffle, inasmuch as unscrupulous vendors would pass-off lowly potatoes as truffles. As Agustín de Zárate noted in 1555: "the Indians consume some roots known as potatoes, which are of the form, and almost even of the taste, of turmas de tierra [truffles]." This then gave rise to the phrase "to truffle" or swindle someone, which survives today corrupted as "to trifl"---thus the cad who "trifled" with a damsels' affections was symbolically giving her a potato, instead of a pheromonal truffle of audacious amorous fortune.

**Stimulants To Sexuality**

Our second archaic recipe compounds betel nuts with pheromone-rich musks. Betel is one of the world's most widely-used stimulants, taken as a masticatory, the sliced or shredded fruits of the betel-palm being wrapped in aromatic leaves of the betel pepper, Piper betle, which has been smeared with a paste of a vegetable quicklime, and often the quid be seasoned with cloves and/or cardamoms and other spices, at times likewise with other drugs being added, such as opium and tobacco (and, at least during its glory days, also with cocaine). The major stimulating principle of betel is the alkaloid arecoline, which is one of the prototypical "smart drugs," shown to enhance learning [Sitaram et al. 1978]. In the Indian Ayurvedic system of medicine, betel is regarded to be an aphrodisiac [Raghavan & Baruah 1958]. Stimulants have singularly and collectively the reputation of potent aphrodisiacs; many act on the body's major stimulants system---the adrenergic, responding to the hormone adrenaline and the neurotransmitter noradrenaline---also exerting dramatic effects on the neurotransmitter dopamine, key element of our so-called "pleasure-circuits" in the midbrain. The best-studied are the amphetamines, including the "psychedelic amphetamines" like Ecstasy or MDMA, and of course cocaine. Straight away one can dismiss MDMA as aphrodisiac—it belongs rather in the same class as alcohol, inasmuch as it "takes away the performance," as noted in a recent British book [Rudgley 1998]. The garden-variety amphetamines, on the other hand, richly deserve their consciptuous reputation, providing one does not exaggerate the dose. Not only do they dramatically heighten libido, but they have been used medically to reverse the depression of libido associated with the chronic use of some serotonin-enhancing antidepressants—the "serotogenic" effect in general, while it may help to overcome depression, clearly depresses the sex-drive, which just might give the "patient" new cause for depression! Note, however, that the antidepressant drug nefazodone, Serzone® or Dutonin®, is known rather to enhance libido!

Moreover, amphetamines can retard ejaculation in men and seem for many to enhance orgasmic pleasure; besides, they tend to raise blood-pressure, to which might accrue ancillary priapic benefits.

The same can be said for cocaine; although again, excess doses may even depress male performance. Indeed, the plantsource of cocaine, the cocoa-leaf (Erythroxylum species) has a robust erotic reputation in its Andean home. As W.G. Mortimer noted in his 1901 classic History of Coca [Mortimer 1901], "The Peruvian Indians employ Coca to stimulate uterine contractions and regard it as a powerful aphrodisiac." He then went on to quote several contemporary authorities, who were adjudging its medical potentials before our modern era, blighted as it is with pharmacopathological nonsense: "Leopold Casper, of Berlin, considers Coca one of the best of genital tonics, and many modern observers concur in this opinion. Vecki says that cocaine internally to a man aged fifty-six invariably occasioned sexual excitement and cheerfulness."

In fairness, it must also be said that he noted that homeopaths: "employ Coca in sexual excess, especially when dependent on onanism." I would say one "dependent on onanism" suffers rather from sexual dearth than excess, and this indeed serves as a valuable caveat regarding the dangers also of an insufficient dose of an aphrodisiac!

As regards qat (Catha edulis), the stimulant-plant of Yemen and Ethiopia, the tender branches of which are chewed neat, and which contain the natural amphetamine cathinone and other stimulants: given that this was adopted as a drug in historical times, during the Moslem era, it is not surprising that there be little emphasis on aphrodisiacal effects in the scant literature. To be sure, like coffee after it (likewise adopted in comparatively recent times), and to avoid the general Islamic proscription of "intoxicants" (specifically alcohol, although this ban was extended to cover also traditional Arabian inebriants opium and hashish, but not the non-traditional tobacco), it became necessary to justify qat-use in the context of alertness for late-night Koranic study, for nocturnal prayers in the mosque, and the like. Although pharmacopuritans have disparaged qat-use as conducive to "sexual problems" (of course, for them, heightened libido is the primary such) and "spematorrhea," or involuntary, non-orgasmic seminal emission, a recent careful study found that about a third of chronic male (but only about one in 20 of female) users reported aphrodisiacal properties, which were personally confirmed by the intrepid researcher, who found that qat-use both stimulated libido and enhanced sexual performance [Kennedy 1987]. Again, the dosage and ancillary health-factors may account for the 20% of male and 10% of female users who rather reported anaphrodisiacal effects.

Of the caffeine-containing stimulants, it is the African cola-nut (Cola nitida), which has the strongest reputation as an aphrodisiac. Cola, of course, was ingeniously combined by a Georgia pharmacist with cocoa-leaves to yield the original Coca-Cola®, that brilliant, non-alcoholic "temperance" beverage which however, along with its host of imitators, was later to be denounced as being causative of the "Coca- Cola fiends" (largely African-American, of course), given to raping white women; to be used as a pretext to proscribe the free-sale of cola and cocaine in the United States in 1914. Coffee (roasted seeds of Coffea species), tea (fermented leaves of Camelia sinensis) and guaraná (seeds of Paullinia cupana) are alike caffeine-containing stimulants with some renown as aphrodisiacs [Rätsch 1997], whereas the caffeine-rich guayusa-leaves (Ilex guayusa) are used in Ecuador against female sterility, and in Argentina the related [8x6]1997], whereas the caffeine-rich guayusa-leaves (Ilex guayusa) are used in Ecuador against female sterility, and in Argentina the related...
To my consummated or willfully brought to closure. I can recall episodes when some titillating tete a tete mysteriously transmogrified into immoderately-prolonged nature of LSD-time in general causes that desire to be transcended before the particular sexual act is... 

Although I have never experienced intense sexual desire transmogrifying into disgust or fear, for me the rule has been that the theobromine (there are only minor amounts of the related xantheme, caffeine), proved to be a potent aphrodisiac in hornets, their drones even copulating with moribund queens [Ishay & Paniry 1979]! Although I should point out I have yet seen no evidence of such dramatic "inhiltation" in the human species, nonetheless chocolate is the love-drug, being packaged in heartshaped boxes for St. Valentine's Day gifts to a sweetheart, and theobromine, like love, is a potent cardiac stimulant, its effects akin to the quickening pulse of amorous excitement. Chocolate also contains minute levels of anandamide, which is our natural neurochemical whose receptor the THC from marijuana activates [di Tomasso et al. 1996], and Moctezuma's cacahuatl was "spiked" with all manner of stimulant and visionary plants, which may help account for its reputation as an aphrodisiac [Ott 1985; 1996]. Compounded with the appropriate ingredients, for nothing might they be known as "chocolate truffles!"

Philttrum Psychotopicum, Or Visionary Venery

Our excursus among the erotic electuaries, philtiry potions and pubic pomades now brings us to the truly heroic medicines, the "Psychoptica" or entheogens, in which direction points our third classic recipe, for the bhang-boli or pot-pills. Cannabis or marijuana, of course, has long been tarred with a licentious brush, but there are many who attest to its place on Aphrodite's altar. In my experience, unlike many of the pharmaka we have examined, where the emphasis in on male performance (for which alone I can personally vouch), Cannabis would seem to be a bisexual stimulant. In my case, I find its effects to be rather too debilitating in general to be of much use in this regard, more enervating than erotic, but many women I have known are effusively enthusiastic about its aphrodisiacal amatory attributes. In the pages of Playboy magazine [Leary 1966], Timothy Leary described LSD as being: "the most powerful aphrodisiac ever discovered," noting also that the LSD-state was to ordinary, waking consciousness as that state was to deep sleep. (I don't know about anybody else, but that had been enough for me--being a bored, 17-year-old high-schooler in the dreariest of suburbs, I began at once assiduously to seek LSD!) Leary, then well on his path from professor to proselyte, continued:

"[S]ex under LSD becomes miraculously enhanced and intensified. I don't mean that it simply generates genital energy. It doesn't automatically produce a longer erection. Rather, it increases your sensitivity a thousand percent. [...] In a carefully prepared, loving LSD session, a woman will inevitably have several hundred orgasms."

If that sounds too good to be true, it is--no woman I have ever spoken to has had the good fortune to experience any suchlike "carefully prepared LSD session!" Noting that by that time he had had 311 "psichedelic sessions" and had made love "every time I've taken" LSD, Leary twice evaded the interviewer's questions regarding the number of orgasms a man might expect under the lubricous influence of LSD! But Leary had clearly hit at least one nail squarely on the head, and by the following year there were pulp-novels aplenty, exposing The Sexual Paradise of LSD, LSD Lusters (both 1967) and the 1969 Acid Party, among others, all festooned with concupiscent cover-art. There had already appeared Thelma Moss' pseudonymous (as Constance Newland) account of her having been cured of her frigidity via LSD-psychotherapy [Newland 1962], one of many testimonials to the curative virtues of this uniquely-otent entheogen.

The comments that follow apply likewise to the visionary familiars of LSD, such as psilocybine and the mushrooms that contain it (species of Psilocybe and other genera), mescaline (from peyotl, Lophophora williamsii, San Pedro, Trichocereus species, and others) and n,n-dimethyltryptamine or DMT (from some ayahuasca-brews and related South American entheogens). In my opinion, LSD has by... 

Although I have never experienced intense sexual desire transmogrifying into disgust or fear, for me the rule has been that the immoderately-prolonged nature of LSD-time in general causes that desire to be transcended before the particular sexual act is consummated or willfully brought to closure. I can recall episodes when some titillating tete a tete mysteriously transmogrified into something else; then abruptly, an eternity later, one or the other might remember: hey, what happened, weren't we making love? To my...
mind, the true erotic potential of LSD and allied Psycoptic is to ease a mutual attraction into the sexual realm, rapidly to enable people to become better acquainted, in an emotionally-opened way, which applies equally to MDMA. Having spoken to innumerable people about their entheogenic experiences, I would have to say that very rarely does the subject of eroticism ever come up, and it is rather in the scope of "pale religious letchery," to borrow Blake's phrase, in the paranoid, propagandistic fantasies of the pharmacopuritans, that the priapic potentials of LSD and its congeners loom large, so to speak.

Moreover, in the traditional world, and with the exception of Cannabis, whose use can be seen clearly in Indian erotic paintings, as well as in association with the Tantric arts, it must be said that the emphasis is far more upon spiritual ecstasy (literally, separating the soul from the body--sex, eating, much light or noise, tend to anchor one's consciousness in the body, militating against ecstasy), whether this be used for self-actualization or more commonly for shamanic healing, than on any potential aphrodisiac virtues. On the other hand, we are dealing today with the degenerated remnants of archaic traditions, often corrupted by Christianity, and we know but little of the potential breadth of use-modalities in antiquity. In Mesoamerica, there survives rather extensive documentation of "the Age of Entheogens" [Ott 1995] from the time of the conquest a half-millennium ago, which tells us that the entheogens enjoyed ludible, as well as medicinal, sacred and ceremonial roles. To my knowledge there is no specific mention of entheogens as aphrodisiacs, with the exception of the famous case of the cacahuatl-potion of Moctezuma, but the arrogant Spaniards, who evidently did not deign to sample them in any context, could hardly have been aware of such, had it existed, which I think quite likely.

There is, however, one class of entheogen that merits special mention here: the Caribbean and South American visionary snuffs ñopo/cohoba and cebíl (prepared from seeds of Anadenanthera peregrina and A. colubrina var. Cebil), whose psychotropic principle is bufotenine, a positional isomer of psilocine, the true active principle of the psilocybian mushrooms [Ott 2001a; 2001b]. As the accompanying photograph of a classic Taino cemi (zemí) indicates (these are wooden or stone anthropomorphic tables, the flat upper-surface of which was used to array "lines" of the cohoba-snuff), the erotic essence of this entheogen hardly took a back-seat in that long-lost culture. These cemi-artsifacts have been found on all four large islands in the Greater Antilles, and their association with the snuff was documented at first-hand by Ramón Pané, left by Columbus on Hispaniola to study the Taino [Pané 1974; Torres 1998]. Bufotenine provoked circulatory crises when ethically injected intravenously into convicts and mental "patients" (non-convict prisoners) in the United States, and turned their faces the color of an "eggplant" [Fabling & Hawkins 1956; Ott 1996; Turner & Merlis 1959]. Bufotenine is dimethyl-serotonine, and of the many visionary tryptamines (LSD, psilocybine, DMT, etc.) is the closest to serotonine--all are thought to act primarily via serotonin-receptors in the brain. But there are also serotonin-receptors in the vascular system, which accounts for its name: sero, "blood[pressure]," tonine "toning." That bufotenine injected into the bloodstream would cause facial lividity suggests the compound can also bring blood to the penis and indeed, after one particularly intense session of snuffing bufotenine-rich cebíl-seeds in Argentina, I experienced an impressive priapism when I repaired to my lodging. Regrettably, I was totally alone at that moment, and so had no other recourse than "onanism" (note to any homæopaths: I was already chewing coca to beat the band!). Cebíl may well prove to be that much sought-after "herbal Viagra®."

While on the subject of bufotenine, a few words about toads (Bufo species, from which the compound gets its name) are in order. Toads being marathon-copolitators, some species of which breed en masse in ponds, it is natural that they came to symbolize fertility and venery, and indeed toads figure prominently as ingredients in philtres [Morgan 1995; Wasson & Wasson 1957]. The toad parotoid-gland secretions (technically not venoms, 'though commonly called that) often contain bufotenine, which was first isolated from secretions of Bufo vulgaris in 1920 [Ott 1996]. On the other hand, these toad-secretions contain various toxic compounds, especially cardioactive steroids, which would seem to overwhelm bufotenine toxicologically, as this is generally present in relatively modest amounts. Nevertheless, dried Bufeosecretion is used in traditional Chinese medicine, under the name Ch'an-su, and similar preparations were used to treat cardiac insufficiency before the introduction of Digitalis extracts. One use of Ch'an-su is as a so-called "love-stone"-- small cubes of the dried secretion are sold as aphrodisiacs, to be moistened and rubbed on the penis to prolong erections, which is thought to involve local anaesthesia, rather than any vascular actions of bufotenine, although this has been detected in the "love-stones." Recently, however, at least four toad-titillators in New York died after they had ingested this product, which likewise contained toxic amounts of cardioactive steroids! There also exist reports of people smoking these toad-preparations, as a supposititious psychoactive drug [Chamakura 1994].

In the famous potion-brewing scene of Shakespeare's Macbeth, his three "weird sisters" give the toad pride of place in their cauldron: "Toad, that under cold stone / Days and nights hast thirty-one / Swelter'd venom sleeping got / Boil thou first i' the charmed pot." There is some evidence for the use of toads in European witches' philtres, as well as in the so-called "flying ointments," as also their addition as fortificants to American chicha beers, but we have at present insufficient data to speculate on relevant pharmacology, either psychotropic or aphrodisiac. Several artistic representations point to an erotic dimension of the ointments, which did contain known visionary plants, such as belladonna (Atropa belladonna), henbane (Hyoscyamus niger), mandrake (Mandragora officinarum) and thornapple (Datura stramonium) [Hansen 1978; Müller-Ebeling et al. 1998], all of which contain psychotropic tropane alkaloids, such as scopolamine, hyoscymine and atropine [Ott 1996]. Indeed, in a famous bioassay experiment, the Spanish physician Andrés de Laguna "managed to obtain a good cannister-full" of a "flying ointment" which he "used to anoint from head to toe the wife of the hangman" of Metz, who promptly fell into a profound sleep for 36 hours! When she came to her senses, she was distraught at having been awakened "from all the pleasures and delights of the world," and told her husband with a sly smile: "know that I have made you a cuckhold, and with a lover younger and better than you" [Gómez Fernández 1999]! Toad-secretions or oneirogenic aphrodisiacs anyone? --- I prefer conscious concupiscence!

An Erotic Epilogue

Laurence Sterne showed the keenest of poetic intuition in his riotous farce, The Life & Opinions of Tristram Shandy, Gentleman, that "Cock and a Bull" story, "and one of the best of its kind, I ever heard," when he included the learned Hafen Slawkenbergius' tale, in which Nosarians and prodigious Noses take the place of priapic Penises [Sterne 1935]. For in matters erotic, it is clear to me that the
It is clear to me that the pathway to a science of aphrochemistry leads via research on human sex-attractant pheromones, and that most potent philtre will likely be some erotic effluvium, a sort of "amorous aromatherapy," rather than a pill, puff or powder; mayhap a pheromonal pessary for women, philtre pomade for men. This direction was pointed to by Patrick Sueskind, in his interesting novel The Perfume, at the climax of which his antihero Grenouille ("frog," which should rather be Crapaud, "toad") is about to be executed for the murder of numerous women, when he uncorks the bottle of perfume he had made from the erotic essences of their bodies, for which purpose he had slain them, so unleashing a frenetic orgy in the crowd of morbid spectators! It is evident that pheromones, indeed olfaction itself, are not operative in all human beings. Many people are effectively anosmic, and 72% of the roughly 1000 human genes associated with olfactory receptors are non-functional (pseudogenes), as well as all of the human genes which have been correlated with putative pheromonal receptors. Moreover, anatomical studies of 564 adults found that 70% lacked the vomeronasal organ, which was present bilaterally in merely 8%, unilaterally in the remaining 22% [Keverne 1999]. Even stranger, it has been said that in those human beings possessing a vomeronasal organ, this invariably lacks effective neuronal connections! This I do not believe, at least in my own case, and there are surely those Grenouille among us, we who inhabit a mysterious, musky and mellifluous world. Through pharmacogenetic study of human idiosyncrasy [Ott 1997] with respect to genes for our pheromonereceptors, it is theoretically possible to develop individually customized "cocktails" of pheromones, personalized philtreprescriptions. Such a paramount philtre would in principle be capable of transforming virtually any compatible individual into that "most concupiscible object" (to paraphrase Laurence Sterne) more desirable than which "neither could your heart desire, nor your concupiscence covet." •

References
Heksens Urtegård. Laurens Bogtrykkeri.


Ott, J. 1996. Pharmacother: Entheogenic Drugs, Their Plant Sources and History. Natural Products Co. [second edition densified; original 1993]


Pané, R. 1974. Relacion acerca de las antiguëdades de los indios. Siglo Veintiuno Editores, México. [original manuscript of 1496]


Wasson, V.P. 1957. "I ate the sacred mushroom," This Week (Sunday newspaper supplement), 19 May issue, pp. 8 et seq.
