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1

INTRODUCTION

§1 In this book I intend to demonstrate that harmel or wild rue, *Peganum harmala* L. (Zygophyllaceae), a common weed of the Central Asian Steppes, the Iranian Plateau, and adjacent areas, was the original intoxicant plant represented in the Iranian religious tradition by the term *haoma* and in the religious tradition of India by the etymologically identical term *soma*. I also intend to show that this identification of the plant improves our understanding of the origin and nature of certain rituals that were central to Indic and Iranian religions, and of the nature of the religions themselves.[1]

§2 Both in the ancient Vedic rites of India, which are partially recorded in post-Vedic literature and to some extent are still practiced, and in the rites preserved by the surviving representatives of the ancient Iranian religion, the Zoroastrians, *soma/haoma* appear as the central and most important elements. The modern day rituals of the two traditions are accompanied by recitation of liturgies whose highly formulaic language preserves the most archaic forms of

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1. The synonyms harmel and *Peganum harmala* will be used interchangeably here. It may be claimed that harmel was implicitly the plant first identified with *soma* in Western scholarship. In 1794 Sir William Jones translated the only occurrence of *soma* in the *Laws of Manu* as "a species of mountain rue" (1796: 72). The reasons for Jones's identification are unclear, but the plant growing in India which he could have most accurately characterized as "a species of mountain rue" is *Peganum harmala*. Neither the mountain rue known in Europe, *Ruta montana* L., nor any other species of the genus *Ruta*, occurs as a wild plant east of the Euphrates (see below, §127). The only genuine rue (i.e. *Ruta* species) known in India (or in Iran) is the cultivated garden herb *Ruta graveolens* L. Traditional Persian botany, however, regards *Peganum harmala* and *Ruta graveolens* as, respectively, the wild and cultivated species of the same genus, and since both plants have become widely known in India largely through their introduction by way of Iran, this taxonomy prevails in India as well. Since there is no uncultivated species of *Ruta* to which "rue" could refer in India, "mountain rue" must represent the Persian *sudāb-i kūhī* which is defined in Indo-Persian lexicons and botanical works as, in effect, *Peganum harmala*.

"*Soma*" was therefore virtually identified at the outset of the comparative study of Indo-Iranian cultures. This book may be regarded as the vindication of Jones's original proposition. The probability that harmel was the source of *soma* has also been apparent to others since Jones, e.g. to Paul Lagarde (1866), the zoologist Wilkins (see Roth 1884: 136n.), and Claudio Naranjo (Efron 1967: 445-446).

Indic and Iranian. These liturgies were memorized and transmitted orally and written down only much later. The attested texts speak of *soma/haoma* as intoxicating, yet the plants used in the present ceremonies associated with these texts are not intoxicating, nor is intoxication reflected in the conduct of the ceremonies. The plants now called *soma* and *haoma* lack the distinctive properties or cultural importance that could account for their being the focus of such ancient and elaborate practices.

§3 Despite the apparent conservation of minute details, these contemporary ceremonies are based on earlier practices which involved the drinking of an extract of an *intoxicating* plant. In neither tradition is the ceremony conducted with an open acknowledgment that the plant regularly used as *soma* or *haoma* is not the one originally used, or that the character of the rite was ever markedly different from what it is now.[2] The respective secondary literatures of commentary and interpretation virtually ignore the absence of the intoxication indicated by the liturgical texts.

§4 The terms *soma* and *haoma* (pronounced *hauma*) are applied to the nonintoxicating plants used in modern ceremonies. In this connection it should be noted that **sauma-*, the form which must be reconstructed for the Proto-Indo-Iranian ancestral language, merely denoted a 'pressed out (liquid or plant)', without reference to any more specific properties of the substance. Thus, rather than exclusively designating the primary intoxicant plant, the term **sauma* could have referred to either nonintoxicating or intoxicating plants extracted in ceremonies, and early on came to be used as a common name for a secondary plant (namely *Ephedra*, see below, §106). Nevertheless, because of the narrowly Indian or Iranian sense of *soma* or *haoma*, the term sauma (without italics or asterisk to distinguish it from the hypothetical word **sauma-* as it may have been historically used in Proto-Indo-Iranian) will be adopted here with restricted reference to the original intoxicant plant.

§5 Numerous scholars have attempted to find evidence for the identification of sauma in the numerous references to *soma* in the ṚgVeda, enigmatic though these may be. The most important of these studies is R. Gordon Wasson's *Soma: Divine Mushroom of Immortality* (1968) and his subsequent publications, where it is argued that *soma* was the fly-agaric or *Amanita muscaria*, a hallucinogenic mushroom consumed until recently for intoxication by peoples in Siberia.[3]

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2. Indian Brahmans know the plant now used as *soma* in south Indian rituals, *Sarcostemma brevistigma*, to be a substitute for an earlier "*soma*". The "*soma*" which *Sarcostemma* has directly replaced, however, seems not to have been the original plant but an *Ephedra*, a nonintoxicating plant which was itself a secondary constituent of rituals. See §§107-114.

3. For a summary of the history of scholarship on the botanical identification of sauma, discussing over 140 publications, see O'Flaherty (1968).

§6 Wasson (1971:171) states that the following four points respecting the ṚgVeda lead him to equate *soma* with *Amanita muscaria*: (1) there is no mention of the roots or branches or blossoms or seed of *soma*; (2) the poets locate the plant high in the mountains (and *A. muscaria* may be the one psychotropic plant which can *only* be found at high elevations in the Indo-Iranian area); (3) there appears in the hymns "a succession of tropes each appropriate for the fly-agaric, indeed fitting it like a glove"; and (4) "no word in the ṚgVeda is inconsistent with this plant." The last of these points touches on a major difficulty of using the ṚgVeda to resolve the botanical identity of sauma, for the descriptions in the ṚgVeda are so general that they may be applied to any psychotropic plant and not just to *Amanita muscaria*. Hence, the Vedic evidence cannot be used as positive support for a specific identification of the plant; its value is merely corroborative. While Wasson's first three points would seem to make *A. muscaria* a reasonable candidate, the actual significance of each is not beyond doubt, as may be noted: (1) A major reason why there is so little mention of the constituent elements of the *soma* plant is not that they were absent from the plant, but rather that, except in a very few cases (see Geldner 1951: 241), the *soma* referred to in the ṚgVeda and adduced by Wasson as pertaining to the mushroom is the liquid extract (*soma pavamāna*) or the deity Soma, and hence not the *soma* plant at all. Moreover, one cannot make too much of what the poets omit: all living things that appear in the ṚgVeda have parts of some kind which the text fails to mention, but one cannot on that account claim that a given part did not exist. (2) While *soma* in the ṚgVeda (and *haoma* in the Avesta) is indeed repeatedly said to grow in the mountains, it may be questioned whether these passages were intended to locate the plant physiographically, to indicate that it grew wild, or merely to assert its lofty origins (see below, §83). (3) Many allusions to *soma* could suit *A. muscaria*, albeit as it is seen in the field and not as it would appear in the circumstances of *soma* ceremonies, but each such allusion can be interpreted quite as appropriately in other ways. Ambiguity pervades virtually all of the complex metaphors and similes associated with *soma* in the ṚgVeda. There is, moreover, little reason to attribute to the Vedic poets any intention to describe the appearance of the *soma* plant.

§7 Although direct links between *soma* and *Amanita muscaria* have not been established, this mushroom has a remarkable property which may allow its presence to be determined indirectly. The urine of a person intoxicated by *A. muscaria* may itself be drunk for intoxication, and such urine drinking is actually attested in Siberia. Since such practices are not known for any other plant, if evidence could be found that the urine of *soma* drinkers was itself drunk, this would strongly support Wasson's identification. No evidence for this, however, has come to light. According to Wasson (1970: 28): "there is only one overt passage in the ṚgVeda that refers to the *soma-urine*," namely, "the

swollen men piss the flowing (*soma*) [9.48.4]." Even interpreting this literally (and supposing the "men" to refer to priests, which is not at all certain), there is still nothing to suggest the *drinking* of such urine. Wasson's reason for suspecting that the urine of *soma* drinkers was consumed comes from an ostensible reference to this practice not in the ṚgVeda but in an Iranian source, namely in the Gathas of Zarathushtra, where, in *Yasna* 48.10, a passage occurs whose contents are summarized by Wasson as "[Zoroaster] excoriates the priests who evilly delude the people with the urine of drunkenness" (Wasson 1968: 32). If this were what was actually said in the Gathas, Wasson's proposal would justify continued investigation. However, close examination of the text by Schwartz (1985a and 1987:4; see below, §158) reveals that such a translation is based on an erroneous reading; the alleged word "drunkenness", *madahyā*, did not originally occur in this passage and appears in manuscripts as a scribal error for *magahyā*. In addition, the word translated as 'urine', *mūθrəm*, more likely means 'feces, filth'. In reality, the passage has no connection with drinking at all, either of urine or of anything else, and has nothing remotely to do with sauma. Apart from the illusory support of this passage, none of the data presented by Wasson on the subject of urine drinking has any relevance for *soma*.[4]

§8 The limits of the possibilities of determining the botanical identity of sauma from the ṚgVeda have been made clear in Wasson's work. As already mentioned, the Vedic descriptions of *soma* are so general that they cannot be used to prove or disprove his or any other hypothesis. Since no effective criteria have been established from the ṚgVeda, any probative evidence for the botanical identification of sauma must have its basis outside of that text.[5]

§9 Wasson attempted to find a plant that would provide a material basis for a widely assumed theory, namely, that the *soma* hymns of the Ninth Book of the ṚgVeda reflect direct experience of the drug, and that, as the hymns imply, *soma* was consumed in order to experience ecstasy, but that not long after the

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4. The recycling of ones own urine for therapeutic purposes in modern India, to which Wasson (1978: 222; 1979: 104) draws attention, appears to reflect the influence of the popular book *Human Urine, An Elixir of Life*, by Rajivbhai Manibhai Patel (1963), the precedent for whose self experiments with urine drinking came not from Indian tradition but from 20th century Arkansas.

5. Some association of Indian vernacular plant names with sauma are considered below (§§109 and 140). The significance of such names is generally ignored by Wasson, probably because Indo-Iranian vernacular names for species of mushrooms are without links to sauma. Even if the Santal name *putka*, which Wasson found to be the name for a puffball in Orissa, could derive from a Sanskrit word *pūtīka*, meaning "stinking" (as Kramrisch [1975] proposes), this could be explained by the puffball's cadaverous stench and there would still be no grounds for believing that a plant called in Sanskrit *pūtīka* 2000 years earlier was a mushroom (and that, therefore, the *soma* which the *pūtīka* replaced [as an additive to the clay of a ritual pot] was a mushroom). At all events, Kuiper (1984) has now shown that the Santal term *putka* has no etymological connection with Sanskrit *pūtīka*, and is thus irrelevant.

hymns were composed, the original plant ceased to be available, for which reason it was replaced in the ceremonies by nonintoxicating substitutes.[6] Rather than dwell upon the uncertainties of his conclusions,[7] it is important here to examine whether the underlying assumptions are adequately founded.

§10 One need not suppose that all the poets of the ṚgVeda had direct experience of sauma intoxication, for it appears that "*soma* intoxication" had become a fixed literary theme, a subject for elaboration by poets in verbal contests for many generations before the fixation of the Vedic texts. In the ṚgVeda *soma* is represented as an offering, made above all to Indra, who is said to depend upon it for his strength. The concept of the extract as an offering to be drunk by the gods, however, is not found in Iranian texts, and must have emerged in India at a time when the extract no longer had the purpose of intoxicating the priests who consumed it. Because an extensive mythology associated with this apparent rationalization of the ritual presence of *soma* had already developed, it may be supposed that the use of the intoxicating plant had vanished from the usual ceremonies long before the final fixation of the *Ṛksaṁhitā* as we have it.

§11 The ṚgVeda indicates *soma* regularly induced a state of ecstasy, which, again, is not verifiable from the Iranian materials for *haoma*. Even if we could be sure that the Vedic poets had personal experience of the effects of the drug, there is good reason to hesitate before assuming that those effects would be accurately described in hymns. If one were going to drink *soma* anyway, he might well pray that the result be beneficial, but simply because beneficial effects are alone mentioned in the Vedas does not establish that they were always or ever actually experienced. The *soma* hymns could be expected to extol sauma intoxication regardless of how it was usually experienced or the purpose for which the drug was taken.[8] As will be noted (§87), the effects attributed to *haoma* in the Avesta may have been intended to influence the outcome of consuming the drug and to encourage results which were not expected as a matter of course, and the same perspective may be applicable to the Vedic panegyrics to *soma*.

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6. This theory seems to be an elaboration of the historically uncritical view of pious Brahmans that the Vedas reflect a golden age which ended when the gods withdrew from this wicked world, taking with them the source of divine ecstasy, the *soma* plant. There is no genuine evidence that the absence of the original *intoxicant* from the ceremonies necessarily results from a shortage of it.

7. For the various views, see Brough [1971a and 1971b] and the other articles and reviews listed in R. G. Wasson [1978 and 1979].

8. A further motive for priests claiming to find the experience agreeable may have been to show themselves as enjoying the approval of the gods (see below, §150). The "ecstasy" of *soma* may be an exaggeration, for in the Atharvaveda the remains of the sacrificial offering (4 34, 35) (and perhaps [at 11.1.25] the porridge [*odana*]) are said to produce ecstasy (Keith 1925: I, 275).

§12 It is also a ṚgVedic cliché that *soma* induced battle fury in Indra, so that it has been supposed (Bergaigne 1878:150; Lincoln 1981) that it must have been consumed for that effect by warriors. Without denying that sauma drinking may have had such potentialities, it may be said that if sauma reliably produced a state either of battle fury or of ecstasy, or of any subjective state valued *for its own sake*, then the ceremonies would have been essentially superfluous for achieving these objectives and the ceremonies would not likely have been everywhere the form chosen to represent the use of the drug. Moreover, if one assumes that sauma was drunk for these results, it cannot be expected that its consumption would have been confined to such ceremonies; it would surely have been drunk by many more people than only priests. Since such results would have remained valuable in later times as well, the consumption of the drug outside of, as well as within, the ceremonies should have continued to the present day. Because there is no clear evidence from India of sauma consumption outside of the ceremonies at any time and because, instead of sauma, nonintoxicating plants appear in present day rituals, it has been generally concluded that sauma must have become unavailable. Although no reference to a shortage of the plant appears in the ṚgVeda or in Iranian sources of any date, it has been alleged as a criterion for its identification that sauma must be a plant not now obtainable in India or Iran. The question of how such a useful plant utterly vanished from the botanical repertory of whole nations who literally worshipped it has added considerably to the mystery of this subject.

§13 If the purpose of the ceremonial use of the plant was ecstasy, the natural response to an unavailability of sauma would have been to abandon the ceremonies rather than to reenact them using nonintoxicating substitutes. It cannot be supposed that a universal, spontaneous transition from using sauma to using substitute plants occurred as soon as the plant completely disappeared, nor can it be supposed, alternatively, that there was a unanimous and universal conspiracy of priests in both India and Iran to replace the missing sauma and, saying nothing publicly about the change, proceed as before. Considering only the geographical and linguistic problems this would entail, it is clear that nothing of this sort could have happened.

§14 Previous attempts to explain the absence of sauma seem not to have noted that its "replacement" in ceremonies with nonintoxicating plants should be of Proto-Indo-Iranian date. The mere simulation of drinking sauma extract is a common feature of all the relevant Indic and Iranian ceremonies. This continuation of ceremonies without the intoxicant essential to their ostensible purpose is too extraordinary an occurrance to have developed independently, rather ceremonies omitting the intoxicant must have already been practiced before the two peoples became separated. Consequently, if these merely imitative ceremonies came about because sauma was unavailable, it must have become unavailable at a time even antedating the earliest parts of the ṚgVeda,

so that the Ṛgveda would be of no value as evidence for the unavailability of the plant. Iranian evidence for the continued use of the intoxicant into historic times (see next chapter) shows that the plant remained available and hence that its displacement from the ceremonies cannot have been caused by difficulties in its supply. Rather, it must be the case that from the earliest times ceremonies merely imitating the drinking of sauma existed side by side with ceremonies in which sauma was actually consumed.

§15 The Indian sources have not only failed to yield the botanical identity of sauma, but also have not provided satisfactory explanations for why the consumption of sauma took place in ceremonial contexts, nor for specific features of the sauma ceremonies such as the intimate association of sauma drinking with animal sacrifice. Nor has any hypothesis based on Indic materials plausibly accounted for the displacement of sauma in the rituals by other plants, for the particular plant species chosen to represent sauma, nor for why in the two distinct religious traditions, sauma rituals lacking the intoxicant became the central organizing principle.

§16 The present work differs from all previous studies in focusing not on Indian but on Iranian sources, which have hitherto received little or no attention in this connection. The Iranian testimony on sauma is by any reckoning at least as cogent as the Indian, and in light of the failure of the Indic materials to provide acceptable solutions, an investigation of the Iranian situation is the only viable alternative. The value of this approach will ultimately be judged on the merits of the solutions proposed below, but it is strongly supported by the considerations now to be detailed.

§17 Iranian data have precedence over those of India because sauma is to be placed in an Iranian, not Indian, geographical perspective. The use of sauma has been ascribed above to the Proto-Indo-Iranians, that is, the speakers of the reconstructable prehistoric ancestor of the Indic and Iranian languages. During the period of linguistic unity the Proto-Indo-Iranians clearly lived northwest of India. The disintegration of the Proto-Indo-Iranian unity culminated in the emigration of those groups that eventually became the Indo-Aryans. The vacuum left by their departure resulted in the expansion, in Central Asia and eventually Western Asia, of the people known in history as the Iranians.[9]

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9. While the precise location of the homeland of the Proto-Indo-Iranian-speaking peoples remains undetermined, it can confidently be surmised to have been somewhere within an area well defined by the topography of interior Eurasia. Given that their language was the southeasternmost branch of the Indo-European family and that their descendents occupy India and Iran, they must have lived in an area west of China, north of India, east of the civilizations of Mesopotamia (whose annals do not record their existence until marked linguistic differentiation had occurred), and south of the subarctic forests of Siberia. (Although it has sometimes been argued that at one time the speakers of Proto-Indo-Iranian occupied areas to the far north, it is certain that they were cattle-rearing herdsmen, and they could not

§18 There is every reason to believe that the use of sauma was developed by the speakers of Proto-Indo-Iranian while they were living somewhere within that area of Central Asia which from the beginning of recorded history has been predominantly Iranian in culture and, until the arrival of the Turks from the fifth century C. E. onwards, also Iranian in speech. The Greater Iranian cultural area (which should be understood wherever the term *Iran* is used geographically here) should therefore include the environment where sauma grew; thus sauma must have remained available at least to those Iranians who continued to occupy the lands of their ancestors. This cultural area is relatively homogeneous in climate and flora. Regardless of whether the same species of plant continued to be available also to the groups who migrated toward India, the social and economic adaptations required in the radically different environments to the south are likely to have had some effect on the ethnobotany of the migrating tribes. These factors will not have affected the environmental relationships of those people who remained in the Iranian area. Hence it is probable that there has been a continuity of Proto-Indo-Iranian and Iranian ethnobotanical traditions absent in India.

§19 It must not be assumed that because of its early date the Ṛgveda, as against the Avesta, more closely reflects the Proto-Indo-Iranian situation and therefore bears more directly on the problem of sauma. There is scholarly consensus that in general the Avesta is the more conservative text, that is, it more faithfully reflects archaic realia than does the Ṛgveda, which is prone to extensive poetic elaboration. The Vedas and the Avesta are products of a Proto-Indo-Iranian oral literature connected with sauma rites. Only when that tradition of oral composition began to decline in India and Iran did the hymns become fixed. In the case of the Ṛgvedic hymns this occurred soon after the arrival of Aryan-speaking peoples in India (*c.* 1200 B.C.E.). In Iran the formation of that portion of the Avesta in the Gathic dialect spoken by Zarathushtra also dates from around the end of the second millinum B.C.E., the bulk of the Avesta, however, results from processes of oral transmission and composition that continued far longer and allowed for textual reflections of the actual ethnobotanic situation of sauma, as against the Indian situation of a long-ossified corpus, which is, moreover, largely poetic in its "recollection" of the plant. The Iranian *haoma* texts probably became fixed in their present form little earlier than the time of the Achaemenian Empire (i.e. sixth to fourth centuries B.C.E.).[10] The lateness of the Iranian materials indicates that

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have evolved such an economy living in Siberia.) These limits demarcate the Greater Iranian Area. (On the Indo-Iranian homeland, see further §112 n.6).

10. The Iranian *haoma* hymns are in the Younger Avestan language, in which texts continued to be composed in the Hellenistic period, and perhaps even later. The *haoma* hymns do not show the grammatical degeneration of the latest Avestan texts and linguistically

productive oral composition persisted in Iran for perhaps a thousand years longer than it did in India and is evidence for the continuity of ancient traditions into historical times.

§20 This is the working definition of sauma used in the arguments which follow: a plant (1) regarded as intoxicating by the early Indo-Iranians and (2) available over the area occupied by Indo-Iranian peoples, which (3) was revered by these peoples as sacred and (4) was consumed in the central rites of their priests. The four parts of this definition serve as an organizing principle for the data presented below; they provide parameters which increasingly restrict the range of botanical alternatives to *Peganum harmala* as sauma.

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and stylistically give the impression of belonging to the older stratum of the later Avesta, but cannot be strictly dated.

2

PHARMACOLOGICAL CORRESPONDENCE

Sauma Intoxication in Iranian Accounts

§21 That the Avestan term *maδa-* (root *mad-*) meant 'intoxication' has been established on the basis of cognate words in Indic and in later Iranian languages, and the term's use in the Avesta to refer to both the effects of *haoma* and those of wine (see Spiegel 1883; Harlez 1883; Bartholomae 1883). In the surviving Avesta, however, elaboration of the experience to which *haoma* intoxication referred is limited to the following passages from *Yasna* 9-11 (i.e. the *Hōm Yasht*, see below, §78):[1]

***Yasna* 9.17:** *ni.tē zāire maδəm mruyē*	O, Yellowish One, I call down thy intoxication.
***Y.* 10.8** (partially repeated in *Yasht* 17.5):	
vīspe zī anyē maiδąŋhō	Indeed all other intoxications
aēšma hacinte xrvīm.drvō	are accompanied by Violence of the Bloody Club,
āaţ hō yō haomahe maδō	but the intoxication of *Haoma*
aša hacaite urvåsmana	is accompanied by bliss-bringing Rightness.
rənjaiti haomahe maδō	The intoxication of *Haoma* goes lightly.
***Y.* 10.14:** *mā mē yaθa gaoš drafšō*	May (thy intoxications), besetting me at their own
åsitō vāraəma caire	impulse, not move me about as a cow's trembling.
fraša frayantu tē maδō	May thy intoxications come forth clear(ly).
vərəzyaŋuhåŋhō jasəntu	May they arrive bringing straightness of mind.
pairi.tē haoma ašāum ašavāzō	To thee, *Haoma*, righteous, promoting Rightness,
daδāmi imąm tanūm	do I give this body,
yā mē vaēnaite huraoδa	which seems to me well formed.
***Y.* 10.19:** *imåsə tūmciţ māvōya*	May thee thyself, and may these
fraša frayantu tē maδō	thy intoxications come forth to me clear(ly).
raoxšna frayantu tē maδō	May thy intoxications come forth bright(ly).
*rənjyō +vazåinte *tē maδō*	May thy intoxications move lightly.
***Y.* 11.10:** *pairi.tē haoma ašāum ašavāzō*	To thee, *Haoma*, righteous, driving forth Truth,
daδāmi īmąm tanūm	do I give this body,
yā mē vaēnaite huraoδa	which seems to me well-formed,
θwaxšāi +haomahe maδāi	for the active intoxication *of *Haoma*,
havaŋuhāi ašavastāi	for well being, for Rightness.
pairi.mē tūmciţ dayå	May thou give me, righteous *dūraoša Haoma*,
haoma ašava dūraoša	the Best Existence of the righteous,
vahištəm ahūm ašaonąm	full of light, and having every comfort.
raocaŋhəm vīspō.x^{v}āθrəm	

1. Avestan translations are by Schwartz and are discussed by him below, §§162-182.

§22 The sources for ancient Iranian religion preserved in Zoroastrianism include as well as the Avestan texts from the first millennium B.C.E., a literature in Middle Persian (Pahlavi) which reflects the Zoroastrianism of Sasanian Persia (*c.* 230-630 C.E.). By the time that the Sasanian clergy translated the Avesta into Pahlavi, the meaning the *haoma* texts seems to have become for them a matter of speculation, and the *Yasna* rite at which these texts were recited had come to be so exclusively performed using as *haoma*, not sauma, but a nonintoxicating plant, that the priests seem no longer to have been aware that the *haoma* (Middle Persian *hōm*) consumed in that ceremony had ever been an intoxicating drug. Their ignorance of this is revealed by the fact that the Avestan term *maδ(a)-* 'intoxication' is never correctly rendered in the Pahlavi translation of the above Avestan passages.[2]

§23 Most of the Sasanian Avesta is now lost. Pahlavi translations of much of it still existed in the ninth century, however, and served as the basis for a number of books then composed in Pahlavi by Zoroastrian priests in Fars. These Pahlavi books appear to contain descriptions of the effects of sauma; in these descriptions, however, sauma is not referred to by the name *hōm/haoma*. It seems that at the time these accounts were composed the term *hōm/haoma*, rather than continuing its original reference to sauma, had come simply to designate the *nonintoxicating* plant consumed in daily *Yasna* rites. Consequently, in order to refer to sauma in the Pahlavi texts recourse would have been necessary to terms other than *hōm/haoma*.

§24 The most explicit and detailed Iranian account of intoxication for religious purposes is the *Ardā Wīrāz Nāmag*. The prologue (Chapters 1-3) of this Pahlavi text says that in order to dispel doubts about the claims of the Iranian priests to religious knowledge, Wīrāz, having been selected as the most righteous of men, is given a drug before a public assembly, whereupon, lying tranquilly before the people, he has a vision of the fate of souls after death, which he afterwards dictates to a scribe. This prologue demonstrates the belief that pharmacologically induced visions were the means to religious knowledge and that they were at the basis of the religion that the Magi claimed to have received from Zoroaster. It has previously been supposed that the event described in this text was outside the tradition of the sauma ceremonies; its possible relevance to the question of sauma has therefore never been explored. It will consequently be necessary to show that, although the drug administered

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2. Avestan *maδa-* would have been correctly translated by Middle Persian *mastīh* 'intoxication' (e.g. in *Pahlavi Vendidad* 19.41). Instead, for the above cited Avestan passages the Pahlavi has *m'dšn'* (i.e. *māyišn* 'copulation', which gives little sense here), except in two cases: in *Yasna* 10.14 Avestan *maδō* is translated *mēnišn* 'thinking', and in *Yasna* 11.10 Avestan *maδāi* is not translated at all. See J. M. Unvala (1924: 28-29, 60), J. Darmesteter (1892-1893: I, 100, n.22), and B. N. Dhabhar (1949: Glossary 125). These Pahlavi forms are discussed below §§183-185.

to Wīrāz is termed *mang*, it is the same substance as sauma. Here follows an abridgement of the opening chapters of the *Ardā Wīrāz Nāmag* as translated by W. Belardi (1979: 89-92):

(I.2) And after that (there) were sedition and contention among people of the Iranian kingdom, and thus they had no king, no ruler, no chieftain, no theologian aware of the Religion, and concerning matter(s) of God they were doubtful. And doctrines of many kinds and different manners of faith, and skepticism and different legislations appeared in the world . . . . And several decisions and judgments were made (in conformity) with diverging doctrines and diverging faiths, and this Religion was in confusion and people in doubt.

And afterwards (besides those) (there) were other Magians and theologians of the Religion; compared with those scoundrels (these) were submissive and sorrowful. And an assembly of them was summoned to the temple of the victorious Farrbag Fire; and (there) were speeches and considerations of many kinds on this (subject). (They said) that "it is necessary for us to seek means in order that someone of us goes and brings information from the spirits, so that people who exist in this time will know whether these *yazišn* and *drōn* and *āfrīnagān* and *nērang* and ablution(s) and purification(s), which we bring (to God) according to (our) rite, attain to God or to the Devs, and come to help of our souls or not."

And afterwards, with the consent (coming) from the theologians of the Religion, they called all the people to the temple of the Farrbag Fire. And from the whole they separated seven men who were most undoubtful about God and the Religion and whose own thought(s) and speech(es) and deed(s) (were) most fit and righteous. And they said: "Sit down in your turn, and from (among) you choose one who (is) good for this enterprise, and most sinless and most renowned."

And afterwards these seven men sat down, and from (these) seven three (men) were chosen, and from (these) three one, named Wīrāz [was chosen] . . . .

And then this Wīrāz, as he heard that speech, stood upon (his) feet, and joined (his) hands on (his) breast and said: "If you please, then don't give me the *mang*[3] which I don't desire, until you, Mazdayasnians, cast lots for the trial. And if the lot comes to me, I'll willingly go to that place of the pious and the wicked (souls); and I'll exactly refer and truly bring this message."

And then the trial lots of these Mazdayasnians were drawn . . . [and] each of the three lots came to Wīrāz.

[II.1] And seven sisters were of this Wīrāz and all these seven sisters were as wives of Wīrāz . . . [they said]: "Don't make this thing, you Mazdayasnians . . . (if) you send (him) from this realm of the living to that of the dead before (the natural) time, a fulfillment of violence is made upon us without reason."

And afterwards the Mazdayasnians, when they heard these words, gave satisfaction to the seven sisters, and said: "We shall deliver Wīrāz to you within seven days, perfect in (his) body; and the glory of this journey will remain on this man." And then they became agreeing.

And afterwards this Wīrāz, before the Mazdayasnians, joined (his) hands on (his) breast and said to them: "It is of (our) custom that first I (have to) worship (the departed)

3. Belardi translates *mang* as 'narcotic'.

souls, and eat food, and accomplish the prescription(s), then you will give me wine and *mang*." The theologians ordered: "Do it accordingly."

And afterwards these theologians of the Religion in the abode of the Spirit selected, for that good (man); a thirty-step (wide) place. And this Wirāz washed (his) head and (his) body, and put on a new garment; perfumed (himself) with an agreeable perfume, spread a new, clean blanket on some appropriate boards. At a (given) moment (he) sat down on the clean blanket, and performed the (rite of the) *drōn*, and remembered (the departed) souls, and ate food. And afterwards the theologians of the Religion filled three golden cups with wine and with the Wishtāspian *mang*, and they gave one cup over to Wīrāz . . . and the second cup . . . and the third cup . . . . And he drank that wine and *mang* and consciously said grace and fell asleep on the blanket.

The theologians of the Religion and the seven sisters . . . chanted the Gathas and kept watch in the dark. . . . The seven sisters together with all theologians and herbads and mobads of the Religion of the Mazdayasnians did not in any manner neglect protection (to the body of Wīrāz).

[III] [The third chapter relates how Wīrāz arises, asks for and receives a meal as his due, and dictates his vision to a scribe.]

§25 In Wīrāz's vision, he arrives in the spirit world at the bridge over which the dead must pass, and because of his extraordinary righteousness is welcomed across it by two spirit guides who remain with him and interpret what he sees. For a while he beholds multitudes in splendor and enters into the presence of beings whom he is told are Ohrmazd and his entourage. Then there begins the spectacle of horror and violence that occupies the largest part of the narration. He perceives a vast territory filled with writhing bodies and sees in fine detail the terrifying circumstances of each: some ceaselessly being torn apart by demons, some crushed by snakes, and so forth. In each case his guides relate their torment to an infraction of the moral or ritual injunctions propounded by the Magi.

§26 It is not possible to determine the date of this text with much confidence. Although the extant version is not older than the ninth century C.E., there are reasons to believe it was originally composed somewhat before the third century establishment of the Sasanian state (Belardi 1979: 121). At all events, it was written at a time when it had apparently ceased to be understood that the Iranian ceremonies had once included the consumption of the drug sauma. Since one did not then think of *hōm/haoma* as a plant which produced visions, that term would not have been used for the drug in this text even if that drug was sauma. There is, however, little reason to expect that the Middle Persian word *mang* identified more precisely the substance given Wīrāz than as a "psychoactive drug." In the contexts in which *mang* occurs its sense is primarily pharmacological, not botanical, and there is no warrant to assume it to have

named a specific plant.[4] The drug given Wīrāz was clearly an extract, and its identification by the term *mang* does not disqualify it as the sauma drug, which must surely have been included in the same pharmaceutical class as the extract which Wīrāz consumed.

§27 That this *mang* was indeed sauma can also be inferred from the circumstances of its administration to Wīrāz. This occurs at just that point in the recital of the *Yasna* liturgy appropriate for consuming sauma, that is, where the *Hōm Yasht* is now recited (see below, §133). Wīrāz sits before the fire, performs the *drōn* rite (see below, §§133 and 152), and has the *mang* handed him in three cups (corresponding to the three swallows of *haoma* in the *Yasna* preceeding recitation of the Gathas).

§28 The drug given Wīrāz is, moreover, not simply called *mang* but specifically the "*mang* of Wishtāsp". The latter is clearly linked with sauma in a ninth-century Pahlavi text, the *Dēnkird* (Book VII, 4.84-86), itself from a lost Avestan source, which tells how Kay Wishtāsp (Avestan Kavi Vīštāspa) accepted Zoroaster's (i.e. Zarathushtra's) teaching. Here it is said Wishtāsp was given *hōm* and *mang*.[5] This was regarded as the most important single event in the

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4. The fact that *bang*, while being the Pahlavi gloss of *mang*, also appears as a Persian name for henbane (*Hyoscamus*) in early Islamic pharmacognosy, does not necessarily mean that *mang* specified henbane in the context of Zoroastrian literature. As a loan word into Arabic, *banj* (with verbal forms) has been used of intoxicating plants in general and not exclusively of henbane (see Rosenthal 1971), while the use of Persian *bang* since at least the 13th century for both henbane and hashish implies its earlier reference to a general class of substances (as does also al-Bīrūnī's 11th-century use of *banj* for datura). Schwartz (below, §§198-222) shows that Avestan *banga-*, long supposed to be the etymon of Middle Persian *mang* and to have an extensive history as a Eurasian *"Wanderwōrt"* (see, e.g. Eliade 1972: 399-402; Crevatin 1983) was, in fact, never a name of a specific drug or plant.

Henning's (1951: 32-34) claim that the story indicates the *mang* given Wīrāz was a deadly poison and hence must have been henbane seems (as Belardi notes) directly opposed by the text itself, for Wīrāz's sisters *ask* if the drug will harm him and are assured it will have no ill effects. Wīrāz's behavior does not particularly suggest that he thought he was risking his life, and no motive is supplied for why he would have been willing to do so. It would certainly have won few converts to the cause of the Magi if Wīrāz had never regained consciousness, and the danger of a mishap would not have been lessened by selecting the most righteous of men to take the chance. If *mang* was thought to be potentially lethal to the righteous, it would have been disadvantageous to suggest that religious knowledge depended on its use, for this would discourage belief that the Magi easily and frequently put themselves in contact with the spiritual world.

5. Although this *Dēnkird* account (Madan 1911: 642.13f.; Nyberg 1964: 60.16) of the episode seems to have been directly translated from Avestan, the fact that Avestan *haoma-* could refer to the nonintoxicating routinely administered ritual drink may have motivated the addition of the word *mang* to indicate a drug with the capability of causing Wishtāsp to have an experience of the sort indicated. Somewhat later versions of the episode later texts omit the original word *haoma* altogether and describe the drink as "*mang* and wine" or "(*drōn*) wine". Thus, in the *Pahlavi Rivāyat* narration of the same incident (*Pahlavi Rivāyat* 140.6-10; see below, §29), Wishtāsp drinks *mang* in wine. In the account of the Persian *Zarādušt-Nāma* (ed. F. Rosenberg 1904) written in the 10th century C.E. (so dated by Rempis 1963:341) and in

legendary history of the Zoroastrian religion. In order to influence Kay Wishtāsp, Ohrmazd (Avestan Ahura Mazdah) sends three spirit beings to promise that ruler a life of 150 years and an immortal son, on condition that he accept Zoroaster into his court, and, if he refuses to do so, to tell him that he will be immediately destroyed (through being devoured in midair by birds). Although Wishtāsp still declines, the threat is not carried out. Instead, Ohrmazd decides to cause him to see displayed for him in the spiritual world the future benefits he can realize by accepting Zoroaster:

> . . . Also to visibly show Wishtāsp victory over Arjāsp and the Hyōnians, his own higher place and imperishable dominion, health and glory, Ohrmazd the creator sent at the same time to the residence of Wishtāsp the divinity Nērōsang as a messenger to the Ameshaspand Ashawahisht [Avestan *Aša- Vahišta* - 'Best Truth'] to cause Wishtāsp to consume the illuminating nourishment which would give his soul eye vision over the spiritual (*mēnōg*) existence, by reason of which Wishtāsp saw great mystery and glory. As it says in the Avesta: "Ohrmazd the creator said to the divinity Nērōsang: 'Go, fly on, notable member of the community Nērōsang, to the residence of Wishtāsp, rich in cattle, of wide renoun, and say this to Ashawahisht: "Powerful Ashawahisht, take the excellent bowl, more excellent than the other bowls which are well made (that is, that cup so excellent should be made in lordliness) for conveying for our sake *hōm* and *mang* to Wishtāsp and cause the lofty ruler Kay Wishtāsp to drink it."' Agreeing to these words, Ashawahisht took the excellent bowl and caused the lofty ruler Kay Wishtāsp to drink it and the lofty ruler Kay Wishtāsp lay down. When the lofty ruler Kay Wishtāsp came forth from (being) *stard*, he said to Hutōs [his wife and sister]: 'Let it be, Hutōs, that Zoroaster Spitāma come swiftly to me with zeal. (Let) Zoroaster Spitāma quickly expound to me the Religion (*dēn*) of Ohrmazd and Zoroaster.'" [6]

Wizīrgird-ī Dēnīg 19 (as transcribed by Molé 1967: 132-135), it is the wine of the *drōn* ceremony which is given to Wishtāsp: "On the day Māraspand [<Avestan *Məθra- Spənta-* 'Sacred Mantra'] of the month Spandarmad [<Avestan *Spənta- Armaiti-* 'Sacred Obedience'] Zoroaster, with the help of the Lord Ohrmazd, spread *barsom* and performed the *drōn* rite. On [the occasion] of that *drōn* were placed things such as milk, a flower, wine, and pomegranate [*abār ān drōn čiyōn sir ud gul ud bādag ud anār nihād*]. He gave the wine to Wishtāsp so that he slept and saw the Best Existence". This provides an additional example of the practice, seen in the *Ardā Wirāz Nāmag*, of administering sauma at the *drōn* ceremony (i.e. after the recital of *Yasna* 8.4), rather than after the recital of the *Hōm Yasht* as in the full *Yasna* (see below, §133).

6. [*Dēnkird* VII 4.84; Madan 1911:642f.] . . . *wēnābdāg ī nimudan ī ō Wištāsp pērōzīh abar Arjāsp ud Hyōnān xwad-iš abardar gāh ud ašāzīsnīg xwadāyīh ud rāy ud xwarrah rāy frēstēd ī andar ham zamān Dādār Ohrmazd Nērōsang yazad ō mān ī Wištāsp pad aštagīh ō Ašawahišt Amahraspand xwārēnd ān ī ō Wištāsp pad ān gyān čašm pad abar wēnišnīh ī ō mēnōgān axwān rōšngar xwarišn kē rāy-iš dīd Wištāsp wazurg xwarrah ud rāz. 85. čiyōn ēd ī dēn gōwēd ku u-š ō Nērōsang yazad guft ku kē dādār Ohrmazd ku be raw, waz, Nērōsang hanjamanīg abar ō mān ī Wištāsp ī abzār gōspand dūr frāz nāmīg ud ēn gōwē ō Ašawahišt ku Ašawahišt +pādixšāy stānē tašt ī nēk ī abar nēktar az ān hutaštagān ī kard (ku jām ēdōn nēk pad xadāyīh sāyēd kardan) abar hōm ud mang amāh rāy barē ō Wištāsp u-š pad ān abar frāz xwārēn dahibed burzāwand Kay Wištāsp ī-š ī ōy gōwišn padīrift Ašawahišt ī pādixšāy u-š stān tašt ī nēk u-š pad ān frāz xwarēnēd dahibed burzāwand Kay Wištāsp ud nibast* [Widengren

§29 In this account the drink causes Wishtāsp to see into *mēnōg* existence and to become *stard* (or *stird*). The parallel account in *Pahlavi Rivāyat* 140.6-10 relates: "When [Wishtāsp] drank, he became *stard* immediately, and they led his soul to paradise and showed him the value of accepting the Religion. When he emerged from *stard*-ness he called for Zoroaster . . . " (*ka-š xward būd pad gyāg stard būd u-šān ruwān be ō garōdmān nīd u-šān arzōmandīh ī dēn padīrift ān be nimūd ka az stardīh frāz būd a-š . . . wāng kard . . . Zarduxšt*). Etymologically *stard* or *stird* means 'spread out, sprawled'. It is used in Pahlavi to indicate the result of being stunned or dazed from a blow and, with few exceptions, is experienced by evil creatures; for example, demons become *stard* upon hearing Zoroaster recite the *Ahuna Vairya* prayer. Confirmation that the *Yasna* rite in which sauma was drunk was known to induce the *stard* condition is provided by a simile in *Yōišt ī Fryān* 2, 7-8: "As soon as the sorcerer Axt heard these words, he became as *stard* as when a man who performs a *Yasna* becomes *stard* (*ud Axt ī jādūg čiyōn ka-š ān az-iš āšnūd stard be būd čand ka mard ī yašt-ē be kunēd stard būd ēstēd* [Haug and West 1892: 212]).

§30 Fundamental to ancient Iranian religion was a belief in two existences, the material, tangible, visible existence (Avestan *gaēiθya-*, Middle Persian *gētīg* or *astōmand*) and the intangible, invisible, spirit existence (Avestan *mainyava-*, Middle Persian *mēnōg*), as was glimpsed by Wīrāz and Wishtāsp by means of sauma. This "spiritual" existence (for which see especially Shaked 1971) differs from the conception of the spiritual realm in other Near Eastern religions in being neither morally superior nor necessarily more sacred than the material world. Ohrmazd created the material world to assist him in defeating the Evil One in the spiritual world. He does not, however, create material existence directly, but first creates it in spiritual form. All material things and creatures exist simultaneously in spirit form. These spirit forms include the double or *frawahr* (Avestan *fravaši-*) of each person, living, dead and unborn. The overall appearance of this intangible, *mēnōg*, world may in many respects resemble the material world but in addition to the forms of all past present and future creatures of Ohrmazd, it encompases the pandemonium generated by the Evil Spirit. The creations of the Evil Spirit are not generally to be observed in the tangible world of ordinary experience but in essence have

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1979: 348-350, following Nyberg 1974: 184b, in place of *nibast*, reads *šast nasāi* 'lay down, a corpse.' However, a corpse being a locus of evil according to Magian conventions, it is highly unlikely that Wishtāsp's body would have been abandoned to that state so casually, for in the very next sentence he is indicated not to have died but only become *stard*. As Molé saw, the letters *dyh* which appear before *dahibed* are dittography.] *dahibed burzāwand Kay Wištāsp ka +az stard frāz būd u-š ō Hutōs ē guft ku bawēd Hutōs kē Spitāmān Zarduxšt tēz ō man be ēd rasēd pad tuxšāgīh Spitāmān Zarduxšt tēz ō man ē nigēzēd dēn ī Ohrmazd ud Zarduxšt.*

only *mēnōg* existence, although they may "borrow" material forms (such as reptiles and invertebrates, for all matter is the creation of Ohrmazd. Evil spirits pervade the intangible world (except of course within the confines of the "Best Existence" or heaven).[7]

§31 The consumption of sauma may have been the only means recognized in Iranian religion of seeing into *mēnōg* existence before death; at all events, it is the *only* means acknowledged in Zoroastrian literature and, as we have seen, is the means used by Ohrmazd when he wishes to to make the *mēnōg* existence visible to living persons. In ancient Iranian religion there is little evidence of concern with meditative practices which might foster development of alternative, nonpharmacological means to such vision. In Iran, vision into the spirit world was not thought to come about simply by divine grace nor as a reward for saintliness. From the apparent role of sauma in initiation rites (see Chapter 6), experience of the effects of sauma, which is to say vision of *mēnōg* existence, must have at one time been required of all priests (or the shamans antecedent to them). Since sauma was the means by which Ohrmazd brought such vision to Zoroaster's champion, Wishtāsp, there is no reason to doubt that sauma would also have been the means whereby Zoroaster (who as a *zaotar* consumed sauma in *Yasna* rites) also saw into *mēnōg* existence and drew from it his knowledge of Ohrmazd and his revelation.

§32 The Pahlavi epitomes of the lost Avestan biography of Zoroaster include allusions to *hōm* (*haoma*) which suggest that that substance was of great importance in the Avestan account of his prophetic mission. For instance, Zoroaster is reported in Pahlavi books to have been created within a twig of *hōm* (see below, §54 n.13) and to have been born as a result of his parents' consumption of an extract of that twig (*Dēnkird* VII 2.25-31; see below, §93).[8] Elsewhere (*Zātsparam* 4.14-16), the *frawahr* 'spirit form' of Zoroaster is said to reside in *hōm*. In the Avestan *Yasna* liturgy Zoroaster is said to come to the drinker of *haoma* (*Yasna* 8.1) and Zoroaster is also said to have been granted as a son to Pourushāspa as a reward for the latter's preparation of *haoma* (*Yasna* 9.13, see below, §92). The Pahlavi biographies say Zoroaster's initial revelation occurred in connection with his entering a river for (or of) *hōm* water (*Zātsparam* 21; *Dēnkird* VII, 3.51), but do not further elaborate the means by which he came to see the other world. The Pahlavi texts, however, were completed only in the predominantly Muslim setting of ninth century Fars, and at that time, because of the vulnerability of the Zoroastrians to criticism by

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7. Confusion could presumably result among such multitudinous forms, for instance, when Zoroaster first beheld the divine beings (*Ameshaspands*) he thought they were demons (*Epistles of Manuščihr* I. 10.9; West 1882: 319; Kanga 1985).

8. According to the *Dādistān-ī Dēnīg* (48.14 [*K35* 165*v*.15-17]) 'Through *haoma* the world is occupied by creatures. By means of *haoma* Zoroaster was created': *hōm ān-iš gēhān dāmānōmand hōm kē-š dahišn ī Zarduxšt abar būd.*

Muslims and their tenuous status as a "People of the Book," the Zoroastrian priests who wrote them may have deemed it imprudent for canonical works to explicitly stress intoxication by sauma as a source of religious belief. A similar defensiveness may be the reason for the entire absence from the Pahlavi sources of explicit acknowledgement that intoxication was *ever* involved in Zoroastrian ceremonies and that it was intoxication to which the ritual consumption of *hōm* referred, though it is also likely that by the ninth century few Zoroastrian priests themselves could still have been aware of the intoxicating property characterizing the Avestan *haoma*.

§33 One Pahlavi account, however, exists which describes how Zoroaster came to confer with Ohrmazd and indicates that in the original Avestan his revelation was indeed said to have occurred through *haoma*. The account is part of an introduction to the *Zand ī Wahman Yasht*, a ninth-century apocalypse. This introduction seems to have been a secondary addition to the text because it describes Ohrmazd interpreting Zoroaster's dream of a tree with branches of seven metals, a role which is rather uncharacteristic for Ohrmazd and has evidently been derived from the Biblical Book of Daniel.[9] Before the episode of this dream, the introduction describes a situation (very similar to the events in the *Ardā Wīrāz Nāmag*) in which Zoroaster, during a sleep of seven days brought about by Ohrmazd's administration to him of "liquid omniscient wisdom," sees the condition of the righteous and the unrighteous in the other world. Since, according to the Pahlavi summary of the lost Avestan *Waršt-mānsr Nask*, "omniscient wisdom was produced for Zoroaster through *hōm*,"[10] the "liquid omniscient wisdom" here apparently refers to sauma. There seems to be no plausible explanation for the attachment of this introduction to the *Zand ī Wahman Yasht* except as an attempt to give to that text the appearance of having come from an Avestan source. The formal feature adopted, namely, the sequence of having Ohrmazd administer sauma to Zoroaster, who then perceives the state of things in *mēnōg* existence, indicates that texts of Avestan origin must have existed at the time this introduction was created which

9. The "mixed iron" of the seventh branch of Zoroaster's tree is parallel with the iron mixed with clay at the foot of the statue in Nebuchadnezzar's dream, which, through Daniel, God interprets as representing the Ages to Come. As Jacques Duchesne-Guillemin (1982) has brought to light, "mixed iron" must have arrived in the Iranian text from *Daniel* 4, for the technique of casting large statues in second century B.C.E. Mesopotamia resulted in the mixing of iron and clay as a permanent part of the base of the statue, whereas from the perspective of the Iranian tradition there is no explanation for the presence of "mixed iron" in the prophecy at all (the parallel is not explained by Boyce's [1984] suggestion that the mixed iron could have referred to iron ore, which, at all events, is without metallic properties).

10. *Dēnkird* IX.36 (Madan 1911: 851.1) *u-š mad ān ī hōm urwāhmanīh nimāyišn ud sagrīh u-š mad xrad ī harwisp āgāhīh* 'and to [Zoroaster] came the *haoma* joy-revelation and satiation of *haoma* and omniscient wisdom came to him'.

presented a similar origin for the revelation of Zoroaster. The passage in question (*Zand ī Wahman Yasht* III, 6-22) reads:[11]

> (6) Ohrmazd the Sacred [*abzōnīg*= Avestan *spənta-*] Spirit, creator of the righteous corporeal existence, took the hand of Zoroaster and put liquid omniscient wisdom into it, and said "drink it." (7) And Zoroaster drank it and omniscient wisdom was mixed into Zoroaster. (8) Zoroaster was within the wisdom of Ohrmazd for seven days and nights. (9) Zoroaster saw in the seven earthly continents men and useful animals: how many individual hairs, one by one, which they had from the back to the head. (10) He saw shrubs and trees—how many were the roots of plants in Spandarmad the earth, that is, how many had grown, had become mixed (therein). (11) On the seventh day omniscient wisdom was taken back from Zoroaster. (12) Zoroaster reflected: "I saw (something) in the pleasant Ohrmazd-created dream; I have not yet recovered from the dream." (13) He raised both hands and repeatedly rubbed his own form. "From the end of the time I slept I have not (yet) recovered from this pleasant Ohrmazd-created dream." (14) Ohrmazd said to Zoroaster Spitāma: "What did you see in the pleasant Ohrmazd created-dream?" (15) Zoroaster said: "Sacred Spirit Ohrmazd, creator of the corporeal world, I have seen a wealthy (person) of much property who was notorious in body and of contemptible *soul-form and he was in hell; (he) did not seem exalted to me. (16) I saw a poor (person) who, out of necessity, had not property but a fat soul in heaven; (he) seemed exalted to me. (17) I saw a childless, powerful person and he did not seem exalted to me. (18) I saw a humble (person) with many offspring; (he) seemed exalted to me. (19) I saw a tree with seven branches on it, one gold, one silver, one copper, one brass, one lead, one steel and one mixed iron". (20) Ohrmazd said to Zoroaster Spitāma: "This is what I prophesy: (21) The archetypal tree which you saw is the material existence which I, Ohrmazd, created. (22) Those seven branches which you saw are the seven ages which have come."

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11. *Zand ī Wahman Yasht* III, 6-22: *u-š ān ī Zarduxšt dast frāz grift u-š Ohrmazd mēnōg abzōnīg dādār ī gēhān astōmandīh ahlaw u-š xrad ī harwisp āgāhīh pad āb kirb abar dast ī Zarduxšt kard (7) u-š frāz xward u-š xrad ī harwisp āgāhīh pad Zarduxšt andar gumēxt. (8) 7 rōz šabān Zarduxšt andar Ohrmazd xradīh būd. (9) u-š be dīd Zarduxšt pad haft kišwar zamīg mardōmān gōspandān ku harw yak mōy čand pad pušt tāg tāg sar ō ku dārēd. (10) u-š be dīd ud dar ud draxt kē čē čand rēšag ī urwarān pad Spandārmad zamīg ku čand rust ēstēd ku gumēxt ēstēd. (11) u-š haftom rōz šabān xrad ī harwisp +āgāhīh az Zarduxšt abāz stad. (12) Zarduxšt pad ēd dast ku pad xwamn ī xwaš ī Ohrmazd dād dīd az xwamn nē winnārd hōm. (13) u-š harw 2 dast burd ān ī xwēš kirb abāz mālīd ku sar zamān xuft ēstōm nē winnārd hōm az ēn xwāb ī xwaš ī Ohrmazd dād. (14) guft-aš Ohrmazd ō Spitāmān Zarduxšt ku-t čē dīd pad xwāb ī xwaš ī Ohrmazd dād. (15) guft-aš Zarduxšt ku Ohrmazd mēnōg ī abzōnīg dādār ī gēhān ī astōmandān dīd hom hangad ī was xwāstag kē pad tan dušraw ud +ruwān-kirb* [In MS DH. [illegible], in K20. [illegible] for [illegible], cf. *ruwān kirb* at Madan 1911: 647.16] *nizār ud pad dušōx būd a-m nē burzišnīg sahist. (16) a-m dīd driyōš ī nēst xīr ī ačārag u-š ruwān frabīh pad wahišt a-m burzišnīg sahist. (17) a-m dīd tuwānīg nēst frazand a-m nē burzišnīg sahist. (18) a-m dīd skōh ī was frazand a-m burzišnīg sahist. (19) a-m dīd draxt-ē kē 7 azg padiš būd yak zarrēn yak asēm yak rōyēn ud yak brinjēn yak arzīzēn yak pōlāwadēn yak āhan čē gumixt ēstēd. (20) guft-iš Ohrmazd ku Spitāmān Zarduxšt ēn ān ī ō pēš gōwam. (21) draxt ī bun ī tō dīd ān gētīg hast ī man Ohrmazd dād. (22) ān 7 azg ī tō dīd ān 7 āwām hast ī rasīd.*

§34 To summarize, the three Pahlavi accounts are consistent in showing that sauma brought about a condition outwardly resembling sleep (i.e, *stard*) in which targeted visions of what is believed to be a spirit existence were seen. Essentially consistent with these accounts is a passage found in two stone inscriptions written in Fars about 300 C.E. by Kirdīr, the founder of the Sasanian Zoroastrian ecclesiastical establishment. In the analyses of Back (1978), Brunner (1974), Gignoux (1979; 1981; 1984), and Skjærvø (1985), Kirdīr's inscription asserts in this passage, as a basis of his claim to religious authority, that his spirit double visited the other world and was shown heaven and hell. The account thus parallels the *Ardā Wīrāz Nāmag* in reaffirming the reliance placed on a vision of *mēnōg* existence as the means to religious truth. Kirdīr does not say how his vision came about, perhaps because it would have been unsuitable to the political purposes of his inscription, but the precedents we have examined point to the possibility that he would have resorted to the same means used by Zoroaster and Wishtāsp; that is, sauma.

Harmel Intoxication

§35 As is well known to researchers, there are significant differences in the patterns of effects of psychotropic ("hallucinogenic") drugs of different composition. The salient features of the ancient Iranian religio-metaphysical outlook which cannot clearly be attributed to the Indo-European background may be regarded as conditioned by the particular effects of sauma upon a tradition developed over many generations of Iranian priests in the greater Iranian area. The Pahlavi accounts show that sauma brought about a condition outwardly resembling sleep (i.e. *stard*) in which visions of what was believed to be a spirit existence were seen. They also show that the experience of sauma was the source of revelation in Iranian religion. In order to decide if sauma could have been harmel it is necessary to examine what evidence there is that the consumption of harmel could have led to the experiences reflected for sauma in the Iranian religious data.

§36 To directly compare the psychopharmacology of *Peganum harmala* with that of sauma, however, involves a methodological difficulty. Our data for the experience for which sauma was valued in Iran are extrapolated from Zoroastrian Middle Persian texts which, although only compiled in the ninth century C.E., reproduce demonstrably older material, much of it taken directly from lost Avestan soures. These texts reveal aspects of a cultural-religious matrix which gave shape and content to the subjective effects of sauma and took shape and content from those effects, and which prevailed when sauma was in actual use. This matrix seems to have altogether disintegrated with the Islamic conquest of Iran in the seventh century C.E. As a result of the collapse of this matrix, one cannot expect to find significant use of sauma as an intoxicant in Iran today, and indeed one does not find *Peganum harmala*, nor any

psychotropic plant, regarded as a source of authentic knowledge in Iran during Islamic times. The subjective experiences of modern Westerners who would consume the drugs of harmel can have but limited relevance, in lack of a traditional context giving form and meaning to the experience. Zoroastrians of today, far from the ancient mythological world of their ancestors, after centuries of influence of Islam, Christianity, and finally modernism, not at all associating their faith with intoxication, would hardly yield suitable testimony or be willing to undergo the frequently harrowing effects of drugs such as these.

§37 What is called for is evidence from another people, one whose culture has arisen, like that of archaic Iran, alongside the same psychoactive drug. Here would be sought parallels to what has been found for ancient Iran as regards the way the drug is used and the belief system it helped shape. Precisely such a situation exists in the upper Amazon and contiguous areas of northwestern South America, where native peoples extract the same psychoactive alkaloids as contained in *Peganum harmala*, the β-carbolines harmine, harmaline, and tetrahydroharmine, from *Banisteriopsis caapi,* a malpighiaceous vine found throughout this region.

§38 *Banisteriopsis caapi* is consumed by perhaps fifty tribes and groups (Friedberg 1965) under the name *yagé* (or *caapi, ayahuasca, natemä, xuma, jauma,* etc.).[12] The *Banisteriopsis caapi* is usually not consumed alone but with the addition of other plants. Frequently these additives, which are said to intensify the *yagé*'s effects (Rivier and Lindgren 1972; Schultes 1957 and 1982; Pinkley 1969), are plants containing another alkaloid, N,N,dimethyltryptamine. The degree to which the presence of these and perhaps other additive plants alters the effect of *yagé* has not yet been established, but may be considerable (McKenna *et al.* 1984a and 1984b). Nevertheless, because *yagé* seems always to be based on an infusion of *Banisteriopsis caapi*, and in some cases apparently consists only of that species, it seems justifiable to regard the psychopharmacological data on *yagé* as chiefly reflecting the properties of the harmala alkaloids.

§39 Close relationship has also been reported by Dr. Claudio Naranjo between the effects of *yagé* on shamans in Amazonia and the effects of pure harmaline, which he administered to urban volunteers in Chile. The following are some of his observations on the subjective effects of *yagé* and of harmaline, drawn from notes which he has kindly made available to me.

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12. *(Oni) xuma* in Amahuaca means '(visionary) extract' (Lamb 1975 [who does not clarify the phonetic value of "*x*"]); *jauma* (pronounced "hauma") designates the *Banisteriopsis* preparation among Guarani Indians of Amazonas medio (P. Naranjo 1983: 97; R. Karsten 1964:95). An etymological connection with Iranian **hauma-* is, of course, impossible. Luna (1986: 171-173) lists these and over 40 additional local names.

The "visions" are frequently called "dreams," and rightly so, for these do not constitute true hallucinations, but vivid imagery contemplated with closed eyes. Usually the "dreaming" individual lies still—so much that among the Jivaro, for instance, the special individual huts where the person who has taken *yagé* goes are called "*sonaderos*" 'dreaming places.' There are exceptions to the immobility of the "dreamer," however. The effect of *yagé* is that of making oneiric activity possible while awake, so that the person may choose to move or engage in specific actions and still contemplate his visions. The typical instance is that of the shaman, who may sing of his visions while still in contact with a reality other than that of wakeful consciousness.

Yagé is used chiefly by shamans, even in the case of tribes where it is also used by nonshamans, the individual's initiation to the drug is under a shaman's direction. Shamans are persons generally distinguished by exceptional capacity for experiencing the supernatural, which they do through *yagé*. The experiences for which the drug is valued are not, however, immediately available even to those who eventually become shamans. Shamans assert they must learn to use *yagé* and that initially their visions may be incoherent or of threatening monsters. During initiation as a shaman the novice may drink *yagé* for many consecutive days until he is able to learn from nature and the spirits and see the visions his guide considers necessary and meet and ally himself with at least one spirit guide. The power of shamans is dependent on such guides.

While the common man experiences terror, the shaman is at home with the beings *yagé* reveals to him. It may have taken him months or years to reach the depths of hell or the heights of heaven, but once he has done so, these doors are open to him, he will need only a short time now, with the help of *yagé* to travel from one world to another there to meet the spirits he must contact and summon to his aid. Fully initiated shamans continue to take *yagé* for healing, initiations, presiding over festivities, prophesying and making decisions and before hunting and battle. In the latter connection, *yagé* is taken for a function that transcends mere practicality: that of ascertaining that men are acting in accordance with cosmic laws, the will of the gods, or the balance of nature. In a situation as delicate as that of taking the life of other beings, it is quite understandable that men should seek supernatural confirmation for the rightness of their action.

A second use, in small quantities, seems to be that of a stimulant. Hunter and warrior alike may chew stems of *Banisteriopsis* on their way to the site of action in order to see better.

It has sometimes been reported that the drinking of *yagé* is immediately followed by a frenzy of aggressive behavior. Since, however, about half an hour is required for the absorption of the drug, the exhibition of frenzy may manifest the individuals summoning up a feeling that his tradition prescribes as the desirable attitude in which to place oneself before the onset of the drug's effect. This is an attitude of courage in confrontation with the demonic presences by which he may see himself surrounded. Beyond this there lurks in the experience of the drinker the confrontation of destiny as a psychological, rather than physical, reality. Sometimes death itself is personified. At others, the agents of death—the spirits of disease—threaten the initiate; still, at other times he may feel that he is about to be devoured by fierce animals. In all such instances he must not be afraid. If he can do this, he will be transformed by his experience. I have little

doubt that the confrontation of death, or an intensified awareness of mortality, is a salient trait of the typical *yagé* experience. If this is so, we should think of *yagé* as an ordeal in itself.

Among non-Indians to whom I have administered the *Banisteriopsis* alkaloids, the almost universal reaction is that of lying flat with eyes closed. Only a few subjects have felt enough energy to sit up or move, or have had enough interest in contacting their environment. Yet there appears to be a relationship between the individual's physical well being, the amount of movement displayed, and the quality of his visionary experience. The same individuals who felt at ease in this reality—being able to walk, write or talk with comfort—were those who felt at ease in their visions, these not being nightmares but beautiful scenes. More specifically, the difference between the two lies not in the content of visions, but in the affective component in them, and the role played in them by the beings imagined. The individual who lies in a drowsy state and feels the most physical discomfort and nausea is the same one who visualizes the tiger as an attacker or the snake as a repulsive creature. The person who feels physical comfort and enjoys movement is generally the same one who visualizes the tiger as a friend or the snake as a guide.

I think that the most pervasive "harmaline themes" may be regarded as abstract emotion in the same sense that the content of music is. Specific images contribute different combinations of these abstract emotions or elemental experimental ingredients in the same manner that musical chords are formed by musical notes.

§40 *Yagé* seems generally to be taken in a formal ceremony, such as is described below by G. Reichel-Dolmatoff (1978:11-14), who has studied the use of *Banisteriopsis caapi* by the Tukano Indians of Colombia over a period of many years:

The amount and quality of light are said to influence the sensitiveness of the participants who occasionally should stare for a while into the red glow of the torch or of a hearth fire . . . . Finally, acoustical stimulation is said to be of importance. The sudden sounds . . . are said to release or to modify the luminous images that appear in the field of view after a few drinks of the narcotic potion. As a matter of fact, the entire ritual is orchestrated, so to say, in a very complex fashion, and no sounds, movements, or light effects are quite arbitrary occurences, but obey an overall plan of well-defined and predetermined sensory signals.

Shamans and elders play an important part in these rituals, serving as guides and commentators once the participants begin to feel bewildered by the maze of disquieting visions. They explain and exhort, reciting fragments of myths or of songs, and thus constitute an ever present and most reassuring element of guidance and council in the midsts of, what can be celestial, or nightmarish, visions.

According to the Indians the drug experience can be divided into three stages. In the first stage, after some violent bodily reactions such as vomiting, diarrhea, and profuse perspiration, the person will feel like flying upward through the air toward the Milky Way, and will perceive, with half-closed or completely closed eyes, an increasing number of luminous sensations. After a series of brilliant yellow flashes dancing dots will appear, soon to be replaced by a multitude of small luminous images that

seem to float in space and now begin to change their shapes and colors in kaleidoscopic fashion.

The onset of the second stage is marked by the gradual disappearance of the symmetric light patterns and by the slow formation of larger images of irregular shapes. Now the ecstatic flight takes the person beyond the Milky Way and before him begin to unfold dimensions that offer visions of dreamlike scenes that overwhelm the beholder. Three-dimensional forms, like rolling clouds, begin to fill the visual field and slowly turn into multicolored, recognizable shapes of people, animals, and monsters. In visualizing these figures the explanations of the shamans or the old men are of importance because they constitute an element of imprinting which stabilizes similar visions on future occasions. The Indians see in these visions mythological scenes full of profound significance to the viewer who watches them with apprehension while becoming more and more emotionally involved in trying to interpret the changing images. People say that they can see the Sun-Father and his daughter, the Snake-Canoe of the Creation Myth, the Master of Animals, Thunder-Person, jaguar-spirits and other supernatural beings and that these appear to reenact the Creation. Thus the beholder is present at the construction of the first *maloca* [cult lodge], the execution of the first dance, or the introduction of the musical instruments. But there also appear monstrous animals and menacing shadows in weird shapes. The game animals crowd the scene and—speaking a language that can be understood by humans—clamor for justice and accuse the hunters of killing too many of them.

It is said that the individual "dies" when he drinks the potion and that now his spirit returns to the uterine regions of the Beyond, only to be reborn there and to return to his ordinary existence on this earth when the trance is over . . . . Once inside the womb and, as the Tukano say, "beyond the Milky Way," the person believes he is able to see all the preternatural entities of Creation, to hear their voices, see their brilliant regalia, and what is more, witness them act out the principal scenes of the Creation of the Universe. They will reenact the Creation, or, rather, the beholder will have returned in time to witness the original creation, and so he will be able to see the birth of plant and animal life, the beginning of the institution of the *yarupari* ritual, the establishment of the *yagé* trance, and any other event mentioned in myth and tradition.

But not all the visions are as rewarding as these; sometimes the images are blurred and the person perceives only huge shapeless masses of color moving vaguely in space. And sometimes these shapes will turn into terrifying monsters, into jaguars and serpents that approach and threaten to devour the person, who, terror stricken, will call out in anguish. The beatific vision of the beyond is not achieved by all, but those who have had a glimpse of its peaceful radiance, will tell of its wonders and will yearn to see it again and again. But others will be horrified by the dangers that seem to threaten them, and will be deeply disturbed by the visions.

There are many other occasions when a man might drink *yagé* for some personal reason and shamans are, of course, frequent consumers of narcotic drugs in various forms. The main objective of entering in a trance is, after all, the acquisition of knowledge, a knowledge that is expected to exist in the Otherworld and that people try to obtain from the supernatural beings.

This knowledge includes, according to Reichel-Dolmatoff (1975: 191-192), awareness of spirit beings who are:

> in every aspect, the exact doubles of every man and woman . . . . The idea of the double is fundamental to many Tukano concepts . . . . There is . . ."another world" matching in detail our world of empirical reality, and between these two "worlds" there is thought to exist a thin shell, an invisible wall which can be penetrated only in a hallucinatory trance. Under the influence of *viho* or *yagé* people say they have visited this other dimension and have seen its inhabitants . . . behaving just like ordinary people in this world.

§41 The use of *yagé* among the more aggressive and individualistic Jivaro of eastern Peru is somewhat differently oriented in Harner's (1968) description:

> The Jivaro Indians of the Ecuadorian Amazon believe that witchcraft is the cause of the vast majority of illness and nonviolent deaths. The normal waking life, for the Jivaro, is simply a "lie," or illusion, while the true forces that determine daily events are supernatural and can only be seen and manipulated with the aid of hallucinogenic drugs. A reality view of this kind creates a particularly strong demand for specialists who can cross over into the supernatural world at will to deal with the forces that influence and even determine the events of the waking life.
>
> The specialists, called "shamans" by anthropologists, are recognized by the Jivaro as being of two types: bewitching shamans and curing shamans. Both kinds take a hallucinogenic drink, whose Jivaro name is *natemä*, in order to enter the supernatural world . . . . When I first undertook research among the Jivaro in 1956-1957, I did not fully appreciate the psychological impact of the *Banisteriopsis* drink upon the native view of reality, but in 1961 I had occasion to drink the hallucinogen in the course of field work with another Upper Amazon Basin tribe. For several hours after drinking the brew, I found myself, although awake, in a world literally beyond my wildest dreams. I met bird-headed people, as well as dragon-like creatures who explained that they were the true gods of this world. I enlisted the services of other spirit helpers in attempting to fly through the far reaches of the Galaxy. Transported into a trance where the supernatural seemed natural, I realized that anthropologists, including myself, had profoundly underestimated the importance of the drug in affecting native ideology. Therefore, in 1964 I returned to the Jivaro to give particular attention to the drug's use by the Jivaro shaman . . . .
>
> The use of the hallucinogenic [*yagé*] among the Jivaro makes it possible for almost anyone to achieve the trance state essential for the practice of shamanism. Given the presence of the drug and the felt need to contact the "real," or supernatural, world, it is not surprising that approximately one out of every four Jivaro men is a shaman.

§42 There are parallels in the intoxicant use of sauma in ancient Iran and of *Banisteriopsis* by the Amazonian Indians which show the alkaloids of *Banisteriopsis*/harmel to be suited to purposes similar to those for which sauma was used. In both cases the plant is consumed under the supervison of specialists (who are the shamans/priests) in ceremonies performed for initiations and in connection with the killing of animals for food, and characterized by the chanting of selected songs before a fire. There is also to be considered, however, the more unusual parallelism in beliefs about the spiritual world

with which the use of sauma and *Banisteriopsis* are associated. In both ancient Iran and among the Amazonians the plants consumed in their respective ceremonies are thought to reveal spiritual worlds containing mythological and historical events, heaven and hell, and the precise counterparts of past, present and future entities and events known in the empirical world. The conception of the spiritual world in ancient Iran seems to have been of a superior reality occupied by good and evil spirits and also by spirit forms of all material entities. These relatively unusual ideas are similar to Tukano Indian conceptions, although there is no possibility of a transmission of beliefs between Iran and the Colombian Amazon. These parallel constellations of views of the supernatural must therefore be independent developments, and explanation must be sought in some factor common to both societies. For the Tukano, these conceptions of the spiritual world can be regarded as an outcome of numerous generations of study and interpretation of experiences of the psychopharmacology of the harmala alkaloids, visions induced by which may have the quality of dreams experienced in the waking state (C. Naranjo 1967). Like the dreams of sleep, the visions are experienced as real, but when the eyes are opened, there is no distortion of ordinary vision and, though the visions are sometimes superimposed, there is little confusion between what is visionary and what is tangible reality. It is apparent from the description of the Tukano's "going beyond the Milky Way" that the visions not only seem real, but that those seeing them believe that their content is witnessed by many people, thus giving consensual validity to their reality, while witnessing the simultaneous existence of forms identical to those encountered in ordinary reality inspires a concept of spirit doubles. Since these specific aspects of Tukano beliefs have their basis in the subjective effects of the harmala alkaloids, it follows that the development of parallel beliefs in ancient Iran could have resulted from consumption as sauma of these same alkaloids, obtained from *Peganum harmala*.

3

HISTORICAL AND GEOGRAPHICAL AVAILABILITY OF HARMEL

Iranian Awareness of the Properties of Harmel

§43 Since the ancient Iranians believed in the reality of a spirit world and the need to obtain information regarding it, the fact that harmaline offers a means to see such a world suggests that if they had been aware of the pharmacological potential of *Peganum harmala* they would have made use of it for that purpose. In this chapter we shall see that the availability and conspicuousness of *Peganum harmala* as a drug make it unlikely that it escaped the attention of the ancient Iranians. In Iranian folk medicine today harmel is recognized as having psychotropic properties; to swallow an infusion of the seeds is believed to produce madness.[1] The intoxicating properties of the plant are recognized in its vernacular names among neighboring peoples, such as Arabic *mogannana* (Ducros 1930) 'that which makes mad' and Turkish *mahmur çiç[eği]* (Bedevian 1936) 'dreamy flower'. Evidence for what plants were anciently classed as intoxicants is not directly available because no pre-Islamic Iranian writings on pharmacognosy survive. Early Iranian ethnopharmacology was apparently well developed, however, and contributed much to Islamic knowledge of drugs. Intoxication is recognized as an effect of harmel by some of the earliest Islamic pharmacological writers, for example, Abū Jurayj (*c.* 900 C.E.) in Abū Bakr M. ibn Zakariyāʾ al-Rāzī's *Kitāb al-Ḥāwī fī al-ṭibb* (*Rhazes' Liber Continens*) (Hyderabad 1967:20, 326), and authorities quoted by Ibn Bayṭār (see below) say *Peganum harmala* "intoxicates like wine" (cf. Avestan *maδa-* used for the intoxication of both *haoma* and wine). This may reflect ancient Iranian views about the plant, since the power to intoxicate is not mentioned for harmel by Dioscurides (*c.* 78 C.E.) or Galen (*c.* 180 C.E.), the Greek authors whose works,

1. An extract made by boiling harmel in vinegar is still used for toothache in central Iran. Dr. Mahmoud Omidsalar tells me that his great aunt related to him that once in her childhood she was administered this medication and accidentally swallowed it despite warnings that doing so would lead to madness. She recalled that she "saw everything moving in front of her and beheld wells in the earth." Though she could understand, she was herself unable to speak during the entire day, most of which she spent asleep. Ivanov *et al.* (1965) report that dilute acetic acid extracted 98% of harmel seed alkaloids.

translated into Arabic about 850 C.E., provided the core of systematic Islamic pharmacology.

§44 The most extensive compendium of Islamic pharmacological knowledge is the *Kitāb al-Jāmiʿ li-mufradāt al-adwiya wa al-aγδiya*, written by Ibn Bayṭār in the mid-thirteenth century. The following is the entry on *ḥarmal* (with some rearrangement of subsections) from this work (ed. Cairo 1967; cf. Leclerc 1877-1883: I, 423; Sontheimer 1842: I, 217-219):

[A. The *Ḥarmal* Plant]

[The Arabic translation of] **Dioscurides** [states] "This plant grows in Cappadocia and Galatia in Asia and they name it *mūly*; some call it wild rue (*saδāb γayr bustāni*). This is a shrub which has many stalks extending from one base. Its leaves are longer, softer and more strongly scented than the leaves of garden rue, and the flower is white and the head is a little larger than the head of garden rue and is triangular and contains the seeds, reddish in color, with three angles and of intense bitterness. The seeds are what is used. They ripen in autumn. Mixed with honey, wine, chicken gall, saffron and fennel juice it is useful for weak vision. Some call it *ḥarmalā* and the Syrians call it *basāsā* and the people of Cappadocia call it *mūly* because it is similar in having a black root and white flowers. It grows on hills and in fertile places.

Abū Ḥanīfa al-Dīnawarī [Arab philologist who wrote *The Book of Plants* (*Kitāb al-Nabāt*) about 895 C.E.]: "*Ḥarmal* is of two kinds. One is a kind with leaves like the Egyptian willow and flowers which in being white and fragrant are like jasmine flowers. Sesame oil and moringa seed oil become fragrant with this blossom. Its odor is not like the odor of olives. Its seed is in a capsule like the capsule of *Cassia*. The other kind is that which is called in Persian *isfand*. The capsule of this is round and that of the other is long. The capsule is the vessel containing the seeds."

Ibn Samajūn [d. 1001 C.E.]: "There are two: a white and a red. The white is the Arabic *ḥarmal*, called in Greek *mūly*, and the red is known as common *ḥarmal* and is called *isfand* in Persian."[2]

[B. Pharmacological Properties]

Galen: "It is warm and dry in the third degree. It loosens thick viscid humors and removes them through the urine."

Masīḥ al-Dimashqī [c. 850 C.E.]: "The seed expels tapeworms from the intestines. It is used against colic, sciatica and coxalgia in a pubic compress. It purifies the chest and lungs of viscid mucus and dissipates visceral flatulence."

ʿĪsā ibn Māssa [9th century C.E.]: "We at the Marw hospital use the seed to expel black bile and various kinds of mucus by means of diarrhea. It is of the greatest use in treating epilepsy."

Al-Rāzī [d. 925 C.E.]: "*Ḥarmal* obstructs and breaks up pain. It induces the flow of menstruation and urine. Some physicians say an infusion undoes the black bile, purifies the blood and softens the womb."

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2. The red and white *ḥarmal* are distinguished by the color of the seed capsules. Neither the color nor the roundness of the capsules appears to have genuine taxonomic significance, however, and in Islamic materia medica no practical distinction is made either between red and white *ḥarmal* or between "common" or "Arabic" *ḥarmel*.

Ibn Wāfid [d. 1074 C.E.]: "It is useful to those possessed by love (*asḥāb al-ʿišq*) because of inducing intoxication and sleep."

ʿAlī ibn Rizayn: "It is useful for colds of the brain or the body."

Anonymous: "It clarifies the complexion. It inclines one to coitus. It fattens and stimulates menstruation and urination."

Another: "One and a half mithqal of pulverized seed taken over 12 nights is effective against sciatica. When not available cardamum seed of equal amount may be used."

[C. Preparation]

Ḥubaysh ibn al-Ḥasan [d. 880 C.E.]: "It causes vomiting and intoxicates like wine or nearly so. This is how to employ it as a vomitive: Wash five drachmas of seeds in gentle water several times and dry them, then pound them in a mortar with a wooden pestle and sift through a coarse linen weave. Pour four ounces of boiling water over [the pulverized seeds]. Pound in a wooden mortar and pass through a coarse linen weave and discard the residue. To this infusion add three ounces of honey and two ounces of sesame oil. It is then ready for use and induces strong vomiting."

Isḥāq ibn ʿImrān [d. 901 C.E.]: "One puts two parts of it into a vessel with 30 parts of wine and heats this until one quarter of it evaporates. Ten drachmas may then be successively administered daily to epileptics. It may also be administered for three consecutive days to a woman who has conceived at least once but is unable to conceive again. The proof that the medicine works is that it induces vomiting."

§45 Since the constituents, harmaline and harmine, that are the chief cause of vomiting are also responsible for the intoxicating effects of harmel, the preparation of the drug as an emetic or as an intoxicant would be the same.[3] The first of the two methods of preparation above includes the crushing in a mortar (and filtering) characteristic of the preparation of sauma. Crushing of harmel materials is essential for all their drug uses and can therefore be assumed to precede the boiling of *Peganam harmala* seed in wine as well.[4] This process of crushing must have been important for the preparation of sauma because it is attested in the very name **sauma-/soma-/haoma* - '(plant) submitted to pressing [in mortar] or drink obtained from it'.[5] It is unlikely that the drug would be named from its extraction by pressing if the equivalent results could be obtained by simply chewing the plant materials, as is the case with psychotropic mushrooms.

§46 *Peganum harmala*, shown in Figure 1, is a bushy shrub with numerous 1-2 foot stems extending radially from the apex of a woody tap root. The stems

3. Vomiting is a frequent but not an invariable effect of harmaline ingestion. C. Naranjo reported 18 out of 30 of his subjects responded to harmaline by vomiting (see his comments §39).

4. In R. N. Chopra *et al.* (1965: 221) one reads: "the seeds . . . in an elephant are said to bring about a condition of tremendous excitement whereby the animal loses control over himself, i.e. becomes '*mast.*'" These animals are able to adequately crush the seeds with their teeth. Harmel seeds are also said to produce excitement in horses.

5. From a root **sau* 'to extract'; the formation of Proto-Indo-Iranian **sauma-* is reexamined below, §§187-197.

are much branched and curve upwards towards their ends, bearing alternate multi-lobed leaves and white, five-petaled, half-inch terminal flowers. From these develop pea-sized, 3-lobed seed capsules, the color of which changes from green to reddish brown to dull white as they mature. Each compartment of these capsules contains 11-15 angular dark red-brown seeds.

§47 The total amount of the psychoactive constituents of *Peganum harmala*, harmaline and harmine, is greatest (2-7%) in the mature seeds (Kutlu and Amal 1967: 135; al-Shamma and Abdul-Ghany 1977) and in the roots (1.4 - 3.2%; *ibid.*), but the ratio of these two alkaloids as well as the total amount contained vary seasonally, geographically, and possibly with other factors.[6] Harmaline and harmine are qualitatively similar pharmacologically but differ in potency. Similar subjective effects are reported after oral doses of 4mg./kg. harmaline or 8mg./kg. harmine (C. Naranjo 1967).[7] Much larger doses in mammals (from 20 to 300 mg./kg. harmine [Gunn 1937]) bring tremor, lowering of blood pressure and of body temperature, and ultimately cardiovascular disturbances resulting in death. For a person of average size the characteristic subjective effects of these alkaloids is usually obtained by consuming 5-10 grams of seeds, 10-30 grams of root, or slightly larger quantities of entire fruiting stems of harmel. These are amounts which may easily be prepared for consumption in a hand mortar of moderate size.

§48 As well as these alkaloids, harmal seeds also contain an edible oil (14-17%); nevertheless, the commercial value of the plant has never been great. *Peganum harmala* is the source of a red dye which in early nineteenth-century Anatolia was used in dying the Turkish fez. The substance was obtained by a complex process involving the treatment of harmel seeds for six months with a mixture of saltpeter and sal ammoniac dissolved in brandy. This red dye, which is apparently an oxidation product of the alkaloids (Schutzenberger 1867: 2, 61-67), was later rapidly produced by treatment of seeds with alcohol and sulfuric acid (Goebel 1838). A yellow pigment (and also brown and greenish ones, see Kasumov 1983) can be obtained merely by water extraction of the seeds (Dollfus and Schlumberger 1842). Because of supplying this

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6. The quantity of harmaline may be twice that of harmine in seeds collected in January, with the ratio between the two alkaloids reversed in June (Kamel *et al.* 1970). The total content of harmaline and harmine of roots is greatest in the thicker root parts (Safina *et al.* 1970: 230) and varies from 1.5 to over 3 percent. Root alkaloid content varies significantly seasonally; it is highest in winter and declines after the appearance of flowers and with the maturing of the seeds. From October to February roots reportedly averaged 0.4% harmaline and 1.8% harmine, whereas during August they contained 0.6% harmine and 0.8% harmaline (*ibid.* see also Khashimov *et al.* 1971:382), but specimens collected in Iraq assayed by al-Shamma and Abdul-Ghany (1977) contained nearly twice these amounts.

7. Pennes and Hoch (1959) report oral administration of up to 960 mg. harmine failed to produce hallucinatory effects in their subjects, who were, however, institutionalized schizophrenics.

yellow dye, harmel is sometimes referred to in India as a kind of henna (i.e. as *mhendi* or *goranti*, see Table 1). Investigation of the possible industrial value of these dyes indirectly lead to the isolation and identification of the alkaloids harmaline (Goebel 1841) and harmine (Fritzsche 1847).

Geographical Distribution of Harmel

§49 One may expect that sauma was sufficiently abundant throughout Greater Iran for its use among the various Indo-Iranian groups there to have long continued. In the absence of any indication of the cultivation of sauma or, in the Iranian materials, of any suggestion of either scarcity or local advantages in its supply at any time, sauma should have been easily obtained as a wild plant within the Greater Iranian area. Among the few uncultivated indigenous plants known to contain psychoactive drugs, *Peganum harmala* is uniquely abundant over this territory.

§50 A possible limit to the geographical range of sauma is provided by the fact that no equivalent intoxicant plant seems to have been known to other Indo-European groups. Sauma could well have been unique to the Indo-Iranian peoples because the plant grew where they alone encountered it, and was not available to the kindred peoples occupying lands to the northwest until after the fixation of distinctly different religious practices.

§51 The historical distribution of *Peganum harmala* corresponds to the area which may thus be assumed *a priori* for sauma. In some late Greek writings, *Peganum harmala* is called *περσάια βοτάνη* 'the Persian plant' (Thomson 1955: texts D.11 and T.10), and the center of its distribution seems indeed to have been the Iranian area, where it occupies vast areas of the hinterland.[8] The antiquity of *Peganum harmala* among the Iranian people is reflected by the fact that far-flung later Iranian languages have names for the plant which evolved independently from a single Proto-Iranian form (see below, §61), indicating that the Iranian peoples were acquainted with it from the earliest period. *Peganum harmala* was early known elsewhere in Western Asia; its Akkadian name was apparently *šibburratu* (Von Soden 1978:13,1226; Thompson 1949: 74), cf. Aramaic *šabbārā* (Mandaic *šambra*) '*Peganum harmala*' (Löw 1881: 321). Its dispersal has been as a weed, thriving on the nitrogenous wastes accompanying human settlement and invading disturbed ground. West of Khorasan the plant is increasingly encountered only as a weed on overgrazed, abandoned fields (Thalen 1979: 301 *seq.*) and most typically beside roads. In Iraq, harmel is described as "the ruderial plant *par*

8. A. Engler (1931: 19a, 154) supposed *Peganum harmala* to have originated in Persia. According to M. Zohary (1973: 391): "The center of its distribution range lies within the Irano-Turanian region."

excellence of the desert; it is invariably found along caravan routes, in the vicinity of wells, etc." (Guest and al-Rawi 1966: 93).

§52 In the earliest description of *Peganum harmala*, which is that of the first century C.E. herbal of Dioscurides (III, 45-46; the Arabic translation of which was quoted in §44A), it is described as a variety of rue, namely *πήγανον ἄγριον* 'wild rue' (Wellmann 1907-1914:2, 57-60). From Dioscurides we learn that among the "Syrians" it had the names *βησασά* and *αρμαλά* (i.e. *baššāšā* and *ḥarmalā*), among the "Africans" *χουρμά* in Egypt *ἐπνουβού*[9] (for these names see below, §§265-268), and in parts of Anatolia (Cappadocia and Galatia) *μῶλυ*.[10] *Peganum harmala* does not appear to have become established in Greece, Italy, or elsewhere in Europe much before Dioscurides' time, for Theophrastus (*Enquiry into Plants* 7.4.1; Hort 1916) was ignorant of it. It is now a circum-Mediterranean weed and is found in Eastern Europe as far north as Budapest (Löw 1924). Expansion of the plant into southern Europe seems largely to have occurred after the advent of Islam, for its European names are predominantly derived from the Arabic *ḥarmal* (e.g. Spanish *garmarza*, *harmaga*, *alhargame*, *alfarma*, *armage*, *alharma*, *amargaza*, etc. [Lokotsch 1927]).

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9. The names *χουρμά* and *ἐπνουβού* are absent from the Arabic version of Dioscurides (see Dubler and Teres 1952-1957).

10. Paul Anton de Lagarde (1866: 173 *seq.*) claimed the name *"moly" (Greek μῶλυ)* links *Peganum harmala* with *haoma*. Lagarde's remarks concerned a passage in Plutarch's *De Iside et Osiride 46* on Persian religious practices in Cappadocia in the second century B.C.E. Here it is said that a herb *ὄμωμι* was pounded in a mortar and mixed with the blood of a wolf as an offering to the devil, Areimanos. This herb *ὄμωμι* must be ultimately connected in some way with Iranian *hauma-* (although its use with wolf's blood in offerings to Ahriman is hardly orthodox). Lagarde argued that *ὄμωμι* was a Greek reflex of Cappadocian *μῶλυ* and hence that *Peganum harmala* must have been used in Cappadocia as a substitute for *haoma* (why it would not itself have been *haoma* he does not explain clearly). As was shown by E. Benveniste (1929), Lagarde's effort to derive phonologically *ὄμωμι* from *μῶλυ* is not possible. (Dübner may have independently come to the same conclusion as did Lagarde, however, in emending *ὄμωμι* to *μῶλυ* in his 1867 edition of the Plutarch text [see further Griffiths 1970]). Despite Lagarde's sound intuition into the botanical origins of *haoma*, his discussion of the matter has seemed obscure (e.g. even while professing to corroborate Lagarde's arguments, Brunnhofer [1910] misunderstood him to have identified *haoma* with *Ruta graveolens*). For the forms *ὄμωμι* and *μῶλυ*, see below, §§269-271.

Moly is the name of the magical plant which in *Odyssey* X, 304-306, Hermes provides to Odyssus as antidote to Circe's pottage (Rieu 1946:163). Whether Dioscurides' report that *moly* was an Anatolian name for harmel establishes the botanical identity of Hermes' *moly* is a matter of some controversy (for which see J. Stannard [1967], K. Raehner [1969], and J. Clay [1970]). That harmel was *moly* is made increasingly plausable by the data linking harmel with sauma, for parallels between the mythology of *soma* and that of *moly* have been noted by J.-F. Cerquand (1873:55-58) and analyzed by him as having a common origin. There are also parallels to certain elements of *soma* rituals in the ingredients of the drug prepared by Circe (involving barley, cheese, honey, and Pramnian wine and identical to mixtures attested elsewhere in Greek literature), which have been brought to light by C. Watkins (1978).

Peganum harmala has apparently been present longer in the southern parts of the European U.S.S.R., where is is known as a weed especially characterized by its association with sites of human occupation (for instance in cemeteries, reflected by its Russian name *mogil'nik* 'tomb' [see Osadca 1930; Ossadcha-Janata 1952]). In the east of the Iranian area *Peganum harmala* is gradually replaced by a second species, *P. nigellastrum* Bunge, which extends into Mongolia and north China.[11]

§53 Harmel is universally associated with the cultivated garden rue, *Ruta graveolens* L., and the two other Mediterranean *Ruta* species, *Ruta chalepensis* L. and *Ruta montana* L. (see Figure 2). These *Ruta* species are small evergreen herbs similar in size, leaf form and in the shape and size of seeds and seed capsules to harmel, which they resemble also in being strongly scented. The association of harmel with species of *Ruta* is manifest in the frequent interchange of their vernacular names, as may be seen in Tables 1 and 2. Where harmel has been introduced into areas where *Ruta* species are already known, it is described as a kind of *Ruta* (thus many European names for harmel such as *Syrian wild rue, African rue, rue sauvage, Harmelraute*, and so forth; exemplified by the botanical name *Peganum* which is from the Greek *πήγανον*, the usual ancient Greek name for *Ruta* species). Likewise where harmel is the older plant, *Ruta* has been named from harmel (e.g. Coptic *bašouš* ['*Ruta*'] < Syrian *baššūšā* ['harmel']; Bengali *ermal* ['*Ruta*'] and Berber *iurmi* ['*Ruta*'] < Arabic *ḥarmal* or **ḥurma* [see below, §265]; Armenian "*sbant* of Aleppo", Bengali *ispund* and Persian *sepandān-i ganda* [all '*Ruta*'] < Old Iranian **svanta-* ['harmel']). In many other cases, however, forms of the Greek name *πήγανον* or the Latin name *Ruta* (also originally a Greek word [André 1956]), have been adopted for *Ruta graveolens* at the same time as its cultivation. The most widespread name for *Ruta graveolens* throughout the Muslim world, *sudāb/sadāb* (the etymology of which is discussed below, §§274-286) was probably also originally a name for harmel (still known locally as 'wild-' *sadāb* or 'mountain-' *sadāb*) which was transferred when the cultivation of *Ruta graveolens* was introduced into Iran.[12]

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11. Whether species of *Peganum*, or varieties of *P. harmala* (of which Nabil el-Hadidi [1972] distinguishes three in Iran) differ significantly in their content of harmaline or other drugs awaits investigation. A third species, *P. Mexicanum* Gray (*P. Texicanum* [M. E. Jones 1933-1935: 47]) is indigenous to remote parts of Texas and northern Mexico. Around 1920 *Peganum harmala* was introduced into the American Southwest (Dayton 1937; Cory 1949; Correll and Johnstone 1970) where it has swiftly colonized roadsides; it now flourishes along much of Interstate-10 between Pecos, Texas, and Phoenix, Arizona.

12. The close connection of *Ruta graveolens* with *Peganum harmala* (Arabic *ḥarmal*) is evident in perhaps the earliest attestation in Arabic of the name *saðāb* for *Ruta graveolens*, found in the *'Uyūn al-axbār* of Ibn Quṭayba (*c.* 850 C.E.), where a popular belief is reported: "upon standing, the seeds of *saðāb* become those of *ḥarmal*" (Brockelmann 1908: 489.10).

Figure 1. *Peganum harmala* L.

Figure 2. Species of *Ruta*.

TABLE 1: SOME NAMES FOR *PEGANUM HARMALA* L.

* = designates seed of *Peganum harmala*

PORTUGUESE: *harmale* (44). **SPANISH:** *harma* (44), *harmaga* (44), *alharma* (44), *alfarma* (44), *armage* (44), *alhargama* (44), *amargaza* (44). **CATALAN:** *armala* (44), *ruda borda* (50). **FRENCH:** *rue savauge* (62), *erimola* (62). **GERMAN:** *Harmel* (49), *Harmelstaude* (49), *Harmelkraute* (49), *Harmelraute* (49), *wilde Raute* (49), *Steppenraute* (49). **YIDDISH:** *bibek* (41). **ITALIAN:** *armora* (44), *ruta selvatica* (61), *pegano* (61). **UKRAINIAN:** *ruta-dyka* (46), *rebrik-sobačj* (46), *rebryk* (46), *sobače-zillja* (46), *sobača-loboda* (46), *sobakarne* (46), *smerdioxa* (46), *vonyučka* (46). **RUSSIAN:** *mogil'nik* (63). **BULGARIAN:** *zarniš* (32). **GREEK (Modern)** *βρωμοχόρταρο*(28), *ἄγριο–πήγανο(ν)* (30), *κολλιά* (30), *ξιδαξια*(30), *ζενδον* (16a); *πήανο* (30). **TURKISH:** *üzerlik* (15), *ilezik* (15), *mahmur-çiçeği* (65); **Uzbek:** *isiriq* (67a); **Uc:** *ildrük* (15); **Azari:** *uzerrik* (24a); **Oguz:** *yidiğ* (15); **Kirghiz:** *adraspan* (25), *adrašman* (25); **Sart, Chat:** *abdaraspani* (47), **Chinese Turkistan:** *ädräsmän* (53). **MONGOLIAN:** *ömkhī-övös* (Classical *ömekei-ebüsü)* (11a). **ARMENIAN:** *aspand* (35), *sbant* (24), *šan-p'in* (29), *sanam* (7), *khowniv* (7), *vahri-esbant* (7), *vahri-pegenay* (7), *p'egenay* (29). **BERBER:** *bender-tīfré/tāfré* (27). **ARABIC:** *ḥarmal* (42), *zariʿat-al-harer* (18), *γalqa* (36), *ðafrā* (36), *mogannanna* (20), *saðāb-šamī* (20), *saðāb-barī* (20), *γalqat-al-ðiʾb* (26), *saðāb-al-jibalī* (45), *šagarat-al-xanīzīr* (57), *xinīza* (54), *xanaize* (17), *xabīza* (72), *xāīs* (54), *xyais* (17), *xayyāsa* (54), *qays* (54), *ḥaramlan* (69a), *ḥarmelun* (69), *ḥurremlan* (11), *ḥaremlān* (1), *ḥuraymilān* (3), *nigtī** (13), *xarjal* (11), *xarguel* (64), *harjal* (3). **PERSIAN:** *spand* (38), *spend* (38), *sifand* (68), *sipand* (68), *sipandīn* (68), *asbatān* (68), *istabān* (68), *isfanj* (60), *sepanj* (60), *šīrsādū* (34), *šaqrdāna* (34), *fātarālstīn* (34), *fāšarsīn* (68), *nīl** (51), *navand* (16), *navan* (60), *nīwandī-maryam* (56), *hazār-isfand* (16), *ṣandal-dāna** (16). **LARI:** *sandolos* (23), *sondoros** (6); **KERMANI:** *svon* (66), *seben* (66), *espend* (66), *daštī* (5). **SEMNANI/SANGESARI** *espan* (67), *esban* (67), *espond* (67), *esbond* (67), *esbund(i)* (67). **TABARI:** *espan* (56). **GILAKI:** *span-dāna** (56). **SISTANI:** *dudnī* (75), *dudnuk* (43a), *bidnik* (43a). **KURDISH:** *aspand* (37). **LURI:** *dī* (40), *espan* (40), *esvan* (40), *dēništ* (43). **BALUCHI:** *spand* (74), *spanj* (74), *hurmul* (74), *ispanthān* (74), *spandā* (2), *spinguli* (2), *spanguli* (2), *spangaoli* (2), *espantān** (4), *spanyānān** [plural](4), *gandāxo* (53), *gandhiyo* (10), *sadāp-i-kōhī* (58a). **PASHTO:** *spilanai* (52), *spalanaey* (52), *spandah* (52), *ašdun-buta* (73). **Waziri:** *spēlanai** (55), *spōnda* (55). **WAKHI:** *spandr* (33), *spand* (33), *spanddoná** (33). **SHUGNI:** *ispandur* (33). **OROSHORI:** *səpăn* (21). **ISHKASHMI:** *spondana* (33). **YAZGULAMI:** *spāndān* (22), *s(ə)pánt* (22), *s(ə)pantā(g)* (22). **BRAHUI:** *kisánkúr* (8). **BURUSHASKI:** *supándur* (9). **BALTI**: *isman* (70). **URDU:** *hurmur* (48). **PUNJABI:** *karnal* (71), *hurmul* (14). **SINDI:** *spelani* (74), *hurmur* (74). **HINDI:** *fijal* (34), *harmul* (74), *isbund-lahouri* (74), *hurmol* (74), *kaladana* (74), *lahouri-hurmul* (74). **GUJARATI:** *ispun* (74), *hurmaro* (74). **BENGALI:** *ispand* (14). **MARATHI:** *sarmala* (74). **TAMIL:** *šimai-arvandi-virati* (74), *simaai-zhavandi-virai/vittula* (14), *simaiyaravandi* (14). **DECCAN:** *vilayati-isband* (58), *vilayati-mhendi* "foreign henna" (58). **KANARESE:** *sime-goranti* (58). **TELUGU:** *sima-goronti-vittulu* (58). **Chinese:** *luòtuo péng* (11a).

1. Ascherson & Schweinfurth 1887. 2. Aitchison 1891. 3. Bailey & Danin 1981. 4. Bailey 1953. 5. Baqāʾī 1959. 6. Bastaki 1980. 7. Bedevian 1936. 8. Bellew 1874. 9. Berger 1956. 10. Bhandari 1978. 11. Blatter 1919-1936. 11a. James Bolson, letter of 5/88. 12. Brockelmann 1928. 13. Burtt & Lewis 1954. 14. Chopra *et al.* 1965. 15. Clauson 1972. 16. Dehkhudā 1947-1973. 16a. Delatte 1939. 17. Dickson 1955. 18. Dozy 1881-1927. 19. Drower & Macuch 1963. 20. Ducros 1930. 21. Edel'man 1966. 22. Edel'man 1971. 23. Eqtedārī 1955. 24. *Flora Armenij* 1954-1966. 24a. *Flora Azerbaidzhan SSR* 1950. 25. *Flora Kirgizskoj SSR* 1957-1967. 26. Förskål 1775. 27. Foucauld 1951. 28. Frass 1845. 29. Gabikean 1968. 30. Gennadiou 1914. 32. Gilliat-Smith & Turrill 1930. 33. Grjunberg & Steblin Kamenskij 1976. 34. Hādī Khān al-ʿAlawī 1824. 36. Hava 1915. 37. Hooper 1937. 38. Horn 1893. 39. Hübschmann 1897. 40. Izadpanāh 1964. 41. Kaganoff 1977. 42. Lane 1863-1893. 43. Läffler *et al.* 1974. 43a. Leonard 1984. 44. Lokotsch 1927. 45. Löw 1924. 46. Makowiecki 1936. 47. Maksimovich 1889. 48. Mallik & Mohajir 1958. 49. Marzell 1943-1958. 50. Masclans i Grivés 1954. 51. Massé 1938. 52. Mayer 1909. 53. Menges 1933. 54. Migahid 1978. 55. Morgenstierne 1927. 56. Muʿin 1951-1956. 57. Musil 1927. 58. Nadkarni 1954. 58a. Nāṣerī 1971. 59. Osadča 1930. 60. Parsa 1960. 61. Pedrotti & Bertordi 1930. 62. Rolland 1903. 63. Safina *et al.* 1970. 64. Schweinfurth 1912. 65. Redhouse 1974. 66. Soroushian 1956. 67. Sotoudeh 1963. 67a. Steblin-Kamenskij 1982. 68. Steingass 1894. 69. Steinschneider 1897. 69a. Täckholm 1969. 70. Univ. of California Jepson Herbarium #M176576 (1955). 71. Univ. of California Jepson Herbarium #244673. 72. Vincett 1979. 73. Volk 1955. 74. Watt 1889-1896. 75. Weryho 1962.

TABLE 2: SOME NAMES FOR SPECIES OF *RUTA*

(Exclusive of European Forms Derived from Greek/Latin *ruta*)

Ruta graveolens except where marked by *=*Ruta chalepensis* L. or **=*Ruta montana* L.

ARABIC: *faijal (12), faijan (12), galec (12), galega (12), fiyal (13), fayyal (13), fayyan (13) saδāb* (3), sidāb (18), ḥarmal* (17), sadāb (23), šadāb (23);* **Morocco:** *sadāb* (37), fiiel* (37), fijla* (37), issin* (37), bou-ranes* (37), rūṭa (12), ārūta (13), rūta (13);* **Tlemcen:** *sadāb-al-jibalī* (37), fijela-al-jibalī** (37), jell (39), zenn (39), figeen (39), fijel (39), fizol (38);* **Tunis:** *ḥašiš-al-jinn (20);* **Egypt:** *sandāb (27), sandāb* (35), sendāb (15), xuft (1);* **Arabia:** *sakab* (28), sazāb* (21a);* **Palestine:** *begām (23), sabād (23), sadābie (23), ḥarmal* (1a);* **Yemen:** *xuft (11), xīl (11), šadābah (6), sadāb* (35).* **BERBER:** *iwármi (38), iurmi (22), iwermi (22) awerma (34), awram (12), ʾuʾrmi (12).* **COPTIC:** *bašouš (10), kanon (7a).* **GALLA:** *dscharte (31).* **TIGRINA:** *dhen (31).* **AMHARIC:** *tal-addam (31), tena-addem (31).* **GREEK:** πήγανι (16), πήγανια (16), πήανι (16), πήανο (16), πήγανον (16), ἀπήγυς (16), πήγανυς (16).* **BULGARIAN:** *sedefče (17).* **HUNGARIAN:** *virnanc (4).* **ROUMANIAN:** *virnani (4).* **UKRAINIAN:** *zymozelen (25).* **ARMENIAN:** *halebi-sbant* (2), sadaf-khod (2), sadab (2), sazsaz (2), garan (2), vahri-pegenay** (2), vahri-sazab** (2).* **TURKISH:** *sedef (17), sadaf (29).* **PERSIAN:** *sudāb (23), saped (23), sadāb (23), payjan (40), payγan (40), sapandān-i-ganda (40).* **DAILAM:** *bīm (19).* **KERMAN:** sedōw (5). **BALUCHI:** *zirag (26).* **SANSKRIT:** *brahmakanyaka (30), brāhmaṇī (30), brāhmī (30), chandrávallarī (30). guchhapatra (9), kapōtavegā (30), maṇḍūka (30), pitapuṣpa (9), sárasvatī (30), sarpadaṃṣṭra (9), saumyā (30), somalatā (9), somavallarī (30), viṣap (9).* **PUNJABI:** *katmal (9).* **URDU:** *sudah (9).* **HINDI:** *pisamarum (9), sadab (9), satari (9), saturi (33), allooda (33), sānūl (19), sātrī (19).* **BENGALI:** *ermul (32), ermal (32), isband (32), ispund (9), tatlī (19).* **KANARESE:** *hāvananju (9), nāgaldāli (9), sadābu (9), sudabugida (32).* **MALAYAM:** *somarayam (24), arūta (24), naagadhali (36), sādsā (1).* **TAMIL:** *aruvadam (9), arvada (9), pambuko (9), tirumuti-patchi (8), arroda (33), aruvadān (24), pāmbugolli (24), aruvadaam-chedi (36).* **TELUGU:** *aruda (9), sadapa (9), suddapo-akoo (33), sudapaha (32).* **URIYA:** *maruā (41)*

1. Anisle 1826. 1a. Ascherson *apud* Löw 1924. 2. Bedevian 1936. 3. Blatter 1919-1936. 4. Borza 1968. 5. Boyce 1966b. 6. Brauer 1934. 7. Budge 1913. 7a. Ibn Kabr (d. 1368) in Budge 1927. 8. Chandrasena 1935. 9. Chopra *et al* 1965. 10. Crum 1939. 11. al-Dimyaṭī 1965. 12. Dozy 1881-1927. 13. Dubler & Teres 1952-1957. 14. Fleurentin *et al.* 1983. 15. Förskål 1775. 16. Gennadiou 1914. 17. Gilliat-Smith & Turrill 1930. 18. Guigues 1905. 19. Hadi Khān al-ʿAlawī 1824. 20. al-Ḥayla 1968. 21 Khattab & Nabil el-Hadidi 1971. 22. Laoust 1920. 23. Löw 1924. 24. Lushington 1915. 25. Makowiecki 1936. 26. Mayer 1909. 27. Meyerhof 1918. 28. Migahid 1978. 29. Monchi-Zadeh 1969. 30. Monier-Williams 1899. 31. Mooney 1963. 32. Nadkarni 1954. 33. Piddington 1832. 34. Renaud & Colin 1934. 35. Schweinfurth 1912. 36. Sundararaj & Balasubramanya 1959. 37. Trabut 1935. 38. Venzlaff 1977. 39. Vonderheyden 1937. 40. Vullers 1855-1867. 41. Turner 1966.

§54 In the Indian area *Peganum harmala* has also become established as a ruderial and, because it is generally known by forms of the Arabic *ḥarmal* or Persian *isfand*, is usually presumed to have been introduced by the Muslims (e.g. Burkill 1935), who import its seeds from the Iranian Plateau for medicinal and apotropaic purposes. It appears, however, already to have had an Indian name in the time of al-Bīrūnī (*c.* 1030 C.E.),[13] which suggests (as do other factors discussed in §141) that it had reached India earlier.

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13. In Abū Bakr ibn ʿAlī ibn ʿUṯhmān al-Kāsānī's Persian translation of the *Kitāb al-Ṣaydana fī ṭibb* made in 1228 C.E. (Sotoudeh and Afshar 1973: 225; British Library Or. 5849, *f.*56.16) that name is *dwpw;* in the Arabic text (Said and Elakie 1973: 155) it is given as *hmlw*. These names are discussed below, §272.

A link between *Peganum harmala* and the plant known in Islamic materia medica as *hawm al majūs* is provided by al-Bīrūnī's remark that some people apply the name *ḥarmal* to *buxūr maryam*, for *buxūr maryam* is identified as *hawm al-majūs* in some later Persian materia medica (e.g. the *Tuḥfat al-Muʾminīn* [*c.* 1669]). Al-Bīrūnī speculates that both plants might be called *ḥarmal* because, like *Peganum harmala*, "*buxūr maryam*" induces menstruation, but this property does not in fact seem to provide sufficient explanation for referring to *buxūr maryam* as "*ḥarmal*". In Arabic *buxūr maryam* is usually *Cyclamen europaeum* L. (Primulaceae) (Schmucker 1969:105). This *Cyclamen* species is in no way associated with Zoroastrian rituals (although the intriguing name *Zoroastris* is given by Dioscurides as a name for it [Gunther 1934:202; Kühn 1829:25,303]). The name *buxūr maryam* is, however, also sometimes applied to *Calendula officinalis* L. (Compositae) (Meyerhof and Sobhy 1932-1940:148). *Hawm al-majūs* would from its name '*haoma* of the Magi' have reference to a plant used by the Zoroastrian priests. From all indications, the plants used by Zoroastrian priests (i.e. the Magi) to which *hawm al-majūs* could have referred (see below, §123) were pomegranate, tamarisk, *Ephedra*, *Ruta graveolens*, or *Peganum harmala*, and none of these much resembles either *Cyclamen europaeum* ("sow bread") or *Calendula officinalis* ("marigold"). While sometimes Arabic *buxūr maryam* names *Calendula officinalis*, the usual Persian name for *Calendula officinalis* is *āftāb parast* 'sun worshipper', and this term is given by al-Bīrūnī himself as a synonym for *hawm al-majūs*. Thus, by way of al-Bīrūnī, Arabic *ḥarmal* (= *Peganum harmala* and *buxūr maryam*) is linked with Arabic *hawm al-majūs* (= *buxūr maryam* = *āftāb parast*). It is unclear, however, whether a real plant was intended by his entry *hawm al-majūs* (translated below); because there he does not record his own observations, but instead presents a partial version of the account, found in the Pahlavi *Dēnkird* VII (2.25-31 [Madan 1911: 605f.]), of how *haoma* brought about the birth of Zoroaster. Bīrūnī's entry is found only in the Arabic text of the *Kitāb al-Ṣaydana* [Togan 1941: 141; Said and Elakie 1973; cf. Habib 1979: 462]; it is missing from Persian MSS of the work:

"*Hawm al-majūs* : In Sogdian (it is called) *xwm* and in Syriac *ʿrzʿd mywšy* and in Persian *āftāb parast* and *hwyɣwr* [?]. The Magi claim that it is a tree without branches *(šaqq)* that grows where no one can reach it, in Azarbaijan. (There) snakes would eat the young of two birds, and an angel came with a twig (*yuṣn*) of *hawm* and threw it in their nest and the snakes stopped their attack and their mouths were closed and the twig hung in that tree and it remains there yet."

§55 *Peganum harmala* is characterized by a strong, peculiar odor,[14] which issues from the leaves when they are disturbed. The plant is made especially noticeable to herdsmen, such as the Indo-Iranians were, by the fact that grazing animals (camels, goats, and some donkeys excepted [Bailey and Danin 1981]) will not eat of its fresh stems and leaves even in the face of starvation (Black and Parker 1936: 12). Its foliage is not actually toxic to large animals, and when it is cut and allowed to sit a few days, the upper part of the plant may be used as fodder (*ibid.*). The avoidance of the living herb by livestock may make it seem strangely protected (Vonderheyden 1937:457). It appears that the property of being shunned by animals may have been regarded in Iran as a mark of plants that were powerful drugs.[15] But doubtless of greater importance in drawing attention to *Peganum harmala* is the fact that because of this avoidance by grazing animals, stands of the plant are left isolated as the surrounding vegetation is consumed. Thereby harmel becomes one of the most available materials for fires, for which purpose, despite its relatively poor quality, it must always have been exploited in the severe winters of interior Asia.[16] When harmel is gathered in this season, the whitish seed capsules crowning the ends of branches, from which the leaves have largely disappeared, are mature and contain numerous small seeds. These seeds have an unusual tendency to snap dramatically when placed in contact with fire, and they then emit volumes of richly scented smoke, describable as having "a heavy, narcotic odor" (Dymock 1889:255). In Iran the scent of this smoke has traditionally been regarded as incense. The smoke contains appreciable amounts of volatilized harmine and harmaline, the psychoactive potential of which must be considered in evaluating the historical origins of the tradition of burning harmel seeds. The smoke is valued as an analgesic for toothache (Boulos 1973: 195) or headache (Venzlaff 1977:65)[17] and may be effective as an antiseptic for wounds (Ghafoor 1974) and as an insecticide (Volk 1955), but,

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14. The odor is reflected in the Ukrainian name *vonyučka,* Baluchi *gandhiyo, gandāxo,* and perhaps also in Armenian *šan-p'in* 'dog dung' (Gabikean 1968; pointed out to me by Professor James Russell).

15. The aversion by animals may have been a characteristic traditionally imputed to sauma. Zakariyā' ibn M. al-Qazwīnī (d. 1283) (*Kitāb 'Ajāyib al-maxlūqāt* ed. Saad 1973: 210) mentions a plant growing on Mt. Savalān in Azerbaijan, remarkable for being shunned by animals. From the context it is clear that Qazwīnī's account derives from the very same legend as does al-Bīrūnī's *hawm al-majūs* (see n.13 above) and that the plant referred to is the same *hōm* that conveyed Zoroaster to his father. It is of interest that Pseudo-Democritus (in Pliny, see below, §149) gives *hippophobas* 'that which puts horses to flight' as a synonym for *achaemenis* (=sauma?).

16. Abū Ḥanīfa al-Dīnawarī's (d. 895 C.E.) *Kitāb al-Nabāt* (ed. Lewin 1953) notes the use of harmel as a fuel by Arabian bedouins. See Jackson (1911:118) for a photograph of bundles of harmel collected for fuel.

17. Harmine is the basis of a patented analgesic (*Chemical Abstracts* 61, 15942).

with respect to psychoactive properties, the amount of harmaline that might be absorbed by inhalation of this smoke would not ordinarly be significant, except perhaps in the case of young children.[18] After having consumed a threshhold dose of harmaline, however, the rapid absorption of additional quantities of the drug from inhaling this smoke could have immediate and marked subjective effects. If this pharmacological potential of the smoke has indeed contributed to the importance in Iran of burning harmel seeds (examined in the next chapter), then originally the plant must have been consumed as well as burned.

§56 Given that the Proto-Indo-Iranians were sufficiently interested in the intoxicating properties of plants to evolve a ritual based on the consumption of sauma, it is difficult to believe that they would have remained unaware that an extract of the seeds of *Peganum harmala* prepared in the same way as sauma produces the very effects for which sauma was valued.

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18. An exception would be the case of a Moroccan exorcism reported by Vonderheyden (1937: 459) to consist of remaining in a tent of harmel vapor until demons are heard to cry out and depart. According to Ossadcha-Janata (1952: 7), "village fools" ("*douvans*") in Bukhara used to inhale the smoke of harmel seeds.

4

ETHNOBOTANIC CONTINUITY OF SAUMA IN IRAN

The Iranian Names for Harmel Identify it as Sauma

§57 The texts of the ceremonial tradition refer to sauma by terms such as *haoma*, pertaining to its ritual preparation as a drug, and not by its common name as a plant. However, the ceremonial imitation of consuming sauma, which seems to be of Proto-Indo-Iranian origin, could have been efficacious only if there was wide general understanding of what was being imitated. This implies that the intoxicating power of sauma was originally well known; however, use of the common name of the plant in the texts recited in the ceremony would have ultimately resulted in acknowledgement that some performances only imitated the act of drinking the drug. It was thus necessary for the plant to be so designated in the liturgy as to make it possible for other plants to be used as ceremonial equivalents.

§58 Reference to the plant as *haoma* 'extract' was well suited to this situation. This seeming obscurantism should not be taken to mean that the identity of the intoxicating plant was secret; on the contrary, the institution of the ceremony must have depended on the reputation of that plant. What would appear to have been secret was whether the plant used on a given occasion was actually sauma (see below, §153). The ambiguity of the term *haoma* has served to permit the continuation of the ceremonies using only nonintoxicating plants. As we shall next consider, there appears to be only one instance in surviving Avestan texts where *haoma* is linked with the real name of an intoxicating plant, and that plant is *Peganum harmala*.

§59 The usual names for *Peganum harmala* in Iranian languages are forms such as *isfand, sepand, sven,* etc. (see Table 1) deriving from Proto-Iranian **svanta-* (Avestan *spənta-*) which meant in effect 'possessing productive numinous power' (see Bailey 1934; Gonda 1949); it may be conveniently translated 'sacred'. This fact provides two arguments for the identity of harmel with sauma.

§60 First, at the time when Avestan was a commonly understood (if not commonly spoken) language, *spənta-* and its cognates already named *Peganum harmala*. This is shown by the fact that the precise forms of the name in

modern Iranian languages[1] could not phonologically have resulted from borrowing from one modern language into another.

§61 Second, *spənta-* occurs in the Avesta (*Vīsperad* 9.3) as an epithet of *haoma* in the phrase *haoma sūra spənta* 'the *haoma*s, powerful, sacred', and is the only adjective associating sauma with the name of any Iranian plant.[2] Moreover, the apposition of *spənta* to *haoma* in this phrase could have been understood in Old Iranian as an allusion to *Peganum harmala*.

§62 The connection of *Peganum harmala* with sauma through the name **svanta-, spənta-* and the like, to which Paul Lagarde (1866:173; see §55 n.10 above) pointed over a century ago,is unassailable. The only objections to a simple and straightforward conclusion from the name arise from W. B. Henning's (1965: 39) remarks:

> The proper place of wild rue *Peganum harmala* is in witchcraft, which the Zoroastrian church ever combated; its seeds are thrown into the fire to excite fat black smoke—a truly Ahrimanian practice. That a seal of approval was set on this sorcerer's favorite in the Avesta itself by the attribution of semi-divine origin, should not be assumed so readily.
>
> That is not to say that we need reject the common derivation of *sipand* "wild rue" from *spənta-*, for which "sacred" is a broad equivalent; for to a *daēvayasna* or devil-worshipper the plant was indeed "sacred".

§63 It is impossible to accept the implication that throughout the various Iranian languages so common a plant as *Peganum harmala* could owe its name, 'sacred', to a predominant influence of the jargon of devil-worshippers. Henning implicitly affirms by his argument that the use of *spənta-* as a name for *Peganum harmala* existed while the word still meant 'sacred'. Moreover, the plant most *daēvayasna*s considered sacred was surely sauma. Even if Henning's effort to relegate the use of harmel exclusively to devil-worshippers were supported by the evidence, the connection of its Iranian names with *spənta-* would still be best explained by identifying harmel with sauma.

§64 It is less likely that in nonritual contexts sauma would be usually known by a term such as *haoma* referring to *how* the plant was prepared for a ceremony than by a name reflecting some inherent property related to *why* the plant was significant in ceremonies and elsewhere. The use of the term *haoma* in the Avesta is explicable because of the relevance of the preparation of the plant to that textual tradition, but "(plant) pressed out with mortar" seems to be a means of referring to a plant without naming it rather than to be itself a phytonym. Nothing is more certain about sauma than that it had the property

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1. For the independent derivation of the modern forms, as well as for other aspects of the history of the term, see below, §§259-264.

2. By contrast, the possibility of deriving a name for rhubarb in Khowar, Kati and Prasun from an unimportant Vedic epithet of *soma, śvātrá-* 'strengthening, invigoration', is the only objective argument adduced by G. Morgenstierne (1954) for his proposed identification of rhubarb as sauma. The situation of *haoma* as a name for *Ephedra* is discussed below, §106.

of possessing numinous supernatural power, that is, what in Old Iranian was *spənta*. More relevant, unambiguous, and conclusive linguistic evidence than the fact that the Old Iranian name of harmel, *spənta* etc., is the single most descriptive Old Iranian word for what distinguished sauma from other plants in ancient Iran, can scarcely be imagined.[3]

Correspondence of Harmel to Sauma in Apotropaic Function

§65 Throughout the history of Islamic Iran to the present day, *isfand*, that is, *Peganum harmala*, has been esteemed chiefly for its apotropaic power and has been the chief plant regarded as having such power. Allusions to it in the very earliest New Persian literature show this is a continuation of pre-Islamic belief.

§66 In particular, the burning of the seeds of *Peganum harmala* is mentioned frequently in Classical Persian poetry and is found in the works of Nāṣir-i Khusraw, ʿAṭṭār, Khāqānī, Saʿdī, Jāmī, and many less famous writers.[4] In modern ethnographic and geographical literature it is regularly recorded as a practice still encountered throughout the Iranian area. The purpose of burning these seeds is not witchcraft, as Henning thought: the seeds are thrown onto braziers not primarily to elicit smoke, fat, black, or otherwise (a purpose for which other oil-rich seeds will do at least as well), but for the snapping sound and the pungent fumes released, results intended not to invoke demons but, on the contrary, to be rid of them.[5] The seeds are burned apotropaically on all occasions where there are special dangers of malign influences: at marriages, births, sicknesses, and circumcisions, as well as when one feels vigorous and joyful, and whenever there is suspicion of the evil eye. Harmel seeds figure also as the critical elements in numerous amulets and the capsules containing the seeds are strung together to make the *panja* (see Figure 3) frequently displayed in conservative Iranian households (cf. Watson 1979: 248).

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3. Another epithet of *haoma* may be reflected by the Persian term *naivand/nīvand*, etc., 'swift', used only of horses and (in Fars) of *Peganum harmala*, and thus parallel to Avestan *aurvan-/aurvant-*, also meaning 'swift' and used in the Avesta precisely of horses and of *haoma* (*Yasna* 10.10; 11.2). The Iranian association of *Peganum harmala* with swiftness is also indicated by the Persian expression *sipand-āsā* 'like harmel, quick'. *Naivand/nīvand* is given as a name for *Peganum harmala* in lexicons (where a verse of Sanāʾī is usually cited [but the attribution of this verse is questioned by R. ʿĀfifī 1972, *s.v.*]) and is actually attested as *navan* '*Peganum harmala*' in the Fars dialect of Jahrom (Parsa 1960: 68).

4. See the verses quoted by I. Shokurzade (1974: 366-367) and in ʿA.-A. Dehkhudā (1947-1973: II, 2075-2076, 2327).

5. Cf. hatred ironically expressed as "the love of the jinn for *ḥarmal*" in the North African Arabic data of Vonderheyden (1937: 360). The latter also reports (without citing his apparent source: Legey 1926:14, 93) that women of Tlemcen throw *ḥarmal* on their doorsteps and over their shoulders saying: "The harmel is sacred, O Prophet of God, protect (us) from male *jinn* and female *jinn*" ("*Lḥarmel ḥarma, ia rasoul Allah, T'ahdina men djenn ou djennia*". This assertion that *Peganum harmala* is sacred expresses the same notion as the Old Iranian name **svanta-* (which indeed underlies the Arabic name *ḥarmal*, as Schwartz shows below, §265) and suggests that the importance of the plant in Islamic North African folk-religion (for which see, e.g. Westermarck [1926]; Vries [1985]) may ultimately be of Iranian origin.

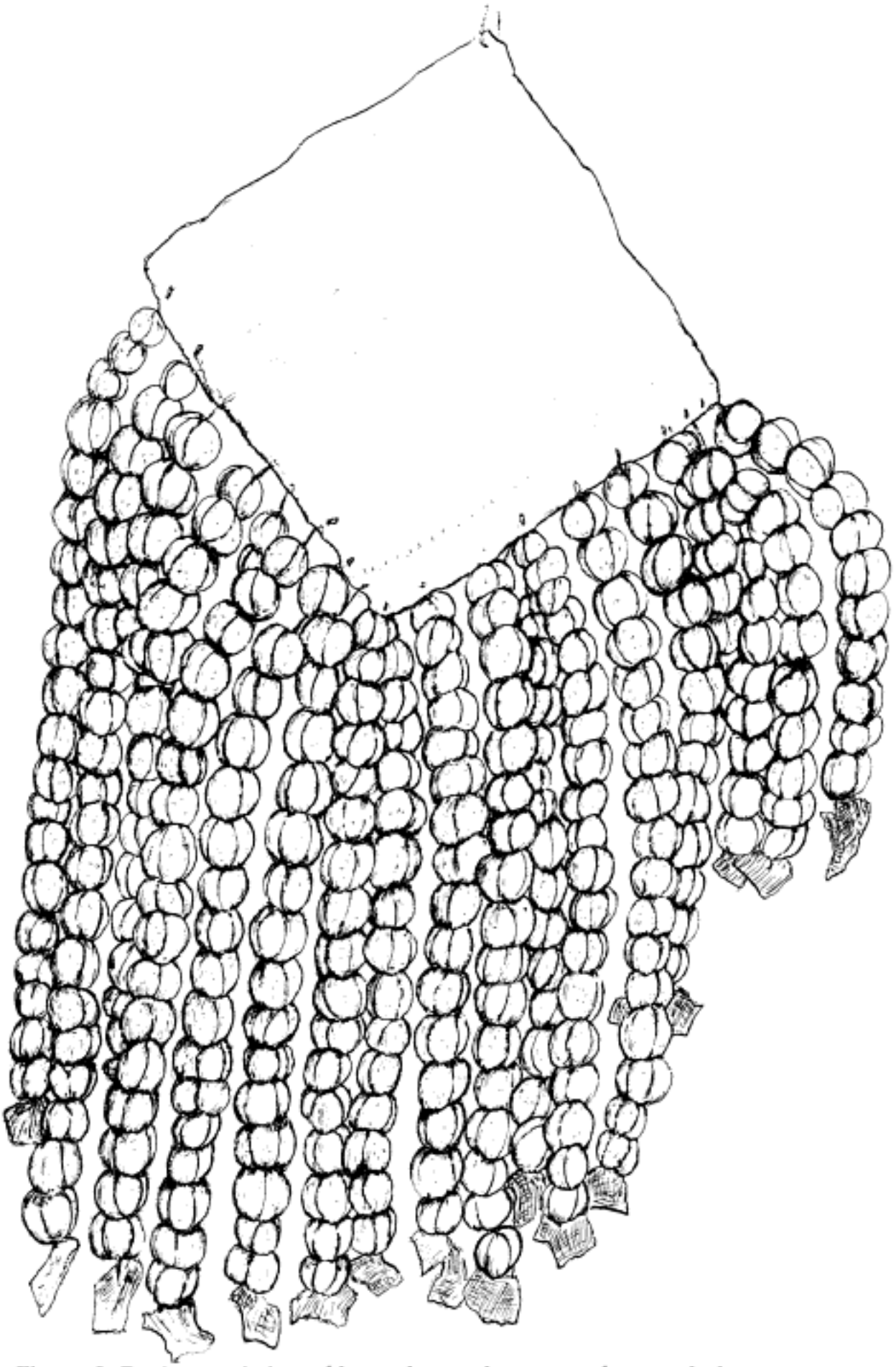

Figure 3. Panja, consisting of harmel capsules strung from a cloth square.

§67 Since the apotropaic use of *Peganum harmala* in Iran antedates Islam, we may ask what the earlier significance of the practice of burning the seeds may have been. From the usual Islamic viewpoint, as a consequence of the strict monotheism which was absent from earlier Iranian culture, the capacity to ward off demons, customarily imputed to *Peganum harmala* in Iran, would lack any inherent relevance to religious concerns. In the dualistic conceptual world of Islamic Iran as expressed in Zoroastrianism, the power to repel evil appears to be the very essence of religion. It is difficult to believe that any long-standing practice credited with accomplishing this end would not have been made use of within Zoroastrianism. As the purpose of the customary use of harmel is identical with the apotropaic aim of the Zoroastrian religion itself, the burning of the seeds of harmel would have been regarded as a religious activity in pre-Islamic Iran.

§68 The present-day apotropaic burning of harmel is accompanied by the recitation of formulaic verses, whose content reveals the essentially religious attitude shown toward the plant. These verses assert that the use of harmel is sanctioned by the most revered sources of religious authority in Islamic Iran.

Esfand and *sepand:*
Our Prophet selected it,
ʿAlī planted it, Fāṭima collected it
For Ḥusayn and Ḥasan.
All who are born on Saturday,
On Sunday, or on Monday,
On Tuesday, or on Wednesday,
On Thursday, or on Friday;
Underground, on the ground;
Black-eyed, blue-eyed, crow-eyed, ewe-eyed;
All who have looked, all who have not;
Neighbor on left, neighbor on right;
Before the face, behind the back;
—May the eye of the envious and of envy crack.[6]

Esfand and *esfand* seed, *esfand* of thirty-three seeds,
For relatives and friends and strangers,
All who go out by the door, all who come in by the door,
May the eye of the envious and of envy be blind!
Saturday-born, Sunday-born, Monday-born, Tuesday-born,
Wednesday-born, Thursday-born, Friday-born.
Who planted it? The Prophet. Who gathered it? Fāṭima.
For whom do they make it smoke? For the Imam Ḥasan and the Imam Ḥusayn.
By the grace of the King of Men, turn away misfortune and pain.[7]

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6. Alluding to the bursting of the seeds as they are thrown onto the fire of a brazier. The rendering into English rhyme of the translation of this first text is by M. Schwartz.

7. These verses are translated from S. Hedayat (1933: 43-44). Similar verses are seen in E. W. Lindquist (1936: 174, n.36), B. Donaldson (1938: 21), H. Massé (1938), H. Izadpanāh (1964: 5), J. Ṣafīnažād (1966: 414), I. Shokurzade (1967: 241; 1974: 77), and N. A. Kisljakov and A. K. Pisarchik (1970: 268). Some previously unpublished examples, very kindly collected for me by Dr. Mahmoud Omidsalar in central Iran during 1976, are the following:

§69 Similar verses are addressed to the harmel plant itself. An apt example of these are the following Azari Turkish verses addressed to *Üzerlik* (the chief Turkish name for the plant):

> Thou art *Üzerlik*, thou art the air [scented with *üzerlik*].[8]
> Thou art the remedy for a thousand diseases.
> Wherever thou art found the evil eye and illness will disappear.
> *Üzerlik*, seed by seed, may it be poured to save the body,
> Whether a relative or a stranger, may his eye be burnt in the fire.
> Golden-colored *Üzerlik*, thy clothing is white, *Üzerlik*.

§70 How is the unique importance of *Peganum harmala* in Iranian folk religion to be explained? On the basis of the argument that *Peganum harmala* was sauma, its folk uses may be seen as the direct and unbroken continuation of ancient sauma practices. The place of sauma in popular beliefs and customs in pre-Islamic Iran, as against its role in the established religion, has hitherto been little investigated. To show the parallelism with the present-day role of

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(1) From Lenjān-e Tāt, 300 km. southeast of Isfahan: *esmand-o seband sī o se dūne esmand / peiyambar-i mā ferestāde bar šahr-i yaman / hamsāye-ye das-i rās, hamsāye-ye das-i čap / hamsāye-ye rūberū, hamsāye-ye pošt-i sar / betereked čašm-i hasūd o hasad.* "*Esmand* and *seband*, three and thirty seeds of *esmand*, / Our Prophet sent (you) for the sake of the land of Yemen. / Neighbor to the right, neighbor to the left, / Neighbor in front, neighbor behind. / [At this point seeds are put in the fire.] May the eye of the envious and of envy burst." [The burned seeds and ashes are then moistened with spit and rubbed on the palm of the right hand of the child for whom the verses have been recited. Additional ashes are rubbed on the sole of his left foot and from the eyebrows down to the point of his nose.]

(2) From Fīrūzī, near Abāde: *esfand-e dūne dūne / ye dūne sad dūne / češm-e hasud betareke.* "*Esfand*, seed by seed, / One seed, a hundred seeds, / May the eye of envy be burst."

(3) From Najafābād-e Tāt: *espand o espand-dūne / espand sī o se dūne / be haqq-ī xodā-ī yegūne / Mohammad kāštes, Alī čides / Fāteme barā Hasan o Hoseyn-eš dūd kardes / nām-ī xodā, nām-ī rasūl / betereked češm-ī hasūd o hasad.* "*Espand* and *espand* seed, / Thirty and three *espand* seeds, / By the grace of the One God, / Muḥammad planted it, 'Alī collected it. / Fāṭima made it smoke for the sake of Ḥasan and Ḥusayn. / In the name of God, in the name of the Prophet / May the eye of the envious and of envy burst!"

(4) From the area of Bushehr: *esband o esband dūne / esband sī o se dūne / čašme xīš o bigūne / harke esmet bedūne / harke esmet nadūne / betarake čašme hasud o hasad.* "*Esband* and *esband* seed, / Thirty and three seeds, / The eye of a relative or of a stranger. Whoever knows your name, / Whoever doesn't know your name. / May the eye of the envious and of envy burst."

(5) From the area of Isfahan: *esband o namak / šas o šiš dūneye band / Mostafā sūxte kard bahr-ī Yaman / betereked češm-ī hasud o hasad.* '*Esband* and salt / Sixty and six seeds bound [together on a string] / Muḥammad burned (them) for the sake of Yemen. / May the eye of the envious and of envy burst.' [With the recital of the last verse, one seed, together with salt, is put in the fire for each person suspected of casting the evil eye.] (M. Schwartz reconstructs the beginning of this verse to have originally been *esband o namak / namak o esband /*, with rhyme */ šaš o šiš dūneye band/*.)

8. Hüseyin Kâzim Kadri 1927: 383-384, where it is stated that the verses first appeared in the journal *Mullā Naṣruddīn* (published in Baku from 1906 to 1911). Professor Hasan Javadi has kindly provided the translation.

Peganum harmala we must briefly consider the place of sauma in ancient Iranian society as evidenced by Zoroastrian literature.

§71 In Zoroastrian literature sauma is presented as if it existed in Iranian culture only as an adjunct to Zoroastrianism, but such a view is actually contradicted by the texts themselves. The very presence of *haoma* in these texts testifies to the enduring importance of sauma in Iranian beliefs since long before the time of Zarathushtra. The purpose of including these texts in the Zoroastrian canon has not been to promote *haoma*, which is irrelevant to any essential Zoroastrian doctrine, but to promote these doctrines—or rather the authority of the Zoroastrian institutions to decide them—by invoking already recognized sources of legitimacy. The traditional reverence for sauma was appropriated by Zoroastrianism, for example, in the connection with *haoma* of Zarathushtra's birth (see §93). Since this reverence for *haoma* was prevalent in Iran earlier and the hegemony of Zoroastrianism would not have diminished it, it may be expected to have continued independently during and after the ascendence of that religion.[9]

§72 It is an accepted fact that popular beliefs and attitudes towards sauma were a strong and persistent element in the Iranian tradition, strong enough, indeed, for some scholars to suppose that *haoma* achieved its important place in Zoroastrian ritual despite the Prophet Zarathushtra himself having condemned and prohibited the use of sauma, as these scholars believe he did (against this view, see below, §§158-160).

§73 The Avesta itself indicates in one place that sauma had folk uses which differed markedly from the ritual drinking of its extract with which the scriptures are chiefly concerned. This is *Yasht* 14.57, a verse apparently referring to its protective value as an amulet:

vərəθraγnəm ahuraδātəm	We worship the Ahura-created Vṛthraghna
yazamaide	(Victory).
haomәm baire	I carry on me *haoma*.
+sairi.baoγәm haomәm	I carry on me the head-saving,
vərəθrājanәm baire	victorious *haoma*.
nipātārәm vohu baire	I carry on me the protector (as) the good thing.
pātārәm tanuye baire	I carry on me the protector for the body.
haomәm yim nivizaiti[10]	When one attaches *haoma*,
nivandāṯ apayeiti	he escapes from the grasp
dušmainyaoṯ pәšana hača	of the enemy in battle.

§74 Such a use of sauma would not have required the approbation of priests and would have persisted whether or not sauma was recognized in the

9. An analogous situation exists regarding the Iranian celebration of the New Year, which one might conclude from Zoroastrian texts alone to have been a purely Zoroastrian observance but which in reality both preceded Zoroastrianism and has continued in Islamic Iran, albeit redefined as a secular event (see Moghadam 1938).

10. For *nivizaiti* see below, §250 n.8.

prevailing religion. Although nonritual uses of sauma itself, unextracted and not drunk as an intoxicant, were presumably widespread, we can hardly expect the ceremonially oriented Zoroastrian literature to give extensive recognition to such practices.

§75 Just as sauma was important before and during the establishment of Zoroastrianism, the harmel plant continued to be important in Iranian folk religion during and after the Islamization of Iran in the seventh century. It may therefore be of interest to consider what parallels may exist between the relationship of *Peganum harmala* to Islam and that of sauma in the pre-Islamic period to Zoroastrianism.

§76 In the folk verses quoted above, the apotropaic use of *Peganum harmala* is said to have originated with the primary figures of Shī'a Islam, namely, with the Prophet, ʿAlī, Fāṭima, Ḥusayn, and Ḥasan. The association of the plant with these personages appears to represent an accommodation of ancient folk beliefs to the official religion, in this case not as a result of concessions by the formulators of Muslim doctrine, but as a spontaneous development within folk religion itself. The ascription of prevailing folk attitudes toward harmel to the founders of Islam is also manifest in more official literature of Shī'a Islam, for example in the following *ḥadīth* series, which is found in the *Ḥulyat al-muttaqīn* of Muḥammad Bāqir Majlisī (d. 1699),[11] probably the most eminent theologian of Iranian Shī'ism. On his authority we must conclude, against Henning, that the place of *isfand* in the Iranian tradition is not to be assigned to mere witchcraft.

> It is related from the Prophet that over each leaf and seed of the *isfand* plant an angel is appointed so that through its bark and roots and branches grief and sorcery are set aside.[12] In its seeds is the cure of seventy-two diseases. Therefore, make medical treatment with *isfand* and frankincense [*kundur*].
>
> From the [Shī'a] saint Ja'far al-Ṣādiq it is related that the Devil is made distant seventy houses from a house where there is *isfand*. It is a remedy for seventy illnesses, of which the easiest is *xūra* [black leprosy?].
>
> And in another account it is related that the Prophet complained to Allah that his people were cowardly. A revelation came down to him to command his people to ingest *isfand* so that by means of it they might become brave.[13] He ordained that it be the incense [*kundur*] chosen by the Prophet. No smoke rises more quickly to heaven than does its smoke, which expels devils and averts misfortunes.

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11. Chapter 9, part 12 (Tehran, edition of 1371*q*., pp. 220-221; edition of 1341*š*, p. 191), cited by I. Shokurzade (1967: 220 n.4).

12. Sunni sources appear also to record this *ḥadīth*: see L. Leclerc (1874: 137n.), M. Vonderheyden (1937: 460), and L. Trabut (1935: 186).

13. This *ḥadīth* is transparently Persian rather than Arabic in origin. It seems to be a "Magian" explanation for the success of Arab armies in the seventh century conquest of Sasanian Iran to claim that "Muḥammad's people" were cowards until provided with sauma. A sense of bravery is often associated with harmine intoxication resulting from the consumption of *yagé*.

§77 The evidence for *Peganum harmala* in its Islamic contexts, furnished by the three texts we have examined above—the Iranian folk verses, the Azari invocation of *Üzerlik*, and the *ḥadīth*s collected by Muḥammad Bāqir Majlisī—may now be compared with *haoma* in the Avesta:

***Peganum Harmala* in Texts of Islamic Iran**	***Haoma* in the Avesta**[14]
1. Use is instituted by four persons of the lineage of the founder of the religion:	
The institution of *isfand* (including planting, collecting and burning) is attributed to Muḥammad (and/or ʿAlī), and Fāṭima, Muḥammad's daughter, for the sake of her sons Ḥusayn and Ḥasan.	Four persons, Yima, Athwya, Thrita and Zarathushtra's father Pourushāspa, are listed as Zarathushtra's predecessors in instituting the use of *Haoma* (*Yasna* 9.3-14; see below, §§91-92).
2. Is directly endorsed by God:	
Allah commands Muḥammad to use *isfand*.	Ahura Mazdah created *Haoma* (*Yasna* 10.17; 11.8).
	Ahura Mazdah invested *Haoma* with the Zoroastrian religion (*Yasna* 9.26).
3. Brings apotropaic benefits to the house where it is kept:	
The Devil is made seventy houses distant from a house where there is *isfand*.	*Haoma* should be present in an Ahurian house so that demons flee from it (*Yasna* 10.1).
	"Let contamination, as soon as it is manifested, vanish from that house, as soon as one brings forth . . . *Haoma*" (*Yasna* 10.7).
4. Instills courage:	
Muḥammad's people are made courageous by *isfand*.	"*Haoma* gives courage" (*Yasna* 9.22).
	"(*Haoma*) I invoke thee for courage and for victory for my body and for strength that brings salvation to many" (*Yasna* 9.27).
5. Expels a thousand demons/diseases:	
"*Üzerlik*, thou art the remedy for a thousand diseases."	The least extraction, praise, or ingestion of *Haoma* smites a thousand demons (*Y.* 10.6).
6. Bears the epithet 'golden/yellow':	
"Golden-colored [*altun*] *Üzerlik*."	"Yellowish [*zāiri-*] *Haoma*" (*Yasna* 9.16, etc.).[15]

14. In order to preserve the textual ambiguity of *haoma* in Avestan texts, the word may be capitalized whether or not it obviously refers to a personification.

15. Golden/yellow is the color of harmel during most of the dry season in the Middle East, as noted by Viktorov (1973): "Growths of *Peganum harmala* L. are especially well marked from the air: dark green in summer, having a characteristically golden orange color in autumn". For the meaning of Avestan *zāiri-* see §260 below.

Correspondence in Attributes and Invocations

§78 *Haoma* is mentioned frequently throughout the Avestan books in connection with the worship of the ancient Iranian deities. Usually this consists of nothing more than naming *haoma* as something consecrated to the gods. *Haoma* is also associated with the roles of deities in contexts which do not contribute to our understanding of sauma (see Gray 1929; Boyce 1970), but with few exceptions the only material in the Avesta which refers to *haoma* as a plant is found in the *Hōm Yasht*, the part of the Avesta devoted to the worship or invocation of *Haoma*. This text, consisting of about 1,700 words, is today included in the liturgy of the *Yasna* ceremony (as chapters 9-11.15) and is recited immediately before and during the consumption of *haoma* in that ritual.

§79 Perhaps the closest parallel to the *Hōm Yasht* outside of Zoroastrian literature is a text of the Mandaeans, who dwell in southern Iran and Iraq, and whose ancient gnostic baptist religion was strongly influenced by Iranian ritual and lore. This Mandean text is entitled *Šafta ḏ Šambra* ("The Scroll of [Wild] Rue"), and was intended for recitation when *Peganum harmala* (Mandean *šambra*), pounded in a mortar and "mixed with water, wine, *šakir*,[16] or the urine of a red bull"[17] was administered as a drug. A noteworthy difference

16. *škr* was translated 'syrup' by E. S. Drower (1934), but later as 'liquor (or syrup)' in the *Dictionary* of E. S. Drower and R. Macuch (1963: 441). Aramaic *škr*, indicating an indeterminate alcoholic drink other than wine, may correspond to Avestan *hurā*, Middle Persian *hur*, for which *ŠKL* (i.e.**škr*) is the Pahlavi logogram. Because *hurā-* and wine were drunk at the recital of the Gathas (according to *Nērangistān* 29-30), which presumably means in the *Yasna* ceremony, it may be inferred that both of these alcoholic drinks sometimes accompanied the taking of sauma. The drinking of alcohol together with harmala alkaloids is frequently reported for *yagé* ceremonies.

17. These ingredients recall more the Zoroastrian preparation called *nērang*, than the *haoma* of the *Yasna*. It is indeed possible that the Mandaeans would have been most familiar with sauma as an ingredient of *nērang*, since the *Yasna* could not be witnessed by non-Zoroastrians and the drinking of *haoma* is one of the less conspicuous Zoroastrian practices (e.g. it seems *never* to have been recorded in any Islamic source on the "Magian religion"; the *hawm al-majūs* known to Muslims was not a plant consumed but only held by Zoroastrian priests). *Nērang* is not only drunk in the initiation rites of *nō-šwā* and *nōzādī* (formerly undergone by all Zoroastrians in Iran) but is also consumed in the daily ritual of *kustī bastan* 'tying the sacred cord' (Soroushian 1956: 166), which must have been often witnessed by the Mandaeans during the centuries when they were under Persian administration. One form of *nērang* is prepared from *hōm*, bovine urine, fruit juice, and wine (*ibid.* 166). A. Houtum-Schindler (1885: 83) describes *nērang* as made from "*hōm*" mixed with cow urine. He claims the mixture was given to the new-born and the dead, taken daily during [the nine days of] *barešnum*, and was also used as a remedy against sickness. I am informed by Mary Boyce (letter of October 7, 1978), however, that *hōm* is not an ingredient of *nērang* in any orthodox usage.

The drinking of bull urine is not originally a Mandaean but an ancient Iranian practice. The Iranian inspiration for the Mandaean text and associated harmel practices is especially marked by the mention of bull urine as an additive to the extract of the plant, for the Mandaic term used for bull urine, *gumiza*, is clearly borrowed from Iranian ritual (cf. Middle Persian *gōmēz*).

between the two texts is the insertion of the name of the person for whom the invocation is recited at various points in the Mandean text; this practice is alien to the recitation of the *Hōm Yasht*. Furthermore, while the *Hōm Yasht* is recited by the priest who is about to drink *haoma*, the *Šafta ḏ Šambra* is recited by the person who administers the extract (who, however, must often have been a Mandaean priest).

§80 Although Mandaic is a language used only by those adhering to the Mandaean religion, and almost all literature written in it consists of religious works, the *Šafta ḏ Šambra* is not a part of Mandaean canonical literature. The text is of a decidedly magical character, and the gods are called forth wholly for the purpose of furthering the effectiveness of the spirit of harmel in a specific situation, that of purging someone of sickness, that is to say, of demons. Wisdom or knowledge is not among the benefits sought, nor is intoxication mentioned in the Mandaean text, even though this effect may well have been experienced as an outcome of drinking preparations of that plant.

§81 An unusual feature shared by both texts is the use of the names *haoma* and *šambra* respectively, at once for the plant, the drink prepared from it, and the personification of the plant. The association of the plant with other divine and semi-divine beings is parallel in both texts and, since the personification of *Šambra* as a deity is unknown elsewhere in Mandaean writings, its appearance in the *Šafta ḏ Šambra* may represent a borrowing from a non-Mandaean source and possibly the influence, if not directly of the Avestan *Hōm Yasht*, then of a similar early Iranian invocation of sauma. The highly formulaic character of the *Šafta ḏ Šambra* indicates that it was composed orally and transmitted perhaps for many centuries before it was written down, although existing manuscripts are no older than the early nineteenth century (Drower 1934). Considering the antiquity of most Mandaean texts, the work could easily date from before the Islamic period; that is, from the millennium when the areas inhabited by the Mandaeans were under Iranian political domination. The Mandaeans during that time adopted many religious and magical practices from their Iranian neighbors, and it would seem natural for them then to have given attention also to the most important single element in Iranian ritual, *haoma*, and therefore to the traditional Iranian attribution of supernatural power to sauma. There may be a reflection of the Iranian *haoma* in Mandaean ritual practice,[18] but reference to *haoma* by name is absent from Mandaean literature. The textual correspondences we shall now examine suggest that the *šambra* in the *Šafta ḏ Šambra* may be a Mandaean adaptation of the sauma of Iranian tradition.

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18. According to E. S. Drower (1956:210 n.1), the preparation of the Mandaean *miša* ("oil of unction"), consisting of date-pulp pounded in a mortar with sesame oil and strained through a white cloth, possibly reflects the preparation of Iranian *haoma*. For the use of sesame oil in preparing *Peganum harmala* as a drug see §44C and cf. also §137.

§82 Comparison of habitats of Mandaean *Šambra* and Avestan *Haoma*

Mandaean *Šafta ḏ Šambra* (Translated by E.S. Drower, 1934)[19]	**Avestan *Hōm Yasht*** (Translated by M. Schwartz)
(O) good plant (son of) the god of the mountains, son of the lord of mountains, son of the lord of the high mountains, son of deep ravines and son of peaceful valleys (337.1).	Good is *Haoma*, created by Mazdah. I praise all the *Haomas*,[20] be they those on the heights of the mountains, be they those in the depths of the valleys, cut for the bundles bound by women[21] (*Yasna* 10.17).
Further I abjure thee, glorious medicine, by the male gods and female astartes by Shamish (the sun) that shineth on thee: by Sin (the moon) that traveleth over thee; by wind, fire and water: by the mountains which bore thee: by the gorges and craggy heights that reared thee: and by the waterways in them (343.6).	Thou (*Haoma*) hast been upon the mountain heights throughout all ages (*Yasna* 9.26).
I abjure thee by the mountains that bore thee, by the uplands that reared thee, by the north wind that breathed over thee (344.16).	I praise the cloud and the rain which make thy body grow on the heights of the mountains. I praise the high mountains where, *Haoma*, thou growest. I praise the wide, broad, energetic, blessed earth, thy bearer. I praise the field of thine earth by which thou growest fragrant and swift, and the good growth of Mazdah. *Haoma*, mayst thou grow on the mountains and mayst thou prosper;
[O] *Šambra*, go below like water	

19. Occasional words in Drower's translation have been replaced by the original Mandaean, e.g. 'rue' by *šambra*, etc.

20. This plurality of *haomas* may be compared with Reichel-Dolmatoff's (1972:97-98) account of the various *yagés* distinguished by Tukano shamans in Colombia:

"From each *yagé* plant the Indians choose branches or pieces of different colors . . . . These colors do not refer solely to the external appearance of the vine but above all to the predominant color of the hallucinations experienced through its use. A *yagé* taken by the Desana produces visions of 'jumping feather crowns', or snakes shaped like necklaces that coil themselves around the houseposts. Another kind of *yagé* is said to produce hallucinations of 'snakes that jump' . . . . it is possible that at the base of this classificatory system there lies traditional knowledge that certain parts of the vine . . . contain different concentrations of the hallucinogenic component and therefore cause different visions. As a matter of fact, one of the chief concerns in the preparation of the drink is precisely the knowledge of how to combine portions of different vines.

"The effect is therefore highly unpredictable, and the consumer of *yagé* runs the risk of having some extremely unsettling experiences. This fact worries the Indians, who, apart from the combination of components used, attempt to influence the effects magically to eliminate the more unpleasant aspects. To this end there is a long series of spells and songs to be recited while the drink is being prepared".

The problem of determining the exact strength and constitution of sauma extracts may have similarly influenced the development of Indo-Iranian rituals.

21. *Peganum harmala* is frequently collected in bundles by women. A. Gabriel (1970: 141) compares the bundles of Zoroastrian *barsom* with bundles of harmel: "Das Bündel geweihter Zweige erinnert an die noch jetzt bisweilen auch bei Muslimen übliche Verwendung der syrischen Raute (*Peganum harmala*) zur Segnung von Gästen" (see below, §124 n.10).

which gusheth from the peak of a high mountain (344.15).

truly thou art the Fountain of Rightness (*Yasna* 10.3-5).

The Lady of Gods and Men took thee and carried thee off to the male gods and the female astartes and she gave favorable testimony concerning thee. And they sent (it) to everyone that was ill, working a cure, and healing was found in it (344.30).

The beneficent god has placed thee upon High Haraiti. From there the learned *spənta-* [!] birds carried thee in all directions, to the peak above the eagles, to the Hindu Kush, to the star-topped peaks . . . to the white-colored mountains. There on those mountains thou growest, *Haoma*, who art of many sorts, rich in sap, verdant. Thy healings are connected with the joys of Good Thinking (*Yasna* 10.10-12).

Thou didst spring forth of thine own strength, and didst come forth and camest into being (342.8).

Haoma, who through thine own power art thine own master (*Yasna* 9.25).

§83 Much mention is made in the Mandaean text of the mountains as the home of *Peganum harmala*. Throughout the Middle East, harmel is generally regarded as a mountain plant; this is seen not only from names identifying harmel as "mountain rue" (e.g. Arabic *saδāb al-jabal*; Persian *sudāb-i kūhī*), but from Persian folk verses, for example, the following from Lorimer (1977: 65; pointed out to me by Dr. Mahmoud Omidsalar):

esfand-i sar-i-kuh	O *Esfand* of the mountain top.
esfand-i kamar-i-kuh	O *Esfand* of the mountain waist.
esfand-i bun-i-kuh	O *Esfand* of the mountain base.
esfand tu ke mīdūnī	O *Esfand*, you who know,
beḥaqq-i suleymūn-i peyγambar	By the grace of Solomon the Prophet
čišmzaxm-rā bigardūnī	Turn away the evil eye.

Although harmel is abundant in the mountains of Iran, it is hardly less so in the lowlands north of the Persian Gulf where the Mandaeans live (see A. Patzak 1964: 401). The emphasis given in the text to the lofty and remote origins of a plant that is in fact a common weed available from the nearest rubbish heap would seem then to have been intended not to describe its habitat, but, rather, to counter its banal provenance. This same consideration may be applied to the Avestan descriptions of *haoma* as growing in the mountains. There are thus no grounds for concluding from the Avesta that sauma grew exclusively on mountains.[22]

22. On the other hand, if the Mandaean text is modeled on an Iranian original, the mountainous provenance ascribed to the plant may simply repeat the Indo-Iranian conception of sauma as originating in mountains. In Anatolia, it should be noted, harmel seems to be exclusively confined to the interior highlands (K. O. Müller 1932).

§84 Comparison of gracious attributes of *Šambra* and *Haoma*.

Mandaean *Šafta ḏ Šambra*

And there will be healing, victory, sealing, armed-readiness, gladness, and medicine, and joy to him that drinketh it (335.8).

. . . that drinketh thee, either in wine, or in *šakir*, or in water, or in the urine of a red bull (337.17).

And the medicine (bringeth?) joy and healing to the drinker and riches to him who administereth it. Thou (O) sprig, givest salvation and not perdition, for thou make them strong (and art) a healer, thou workest healing and yieldest not (344.1).

Cure, my cure! Victorious Medicine, my victorious healer! (344.8).

Protection, son of Protection art thou, lofty is thy throne. "Protection son of Protection" they call me (335.15).

I am *Šambra*, the good neighbour, king of all drugs (335.17).

Avestan *Hōm Yasht*

I ask of thee, O golden (one), intoxication, power, victory, health, healing, success, increase, strength of the whole body (*Yasna* 9.17).

Thou (*Haoma*) makest rich in men, more *spənta-*, and more insightful whomever apportions thee combined with *gav-* ['flesh/cattle-product'] (*Yasna* 10.13).

Thee I invoke for courage and for victory for my body and for strength that brings salvation to many (*Yasna* 9.27).

(O) *Haoma*, give me of thy healing by which thou art a healer, (O) *Haoma*, give me of thy victoriousness, by which thou art a victor (*Yasna* 10.9).

From other Zoroastrian texts

I carry on me the . . . victorious *Haoma*. I carry on me the Protector (as) the good thing. I carry on me the Protector of the body (*Yasht* 14.57).

(*Haoma*) is the chief of medicinal herbs (*Bundahišn* 17.20]).

§85 Comparison of punitive attributes of *Šambra* and *Haoma*.

Mandaean *Šafta ḏ Šambra*

Thou hold back . . . those evil spirits . . . like lightning that is sent and loosed against that evil serpent, driving it out and turning it aside by its force from that house (334.22).

Turn away that evil serpent that makes for him: scare it off, thou Medicine, frighten it away by thy potency. And receive from me these spells and conjurarations . . . harass, drive away and make impotent those who hate him and all his enemies, and *šid*s, demons (*daiwia*), incubi, hobgoblins, malign spirits,

Avestan *Hōm Yasht*

O golden *Haoma*, loose thy weapon for protecting the body of the righteous against the yellow loathsome poison-emitting serpent, against the evil-doing, bloody, injurious murderous one, against the lying mortal *sāstar*s . . . against the Truth-mocker. . . against the sorcerous witch (*Yasna* 9.30-33).

I ask this, that I may overcome all the enmity of the enemies, demons (*daēva-)* and men, of *yātu* spirits, of *pairika* spirits, of *sāthra*s, of *kavi*s and *karapan*s, of two-legged scoundrels, of

amulet spirits, evil apparations, spectres and fearsome shades of darkness, evil enchantments, wicked machinations (343.15).

Healing Medicine that cureth spirits and souls, before whōm *šid*s tremble and evil spirits quaking are driven (337.5).

In the name of him who is a Healer that healeth . . . thou shatterest, drivest away and renderest impotent . . . gods and male idols and all evil beings male and female that slay embryos in the womb of their mothers and . . . vows, curses and provocations (imprecations?) of gods and men (324.9).

two legged Truth-mockers, of four-legged wolves, and of hosts having a broad front, roaring, scampering (*Yasna* 9.18).

(O *Haoma*) throw aside the plot of that one who curses me, throw aside the various plots of him who stands as my curser (*Yasna* 10.12).

Even the smallest *Haoma*-preparation, the smallest *Haoma*-laudation, the smallest *Haoma*-potation, serves to smite a thousand demons. Let the contamination vanish from that house as soon as it is created, as soon as, indeed, one brings it forth . . . and praises the excellent healing of him who confers healing, *Haoma* (*Yasna* 10.6-7).

§86 The effects actually experienced from a preparation of harmel were well known in Middle Eastern lore: as reported in early Islamic materia medica, they are chiefly vomiting, sleep, intoxication, and an inclination toward coitus (see §44). There is no reason to think the Mandaeans were unfamiliar with these characteristics of the drug, or that they would not have been anticipated by those for whom this invocation was recited. It is doubtless the very predictability of these effects that made useful the invocation of the plant in the hope of ameliorating them. If this were not the situation, it is hardly likely that persons suffering illness would have been subjected to a 2,500-word conjuration of the medicine before consuming it, nor is it probable that the *Šafta ḏ Šambra*, which is not a text of religious value to the Mandaeans, would have been preserved at all.

§87 The Mandaean *Šafta ḏ Šambra* has implications not only for determining the plant referred to in the Avestan *Hōm Yasht* but also for understanding the content of that text and the purposes underlying its recital in sauma rites. The very recitation of the *šambra* invocation appears to be intended to compel a preparation of *Peganum harmala* to yield certain results. The *Šafta ḏ Šambra* explicitly declares that the text itself contains spells and conjurations and that the recited words "will be a cure that will free" the subject (336.9). Similar statements appear in the *Hōm Yasht*, the words of which "bring health and victory against enemies" (*Yasna* 10.18). Whether or not the words were believed to compel *haoma* after the manner of magical conjurations or to exert more gentle influence upon *haoma* to do what was asked, the motivation for reciting the *Hōm Yasht* should not be overlooked: "(*Haoma*) understands the many truly spoken sayings. . . . *Haoma* . . . does not question . . . the truly spoken word" (*Yasna* 9.25). The practical purpose of the *Hōm Yasht* does not

seem to be to communicate observations about the properties of sauma, but to influence the outcome of drinking it. In general, it may be assumed that the effects attributed to sauma in the *Hōm Yasht* are only the desirable ones the recital of the text was believed to further.

§88 The aspect of sauma most extolled in the *Hōm Yasht* is the quality of its intoxication, but one cannot assume that the characteristics sought were those actually expected. The focus upon the benign effects may be taken as reflecting an actual concern that the effects may be unpleasant.

Attribution of generative powers

§89 We may next turn to another property shared by harmel and sauma. The very end of the *Šafta ḏ Šambra* recommends the preparation of *Peganum harmala* for a purpose quite different from the apotropaic healing with which the invocation is otherwise concerned:

> Read it over them and administer the potion to a woman that desires to bring forth (a child) and for one that desires to have children (346.20).

The same virtue is claimed in the *Hōm Yasht:*

> *Haoma* gives pregnant women the birth of an excellent son and righteous progeny (*Yasna* 9.22).

§90 The *Hōm Yasht* also alludes to the power of *Haoma* punitively not to assist certain women to have desirable offspring.

avaŋhərəzāmi janyaoš ūnam	I renounce the vulva/burrow
mairyayå āvītō.xarəδayå	of the filthy roguish wench[23]
yā mainyeinti davayeinti	who plots to deceive
āθravānəmča haoməmča	the priest and *Haoma.*
hā yā dapta apanasyeiti	She herself, deceived, fails,
yā taṯ yaṯ haomahe draonō	sitting down to consume
nigåŋhənti nišhaδaiti	the *draonah*[24] of *Haoma:*

23. For this reading see below, §180.

24. Where the *draonah* ('portion', especially 'portion allotted as payment to a priest') of *haoma* is mentioned again in the *Hōm Yasht* (*Yasna* 11. 4-7), it refers to the organs of sight and of speech of the *haoma*-drinking priest (who surrenders his body [=*gāuš* of *Yasna* 11.7] to *haoma;* see below §150 n.3). *Haoma*, being a drug, would most likely work its effects on someone who drinks *haoma*, i.e. in the context of the *Hōm Yasht*, on the *Yasna* priest; yet here the "he" who could make a "filthy roguish wench" the mother of priests must be the priest and not *haoma* directly. The verse apparently alludes to sexual/reproductive aspects of the drug, although to whom or what the wench or her empty place may refer is completely obscure.

nōiṯ tam āθravōpuθrīm	He does not make her the mother of priests;
naēδa dasti hupuθrīm (*Yasna* 10.15)	He does not make her the mother of fine sons.[25]

§91 By contrast, the birth of illustrious sons is the only benefit which the beginning of the *Hōm Yasht* claims to have been realized by the first four mortals who extracted *haoma*.

> (*Yasna* 9.1) At the mortar time [the first period of the day], *Haoma* came upon Zarathushtra, purifying the fire and intoning the Gathas. Zarathushtra asked him: (2) "Who, man, art thou, whom I see as the most beautiful in all the material world, luminous with thine own life?"[26] Then the righteous *dūraoša Haoma* answered: "I am, O Zarathushtra, the righteous *dūraoša Haoma*. Take me, Spitāma, extract me that I may be drunk, praise me with might, as the other *saošyant*s [saviors] have praised me." (3) Thus spake Zarathushtra: "Praise be to *Haoma!* Which mortal in the material world first extracted thee? What reward was granted him? What benefit came to him?"

§92 *Haoma* responds to Zarathushtra's questions about the first four mortals who extracted him, saying that the benefit they received was the birth of sons,

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25. A preparation which probably contained sauma is described by Pliny from the *Chirocmeta* (*Naturalis historia* XXIV:166; see below, §151): "Democritus [Bolus of Mendes] gives the name *hermesias* to a means of procreating children who shall be handsome and good. It is not a plant, but a compound of ground kernels of pine nuts with honey, myrrh, saffron, and palm wine, with the later addition of *theombrotion* and milk. He prescribes a draught of it to those who are about to become parents, after conception, and to nursing mothers. This, he says, results in children exceeding fair in mind and body, as well as good. Of all these plants he adds also the magical [or Magian?] names". *Theombrotion* ('food for the gods, divine food') which the *Chirocmeta* describes as a finely scented plant growing thirty *schoeni* (i.e. about 200 km.!) from the Choaspes (Karkha) River and like a peacock in its colorings, may be identified with sauma. For "peacock" see below, §§172-177. Pseudo-Democritus also says of *theombrotion*: "The kings of Persia take it in drink for all bodily disorders and for instability of intellect and of the sense of justice [meaning perhaps as a test for these instabilities, since a king would hardly have confessed himself to be in need of treatment for them] and that it is also called *semnion* from the majesty of its power". Greek-Latin *semnion* is from Greek σεμνός 'awesome, sacred', and may be a translation of Avestan *spənta-* as the name of the plant.

26. Because plants do not speak, the human appearance of *Haoma* more probably reflects a characteristic of the subjective experience of the drug than the morphology of a plant species. Hence we cannot conclude from these words of Zarathushtra that a given specimen of the *haoma* plant, or of the roots of the plant, actually had the appearance of a luminous and beautiful man. Gernot Windfuhr (1986), however, makes this passage the basis for arguing that *haoma* was the (geographically remote and psychopharmacologically irrelevant) ginseng plant because (the most highly valued) ginseng roots have a homunculus shape (with one eye). To Windfuhr's discussion may suitably be added reference to the identical ideas for identifying ginseng with *soma* of P. Andreas Eckard (1928: 226-230).

Klopin's (1980) proposal that *haoma* was *Mandragora turkomania* seems inspired by associating with the reputed man-like shape of mandrake roots a similarly concrete interpretation of Zarathushtra's salutation of *Haoma*. Encounters with human incarnations of plants are often reported by *yagé* users; indeed, the skills of the *yagé* healers studied by Luna (1986 and 1987) are *only* learned by means of encounters after drinking *yagé* with a human incarnation of the *Banisteriopsis* plant.

whose merits he then briefly describes. For example, *Haoma* says (*Yasna* 9. 13-15) the fourth to have extracted him was Pourushāspa, with this result:

> To him were you born, you, righteous Zarathushtra, in the house of Pourushāspa, opposed to the *daēvas*, following the law of the *ahuras*. (14) Famed in Aryana Vaējah, you were the first to sing out the *Ahuna Vairya* prayer; four times, each (time) sung out louder. (15) You who made all the demons disappear beneath the earth, those who had earlier rushed against this earth in the form of men. You who are the strongest, who are the bravest, who are the most active, who are the swiftest, who are the most victorious of the creatures of the Two Spirits.

§93 How *Haoma* was able to cause the birth of sons to these men is not stated, but one explanation, perhaps the only one for how a drug could have such results in the material world, is that it was thought to act as a sexual stimulant. This, indeed, is a property clearly indicated for sauma in the account of the birth of Zoroaster, epitomized from lost Avestan texts in *Dēnkird* VII (2.26-35): Zoroaster's father, Porushāsp, had his wife prepare a decoction of the *hōm* plant mixed with milk, which they both then drank (apparently without reciting the *Yasna* liturgy ordinarily accompanying the drinking of *haoma*). In consequence they lay together for the first time and, despite repeated interruptions by the demons, in the fourth attempt accomplished the conception of Zoroaster.[27] In this account, the only effect of sauma upon Porushāsp or his wife seems to have been sexual stimulation. As has already been noted, this is one of the effects of drinking a preparation of harmel reported in traditional Near Eastern pharmacopoeias.

Simultaneously Both Incense and Intoxicant

§94 So far the correspondence of the role of *Peganum harmala* in Iranian folk religion with that of *haoma* in the Avesta has been supported by evidence that *Peganum harmala* is: (1) invoked or described by terms similar to, or identical with, those used of *haoma*; (2) characterized by the same epithets; (3) assigned

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27. According to Abū al-Mutarrif ʿAbd al-Raḥmān ibn Wāfid (*c.* 1050) in Ibn Bayṭār (see above §44C): "By means of causing intoxication and sleep, it is useful to persons given up to passionate love." An anonymous authority is also quoted by Ibn Bayṭār as saying: "it clears the complexion and stimulates coition." For the sexual aspects of harmaline intoxication, see C. Naranjo (1975:140-144). The report of clinical studies by C. Caller Ibérico (1941) in which small doses of harmaline were found to have pronounced effects directly on sexual organs, cited by R. S. De Ropp (1951:267), should be mentioned, though such results are not usual. C. Naranjo recorded an aphrodisiac effect of harmaline upon subjects only at dosages less than those required for hallucinations.

A curious account that the Turkish Sultan Süleyman administered the seeds of *Peganum harmala* to excite women in his harem is given by O. R. Alander in his dissertation "Inebriantia" (1763: apparently the earliest published attempt to inventory the world's intoxicating plants); it seems, however, to have had as its basis only Alander's fantastic misunderstanding of a remark published by Pierre Belon (1555:207) speculating that the notorious drunkard Sultan Selim may have made use of harmel seeds to intoxicate himself! Nevertheless, the reputation of harmel as an aphrodisiac was well known to the Turks and, as Schwartz (§278) suggests, could explain its Turkish name *(y)üzerlik*.

similar properties; (4) associated in a similar manner with sources of religious authority; and (5) used for apotropaic purposes, for healing, and to promote procreation. However, there remains one important aspect of the use of harmel which does not at first seem to accord with the use of sauma, namely the burning of the seeds of *Peganum harmala* in folk religion, in contrast with the Avestan extraction and drinking of *haoma*. How can this disparity be resolved?

§95 While burning is the usual use reported for harmel in modern Iran, there is evidence in folk religion that an extract was also drunk; Mandaean materials recommend the drinking of a preparation of harmel for healing and procreation, as we have seen. However, the Mandaean texts also recommend ingestion of the plant for wholly apotropaic ends, as in the following passage where the plant is called by its Persian name, *isfand/ispand*:

> Solomon then asks, "O demon, what is the charm that exorcises thee?" . . . The demon replies giving a recipe and a magical formula, the latter usually being Arabic in Mandaic script. The recipes are various, for instance: "black *ispand* in the milk of a red cow: boil it over the fire and eat it" (Drower 1943: 156).

§96 According to the Shi'a *ḥadīth* quoted earlier (§59), Muḥammad was commanded by God to have his people ingest *isfand* for bravery. This *ḥadīth* is interesting in the present connection because it is followed by the recommendation not that *isfand* be ingested, but that it be burned. The *ḥadīth* concludes: "He ordained that it [*isfand*] be the incense chosen by the Prophet. No smoke rises more quickly to heaven than its smoke, which expels devils and averts misfortunes." Since the *ḥadīth* is prescriptive, the consumption of *isfand* by Muḥammad's followers seems to be mentioned in order to encourage the burning of the plant. Another of the *ḥadīth*s quoted states that "an angel is appointed over every leaf and seed of *isfand*," but in this case also, the moral drawn is that one should burn *isfand*. How the relationship of the simultaneously recommended ingesting and burning *isfand* was meant to be understood by those who heard these *ḥadīth*s is not immediately obvious. What is important for us is that they reflect Iranian traditions in which ingestion and burning were held to have the same effect.

§97 While there is evidence connecting the burning of *Peganum harmala* with its ingestion, it is insufficient to explain the fact that burning has been the chief mode of using *Peganum harmala* throughout the Islamic period in Iran, as presumably it was in Iran earlier. The question which must then be asked is whether sauma was indeed burned in pre-Islamic Iran. Although the fact has gone largely unnoticed, there is evidence for the burning of sauma both in Zoroastrian rituals and in the Avesta, indeed in the very earliest Iranian sources, the Gathas.

§98 In *Yasna* 32.14, Zarathushtra speaks of certain miscreants who "set their thoughts on helping the wicked one, whereby the bovine is ordered to be slain, (the wicked one) who burns the *dūraoša*- for help." Here sauma is referred to as

dūraoša-, which is known in the Avesta only as a fixed epithet of *haoma*.[28] This passage, which has much importance for the identification of sauma and for its history in Iran, is further discussed below (§§136 and 159-160); here we need

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28. For discussion of the meaning of Avestan *dūraoša-* see §§226-227 below. Bailey has reported (1964) that Khotanese "seems to have preserved the most ancient and famous word for the intoxicant, the *dūraoša-* of the Avesta." The passage (in P2925, Bailey 1969: II, 101.34) is translated by Bailey (1979: 161-162): "he here draws to me as one draws an exhilarant draught (*durauśa' ttraha*)." If Bailey is correct, this would be the only Iranian attestation of the word *dūraoša-* outside of the Avesta and this passage would be the most explicit reference to sauma drinking in Iranian literature that is not part of the Zoroastrian tradition. Bailey's reading of the passage is, however, questioned in the following note on Khotanese *durauśa'*, graciously contributed (October 6, 1983) by Professor Ronald Emmerick:

"*durauśa'* occurs only in P 2925.33 KT 3.101. According to Bailey (1979:161 *s.v.*), it means 'elatant, exaltant, exhilarant' and is an 'epithet of a beverage'. See also Bailey 1982: 51. Bailey appears first to have compared Khotanese *durauśa'* with Avestan *dūraoša* in 1964: 4. He did not mention the Khotanese word in his discussions of *dūraoša-* in 1936: 95-97; 1953: 22; 1957a: 30-32; or 1957b: 53-58. There is a formal difficulty involved in Bailey's comparison. He tries to deal with it by deriving Khotanese *durauśa'-* from a hypothetical **duraušya-* but does not account for the *-ya-* suffix. He offers no proof that **šy* could result in Late Khotanese *ś*, since his only parallel, Khotanese *khaṇauśa'*, which he derives from **kanaušya-*, is equally uncertain: the related forms have neither **šya* nor **ya*.

"Bailey's explanation of *durauśa'* involves a still more serious difficulty of a semantic nature. He describes *durauśa'* as an 'epithet of a beverage' but the only evidence he offers in support of the idea that a beverage is involved is an etymology. According to Bailey *durauśa' ttraha* means 'an exhilarant draught', but *ttraha* is nowhere attested in the meaning 'draught'. The etymology he offers for *ttraha* is not without its own difficulties. It is based on a root *tar-* attested only in the modern Iranian languages Ormuṛī and Parāčī and poses the question why **tr-* did not become *dr-* as in *drrai* 'three', cf. Avestan *θrāiiō*, Old Indic *tráyaḥ*.

"There is a well-attested Khotanese word *ttraha* meaning 'radish': see Bailey 1979: 143, *s.v. ttrahā-*. Its meaning is guaranteed by several bilingual passages in which it corresponds to Sanskrit *mūlaka* and Tibetan *la-phug*. The soundest method of procedure would seem to be to see whether *ttraha* in the passage in question could not bear its normal meaning. In fact the use of the verb *thaṃj-* with *ttraha* would suggest that it may well do so. Here *ttraha thaja* may mean 'one pulls out a radish' rather than 'one draws an exhilarant draught'. For this use of *thaṃj-* one may compare in Old Khotanese *kho ju ye viysu thaṃjäte khārja* 'as one pulls a lotus out of the mud' (Emmerick 1968: 5.90). This parallel is particularly apt. In Emmerick 1968: 5.90 the comparison is between pulling a lotus out of the mud and rescuing someone from the ocean of birth. Now Bailey describes the context of *ttraha thaja* as 'an amorous context' but the immediately preceding lines 31-2 refer to *vauma vi ī parauysadā* 'of those drowning in the ocean' and to *satsaira* 'the cycle of existence'. The context is thus clearly similar to that of Emmerick 1968: 5.90.

"On this analysis *durauśa'* may be expected to be the locative of the source of motion like *khārja* in Emmerick 1968: 5.90. Formally it has the appearance of the locative from a noun **durauysa-*. In view of the use of Khotanese *dūra-* 'hard' in connection with *uysmā-* 'soil' as in *uysmṃnai pṇḍai dūrä* 'a hard clod of soil' Ch 00268.170 Bailey 1951: 67 [Deśanā 22]), one is tempted to regard *durauśa'* as miswritten for **durauśma'* 'in hard soil'. The locative form would be like *rraśma* from *rraysmā-* 'battle-rank' (Emmerick 1968a p. 277). The omission of the lower portion of a complex akṣara is a not uncommon kind of scribal error. However, one cannot be absolutely certain that *durauśa'* is not an adjective qualifying *ttraha* 'radish'.

"As a tentative rendering of *ṣa' ma vā thajai khū *durauśma' ttraha thaja* I would suggest 'he pulls me out as one pulls a radish out of hard soil'. For confirmation it will be necessary to scan Buddhist literature for such a comparison."

note only that it clearly shows that sauma was something in the Avesta which was burned.

§99 It is important to point out now that sauma is represented as being burned in the *Yasna* rite itself. During the recital of the hymn to Fire in *Yasna* 62, the residue of the plants from which the *haoma* extract has been obtained is placed in the fire.[29] The burning of haoma is also represented where the plant used as the chief ingredient of the *haoma* drunk in the *Yasna* and commonly called *hōm* in Iran today, *Ephedra*, is burned as fuel incense which Boyce (1970: 64-65) reports takes place on almost all occasions when an animal is slaughtered for food among the Iranian Zoroastrians (see §§115 and 131).[30]

§100 Where we find reference to the burning of sauma in the Avesta, the plant is called *dūraoša-*, not *haoma*. This is probably best explained by the fact that the literal meaning of *haoma*, 'extract', refers to an aqueous state which will not burn. To speak of burning an extract would seem especially inappropriate in view of the Avestan prohibition of mixing fire and water, which excluded even the use of moist wood as fuel for ordinary household fires.

§101 The placing of incense on fires is a dominant motif in ancient Iranian iconography and was of great importance in Iranian rites, focused as these rites were on fire, for which fragrant fuel (Avestan *aēsma- baoiδi-*) was required. The above noted ritual uses guarantee that sauma was a suitable offering to the fire. Since sauma was the most sacred of plants, it should have been a preferred offering. Frankincense and sandalwood, the incense favored by Zoroastrians (and other Iranians) today, are foreign products that were not readily available in ancient Iran and were probably unknown to the early Iranian pastoralists. Because there are few plants indigenous to the Iranian area useful for incense, sauma must have met this need whenever it was available.[31] Of the few native

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29. "When [the solid remains of the twigs out of which the liquid has been well squeezed by the fingers in the strainer are] thoroughly dry, they are put into the fire at the time of *Atash Nyayish*" (Haug 1884: 402 n.1). This must refer to *Yasna* 62.9, after which ritual instructions are for the *raspī* to place *hōm* and *urwarām* upon the fire ("*hōm ud urwarām kustag ō ātaxš dahišn*", Darmesteter 1892-1893: I, 389 n.28). The burning of the residue of *haoma* is also reported by A. Khodadadian (1975: 228-229), F. M. Kotwal (in Boyce 1975b:167 n.134 and 323) and F. M. Kotwal and J. W. Boyd (1977:31).

30. The *hōm* is burned together with frankincense during the recital of *Yasna* 7 and 8 in a *drōn* ceremony (Boyce 1970: 64-65). The older practice still survives at the festival of *Mihragān*, however, when under otherwise identical circumstances, it is not the plant called *hōm* but *Peganum harmala* which is burned, see §115.

31. While the names of other incense plants (such as *vohu.gaona-* or *vohu.kərəti-*, see §238) are obscure in the Avesta, the burning of juniper (Avestan *hapərəsi-*) is linked there with the otherwise unknown "Vyāmbura" *daēva*-worshippers. Burning juniper could not have been a practice limited to *daēva*-worshippers, however, because juniper is abundant and valued as a fragrant fuel over much of eastern Iran and the Indo-Iranian borderlands. Juniper is burned apotropaically together with harmel in the Shina and Hunza areas (Jettmar 1975: 217 n.134, 258, 270, 421), and in Wakhan (Grjunberg and Steblin-Kamenskij 1976:249-250). The burning of juniper together with a fragment of "*hōm*" (*Ephedra*) in modern Khorasan

substances used as incense, the seeds of *Peganum harmala* seem consistently preferred in Iran during Islamic times,[32] and there is every reason to believe that they were also preferred in Avestan times, in full accord with the identity of harmel as sauma.

(Aitchison 1889:434) is presumably a reflection of the same practice but, again, with the replacement of harmel by *Ephedra*.

32. The seeds of *Peganum harmala* are regularly burned in offerings to open fires by the Zoroastrians of Iran today (see J. S. Soroushian 1956, *s.v. būtī sven*, and *čaryū*). W. Eilers and M. Mayrhofer (1962:68n.) report that in Yazd the Zoroastrians burned as incense *kundur* (apparently locally designating pine resin), sandalwood, *senjed* (oleaster), and *isfand* (*Peganum harmala*). In the nineteenth century, the seeds of *Peganum harmala* were exported by the Zoroastrians of Iran to those in India for use as incense; see J. E. Polak (1874: 703). The fact that the modern burning of *Peganum harmala* is not for aesthetic but for apotropaic ends is consistent with what Zoroastrian tradition indicates must have been the case with sauma: "The burning by the Parsees of sandalwood incense on the holy fire during the performance of all religious ceremonies and prayers . . . is intended not so much to propitiate the good spirit of the holy fire, as to scare off the evil spirits by the fumes of the materials burnt" (Ruttonshaw Kershaspji Dadachanji [1911: 341]).

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THE EVIDENCE OF ZOROASTRIAN RITUALS

§102 This chapter will examine the use of plants to represent sauma not only among the Zoroastrians in India, the Parsees, but in greater detail among the small groups of Zoroastrians in and around the cities of Kerman and Yazd in central Iran, who have maintained a tradition of rituals and religious customs apparently unbroken since pre-Islamic times. We shall consider how under varying circumstances both of the two plants extracted for Zoroastrian *Yasna* rituals, *Ephedra* and pomegranate, and a third plant, rue (*Ruta graveolens*), are ritually used to represent sauma and how the role of each of them provides evidence that sauma was harmel.

§103 The most explicit Iranian representation of the consumption of sauma is found in the *Yasna* ritual, which lasts about two hours and is performed several times each morning by priests in Zoroastrian fire temples. During the *Yasna* a priest in the role of *zōt* (Avestan *zaotar*) executes the following three major ritual actions: (1) after reciting *Yasna* 8.4 he consumes some of the *drōn* bread (which appears to be a vestige of sauma, as is discussed separately §133); (2) during the recital of *Yasna* 11.10 he consumes a *haoma* extract; and finally, (3) while he recites *Yasna* 22-27 he prepares a second *haoma* extract, differing from the *haoma* he has drunk only in that it contains milk. This second *haoma* extract (the *āb-zōhr*, see §131) is poured down a well after the ceremony has concluded.

§104 The *haoma* extract consumed by the *zaotar* is not prepared during the *Yasna*, but before it, by the other priest participating in the ritual, the *raspī*. To prepare it the *raspī* sits alone within the consecrated area and pounds in a mortar, with water, three twigs of a species of *Ephedra*, referred to as *hōm*, and a piece sliced lengthwise from a twig of the pomegranate tree (Kotwal and Boyd 1977). From these crushed plant materials he squeezes out the liquid and passes it through a plate with nine holes, and then through a metal ring wound with three hairs from a bull, and into the *haoma* cup from which the *zaotar* will later drink. The residue from this extraction is thrown on the floor and is eventually burned (see §99 n.28). Only after the *raspi*'s preparation of the extract is complete does the *zaotar* join the *raspī* in the ceremonial area and begin recital of the seventy-two chapters of the *Yasna* liturgy. Thus, when,

about a quarter of an hour after the rite begins, the *zaotar* is handed the "*haoma*" to drink, it consists of an extract which has been pressed out from two plants. One of these plants presumably represents sauma while the other represents a secondary constituent, or additive, to the primary drug.

§105 The Indian *soma* rites do not attest a parallel to this use of two plants, but, as will be seen (§114), this situation cannot be the basis of an argument against two plants being part of the original ceremony. The extraction of two plants is indicated in the text of the Avestan *Yasna* liturgy as well as being represented in the ritual actions accompanying its recital and, since Iranian ceremonies have been consistently simplified (see Pavry 1918), not embellished, it is *a priori* unlikely that the second plant would be an innovation. We shall now consider the relationship to sauma of each of these two constituent plants, *Ephedra* and pomegranate.

EPHEDRA

(a) The relationship of *Ephedra* to sauma

§106 For centuries the Zoroastrians of central Iran have collected the leafless, much branched, jointed twigs of small shrubs of the genus *Ephedra* (locally known as *hōm*) in the mountains and have used them as *haoma*.[1] In areas of eastern Iran where these *Ephedra*s are particularly abundant (and where Zoroastrian influence has long been absent) they have such vernacular names as *hōm, hum-i bandak, xuma, um, uma, ōmə, oman, yūmana, amojak, uroman, humb, narōmb, nārom*, and so forth (see Table 3), all of which names derive from Old Iranian **hauma-*. This establishes that *Ephedra*s were well known by the name *haoma* in Avestan times and even earlier. What is more, still farther east in areas where Dardic and Indic languages are spoken, these species of *Ephedra* bear such names as *soma, som, sumanai, asmania, amsania, asmina-butī* and *somalatā*, indicating that in Old Indic they were called *soma*. A point which is of obvious importance to determining the botanical identity of sauma but which seems not noted previously, is that the naming of *Ephedra* from *hauma* in Iran, and from *soma* in Indic, indicates that *Ephedra* was called **sauma* already in the common ancestral Indo-Iranian language.

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1. The *Ephedra* plants used ritually are one to two-foot high shrubs having many thin, yellow-green branches emerging from a somewhat woody base. They are characterized by leafless, jointed stems, the ends of which (in female plants) sometimes bear globular 1/4-inch fruits. They therefore have a gross similarity in appearance to harmel plants in winter, although confusion between *Ephedra* and harmel is hardly likely. Botanical differentiation of species of the genus *Ephedra* is often difficult. Presumably several of the ten species occurring in Iran (Riedl 1963) could serve as *haoma* in ritual. Boyce's (1970: 62) samples were *E. pachyclada* Boiss. (see Figure 4) or *E. intermedia* Schrenk & Mey., var. *Persica* Stapf. Bornmüller (1893: 43) reported "*E. distachya*" to be the plant used as *hŏm* in Yazd, but no species of this name is included in the *Flora Iranica*. Pictures of *Ephedra* plants used as *haoma* appear in J. Darmesteter, (1892-1893: I, lix); A. V. W. Jackson (1906: 387), and J. R. Hinnells (1973: 127; photograph by Mary Boyce).

§107 Moreover, the use of *Ephedra*s in present day Iranian *haoma* rituals was probably paralleled by the use of *Ephedra*s in the *soma* rites of the north Indian Vedic schools, which endured until the tenth century Islamic invasions of north India. Today *soma* rites are rare and are found only in south India, where schools of Vedic priests were to some extent reestablished by refugees from these invasions. The plant which reports uniformly indicate to be used as *soma* in these south Indian rites is an asclepiadacious, leafless climber, *Sarcostemma brevistigma* Wight & Arn.[2] The twigs of this plant contain a milky sap, but when dry they may be difficult to distinguish from *Ephedra* stems.[3]

§108 *Sarcostemma*s are tropical species and could not have been available for use as *soma* in Vedic times because they are absent from the flora of north India, and must therefore have been adopted only when, long after the Vedic period, Brahman priests emigrated to south India. These priests must have then selected *Sarcostemma* to substitute for the plant traditionally used as *soma* in north India. *Ephedra* species do not seem to occur in south India, nor in fact near the ritual centers on the northern plains themselves, so, to have been used there during the many centuries of Vedic practices, they would have to have been imported from adjacent uplands to the north and northwest.[4] The greater distance and political barriers would, however, have precluded importation of *Ephedra* to the *soma* rituals once the sites of these rituals had shifted to south India.

§109 That it was *Ephedra* which *Sarcostemma* replaced as *soma* is evidenced by the fact that in Nepal today *Ephedra* is called by the Sanskrit name *somalatā* '*soma* creeper' (Singh 1979; Shrestha 1979; Manandhur 1980). The Islamic invasions resulted in the flight of Hindu refugees both to south India and to Nepal. Although these refugees do not appear to have established Vedic rites in Nepal, they introduced the Sanskrit language there. Sanskrit names for plants in Nepal date from the arrival of these refugees (J. F. Staal). The designation of

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2. Synonyms for *Sarcostemma brevistigma* Wight & Arn include *Asclepias acida* Roxb., *Sarcostemma acidum* Voigt., and *Sarcostemma viminale* Wall. ex Decne. A. C. Burnell (1878: viii n.), states that, while *Sarcostemma* was used for *soma* on the east coast of India, on the west coast two species of *Ceropegia*, "*C. Decaisneana*" and "*C. Elegans*" were used, but he does not say how he knew of the ritual use of these species. The two *Ceropegia*s are also asclepiadacious vines and probably merely substitute for *Sarcostemma brevistigma* in local rites.

3. The twigs of *Sarcostemma brevistigma* which J. F. Staal (1979: 156) observed in ritual use were, in fact, mistaken for *Ephedra* stems by the first botanist he consulted.

4. The importation of *soma* plants is reflected in the ritualized enactment of the purchase of a cart of *soma* plants described in *Śatapatha Brāhmaṇa* 3.3.1.1*f* (see Hillebrandt 1980: 160-167; Dandekar 1973: II, 112-144; Kashikar 1964: 270-277; and Staal 1979).

TABLE 3: MODERN INDO-IRANIAN NAMES FOR *EPHEDRA* SPECIES

Names underlined derive from PIIr. *sauma–.(see §106).

EPHEDRA GERARDIANA Wall.

amsania	Punjab (5)
asmani-booti	Punjab (1)
asmānia	Jhelam (31), Punjab (1, 10)
būdsūr/būtsūr	Punjab (10)
budagur	Punjab (12)
čewa	Punjab (1, 10)
ehewa	Punjab (22)
khanda	Kunawar (10)
khanda-phog	Bushahr (12)
khanna	Sutlej (31) Kunawar (10)
oman	Pashto (14)
phok	Sutlej, Janusar (19)
raci	Bushahr (12)
sang-kaba	Sherpa (Nepal) (16)
soma	Sanskrit (1)
somalata	Nepal (27)
somlata	Nepal (16, 28), Sanskrit (16)
thayon	Ladakh (29)
tootagantha	Hindi (1)
trano	Ladakh (10)
tsapatt(-tsems)	Ladakh (10, 31)
tse	Piti or Spiti (31) Ladakh (10)
tutgantha	Jaunsar (11,13) Hindi (15)
uman /uroman	Pashto (14)

EPHEDRA INTERMEDIA Schr. & Mey.

hōm	Central Persia (9)
hum/huma	Baluchistan (23)
imom/imik	Wakhan (30)
khanna	Kunawar (11)
maha/mawa	Khyber/Hindu Kush (24)
marizad	Baluchistan (8)
oman	Pushto (12)
porgaz	Brahui (8)
rogangaz	Baluchistan (8)
sumani	Chitral (11)
um/uma	Baluchistan (23)

EPHEDRA NEBRODENSIS Tineo.

gwatham	Baluchistan (8)
omah/umah	Baluchistan (11)

EPHEDRA PACHYCLADA Boiss.

asmina-buti	Gilgit (14)
hōm	Afghanistan (9)
hum/huma	Afghanistan (2)
kōreš	Qayen (Khorasan) (2)
maha/mawa	Khyber/Hindu Kush (24)
mao	Khyber (2)
som	Gilget (14)
oman	Pashto (3)
soma	Kafiristan/Nuristan (24)
um	Afghanistan (2)
uma	Afghanistan (2), Baluchi(24)
uman	Afghanistan (24)
xōreš	Afghanistan (2)
xušk-targ	Qayen (2) Baluchi (20)
yehma	Afghanistan (4)

EPHEDRA CILIATA F. & M.

andho-khimp	Indian desert (6)
bandak-māu	Pashto (26)
bandukai	West of Indus (31)
brata/bratta	Punjab (10, 31)
drāksa	Sanskrit (3)
hīb	Jaz Murian (Baluchi) (15)
hum-i-bandak	Afghanistan (3)
kucan	Punjab (10, 11, 31)
kūrkan	Punjab (10)
lana	Indian desert (6)
lastūk	Salt Range (Punjab) (31)
nangarwal	Bari Doab (Punjab) (31)
nikki	Punjab (10)
phog/phōk	Punjab (21) Rajputana (10)
sou-phogaro	Indian desert (6)
tandala	Salt Range (Punjab) (31)
um/umbar	Kashmir and India (3)

EPHEDRA (species not specified)

acilig	Azerbaijan (12a)
amojak	Khufi (30)
asmania	Kagan Valley (14)
bandak-e-kōhī	Afghanistan (26)
budsur	Punjab (22)
buzak	Afghanistan (26)
dundula	Punjab (22)
ehewa	Punjab (22)
hōm	Brahui (7), Pashto (22)
hum/humb	Baluchi (4)
jarkana	Pashto (26)
kučan	Punjab (22)
medrāx	Khowar (30)
modrag	Tajik-Wakhan (30)
nārom	Brahui (7)
nar-ōmb	Baluchi (4)
nawa	Pashto-Waziristan (14)
rīš-e-buz	Afghanistan (26)
oman	Pashto-Waziristan (14)
ōmə	Pashto (17)
usmania	Kagan Valley (14)
(w)umān	Tajik-Afghanistan (30)
xumá	Tajik-Zerafshan (30)
(y)imik	Wakhan (30)
yūmana	Munjani (30)
yūmenä	Yidga (30)

1. Ahluwalia 1967. 2. Aitchinson 1891. 3. Aitchinson in Watt 1889-1896. 4. Bailey 1972. 5. Bamber 1916. 6. Bhandari 1916. 7. Bellew 1874. 8. Blatter in Parsa 1941-1956. 9. Boyce 1970a. 10. Brandis 1879. 11. Brandis 1921. 12. Chopra *et al.* 1965. 12a. *Flora Azerbaidzan* 1950. 13. Gupta 1928. 14. Hocking 1958. 15. Leonard 1984. 16. Manandhar 1980. 17. Morgenstierne 1973. 18. Morgenstierne 1974. 19. Nadkarni 1954. 20. Nāṣerī 1971. 21. Nair 1978. Pakistan Forest Reseach Service 1956. 23. Parsa 1943-1952. 24. Qazilbash 1960. 25. Sabeti 1966. 26. Schapka & Volk 1979. 27. Singh *et al.* 1979. 28. Srestha 1979. 29. Srivastava & Gupta 1982. 29a. Stapf 1889. 30. Steblin-Kamenskij 1983. 31. Stewart 1869.

***Ephedra pachyclada* Boiss.**
Small gregarious shrubs.
Internodes at 2.5 - 6 cm. intervals.
Stem diameter 5 - 7 mm.
(After Ghahreman in Moybayeni 1980)

***Ephedra Gerardiana* Wall.**
Rigid, erect shrubs.
Generally with numerous stems
from a woody, creeping rootstock.
Up to 0.7 meter high.
Internodes at 2.5 cm. intervals.
Stem diameter up to 4 mm.
(From Nikitin 1957)

***Ephedra intermedia* Schr. & Mey.**
Small, erect shrubs.
Internodes at 3 - 6 cm. intervals.
Stem diameter 4 - 6 mm.
(From Nikitin 1957)

***Ephedra ciliata* F. & M.**
= ***Ephedra foliata* Boiss. ex C.A. Mey.**
Tall and scandent with slender branches. Internodes at 2.5 to 10 cm. intervals.
Stem diamerter up to 8 cm.
(From Nikitin 1957)

Figure 4. *Ephedra* species of the East Iranian–North India area.

Ephedra in Nepal by the Sanskrit term *somalatā* can only mean that when the Brahmans reached Nepal they found *Ephedra* growing there and they recognized it as the same plant they had known in north India as *somalatā* when it was being imported for *soma* rituals.

§110 This ceremonial use of *Ephedra* for millennia in both Iran and India must reflect some unique intrinsic property of the plant. The only characteristic of *Ephedra* markedly distinguishing it from the numerous xerophytes of similar appearance among which it grows is a pharmacological one, and this certainly must underlie its ceremonial role, that is, consumption as a drug. Some of the *Ephedra* species known by names reflecting *haoma/soma* contain, in quantities conditioned by rainfall and season, ephedrine, a sympathomimetic alkaloid somewhat similar in physiological action to adrenaline. The claims of several modern authors (e.g. Qazilbash 1960; Mahdihassan 1963, 1974, 1985; Falk 1987) notwithstanding, the pharmacological action of ephedrine as a stimulant is of insufficient intensity and too inconsistent in character with what is indicated for sauma by the Iranian evidence to allow identification of *Ephedra* itself as sauma, but it must nevertheless be its pharmacological action which underlies the specificity of *Ephedra* use in sauma ceremonies and consequently the common names of these plants. The cultural history of *Ephedra* also shows that it was not sauma. It is unknown in traditional Indic or Iranian folk medicine,[5] while in China, where it has been recog-

5. Ephedrine is contained only in the stem bark of *Ephedra* plants with none in the roots or stem wood, and can easily be extracted by preparing an infusion of the stems in a mortar. Ephedrine may constitute up to 2.5% of fresh stems of some *Ephedra* species (Hegnauer 1962-1973:I, 450-457) so that perceptible pharmacological effects may be expected from less than a gram of such twigs. The ephedrine content of *Ephedra*s is much influenced by the amount of moisture available to the growing plant and the season of its collection, and not all *Ephedra* species produce the drug (see Chopra *et al.* 1965: 146 *seq.*; Nadkarni 1954: 486 *seq.*). If, as is argued below, *Ephedra* was valued only as an additive to sauma, with the omission of sauma from the ceremonies, the pharmacological potency of *Ephedra* plants would have ceased to be significant, and the precautions necessary to preserve the effectiveness of ephedrine, which is easily destroyed by heat or moisture (Blakelock and Gillett 1966: 83), seem indeed not to be observed in the handling of the *Ephedra* plants employed in modern Zoroastrian rituals. The procedure prescribed in the *Vidēvdād* (5.42-43) of burying polluted *haoma*s under the floor of one's house for one year could nullify the potency of any drug plant.

While *Ephedra*s are easily recognizable as a distinct class of plants, the various species look much alike and it is unclear to what extent the early Indo-Iranians distinguished between the species recognized in modern botany. It seems that names reflecting Indo-Iranian **sauma-* are now applied to all the species of *Ephedra* commonly encountered in the east Iranian-northwest Indian uplands. Application of such names to the only local species growing at lower elevations, *E. ciliata*, which contains no ephedrine, although also attested, is apparently less pervasive. The *Ephedra* species most probably imported and purchased for ancient north Indian *soma* rites was *E. Gerardiana*. The creeping habit of this species probably explains the conception of *soma* as a creeper (Sanskrit *-latā*) and thus ultimately accounts for the selection of the climbing plant *Sarcostemma brevistigma* to serve as *soma* in south India. There is no evidence that *haoma* was ever supposed in Iran to be a climbing plant.

nized for many centuries as a medicine, it is not regarded as intoxicating and its consumption lacks ceremonial or religious associations.[6]

§111 The clearest demonstration that *Ephedra* cannot have been sauma exists in the very fact that *Ephedra* extracts are today drunk as *haoma* by Zoroastrian priests who do not become intoxicated from them and whose predecessors, moreover, apparently consumed *Ephedra* extracts for centuries without so much as knowing that *haoma* is said in the Avesta to be intoxicating (see §22). It is also clear that, whatever pharmacological effects Zoroastrian priests may experience from drinking *Ephedra* extracts, it is not for the purpose of experiencing those effects that the extracts are drunk, whereas the object of drinking sauma preparations was precisely for their effects. What then will explain the identification of *Ephedra*s as *soma* and *haoma*, both by priests and throughout numerous Iranian and Indic dialects since near the time when sauma ceremonies first began?

§112 It has sometimes been supposed that *Ephedra* was symbolically substituted for the original intoxicant, but there are many reasons to doubt this. First, it would be strange that a merely symbolic substitute should itself have unique pharmacological properties. Furthermore, sauma must have been commonly known in ancient Iranian society as an intoxicating plant in order for the credibility of the sauma ceremonies, and the authority Iranian priests claimed from them, to have been maintained. Despite being commonly designated *haoma* (and the like), *Ephedra* is without suitable psychoactive potential in fact (and is not regarded in traditional ethnobotany as having any psychoactive properties at all) and, therefore, it cannot have been believed to be the means to an experience from which priests could claim religious authority or widely believed to be the essential ingredient of an *intoxicating* extract. Nor is it likely that *Ephedra* would be uniquely designated by vernacular names like *haoma* if it had been introduced into the ceremonies as a symbolic substitute for sauma, for this purpose could have been served equally well by many other plants without prejudice to the outcome of the ceremony. Moreover, for a single, arbitrarily chosen substitute for sauma to be so universally adopted would have required an implausibly uniform Indo-Iranian society (and priesthood); once such a choice were made, there would have been no means to communicate or enforce it. Even if that had been possible with respect to the conduct of ceremonies, it would remain to explain how the adoption of such a

6. Alison Bailey Kennedy has determined that the supposed references to *Ephedra* in early Chinese sources may actually pertain to species of *Equisetum*. She reports that at Kew Gardens in 1984 she examined the plant specimens recovered by Sir Auriel Stein from graves near Turfan and described by him (1931) as *Ephedra* twigs, and discovered them to be in fact *Equisetum* also. She has promised to present arguments that a similar confusion of *Ephedra* with *Equisetum* may underly the association of *Ephedra* with **sauma*.

convention among priests could result in the popular designation as *soma/haoma* of *Ephedra* species.[7]

§113 It is therefore neither likely that *Ephedra* was a substitute for sauma nor that it was sauma itself, yet, according to both Iranian and Indian traditions, *Ephedra* was essentially linked with the extract drunk during the ceremonies. The only way of reconciling this fact with the considerations of the preceding paragraphs is to view *Ephedra* as an archaic additive to the extract. Thus, *Ephedra* too would have been a *soma-/haoma-* 'pressed out (plant)', though not the only (or fundamental) one. The Avesta clearly indicates there was more than a single *haoma*. *Haoma* is *pouru.sarəδa-* 'of many kinds' (*Yasna* 10.12) and the word *haoma-* frequently appears in the Avesta as a plural, particularly in that part of the *Yasna* and its supplement, the *Vīsperad*, recited while preparing the *haoma* drink. Also both *haoma-* and *para.haoma-* 'subsidiary *haoma*' are named at those points in the *Yasna* liturgy where there occur a list of the items to be consumed by the *zaotar* (i.e. at *Yasna* 3.2; 4.1; 7.26; and 8.1).[8]

§114 The pre-Islamic use of *Ephedra* as *soma* in Indian rituals casts light on its function as a constituent of the ritual extract. In the Indic tradition, after sauma came to be omitted from the ceremonies (which appears to have been a necessary precondition for their continuation; see §155), *Ephedra* continued to be pressed out as *soma*. No additional plant was introduced as a replacement for sauma. On the other hand, *Ephedra* itself could not have been a substitute for sauma because of the rationale of the *soma* rituals: *soma* was an offering to the gods, and it was in order to receive *soma* that gods made themselves present. It is hardly possible that rituals would be undertaken to summon the gods to

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7. The cognate Indic and Iranian names for *Ephedra* may aid in locating where the Indo-Iranians came from, for there are almost no other plants bearing cognate names in Indian and Iranian languages. The vernacular survival of the Indo-Iranian name for *Ephedra* implies continuous association with the plant by both Indo-Aryan and Iranian groups. While ephedrine containing species of *Ephedra* occur in alpine areas of Europe and China as well as in the Hindu Kush-Pamir-Himalaya highlands they are discontinuously distributed in Eurasia. In areas where they are not abundant, as in western Iran, *Ephedra*s have ceased to be known by *haoma*phoric names. An alternative to the widely held view that the differentiation of Iranian and Indic languages occurred in the course of two waves of eastward migration from southeastern Europe, is the hypothesis that this differentiation took place in the Helmand valley in eastern Iran. This would be consistent with the distribution of these *Ephedra* species as well as with the fact that Indo-Iranian culture developed around the herding of cattle. G. Gnoli (1980) has argued attractively that this area was the site of the ancient Iranian society reflected in the Avesta. Its unique regional suitability for a cattle rearing economy is also relevant to locating Proto-Indo-Iranian origins.

8. In Pahlavi *parāhōm* denotes the liquid extract as against the plant, nevertheless, the earlier Avestan term *para.haoma-* did not specify the liquid extract as against the plant and may never have been used for the extract at all. The term *haoma-* must primarily have referred to the drink and in the Avesta it is not *para.haoma-* but *haoma-* which occurs as the object of the verb 'to swallow' (*xvar-*, *Yasna* 9.16).

partake of specious *soma*. Presumably the gods might be expected to supply a missing ingredient in the *soma* offered them, but would not have been expected to be taken in by a false offering. The fact that *Ephedra* is used alone in the later Indic rituals is a further argument that it was an original constituent and not a substitute plant and thus confirms the Iranian evidence that at least two plants were originally present in the ritual extract.

The ritual use of *Ephedra* as evidence that sauma was harmel

§115 *Ephedra* seems to have been used in Iranian rituals almost exclusively as an additive to the *haoma* mixture of the *Yasna*. Since *Ephedra* was identified with *haoma* in rituals, however, it would be remarkable if it were not also occasionally used to symbolically represent sauma. This is undoubtedly the case when *Ephedra* is burned, for *Ephedra* is not an incense plant. The burning of *hōm* (i.e. *Ephedra*) together with frankincense occurs in the ordinary Iranian rites sanctifying the slaughter of meat animals (see §101). This ritual burning of *Ephedra* must be a reflection of the earlier practice of burning *Peganum harmala* (together with frankincense [i.e. Persian *kundur*; cf. §§76 and 99]) which is still carried out (with precisely identical ritual procedures) in connection with the most important annual sacrifice, that of the *Mihragān* festival, by the Zoroastrian priests of the city of Yazd.[9] Thus, where *Ephedra* is used alone, it is manifestly as substitute for *Peganum harmala*, another indication that harmel was sauma.

§116 If *Ephedra* was an original constituent of the ritual extract, its pharmacological properties must have been consonant with or complementary to those of sauma. It has been noted (§110) that ephedrine is a sympathomimetic drug, stimulating the sympathetic nervous system and thus interfering with sleep. The physiological effects of harmaline are in some respects the very opposite of those of ephedrine, for harmaline lowers blood pressure and may induce sleep (as was recognized as an effect of harmel in Islamic materia medica [§44]). It is not possible to precisely predict the pharmacological action of a combination of ephedrine and harmaline, but it is reasonable to expect that the action of ephedrine would diminish the tendency of harmaline to induce sleep and could thus facilitate the experience of visions. Indeed, no plant available in the Iranian environment seems better suited to be consumed as a means of averting sleep than *Ephedra*. In general, there is reason to believe that harmel used for the purpose of visions would probably have regularly been in the form of mixtures with other plant drugs, since, as has been noted (§38), the harmaline

9. Compare Boyce's detailed description of the burning of *hōm* and frankincense in the village of Sharifabad, cited in §99 n.28, with her (1975a: 112) account of burning *Peganum harmala* and frankincense by the more conservative priests of Yazd in the identical ritual procedure.

containing preparations of *Banisteriopsis* consumed in South America for visions typically involve the admixture of other plants. Likewise, when clinically administering harmaline orally in order to induce visions, Claudio Naranjo found that harmaline most effectively induced visions when it was combined other psychoactive substances. Apparently over many generations the shamans of South America have discovered how to induce a wide range of experiences by varying the additives to the *Banisteriopsis* drug and a parallel body of empirical lore may have developed around the preparation of harmel as a drug. Not only do the properties of *Ephedra* seem specifically suited for use with harmaline, but the mere datum that sauma was prepared in mixtures is particularly consistent with its identification as harmel, for the effects of most plant drugs are not to such a degree modified by other drugs consumed with them.

POMEGRANATE

(a) Pomegranate and the identification of sauma with *haδānaēpǎtā*

§117 If it is allowed that *Ephedra* may have originally been an additive to sauma, then, of the two plants compounded for the modern *Yasna* ritual, it should be pomegranate rather than *Ephedra* whose original purpose was to symbolize sauma. The prevailing view, however, has been just the reverse: that pomegranate was an additive plant. The Avestan term *haδānaēpǎtā*, which is named in the *Yasna* liturgy as a plant consumed together with *haoma* and to which the ritual use of pomegranate corresponds, is widely supposed to *mean* 'pomegranate'. This is first because in places where the Avestan *Yasna* liturgy calls for the presence of *haδānaēpǎtā*, the modern Zoroastrian ritual employs pomegranate twig, root, or leaf. Secondly, the identification of *haδānaēpǎtā* as 'pomegranate' is due to etymological assumptions. These etymological issues are discussed in §§231-251; here it need merely be said that the fact that the element *haδāna-* 'having seeds, seedy' is the basis of words for 'pomegranate' in some later Iranian languages does not prove that the entire compound *haδānaēpǎtā* also means 'pomegranate'. Moreover, the data, when examined closely, actually preclude the meaning 'pomegranate' for *haδānaēpǎtā* in the Avesta.

§118 In the Avesta *haδānaēpǎtā* is specified for two uses: as an ingredient of the intoxicating extract and as incense; yet for neither of these uses is pomegranate in any way suitable, nor should any feature of the pomegranate earn it the prominence of the *haδānaēpǎtā* plant. The pomegranate's fecundity symbolism, which accounts for its role in certain other religious contexts, is irrelevant here. It is the fruit which lends itself to this symbolism, but the fruit is not used in preparing the *Yasna* drink, nor could the *haδānaēpǎtā* collected as loads of fuel incense (*Vidēvdād* 14.5; 18.71) refer to the fruit. The Avestan *haδānaēpǎtā* is in fact never interpreted as pomegranate in the Pahlavi textual

tradition, where the Avestan word is simply transcribed and left undefined. What is even more decisive, however, is that Avestan *haδānaēpǎtā*, in addition to being described as a fragrant plant substance, is clearly classified as a soft (*varədva-*) as against a hard (*xraožd va-*) wood (*Vidēvdād* 14.2-3), whereas pomegranate wood is exceptionally close grained and slow burning, and is burnt in Zoroastrian sacred fires for these very qualities (Boyce 1977: 75).

§119 The term *haδānaēpǎtā*, no cognates of which survive in any later language, was probably not common (if used at all) in ordinary speech, but belonged rather to priestly usage (like other Avestan terms for ritual substances, see further §237), and may have been one of the terms which designated sauma. The ambiguity of *haoma* as a term for sauma existed already in Avestan (and indeed far earlier as proven by the Indian use of names connected with *soma* for *Ephedra*); in the context of the ceremony, "*haoma*" implied the intoxicant but was commonly used to name the nonintoxicating *Ephedra* which was also, and more regularly, present. Whereas ordinary "*haoma*-containing" *Yasna*s might or might not actually include sauma, Avestan may be expected (especially in light of the ordeal functions of the *Yasna* discussed in Chapter 6) to have had a means of more emphatically asserting the presence of sauma in the extracts prepared for the *Yasna* . The characterization of *zaoθra*s (see §129) as containing both *haoma* and *haδānaēpǎtā* (in *Yasna* 22, 24, 66, etc.) may indeed have been intended to assert that they really did contain sauma, although in the course of time a nonintoxicating plant was substituted in most and eventually in all yasna performances. The identity of *haδānaēpǎtā* and sauma is further indicated by the coincidence that the two uses which the Avesta assigns to *haδānaēpǎtā*, namely, as incense and intoxicant, are precisely the uses of sauma. It is unlikely that this unusual combination of functions would characterize both sauma and yet another Avestan plant. Pomegranate, by reason of representing *haδānaēpǎtā* in the modern *Yasna*, may therefore be regarded as the substitute for the sauma plant.

§120 This appears also to be the function of pomegranate elsewhere in Zoroastrian rituals. For example, Modi, in his account of *The Religious Ceremonies and Customs of the Parsees* (1937: 52), reports that "instead of the juice of the *haoma* plant, if [it is] not available at hand, the juice of a few grains of pomegranate . . . is dropped into the mouth of the dying person." In the older initiations described in texts, and in the modern initiations of priests, drinking *haoma* is required. Although according to *Pahlavi Yasna* 9.26 "one has not accepted the Religion until he drinks *hōm*", it is by no means sure that all persons espousing Zoroastrianism were required to consume sauma. However, as all members of this faith must today pass through an initiation modeled in part on the initiation of priests, it seems likely that sauma is reflected by the infusion of crushed pomegranate leaves and twigs which is administered to the novice at the beginning of these rites. Moreover,

pomegranate seeds (Modi 1937: 338; Drower 1944: 87) or twigs (Haug 1884: 407) appear to represent sauma when—as is the usual practice among Zoroastrian priests in India—they are placed on the *drōn* bread to replace the *sadāb* called for by the Pahlavi scholia to the *Nērangistān* (see below, §132 with n. 24).

§121 The choice of pomegranate to represent sauma may result in large part from the availability of the pomegranate, its being evergreen, and the importance of its fruit in other Zoroastrian observances, as well as its partial association by name with *haδānaēpǎtā*. But pomegranate is also characterized by a resemblance to *Peganum harmala*; in particular, by the likeness of its wild fruits to harmel seed capsules. This similarity is reflected in Arabic by the use of **ḥuraymla* (or **ḥurmayla*), a derivative of *ḥarmal*, and *ʾumm ḥarmal* 'mother of harmel' as names for pomegranate.[10]

§122 The present-day substitution of pomegranate for harmel in Zoroastrian ritual has a long history, as is shown by accounts (written in Islamic times) of practices observed at the ancient festival of *Isfandagān*. This festival occurs on the day *Isfandarmuδ* (< Middle Persian *Spandarmat* <Avestan *Spənta- Armaiti-*) (the fifth day) of the month *Isfandarmuδ* (the twelveth month), 30 days before the New Year. Accounts of a parallel Iranian festival occurring one month earlier, that of *Bahmanjana*, observed on the day *Bahman* (the second day) of the month *Bahman* (the eleventh month), say that that festival featured the consumption of the plant *bahman*.[11] If any plant was analogously consumed at

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10. "*Imḥarmal*: small black fruits of a variety of pomegranate which are not edible but are used to make a local medicine" (Guest 1933: 48, 79). "*Immḥarmal*" is a pomegranate according to Henry Field (in D. Hooper 1937:160, 226). According to Abū Ḥanifa al-Dīnawarī (d. 895) (Lewin 1953:104.8): "the *ḥrymlh* (vocalized *ḥurraymila* [حريملة] by Ibn Manẓur [*c.* 1300], *Lisān al-ʿArab* [1966: 13, 195] is like the small pomegranate." M. Vonderheyden (1937: 456 n.1) says "Le diminutif حريملة designe une plant toute différente, une sorte de petit grenadier."

11. The analogy is particularly evident in a Zoroastrian text written in Yazd in 1719 in which *sapand* (=isfand=*Peganum harmala*) is stated to be the plant consumed at the festival of *Bahmanjana:* "In the matter of the *Behemanjeh* [*sic*] *Jashan*: This *Jashan* is solemnized on the day *Behman* of the month *Behman*. Some say that the Parsis on that day used to partake of vinegar mixed with *sapand* [i.e. *Peganum harmala*], while others say that they used to swallow *sapand* mixed with fresh milk, so that Behman Amashasfand might sharpen the memory and perfect wisdom and intelligence" (translated by M. R. Unvala, from an unpublished text [1908: 208; cf. MS. no. 100[283] in Dhabhar 1923: 63]).

This account was apparently derived from descriptions of this festival by Islamic writers of the tenth century (e.g. al-Bīrūnī [*al-Qānūn al-Masʿūdī*, see Sachau 1879: 424; *Kitāb al-Ṭafḥim li-awāʾil ṣināʿat al-tanjīm*, ed. Wright 1934: 181-182], Asadī Ṭūsī [ed. Dabīr Siyāqī 1957: 158]; Minūčihrī [ed. Dabīr Siyāqī 1959: 86]; cf. also the thirteenth-century account by al-Qazwīnī [ed. Wüstenfeld 1849: 2, 83]). The plant consumed at *Bahmanjana* in these Islamic accounts is not referred to as *isfand* or the like, but as the roots and petals of the (white/yellow and/or red) *bahman* plant. Although substances continue to be sold in bazaars as *bahman*, there is perplexity about its identity throughout Islamic pharmacognostic literature (see Meyerhof and Sobhy 1932-1940: 294-298; Renaud and Colin 1934:71; Stewart 1869:161). The plants usually identified by modern writers as red and white *bahman*, namely *Statice limonium*

Isfandagān, it should be *isfand*, as indeed, according to an informant of Anjavī Shīrāzī (1973:1, 53), *isfand* (presumably in quite small quantities), mixed with milk, was still consumed in Kerman at *Isfandagān* during the early years of the present century. A sixteenth-century account of *Isfandagān*, written in central Iran by Zoroastrian priests (see below §131 n.17), states that the festival was marked by preparing and burning a mixture containing (among five ingredients) raisins and *isfand*. This account also provides the detail that at the same time an exorcism against the poison of noxious creatures was written on saffron paper or deer skin and fastened outside the house. Al-Bīrūnī, in his tenth-century *Chronology* (ed. Sachau 1878:220), reports that the festival of *Isfandagān* was famous as the occasion for writing (between dawn and sunrise) an exorcism (essentially identical to the one described by the Zoroastrian priests) accompanied, rather than by the burning of *isfand*, by pulverizing together raisins and pomegranate seeds and eating these to nullify the poison of scorpions. Pomegranate seeds were not traditionally regarded as an antidote, but the seeds of harmel were (see, e.g. al-Bīrūnī quoted by Togan 1941:117). Originally the festival must have featured the consumption of

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(Plumbaginaceae) and *Centaurea behen* (Compositaceae), respectively, are Mediterranean species unknown in the Iranian area, while the variety of straw for which the name *bahman* is used locally in southwestern Iran (Eqtedārī 1955: 50-51; Soroushian 1956: 23) seems wholly incongruous with accounts of the *bahman* plants in the materia medica. Incongruous also is the mention of "white *bahman*" as a superior compote in the late Sasanian text *Xusrau ud Rēdag* 45 (J. M. Unvala 1921: 23).

The term *bahman*, rather than referring to yet another plant, may have been, like *haoma*, *dūraoša-*, and *haδānaēpātā-*, etc., a name for sauma in a particular context of its use. The form *bahman* goes back, via Middle Persian *Wahman*, to Old Iranian **Vahu- Manah-*, Avestan *Vohu- Manah-* 'Good Thinking', the *Aməša Spənta* (hypostatic aspect of the divinity) most associated with sauma (see Boyce 1970: n.85). In the *Dēnkird* VII 3.52 (Madan 1911: 624.6) account of Zoroaster's initial revelation, it is said that he saw Good Thinking (i.e. Vohu Manah = Bahman) as a giant man carrying a white twig (*arus tāg*, regarding which see §260). This white "plant of Bahman" seems to be the precedent for the white *bahman* plant of the *Bahmanjana* festival. It may be conjectured that the reports of the consumption of *bahman* at *Bahmanjana* were based on the precedent of the consumption of *isfand* at *Isfandagān*.

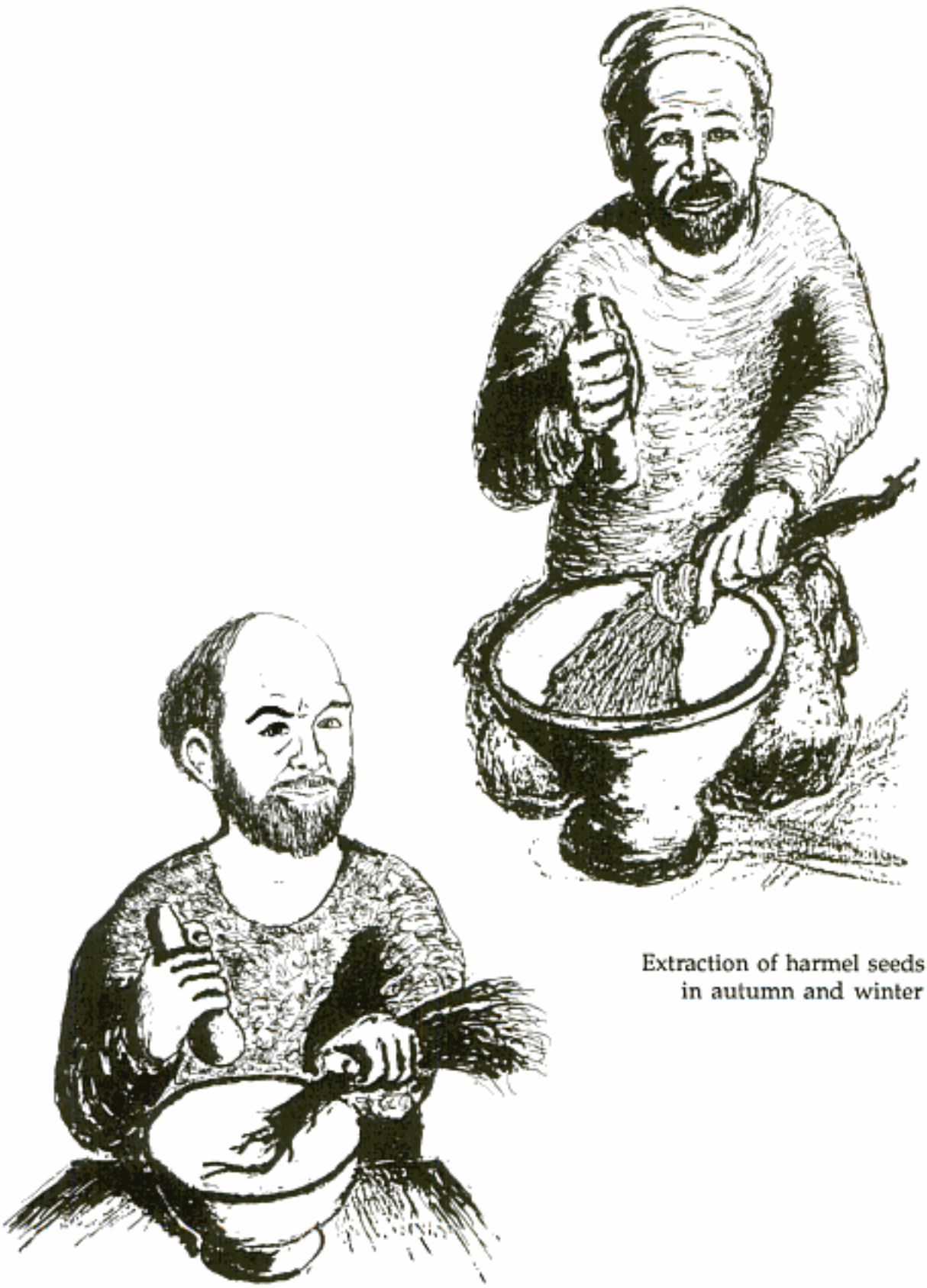
While the Yazdi account of *isfand* at *Bahmanjana* is probably taken ultimately from the tenth century Islamic sources, it is relevant for what it reveals of the attitude of Zoroastrian priests in the eighteenth century toward harmel. The fact that the *bahman* of the earlier accounts has been emended to *sapand* in the Zoroastrian version shows that harmel was believed by Iranian priests to have at one time been consumed to achieve psychoactive results (such as perfecting wisdom and intelligence), results which are otherwise attributed in the literature of Zoroastrianism only to *haoma*. It also discloses that there was an enduring awareness of *Peganum harmala* in the role of sauma among priests. The preparation of *Peganum harmala* with milk in both the account of *sapand* at this *jashan* and in the account of the more recent consumption of *isfand* at the *Isfandagān* festival in Kerman should be compared with the mixing of *haoma* with milk (discussed below, §138). Regarding the alternative preparation of *isfand* with vinegar above, cf. §43 n.1 and the preparation of *sīr-o-sedōw* (§137).

Peganum harmala (i.e. *isfand*) in order for the sauma effects to be experienced. In popular survivals of the festival later on, when most participants were no longer prepared for such effects as visions that drinking sauma might bring, the *isfand* was merely burnt, or else it was replaced by a nonintoxicating plant. Al-Bīrūnī's report shows that the substitute plant was pomegranate.

(b) Pomegranate and the identification of sauma with *barsom*

§123 Pomegranate appears to have a further substitute function in Zoroastrian ritual when it is used as the Zoroastrian *barsom* (Avestan *barəsman-*). The Middle and New Persian term *barsom* designates certain twigs which, during various rituals and, with special importance, while preparing *haoma* before and again during the *Yasna*, are held in the left hand of the *haoma*-preparing priest, whose his right hand grips the *haoma* pestle. In the Avesta, *barəsman-* is more often characterized as strewn than as held in the hand. Existing Avestan and Pahlavi texts say nothing about the source of *barəsman-/barsom* except that it is a plant substance, nor about the connection of holding it in the hand with strewing it. Zoroastrian works in New Persian state that *barsom* should be cut from either the pomegranate or the tamarisk (*Rivāyat of Kaus Kamdin* and *Rivāyat of Kamdin Shapur:* M. R. Unvala 1922:I, 484; II, 32-33; Dhabhar 1932:418), or else that *barsom* should consist of *hōm* (presumably *Ephedra*) or tamarisk, or, if neither of these is available, pomegranate (Shea and Troyer 1901:158; Dehkhudā 1947-1973: B 893). Since, except for tamarisk (whose presence is probably an intrusion of non-Iranian origin, see §126), the plants named (i.e. *Ephedra* and pomegranate) are the very two plants which are pressed out and drunk ritually as *haoma*, their use as *barsom* suggests that *barsom/barəsman-* may originally have been the same plant as sauma. The mutual identity of *barsom* and *haoma* may also be indicated by the accounts of the plant called in Arabic *hawm al-majūs* 'the *haoma/hōm* of the Magi'. Islamic pharmacological texts (from as early as the 10th century C.E.) furnish only vague and conflicting botanical information about *hawm al-majūs* (see above, §54 n.11), but it is significant that they do not report that the Magi extracted and consumed *hawm al-majūs* in their rituals (i.e. as *haoma*), but rather they say that the Magi, while reciting prayers, held *hawm al-majūs* (and thus that the plant corresponded with *barsom*). We then have attestation of the very same plants which are ritually prepared and drunk as *haoma/hōm* (i.e. *Ephedra* and pomegranate) being used as *barsom*, and complementarily, *haoma/hōm* described as if it were *barsom*.

§124 In addition to the use of pomegranate twigs both to represent sauma in *haoma* extracts and to serve as *barsom*, a further fact should be noted. At the very time a piece of pomegranate twig, apparently symbolically representing sauma, is being pounded in the mortar with the right hand, *barsom* is held in the priest's other hand (Kotwal and Boyd 1977). This suggests not only that



Extraction of harmel seeds
in autumn and winter

Extraction of harmel roots
in spring and summer

Figure 5. The manipulation of harmel plants for extraction.

barsom and sauma were identical, but also that sauma stems, rather than being cut into short lengths to fit into the mortar (as are the *Ephedra* and pomegranate pieces now used), were originally grasped together as *barsom* while their ends were being crushed in the mortar (see Figure 5).[12] The active drugs of harmel are concentrated not along the stems but, depending on the season, in either the roots or the seed capsules at either end of the stems (see above, §47). From the beginning of the year until the ripening of the seeds, the roots are the part of the plant richest in the harmala alkaloids. Because harmel typically grows in hard ground, only by grasping together the stems at their base and pulling off the upper few inches of root can roots of the plant be easily harvested. To extract a drug from roots thus obtained, the uprooted end of the stems could be held firmly over a mortar with one hand while operating a pestle with the other. Similarly, during the later part of the year when harmaline and harmine are concentrated in the seeds, these drugs might be most efficiently obtained by holding with one hand bundles of stems cut off at the base while pulling away and crushing numerous seed capsules into a mortar with the other hand. The *Yasna* ceremonies of ancient Iran took place out of doors in areas defined by furrows, and in most parts of Iran these furrows could have been drawn to enclose an area containing live harmel plants.[13] From the plants within the ritual area itself the drug could then be freshly prepared by holding together successive handfuls of stems and crushing in a mortar whichever end was appropriate for the season of the year, then discarding the stems. Wherever this process had been carried out, the numerous stems remaining from it would constitute a very visible (and perhaps also highly pungent) indicator of the site of sauma ceremonies. Thereby the act of preparing sauma might become associated with the strew of these stems. If it is to these strewn stems that Avestan *barəsman-* referred, then the act of strewing

12. An important part of some Zoroastrian rituals is the tying of the *barsom* twigs into a bundle. This procedure may be a reflection of binding together the stems of mature *Peganum harmala* plants in order to efficiently crush the terminal seed capsules in a mortar (cf. §82 n.21). The shape of the harmel plant (see Figure 5) is particularly consistent with the uniquely descriptive reference (*Nērangistān* 98 [*f.*179.10-15]) to the source of *barəsman-* as *+hamō.varəšajim paouru.fravāxšəm* 'having many [glossed in Pahlavi "30"] stems from the same root'.

13. Sauma ceremonies developed among a nomadic population and must have taken place in open country. The Iranians had no temples at all until Achaemenian times (Boyce 1975c) and seem to have performed *Yasna*s out of doors, perhaps until the Islamic conquest. Since *Yasna*s may not be witnessed by outsiders, they are now conducted in fire temples, but in earlier times security must have been achieved by locating them at relatively remote sites. "All that was needed for solemnizing the high rituals was a clear, flat piece of ground which could be marked off by a ritually drawn furrow" (*ibid.* 455). Living plants are preferred in Zoroastrian ceremonies, and since harmel plants are found in proximity to virtually all human activities in Iran, the extract would have been prepared from plants obtained within the ceremonial area itself.

barəsman- would betoken the performance of the *Yasna;* which is to say, the act of consuming sauma, hence "strew *barəsman-*" would in effect amount to an idiom for "consume sauma". The chief means of serving the gods in the Avesta is the performance of *Yasnas*, and in the Avesta there is no indication of any way in which gods would be served by the strewing of plants except in connection with the performance of the *Yasna*. This would account for the frequent mentions in the *Yasna* liturgy of serving the gods with strewn *barəsman-*.

§125 This explanation of barsom contrasts with the widely accepted view (see Paul Thieme 1957) that in origin Avestan *barəsman-* is essentially identical with Indic *barhis-*, which in the Vedas is also frequently said to be strewn (*stṛ*), and in Indian ritual consists of grass spread as a cushion for the gods (*devas*), upon which they would sit and receive offerings of *soma*. While the Avesta preserves an exact cognate of Indic *barhis-*, Avestan *barəziš-* (> Persian *bāliš*) meaning simply 'cushion', it is not mentioned in connection with ceremonies and need never have had anything to do with a ritual cushion for gods. In Iran the deities of Zoroastrianism seem to have been regarded as incapable of making use of a tangible cushion, so that if the spreading of grass as a seat for the gods was ever a custom inherited by the Iranians, it would early on have been discontinued. Whereas etymologically Avestan *barəsman-* has a common origin with the words for 'cushion', Avestan *barəziš-*, Indic *barhis-* (see below, §§252-258), there is no justification for concluding that *barəsman-* meant 'cushion', still less that it referred to a cushion of grass to be sat upon by the gods. It is possible that the tender foliage upon which the sacrificial victim was laid in Magian rites, as described by Herodotus (I. 152), is a reflection of the ancient ritual usage, and a cushion was still known in connection with animal sacrifice by the Sasanian commentators on the *Nērangistān*,[14] but this cushion is nowhere associated with the terms *barəsman-/barsom* in Iranian texts.[15] There is in fact no trace of a strew of grass for use by the gods, for sacrifices, or for any

14. *Nērangistān f.*128*v* (concerning killing a sheep): "[Placing] the rump toward the *zōt*, breast to the fire, dig a hole, put down a cushion without recitation (*nērang*). If no hole is dug the cushion will be damaged" (*bē ka may nē kand bāliš rēš bawēd*).

15. Boyce (1970:69 n.1) renders a passage at *Nērangistān f.*85*v.*11 as a reference to killing an animal "on" *barsom*, but such a translation is precluded by the context: *ka Srōš drōn xward barsom ne pad nigērišn a-pādyāb be bawēd a-š be šōyišn u-š be rāyēnišn u-š gūmānīg wizard bawēd ka gōspand pad yast a-š ō kušišn ka yast pad zōhr a-š zōhr ō dahišn Afarg guft had pad barsom ī a-pādyāb gospand nē kunišn u-š zōhr ō nē *dahēd.* 'When the *Srōš drōn* is consumed (and) *barsom* inadvertently becomes impure it should be washed and put right; the recitation becomes doubtful. When an animal is in the worship it should be killed. If the worship includes *zōhr*, the *zōhr* should be offered. (However,) Afarg spoke thus: "With impure *barsom* no animal should be killed nor should *zōhr* be *offered."' The *barsom* to which Afarg refers here is that present in the *Srōš Drōn* ceremony, which consists of *hand-held* twigs of *barsom*. This passage makes it clear that it was necessary also to *hold* these twigs when animals were sacrificed, and says nothing about *where* the animal was to die.

other purpose in the *Yasna* or in any existing Iranian ceremony,[16] yet during the performance of the *Yasna* the Avestan liturgy frequently proclaims the strewing of *barəsman-* as a part of the ceremony. Rather than suppose that ritual representation of this apparently important act of strewing *barəsman-* has simply disappeared without a trace from the ceremonies, one could more convincingly maintain that the strewing of *barəsman-* never referred to the preparation of a sacrificial cushion but referred instead to the act of extracting and consuming sauma (or later, the symbolic enactment thereof). In this figurative sense the gods have continued to be worshipped by "strewing *barsom*", although in concrete terms, in the *Yasna* today the *barsom* is held rather than being strewn during the pounding of "*haoma*" (and at other prescribed moments) and then laid aside in an orderly fashion on a special stand.

§126 Stems of *Peganum harmala* are insubstantial and, like grasses, wilt rapidly (cf. Avestan *nąmy-ąsu-* '[*haoma*] having a soft stem', *Yasna* 9.12, see §182). Whether one believes *barsom* to have originally been grass or sauma stems, he must explain why it is that *barsom* has historically consisted of woody twigs. The practice of holding twigs as the Iranian priestly insignia was undoubtably adopted from earlier Near Eastern traditions of holding tamarisk branches, as Peter Calmeyer (1975) has shown. In order for the Iranian priests to have adapted *barəsman-/barsom* to serve the ritual and emblematic functions of the hand-held twigs, it would have been necessary for them to have replaced the original *barsom* plants by stouter ones, such as twigs of the pomegranate or of *Ephedra*, or else by the anciently used tamarisk branches. The identification of these emblematic twigs with *barsom* indicates that *barsom* was in some essential way connected with the distinctive office of the Iranian priesthood. Since the priesthood was ultimately defined by the performance of sauma rites, it seems again highly probable that it was to these rites that *barsom* referred and, indeed, that the plant represented by the *barsom* twigs would have been sauma, the plant whose use must have *actually* been emblematic of the priesthood.

RUTA GRAVEOLENS

(a) *Ruta graveolens* in rituals represents harmel

§127 *Ruta graveolens* L., the garden rue, called in Persian *sudāb* or *sadāb*, is essential to the rituals of the Iranian Zoroastrians, who grow it in the precincts of each of their fire temples (Boyce 1966b: 54). Although the word *sudāb/sadāb* is likely Iranian (and seems itself to link *Peganum harmala* with sauma, see

16. The *Nèrangistān* commentary *Griftan ī Drōn* (see below §132 n.24) mentions cutting (or not cutting) grass to prepare a cushion "not for the comfort of the priest but for the ritual power (*nērang*) of the *drōn* (ceremony)," but, possibly because the *drōn* ceremony is now only performed inside fire temples, this is no longer done.

below, §§274-286), the plant it now names, *Ruta graveolens*, is not Iranian at all. Except in the coastal districts of Anatolia, Syria and Palestine and parts of central and southern Arabia, species of the genus *Ruta* (i.e. *Ruta graveolens*, *Ruta chalepensis* or *Ruta montana*) have not been reported as wild plants in Asia.[17] Rue seems to have first been cultivated in (or near) Greece, where wild species of *Ruta* occur.[18] The plant cannot have been known to the early Iranians and, therefore, *Ruta graveolens* itself cannot have been the plant originally used, unless the rituals wherein it figures (which we shall presently consider) are late innovations (and given the antiquity and pronounced conservatism of the Zoroastrian tradition, this hardly seems likely). In other words, there can be no doubt that in Iranian ritual *Ruta graveolens* is a substitute; the only question is, what is the plant for which it substitutes? The unique, intimate relationship of *Ruta* to *Peganum harmala* (see §53), the fact that in the Middle East, names for *Ruta graveolens* are frequently derived from names for *Peganum harmala*, and the direct evidence from the Zoroastrian rituals themselves, show that *Ruta graveolens* must be the ritual replacement of *Peganum harmala*. I shall next present evidence to establish that in these rituals *Ruta graveolens* has the role of sauma, indicating further that sauma was *Peganum harmala*.

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17. The species classed as *Ruta* in some Asiatic floras (e.g. *R. tuburculata*, *R. abiflora*, etc.) are apparently all species of the related genus *Haplophyllum* A. Juss. (see Townsend 1966a and 1966b).

18. Further confirmation that the cultivation of *Ruta* spread from a single location is the consistency of magical and supernatural powers assigned to *Ruta graveolens* and particularly the universal attribution to it of the ability to ward off and counteract the poison of noxious creatures. These powers are not ones which can be rediscovered by simple observation and represent beliefs which must have been borrowed along with the cultivation of the plant. (For a survey of the powers attributed to rue in European folklore see H. Marzell in Bächtold-Stäubli [1927-1942:7, 542-548], Branky [1901], and Gunther [1905]). The ascription of these powers to *Ruta graveolens* is probably not historically independent of their assignment to *Peganum harmala*. Since *Peganum harmala* has borne names meaning 'sacred' since Proto-Iranian times, it is likely its ethnobotanic importance as a source of supernatural powers is far older, and that Greeks exposed to Iranian beliefs about harmel (in Anatolia) transferred them to *Ruta graveolens* in Greece, providing an impetus for its cultivation, which eventually had a role in the spread of the plant to other Mediterranean lands and, in Roman times, throughout Europe. A major claim for the value of "rue" (Greek *πήγανον*) in the Classical World was its being a chief ingredient of the antidote of Mithridates Eupator (d. 64 B.C.E.), the last Iranian ruler of Pontus, but is is likely that the "rue" traditionally used by an Iranian prince as an antidote would have been *Peganum harmala* (Greek *πήγανον ἄγριον*, "wild rue"). The success of *Ruta* as the successor to harmel even where harmel is a native plant must be largely due to the ease with which *Ruta graveolens* can be propagated from cuttings (as against the difficulty of cultivating harmel, despite its proliferation as a weed), and also to the fact that *Ruta graveolens* is evergreen, a factor of particular symbolic importance in its replacement of harmel in Zoroastrian rituals. For the history of rue as a spice in Rome (but not so used in Greece), see A. Andrews (1948).

§128 Among the Zoroastrians in Iran *Ruta graveolens* is reportedly tasted on all religious occasions (see Sheriyar 1914: 311-312). This constant presence of *Ruta graveolens* is best explained by the precedent of sauma. This is confirmed by the representation of sauma by *Ruta graveolens* in three concrete situations: (a) as the chief plant used in the preparation of offerings (*zaoθra*s) to Water and to Fire; (b) as the plant to be consumed in the *drōn* rite; and (c) as the plant corresponding to Avestan *dūraoša*, a designation for sauma, at *Gāhāmbār* festivals.

(b) The use of *Ruta graveolens* in *zaoθra*s represents sauma

§129 In Avestan, *zaoθra* means 'that which is poured', hence, 'liquid offering'. The term usually seems to refer to the extracted sauma, drunk by a priest in the worship of a divinity. In two cases, however, *zaoθra*s are prepared which are not drunk: when offered to Fire and Water they are poured into the material manifestations of these elements.

§130 The *zaoθra* to the Waters, called *āb-zōhr* in Middle Persian, survives in two forms. When the *āb-zōhr* is offered after a *Yasna* it consists of the mixture of the extract of pomegranate and *Ephedra*, together with milk, which the *zaotar* prepares during the *Yasna* (see §104). This shows that the *āb-zōhr* originally contained sauma. At other times, when the pomegranate-*Ephedra*-milk mixture made during a *Yasna* is not freshly available, Zoroastrian priests in Iran make the *āb-zōhr* offering with a mixture consisting of grains, fruits, garlic, milk and *Ruta graveolens*;[19] this mixture then seems to serve in the place of the pomegranate-*Ephedra* mixture in representing sauma.

§131 Analogous to the Water offering is the Fire offering, the *ātaš-zōhr*. The essential part of the *ātaš-zōhr* is the fat of a sacrificial animal (Boyce 1966a), although a paring of its horn or even some hair may also be used, together with a plant constituent which, in parallel with all other *zaoθra*s, should be sauma. Two occasions when the *ātaš-zōhr* was still made were observed in 1964 by Mary Boyce among Zoroastrian communities in Iran: one at the *jašn-i Mihrīzed* (ancient *Mihragān*), when an animal was sacrificed and its fat offered to the fire accompanied by the burning of *Peganum harmala* (see §115); the

19. This information, like most of the details on Iranian ritual, comes from Mary Boyce, who made a unique study of the practices in Zoroastrian villages in 1964. The modern libation (*ōwzūr*), which she identifies with a form of the ancient *āb-zōhr*, as prepared by a priest, was from "five things, namely, milk, garlic, rue, rice, oleaster- [misprinted oleander-] fruits, and bread" (1966a:112 n.1). The essential place of sauma as an ingredient in the offering to Water is substantiated by Boyce (*ibid.* 113), citing *Nērangistān f.*140.16 to the effect that *parāhōm* (meaning here the pomegranate-*Ephedra*-milk mixture, see above, §113 n.6) and *āb-zōhr* are identical. She further observes: "In the Pahlavi texts the *āb-zōhr* is sometimes referred to as the pouring of *hōm* into the waters. This is readily understandable, since *haoma* regularly stands first among the ingredients of the libation and gives its name to it as the *para.haoma, parāhōm*" (1966a:117). This provides so much more reason to believe that the modern *āb-zōhr/ōwzūr* she describes contains a representation of sauma.

other at *čahārom*, the ceremony of the fourth day after death. Boyce (*ibid.* 107) reports that the *ātaš-zōhr* at *čahārom* consists of some fat, a paring from the horn of, and a scrap of wool from, the sheep sacrificed at the last *Mihragān*, pounded up with the root of an aromatic plant (*būd-i nākōš*), garlic, and *Ruta graveolens*. The five ingredients of this *ātaš-zōhr* parallel the composition burned on the festival day of *Isfandagān* (§122), which also included a paring of the horn of a sheep sacrificed at *Mihragān* and garlic, but contained raisins and *Peganum harmala* instead of *Ruta graveolens*.[20]

(c) Use of *Ruta graveolens* in the *drōn* ceremony represents sauma

§132 Apart from the classification of *sadāb* (i.e. *Ruta graveolens*) as a herb (i.e. as a *tarrag: Bundahišn* 117.28: B. T. Anklesaria 1956:149), the earliest Iranian mention of *sadāb* is in the *Nērangistān*, or 'ritual code'.[21] This text consists of brief passages in Avestan with interlinear Pahlavi translation interspersed with Pahlavi commentaries. The longest of these commentaries gives views of various Sasanian authorities (much in the style of the Mishnah) on the conduct of the abbreviated form of the *Yasna* ritual known as the *drōn* rite.[22] In this commentary (*Nērangistān* 28) *drōn* refers to small cakes of ritual bread, together with which alcoholic drinks or drugs may also have once been consumed (though this is no longer the case),[23] and in this text *sadāb* is specified as the plant to be placed on the bread cake consumed as *drōn* by priests.[24]

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20. According to the description provided by H. Anquetil du Perron (1771: 2, 577) from the "*vieux Ravaet*" *f.*252, a fifth ingredient of the mixture burned at *Isfandagān* was cotton seed. Variations of the constiuents (always five in number and always including *isfand*) are given (from the *Rivāyat of Kamdīn Shapur*) in M. R. Unvala (1922:I, 526-527; Dhabhar 1932: 341-342) and in S. D. Bharucha (1906: I, xiv).

21. Still earlier, in the latter part of the Syriac *Book of Medicines* of the sixth century C.E. (ed. W. Budge 1913: 675), *sdb* occurs (without definition as either *Ruta* or harmel) in recipes apparently copied from some non-Greek (Iranian?) source.

22. This commentary precedes the part of the Avestan text dealing with the failure to sing the Gathas due to intoxication during ceremonies. In particular, the Avestan (*Nērangistān* 29-30) discusses intoxication from consuming a *draonah-* 'portion payed to priests' consisting of wine or kumiss.

23. "When one desires to take a drug, when a drug is among the edibles assembled and set out with the *drōn*, he should taste the drug before (tasting the *drōn*)" *ka dārūg ē ō kāmēd xwardan ud ka dārūg az ān ī pad xwarišn mehmānīh pad drōn frāz nihišn u-š čāšnīg pēš ēn az dārūg kunišn* (*Nērangistān f.*46.5; equivalent to *Pahlavi Rivāyat* 182.4). The Middle Persian word *dārūg* seems to have been of similar meaning to, and may be the etymological antecedent of, English *drug*, French *drogue*, etc. (but for alternative views see E. Sluszkiewicz 1977). Because of the relative position of this passage within the text, Middle Persian *dārūg* cannot here refer to wine or an alcoholic drink. Wine and *hur* (or perhaps the mysterious beer "*wašag*" [see Henning 1953]; *Nērangistān* has *wš'k')* are subjects of a separate discussion in *Nērangistān f.*40.16 (corresponding to *Pahlavi Rivāyat* 175.7).

24. *Nērangistān f.* 40.11; *Pahlavi Rivāyat* 175.4. The whole of the commentary of which this is a part comprises a distinct Pahlavi treatise having the title *Griftan ī Drōn*, "The Conduct of the *Drōn* Ceremony." I shall present elsewhere a collocation of the two versions of this text

§133 The Avestan liturgy of the *Yasna* ceremony is a compilation of texts of differing origins. It does not seem to have been recognized previously that, by reason of its relationship to the liturgy, the consumption of the *drōn* bread must represent the act of consuming sauma as practiced before the insertion of the three chapters which comprise the *Hōm Yasht* (*Yasna* 9-11.15) into the text of the *Yasna* liturgy. The *Hōm Yasht* differs in content and form of expression from most of the text now surrounding it in the *Yasna* (see Schlerath 1968: xi) and must itself have originated as the liturgy of a separate and independent sauma ceremony (Boyce 1975b:266). The proposition that the consumption of the *drōn* bread represents consumption of sauma follows from these four considerations: (1) The parallel consumption of *soma* in the Indic *Yajña* shows that the *Yasna* originally included the act of drinking sauma. (2) If the three chapters which comprise the *Hōm Yasht* were deleted from the present *Yasna* liturgy, the *drōn* bread would be consumed at precisely that point in the recital of the liturgy where the drinking of *haoma* now occurs. (3) For the *Hōm Yasht* to have been inserted in its present position in the *Yasna*, sauma must have been drunk at that very point of insertion. (4) The only substance whose consumption is presupposed by the *Yasna* rite is sauma; there is no other Avestan substance to which the *drōn* bread can be likened. Thus the consumption of the *drōn* bread in *Yasna* 8 is historically equivalent to the consumption of the *haoma* in *Yasna* 11 as a representation of drinking sauma, and the specification of *sadāb* as the unique plant eaten with the *drōn* bread assigns it to the place of sauma.

(d) The Upse of *Ruta graveolens* to represent Avestan *dūraoša*

§134 The use of *Ruta graveolens* in place of sauma is again manifest in the legend of the origin of the obligatory holy days of the Zoroastrians, the *Gāhāmbārs*. These are six feast days, distributed over the seasons, on which is performed an extended form of the *Yasna*, the *Vīsperad* ('all the judges', see §150), the nature of which makes it especially likely that these festivals were characterized by the use of sauma. The *Gāhāmbārs* are quite ancient. They were reportedly celebrated before the time of Zoroaster, who appears from one account (see *Zātsparam* 21) to have had his initial vision in connection with one

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and also an examination of the *Čim ī Drōn* which accompanies it in the *Pahlavi Rivāyat* (pp. 166-169). It accords with the hypothesis that pomegranate and rue both represent sauma, that on the one hand the *Nērangistān* specifies *sadāb* as placed upon the *drōn* bread, and that, on the other hand, it is pomegranate which is placed upon the *drōn* bread in actual practice. Although *Ruta graveolens* resembles harmel more distinctly than does pomegranate, ingestion of an extract of *Ruta graveolens* causes gastroenteritis. Hence for the *Yasna*, where the drinking of an entire cup of *haoma* extract is required, pomegranate has been particularly preferred. The same consideration may have lead to abandoning the consumption of *Ruta graveolens* in the *drōn* rite, although in general the representation of sauma by pomegranate is the more ancient practice, since pomegranate is a native plant.

of them. The legendary origin of these six holy days is recounted in a letter sent from the priests of central Iran to Zoroastrians in India in 1628 in response to the discovery that *Ruta graveolens* was not being used in the rituals of the Indian congregations. Some *Ruta graveolens* plants were apparently sent with the letter, and the recipients were especially advised to use them at *Gāhāmbār*s and in the ceremonies performed to assure the safe passage of the soul on the third day after death.

§135 According to the legend related in that letter, the *Gāhāmbār*s originated under King Jamshid (the Avestan Yima), who during his reign of universal weal and prosperity was visited by a demon of greed disguised as a needy stranger. As hospitality required, the visitor was offered his fill of whatever the king could provide, whereupon he proceeded to devour the vast herds and everything edible that this richest of all monarchs possessed. King Jamshid prayed earnestly for help from Ohrmazd, who in response sent Bahman (Avestan Vohu Manah 'Good Thinking') to King Jamshid with the following message:[25]

> "Go and capture a yellow bovine and in the name of Ohrmazd kill it and command that it be cooked in old vinegar, and put garlic and *sudāb* into the caldron and place it before the demon so that he eats it."
>
> This was done, and when the demon ate the first mouthful, he withdrew and became non-existent.
>
> Then, from that day on, they instituted the *Gāhāmbār*, and whenever famine and want arise a bovine should be slain and garlic and *sudāb* should be cooked and eaten so that famine and want disappear. For *Gāhāmbār* it is absolutely necessary that *sudāb* compounded with garlic be burned in the *Gāhāmbār* fire and (also necessary) that it be tasted.

§136 This legend must have had its origin in an interpretation of the section of the Gathas which includes the passage referring to the burning of sauma by its distinctive epithet *dūraoša* (see §98). The Pahlavi translation of the relevant Gathic verses, which occur in the thirty-second chapter of the *Yasna* liturgy, states that a demon, who overhears Yima/Jamshid announce his intention to provide the people with meat, greedily sets about to slaughter the cattle himself. The Pahlavi recommends burning *dūrōš* (i.e. *dūraoša*) for assistance in

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25. Translation based on the text in M. R. Unvala (1922: II, 162-163, with parts also in I, 159.11 and 428.9) and (from another MS. of the same *rivāyat*) in J. J. Modi (1921). The same tale also occurs as the latter part of Chapter 94 of the metrical version of the *Sad Dar*, a Latin translation of which is given by Thomas Hyde (1700: 485-486) and a paraphrase from this by A. Christensen (1934: 645). The metrical *Sad Dar* was composed in Kerman in 1495 C.E., 132 years earlier than the letter quoted above, but its account differs only in the detail that a red, rather than a yellow, bovine was to be killed. For the later use of *sadāb* at the *Gāhāmbār*s of Zoroastrians in India, see J. K. Katrak (1941: 215-216).

counteracting this demon.[26] Equating, as we must, the burning of *dūraoša* (i.e. of sauma) with the burning of *Ruta graveolens*, we see that the latter is a substitute for sauma.

§137 The form in which *Ruta graveolens* is now present at *Gāhāmbār*s and at other religious occasions is in a mixture known as *sīr-u-sedōw* 'garlic and rue.' The following is a first-hand description by Mary Boyce (letter of February 19, 1970; cf. Boyce 1977:42) of its preparation among the Yazdi Zoroastrians:

> The *sedōw* (rue) is used either fresh or dried. It is crushed in a mortar with the *sīr* (garlic), and there is added chopped coriander leaves and turmeric, cumin seed, pepper, and salt. Fat (which must be the rendered fat of a sacrificial animal) is melted or oil (necessarily sesame seed oil) is heated in an iron pan. When this is very hot, the mixture is poured in from the mortar; and when it is heated right through, vinegar is added and then pure water. Occasionally a beaten egg is also added at this point. The hot mixture is then poured into a ritually pure utensil, usually a silver-plated bowl, containing chopped dried mint. A few bits of bread are added, and the bowl is carried at once to where the priest is officiating.

In *sīr-u-sedōw* the yellow bovine of the legend is represented only by fat from a sacrificial animal, and to the rue and garlic[27] are added spices (perhaps to rationalize the concoction as merely culinary),[28] but this mixture clearly has a common origin with that called for in the *Gāhāmbār* legend.

§138 The yellow *Gāhāmbār* cow and the fat representing it in *sīr-u-sedōw* have a correspondent in Zoroastrian eschatology that further establishes sauma as the plant to be consumed with them. At the end of the world a final *Yasna* will be performed in which the bull Haδāyuš will be slaughtered and its fat mixed with the "white *haoma*" to provide the draught of immortality for the

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26. Translations of the relevant parts of *Pahlavi Yasna 32* may be found in M. Molé (1963: 230), and E. W. West (1904: 189). Both of these scholars (as also H. Humbach [1974]) observed that the legend quoted above must have originated as an interpretation of *Pahlavi Yasna* 32.8-14.

27. Garlic is an ingredient of the *Peganum harmala* mixture prepared on *Isfandagān* (§§119 and 133), with which the *sīr-u-sedōw* mixture probably shares a common origin. Garlic may owe its presence here to its having been esteemed in its own right as an apotropaic in ancient Iran. There appears to have once been a *Sīr-sūr* 'Garlic-feast' on the fourteenth day of the tenth month, with the object of gaining protection against demons (al-Bīrūnī, *Chronology*, tr. Sachau 1879: 212). The third Old Persian month, *θāiγṛči-*, may have been named for garlic (Eilers 1953: 43n., but doubted by Boyce 1982: 25). In the Indian tradition, by contrast, garlic was regarded as impure (see Bedi 1960).

28. A secular form of this preparation seems to have survived elsewhere in Iran as *āb-kāma*, an infusion of spices eaten with meat. Historically, *āb-kāma* could be prepared with either *Ruta graveolens* (Dehkhudā 1947-1973: *s.v.*) or *Peganum harmala* (Minorsky 1953: 255), showing once again the equivalence of the two plants in Iran. Since *Peganum harmala*, which has no role as a spice in Iran, was probably the older ingredient, its presence in *āb-kāma* suggests that the origin of this bitter sauce may have been in the ritual connection of sauma with the sacrifice of meat animals for food (see §153).

resurrected dead.[29] Although the "white *haoma*" differs from ordinary *haoma*, just as the Haδāyuš bull differs from ordinary cattle, this mythological *Yasna* seems to be a paradigm for (or reflection of) the *Yasna* ceremony as it was ordinarily performed. Throughout the Avesta, *gav-* 'flesh/bovine' is mentioned as a constituent of *haoma* preparations. The individual deities of the *Yashts* are regularly worshiped with *haomayō gavā* (or **haoma yō gava* [cf. Hoffmann 1967]) 'flesh/bovine with *haoma*', and the *zaoθras* which the Avesta proclaims to contain *haoma* and *haδānaēpǎtā* are also said to contain *gav-*. In ritual usage *gav-* is often represented by milk (which is mixed with *soma* in India), and it was milk which was mixed with *hōm* to engender Zoroaster (§95),[30] but in some other rituals *gav-* may be represented not by milk, but by urine,[31] or horn, or in the account of *Gāhāmbār* beginnings above, by meat, whereas in the drink consumed at the final *Yasna*, it is in the form of the fat of the bull Haδāyuš.[32] The only modern ritual preparation involving the fat of sacrificial animals with which this "white *haoma*" mixture could be said to correspond is *sīr-u-sedōw*, in which *Ruta graveolens* has unmistakably the role of sauma.

§139 That the use of *Ruta graveolens* in Zoroastrian ritual must be in place of *Peganum harmala* was first recognized by W. B. Henning, who thought the replacement resulted from a superstitious regard for *Peganum harmala* as a plant (only) of sorcerers: "In late times *sudāb* was admitted to Zoroastrian ceremonies, probably as a substitute for *isfand*, in a concession to popular superstition" (1965: 39 n.2). The need to mollify Muslim suspicions of sorcery

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29. *Bundahišn* 226.3: *yazišn pad rist-wirāyišn Sōšyans kird abāg ayārān kunēd ud gāw ī Haδāyuš pad ān yazišn kušēnd, az pih ī ān gāw ud hōm ī spēd anōš wirāyēnd ud ō harwisp mardōm dahēnd ud harwisp mardōm a(h)ōš bawēnd* 'Sōshyans with helpers will perform the *Yasna* at the Resurrection of the Dead and they will kill the Haδāyuš bull at that *Yasna*, and from the fat of that bull and white *haoma* they will prepare immortality and will give it to all men and all men will become deathless' (similarly *Dādistān-ī Dēnīg* 48.16 and *Zātsparam* 3.15).

30. Milk is present in the putative sauma mixtures mentioned in §90 n.25 and §130 n.16. Harmel extract is drunk with milk according to the passage quoted in §95 and at the observance of *Isfandagān* in Kerman (see §122).

31. For the combination of *hōm* (*Ephedra*) with bovine urine in a form of *nērang*, see §79 n.17.

32. Because of the variation in the form in which *gav-* is ritually present, it seems unlikely that the bovine constituent served a pharmacological function. "Bovine" may have been consumed with sauma to facilitate for the drinker contact with the soul of the slaughtered beast and a means thereby of negotiating immunity from the ordinary consequences of killing sentient beings. The need to forestal retaliation by the slain animal's spirit in this way could have been a factor in the persistence of the centrality of sauma in priestly traditions (see Chapter 6). In the liturgy, at the conclusion of the *Hōm Yasht* (*Yasna* 11.1 and 7) recited just before the *zaotar* drinks *haoma*, *gav-* is a metaphor for the flesh of the *zaotar* (see §150 n3).

may indeed have been a factor encouraging the replacement of *isfand* in ritual by other plants.

(e) *Ruta graveolens* and the history of *soma* in India

§140 The Sanskrit term *somalatā*, used for *Sarcostemma brevistigma* and *Ephedra Gerardiana* in different places in the Indian area, also reportedly identifies *Ruta graveolens* (Fleming 1812, Piddington 1836, Monier-Williams 1899), as do also the synonyms *saumyā*, *somavallarī*, and other relevant Sanskrit terms (see Table 2). There does not seem to be any attestation of the use of *Ruta graveolens* as *soma* in Indian rituals, which is not surprising since an extract pressed out from *Ruta graveolens* is toxic. There is, moreover, no property of *Ruta graveolens* which could readily explain these names. However, since *Ruta graveolens* necessarily reached India via Iran, where it appears to serve analogously to *soma* in certain rituals, it may be that the Sanskrit names are modeled upon Iranian terminology of ritual substitutes for *Peganum harmala*. Although Achaemenian, Parthian, Saka and Kushan incursions into India may have exposed some Brahmans to Iranian rituals, there is nevertheless little reason to think that late Iranian ritual use of *Ruta graveolens* could have prompted adoption of the plant under the name *soma* in Sanskrit.

§141 If the Sanskrit names for *Ruta* do not then reflect Iranian use of the plant, the alternative is that the names were given to *Ruta* in the course of its propagation in India. It has generally been supposed that the dispersion of *Peganum harmala* across northern India resulted from Muslim transportation of the seeds for medical or apotropaic uses. However, peoples entering India from Iran probably used and esteemed harmel much more before the advent of Islam, and the conditions for its distribution have remained the same from the period antedating the immigration to India of the Indo-Aryans themselves. Although harmel may be locally abundant in its characteristic ruderial environment, it is not a common plant in India. It seems unlikely that *Ruta graveolens*, on the other hand, reached India much earlier than the Hellenistic period, since there is no evidence for its cultivation anywhere outside of Greece before that time, and since *Ruta* is not a part of the traditional Indian Ayurvedic herbal. As happened in Iran, when *Ruta* was introduced into India, it must have acquired the names of the wild species it most resembles, that is, *Peganum harmala*. If this is so, then harmel must have been recognized as sauma and designated *soma* in some quarters of India long after Vedic times.

§142 The problem of the availability of sauma in Vedic India has frequently been misunderstood. There is no reason to think that the absence of sauma has ever impeded the performance of Vedic rituals. The fact that sauma intoxication has been absent from the *Yajña* throughout historical times shows that sauma is unnecessary for the viability of that rite as an institution. Apparently, even before the completion of the ṚgVeda, a major use of the priests' knowl-

edge of Vedic hymns and ritual was for magical purposes, for which the intoxicating effects of sauma would not necessarily have been required. Historically, sauma seems not to have been essential to the magic of Indian priests. Sauma itself was doubtless potentially useful for such purposes, but the power attributed to sauma would presumably have been regarded as inherent rather than due to special priestly knowledge, and access to the plant by nonpriests, and particularly by non-Aryans and the intended victims of Vedic magic, would only have lessened the relative advantage of the Aryan priests in the conduct of magic. Whether or not sauma grew in India or only at a great distance from it, access to the plant by Indians would have been the same for the priests and their enemies alike. The problem for the Vedic priests would have been less how they were to obtain the plant themselves than how to prevent others from doing so.

§143 Just as knowledge of Vedic hymns and ritual techniques was jealously restricted by Indian priests, in the context of the Indian caste system it would have been useful for them to have controlled access to sauma. Since the actual growth and distribution of the plant could not be controlled, the only means of curtailing access to it would have been to obscure its identity. This was accomplished by the combination of elaborate obscurantism in the composition of hymns to the plant drug (an extension of a characteristic already found in certain Indo-Iranian genres [see Boyce 1975b:9]), with a corresponding proliferation of irrelevant ritual details. The *Brāhmaṇas* (*c* 600 B.C.E.) list a variety of plants, few of them clearly identifiable and many patently fantastic, for use as *soma* substitutes (e.g. *Śatapatha Brāhmaṇa* 4.5.10; 5.3.3; 6.6.3; see R. E. G. Müller 1954). These hypothetical substitutes do not seem to share features that could be related to a common original plant and do not at all show similarities with *Ephedra/Sarcostemma*. Because of the similar appearance of the *soma* of present-day Indian rituals (i.e. *Sarcostemma brevistigma*) and the *Ephedras* used in Iran, it can be supposed that there has in fact been a continuous tradition of the ritual plants used as *soma* and that the substitutes proposed in the *Brāhmaṇas* had no reality in actual practice.

§144 Although such tactics would have succeeded in obscuring the identity of the plant among the laity, outside of Aryan society knowledge of the identity of the intoxicant plant as a sacred object would persist among the servants of the priesthood and be adopted by them. This would have been regarded as a defilement of the plant which could not be prevented. The priests, who by this time may anyway have had no need for the intoxicant plant, would have tended to stop using it. At this point the sanctity of the plant would have become manifest as a taboo.

§145 Now may be appreciated the significance of the otherwise unexplained reports by E. Balfour that *Peganum harmala* was "the plant sacred to the Pariah

caste" (1885: II, 18), and "the [*Peganum harmala*] plant is . . . not to be touched by Sikhs or Hindus" (*ibid.* III, 172).

§146 This explains why *Peganum harmala* disappeared from all Hindu rituals and folk traditions and is no longer associated with its ritual substitutes. Thus, the Indian situation, so closely linked to its unique social history, is markedly different from the Iranian, where the ancient ethnobotanic tradition is unbroken. It is this Iranian ethnobotanical tradition that yields the ultimate identity of the plant which stands behind Iranian *haoma* and Indian *soma*, *Peganum harmala* L.

6

THE HISTORICAL PERSISTENCE OF THE SAUMA RITES

§147 To this point we have been exclusively concerned with examining evidence for the botanical/pharmacological identity of sauma. Before summarizing the arguments identifying sauma with harmel, some of the historical aspects of this identification need to be considered. The purpose of this chapter is to clarify how harmel was used in order to account for how the ceremonies symbolically representing harmel consumption continued to be at the core of the Zoroastrian tradition after the actual consumption of the plant in those ceremonies had ceased and had even been forgotten.

§148 It will be recalled that in the *Ardā Wīrāz Nāmag* quoted in §24, Wīrāz was sent forth to the spirit world to resolve the question of whether souls were helped in avoiding hell by the ceremonies (which were historically based directly or indirectly on drinking sauma) practiced by Zoroastrian priests (or more precisely, in view of the probable pre-Sasanian origin of the *Ardā Wīrāz Nāmag*, by the Parthian Magi). The administration of the drug to Wīrāz could not have been merely intended to convince Wīrāz, who anyway had no doubts about the truth of Magian teachings, but was meant to persuade those summoned to observe him. Since it was the people's doubt about priestly claims that led to the project of sending Wīrāz, the Magi could not have supposed that the people would accept the report of Wīrāz, who was experienced in the intoxicant use of sauma and hence surely a priest himself, without being shown some evidence of his reliability. The drug which was meant to bring Wīrāz visions was at the same time the means of exposing him to an ordeal (as shown by Göbrecht 1969) that would publicly attest his personal trustworthiness. He passed this test by remaining tranquil.

§149 A contemporary (mid-second century B.C.E.) account of the use of drug plants by the Parthian Magi survives from the *Chirocmeta* by Bolus of Mendes (in Egypt), a book quoted in Pliny's *Naturalis historia* 24, 160-67 (translated by W.H.S. Jones 1956: 7, 113-17) where it is wrongly attributed to Democritus (see Bidez and Cumont 1938: I, 117-19, and above, §90 n24). Since sauma is the only

plant known from Iranian religious sources with attributes similar to the magical plants described by Bolus under various Greek names, it is probable that some, or perhaps all of those plants refer to sauma (which as we have seen was already also diversely named in Iranian texts, e.g. by Avestan *dūraoša-, haδānaēpǎtā-, barəsman-, haoma-*). Bolus' account attests that the potential of plants as ordeal drugs was exploited by the Parthian Magi. The capacity of sauma to produce visions of a credible spirit world would certainly have qualified it for the uses that Bolus reports the Magi made of the following plants:[1]

> *Thalassaegle:* "To drink *thalassaegle* ['sea radiance'] causes men to rave, while weird visions beset their minds."
> *Achaemenis:* [A name which has obvious reference to the Persian world.]: "Criminals, if they drink it in wine, confess all their misdeeds because they suffer diverse phantoms of spirits that haunt them. Mares have an intense aversion to it . . . for which reason it is known as *hippophobas*" (see above, §55, n.14).
> *Nyctegreton:* ['That which keeps one up all night'.]: "The Magi and the kings of Parthia use the plant to make their vows."
> *Ophiusa:* "To take *ophiusa* ['that which is characterized by snakes'] in drink causes such terrible visions of threatening serpents that fear of them causes suicide; wherefore those guilty of sacrilege are forced to drink it." (Cf. the prominent role of snakes in *yagé* visions, §82, n.20.)

§150 This ordeal aspect of the use of sauma also appears in the liturgy on both occasions where sauma consumption is represented in the *Yasna*, that is, accompanying both the consumption of the *drōn* bread after *Yasna* 8.4 and the drinking of *haoma* extract during *Yasna* 11.10. In the first case, when the *zaotar* is about to partake of the surrogate sauma represented by the *drōn* bread (see §133), he invokes the drug to expose him in the following words (*Yasna* 8.3) if he is falsely representing himself:

8.3 *aməša spənta daēne māzdayasnē*	O Amaša Spantas, Vision of Mazdaworship,
vaŋhavašca vaŋuhīšca	Good Males, Good Females,
zaoθrāsca yō aēšva	*Zaoθras*! Whoever among these
mazdayasnaēšva	Mazda-worshippers here, calling himself a
mazdayasnō aojanō ašahe rāθma	Mazda-worshipper, an adherent of the Truth,
jīštayamnō yāθwa gāθå ašahe	ruins the world with witchcraft,
mərəγənte avi tū dim disyata	O you waters, plants and *zaoθras*,
yå apasca urvarāsca zaoθrāsca	make him known!
8.4 *yasca aētaēšąm mazdayasnanąm*	Whoever of these Mazda-worshippers,
pərənāyunąm aiwi.zūzuyanąm	of full age, invoking diligently,
imå vacō nōiţ vīsaite framrūite	is not ready to recite *these* words
aētąm ā yātumanahe jasaiti	will get the punishment for sorcery.

1. Although in other contexts Pliny uses *Magi* for charlatans active in the Roman world of the second century C.E., in the *Chirocmeta* the term has the older meaning 'Iranian priests'.

[At this point the *zaotar* consumes the *drōn* and then recites *Yasna* 8.5-8, which propound curses upon deceivers and which are identical to the words that are recited following the drinking of *haoma* (i.e. *Yasna* 11.11-15)].

Whereas originally in the *Yasna* these "plants, waters, and *zaoθra*s" must have referred to the sauma drink, in the shorter *drōn* ceremony they must refer to the *drōn* bread and whatever is consumed with it. The announced function of the plants, waters and *zaoθra*s to expose duplicitous participants indicates that the ceremony must have once been an ordeal for the priests who performed it.[2] The function of testing the drinker is again asserted in *Yasna* 11, (the last of the three chapters of the *Hōm Yasht*) which the *zaotar* recites just before he consumes the *haoma* extract. *Yasna* 11 consists of an elaborate warning that woeful consequences will befall anyone who attempts to resist the effects of the drug, and that the *zaotar*, following Zarathushtra, surrenders his body to *haoma* and thus shows himself to be a follower of Truth.[3] In the more elaborate *Yasna* performed at *Gāhāmbār*s and at the initiation of priests, the *Vīsperad* ('all the judges'), the *zaotar*, before drinking the *haoma*, interrupts his recital of the *Hōm Yasht* to make a roll-call of six additional priests who, as well as the usual *raspī*, were apparently at one time regularly assembled on such occasions to witness (and judge) his response to the drug. What most decisively shows that administering sauma functioned as an ordeal is the construction of the *Yasna* itself: at near the beginning of the ceremony the *zaotar* is handed a cup containing as *haoma* an extract whose composition is unknown to him, since it

2. The ordeal character of the text of *Yasna* 8 has been demonstrated by Darmesteter (1892-1983: I, 75), J. C. Tavadia (1948) and M. F. Kanga (1950).

3. *Yasna* 11 requires that, just as a sacrificial animal submits to the *zaotar* priest (*Yasna* 11.1), the *zaotar* priest must in turn surrender himself to *haoma*, who is "the swiftly-sacrificing *zaotar* of Ahura Mazdah" (*Yasht* 10.89 [Boyce 1970:69]). Because the Pahlavi translators of the Avesta were unaware that *haoma* had originally been an intoxicating drug, they could not have understood the thematic coherence of *Yasna* 11 nor its relevance to the act of drinking *haoma*. In consequence, the command at *Yasna* 11.7-8 for the drinker to cut free his organs of sight and speech and allow them to be acted upon by the drug has been misinterpreted, apparently since Sasanian times, as an injunction to mutilate the heads of sacrificially slain animals to propitiate the abstract deity *Haoma*. This interpretation has prevailed despite the fact that there is no animal sacrificed in connection with the *Yasna* ceremony today nor any other passage in the *Yasna* liturgy to suggest that an animal ever was sacrificed or dismembered during that ceremony.. I shall discuss elsewhere the unitary structure of *Yasna* 11 and its constant relevance to the ritual actions actually accompanying its recital.

The traditional interpretation of *Yasna* 11 exhibits a wholly symbolic conception of *haoma*, as a result of which the substitute plants were seen as equivalent representations of a spiritual entity and not as standing for a particular species. This explains why no priority seems to be accorded to harmel among ritual plants and why the question of botanically distinguishing the primary species from its substitutes did not arise among the Zoroastrian priests. In Iran the botanical identity of sauma became obscure because the issue was not meaningful, and not as the result of any compact among priests to conceal it or willfully to compromise the authenticity of rituals.

is prepared in his absence before the *Yasna* starts [see §104], but which is supposed to be a powerful drug, and he must drink it under scrutiny of other priests and all the spirits summons as witnesses.

§151 The use of sauma ceremonies as tests must have been effective in maintaining fidelity among Iranian priests, all of whom must periodically assume the role of *zaotar*, while at other times they must prepare the extract to be consumed by their fellows. The willing participation of persons in the role of *zaotar* in the *Yasna* would have insured that they were accepted as qualified by the other priests. By being willing to take the role of *zaotar*, one would demonstrate his preparedness to expose his soul to judgment by the spirits and show his confidence that other priests would recognize his spiritual acceptability. If one had already gained acceptance in this manner, it would have been largely unnecessary for the extract administered to him in the *Yasna* to have as much pharmacological potency as that administered to someone whose suitability was in doubt. The *Ardā Wīrāz Nāmag* shows that the drug was not taken casually to induce visions, but was reserved for occasions when there was genuine need to obtain information about the spiritual world.[4] In the usual conduct of ceremonies there may have been little or no need to induce visions. Thus, virtually from the inception of the ceremony as an institution, the extract administered in it would frequently not have been sauma at its full potency and need not have been sauma at all.

§152 The story of Wīrāz suggests that although the vision-inducing drug was available, it was only rarely used, chiefly because people did not desire it. Even Wīrāz, who apparently had no reason to be apprehensive about its effects,

4. Among the situations where sauma seems most likely to have been used was at the inauguration of pre-Islamic Iranian rulers. This is indicated by King Wishtāsp's consumption of "*hōm* and *mang*" at his "initiation" (as Molé [1963: 383-84] has justifiably interpreted the passage quoted in §28), which is still commemorated by Zoroastrians at the New Year. The New Year was the occasion when the inauguration of Iranian rulers traditionally occurred and when the use of sauma for divination (in this case of the qualifications for authority) may be expected to have been most exploited. A reflection of the initiation of kings with sauma may be preserved in Plutarch's *Life of Artaxerxes* III.1-3 (as translated by B. Perrin 1914-1926: Bk. XI, 130-31):

"A little while after the death of Darius [II], the new king made an expedition to Pasargadae that he might receive the royal initiation at the hands of the Persian priests. Here there is a sanctuary of a warlike goddess whom one might conjecture to be Athena. Into this sanctuary the candidate for initiation must pass, and after laying aside his own proper robe must put on that which Cyrus the Elder used to wear before he became king; then he he must eat a cake of figs, chew some turpentine-wood, and drink a cup of sour milk. Whatever else is done besides this is unknown to outsiders."

Zoroaster also put on a garment when he came up from the *hōm* liquid (*Zātsparam* 21.4 and *Dēnkird* VII 3.53, 4.57 [Madan 1911: 625.1, 636.1; Nyberg 1964: 56.17, 57.16]) as, it seems, did his father Porushāsp when he approached the *hōm* (*Dēnkird* VII 2.32 [Madan 1911: 606.14; Nyberg 1964: 41.7]) and as also did Ardā Wīrāz (see §24). This suggests that a change of clothes may have been a regular feature of sauma rites and therefore gives further reason to believe that the above account reflects sauma-drinking in the initiation of Iranian rulers.

did not want the drug. If the practitioners of the ceremony determined through visions that it was not necessary in each case actually to travel to the other world but that they could accomplish their purposes through ritual procedures alone, then the extract would not have to contain the vision-inducing ingredient. The ceremony without sauma would demonstrate equally well the acceptability of the *zaotar* to the spirits and exclude unqualified persons from attempting to act as priests.

§153 The value of the ceremony as a test by which to exclude imposters would have been important in connection with the payment of priests and may explain why sauma ceremonies came to be associated with animal sacrifices. The exclusive ability of Indo-Iranian priests legally to oversee the sacrifice of animals was doubtless at one time basic to their livelihood. In the early situation the payment of priests must have been in kind and must have consisted of a portion of the animal sacrificed. Long after the establishment of a priestly hierarchy, priests apparently continued to be itinerant and in each new situation would have required a means quickly to demonstrate their authority to superintend sacrifices. Sauma may have once been necessary to the priests' authority to conduct sacrifices because by means of it they could reliably convey the animal's spirit to the other world. But regardless of whether this was the original relationship of sauma to animal sacrifices, the value of sauma as a means of protecting the prerogative of priests to receive a share of every feast must have been the major factor linking sauma drinking and animal sacrifice. Their conjunction must have developed also out of the necessity of sacrifices to pay priests for conducting sauma ceremonies for other purposes, such as to benefit souls after death. The minimum price claimed by priests for such services can be supposed to have been a good meal, and, as late as Avestan times, a good meal could only have been a meal of meat, which was synonymous with food (Avestan *pitu-*; Boyce 1975b).

§154 Under such conditions the employment of priests for any purpose would necessarily include sacrificing an animal. Since priests were thought to be able to bring benefits to human souls through sauma ceremonies, one might as well have commissioned the priests to conduct a sauma ceremony on behalf of his soul even if the primary objective of employing priests was to have an animal killed and eaten in a feast, since the charges would be no more. Consequently, although it is certain that it was sometimes essential to have animals killed for food, and this must have involved hiring priests to do it, there is no direct attestation of the employment of priests solely for this purpose. Rather, whenever a feast was called for or it was desirable to obtain meat for any reason, priests would be employed to perform sauma ceremonies for the benefit of whatever human souls the donors of the animals would designate.

§155 The sauma ceremonies have continued throughout their history to be the chief activity by which priests obtain their livelihood and maintain their

exclusive claim to their livelihood, and not as a means of obtaining visions. Thus, for the ceremonies to have so effectively served these secondary functions, it was necessary that the extract routinely administered in them, year by year, be without the uncertainties inherent in potentially hallucinogenic plant materials. Since the ranks of the priesthood in both Iran and India came to be decided by social processes (chiefly kinship) rather than by the tests for which harmel could be used, once this change had occurred it would be essential that priests carefully avoid putting their colleagues to the test; to hand a colleague an extract that so much as tasted of harmel and could imply doubts concerning his fitness would have risked insulting him. Courtesy has thus disallowed even a vestigial presence of harmel in the extract drunk in rituals. Safe, nonintoxicating alternatives to sauma/harmel have therefore been essential for the survival of the sauma ceremonies. Thus the ceremonies, originally structured for controlling the intoxication of sauma, developed into independent rituals excluding intoxication—so that no amount of the original plant is consumed in their modern enactments.[5]

5. For Iran, the evidence we have seen from the *Ardā Wīrāz Nāmag* and Bolus' *Chirocmeta* indicates that intoxication by the drug still had an important role within the religious establishment at least into Parthian times. Apart from its importance as a means to Truth, however, informal use of harmel for intoxication for other religious purposes among Iranian priests may well have simultaneously continued outside of the ceremonies.

Among the Indo-Aryans, after they settled in India, the reliance upon livestock for food greatly declined, and with the diminished importance of animal sacrifice so did the value of the ceremonies as a means of demonstrating the qualification of priests. By the time of the ṚgVeda the ceremonies had ceased to have any place for sauma. Nevertheless, there is reason to suppose that completely apart from the *soma* ceremonies a role for sauma intoxication would have survived in India also. The effectiveness of harmel as a drug is particularly susceptible to modification by admixture with other plants, and these seem always to have had a place in sauma preparations. The opportunities for controlling the effects of sauma through additives must have caused the Indo-Aryans to examine thoroughly the resources of the flora they encountered in India. If the pre-Aryan Indian cultures were familiar with psychoactive plants, the Aryans would surely have investigated those plants. In any event, for centuries after the Aryans entered India, the value of *soma* intoxication asserted in the Vedic hymns and rituals kept alive belief in the value of psychotropic plants as adjuncts to religious experience and sustained interest in local ethnopsychopharmacological resources. It is therefore relevant to note that (as was pointed out to me by Leonard Enos) several indigenous Indian *Desmodium* (Leguminosae) species are rich in N,N-dimethyltryptamine, the same substance found in plants added to *Banisteriopsis* extracts in South America (Banerje and Ghosal 1969; Ghosal *et al.* 1972; Ghosal 1972). This substance is pharmacologically inert orally unless it is combined with harmala alkaloids (which modify its metabolism through the inhibition of MAO or other enzymes). It appears the only way *Desmodium* species could have been effectively consumed as psychoactive drugs in India would have been by ingesting them with extracts of *Peganum harmala*, the one local source of these alkaloids. It may, then, be significant that one Indian *Desmodium* species, *Desmodium gangeticum* DC. (=*Hedysarum gangeticum* L.) is reportedly designated by Sanskrit names associating it with *soma* ceremonies, namely (according to Kirtikar and Basu 1935) *saumyā-* (also given as a name for *Ficus glomerata*, *Abrus precatorius* (=rosary pea), *Glycine debilis* (=soybean) and *Ruta graveolens* [see §140]) and (according to Monier-Williams 1899) *aṃśúmat-* 'rich in *soma* juice'.

7

SUMMARY OF ARGUMENTS SHOWING IDENTITY OF SAUMA AND HARMEL

§156 No detail concerning either sauma or *Peganum harmala* appears to disagree with their equation. If one would still claim that the botanical identity of sauma is unproven, he would need to supply a different explanation both for how harmel came to have every one of the nonintoxicating uses known for sauma (e.g. as apotropaic, incense, aphrodisiac, etc.), and for how it came in some cases to occupy the place of sauma in Zoroastrian rituals, and, on the other hand, account for what became of sauma in popular religion and priestly ceremonies after the time of the Avesta. However, even if one could explain away each of the correspondences we have examined, to claim that harmel was not sauma would in fact require assuming that there were simultaneously two sacred apotropaic intoxicant plants, both used both as incense and drunk in nearly identical ceremonies in ancient Iran. Vestiges of the distinction of harmel as a sacred plant exist among all Iranian peoples. That distinction can only have come about in response to some unique property of this plant and only if that property was exploited and valued. But *Peganum harmala* is a commonplace weed without significant economic value, as compared with other Iranian plants, and in general unremarkable, except in the one respect that it alone among Iranian plants contains the visionary drugs harmaline and harmine. This property is not exploited today, but because it is the sole significant distinctive feature of harmel, the only way the plant could have acquired sanctity among all Iranian peoples was for these drugs to have been used and for their effects to have been widely experienced and esteemed. It is clear that the effects of this drug in ancient Iran could only have been interpreted in religious terms, and since it must have been used, it is therefore to be expected that some trace of that use should exist in the data of ancient Iranian religion. In other words, if the use of a sacred intoxicant, that is, of sauma, had not already been deduced from the Indo-Iranian texts and rituals themselves, it would be necessary to propose it on the basis of the properties and cultural history of harmel in Iran. However, the correspondences we have seen between the two independent sets of evidence for harmel on the one hand and sauma on the other, point to a single intoxicant plant, and in addition, verify the historical reality of the use of its drugs as a major feature of ancient Iranian culture.

§157 Major arguments for the identity of sauma and harmel

1. GEOGRAPHICAL CORRESPONDENCE

Sauma must have been widely available to many Indo-Iranian groups over large parts of the Iranian area, and was not a localized or rare species. No known psychotropic plant is so abundant and conspicuous as a source of psychoactive drugs over the Iranian area as is harmel, and harmel has been long known in Iran to have psychoactive properties.

2. PHARMACOLOGICAL CORRESPONDENCE

The pharmacological suitability of the drugs of harmel for use as sauma is objectively demonstrated by the parallel roles played in ancient Iran by sauma and in certain South American cultures by *Banisteriopsis* extracts containing the same drugs. In both cases (1) the plant extract is the basis of mixtures with other psychoactive plants; (2) the intoxicant use of the plant is chiefly in ceremonies supervised by trained specialists; (3) the effects of the drugs are valued for visually revealing a simultaneous, intangible spirit world interpreted as being a higher reality; and (4) the experience of these visions is central to beliefs and religious institutions.

3. EVIDENCE FROM IRANIAN FOLK RELIGION

The chief evidence for *haoma* comes from the record of ancient Iranian folk religion which is preserved in the Avesta. The survival of this ancient text among the Iranian Zoroastrians (chiefly as oral literature) manifests a conservatism which may be expected also in Iranian folklore and ethnobotany.

Sauma in ancient Iran	*Harmel in later Iran*
Name:	
The name "*haoma*" was apparently restricted to ritual contexts, and was not the common name of sauma. While intoxicant use was limited to specialists, the property of chief popular interest was the sacred power sauma's psychoactive use proved it to possess. Sauma was the sacred (i.e. Avestan *spənta-*) plant.	Modern Iranian names for harmel show that it was named 'sacred' in ancient Iran. Only the identification as sauma provides a plausible explination of the Iranian names for harmel.
Ethnobotanic attributes:	
In pre-Islamic Avestan and Pahlavi texts *haoma* harmel is invoked in verses which:	In post-Islamic Persian, Mandaic, and Turkish texts is invoked in verses which:
(A) Attribute the origin of the use of *haoma* to the founding figures of Zoroastrianism.	(A) Attribute the origin of the use of harmel to the founding figures of Shi'a Islam.
(B) Assert that	(B) Assert that
•*Haoma* brings healing, victory, salvation & protection.	•Harmel brings healing, victory, salvation & protection.
•*Haoma* originates in mountains.	•Harmel originates in mountains.
•*Haoma* promotes childbirth [as aphrodisiac(?)].	•Harmel promotes childbirth (as aphrodisiac).
•*Haoma* is chief of drugs, etc.	•Harmel is king of drugs, etc.
Use as apotropaic incense:	
The chief nonpriestly use for sauma was as an apotropaic, a use which is inherently independent of formal religion. Sauma was burned as incense apotropaically. Sauma was apparently the chief incense plant of Avestan times (e.g. *dūraoša, haδānaēpātā* = sauma).	Harmel is the chief apotropaic plant of Iran today and this role is demonstrably pre-Islamic. Harmel is the most widely used native incense plant in Iran and the only one containing known psychoactive drugs.

4. EVIDENCE FROM ZOROASTRIAN RITUALS

The purpose of sauma intoxication was to gain knowledge from visions which could be obtained from the plant. Belief in the validity of such visions (and skill in using the drug to obtain visions) disappeared from Iran. Visions are no longer sought from the rituals representing the use of sauma and the original plant is therefore not consumed in them. In various ritual contexts where the *consumption* of sauma is represented, the selection of the three other plants which are used, i.e. *Ephedra*, pomegranate and *Ruta graveolens*, is explained by the relationship of these plants to harmel. The ancient addition of *Ephedra* to sauma mixtures is explained by the pharmacology of harmel. Pomegranate is a native Iranian plant which has had demonstrable use in Iranian ethnobotany as a replacement for harmel. The presence of *Ruta graveolens* in Zoroastrian rituals is explicable only as a harmel substitute. In Zoroastrian rituals where sauma is *burned* instead of being consumed, the plant used has always been harmel.

Part II

Martin Schwartz

1

AVESTAN PASSAGES RELEVANT TO *HAOMA*

ALLEGED GATHIC REFERENCES TO *HAOMA* (see §7, §72 and §98)

§158 The alleged opposition of Zoroaster to the use of the intoxicant *haoma* is based chiefly on the interpretation of one passage, *Yasna* 48.10, concerning which I showed the following in a recent detailed study (Schwartz 1985a): Instead of *madahyā*, genitive of *mada-* 'intoxication', one must read *magahyā* (cf. Pahlavi translation *mayīh*). The form *maga-* means 'gift of reciprocity', especially that given to poet-priests (cf. Old Indic *maghá-*), but also 'ditch, pit' (=Younger Avestan *maga-*). The homophony is exploited by Zoroaster in a complex pun. I translate *kadā ajən / mūθrəm ahyā magahyā // yā . . . karapanō urūpayeintī //* as 'when will they ban(ish) the filth of that ditch/reciprocity-gift whereby . . . the *karapan*s commit plunder' (*aj-ən* 'ban, remove, set aside as accursed or sacred', cf. Arabic *ḤRM;* to Old Indic *ā́gas-* 'sin, vice'; Greek *γόης* 'stain, pollution; holiness, sacred precinct; i.e. *sacratum*'. *Karapan-* /karpan-/ *'singer, poet', cf. Old Indic *kṛpaṇyú-* 'singer, poet' from *kṛpaṇyá-;* also *kṛpámāṇa-* with *kaví-;* and *urūpaya-* < **rupāya-*, cf. Middle Persian *rubāy-* 'swipe, snatch', *rōb* 'robbery, plunder'). The phrase *mūθrəm ahyā magahyā* is contrasted (with phraseological and phonic parallelism in the respective surrounding verses) by *mīždəm . . . ahyā magahyā* (*Yasna* 53.7) 'the prize of that gift', referring to the reward for the commitment to Zoroaster, which entails prosperity for the righteous, while the *karapan*s and their supporters disappear into the ground. Thus *Yasna* 48.10 contains no reference to intoxication, let alone condemnation of *haoma*.

§159 I recognize another play on words in the other Gathic passage cited in discussions of *haoma, Yasna* 32.14, which reads, *ahyā grāhmō *ā hōiθōi / nī kāvayascīṯ xratūš (nī.)dadaṯ // *varəcåhīcā fraidivā / hyaṯ vīsəntā drəgvantəm avō // hyaṯcā gāuš jaidyāi mraoī / yā dūraošəm saocayaṯ avō //.* The occurrence of the same word, *avō,* twice in the same position at the end of consecutive lines, is unusual, as is also the syntax of *avō* in c, where the dative **avaŋhē* 'for help' is expected. I assume two Avestan words *avō,* 1) = Vedic *ávas(-)* 'help, sustenance' and 2) = Old Indic *avás, ávas* 'down(ward)'. The latter *avō* may now also be recognized in *Yasht* 8.40, where the context demands 'downward', rather than a pleonastic hapax 'water'; cf. also *avō* as preverb,

Yasht 13.44. The implication of *avō* is that the *kavi*s, by patronizing the wicked *karapan* in connection with sacrificing the bovine (cf. *Yasna* 32.12) and burning the *haoma*-plant (*dūraošəm*), in the long run lead him downward, i.e. to hell. I translate, 'For the loot [*grāhmah-*, cf. Old Indic *gras* 'to devour', Sogdian *γrāmē* 'wealth', etc.] of which (world) some *kavi*s have constantly put their thoughts and energies down into the trap, whereby they set about to help the wicked one, whereby the bovine is ordered to be slain, (the wicked one) who burns the *dūraoša*-plant, for help/hell'. The form *avō* 'downward' concretizes the directionality suggested by *nī*. The phrase 'in the snare' is paralleled in the preceding stanza by 'in the House of Worst Mind' (*acištahyā dəmānē manaŋhō*) in which the destroyers of the world have sought loot (*grāhmō *išasaṭ*). That both phrases refer to hell is shown by *Yasna* 46.6a, *drujō . . . dāmąn haēθahyā* 'the bonds of Lie' alongside *Yasna* 46.11a *drūjō *dəmānē* 'the House of Lie' (note that *dāman-* = Old Indic *dāman-* 'bond', cf. Persian *dām* 'trap', etc., but probably with play on **dāman-* 'establishment, dwelling', cf. Vedic *ṛtásya dhāman-* 'foundations of Truth'). My interpretation of 32.14 is supported by the stanza immediately following it, 'Because of these things, the *kavi*hood and *karapan*hood is going to perdition, along with those they ensnare (**daintī;* Insler 1975), who will not be brought to those who rule at will over life in the House of Good Mind'.

§160 Thus *Yasna* 32.14 does not provide evidence for Zoroaster's rejection of the commonplace sacrifice of cattle, nor does it prove that Zoroaster condemned the burning of *dūraoša* (the *haoma*-plant), much less that he repudiated the pressing and drinking of *haoma*. It does provide evidence for the ritual burning of the plant, of greatest importance for Dr. Flattery's identification of the plant as *Peganum harmala*.

§161 The use of word play, together with syntactic ambiguity, reflect a general stylistic obscurantism characteristic of Indo-Iranian priestly poetry (for which cf. Boyce 1975b:9; Gonda, cited §244; on Zoroaster see Schwartz 1985a and 1986). An extension of play on sound is found in *Yasna* 11.9, where there occurs a series of forms based on Gathic words which resemble, in some instances only vaguely, the names of the numbers from one to ten. This bizarre paronomastic use of the Gathas provides a "count-down" (Schwartz 1986: 331-332) preceding the drinking of *haoma*, as Flattery has observed. This important connection of the text of the Gathas with the ritual use of *haoma* is of relevance for Flattery's observations of parallelisms with the *yagé* cult, where sacred chants accompany the taking of the drug; cf. especially §§120 and 124 above.

ANNOTATIONS TO THE *HOM YASHT*

Yasna 10.8: *urvāsman-* (see §21)

§162 The association of *urvāsman-* (Old Avestan *urvāzəman-*) 'bliss' and *aša-* 'Rightness, Truth' probably has visionary connotations; cf. Kuiper (1964: 105).

Kuiper's general views are not vitiated by taking the key passage, *Yasna* 30.1c *ašā yecā yā raocābīš darəsatā urvāzā*, as '. . . and [via hymns] for *Aša* (**ašāyecā* for */ašayācā/*), the things which are to be seen in bliss (*urvāzā*) amidst the lights'. The paradisiacal aspect of the visionary experience is seen from *Yasna* 11.10, *vahištəm ahūm ašaonąm raocaŋhəm vispō.xᵛāθrəm* 'the Best Existence of the righteous, full of light, having every comfort', which echoes *Yasna* 31.7c: *raocābīs . . . xᵛāθrā* 'the spaces/comforts amidst the lights', where the context is literally visionary, as shown by *Yasna* 31.8 (see further Schwartz 1986:367-369).[1]

§163 *Yasna Haptaŋhāiti* 36.2, where 'the Fire of Ahura Mazdah' is addressed as 'most blissful' and bade to come to the worshippers 'with the most blissful of bliss' (*urvāzištahyā urvāzyā*), is also relevant for the visionary aspect of *urvāsman-*, for as is made explicit in the final stanza, *Yasna* 36.6, Fire is the 'corporeal manifestation' (*kəhrpəm*) of Ahura Mazdah, these lights here (*imā raocå*), i.e. on earth, whose 'highest (manifestation) . . . is called the sun'. Since *Yasna* 36.1 begins with the theme of the 'communion of Fire' *(vərəzānā āθrō)*, keeping in mind the connection of Fire and *Aša* (*Yasna* 34.4; 46.7, etc.), one may compare *Yasna* 49.8: *urvāzištąm ašahyā . . . sarəm* 'the most blissful union of *Aša*' (cf. *Yasna* 49.9, where *sarəm* is connected with *daēnå* 'visions'), and with *Yasna* 32.1-2, which relates *urvāzəmā* 'bliss', *sarəmnō* 'united', and *ašā huš.haxā xᵛānvātā* 'the Good Associate of sunny *Aša*'.[2]

§164 The contrast in *Yasna* 10.8 of *aēšma-* 'violence, fury' and *urvāsman-* 'bliss' may ultimately also go back to the visionary contexts of the Gathas; *Yasna* 49.4 collocates *aēšma-* and the vision of the deceitful one (*drəgvatō daēnā*), contrasting with *Yasna* 49.5, 'he who has united (*sar-*) his vision with Vohu Manah', and 'the most blissful (*urvāzištąm*) union of Truth'; cf., in the parallel and concentrically related *Yasna* 49.8-9, the motif of "yoking" the vision with Truth. There is also an implied opposition of *urvāzā* and *aēšməm*, *Yasna* 30.1 and 6. The visionary associations of *urvāsman-* in *Yasna* 10.8 are amplified throughout the rest of the text by the request for lightness, brightness, and clarity of intoxication.

§165 The reading *rənjaite*, with expected middle voice (cf. Old Indic *rāñjate*), has support from manuscript variants. The form *rənjaiti* is not impossible in

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1. *Gāhāmbār* 3.6 (whence *Vīsperad* 18.2 and in turn *Pursišnīhā* 37, mentioned by Kuiper 1964:105) further collocates bliss (*urvāsma-*), Best Existence (*vahištəmca ahūm*), Endless Lights (*raocå*) and boundless comforts (*xᵛāθrā*) as shown to the soul eschatologically (in contrast to the sufferings for the deceitful, *sādrā drəgvatō*); the background here probably involves *inter alia* (see e.g. *Yasna* 12.1 and *Yasht* 12.36) a conflation of *Yasna* 31.7-8 with *Yasna* 45.7-8, which are united by *cašmainī* 'in a vision' and other parallel features (Schwartz 1986: 368).

2. For the relation of *Yasna* 32.1-2 and *Yasna* 49.8-9, and the connection of *vərəzāna-* and *urvāzəman-*, see Schwartz (1986:342-347). The centrality of the term *urvāzəman-* (**vrāzman-*) in Iranian visionary experience explains the unique and elaborate oral acrostic suggestion of the word at *Yasna* 33.2c (cf. *ibid.* 342-345).

intransitive sense (cf. *rənjaṯ.aspa-*, if 'having horses which move lightly'. The factitive/causative form would be not *rənjaiti* but **rənjayeiti*. Intransitive meaning for *rənjaiti/e* would parallel *Yasna* 10.19 *rənjyō vazåinte* 'waft (quite) lightly', where *rənjyō* is adverbial accusative neuter of the *comparative stem *rənjyah-*.

Yasna 10.14: Avestan *drafša-* (see §21)

§166 Apart from the unsuitability of *āsitō* to be the subject of the sentence, it is obvious that the translation of Bartholomae (Wolff 1910), with *drafša-* as 'flag, banner', is rather forced, and not very apt for the larger context. Particularly obscure here would be the relationship it introduces between the supposedly fluttering consumers of *haoma* and the "speaker" ('me') whose experiences of intoxication is the topic of the text.

§167 The translation I have suggested for *Yasna* 10.14 differs considerably from the interpretation of Bartholomae-Wolff, which reads: "Nicht sollen sie mir beliebig wie das Stierbanner sich einherbewegen, (wenn) sie (dich) geniessen; stracks vorwärts sollen sie gehen, (die) sich an dir begeistern; mit energischem Schaffensdrang sollen sie sich einstellen". The translation of the rest of the passage (which I do not contest) reads: "Ich weihe dir, o ašaheiliger ašafördernder Haoma, diesen Leib hier, der mir schön gewachsen scheint". My own interpretation for the disputed text is as follows: '*May they (your intoxications), besetting me at their own impulse, not move me about as the trembling of a cow. May your intoxications come forth clear(ly); may they arrive bringing straightness of mind.' My rendering is based on the following considerations:

(1) The construction *mā mē . . . caire* is parallel to *mā tē nīre* 'may nothing of yours flow away' at *Yasna* 10.17; the unusual construction of the prohibitive particle with an infinitive in *-e* based on the present stem is characteristic of *Yasna* 10. The question thus is, what is the subject of *caire*?

(2) For Bartholomae and others the subject is *āsitō*, taken as nominative plural of a stem *āsit-* 'consuming', but the latter is highly suspect. A verb *as-* 'to eat' is unknown in Iranian outside of *kahrkāsa-*, originally *'chicken-eater', Avestan *kahrkāsa-*, Sogdian *čarkas* 'buzzard, vulture', Ossetic *cærgæs* 'eagle', which may be regarded as a formation antedating Proto-Iranian. The attested verb for 'consume' (used with *haoma-*) is *xᵛar-*. Furthermore, *āsit-*, with formant *-it-*, would also be isolated. By contrast, *huzāmit-* and *(daēvō.)γnit-* are formed from attested stems in *-i-*, respectively *huzāmi-* and *-γni-* (cf. *vārəθraγni-*); similarly Bartholomae s.v. *huzāmit-*. Rather than assign *āsita-* to **as-*, one may take it with the attested stem *āsita-* 'lying upon' (in *āsitō.gātu-* 'lying upon a place'), past passive participle of *ā-say-* 'to lie upon'. In the present context *āsitō* may be either nominative plural of a root-stem *āsit-* or nominative singular of the participle *āsita-*, agreeing with *drafšō*.

(3) The interpretation of *gaoš drafšō* as 'bull-banner' ('banner bearing the image of a bull') is problematic in many ways. Contextually it is unlikely that this specific flag, allegedly a symbol of Iranian victory, would be introduced in a negative context. Formally, for 'bull-banner' one would expect a compound **gao.drafša-* rather than *gaoš drafša-* 'the bull's (or, more usually without masculine specification, cow's) banner'. Bartholomae elaborated Darmesteter's acceptance of the Pahlavi translation *gāw drafš* 'bull banner' and his equation with the flag which, according to sources of the Islamic period, was established as the Iranian national standard, the *dirafš-i Kāviyān*, by the blacksmith Kāva, who made a banner out of his leather apron (or leather bag, or turban), which he attached to a pole or lance. According to Bartholomae's theory, the *drafšō* 'banner of the bull', Pahlavi *gāw drafš*, originally referred to a flag representing a bull, but was later reinterpreted as 'flag made of the skin of a bull'. While A. Christensen (1925: 37), in his fine study on Kāva's banner, accepted Bartholomae's views (and the translation upon which it is based), the numerous early descriptions he assembled of the *dirafš-i Kāviyān* (*ibid.*, 35-36) in no way support the thesis that the banner had a bovine device, or was made of bull hide. Thus there is no ground for taking *drafšō* as 'banner' in a phrase with genitive *gaoš*.

4) An abundance of evidence points to the meaning 'flag, banner' as only one specific application of a broad original signification of *drafša-*. Old Indic *drapsá-* is 'banner' at *RV* 4.13.2, but it is more commonly attested in the meaning 'drop, droplet', and in fact refers to the drops of *soma-*. It is even possible (I shall not press the point) that at *Yasna* 10.14 *drafša-* echoes an old word-play on 'droplet' (of sauma) and 'fluttering, trembling'; cf. ṚgVeda 1.64.2, where *drapsínaḥ*, describing the atmospheric and martial Maruts, means both 'bearing banners' and 'pouring out drops', while in hymns to Agni, the god of fire, *drapsá-* 'droplet of soma' may also mean 'spark' (Gonda 1975: 242-243). Middle Iranian attests not only the noun *drafša-* 'banner' (Middle Persian *drafš*, Sogdian *ʾrδʾšp*, *ʾrδʾyšp*, cf. Armenian *drauš*), but also a verbal stem *drafša-* 'to tremble' (Middle Persian *drafš-*) as well as 'to shine' (Middle Persian *drafš-*), 'to blaze' (Parthian *drfš-*, Manichean Sogdian *wyδrfš-*). The association of meanings 'tremble' and 'shine', etc. is found for other words, e.g. Old Indic *tviṣ-* 'violent agitation'; 'brilliance, glitter, splendor'; Greek *σείω* 'shake, quake', *Σείριος* 'burning, Dog Star'; or Old Indic *sphuráti* 'darts, rebounds, springs, trembles'; 'flashes, glitters, gleams', and *sphuraṇa-* 'glittering, sparkling'; 'trembling, throbbing, vibrating', etc. The latter has more distant cognates with similar semantic range, e.g. Old Norse *sparkr* 'lively, brisk', English *spark, sparkle*, Latvian *spirgsti* 'glowing coals', Swedish dialects *spräker* 'lively'; 'shining, radiant'; *spräkkle* 'spot, speckle'; Norse *spronge* 'ride quickly, sprinkle', English *spring*, etc. Clearly the image of agitating motion

gave rise to words for flashing and flickering light, as well as sprinkled droplets, etc.

§168 Thus the entire range of forms in Indic *draps-*, Iranian *drafš-*, may be relegated to a single etymon with meaning 'to be in agitated motion'. The old etymology of *drapsa-*, *drafša-* 'flag' from PIE *drep-* 'to cut (cloth, etc.)', whence Old Indic *drāpi-* 'mantle, garment', Lithuanian *drāpanas* 'clothing', Middle Persian *drab-* (Pahlavi *dlp-* [*Nērangistān* 170.10 and 25; Waag 1941: 92, 94]) 'to wear', must be abandoned. Old Indic *drapsá-*, Avestan *drafša-* 'flag'; *drafšaka-* > Armenian *draušak* 'streamer on a crown', are semantically parallel to Old Indic *dhvaja-* 'banner', Avestan *dwō.ža- (dwaža-)* 'to flutter'. Parallel to the developments of *drafša-* *'be in agitation, shine' on one hand, and *'flutter' on the other, would be Sogdian *ərδēf-* (Manichean *ʾrδyf-*, S. *ʾrδyp-*) 'to shine' and Khotanese Saka *drāh-* (ppp. *drautta-*) 'to fly' (< *'flutter the wings' and/or 'dart about'), both of which go back to a single stem, Old Iranian **drāfaya-*. The *-f-* of the latter is probably due to the influence of *drafša-* < *drapsa*. This *drapsa-* should be from earlier **drab-sa-* (and *drāfaya-* from **drābaya-*, with Old Iranian *-f-* from *drafša-*), Iranian root **drab-*, from PIE **dreb-*. The latter is also reflected by Lithuanian *drebėti*, 'to tremble' (and Old English *treppan* 'to tread', Dutch *trappen* 'to stomp', Middle High German *trampfen* 'to run'; cf. the relationship of Old Indic *sphur-* 'tremble, dart', etc. to Iranian *spar-* 'to tread, kick', etc.).

§169 It has been seen that Old Iranian *drafša-* meant not only 'banner', but also 'trembling, convulsion(s)'. The latter meanings suit *Yasna* 10.14, and would refer, in accordance with Flattery's analysis of the realia, to the undesirable spasms of harmel intoxication. The trembling is compared to that of a terrified cow, and its uncontrolled nature is expressed by *vārəma* (**vārəm-ā*) 'at impulse', literally 'at its own will'. While one can construe 'let not trembling, besetting (*āsitō*, literally 'lying upon') me like that of a cow, move me about', where *āsitō* (singular) agrees with *drafšō*, this would be syntactically contorted. I therefore take the subject of *caire* to be not the first item of comparison, *gaoš drafšō* 'the trembling of a cow', but *āsitō* (*tē . . . maδō* 'your intoxications . . .) besetting . . .', with *āsitō* plural of root-stem *āsit-* 'lying upon, settling upon, besetting'.

§170 The correct translation of *tē maδō* follows from the newly established context. Contrasted with the unnerving spasms are the characteristics described by the plurals *fraša* (note the phonic relationship *drafša-: fraša-*) 'clear, splendid' (see below) with predicate *frayantu* 'may they go forth', and *vərəzyaŋuhåŋhō* 'bringing straightness of mind' (cf. Gershevitch 1974:49) with predicate *jasəntu* *'may they come'. According with the subject to which these refer, the phrase *tē maδō* should not mean those 'who are intoxicated (or inspired) by you', but 'your intoxications', which the priestly hymnist prays will bring not the tremors indicated by *drafšō*, but straightness of mind

(*vərəzyaŋuhåŋhō*), clarity, and lightness. Thus we would have accord between verses 19 and 8, *rənjyō vazåinte (*tē) maδō* 'may (*thy) intoxications move lightly' and *rənjaiti haomahe maδō* 'the intoxication of *haoma* is light'. See §178.

§171 The form *maδō* would ordinarily be the nominative plural of a root-stem *(-)mad-*, which could, in theory, mean 'becoming intoxicated' (cf. Vedic *soma-mad-*), but, as is actually shown by **aγryō.madu.mad-* (see below, §184), means 'intoxicating (someone)', from which an independent noun *mad-* 'that which intoxicates, intoxication' could easily arise. The gender of *mad-* is feminine, as is shown by *imåsə, Yasna* 10.19; see below, *ad loc.*

Yasna 10.14 and 19: Avestan *fraša-* (see §21)

§172 The word *fraša-* here is not the adverb 'forward' (as in the alliterative cliché *fraša fra-ay-*, limited to passages in the *Vidēvdād*, 6.27, 7.52, 18.29, which is probably a reinterpretation of *fraša fra-ay-* of the passage under discussion). Instead, *fraša* is nominative plural of the adjective *fraša-* discussed by Bailey (1971a: vii-xvi). Bailey has demonstrated beyond doubt that *fraša-* means 'conspicuous, spectacular, splendid, wondrous'. Important among the evidence he martials are (1) the translation of Old Persian *fraša-* as Akkadian *bunū*, verbal noun from *bānu* 'be bright, lively; make beautiful, be magnificent'; (2) the Avestan collocations, *Yasna* 19.10, *srīra-* 'beautiful', *abda-* 'wondrous', and *Vidēvdād* 1. 20, *bāmya-* 'radiant'; (3) the Pahlavi collocation *abd fraškard;* (4) Armenian *hrašk'* 'marvel', *hrašakert* 'extraordinary'; (5) Middle Persian *frašagar* translated by Persian *ẓāhir* 'manifest'; and (6) Middle Persian *frašemurw*, Georgian *p'aršamangi* 'peacock', literally 'marvelous bird, bird with spectacular colorations'.

§173 The identification of *fraša-* in *Yasna* 10.14 and 19 with *fraša-* 'conspicuous', etc. now becomes clear from the parallelism of *fraša frayantu tē maδō* and *raoxšna frayantu tē maδō*, where *raoxšna* is 'brilliant, bright, splendid'; both adjectives *fraša-* and *raoxšna-* are appropriate descriptions of intoxications (referring to the vivid quality of the visions), but could hardly be used of those intoxicated. It may be noted in passing that the use of *fraša-* as an epithet of *haoma* is probably connected with *frāšmi-*, occurring exclusively as an epithet of *haoma, Yasna* 10.21 (where it is parallel to the color term *zairi-*), and further *Yasna* 57.19, *Yasht* 8.33. The meaning of *frāšmi-* should be something like 'glowing', but the relationship with *fraša-* may have been associative, rather than etymological; compare Gershevitch (1959:233).[3]

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3. To Benveniste's (1936:230-231) etymology of *frāšmi-*, to which Gershevitch refers, add now the evidence from Sogdian for **šam-* given by N. Sims-Williams (1985:180). The meaning 'blush' for the Sogdian goes well with Av. *frāšma-* *'sunshine', and the semantic parallelism with *zāiri-* as 'golden-colored, yellowish' suggested by Gershevitch.

For the meaning of *fraša-*, see now J. Narten (1986:197-203).

§174 The identification of *fraša-* as an epithet of *haoma-* now also helps explain the characterization, transmitted by Bolos of Mendes *apud* Pliny, of the Persian plant *"theombrotion"* (whose description otherwise suits *Peganum harmala* used as *haoma*, see §93 n.25), 'like a peacock in its colorings'. The Old Iranian phrase **fraša- mṛga-* 'spectacular bird' yielded the word for 'peacock' not only in Middle Persian *frašemurw*, but also in Parthian **frašamarg*, reflected in the Georgian form. The adjective *fraša-* appears to have disappeared from everyday Iranian speech, for it is not attested beyond Old Iranian, except in Armenian *hrašk'*, which may go back to an older stratum of the Parthian vocabulary; its absence not only from our large corpus of Middle Persian texts, but also from the fairly abundant Sogdian texts, points to the relatively early general desuetude of *fraša-*. Thus, by the time of Bolos of Mendes, the Persians called the peacock by a term no longer comprehensible, 'the *fraša-* bird', or 'the bird *Fraša*'. The word *fraša-*, constantly heard alongside *raoxšna-* 'bright' in the liturgy to *Haoma*, could then be associated with 'peacock'. This could give rise to a popular belief in a particular variety of *haoma* plant with the colors of a peacock.

§175 The disappearance of the word *fraša-* in Persia eventually affected the word for peacock as well. Middle Persian *frašemurw, frašamurw* was replaced by New Persian *firišta-murγ* 'angel-bird', where *firišta* 'angel' (Middle Persian *frēštag)* replaced the no longer meaningful *fraša-*. From Arabic, Persian has the better known word for peacock, *ṭāvūs*.

§176 I would explain the early obsolescence of *fraša-* as due to its being subsumed by its development as a technical term of theology. The starting point is the Gathic phrase *fərašəm (ahūm) kar-/dā-* 'make (the world) *distinguished, excellent'. In the Gathas this referred to a situation regarded as imminently possible; note especially *aṯcā tōi vaēm hyāmā yōi īm fərašəm kərənaon ahūm* 'Thus may we be those who will make this world excellent' (*Yasna* 30.9). It is probably significant that the three other Gathic attestations of *fəraša-* are connected with *haiθya-* '(something) actual, real, true' and *vasnā* 'according to wish': *xšmākā xšaθrā ahurā fərašəm vasnā haiθyəm då ahūm* 'By your power, Lord, Thou shalt make this world in actuality excellent', *Yasna* 34.15; *yō mōi ašāṯ haiθīm hacā varəšaitī zaraθuštrāi hyaṯ vasnā fərašō.təməm* 'He who, in accordance with righteousness, shall accomplish as actual for me, Zarathushtra, that which is most excellent, in accordance with (my?) wish', *Yasna* 46.19; *dātā aŋhāuš arəδaṯ vohū manaŋhā haiθyā.varəštąm hyaṯ vasnā fərašō.təməm* 'The Creator of the world shall promote, through Good Thinking, as an actual accomplishment, that which is most excellent, in accordance with (His) wish', *Yasna* 50.11. The *fraša-* is here something brought into reality, *haiθya-*, from the plane of wish, *vasnā* (the concept of *vasnā* may involve more than 'will'; see Schwartz [1986:387 n.15]). While *haiθya-* may correctly be translated 'true' (like its cognates Old Indic *satya-*, Ossetic *æcæg*)

the Pahlavi inevitably translates it throughout the Avesta not by the usual words for 'true', *rāst, wābārīgān, wizurd,* but by *āškārag* 'patent, overt, manifest'. This glossation must be based on an early exegetic tradition where *haiθya-* 'true' was understood as that which is patent, verifiable, ascertainable, in contrast to truth as a matter of ethics or religious faith. This accords precisely with the prehistory of *haiθya-* < PIE **Esn̥tyo-*, from **Es(e/o)nt-*, participle of **Ees-* 'to be'; hence **Esn̥tyo-* is basically 'as something is', cf. Old Indic *sa(n)t-* 'real (English cognate *sooth*), virtuous', but German *Sünde*, English *sin*.

§177 With regard to the statement in Pseudo-Democritus that *theombrotion* is drunk by Persian kings against bodily disorders and instability of intellect, cf. the attributes of *haoma* (healing, increasing insight, etc.) in the *Hōm Yasht* (§84). For Pseudo-Democritus' statement that the Persian kings drank *theombrotion* to increase the sense of justice, cf. the *Hōm Yasht*'s characterization of *haoma* as 'truly the source of Truth/Rightness' (*haiθimca ašahe xå*), *Yasna* 10.4, and the epithet 'furthering Truth' (*aša-vāzah-, aša-vazah-*) uniquely applied to *haoma* (*Yasna* 10.1 and 14, etc.). The institutional application of the justice-manifesting consumption of *haoma* was the ordeal; see §§150-159. For Pseudo-Democritus' term *hermesias*, see §90 n.25.

§178 In *Yasna* 10.19, the separation of *imåsə* from from *tē maδō*, which has previously impeded translation, parallels that of *āsitō . . . tē maδō* at *Yasna* 10.8, again with *fraša frayantu*. Note the alliteration *fraša frayantu*, the assonance *fraša . . . raoxšna* and the alliteration *raoxšna . . . rənjyō*. For reasons of meter/rhythm and parallelism, **tē maδō* must be posited after *vazåinte*, whose *-te* caused haplological disappearance of **tē*. The form *vazåinte* 'waft, fly, move forth' may echo *Yasna* 10.14 *ašavāzō* 'making Rightness/Truth move forth', cf. *Yasna* 10.1 *ašavazåŋhō*, both epithets of *Haoma*.

§179 In *Yasna* 11.10, while *pairi.tē haoma . . . daδāmi* is repeated from *Yasna* 10.8, it is expanded by the request of reciprocity, *pairi.mē . . . dayå . . . haoma*; this parallelism may extend to *ašava . . ašaonąm*. Cf. also the parallel of *havaŋuhāi* 'for well-being' (from *hu-* 'good' and *ahu-* 'existence') plus *ašavastāi* vis-à-vis *vahištəm ahūm* 'Best Existence' plus *ašaonąm*. I emend *(θwaxšāi) *haomahe (maδāi)* for *haomāi* in consideration of both form and meaning; cf. *haomahe maδō* (*Yasna* 10.8). The erroneous *haomāi* is a simple instance of "attraction" to the surrounding datives.

Yasna 10.15: Avestan *ūnă-* (see §90)

§180 The interpretation of this passage rests on the meaning of two words, *ūnąm* and *āvitō.xarəδayå*. I take the first simply as accusative of *ūnā-* = *unā-*, literally 'empty place, hole (cf. H.-P. Schmidt 1969: 124 *seq.*; 1983), here probably = '*cunnus*'. For the second hapax, *āvitō.xarəδayå*, I follow the reading preferred in Geldner's edition. I see the form as parallel to *mairyayå*, i.e. the

gen. of an *-ā-* stem fem. adj., *āvitō.xarəδā-*, obviously a compound. The first member, **āvita-*, I take as 'endowed with, characterized by', and identify it with the second element of *satāvita-* and *utāvita-*, where **-āvita-* is equivalent to the possessive suffix of the parallel forms *satavant-* and *ūtavant-* in *Yasht* 2.14. **āvita-* would be the past passive participle of *avi-ay-* 'herzugehen zu, ankommen'. The second member, **xarəδa-*, has been recognized as the cognate of Khwarezmian *pcxrδ*, New Persian *payxāl* 'excrement (of animals and birds), refuse', New Persian *āxāl* 'peel, trash, discards', New Persian (loan word) *xard* 'mud', Shughni *šarδ-*, Yidgha *ɕawd-*, Yaghnobi *xərd-*, Pashto *xaṛ-el* 'to defecate', Khotanese *saṃkhal-* 'to stain', etc. Thus, *āvitō.xarəδå* would mean 'filthy, dirty'. The Sanskrit translation *paribhraṣṭabuddhi-* 'with impaired intellect', which misled Bartholomae into making his improbable analysis **āvitō.xarəδāy- < *a-vitaxra-dāy-*, is probably based on an erroneous interpretation involving *xarəδ-* as equivalent to Middle Persian *xrad (xraδ)* or New Persian *xirad* 'wisdom, intellect' (Avestan *xratu-*); this also motivated the misreading *āvitō.xraδayå*.[4]

Yasna 11.2: Avestan *bāšar-*

§181 Hoffmann's (1986:166 and 179, fn.4) translation of *bāšar* as "Pfleger" instead of 'rider' is hard to accept, in view of the clear context for 'rider' ('may thou not be a yoker of steeds, a mounter of steeds, a harnesser of steeds, who do not entreat me for [showing] strength in the crowded district assembly of many men'), and the symmetry horse : rider (*bāšar-*) :: *haoma* : drinker (*xᵛāšar-*). There may have been a general expansion of the agent suffix to include middle voice verbs, or a special creation of *bāšar-* in the specific context of *Yasna* 11.2 by analogy with *zaotar-* and *xᵛāšar* (where there is also rhyme).

Yasna 10.5: Avestan *nąmy-(ąsu-)* (see §87)

§182 Against Gershevitch's (1974:48) translation of *nąmy-(ąsu-)* as '(having) sweet (stalks)' stands the Pahlavi translation *narm-tāg*, 'soft stalked'. The meanings 'soft' and 'sweet' are also found for Sogdian *namr-* in C 2 (spelled *nmr-*) and glossed 'sweet' in *Psalm* 19.11 (*nmry-str*). Furthermore note Avestan *nąmišta-*, superlative of the quality expressed by *nəmah-* 'homage' < 'bending', both words being collocated at *Yasna Haptaŋhāiti* 36.2 in a series of *figuræ etymologicæ*. Clearly **nāmi-* is a Caland's Law variant of Old Iranian **namra-* 'pliant, soft'. The semantic development of the vṛddhi **nāmra-* to 'sweet' is an inner-Sogdian phenomenon, cf. French *doux*, etc.

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4. This interpretation of *āvito.xarəδayå* was made in the unpublished 1975/1976 revision of my dissertation "Studies in the Texts of the Sogdian Christians", pp. 62-63; cf. also Bailey (1979:417). For *xard-* see also Schwartz (1969:447; 1970:290) with literature.

Pahlavi translations of Avestan *mad-* (see §22 n.2)

§183 It is a curious fact that the Pahlavi translators did not understand straightforward forms of the Avestan root *mad-* 'to intoxicate' (except for where the context permits equation of the noun *maδa-* 'intoxication' with *maδu-* = 'wine'). The relevant Pahlavi glosses are based on *mʾd-* (which Iranologists have tacitly rationalized to **md-*, for example Bartholomae's *madišn* for *mʾdšnʾ*, *madēnitan* for *mʾdynytnʾ*; etc. In the translations of *Vīsperad* 8.1 and apparently *Nērangistān* 30, the Pahlavi glosses in *mʾd-* are interpreted as forms from *meh* 'greater' (*mehēnīdan* 'to increase', etc.). In the translation of the *Hōm Yasht* (*Yasna* 9-11), this *mʾd-* is elaborated by glosses which show it was taken as referring to knowledge. Thus *maδō* (*Yasna* 10.14; 10.19) is glossed *vidyā* by Neriosengh, and *maδəm mruye* (*Yasna* 9.17) is glossed *mʾdšnʾ gōw tis-ē-m pad frahang gōw ku-m dānāgīh bawād* 'speak **māyišn*, i.e. say something to me in instruction: that I may have knowledge'. (For the latter passage Bartholomae's emendation of the straightforward *tis-ē-m* 'something to me' as *az ēn may* 'from this wine' must be rejected as unjustified). For *Nērangistān* 29, which pardons priests who do not recite the Gathas 'after (their) drinking intoxicating (alcoholic) beverages' (*maiδyanąm parō xᵛarətōiṯ),* there occurs the gloss *az may xwarišn* 'after drinking wine', further explained as *may xwarēnd mast be-bawēnd* 'they drink wine, they become drunk'. Avestan *maδa-* is translated as Pahlavi *may* in *Nērangistān* 30, where *hurąm xᵛaraiti maδō aspaya.payaŋhō* 'drinks kumiss, (i.e.) the intoxicant beverage (not 'Wein'!) of mare's milk' is glossed by Pahlavi *hur xwarad may ān-iz asp pēm* 'drinks kumiss, the "wine" which is mare's milk'; the mistranslation was no doubt furthered by the genuine collocation of *hurā* and the proper word for wine, *maδu-*, in *Vidēvdād* 14.17 *(hurayå vā maδə̄uš vā).* Here the phonically similar (but originally unrelated) words for 'wine' and 'intoxication, intoxicant' merged in translation as an *ad hoc* broadened concept of wine (*may*) for any alcoholic beverage. This is of interest for the solution of the general glossation in Pahlavi of the Avestan words pertaining to intoxication.

§184 The Indo-Iranian verbal stem for 'bring about intoxication' would have been a causative stem *mādaya-*, well attested in Old Indic. One may assume for Old Persian a cognate **māδaya-*, which lies behind the relevant Pahlavi forms in *mʾd-*. Thus the earliest stratum of Pahlavi glossation correctly rendered the Avestan forms in *mắδ-* for 'intoxicate, intoxication.' However, **māδ(aya)-* underwent the regular change to Middle Persian *māy-*, homophonous with forms for 'copulate' (from the old root *māy-;* thus *mʾdšnʾ* is both 'intoxication' and 'copulation'!), bringing about the Middle Persian exploitation of the old past participle *masta-* for the concept of intoxication, and making *mʾd-*, i.e. *māy-* *'intoxicate', no longer correctly comprehensible. Hence *mʾd-* was treated differently in various contexts. It was also taken from *meh* 'greater', or

left unexplained, e.g. for *Yasna* 10.8, where *mᵓdšnᵓ* merely elicits a statement of helplessness, *mᵓdšnᵓ abāyēd guftan* 'one must say *mᵓdšnᵓ*.' The Avestan reference is to the violent intoxications, *maδåŋhō,* against those of *haoma*. However, the word *mad(a)-* in reference to *haoma* was foregrounded by the importance of the sacred beverage; some interpretation was necessary. Two factors determined the interpretation: (1) the belief that *haoma* conferred spiritual benefits; and (2) the apparent sense of *maδa-* (and *maiδya-*) elsewhere for an intoxicating beverage used ceremonially, i.e. 'wine'. Taken together, the two factors would give the impression that the *maδa-* of *haoma* was in some way a spiritual analogue of the intoxication of alcohol. As noted earlier, the Middle Persian word for 'intoxicated' is *mast,* whence *mastīh* 'intoxication'. The Avestan cognate was observed to occur in *aγryō.maδu.mastəma-* 'highly intoxicated by the first treading of wine' (*Pursišnīhā* 31), which, as analyzed by K. M. Jamaspasa and H. Humbach (1971:I, 49), is superlative of **aγryō.maδu.-mad-*, for which the Pahlavi has *kē-š ān ī mast ud aγrāy mastīh* 'whose intoxication is that of one who is intoxicated, which is of high value'. A form almost identical to Pahlavi *mastīh* is Avestan *masti-* 'knowledge' (from the root *mand-*), correctly translated by *frazānagīh* for the two attestations in the *Hōm Yasht, Yasna* 9.17 and 9.20. In the second Avestan passage it is stated that *haoma* grants, to those who avidly study the sacred text, holiness (*spānah-*) and *masti-*. In the first passage *masti-* concludes a series of nine things for which *haoma* is invoked; the series begins with *maδa-*, so that *maδa-* and *masti-* both frame the list. This associative parallelism of *maδa-* and *masti-* allowed the following analogy: Pahlavi *mastīh* (Avestan **masti-*) 'intoxication' : Avestan *maδa-* 'intoxication, intoxicant, alcoholic beverage' :: Avestan *masti-* 'knowledge' : *maδa-* 'x', whereby 'x' = 'knowledge'. The latter development could not have taken place if, during the later period of Pahlavi glossation, it was believed that *haoma* was intoxicating, which would exclude "spiritualization" of *maδa-* via *masti-* 'wisdom'.

2

AVESTAN TERMS FOR THE SAUMA PLANT

Etymology of *soma-/haoma-* (see §45)

§186 This is the proper place to take account of an unusual explanation of *soma/haoma* offered by a distinguished Iranist, Sir Harold Bailey (1971; 1972:105; 1975:19; 1979:491; 1984; 1985). As against a universal consensus that *soma-/haoma-* has its origin in the Indo-Iranian root **sau-* 'to crush or grind by pressing with a pestle in a mortar' with suffix *-ma-* (see §262 below), Professor Bailey, in a favorable response to Mr. Wasson's theory that the sauma plant is a mushroom, proposed that **sauma-* have its origin in a word meaning 'mushroom'. It would be a remarkable phenomenon for there to have arisen a central ritual of pounding a mushroom (and, eventually, a twiggy substitute of wholly different appearance) because of similarity in sound between 'mushroom' (unattested for **sauma-*) and 'pound in a mortar'; it would be as if English-speaking ritualists, having instituted a cult of a psychotropic mushroom, would have the word *mushroom* prompt them to innovate a ritual of constructing sacred rooms (and piously fill them with oatmeal mush).

§187 Before proceeding to the etymology itself, it is worth observing the attestation ṚgVeda 1.84.8 (as translated by Bailey 1984:17) has 'when will (Indra) spurn [*sphurát*] the giftless mortal, like the *kṣúmpa*-plant with foot?' This is the only clear mention of mushrooms in the ṚgVeda, and it is interesting that here the mushroom is the exemplum of something despised. This is not definitive evidence against the *soma*-mushroom theory, but is nevertheless relevant. Bailey attempts to bridge the forms *kṣúmpa-* and Indo-Iranian **sauma-* by taking *k-* as prothetic. While he does not note the fact, all the other instances of Indo-Iranian *k-* prothesis involve Proto-Indo-European (PIE) **sw-*. Thus Old Iranian **xšv(a)ib/p-* 'to move quickly from side to side, to whip' (the respective meanings of Old Norse *svífa* and Latvian *svaipīt*), cf. Avestan *xšvaēpā-* 'rear, *tail', Old Indic *kṣip-* 'throw, swing' (probably dissimilated from **kṣvip-*); Avestan *xšvīd-* 'milk', Old Indic (lexicographical) *kṣvidyati* 'becomes moist' (Latvian *svaidīt* 'to smear', *sviēst* 'butter'); and Old Indic *kṣvedati* 'hums', Pashto *špel-* 'to whistle' (Old Slavic *svistati* 'to whistle'). Some of these forms were indeed alluded to by Bailey, who also cites the words for 'six'. However, the initial velar is lacking for 'six' in Old Indic, and the *ch*

of the Prakrit forms, rather than reflect **kṣ-* and unmotivated palatalization, may go back merely to *s-*, cf. Pischel (1900:§211). Possibly one should proceed from PIE **sweks*, becoming Proto-Indo-Iranian **svakš;* the Indic form may reflect lost *-v-* by analogy with *sapta* 'seven', and subsequent assimilation of **saṣ* to *ṣaṣ;* an independent assimilation of **svaš* to **švaš* may lie behind the Iranian *xšvaš*, with *x-*, as regularly, preceding an older initial cluster **šC-*. Thus 'six' should not be ranged with the other forms in Proto-Indo-Iranian that have **kšv-* alongside cognate forms, in other languages, reflecting **sw-*.

§188 If *kṣúmpa-* belongs with German *Schwamm*, etc., it would be a replacement of **kṣvámpa-* or the like. This situation could be explained by a PIE ablaut alternation **swómPo-: *sumPó-* (perhaps originally nominative **swómb(h)s > *swómps:* genitive **sumb(h)ós*, etc., cf. English *swamp: sump*), giving, via analogical levelings, **kṣvámp: *kṣumpás*, and finally a single compromise thematic *kṣúmpa-*. Thus the *k-* of *kṣúmpa-* would ultimately have the same origin as the *k-* of *kṣvidyati*, etc.

§189 While the *(*)kṣv-* of *kṣúmpa-* thus has parallels in such forms as *kṣvidyati*, the *k-* is nevertheless remarkable, for one would regularly expect **sv-*, and not Proto-Indo-Iranian **kšv-*, Old Indic **kṣv-*, for the entire series of words, 'mushroom' included. It is notable that an irregularity is also found in Greek *σομφός* 'spongy, fungous', against the expected *ὀμφός (< ὁμφός <*ϝομφός < *swombho-)*. It therefore becomes conceivable that the irregularities of both the Indic and Greek forms for 'fung(o)us' represent a single PIE variant of **swombh-*, i.e. **kswombh-*. PIE **ksw-* would have been simplified via **sw* to Greek *σ–*. A PIE variation **(k)sw-* would also explain the hitherto puzzling series of Greek words with cognates pointing to PIE **sw-*, words which, apart from the initial sigma, appear, like *σομφός*, to be Hellenic in phonology, and have meanings which make it unlikely that they were borrowed from a non-Hellenic language. These include *σαρδάζω* 'deride' (Welsh *chwarddu* 'to laugh', Sogdian *sxwarδ-* [Old Iranian **us-hvard-*], 'to shout', Avestan *kaxvarəδa-* 'sorcerer, *γόης*', *σέλας* 'gleam', *σελήνη* 'moon' (Old Indic *svarati* 'shines', Greek *ἕλη* 'sunlight', *ἑλάνη* 'torch'); *σῑγή* 'silence' (German *Schweigen*) and *σιωπή* 'silence' (Old High German *giswiftōn* 'conticescere', etc.); and *συρφετός* 'sweepings, draggings', (Gothic *afswaírban, biswaírban* 'to wipe off', Old Frisian *swerva* 'to crawl'); semantically Greek *σαίρω* 'sweep, clean', *σῦρω* 'sweep, drag, crawl' from PIE *twer-* 'to turn' may have been influenced by PIE **swerbh-*.

§190 Particularly interesting is Greek *σῑμός* 'bending upwards, convex, snub', with cognates not only in Germanic (Norwegian *svīma* 'to reel', Old English *svīma* 'vertigo', Middle Low German *swāien, sweimen* 'to swing, sway', and Celtic (Welsh *chwid* 'agile turn', *chwin* 'movement'), but also in Slavic (Ukrainian *xvíjaty* [*-s'a*] 'to tilt [reel]', Russian *xvéjat'sja* 'to move'). These words are from the same ultimate root as Avestan *xšvaēpā-*, Old Norse *swífa*. Here Slavic *xv-* (against regular *sv-* from PIE **sw-*) would parallel Indo-Iranian

**kšv-* (Old Indic *kṣv-*, Old Iranian *xšv-*) and Greek *s-* as the reflexes of PIE **ksw-*, variant of **sw-*. The same Slavic cluster is found in Russian *xvóryj* 'ill' (Middle High German *swër* 'pain, illness, swelling', Avestan *x'ara-* 'wound'), where again PIE **(k)sw-* should be reconstructed. Note that the regular Slavic reflex of PIE **ks-* is *x-*, e.g. Polish *chybać*, Czech *chybati* 'to swing, sway, be in agitation': Old Indic *kṣubh-*, Avestan *xšaob-* 'be in agitation'; Old Slavic *xudŭ* 'small', *xuždii* 'smaller': Old Indic *kṣudra-/kṣodīyas-* "small/smaller'.

§191 The language groups concerned, i.e. Indo-Iranian, Greek, and Slavic, are precisely those where a difference in the reflexes of **ksw-* and **sw-* is expectable. In phonetic terms, the **k-* prothesis of **ksw-* may be explained phoneticaily as originating in a tense onset accompanying a fortis pronunciation of the cluster *sw-*, and is due to the close relationship of *w* and velarity (cf., among many examples, **sw-* and **tw* becoming *kʿ* in Armenian). This phonetic intensification would correspond to the "expressive" nature of words in question, which refer to raucousness and high-pitched noise, glowing and glimmering, agitated motion, etc. In some instances the original "expressive" factor can no longer be precisely identified. In these cases the relevant feature may have developed secondary sound-symbolism. Thus, in Greek *σῖγή* and *σιωπή* the sigma may express sudden cessation of sound; cf. English *shh, hush.* In Avestan *xšvid-* 'milk' the *xšv-* is hard to separate from that of Avestan *xšvipta-* (**xšvifta-)* 'milk (obtained from a milch animal)', Sogdian *xšift-*, Sarikoli *x̌evd,* etc. 'milk', explainable as 'that which is obtained by rapid or agitated motions' or 'sped forth', root **xšv(a)ip/b-*, but the relative chronology of the semantic developments is unknown, as is the connection of Old Indic *kṣīra-*, Persian *šīr* 'milk'. The meaning 'milk' for **xšvifta-* may be based upon *xšvīd-*, where the prevelarization could be related to a basic word for dripping, trickling, soaking through, etc. For Sogdian *xšift-*, see further §203 n.1.

§192 The latter possibility would be supported by Old Indic *kṣúmpa-*, Greek *σομφός* < PIE **(k)swomP-*. For **swomP-* I assume a basic meaning 'swamp(y)', whence 'fung(o)us', *a priori* more likely than the reverse order of semantic development. For the further connections I would compare PIE **seup/b-*, whence Old Indic *sūpa-* 'soup', Germanic names for 'soup' (and the like), 'sop, soppiness', and verbs for 'slurp' and 'sip'; **seup/b-* is itself one of several PIE roots **seu-* 'to exude liquid, be moist', whence various words for soakage, sogginess, etc. Thus, with nasal infix, **sumP-* and (with reverse ablaut) *swomP-* 'soppiness, swamp(iness)'.

§193 There is in fact a considerable difference between **sauma-* and the Germanic words for 'mushroom', etc., which would have given in Indic not **svama-* (**sụama-*) or **suma-*, let alone **sauma-*, but **svamb(h)a-* or **sumb(h)a-*. The PIE etymon 'mushroom' ('swampy, boggy, moist') is reconstructed **swomb(h).* The **-mb(h)-* is clearly reflected in Germanic, e.g. Old Norse *svǫppr,* Danish *svamp* 'mushroom' and 'sponge'; cf. English *swamp* and, with zero grade, *sump; *-mbh-* is reflected by *-mm-* in Gothic *swamms* (*sic*), Old

English *(mete-)swamm* 'mushroom', etc., Old High German retains, alongside *swam(m)*, German *Schwamm*, the cluster *-mb-* in *swamb*; Greek σομφός stands to *swamb*, *Schwamm*, as Greek γόμφος 'lateral tooth' stands to Old High German *kamb*, German *Kamm* 'comb'. As in Germanic, the disappearance of *b* after *m* is inconsistently realized in Iranian: Khotanese *huma-* would be like Khotanese *dumaa-*, Avestan *duma-*, against Sogdian *δumb*, Middle Persian *dumb* (alongside *dum*) 'tail'; PIE **dumb-*, cf. Old High German *zumpfo* 'penis'. Since there is no way to bridge the Proto-Indo-Iranian forms **svamb(h)a*, **sumb(h)a-* 'spongy object, mushroom' and **sauma-*, the connection must be abandoned.

§194 Bailey (1979) himself has recently seemed to abandon the sauma-mushroom identification while apparently still advocating the possibility that **sauma-* is **'the spongy plant' (note that he now adds Khotanese *haṃba-* 'balsam' from **humba-* to the etymon). Bailey (1979: 162) writes:

> In *ṚV* 10.94.3 reference to the stalks of *soma* cites the *vṛkṣásya śā́khām aruṇásya* 'the branch of the red *vṛkṣa*-plant'. Avestan *varəša-*, Old Indic *vṛkṣá-* seem to have survived in Yazghulami *warš* 'a herb which blinds cattle', and Shughni 'a hill grass', if these are from **varša-*; it could then give a meaning 'plant with root, shoot, or stalk', whence later 'tree'. The phrase *vṛkṣá- . . . aruṇá-* with 'branch' hardly suits a mushroom.

§195 Again on a relationship of Khotanese *huma-*, etc. to *soma-*, Bailey notes (1979: 491): "The use of the 'branch of the red tree', *vṛkṣásya śā́kham aruṇásya*, causes difficulty"; here he also refers to *ṚV* 10.94.3 together with the Middle Persian description of *hōm ī spēd* 'the white *haoma*' as a tree (*draxt*) or plant (*urwar*) (see also Bailey 1974: 374 and 371). It may be added that this Vedic and Middle Persian evidence for the unmushroomlike nature of the sauma plant is completed by the Avestan mention of trunks (*varšajīš*), shoots *(frasparəγō)* and outgrowths (*fravāxšō*), as well as stalks (*-aṣu-* = Vedic *aṃśu-*), *Yasna* 10.5; *Yasna* 9.16. The picture of a chlorophyll-producing plant is further borne out by Avestan *zairi.gaona-*, to which correspond Aramaic *zargōn* 'vine', Middle Persian and Parthian *zargōn*, Sogdian *zaryōn* 'greenish, vegetable'. All of this goes against the identification of sauma as the mushroom *Amanita muscaria*, but is suited by the identification as *Peganum harmala*.

§196 Bailey (1985), following Benveniste (1929), connects *haoma* via Plutarch's ὄμωμι (on which see §52 n.10) to Greek ἀμωμίς, and thence to Greek ἄμωμον, Syriac *humāmā* and Arabic *humāma*. For the series of forms he claims an original Iranian **humāma*, consisting of *huma* 'soft' plus suffix *-ama-*. The connection of *haoma* with ἀμωμίς, is, however, untenable (see §269) and derivation from Iranian **huma-* 'soft', and thereby connection at the linguistic root level with *haoma-*, provides no botanical specificity. Bailey's citation of Old Indic *saumya-* 'soft' alongside *soma-* does not make it clear that *saumya-* really means 'like *soma-*' and hence, *inter alia*, 'gentle' (rather than 'physically soft'). Against Bailey's etymological manipulations, whereby *haoma-* would

be 'something soft', the traditional explanation of *soma-/haoma-* remains unshakable, supported as it is by proper morphological analysis, by its textually associated cognate forms for 'mortar', 'ritual pressing', etc., and by the actual method of preparation.

More on mushrooms, and the alleged PIE **bhongo-* 'psychotrope'

§197 There exists a series of phonologically similar words in Indo-European, Uralic, and northeastern Siberian languages which seems to bring together mushrooms and other plants under a shared characteristic, a narcotic effect. This linguistic material has had a significant role in the history of the identification of *soma/haoma* and other issues pertaining to the use of psychotropic plants by the Indo-Iranian peoples. The forms consist of (1) words for 'mushroom, squamous substance' and likely cognates. These include: in Indo-European, Latin *fungus* and Greek *σφόγγος;* in the Finno-Ugric branch of Uralic, Mordvin *paŋgo* 'mushroom, fungus, lichen', Ostyak *paŋk,* etc., Vogul *paŋx, poŋk,* etc. *'Amanita muscaria';* Ostyak *paŋkəl-, paŋkət-* 'after eating *Amanita muscaria,* become intoxicated and/or sing; prophesy, heal shamanistically'; Vogul *põõŋkl-,* etc. 'become intoxicated (by any means)'; in the Samoyed group of Uralic, Ket *haŋgo 'Amanita muscaria'* and Tavgi *faŋka-* 'be intoxicated'; and in Chukotkan languages, Chukchi, Koryak, and Kamchadal *poŋ-* 'mushroom'; (2) Words for drug plants in Indo-Iranian: Old Indic *bhaṅgá-, bhaṅgā́-* (already AtharvaVeda) 'hemp', also (ṚgVeda) epithet of *soma;* Avestan *baŋha-* 'an abortive plant'; Middle Persian *bang* 'henbane'; Persian *bang* 'henbane, hemp'.

§198 Before discussing the views on the history of drug plants to which these linguistic data have given rise, it will be of help to discuss the forms of the first ("mycological") group. The etymology of Greek *σφόγγος* (and its variant *σπόγγος*), Latin *fungus,* have been usually discussed by Indo-Europeanists together with Armenian *sunk* (*sounk*), with the conclusion that all derive from an unknown "Mediterranean" source. This position allows an escape from accounting for the difficult phonological details. Another solution, proposed by H. Pedersen (1900; I have not been able to obtain the original article and am dependent on the summary of Roman Jakobson *apud* Wasson 1968: 319-320), also operates with the Greek, Latin, and Armenian forms, to which it adds also Old Slavic *gǫba* 'sponge' and kindred Slavic forms also meaning 'mushroom'. Pedersen suggested that *gǫba* and Old High German *swamb* could go back to PIE **sgwhombho-*, but, in order to account for the Greek, Latin and Armenian forms, he alternately proposed an original **sphwongo-*, becoming through metathesis **sgwompho-*, with variant **sgwombho-*.

§199 An original **sphwongo-* is *a priori* unlikely, since PIE initial clusters of two labials, PIE **p(h)w-* and **bhw-*, cannot otherwise be reconstructed. Furthermore, PIE **sp(h)-* would give Armenian **pʿ*, not **s-*, while the proposed

variant of the metathesis, **sgwombho-*, would yield Old Slavic **gvǫmba* and ProtoGermanic **skwambaz*, not **swambaz* (cf. Old Norse *svǫppr*).

§200 Old High German *swamb*, etc. should be (against Pedersen) related to Greek *σομφος* (see above, §181), and separate from Greek *sp(h)óngos* and Latin *fungus*. Armenian *sunk* does not belong here either. It is of Caucasic origin, most likely South Caucasian (Kartvelian), cf. Georgian *sok'o* 'mushroom'; (see Klimov [1964: 165] where Armenian *sunk* (and *sokon*) are given, with Ossetic and Nakh-Daghestanian forms, which are probably also from the Kartvelian). The *-n-* of *sunk* may be due to the influence of Armenian *spung* 'sponge' (from Greek), cf. *sung*, variant of *sunk*, which therefore need not be of "West Armenian" origin.

§201 This leaves Greek *sp(h)óngos*, Latin *fungus*, and Old Slavic *gǫba* to account for. If we start with PIE **bhongo-*, we get *fungus* as regular reflex, *sp(h)óngos* via *s*-prothesis, perhaps with additional influence of *σ(F)ομφός*, and *gǫba* via metathesis of **bǫga*. This metathesis would be motivated by the semantic similarity of Balto-Slavic **gumba-*, Lithuanian *gumbas* 'convexity, round excrescence', *gumbras* 'boil', cf. Pashto *γumba* 'boil', and also by Old Slavic **gǫba* 'lip, snout'; for the relevant forms see Vasmer (1950-: 316).

§202 It is noteworthy that the meanings and geographical distribution of the forms Greek *sp(h)óngos* 'sponge', Latin *fungus* 'mushroom, fungus, lichen, mildew' and Slavic **gǫba* 'mushroom, sponge' points to the meaning of **bhongo-* not as 'sponge' (originally a specific Mediterranean development of the Greek), nor even as 'mushroom', but 'spongy, soppy, swampy substance', of which fungi are the most common exemplars. The meaning would come close to that of German *Schwamm* 'sponge/mushroom', whose cognates include words for swamp and sump. As I have proposed (§191), **swombho-* ultimately means 'soupy moisture', to root **seup-*; thus **bhongo-* could have doublet **bhogno-*, whence Russian *bagnó*, 'low swampy place', Ukrainian *bahnó* 'swamp', etc., and perhaps also German *Bach* 'stream', Irish *búal* 'water' (see Vasmer 1950-:36). For the phonological relationship of **bhongo-* to **bhogno-*, cf. Latin *fundus:* Old Indic *budhna-* 'bottom', but the inserted nasal of **bhongo-* could also be sound-symbolic. Cf. also **swomp/bho-*, root **seup-*.[1]

§203 It is quite possible that **bhongo-* was borrowed as **p8ŋk8-* in Uralic in some very remote period of contact with the Indo-Europeans; cf. the later borrowings of 'mushroom' in Uralic from Indo-European, Hungarian *gomba* from Slavic, probably Finnish *sampa* from Germanic **swamb/pa(z)*, and also Turkish *mantar* 'mushroom, fungus, cork' from Greek *μανιτάρι* (ancient *ἀμανίτα*). It is noteworthy that **p8ŋk-* is reflected with the general meaning 'mushroom, fungus, lichen/mildew' in Cheremis and Mordvin, but is specifically 'fly agaric' in Vogul and Ostyak. There is no evidence to suggest that **bhongo-* in Indo-European meant specifically 'fly agaric'; this sense could

1. [For these forms cf. also Toporov (1985:301-305)].

have developed in Uralic (more precisely, Ob-Ugrian) territory, where this was the mushroom *par excellence*.

§204 This brings us to the second series of words, i.e. the Indo-Iranian words formally reminiscent of **bhongo-* but referring to non-mycological drug plants. B. Munkácsi (1907: 343-344) first connected the Ob-Ugrian words for '(fly agaric) mushroom' with the phonically similar Indo-Iranian words referring to various drug plants, and concluded that the Ob-Ugrian originally meant 'intoxicating, narcotic', and comes from Indo-Iranian. See further the extracts of subsequent relevant literature most usefully gathered and discussed by Wasson (1968: 226 *seq.*); note particularly Wasson's judicious criticisms of M. Eliade's (1964) thesis that "the magico-religious value of intoxication for achieving ecstasy is of Iranian origin", which is the most extreme extension of Munkácsi's view. Most recently the issue has been discussed again by F. Crevatin (1983: 109-15), who seems to believe that PIE **bhongo-* (and **spongo-*), whence he derives the Uralic forms, originally referred to the fly agaric mushroom, and that the same etymon gave rise to Uralic and Indo-Iranian terms with application of 'intoxicant potion' to plants other than mushrooms. Crevatin also seems cautiously favorable to the thesis that the Indo-Iranians originally used a psychotropic mushroom, but is reluctant to identify *soma/haoma* thus.

§205 As against the evidence for PIE **bhongo-* 'mushroom', there is in fact no real evidence for such a form meaning 'narcotic or intoxicant plant'. The apparent Indo-Iranian **bhanga-* with such a meaning is based on illusory data, as I shall now try to show.

§206 With regard to 'hemp', called *bhaṅga-* (and *śaṇa-*) in Sanskrit, there is no evidence for its use as an intoxicant in either India or Persia before well within the Islamic era. It is true the Scythians were exceptional in this regard, for their inhalation (!) of hemp is noted by Herodotus and confirmed by the Scythian tomb artifacts from Pazyryk. But it is clear also from Herodotus and other sources that the Scythian religion was different from that of other (Indo-) Iranians, and that the nomadism of the Scythians involved them in a different cultural complex, including particular shamanistic practices. It is perhaps relevant that in Ossetic, the surviving Scytho-Alanic language, 'hemp' is *gæn(æ)* (cf. **kæn-* 'flax' in *kættāg* 'linen'), whose prototype was early disseminated not only in the Caucasus (Svanetic *kan*, Abkhaz *a-k°no*), but independently among the Turks (*kendir*), and also yielded, in Uralic, Cheremis *keńe*. This form (like Sanskrit *śaṇa-* 'hemp', with *ś* from palatal *k̂*?!) lacks the labial which follows the *n* in the *cannabis* word in Assyrian, Middle Persian, Greek, Slavic and Germanic on one hand, and the East (Central Asiatic) Middle Iranian on the other: Khotanese *kaṃhā-* 'hemp', Sogdian **kinbā* or **kenbā (kynp')*, Khwarezmian *knbynk* (adj.), Khotanese *kuṃbā-* 'flax', from earlier disyllabic **kanbā-* (and **kanfā-*, from **kanphā-* for Khotanese *kaṃhā-* ?).

§207 The latter forms are of further interest. Words for 'hemp' and 'flax' often merge. If the source of Sanskrit *bhaṅga-* 'hemp' also referred to flax, and (as Mayrhofer 1956-1976, *s.v. bhaṅgă-* suggests) had the original form **kaṃbhă-*, **gaṃbhă-*, or the like, a metathesis to *bhaṅga-* could have been motivated by the association of flax (and hemp) with the beating (Old Indic *bhaṅg-*) necessary for the plant fiber to be used. W. Eilers (1985: 25) has suggested more simply a theoretical Proto-Indo-Iranian **bhang-* 'to beat' as the source not only for Old Indic *bhaṅgā-*, *bhaṅga-* 'hemp', but also Avestan *baŋha-* and Middle Persian, New Persian *bang/mang* 'henbane', which he wrongly also takes as 'hemp'.

§208 Against the opinion of Crevatin (1983: 112-113), the data of the Atharva-Veda do not show that hemp was used as a psychotrope. In *AV* 11.6.15 we are dealing with a series of holy plants. *Soma* was obviously the most sacred ritual plant, whether or not it was used psychotropically at the time the AtharvaVeda was composed. The presence of barley in the text is due not to a use in beer, as Crevatin suggests, but due to its long venerability as the Indo-European food grain *par excellence*. The numinous force ascribed to barley (Avestan *yava-ašavan-* 'the barley endowed with *Ṛta*', Persian *jordā*) is not only evident in the Avesta, where the mere cultivation of this grain is said to counter demons, but in a variety of Hittite, Vedic, and Greek data; see in detail Watkins (1978). *Darbha*-grass provided the seat of the god Agni on the fire-altar, and was used to sweep the sacrificial area, whence the numinous power of this grass (cf. *AV* 19.32). Crevatin's confidence that *darbha* was psychoactive is based on *AV* 6.43, where *darbha* figures in a charm to appease the anger of stranger and kin, but here we are not dealing with a tranquilizing drug, a "*sedativo*": the Atharva-Veda is not medical, but magical.

§209 Finally, the inclusion of hemp (*bhaṅgā-*) in the list is due to its use as the traditional means of binding, which, as is well known, is an operation which has a profound and multifaceted role in archaic magic and its symbolism, being the medium of control, alliance, incapacitation, and delimitation; it is also the means of fastening amulets. Cf. *AV* 2.4.3-4. As a name for hemp, out of which snares were ritually prepared, *bhaṅgá-* 'smashing' would be a propitious indication of the desired effect. Cf. *AV* 8.8.6, where the bonds of death, specified as hempen by *Kauśikā-sūtra* 16.15-16, 14.28, are associated with fatal hammers.

§210 It may be added that *bhaṅgá-* 'smashing, breaking through', as epithet of *soma* in *ṚV* 9.16.13, amplifies the immediately preceding *aptúr-* 'overcoming the waters'. This numinous epithet, with its victorious resonances, could have been another factor in the naming of hemp *bhaṅgá-*, *bhaṅgā́-*, although the fact that *bhaṅgá* occurs with regard to *soma* only in a single, contextually conditioned passage makes a connection questionable. In any event, it can be concluded that *bhaṅgá-*, either as a name of hemp or an epithet of *soma*, is independent of psychotropic reference.

§211 Passing now to the Iranian material, Avestan *bangha, baŋha-*, and Middle and New Persian *bang* and *mang* (Arabic *banj*), I shall now try to show that these names too do not go back to an Old Iranian **banga-* 'psychotropic or narcotic plant'.

§212 W. B. Henning (1951: 33 *seq.*) noted that Avestan *baŋha-/bangha-* is better derived phonologically from Proto-Iranian **dvaŋha-* (=Old Indic *dhvaṃsa-* 'destroying') than from a Proto-Iranian form with **-anga-*. Obviously this would suit the name of a plant at issue in *Vidēvdād* 15.14, where *baŋhəm* is listed as an abortive plant (I shall return to this passage). This also neatly fits *Vidēvdād* 19.20, the divine epithets of Ahura Mazdah *axᵛafnō, abaŋhō* 'sleepless, indestructible', and *Vidēvdād* 19.41, *daēvəm kundəm baŋhəm vī.baŋhəm* 'the demon Kunda, destructive, full of destruction'. However, this meaning also seems to occur for the name of a righteous person whose memory is revered, *Pouru.baŋhəm* (*Yasht* 13.124); 'full of destruction, having much destruction' (or 'destroying many'), a warrior's name, seems more likely than 'he who has many narcotics', which would suit a drug merchant or (given the context of *Vidēvdād* 15.17) an abortionist. But if a *nom de guerre* is not involved here, I suggest *'having a large abdomen', cf. Old Indic *bháṃsas-, ṚV* 10.163.4.

§213 That in *Vidēvdād* 15.14 *baŋha-* should mean merely 'destructive, destroying' is shown by the larger context: *baŋhəm vā šaētəm vā γnānəm vā fraspātəm vā kąmciţ vā vitācinąm urvaranąm* 'baŋha- or *šaēta-* or *γnāna-* or *fraspāt-*, or any of (the) (foetus-)dissolving plants'. The last two terms are clearest etymologically. First, *γnāna-* 'beating, killing', is from the root *gan-* 'strike, kill', cf. *Vidēvdād* 13.51 *ava.γnāna-* masculine 'killer', *γənąna-* neuter *Yasht* 10.27 'a blow' (delivered by Mithra against evil beings)'. Next, *fraspāt-* means literally 'throwing forth' (=Pahlavi *frāz abgandan*). This may now be understood as a term for 'abortive', cf. Persian *bačča andāxtan* 'throw a child' = 'have an abortion', and also Modern Greek *ἀποβολή* 'abortion, miscarriage' (originally 'throwing off/out'). The same semantic development occurs in Sogdian: Manichean *pš'q* 'abortion' (in Manichean texts referring to the 'Abortion-demons'), from *pšāy-* 'to throw, abort', S. *nš'y-* *'to be aborted',[2] which points to *šaēta-* also meaning 'abortive'.[3]

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2. S. *nš'y-* occurs in the Paris Text 22.18, untranslated by Benveniste (1940: 156). The passage means (starting from the end of Line 22): '(Her) deficient milk (restore *γš'β[t]y*, cf. Yagnobi *xšift*) will dry up, and the pregnant woman's foetus will be aborted (*nš'yt*) in her womb'. One should reconstruct an active form **nišāy-* from **ni-šāya-*, related to Khotanese *biṣṣāta-* 'dislocated', Old Indic *sā́yaka-* 'missile', from PIE **seE- (*sē-), *sē(y)-* 'to throw, cast'. Cf. already Schwartz (1969: 446).

3. It is clear that *š*, the regular reflex of PIE **s* after *i*, was generalized from the *-šāy-* of *nišāy-* *'throw down, abort' to the parallel form *pšāy-*, where *p-* reflects the preverb *apa-*, after which one would expect Old Iranian *-hāy-* for PIE **(-)sēy-*. This resulted in a new "root" **šāy-* 'to abort'. See the parallel examples in Gershevitch (1974:72); in support of Gershevitch's **šaiča-* 'pouring, forming pools, sprinkling', note the medieval place name *Šēz* in Azarbaijan,

§214 Thus we see that all three words following *baŋha-* in *Vidēvdād* 15.14 are adjectives which are in effect synonymous with *vitācinąm* 'liquidating (a foetus)', modifying 'plants' at the end of the sentence. It is now obvious that *baŋha-* at the head of the list is semantically like the rest of the series. The series may be translated 'destroying or aborting or killing or inducing miscarriage, or any of the plants which liquidate'. The series is therefore ordered: [A] a general word for 'destructive' alternating with [B] a term for 'abortive': ABA'B'(A"). It is doubtful that this is anything more than a pleonastic way of saying 'any abortive plant at all', and that any specific plant is named.

§215 One must account for the fact that the Pahlavi translation of *baŋha-* in the latter passage is not *bang*, but the less similar variant *mang*, with the specific gloss *mang ī Wištāsp* 'the *mang* of Wishtāsp'. The situation may be explained thus: the scholiasts were confronted with two terms, which they thought to form a pair of botanical designations (whereas the next two words they recognized as common nouns for abortifacients). They of course assumed *baŋhəm* to be *bang/mang*, while for *šaētəm* they thought of Middle Persian *šēd* 'bright(ness)' (Persian *šēd*, cf. Armenian *ašxēt;* Avestan *(-)xšaēta-*). Taking *baŋha-* as *bang/mang*, they identified this with the *mang ī Wištāsp*, seeing *šaēta-* as a more splendid *mang*, and invented a symmetrical counterpart, *mang ī Zarduxšt*, 'the *mang* of Zoroaster'. If my explanation is correct, there is no ground for Belardi's (1979: 115-116) speculation that the realia involve two plant juices, one abortive, the other intoxicant.

§216 While it was almost inevitable that the Pahlavi scholiasts would have rendered Avestan *baŋha-*, in the context of harmful plants, as the virtually homophonous *bang* (or its variant *mang*) 'henbane', it is most unlikely that *bang/mang* derives from Avestan *baŋha-*, which is not a botanical designation. Nor is a derivation from 'destructive' appropriate for *bang/mang*, as shall presently be seen. Phonologically it is very improbable that *bang/mang* is from Proto-Iranian **dvanha-*, which would give Middle Persian **dax*. The change *dv-* to *b* does occur in Parthian, e.g. *bar* = Middle Persian *dar* 'door' from **dvara-*, but **-anh-* to **-ang-* is unknown in Parthian or elsewhere in Middle Iranian. Obviously Zoroastrian Middle Persian *-ang-* in scholia as approximation of Avestan *-aŋh-* in proper nouns is irrelevant for our present instance.[4]

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at the site of a spring-fed lake. From this **šāy-* was formed an early East Iranian form *šaēta-[šaita-]* 'abortive', parallel to that of the cognate Old Indic form *setā-* 'furrow' from PIE *sēy-* 'to throw (seed), sow' (cf. also Old Indic *sēnā* 'missile'). For **seE->*sēy-*, **sey-*, see Schwartz (1980b). It may be added that B. T. Anklesaria (1950) and H. Jamasp (1907) have taken *šaēta-* as 'abortive' by comparing Sanskrit *śāyayati* 'cause to lie down', regarded as possible by W. Belardi (1979: 115). One must object that the cognate of Sanskrit *śī* 'lie' is Avestan *sī (say-)*, with expected *s-*, not *š*. Belardi's preferred connection with the other Avestan *šaēta-*, 'acquisition, possession, wealth' (not 'power'!), is unconvincing.

4. I am not convinced that Elamite *-nk-*, Greek *–γγ–* [-ng-] represents an actual **[ng]* as against **[nh]* in the examples discussed by Gershevitch (1969: 212-214). The instance of Middle

§217 It now becomes necessary to explain Middle Persian, New Persian *bang/mang* 'henbane', Arabic *banj* 'henbane, datura' (which, as most scholars have agreed since Henning's [1951: 33 *seq.*] discussion, must not be confused with the later Persian *bang* 'hemp' from New Indic *bhang*, Sanskrit *bhaṅga-*). An ingeniously novel explanation was offered by W. Belardi (1979:119): Assuming *banha-* and *bang/mang* are 'henbane', Belardi reconstructs Proto-Iranian **dvanga-*, Proto-Indo-Iranian **dhvanga-* '*Solanacea;* plant containing solanine'. From this **dhvanga-* Belardi also derives Sanskrit *dhvāṅkṣi-* (lex.) 'a particular medicinal plant', *dhvāṅkṣatuṇḍa-*, *dhvāṅkṣanāsā-*, *dhvāṅkṣavallī-* '*Ardisia solanacea*', *dhvāṅkṣamācī-* '*Solanum indicum*', all forms which would arise by popular etymological modification via *dhvāṅkṣa-* 'crow' (all these forms are misprinted *dhvaṅkṣa-*, as Crevatin [1982], who is sceptical of the etymology, has noticed).[5]

§218 Belardi's etymology, for all its erudite combinations, is very problematic. It is difficult to think that the word in question would embrace so broad a botanical spectrum. In detail, the genus *Ardisia* does not belong to the order *Solanaceae* (which includes e.g. the potato and eggplant), and neither *Ardisia solanacea* nor *Solanum indicum* contain the same alkaloids as *Hyoscamus* (henbane), as Belardi thinks (D.S.F.). While the Sanskrit forms are self-explanatory at face value, i.e. named for their resemblance to a crow's beak, etc., an etymon **dhvanga-* remains unexplained (Belardi wisely refrains from any temptation to mention *dhvaj-* 'to flutter'). Furthermore, it is a fact that the Sanskrit and Iranian names of shrubs, herbs, and fruits, are rarely (if ever) cognate.

§219 The assumption that *bang/mang* means 'henbane' has been countered by Flattery, who instead argues for it being a more general word for 'psychoactive drug'. In favor of this one could note Arabic *banj* as both 'henbane' and 'datura'. More importantly, as Flattery argues (§26 n.3), there is nothing to show that *bang/mang* necessarily referred to a potentially lethal drug, not even in the Ardā Wīrāz legend. Wīrāz drinks the *mang ī Wištāspān*, apparently the same *mang* Wishtāsp took for the trance in which the truth of Zoroaster's mission was revealed. In the *Iranian Bundahišn* 4.20 (Anklesaria 1908: 43.12), the drug which mercifully palliates the death throes of the

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Persian *frasang* (and *frasax*), Greek *παρασάγγη* '*parasang*' is complicated by possible influence of Persian *sang* etc. 'stone', cf. English *milestone*.

5. And even if, against all likelihood, the Iranian name of 'henbane' were related to the Sanskrit names in *dhvāṅkṣ-* for such different plants, even granting *dhvāṅkṣ-* represents **dhvaṅga-*, the correspondence of the Iranian would be irregular. As noted above, **dhvanga-* would give (Late) Avestan **banga-*, not *baŋha-*, and (if my arguments that *baŋha-* is not a phytonym are correct), the only reason to have thought that *baŋha-* is a misspelling of **banga-* (i.e. *baŋga-* in Hoffmann's [1971] system), the equation with Middle Persian *bang*, etc., is no longer tenable. I shall not quibble that **dvanga-* should have given Persic **dang;* interdialectal exchange is theoretically possible. The vast formal and semantic gulf between *dhvāṇkṣatuṇḍa-*, etc., and *bang/mang* suffices to make one seek another explanation.

Primordial Bovine is called *mang ī bēšāz kē hast ī *bang-(i)z (banj?) xwānīhed* 'the medicinal/healing *mang*, which is (also) that which is called *bang*'.

§220 The key to the etymology of *bang* is the variant form *mang*, again referring to a psychoactive substance. This form occurs in the Pahlavi accounts of the Primordial Bovine, divinely given *mang* for soothing the pangs of death; of Wishtāsp, who enters the long trance which precedes his acceptance of Zoroaster's religion; and of Wīrāz, who has his vision after drinking *mang ī Wištāspān*. The first two myths are based on lost Avestan texts. In the two versions of the first myth, *Iranian Bundahišn* 4.20 (quoted above) and *Zātsparam* 2.7, the word *mang* is glossed as 'that which is called *bang*'. These data indicate that *mang* is the more antique form, possibly an adaptation of an Avestan form, and that *bang* is of later origin. While in Iranian *b-* could be dissimilated to *m-* before *n-* (Eilers 1953: 73 *seq.*), *m-* becoming *b-* is not unusual, particularly when a nasal follows.[6]

§221 Thus we arrive at **mangă-* 'psychotropic substance', which could give specific senses 'henbane, datura', and, with Flattery (§§26-27), *'Peganum harmala'*. The etymology would be PIE **meng-* 'to create attractive illusions, to charm, appear charming, deceive' (cf. Pokorny 1959: 731 'schöner machen, schwindelhaft verschönern') whence Old Indic *mañjú-*, *mañjulá-* 'attractive', and probably also *maṅgalá-* 'good omen, fortune'; Greek *μάγγανον* 'means of charming, bewitching, or tricking; philtre; device'; *μαγγάνευμα* 'quack remedy' (occurring with *φάρμακα* 'drugs'); Middle Irish *meng;* Ossetic *mæng*, Sogdian, and Persian *mang*, all 'deceit, trickery'. It may be assumed that Iranian inherited two homophonous words, **manga-* 'deceit, trickery' and **manga-* (or **mangā-*) *'magic potion, hallucinogen'. [7]

§222 It may be concluded Indo-European **bhongo-* did not mean 'psychotrope' but merely meant *fungus* and the like; it is a coincidence that Ostyak

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6. Thus *maizman-* 'urine' gives Khotanese *bīysman-*, cf. Sogdian *βizm-δānē* 'bladder', and, with *-n-*, Avestan *maiδyāna-* 'middle', Persian *miyān* 'middle, waist': Yagnobi *bidon* 'middle' and Ormuri *biyān* 'waist', and Avestan *mayna-:* Sogdian *βaynē*, Khwarezmian *βaynək*, Ossetic *bæynæg*, Middle Persian *brahnag*. The examples can be multiplied.

7. As a semantic parallel to the etymology of *mang/bang* 'hallucinogen, henbane' (Arabic *banj* 'datura'), I would compare the etymology of Sanskrit *dhattura-* 'datura (*Datura alba*)', where *dhūrta-, dhūrtakāra-* 'deceptive, tricking' is clearly involved; see the material in Turner (1966; 1973:384 and 393 under *dhattūra-, dhūrta-*, and **dhūrtakāra-*). There is now all the less reason to involve dubious etymologies in **dhwes-, *dhus-*, or an unknown substratic etymon without further derivatives, and the role of "popular etymology", cf. Mayrhofer (1959:88-89). Old Indic *dhūrta-* gives Prakrit *dhutta-* 'rogue' and 'datura'; from **dhūrtakāra-* would come Marathi *dhutāra-* 'cheat', etc. and by metathesis Marathi *dhaturā* 'trickery', with compromise forms Buddhist Hybrid Sanskrit *dhutturaka-*, Hindi *dhutūrā*, Bengali *dhutura*, Assamese *dhūturā*, etc. The *-tt-* forms could be due to forms like *dhutta-* with *tt* from *rt*, and also have expressive value; and Sanskrit *dhustūra-* could have *st* as "learned" overcompensation replacing Middle Indic *th* (found e.g. in Maithili *dhuthur*), in reality the product of assimilatory aspiration by *dh-;* similarly the forms with *dhvas-* in the first syllable. Thus *dhūrta(kṛt-)*, literally 'deceptive, causing deception', glossed as 'datura', is not a baseless lexicographical fabrication.

paŋk 'intoxicating mushroom', Old Indic *bhaṅga-* 'hemp', Avestan *baŋha-*, characterization of abortive plant ('destructive'), and Middle Persian *bang* 'henbane' are similar in form. A parallel of sorts to this situation is the accidental similarity of English *hemp* and *henbane*. If I may close this unavoidably ponderous section with levity, the alleged **bhongo-*, **banga-* 'hallucinogen' turns out to be merely an attractive illusion.

Haoma and hops

§223 Abaev (1975) has proposed to derive Ossetic *xumællæg* 'hops' from **hauma- aryaka-* "Aryan *haoma*". This would be conceivable if it were known that the Scytho-Alanic (West Saka) ancestors of the Ossetes regarded *haoma* as paradigmatic of intoxicant in general (which would probably involve a desacralization of the beverage). Unfortunately nothing is known about the Saka usage of *haoma* (the background of the epithet *H-u-m-v-r-g* applied to certain Sakas by the Achaemenids unfortunately remains wholly conjectural; against Khotanese *durauśa-* reflecting Avestan *dūraoša-*, see Emmerick's note §98 n.27). Earlier attempts to connect the hops word with *haoma-* have been justly rejected by most scholars. The fermentation of beer is quite different from the pressing of *haoma;* note that extraction by mortar and pestle cannot be applied to hops. There is no evidence for the cultivation of hops originating among the Scyths; this would in fact be contradicted by the application of **hauma-* as a name for 'hops', which have no intoxicating property in themselves, but are used to facilitate the production of beer, enhance and preserve it (Burgess 1964). The situation with, for example, Russian *xmel'* 'hops, intoxication' is different, for here hops would be associated with the production of an intoxicant beverage introduced by another people. Henning (1946: 720) connects Greek *ζῦθος* 'beer' with Sogdian *zwtʾk* 'some intoxicant beverage', but this is too uncertain as evidence for Scythian brewing of beer. The former word, if of Greek origin, may be connected with *ζυμός* 'leaven, ferment', and the latter may be from an ancient **zūta-* 'poured (as a libation)'. The modern Ossetic word for 'beer', *bægæni* (whose **g* [as in the case of Khwarezmian *bkny*] cannot be from Old Iranian **g* [which gives γ], seems to be of Turkish origin, suggesting external influence in development of brewing techniques. Sogdian *βγʾny* has nothing to do with *bægæni* and beverages; see Henning (1968: 244-245).

§224 It is likely that the 'hops' word originated among the Germanic peoples, for whom beer has a long tradition of importance. Indeed Germanic uniquely provides a convincing etymology (German *hummeln* 'to grope, grasp around' has been compared, in reference to the distinctive growth of the clinging vines). From Germanic the word for 'hops' (Old Norse *humli, humla, humall,* whence eighth century Latin *humulus* and Finnish *humala,* traveled eastward and southward (note Slavic **xŭmelĭ,* thirteenth century Greek *χούμελι,* and cf. especially Old Norse *humli,* Old English *humele*) to the region north of the

Black Sea, where it likely was borrowed into Scythic as **xumall-ag* (with the productive suffix *-ag, -ak*), whence, likely via a Turkic intermediary **qumlaq/ *xumlaq*, the word was further disseminated in Chuvash, Vogul, Hungarian, etc. From Scythian **xumallag* comes, as the expected development, Ossetic *xumællæg*.

§225 This trajectory seems confirmed by the history of the 'ale' word: Germanic **alud-* (Old English *ealud*, etc.), representing a West Indo-European word for *'bitterness' (cf. Latin *alumen*), gave Finnish *olut*, etc. and ultimately Scythic **alud/t-*, whence Ossetic *æluton, ilæton* (whose fabulous nature suggests an exotic origin), Georgian *ludi*, for which cf. further Abaev (1955: I, 130). It may be concluded that Ossetic *xumællæg* has no relevance for the history of *haoma*.

Avestan *dūraoša-* (see §98)

§226 Since no noun or adjective **dura-* is found in either Indic or Iranian, and *dūra-* 'far' occurs in both, and **-auša(s)-* is reflected in Iranian and Indic only in the sense of 'destroying, destruction' (rather than its etymological meaning 'burning'), the simplest explanation would be that Avestan *dūraoša-* 'keeping destruction far away' reflects the original form and meaning, whereas the Old Indic *durósa-* has shortened the first syllable by popular etymology (*dur-* 'bad, difficult'). The Vedic hapax *oṣám* 'quickly' may be from older 'burning', but it is unclear if the latter meaning was still extant when the compound **dūrauša-* was created; the difficulty of the Vedic attestations are probably due to poetic plays on the meanings 'hard to destroy' and/or 'hard to burn', which await another occasion for discussion.

§227 The usual interpretation of *dūraoša-* as 'keeping death afar, averting death' associates *haoma* with a drink of immortality. Except in an eschatological context, however, immortality is not a prominent objective of haoma-drinking. Considering that *dūraoša-* in the Gathas refers to sauma in the context of burning it and that burning is the chief way of using an apotropaic plant in Iran, together with the fact that *haoma*'s apotropaic function is quite marked elsewhere in the Avesta, it seems more likely that *dūraoša-* had the sense 'keeping destruction far away' as referring to the apotropaic powers of the plant. For the etymology of *dūraoša-/durósa-*, see, in addition to the references to Bailey in §98 n.28, Gershevitch (1975:49) and Bailey (1985a).

Avestan *haδānaēpǎtā- 'Peganum harmala'* (see §§117-121)

§231 From considerations of realia Flattery (§§117-122) has rejected the equation of *haδānaēpǎtā-* with pomegranate (for which see Morgenstierne 1973: II, 190; Klingenschmitt 1965: 32 n.8, with reference to Bailey 1957b: 53), and has indicated instead that *haδānaēpǎtā-* should be a designation for harmel.

§232 It is true that *haδānaēpǎtā-* seems to be a compound whose first member is comparable with an Old Iranian etymon for 'pomegranate', **haδānā-*. From

a purely linguistic viewpoint however, the two items cannot be directly and unqualifiedly equated, since *haδānaēpǎtā-* has the additional element *pǎtā-* apparently added to the first member, *haδānaē-*, terminating in a diphthong *-aē-* which itself requires explanation. The presence of the additional material in fact suggests that *haδānaēpǎtā-* is not pomegranate but some other plant thought to bear some relationship to it.

§233 Both details have been addressed recently by Bailey (1985: 871), who still takes *haδānaēpǎtā-* as 'pomegranate'. For *-pǎtā-* Bailey compares West Iranian words for 'poplar', Persian *pad, pada,* Baluchi *paθk, patk,* etc. I fail to see the relevance of 'poplar' here. That it is listed in Pahlavi together with willow as a tree, which like *haδānaēpǎtā-*, is a soft wood, in no way concerns pomegranate, which has hard wood. Furthermore, Bailey's citation of the second part of the Avestan word as *pātā-* is fallacious; the basic form is *haδānaēpǎtā-*, with *pāt-* retained in the nominative (and normalized in the Pahlavi transcription), and *-pat-* in other cases showing the common Avestan secondary shortening of unstressed *ā*. Earlier Bailey (1979: 197) had compared Baluchi *paθk,* Kirmani *patk,* and Mazandarani *palak* with Ossetic *fætkʾu*. The latter, apart from its semantic difference from 'poplar', is probably of Caucasic origin, as indicated by the termination *-tkʾu* (see Abaev 1973: 203), with replacement of the inherited **(ha-)marnā-*. If the analysis is *fæ-tkʾu* < **pa-*, cf. perhaps Latin *pom-um?* Alternatively *fætkʾu* could be from the ultimate etymon of Hebrew *tappūaḥ,* etc., cf. Ossetic *færæt* 'axe', etc.: Middle Persian *tapar,* etc. I believe that such a metathetic relationship may be found in the Slavic word for 'poplar', on whose problematic PIE antecedent the unobserved Iranian correspondence sheds new light: Old Slavic **topolĭ* < **potol-*, as also Proto-Iranian **patar-* feminine, nomnative **patā* (whence the New Iranian forms cited above), **potol-* was itself dissimilated, like Latin *pōpulus* (and Old Slavic **topolĭ,* if not directly from **potol-*), from PIE **poptol- or *ptoptol-* (perhaps *'the fluttering', from reduplicative stem of **pet-* 'to fly' and noun formant **-e/ol-*).

§234 For the *-aē-* of *haδānaēpǎtā-* Bailey reconstructs **-as/-az,* comparing Khotanese *biśīväraa-* 'high-born, princely', which he reconstructs to Proto-Iranian **visas-puθra-* (*sic,* similarly Bailey 1979: 292). This analysis rests on several assumptions, each unsupportable: (1) That Indo-Iranian **-as* would remain in Proto-Iranian as **-as* before *p-*, rather than become *-ah,* as is ordinarily assumed. This is refuted by the Elamite transcription of the word for 'prince', *misapušas* (literally 'son of the [royal] house'), cf. Bailey (1972: 292). This renders Old Persian **visah pusa-*, where *visah* is genitive of *vis- (viθ-).* (2) That the Khotanese outcome of Proto-Indo-Iranian **-as* became **-ai,* then **-ē,* then *-ī.* Rather, Proto-Indo-Iranian **-as* became Proto-Iranian **-ah,* which in East Iranian became a fronted simple vowel, cf. already Gathic *-ə̄* in *kə̄* 'who', etc.; Armenian *sepouh* (with short *e,* rather than *ē,* Middle Iranian *ē,* Old Iranian *aī*), which is hardly from Alan (with Bailey 1979:293), but from Parthian **wisepuhr,* shows Parthian *e* < **-ah*. Khotanese (and Sogdian) have *-i* as the

regular outcome of **-ah*, as in the nomnative singular of thematic stems; in Khotanese *biśīväraa-* the *-ī* is lengthened under stress at morpheme juncture. It is Younger Avestan, where **-ah* became *-ō* (as apparently in part also Gathic), that is erratic, cf. Avestan **-āh > å*. (3) That Avestan *-ō(.)-* at the end of thematic first members of compounds reflects a Proto-Iranian substitution of the thematic vowel *-a-* by the ending of the thematic nominative singular. Rather, as shown by East Middle Iranian compounds, this development occurred within Avestan; it may even be a matter of scholastic orthography. The Digorun Ossetic alternation *dzæbēdur, dzæbōdur* 'mountain goat' probably has nothing to do with **-as/h C-* (cf. Abaev 1958:390-391), let alone with the Avestan developments. Nothing, in fact, supports the alleged alternation of *-aē-* and *-ō(.)-*.

§235 The second element of *haδānaēpǎtā-* is identical to the past passive participle of the root *pā-* 'to protect, preserve, contain, keep, hold in, hold back', well attested in Avestan and throughout Iranian. The past passive particle was taken over in Armenian with the meaning 'covered', etc.; cf. *oskiapat* 'covered with gold, gold plated', further *patak* 'cover', reflecting an early Parthian form **pātak*, and Armenian has as denominal verb *patem* 'I cover, surround, enclose'. (Bailey [1979: 197] invents for the Armenian words an Iranian root **pat* 'to cover', whence he also derives Shugni *pūθč* 'eyelash', Persian *palk* 'eyelid', etc., which are more likely to be partially sound-symbolic reflexes of **pet-* expressing fluttering and flapping.) As for the *-aē-*, it is simply what it appears to be, the locative of a thematic stem at morpheme juncture, cf. e.g. *raθaēštar-* 'one who stands in a chariot'.

§236 Thus *haδānaēpǎtā-* would mean 'the (plant) contained in the pomegranate fruit (*haδāna-*)'. Applying this to Flattery's independent equation of the *haδānaēpǎtā-* plant with *Peganum harmala*, we may compare the colloquial Arabic designation *ʾumm-ḥarmal* (*imḥarmal*, etc.), literally 'mother of harmel', for 'pomegranate' (§121). It is quite possible that this curious appellation for the pomegranate ultimately derives from Iran, the source of other Arabic lore concerning *Peganum harmala* (e.g. §66, n.5); note especially the likelihood of Arabic *ḥarmal* based on a calque of Iranian *svanta-* (§265). A folkloric view of pomegranate as the matrix/origin/prototype of *Peganum harmala* would have as a corollary *Peganum harmala* as 'contained', i.e. latent, in the pomegranate fruit. Possibly too the term *haδānaēpǎtā-* may refer not only to the harmel as 'contained', but also to the capsules containing (cf. Armenian *pat, patak*) the harmel seeds, with a complex word play '(having) containers at the thing which is accompanied by seeds' (*haδāna-*, neuter?). It is precisely the many capsules of *Peganum*, with their abundant seeds (30 to 40 per pod), which is strikingly similar to a small pomegranate (reflected also in the Arabic *ḥurraymila, ḥurrmayla*, etc. [§121 n.10]).

§237 The term *haδānaēpǎtā-* emerges as a kind of priestly kenning, a special ritual designation. One may compare, in the *Vidēvdād*, priestly inventions

replacing the ordinary secular designations (which are overtly disdained as belonging to 'people of bad/evil speech/words' (*duž.vacah-*). In *Vidēvdād* 13, against profane *dužaka-* for 'hedgehog', there stands *vaŋhāpara-*, which I take as 'stickleback', from *vaŋhā-* (*F.*3g), glossed by Pahlavi *pušt* 'back', and *-para-* probably related to Greek *περόνη* 'point, needle, quill', Russian *perjat'* 'to pierce', but with *para-* as preposition, perhaps paronomasically 'having a superextensive back'? In *Vidēvdād* 13.2, as against profane *kahrkatāt-* for 'rooster', there stands *parō.darəs-* 'that which sees first'. In these instances the secular terms may have been interpreted as pejorative. Thus *dužaka-* (whence Persian *žūža*, etc.) would have been associated with *duž-* 'bad' (perhaps as *duž-aka-* 'having nasty barbs': *-aka-*) and/or as 'little-bad-thing' and 'bad evil' (*aka-*). While the *kahrka-* of *kahrkatāt-* is represented by Pashto *čirg* 'rooster' (and Persian *kark* 'chicken', etc.), the *-tāt-*, which is the productive suffix forming (feminine) abstract nouns, requires explanation. I suggest that *kahrkatāt-* amounts to 'cluckdom', where *-tāt-* enhances the onomatopoeic quality of *kahrka-*. Thus, via focused magnification of merely potentially pejorative aspects of these ordinary words, they become characterized as words of malice. The "elevated" terms for 'hedgehog' and 'rooster' reflect their position in the priestly world view, i.e. creatures who belong to the world of Good, who combat the forces of Evil (the rooster combats the demon of sloth, and the hedgehog destroys the ant). The opposition of the approved (priestly) words to words of "bad-speaking men" (=ordinary words!) is a dualistic partial recasting of the Indo-European opposition of words of divine language to words of human language. Both oppositions are compatible with a more basic opposition, poetic vs. ordinary language (cf. Toporov 1980: 208 *seq.* with literature).

§238 The poetic traits of metaphor and ambiguity characterize not only *haδānaēpǎtā-* but also terms for parallel ritual objects. At *Vidēvdād* 8.2 and 18.71, *haδānaēpǎtā-* is accompanied by the names of two other (fragrant) fuel plants, *vohu.gaona-* and *vohu.kərəti-*. The meaning of the latter is obscure; a possibility is 'having/conferring good praise/glory' (*kərəti-*), but a meaning 'having a good make', apparently equal to 'well made, having a fine shape', would be paralleled by the transparent interpretation of *vohu.gaona-* as 'having good color'; thus Pahlavi *hugōn* preceded by *hukard*. Yet these meanings would be oddly vague as designations of fuel plants. In fact Avestan has a different, more descriptive meaning, 'blackish' (*'blood-colored') for *vohu.-gaona-*, as at *Yasht* 8.58 (Pahlavi *siyā-gōn* 'of black color'), the reference is to sheep. Possibly then *vohu.kərəti-* is 'having a blood-like aspect'? Cf. Schwartz (1982: 195). As with *haδānaēpǎtā-*, a complex word play seems involved.

§239 The oldest attestations of *haδānaēpǎtā-*, *Yasna* 3.3 and *Yasna* 22.1, occur with yet another roundabout designation for a ritual object, *gav- jīvyā-* 'living flesh/cow' traditionally understood to designate ordinary *xšvid-* 'milk' (but see §138 n.32 above). The form *jīvyā-* is remarkable for the preservation of *jīv-* as against *jv-*, which is found everywhere else in Avestan (including the

orthography of the Gathas), and shows the great antiquity of the ritual phrase. Perhaps the term *haδānaēpǎtā-* is equally old.

On *pāṭā́-*, *AtharvaVeda* 2.27

§240 Could *haδānaēpǎtā-* be of Indo-Iranian origin? The question arises from its new identification as another name for *Peganum harmala*, and in consideration of the proposal of W. W. Malandra (1979: 220-224) and M. Stutley (1980:130) that *pāṭā́-* in *AtharvaVeda* 2.27 is *soma*. The meaning of this hapax is unknown. The plant with which it is later identified, *pāṭhā-* '*Stephania* (or *Clypea*) *hernandifolia*' is phonemically different, and Malandra (1979:220) rightly looks for a different explanation. Malandra notes a number of parallels between *pāṭā́-* and *soma:* The eagle discovered them both, Indra consumed both, Indra's use of the *pāṭā́-* amulet in overcoming the Asuras, as prototype of human use of it to overcome opponents in disputes, is parallel to Vasiṣṭha's invocation of Indra(-)and(-)Soma to overcome and countercurse his false accusers, *ṚV* 7.104. From *ṚV* 7.104.12, where it is said that *soma* favors the honest and smashes the untrue, Malandra deduces that *soma* was thought to be instrumental, like Varuna, in discriminating truth from falsehood and destroying the liar or perjurer.

§241 One may now bring in some data from the Iranian side. For *soma* as showing forth truth, cf. Flattery's discussion of *haoma* as an ordeal medium (§§147-155), and compare further the invocation of *Haoma* at *Yasna* 10.4 *haiθīmca ašahe xå ahi* 'really thou art the well/source of Truth' with the parallel invocation of Varuṇa, *ṚV* 2.28.5 *ṛdhyâma te varuṇa khâm ṛtásya*, cf. Kuiper (1960: 248). Furthermore, *haoma* also was used as an amulet against one's foes in battle (see §73), which matches the statement at *AV* 2.27.4 that Indra wore the *pāṭā́-* on his arm.

§242 The association of the *pāṭā́*-charm with defeat of the enemy in battle also follows from *AV* 2.27.5 'By means of it (the *pāṭā́-*) I shall conquer the enemies, as Indra (conquered) the Sālāvṛkas'. This passage was cited by Kuiper (1960: 251) in supporting his hypothesis that the verbal contest as a reiteration of Indra's primordial battles. Kuiper here has in fact anticipated Malandra's observation of the similarity between the *pāṭā́*-text and the *soma* myth (including the parallel role of the eagle). But it is Malandra who takes the bold further step and explicitly suggests the identification of *pāṭā́-* with *soma*.

§243 Malandra, focusing on the text's statement that the *pāṭā́-* was dug up by the *sūkará-* (hog or boar) with his snout, ventures to identify the plant as a tuber, since lexicographers attest many names of tubers which begin with *sūkara-* or *varāha-* 'boar'. In view of the boar's fondness for truffles, Malandra suggests that the *pāṭā́-* was a truffle. However, Malandra also holds open an identification of *pāṭā́-* as a mushroom, in view of Buddhist traditions identifying *sūkaramaddava-*, the food (pork?) whose ingestion was held responsible for

the Buddha's death. Malandra makes very clear that he is "not among those who are convinced that the ṚgVeda offers evidence that *soma* was a mushroom" (1979:222, cf. 223, lack "strong evidence to support the *soma* = mushroom equation"). Nevertheless, he concludes that if *pāṭā́-* were a truffle, it could then have been a substitute for an earlier mushroom, and thus be admissible as "circumstantial evidence" for Wasson's *soma*-mushroom theory.

§244 The assumption underlying Malandra's approach to the identification of the plant in question is, in itself, a reasonable one: Salient statements of a text have a close relationship with the object which is the focus of that text, and in the instance of an object whose identification is obscure, such statements may be identificatory. This is expectable with regard to descriptive prose but is hardly axiomatic for the poetry of magical charms. As J. Gonda (1949:3) remarks concerning his earlier work on the language of *AtharvaVeda Saṁhitā* 1-7 (cf. also Gonda 1940 and 1975):

> A good number of stylistic peculiarities in Vedic literature, such as alliteration, anaphoric repetition, paronomastic juxtaposition, rhyme and homoioteleuton and other 'figures' must not be considered as ornaments, as stylistic 'embellishments' (at least not primarily), . . . on the contrary, they had another function: in the sacral or ritual *'Sondersprache'* a certain stereotypy in the construction of the sentence (parallelism, etc.), . . . [and] repetition of various kinds, etc. possess a very real and essential expressive value, they intensify the magic power or religious value of the text, have a hallowing effect, render the text solemn.

It is precisely such devices that are the *raison d'ētre* of various "statements" of our Vedic texts, of which the AtharvaVeda is the most explicitly incantatory.

§245 The use of phonic repetition may be illustrated for *AV* 2.27 from the first stanza: (a) *(néc chátruḥ) práśam jayâti* '(May not the enemy) win the argument': the last words are echoed by (c) *práśam prátiprāśo jahy* 'smash the argument of the arguing opponent', which is repeated as the refrain of the following stanzas, (c) doubly echoes the *prāś-*, with the further strong alliteration by *pra-* of *prati-* 'opposed, counter-', and at the end of the line *-práśo jahy* echoes *práśam jāy-*. The role of phonic factors in producing an entire topic may be illustrated by another AtharvaVedic datum. *AV* 4.85.1, addressed to the apotropaic plant *varaṇā-*, features a play on the name of the plant and the verbal root *v(a)r-* 'to ward off'; more at *AV* 10.3.1-6. But what is more interesting is *AV* 4.7.1, proclaiming the effects of the water, *vār*, of *varaṇāvatī-* 'that which is associated with *varaṇā-*' (probably a river near which the plant grew), as able to 'ward off', *vārayātāi*. The verb is repeated in the recitation, *vāraye* 'I ward off'. Here focus on the water, with *vār-* chosen instead of the alternative common forms *udaka-*, *jala-*, etc.), and on *varaṇāvatī*, instead of address to the plant itself, is phonically motivated. From a viewpoint of magical use of language, extra dimensions of calling forth apotropaic powers are thereby gained.

§246 We may now consider the detail of the *sūkará-* digging up the *pāṭā́*. The phonic aspects after the relevant passage can be best appreciated after an analy-

sis of other aspects of its background as a poetic text. These factors, while essentially heterogeneous, underwent a complex interaction with the phonic factors through the associability of their similar elements. The text in question is thus a result of an interhierarchical convergence of diverse data, formal, structural, and conceptual (I call this convergence "syntropy"):

(1a) A myth of the origin of the use of the plant. The myth specific to *soma* is its being brought by an eagle (*śyená-*, *suparṇá-*) to Indra. This connection of the eagle and the plant *par excellence* explains why, e.g. in *AV* 1.24, addressing the 'dark plant of even color', the first statement is 'the *suparṇá-* that was born in the beginning, you were his gall'. The text goes on to say how the Asurī gave it to the trees for color, and made it a cure for leprosy. (1b) A statement of how the plant was first dug up by a mythological being is a topos in the AtharvaVeda; for example, 4.37.1: 'That which Jamadagni dug up to make his daughter's hair grow, Vitavya has brought here from the dwelling of Asita'; *AV* 4.4.1, 'You, the plant which the Gandharva dug up for Varuṇa when his virility declined, you, who produce erections, do we dig up'. Cf. also 6.109.3. This topos combines the format of origin myth and a statement of digging up the plant for purposive use; note e.g. *AV* 6.136.1 'As a goddess you were born upon the goddess Earth, Plant! We dig you up, O Nitatnī, that you may strengthen the hair'. Cf. *AV* 6.21.1; further 4.7.5-6 and 6.6.8.

(2a) The pig/boar is the rooter, i.e. digger, *par excellence*. (2b) The Boar (sometimes called Emuṣá) is, like the *suparṇá-* (who brings the *soma* that energizes Indra's cosmogonical act), a protological beast. Cf. Kuiper (1960: 251): ". . . this plant . . . is said to have been dug put by a boar with his snout—just as a boar has dug out the earth from the bottom of the cosmic waters before Indra could expand it". The Boar, in fact, was regarded as an avatar of Viṣṇu, but also identified with the cosmogonic god Prajāpati (*Taittirīya Saṁhitā* 7.1.5.1, *Taittirīya Brāhmaṇa* 1.1.3.5, cf. *Śatapatha Brāhmaṇa* 14.1.2.11).

(3a) The pairing of the eagle and the boar as discoverers of the plant makes for a parallelism (3b) which achieves a contrast of items, (3c) themselves complementary, their respective domains of operation, heaven and earth, together indicating a cosmic totality. Cf. the statement in the *Hōm Yasht* that *haoma* grows on the highest mountains and deepest valleys, etc. (§83).

Now the phonic aspect: (4) Of the words for the mythic animals, which included *śyená-*, the primary name of the eagle in the *soma*-myth, and *varāhá-*, the usual word for 'boar' (as against the tame hog), or *Emuṣá-*, as it is called in some texts, the forms *suparṇá-* (which is found instead of *śyená-* in some ṚgVeda texts), and *sūkará-* ('hog, boar', also used of Emuṣa) have detailed phonic similarity, suitable to their being chosen for contrastive/complementary celestial and terrestrial mythical discoverers of the plant:

sŭCar(C)á- { *suparṇá-* → protological beast → locus: heaven ; *sūkará-* → protological beast → locus: earth } totality

§247 The phonic relationship is foregrounded by the shared initial positions of the animal names, and by the structural parallelism of the rest of their respective lines, *AV* 2.27.2ab:

suparṇás tvânvavindat
sūkarás tvâkhanan nasâ

The mantric power of the two lines explains why they recur as the opening of *AV* 5.14, a charm devoted to a nameless plant, which may or may not be the *pāṭā́-*.

§248 If the above analysis is correct, it is likely that the connection of the plant with the eagle was primary in the poet's mind, so there is a good chance that *pāṭā́-* was regarded by the poet as another name for the *soma*-plant (i.e. whichever plant he identified as *soma*); the possibility is increased somewhat by the parallels drawn from Indra's career. Both data may, however, be merely a matter of poetic adoption of material from the *soma*-hymns.

§249 The *pāṭā́*-plant was also treated by M. Stutley (1980:130). Stutley's discussion parallels that of Malandra in several respects, but is more confused. In the midst of the summary of *AV* 2.27, she remarks: "The *pāṭā́ (Clypea hernandifolia)* has a bitter root and is much used in India as a medicament." Despite this identification (where *pāṭā́* is written instead of *pāṭhā*), she returns to *AV* 2.27: "It was said to have been discovered (or seen) by an eagle and then [*sic*] dug up by a pig, which suggests that it may have been a truffle." Stutley even goes on to note that according to *Kauśikā-sūtra* 38.18-21, 'He ties on his arm an amulet of *pāṭā́* root and wears a wreath of seven of its leaves'. Clearly this seven-leaved wreath (*mālam saptapalāśim, Kauśikā-sūtra* 38.21) contradicts the identification of *pāṭā́* as a truffle (or any tuber or mushroom). The impression that *pāṭā́* was conceived of as sappy (i.e. containing chlorophyll) is conveyed by *AV* 2.271: *arasā́n kṛṇv oṣadhe* 'make them [the opponents] sapless, O plant!'. Note also that *Kauśikā-sūtra* 38.18 with Dārila's commentary (for which see M. Bloomfield 1886: 481) indicates that the *pāṭā́* has a root which the plant's user chews (*pāṭāmālāṁkhadann*) when he speaks.

§250 This further shows that the *pāṭā́* may not actually have been expected to be consumed. The oral application of the plant was here probably connected with efficacy of speech, just as binding the plant onto the arm (as attributed to Indra) was thought to confer victorious strength. For the latter detail may be compared the binding on of the *haoma* amulet (§73).[8]

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8. Regarding the 'binding' of *haoma* in *Yasht* 14.57 it may be noted that since *nivizaiti* is a hapax for which Bartholomae could furnish no cognates, his translation 'attaches (*ansteckt*)' seems based solely on the context, which involves the *haoma* being borne on one's person during battle. However, further evidence from Iranian is now available. Bailey (1979:387) brings *ni-viz-* together with Avestan *a-vaēza-* *'unbound (by sin)', comparing Khotanese *vīysāna-* 'a binding', and also Baltic and Slavic forms meaning 'to plait, to bind' from PIE **wei-ǵ(h)-*. I have furnished similar comparisons from Baltic, etc., venturing also to explain Av. **Vīšta-aspa-* 'having bound/tied horses', parallel to *Yuxtāspa-* and *Hitāspa-*

§251 If, as must remain uncertain, *pāṭā́-* was a (magic?) name for some plant regarded as the *soma*-plant (used in a manner other than pressed), then a relationship with Avestan *haδānaēpā̊tā-* is conceivable, but rather improbable. Unless, as is very dubious, the term started as Indo-Iranian **pātā-*, of unclear meaning ('protection' is formally unlikely), one would have to posit a truncation of the original compound. Such a truncation would also be a difficulty for regarding *pāṭā́-* as inspired by an Iranian priestly term, a notion which intrinsically has nothing to recommend it. Finally there is the *ṭ* for expected *t;* a spontaneous palatalization is possible but not ideal. Etymologically *pāṭā́-* could be partially inspired by *pāthā-*, and partially by the root *paṭ* 'to split, to sunder', cf. *paṭu-* 'acute, keen, trenchant', *vākpaṭu-* 'eloquent, successful in speech'. In any event, *pāṭā́-* has no real relevance for the identification of the *soma*-plant.[9]

Avestan *barəsman-*, Indic *barhís-* (see §§123-126)

§252 Avestan *barəsman-* (Pahlavi and Persian *barsom*) has been constantly compared with Vedic *barhís-*. Both words refer to pieces of vegetation which are used ritually in connection with offerings; both are said to be strewn (*stṛ-/star-*) and, since *barəsman-* goes back to Proto-Iranian **barzman-*, both are reconciled by an Indo-Iranian root **bharźh*. The same root also furnishes in Iranian a formally identical cognate of *barhís-*, Old Iranian **barziš-* (Avestan *barəziš-*), Persian *bāliš* 'cushion, pillow', which accords with the fact that *barhís-* grass was used as a cushion upon which the gods were thought to accept the offerings.

§253 These facts have given rise to an assumption that has prevailed among most commentators on the subject, that *barəsman-* originally had the same meaning as *barhís-*, both referring to a cushion of foliage; see most recently P. Thieme (1957: 71-75). The conclusion that the meaning 'cushion' is basic has also lead to a preference for deriving *barhís-/barəziš-* and *barəsman-* from PIE **bhelǵh-* 'to blow up, swell' whence Old Prussian *balsinis*, Serbo-Croatian *blàzina* 'cushion, pillow' as against derivation from the Indo-Iranian root

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(Schwartz 1980a:126). I hope there to have met the objection to my earlier, similar explanation for *Vīštāspa-* (Schwartz 1985b:659), recently voiced by Mayrhofer (1985:327), who asks whether one can still conceive any alternative to the equation with ṚgVedic *víṣita- áśva-* forwarded by O. Szemerényi and refined by J. Narten. Note especially pp. 581-582 in the article of Insler to which I last refer, where the derivation of *víṣita-* from **sHto-* is refuted in favor of PIE **-sito-*. The latter form would also necessarily be continued in Av. *Hitāspa-*. In Schwartz (1985b:659) I merely meant to range *Jāmāspa- (Dōjāmāspa-)* with *Hitāspa-*, *Yuxtāspa-*, and *Vīštāspa-* semantically, not formally; *Jāmāspa-* (on which see now Schwartz 1980a:125; 1986:345, 347, and 389) is of course not a past participle.

9. For *pāṭā́*, see now Das (1987), who has treated the matter in detail. From the additional AtharvaVedic material Das has brought to bear upon its identification, the *pāṭā́* is a leafy plant with "hooks" (Das 1987:36).

**bh(a)rźh-* 'to make high'. For these views see Mayrhofer (1956-1976: II, 415-416). It will now be shown that these conclusions are fallacious.

§254 The provision of foliage as a seat for the gods is a custom of Indo-European origin. This institution reflects a period when grasses were ordinarily heaped up to form cushions. The strewing of grasses for this purpose was probably originally designated by the PIE verb **ster(H)-*, whose close association with long, twiggy grasses may be seen from Latin *strāmen*, English *straw* (although the same verb could be used of the spreading of cloth upon which to lie). In *barhíṣ-*, precisely because of its ritual context, there is a preservation of the early material realia, grasses employed as a cushion; in *barəziš-*, *bāliš* there is generalization of the function served by the grasses, 'cushion', whence the development 'pillow', just as 'cushion' is designated in Old Indic by another derivative of the root, *upabárhaṇa-* (cf. Khwarezmian *βžnyk* 'pillow' < **barzanaka-*, Parachi *bāna-pāī* 'pillow' reflecting **barz-n-*, etc.).

§255 These data are ideally suited by derivation from a root meaning 'to heap up'. This definition suits the meaning not only of Indo-Iranian **bh(a)rźh-*, but also its Indo-European etymon **bherǵh-;* from 'heap up' one not only gets the very numerous Indo-Iranian forms for 'high, elevated object', matched in Germanic by Old English *beorg* 'tumulus, hill', German *Berg* 'mountain', etc., but also words referring to solidity, e.g. Old Indic *bṛṁhati, (pari)bṛḍha-*, Latin *forctis, forctus*, as well as the sense of 'cover over' found in the Saka Iranian Ossetic *æmbærzun*, Khotanese *vūḍa-* 'covered', and matched by German *bergen*, etc. By contrast Old Prussian *balsinis* and Serbo-Croatian *blàzina* refer originally to a stuffed or inflated bag (i.e. the modern type of pillow), cf. especially Slovenian *blazína* 'pillow, handball, football'. Against the derivation of the Indo-Iranian words in question from the same etymon as the Balto-Slavic words for 'pillow' is the fact that forms like Old Indic *upabárhaṇa-* show an inner-Indo-Iranian formation from a still productive verbal root. There is no evidence for an Indo-Iranian verbal root **bharźh-* 'to swell up'. In fact there is no evidence for the latter as a verbal root even in PIE. The various forms from Celtic, Germanic, Baltic, and Slavic given by Pokorny (1959-1969:125-126) under **bhelǵh-* 'schwellen' point only to an old noun for 'inflatable animal skin, leather bag'. The exception, Old Irish *bolgaim* 'I swell' alongside *bolg* 'bag', should therefore be a denominative, parallel to English *bulge*, etc., ultimately from Gallic *bulga* 'leather bag'. In place of the alleged verb **bhelǵh-* I suggest a nominal formation in *-ǵh-* from **bhel-* 'to blow up'.

§256 A vestige of the institution of "strewing" a heap of grass as a seat for the gods may have been preserved in Western Iran; Herodotus I. 152 reports that the Magi deposited the sacrificial victim upon tender grasses, but this may be due to a projection of Greek ritual ideas upon the Iranians. There is no support for the theorization that *barəsman-* originally referred to vegetation used as a cushion. Since the root means 'to heap up' without necessarily referring to a cushion, *barəsman-* need merely refer to some heap of vegetation whose laying

out would be indicated by the verb *star-;* see above on English *straw* and Latin *strāmen.* The formation of *barəsman-* (**bherǵh-men-*) would in fact be parallel to that of *strāmen.*

§257 As it happens, there exists possible evidence for a Middle Persian scholastic retention of the original sense of *barəsman-* as 'heap (of vegetation)', in *Pahlavi Vidēvdād* 18.3. In a list of tokens of the priestly office, Avestan *urvarā* 'vegetation' is glossed as *barsom,* which is further glossed *hast kē* IIՐՐI9 *gōwe(n)d* 'there are those who say IIՐՐI9'. The unclear word cannot, from its context, be *kwtyn'* (i.e. *kūdīn* 'mallet, sledgehammer' [also Persian]) as at *Nērangistān* 129.5, 17, 18 (*bis*), 22, 23, 29, nor its homograph at *Nērangistān* 172.25, *kntgr* (elsewhere *kntgl*), i.e. *kantigr, kantīr* 'quiver'. The second letter, between the unambiguous *k* and *t,* may in theory be *w, r, n,* or *O* (ideographic *'ayin*). In practice only *w* is likely, since [r] is spelled *l* in less common words, and, since *[kVnVt-] is dubious, Old Iranian *[nt] would appear as Pahlavi **nd,* not *nt,* and *O* is excluded, as the word is obviously not an ideogram. The sequence *kwt-* suggests **kōt (*kōd),* whence Armenian *koit* 'heap', Persian *kōd* 'heap of grain, collection'. The last three letters are ambiguous; if *-gwn,* read *kōdgōn* (or, less likely, if *-yn',* read *kōdēn*) *'like a heap'? A more satisfying possibility is a scribal error for simple **kwt,* with a false start for **gwb-* of the *gōwēnd* which follows; then we would simply read *kōd.* We would thus emerge from this analysis with a scholium for *barəsman-,* 'heap (of plant matter)'.

§258 In any event, the pressing of *haoma* would require a preparatory accumulation of stems. The identification of these heaps with the *barəsman-* would explain the frequent mention of strewing the *barəsman-* as a specific act of worship in the *Yasna* ceremony, and accords with the other Avestan references to this act. The "strewing" of the *barəsman- (*barzman-)* would be comparable, in name and action, to the "strewing" of the **barziš-,* the grasses serving as a cushion for the offerings. This circumstance may have had a role in the disappearance of the latter institution in Avestic religion, what with the greater importance of the *haoma* ritual.

3

OTHER NAMES FOR HARMAL

Iranian **svanta* *'Peganum harmala'* (see §§57-64)

§259 The Proto-Iranian form **svanta- (=*sụanta-)* 'sacred' must be reconstructed as the foremost name for harmel. This is especially significant in view of the fact that the representatives of this form in modern Iranian languages are the sole reflexes of the ancient word for 'sacred', apart from compound fossils of ancient fixed phrases (i.e. the month name, Persian *Isfandarmuδ* [of which *isfand* is a modern abbreviation] = the Avestan goddess Spəntā Armaiti, and the word for 'sheep', Persian *gusfand,* etc., Avestan *gav- spənta-*). Thus harmel was 'the sacred (plant)' *par excellence,* as Flattery notes. This phytonymic evidence in itself points *a priori* to the conclusion that the *haoma*-plant is *Peganum harmala.* In fact *spənta-* actually is adjective of *haoma-* at *Vīsperad* 9.3. The etymon is reflected by a variety of forms whose phonological characteristics show independent evolution, rather than borrowing from Persian *isfand, sipand* or the like. Here may be cited the vocalism of Pashto *spānd,* and cf. the interesting *spalanai* 'harmel-seed', which must be explained as the expected Pashto outcome of earlier **spadān-,* itself dissimilated (via **spand(δ)ān-*) from an ancient compound **spanta-δāna-(ka)* < **svanta-dāna-*); the vocalism of Oroshori *səpān,* as well as its development **-nt-* > **-nd-* > *-n-;* and contrastively the lack of voicing of *-nt-* in Baluchi *sipantān* (old plural, or, like Pashto *spalanai,* Ishkashmi *səpandona* < **svanta-dāna-* *'harmel-seed', with expected East Iranian *sp*) reflecting Proto-Iranian *svanta-; isfand* itself has the characteristically Persic *sf* (as against *sp*) reflecting Proto-Iranian **svanta-,* cf. Persian *gusfand* alongside *guspand,* Avestan *gao.spənta-* 'sheep' (*sacral, i.e. ritual, bovine), etc. An alternative Persic reflex of **sv (*sụ)* is *s* (cf. Old Persian *asa-*, Avestan *aspa-*, Sanskrit *asva-*) with **svanta-* giving Old Persian **santa-*, reflected in Kuhgiluya *gusend* (Lumʿa 1960:180), Kumzari *"gosan"* (Thomas 1930) 'sheep', and Armenian *sandaramet* representing the name of the earth divinity (=Avestan *Spəntā Armaiti;* Persian *Isfandarmuδ*; Cappadocian *Σονδαρα* may have *Σο-* from **sva-*). Thus one may expect Persic forms for *'Peganum harmala'* from **santa-*.

§260 The latter may well be the source of Lari *sandolos* 'the *esfand* which is placed on fires' (Eqtedārī 1955: 136) and *sondoros* "*esfand*" (Bastakī 1980); Syriac *sndryg* 'harmel seed'; and Persian *ṣandaldāna* (Persian-Arabic *ṣandal-dānaǰ*) 'harmel-seed'. The termination of the Lari form is curious. It is tempting to reconstruct **alus/arus* = Middle Persian *arus* 'white' (Ossetic *urs* 'white', Avestan *auruša-*, Proto-Indo-European **Elu-so-*); one could compare Pahlavi *arus tāg* 'the white twig' of Wahman (above §87 n.24), the 'white *isfand*' (*sipand-i siped*) of the Islamic pharmacopoeias, and even the Pahlavi *hōm ī spēd* 'white *haoma*'. But this combination is unlikely. It is not white *esfand* which is indicated for the Lari form; rather "the *esfand* placed on fires" should refer without color distinction to harmel seeds, the meaning found for Syriac *sndryg* and Persian *ṣandaldāna*. Moreover all three words are formally connected: Syriac *sndryg* (for **sndrg* = Middle Persian **sandarag*?) is inseparable from Greek σανδαράκη 'sandarac' (the tree *Callitris quadrivalvus* or *Tetraclinis articulata*, whose resin is used for varnish and incense), just as Lari *sandolos*, *sondoros* calls for comparison with Perso-Arabic *sandarūs* 'sandarac', *sandalus* 'the resin of *Trachylobium Hernemannianum*' (sold in Indian bazaars). The *-l-* of *sandolos* (and *sandalus*) also necessitates comparison with Perso-Arabic *ṣandal* (< Sanskrit *candana-*), properly 'sandalwood', found again, oddly, with *-dāna* 'seed', in reference to harmel. Note also Mandaic *sandlus*, *sandrus* compared by Drower and Macuch (1963) with Perso-Arabic and Syriac *sandarūs* 'sandarac' but glossed as 'sandalwood' (the form occurs with *riha* 'incense'). One may assume an ancient Persic **santa-* giving **sand* 'harmel' with special reference to the seeds, burned as an apotropaic incense, and used for preparing a dye. This **sand* would recall *sandarus* 'sandarac', also an incense and dye-stuff, and further the fumigant sandalwood, *ṣandal*, with confusion of **sand* with each, and further interaction between *sandarus* and *ṣandal*, as independently probably also Mandaic *sandlus* (*sandrus*). The form *sandalūs* for 'resin of *Trachylobium Hernemannianum*' would derive its name similarly. The presence of such a form in Lari is probably connected with commerce via Bandar ʿAbbās.

§261 Forms in modern Iranian languages which preserve gender, such as Pashto *spānda* and Oroshori *səpān* in the east and Vafsi-Ashtiyani *esbanda* in the west, would regularly reflect for 'harmel' an old feminine **svantā-* (see Morgenstierne 1952: 206). This would disagree with the masculine gender of *haoma-*. In theory, the feminine gender could be a secondary development; for example, for 'finger', **anguštā*, feminine, is reflected by forms in various modern Iranian languages (*ibid.* 205), but Old Iranian actually had masculine *angušta-*, attested in Avestan, in agreement with Sanskrit *aṅguṣṭha-*; note Morgenstierne's account of the transformation of masculine collective plurals to feminine singular (*ibid.* 204). But in view of the wide distribution of the **-ā-* feminine in the word for 'harmel', it is likely the Proto-Iranian form was

feminine as well. The feminine gender predominates for plant names in later Iranian (see the examples in Morgenstierne 1952) and seems to reflect an Old Iranian tendency; cf. such clear Avestan feminines as *hapərəsī-* 'juniper' and *haδānaēpǎtā-*. As an adjective **svantā-* agreed with *urvarā-* 'plant', and as a noun may have been an abbreviation of the phrase **svantā urvarā*. Agreement with *urvarā-* may have had a role in the general tendency for plant names to be feminine.

§262 Perhaps the gender difference between **svantā-* and *haoma-* arose because **svantā-* exclusively designated a plant, while *haoma-* referred to a plant, a god, and the juice pressed from the plant. In *haoma-* (=Proto-Iranian **hauma-*, Old Indic *soma-*) we have an action noun in **-ma-*, a suffix which in both Old Indic and Old Iranian is typically masculine and frequently refers to ritual objects and institutions. Other examples are Old Indic *stoma-*, Avestan *staoma-* 'hymn' from *stau-* 'to praise'; Old Indic *homa-* 'oblation' from Old Indic *h(a)u-* 'to pour'; Avestan *aēsma-* (Old Indic *idhma-*) 'fuel' from **aidh(-s-)* 'to burn'; Avestan *maēsma-* 'urine (used for ritual purification)' from Old Iranian **maiz-* 'to urinate'. Thus properly Old Indic *soma-*, Old Iranian **hauma-* from Indo-Iranian **sau-*, Iranian **hau-* 'to press (in a mortar)' = 'that which is pressed', and **hauma-* is the product of the sacred plant, or the plant itself, or the god embodying both—all three used inseparably from the ritual pressing of the plant. Hence **hauma-* was not a general name for the plant, but for one ritual manifestation of it, whose institutional naming has a different basis from the more general term, *svanta-*. Since our texts refer to the plant in the context of the pressing, it is Avestan *haoma-* (and Vedic *soma-*) which they employ.[1]

§263 Some derivatives of **svanta-* require explanation. Tajik has conservative *sipand, sipandən* (= Persian *sipand, sipandān;* the second form, combining **sipand-ān* plural/collective of *sipand*, and *sipand-dān* 'harmel seed'), but also has the colloquial *sipandar* (Andreev 1953: 50, 53, 237), cf. also Wakhi *spandr* (alongside *spand*), Shughni *ispandur*, Shina *spandur*, Burushaski *supándur* (differently Berger 1956:14). Possibly *sipand* interacted with *kundur* '(frank-)incense', giving *sipandur*, then *sipandar*. In some forms of *ispand/sipand, p* became *m* under the influence of *n*, note in Persic Lenjān-i Tāt *esmand* (§68 n.7); and, if borrowed from Eastern Persian, *isman* in Balti, and compare Kirghiz *adraspan, adrašman*.

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1. Other harmel names with specialized religious significance may be reflected in modern vernaculars; e.g. Lurī *dēništ* 'harmel' may well be a form based on Avestan *daēnā*, Middle Persian *dēn* 'The Religion' (or 'Vision'? 'Consciousness'?). If the form is of Old Iranian provenience, one of many possible etymologies would be with second member of compound **-yašta-*, **-yašti-* (or **-išti-*), hence 'pertaining to worship to/for/in accord with the *daēnā*'.

§264 I would explain the form *sepaxt 'Peganum harmala'* occurring in one of the dialects of Bashkardi (according to a private communication to me by I. Gershevitch, who did field research in this Persic language) as a blend of *sepand* (represented elsewhere in Bashkardia according to Dr. Gershevitch) and **sepext* < Middle Persian *spixt* 'sprouting/blooming'; cf. Khotanese *späta-* 'flower' < *spixta-*; further Pahlavi *spēg* translating Avestan *frasparəγa-* 'bloom (of *haoma*)'.

Arabic *ḥarmal* and its Old Berber equivalent (see §53)

§265 In the form *χουρμά* attributed by Dioscurides to the "Africans" (Ἀφροι), under which Dioscuridean designation early Berber forms are uniquely attested, I recognize **ḥurma* as the Old Berber prototype of modern *(i)urmi, awerma,* etc. *'Ruta chalepensis, Ruta graveolens'* (for which see above, Table 2). The Dioscuridean form is therefore of interest for the chronology of the general disappearance of **ḥ* in Berber. But it is not likely that the relationship of the Berber and Arabic words is due to a common origin in Afro-Asiatic; the absence of comparable words for harmel in the indigenous languages of Africa, and the lack of clear cognates in Semitic for Arabic *ḥarmal* (Dioscurides, who attributes *ἁρμαλά* to the "Syrians", may well have confused Arabs and Syrians), the Iranian area as the likely center for the diffusion of harmel, and considerations of linguistic geography, make it probable that **ḥurma* represents a borrowing from Arabic. Since Arabic *ḥarmal* does not seem to continue an old Semitic plant name, one would seek an Arabic etymology. The root *ḤRM 'sacer esse, sacratum esse'* yields *ḥaram* and *ḥurma* 'sacred, sacred thing' (which would be a calque of Iranian *svanta-* 'harmel' = 'sacred', see §§259-264). *Ḥaram* and/or *ḥurma* would then be influenced by the names of the botanically kindred *Zygophyllum simplex* L., *ǰarmal, qarmal* (Migahid 1978). These are formed like *xardal* 'mustard', *ḥanẓal* 'colocynth', with the formant *-l* common in Arabic plant names. In fact names for *Zygophyllum* species occur without the formant: *qurma* (with vocalism like that of Arab *ḥurma* 'sacred thing'), and, more significantly, *ḥarm 'Z. simplex'* and *'Z. decumbens'*. In the latter we may recognize a confusion of *'Zygophyllum'* with *'Peganum harmala'*, for *ḥ* does not ordinarily alternate with *j* or *q* (whereas a *j/q* alternation is possible, since both *j* and *q* are pronounced dialectally as *g*), and there is nothing 'sacred' about *Zygophyllum* species, weeds much resembling harmel used marginally for camel fodder. In *ḥarm* one may therefore recognize an old form for *ḥarmal* lacking the *-l*. This makes it possible that the Old Berber **ḥurma* is borrowed from an Arabic form without *-l* (Arabic **ḥurma,* like *qurma,* or with Berber *u* < *a* because of the labial *m*), rather than with early dissimilatory loss of *-l*. The Arabic triconsonantal form would also confirm the derivation from 'sacred'. A loan translation would have arisen under early

Persian-Arabic bilingualism. The calque would be paralleled by the later Turkish calque *yüzerlik = sadāb*, see §280. Eilers (1974:126) compares the formation of Arabic *ḥarmal : ḥaram* ("Tabu") to that of Hebrew *karmel : kerem* 'vineyard', with the remark that *ḥarmal : ḥaram* shows parallel semantic development (semantisch gleichentwickelt) to Persian *isfand* "Raute") from Old Iranian *spənta-* 'holy'.

Egyptian ἐπνουβού (see §52)

§266 In MSS of Dioscurides the name of an Egyptian plant, ἐπνουβού appears after Latin **ruta hortensis* (or *montana*) and is followed by "Syrian" ἁρμαλά and βησασά the latter forms indicate that the reference is to wild rue (*Peganum harmala*), rather than to garden rue, and should therefore occur under the entry πήγανον ἄγριον rather than the preceding πήγανον κηπαιόν in the MSS edited by Wellmann. The form ἐπνουβού is to be analysed as *(ἐ)π–*, representing the Ancient Egyptian masculine article, and the word for 'gold', Ancient Egyptian *nb(w)*, Coptic *noub*. This in turn furnishes the identity of the hitherto mysterious plant *nbw* occurring in the late Berlin Museum Papyrus 3027, K 7, 5-6. The text has most recently been treated in H. Grapow, H. von Deines, *et al.* (1958: 5, 504 [hieroglyphic text], 4:1, 1958, 293 [translation]): 'Ein anderes (Heilmittel): *ḫmw* (Blätterzweige) der *nbw*-Pflanze; werde zerkleinert in einem Hin-Gefäss, werde veranlasst, das (das Kind) es trinkt'. The name *nbw/(ἐπ)νουβού* 'golden' would be parallel to the Azari Turkish epithet *altun* for *Peganum harmala*, and Avestan *zāiri-* 'yellowish, gold-colored', a chief epithet of *haoma*, and the less common *zairi.gaona-* 'yellowish, yellow-green' (see §77). The sacral term *zāiri-*, it may be added, seems to be the etymon of Baluchi *ziray 'Ruta graveolens'*, which should be added to the material on *Ruta* as ritual replacement of harmel (see §139).

§267 Twelfth century Coptic names for 'rue' (Arabic *saδāb*) are (Ibn Kalb *apud* Budge 1928) *bašouš* 'rue' (< Syrian *baššūšā* 'harmel'); **kanon* 'garden rue' (< **pikanon* = **πήγανον*, with metanalysis via the masculine article *pi-*); *emtotf* and *kefrios* (=*saδāb jabalī* 'mountain rue').

§268 The identification of Egyptian *nbw* as *Peganum harmala* on the basis of Dioscurides was independently made by Terence DuQuesne of the Psychopharmacology Research Committee, London, as he kindly informed Flattery and myself (letters of April 24, 1982 and May 8, 1984). DuQuesne further links *nbw* with *nbyt* to which the Papyrus Ebers 852 assigns an Eastern origin.

Greek μῶλυ (see §52 n.10)

§269 There is no support for Benveniste's (1929) view that Plutarch's ὄμωμι pounded in a mortar was something other than *haoma-*. The mixture with wolf's blood would suffice to characterize it as a *daēvic* offering, dualistically

distinguished from *haoma* prepared in the usual manner for offerings to the "orthodox" divinities. Thus, rather than identifying ὄμωμι with the botanically obscure Greek ἀμωμίς and further Syriac *humāmā*, Arabo-Persian *humāma*, I suggest that ὄμωμι is a dittography of sorts, brought about by correcting the false start *ομ* to *ωμι* (for *ὥμι*, Middle Persian *hōm(-)*, with the false start left unstruck, as frequently). The form (ὄμ)ωμι would show the same pattern of integration as other Greek plant names of exotic origin (κόμμι, σέσελι, πέπερι, σίναπι).

§270 It is quite possible that μῶλυ, given by Dioscurides as the name of harmel in Cappadocia and Galatia, may have served as the origin of the mythical plant of the Odyssey. Harmel's reputation as a magical plant may have come to Asia Minor (and ultimately from the Iranian heartland); cf. above on its medico-magical use in Egypt. Possibly then the connection of μῶλυ with Hermes may be due to the similarity of Ἑρμῆς with Semitic variants of Arabic *ḥarmal*, cf. Dioscurides' "Syrian" ἁρμαλά. Note also in this connection the name *hermesias* given by Pliny for a Magian preparation which quite likely contained *Peganum harmala*, as Flattery indicates (§83 n.23). The connection with Hermes also suits the psychotropic (and psychopompic) "speediness" of the drug (cf. the various connections of *Peganum harmala* and words for 'swift' discussed in §64 n.3). Acquaintance with the narcotic potential of the plant would explain the later attested use of the name μῶλυ for the sleepy nightshade, *Withania somnifera*, but note Greek μωλύς 'weak, feeble, dull' (also used of the intellect). If the name μῶλυ originated in an indigenous Indo-European language of Asia Minor and already there referred to the psychotropic nature of *Peganum harmala*, then it would be related to Armenian *mol, molor, moli* 'raving, mad, insane' (cf. Tomaschek 1894: 27-28); the latter would be also paralleled by Egyptian Arabic *mogannana (mujannana)* 'that which drives mad' = 'harmel' (Ducros 1930). One may note here the likely relationship of Syriac *šabbārā*, Mandaic *šambra*, with the root *ŠBR* 'be childish, foolish, stupid', *šaβrā* 'childishness, folly, stupidity'; thus harmel would be named from inducing foolish behavior, cf. Brockelmann (1928: 754). Finally, from Anatolia again, cf. Turkish *mahmur çiçeği* 'bloom of sleepy languidness (as from intoxication)'.

§271 Greek μῶλυ for a kind of garlic may have its meaning from μωλύζα 'garlic', under the influence of μῶλυ; the association of garlic with *Peganum harmala* may have been effected by their shared apotropaic attribution. There is little to recommend the oft-claimed connection of μῶλυ with Sanskrit *mūla-*, the usual word for 'root'.

Names for harmel in al-Bīrūnī's *Kitāb al-Ṣaydana* (see §54 n.13)

§272 The form *dwpw* could be an attempt to render in the Arabo-Persian script some Indic vernacular derivative of Sanskrit **dhūpa-* 'incense, fumigant'. In this event *hmlw* would be a misreading, although its resemblance to *hwm = hōm* (and to *ḥrml*!) is striking, and the general superiority of the Arabic version must also be taken into account. Possibly there was a conflation of two words. The texts of Bīrūnī's *Ṣaydana* also provide material for the word for harmel in the medieval language of Sanjar (in eastern Syria). The Persian text (Or. 5849) gives the Sanjari name as *ʾsbrw thlk* (in variant MSS: *ʾsbw nhlk, ʾspr thlk;* Sotoudeh and Afshar 1973:225), while the Arabic text has *ʾsbry thlk* (Said and Elakie 1973: 1545) and has (as do some Persian MSS) instead of سنجری *Sanjarī* the erroneous سجزی *Sijzī* (as if = Persian *sagzī*, the language of Sijistān, Sīstān). The first part of the name should represent a vernacular equivalent of Syriac *šabbārā*, Mandaic *šambra;* hence **ʾšbr = *əšbar* = Syriac */šbar/* (construct state)?[2]

§273 The phrase *ʿrzʾd mγwšy* given in the unique Arabic MS of al-Bīrūnī's *Kitāb al-Ṣaydana* as the Syriac for *hawm al-majūs* must be corrupt. I propose Syriac **ʿrṭnʾ *dmγwšy= ʿarṭānā da-m(ə)γūšē; ʿarṭānā* and allied forms are glossed in Arabic lexica of Syriac as *buxūr maryam* (see Payne-Smith 1879-1901:2, 2990). The latter gloss brings **ʿarṭānā da-m(ə)γūšē* 'cyclamen of the Magians' into line with Arabic *hawm al-majūs* '*haoma* of the Magians', itself sometimes identified with *buxūr maryam*, as Flattery notes. As for the latter identification, it may be explained from an association of "Magian" with "sun-worshipper" (i.e. *āftāb-parast*) as the Persian name of the marigold. It is thus

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2. Note the spellings and vocalizations of vernacular forms in Payne Smith (1879-1901:2, 4043): *šawrā, šəβārā, šaβrē, šəβarē(?), šaβrānē*, at least some of which probably mean 'wick' rather than 'harmel'. The spelling *šmrʾ* given there is relevant for the Mandaic form. The relationship to such Syriac names for harmel as *bašbāšā, baššāšā, bīšbaš, bīšša*, etc., is not clear.

The hapax *murdīn* 'harmel' (Payne Smith 1879-1901, from a unique Bodleian manuscript) may represent Middle Persian *(a)murdē/īn(ag)* derived, via the Middle Persian adjective suffix *-ēn-* (e.g. *šāhē/īn* 'royal', etc.) from Old Iranian **amṛta-* 'immortal', cf. Persian *murdād* < Old Iranian **amṛtāt-*, Sogdian *murδāspand* (via West Middle Iranian?) from Old Iranian **amṛta-*spanta-*, etc. Vedic *amṛta-* (cf. the Greek cognate *ambrosia*) 'immortality, associated with immortality' commonly refers to the *soma*-drink (Macdonnell 1917:108-09); possibly some Iranians applied *amṛta-* 'immortal' directly to the sauma plant. *Murdīn(a)* could also be the source of the gloss *hawm al-majūs = "marāniya"*, if that indeed refers to the sauma-plant. The form is not Arabic (see Gershevitch 1974) and most obviously of Persian origin. However, the form is suspect: genuine Persian words do not end in *-iya* (since old **-iyaka-* does not result in *-iya-* but in *-īg, -ī*). I propose that *mrʾnyh* is a simple misreading of *mrdynh* =**murdīna*, with ا (ʾ) misread for د (*d*).

probably in reference to this plant that *buxūr maryam* 'Mary's fragrance' originally glossed *hawm al-majūs.*

§274 Quite possibly *buxūr maryam* first meant *'Cyclamen europaeum'*, while *'Calendula officinalis'* was originally designated *šajara(tu) maryam* 'Mary's plant', with subsequent confusion of names. Cf. Middle Low German *marienblome* and Middle Dutch *marienbloemkijn* 'Mary's flower' = English *marigold* (*"Mary's gold"), attesting an interesting correspondence of Eastern and Western botanical folklore. For *buxūr* 'fragrance' in the Arabic name of *Cyclamen europaeum*, cf. Syriac (from Middle Persian) *āδarbōy* 'fire-fragrance' = *ʿarṭānīθā 'Cyclamen europaeum'.*

Persian *sudāb/sadāb* (see §§53, 127, 132)

§276 The form *sudāb 'Ruta graveolens'* has hitherto lacked an etymology. As a preliminary to clarifying the origin of the word, it may be noted that the inscrutable initial syllable should have not had *u*, which was favored by Classical Persian lexicographers and continued in the predominant modern Tehrani pronunciation *sodāb*, but rather *a*. An older vocalism *sadāb* is indicated by (1) the Pahlavi spelling *stʾp* rather than **swtʾp;* (2) the Arabic form *saδāb*, which probably represents the Sasanian pronunciation (in confirmation of the Pahlavi spelling); (3) the vocalization *sadāb (saδāb)* in early New Persian, evidenced by the vocalization in Abū Manṣūr ibn al-Muwaffaq (c. 950 C.E.) (Bahmanyār and Maḥjūbī Ardakanī 1967), and etymologies and puns involving *ṣad āb* 'a hundred waters', in al-Bīrūnī (*Kitāb al-Ṣaydana: s.v. fījan*, and in Rūdakī (discussed below); (4) twelfth or thirteenth century Armenian *satap/sadab*, from the Persian, and (5) Turkish *sedef*, a colloquial modification of the Persian form along usual patterns (cf. Persian *čirkāb* 'bilge' > Turkish *çirkef*); (6) *sedōw* in the Zardoshti speech of Yazd and Kerman, which may be regarded as an independent West Iranian form. Unlike *šabān*, Pahlavi *špʾn*, which expanded at the expense of the older vocalism **šubān* < Old Iranian **fšu-pāna-* (example provided in a letter [May 10, 1979] by Professor H. W. Bailey), *sudāb* appears to have expanded at the expense of *sadāb*. Motivations for the change *sadāb > sudāb* will be discussed below.

§277 While *Ruta graveolens* was introduced into the Near East from the Greek territory (where it was known as *πήγανον*, whence the Semitic "rue" words [see Table 2]), there is no non-Iranian word from which *sadāb* (etc.) can be derived. *Sadāb* should thus be of Iranian origin. In view of the common exchange of words for *'Ruta graveolens'* and *'Peganum harmala'* (for which see the data in Berber and Coptic, above, §265), it is plausible that *sadāb* originally was a name for harmel. This is borne out by a verse attributed by Classical Persian lexicographers to Rūdakī (tenth century C.E.). The lexicographers cite

the verse in connection with a noun *sudāb* supposedly meaning 'strength' (i.e. = *quvvat, tavānī, qudrat)*, as follows:

agar sudāb bi-kārand u az tu yād kunand
sudāb-i mardī dar tan fuzūn šavad zi sudāb.

The verse would then mean, 'If they plant *sudāb* and remember you (or, memorialize you), masculine *strength (*sudāb-i mardī*) will grow in the body from the *sudāb'*. Now, apart from this verse, there is no evidence for *sudāb* (or the like) 'strength', which would moreover be etymologically inexplicable. Nor is it apparent how *'Ruta'* could be named from 'strength,' or vice versa. Moreover, if one follows the traditional reading and interpretation of the verse, the word play on *sudāb* would be very heavy-handed.

§278 If however one replaces *sudāb* in the first hemistich and at the end of the second hemistich by the older form of that plant name, *sadāb,* and by two words, *ṣad āb,* at the beginning of the second hemistich, one gets:

agar sadāb bi-kārand u az tu yād kunand
ṣad āb-i mardī dar tan fuzūn šavad zi sadāb.

'If one plants *sadāb* and remembers you, a hundred fluids of masculinity (*ṣad āb-i mardī*) will grow in the body from the *sadāb.*' The specificity of *āb-i mardī* 'fluid(s) of masculinity,' i.e. 'semen', presupposes an association of the plant with the increase of masculine sexual fertility, a property commonly attributed in Iran to *Peganum harmala* (see §§89-93) but not to *Ruta graveolens,* which was in fact regarded as an anaphrodisiac (see Détienne 1977:63-64; Afshar 1967). Thus in this early attestation *sadāb* can hardly refer to *Ruta graveolens* but should designate *Peganum harmala.*

§279 It should be noted that New Persian *āb* 'water, liquid, fluid' may without further qualification mean 'seminal fluid, semen,' (e.g. Jamālzāda 1963: 1; reference supplied by Dr. Mahmoud Omidsalar). When specificity is desired, the more explicit *āb-i mardī* (as in our verse) or *āb-i mardān* 'fluid of males' is employed. Thus *sadāb* 'harmel' could have been understood as 'a hundred seminal fluids', i.e. 'furnishing a hundredfold virile potency'.

§280 It is likely that Rūdakī's verse plays upon an understanding of *sadāb* as 'supplying a hundredfold virility' common in the folklore concerning harmel among Iranians of Transoxiana. In accordance with the general pattern of cultural history, and specifically folklore concerning harmel (see the Azari verse quoted in §69), one may expect such a notion to have spread to the Turkish communities of the area. I would therefore venture to use my etymology of *sadāb* 'hundred(fold) fluids/virility' to clarify the widespread Turkic name for *Peganum harmala, (y)üzerlik,* which until now has lacked an etymology. Both *yüzerlik* and *üzerlik* (*yüzärlik, üzärlik*) are attested from the time of Kāshgharī (twelfth century C.E.), and are current in Turkey today (*yüzerlik* occurring in

provincial speech). The loss of *y* before the front vowel *ü* is common and is already attested in Old Turkish. Taking *yüzerlik* as the earlier form allows us to analyze the word as a compound of *yüz* 'one hundred' and *erlik (ärlik)* 'masculine power'; thus one arrives at 'conferring a hundred virile potencies', which would be the calque of *sadāb*.

§281 The meaning *'Peganum harmala'* is not only attested for *sadāb* in the above material, but also for Armenian *sanam*. The form may have arisen via dissimilation from **sandab* (> **sandam* > **sanam*), the *-n-* being perhaps due to the influence of *sandal* (Persian *ṣandal*), cf. §260. However, the form *sandab* is attested for the Arabic of Cairo with the meaning *'Ruta chalepensis'* (Förskål 1775:146; Meyerhof 1918:196).

§282 It may be concluded that *sudāb* is from earlier *sadāb*, which originally meant 'harmel'. The alleged word *sudāb* 'strength' may now be rejected as a lexicographer's invention from the context of the misread verse of Rūdakī. It appears that, after a long period of co-existence of the meanings 'wild rue' (harmel) and 'garden rue' (named after the latter plant because of the similar appearance), the secondary meaning came to predominate, 'harmel' having a more common alternative form (Middle Persian *spand*, New Persian *sipand*, *isfand*, etc.) whose numinous associations (cf. Middle Persian *Spandarmad* and *Amahraspand*, referring to divinities) exclusively suited the plant's apotropaic virtues. It was probably while both meanings still co-existed for *sadāb*, the garden rue, which lacked all connection with virile potency (an association still borne by the form *sadāb* in the early Classical Persian period, as indicated by the evidence of *yüzerlik* and supported by Rūdakī), began being called by a distinctive form *sudāb*. This arose, perhaps dialectally, through anticipatory labialization of the vowel in the first syllable by the *b*; for long range labialization cf. Persian *urdēbihišt* (modern Tehrani *ordībehešt*) from Middle Persian *ard(ē)wahišt* '(month) *of Best Rightness' (Old Iranian **ṛtahya vahištahya*); and, with progressive labialization, Persian *Bahrām* < Middle Persian *Wahrān*, Middle Persian *awestām* < **awestān*, 'province', etc.

§283 It is unlikely that *sadāb* ('harmel') arose in Middle Persian, or referred originally to the plant with regard to male sexuality. Compounds in 'a hundred' are very common in Old Iranian (a feature of Indo-Iranian origin) but not in Middle Iranian. Persian *sadāb* etc. would continue an Old Iranian compound **satāp-* 'having (or giving) an hundred (*sata-*) waters (*āp-*).' As against later Iranian, Old Iranian *āp-* is not used for 'semen' (which is indicated by *xšuδra-* ('liquidity'), so that the sense of *āb* in *sadāb* must have undergone a reinterpretation based on the plant's independent reputation as an aphrodisiac and promoter of male fertility.

§284 An ancient epithet 'having a hundred waters' for sauma is justified by various data illustrating the conception of *haoma*. As the chief representative of plant life, *haoma* was inevitably connected with water; cf. *Yasna* 10.3 in §82.

More importantly, *haoma* juice mixed with water (*haomyā- āp-*) was the liquid *par excellence,* so that *haoma* was regarded as beneficial to the waters and even having a role in the production of water. This is reflected in ritual by the practice of offering a preparation of the consecrated extract as a libation to the Waters, and in mythology by the statement in *Yasht* 8.33: After Tištrya brings on the cloud-forming mists, the wind flies "along those paths which *Haoma* traverses", and from there the wind drives down the rain, clouds and hail upon the earth. In the Pahlavi books it is even said that *Haoma* is a "collaborator" (*hamkār*) of Tištrya in the production of rain (*Bundahišn* VI b 3 [f. 33.5] *Dēnkird* III, 112; *Zātsparam* 3.8).

§285 The connection of the plant (and divinity) with water and the production of rain must be of Indo-Iranian origin, for it is also found in the ṚgVeda, where it has undergone a great deal of poetic elaboration. As A. A. Macdonnell (1917: 153) writes:

> *Soma*'s connection with the waters resulting from the admixture, is expressed in the most various ways. He is the drop that grows in the waters; he is the embryo of the waters or their child; they are his mothers or his sisters; he is lord and king of streams; he produces waters and causes heaven and earth to rain.

There is in fact a Vedic parallel to the Old Iranian epithet **satāpa-;* it is *śatádhāra-* 'having a hundred streams', which refers to *soma* (9.80.4; 9.86.11; 9.96.14) and the admixture of *soma* (9.86.27). It occurs (3.26.9) with regard to the hymnist as the source (*utsá-*) of inspiration in a figure modeled after *soma* imagery; this is clear from the reference to the three "sieves" of the hymnist, and the statement that he "intoxicates". Finally, in what is probably the most recent attestation, 10.107.4, *śatádhāra-* refers to the wind (cf. above on *Yasht* 8.33, with connection of wind, *Haoma,* and rain); this last Vedic passage is proceeded by an apostrophe to *soma.* It may be concluded that *śatádhāra-* is properly a *soma* epithet.

§286 In view of the correspondence **satāp-: śatádhāra,* it is likely that 'having/yielding a hundred waters/streams' was a Proto-Indo-Iranian epithet of sauma. If it is assumed that the more specific word, *śatádhāra-,* is the more original, its replacement in Iranian would be understandable: Indo-Iranian had *dhārā-* 'blade' and *dhārā-* 'stream', and homophony caused the elimination of the latter word in Iranian, leaving only *dārā-* 'blade' (Sogdian *δār* etc.). The old epithet may well have undergone reinterpretation as 'having a hundred blades'. Just this meaning is found in the Avestan description of Mithra's mace, the *vazra-* (*Yasht* 10.96): *satafštāna- satōdāra-* 'having a hundred mammaries (= protuberances, knobs), having a hundred blades'.

§287 It would seem that the characterization of the plant as 'having/yielding a hundred waters' did not have sufficient force, from a cultic viewpoint, for its canonization in what emerged as the authoritative religion; hence, *satāp-* is not

found for *haoma* in the Avesta. As a non-sacral name for the plant it survived in folk traditions, where its meaning underwent reinterpretation.[3]

3. The two meanings of **śatádhāra-*, 'yielding a hundred streams' and 'having a hundred blades', are connected in the conception of the mace as thunderbolt. This conception is of Indo-Iranian origin, and is attested not only in Indra's water-releasing *vajra-*, but is reflected by the Middle Persian *wēr* and *warz(ag)* 'lightning(-bolt)', from Old Persian **vaδra-*, Old Iranian *vazra-*. It is even not impossible that the collocation of *satafštāna-* with *satōdāra-* formulaically reflects the same word play, with *-fštāna-*, literally 'mammary, female breast', supporting the image of released streams; cf. Vedic *ūdhar-* 'udder' used of the cosmogonic source of the waters, produced by Indra's cleaving the primordial rock or mountain (*áśman-*, *parvatá-*, *girí-*) with the *vajrá-*. The connection of a paronomasic *vazra- . . . satōdāra-* with Mithra may go conceivably back to a myth where Mithra had Indraic traits; cf. the Western Mithraic representations of Mithras producing streams of waters by piercing a mountain or rock. The Western Mithras has another apparently archaic trait which parallels the Vedic Indra: Mithras is a cattle thief (*βουκλόπος:* Commodianus; for details see Schwartz 1975:417-418) associated with a grotto; cf. Indra's removal of the cattle of the Paṇis or Vala (paralleled by the cattle-rustling exploits of Herakles and Cacus). The connection of Mithra(s) and Indra would be due to independent assimilation of traits of the Indo-Iranian **Vṛtraghna-*, for which cf. G. Dumézil (1969, chapter 3, part 2).

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Ⓞ Indicates rejected forms.
A. = Attested in Arabic script

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