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THE RULES OF THE GAME: CONSTRUCTING POWER IN RHIZOTOMIC PRACTICE

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Abstract: The growth of contemporary interest in ethnobiology and -botany legitimates an attempt to historicise the activities and claims of ancient rhizotomists, 'root-cutters', i.e. individuals who made themselves specially knowledgeable about the medicinal and other values of plants (mainly wild) and animal-parts. These men and women hardly formed a coherent group in fact, but may be treated as such for heuristic purposes. One model for historicising them is to locate them between family or household medicine on the one hand, and the increasingly complex market in health-care that developed in the Greek world from the fifth century BCE, and continued to grow in complexity throughout the Hellenistic and Roman periods. We can suggest two ways in which rhizotomists responded to this market pressure: experimentation and the construction of the marvellous through complex rules of collection. These rules covered gathering, body movements, offerings to the herb or the earth, addresses to the herb, and close temporal specifications – these latter lent themselves in turn to exploitation by literate rhizotomists in terms of occult schemes. We may use Searle's distinction between regulative and constitutive rules to interpret these moves.

Keywords: Ancient iatromagic, ancient ethnobotany, rhizotomists, markets in healing, rationality, of magical practice, rules for plant-collection

"Pour décrire les parties constitutives et les propriétés des végétaux, les Hanunóo on plus de cent cinquante termes, qui connotent les catégories en fonction desquelles ils identifient les plantes, 'et discutent entre eux des centaines de caractères qui les distinguent, et souvent correspondent à des propriétés significatives, tant médicinales qu'alimentaires.' "[1] Awareness of the familiarity

I have used the following abbreviations for standard works:
CCAG = AA.VV., *Catalogus Codicum Astrologorum Graecorum*, 12 vols. in 20. Brussels, 1898-1936.
PGrMag = K. Preisendanz (ed.): *Papyri Graecae Magicae*. Leipzig, 1928-31; cited from ed. 2, by A. Henrichs, Stuttgart, 1973-74.
TrGF = B. Snell-R. Kannicht-S. Radt (eds.): *Tragicorum Graecorum Fragmenta*, 5 vols. Göttingen, 1971-2004.

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of indigenous peoples with the flora and fauna of their environment, the basis of Lévi-Strauss' notion of 'la science du concret', has given rise to entire fields of modern study, including ethnobotany, ethnobiology and ethnomedicine.[2] In the case of small hunter-gatherer peoples and primary agriculturalists, we may take it for granted that knowledge of significant local flora and fauna, their culturally-specific uses and (ascribed) properties, as well as techniques for their harvesting and maintenance, is widespread among adults.[3] Since the decline of structuralist dichotomies ('nature' versus 'culture'), and with the massive ecological degradation of recent years, much interest has come to focus on 'symbolic ecology', the interrelation between the bio-geographic environment, cosmological views and cultural praxis.[4] Moreover, in the highly politicised area of modern anthropology, an intensive discussion over intellectual property-rights has developed, particularly in cases, such as the dimorphin-related peptides secreted by the kampô frog in SW Amazonia, where local entrepreneurs but also western pharmaceutical companies see chances of profitable exploitation of indigenous technical knowledge.[5]

At the same time, even in small-scale societies, there have usually been individuals, now termed Traditional Medical Practitioners (TMPs), who have succeeded in establishing themselves as especial experts.[6] This is even more clearly the case in relatively complex societies where substantial urbanisation has taken place, although the majority of the population still derives its income from the land.[7] Under this last heading we can include ancient specialists in herbal medicine in the wide sense, which of course includes remedies employing animal parts and substances.[8] Many of these practised as autonomous individuals, others were associated more or less loosely with 'Orphism', with Em-

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[1] Lévi-Strauss 2008, 567. The internal citation is from Conklin 1954, 97. The Hanunóo are a Philippino people inhabiting a small area at the southern end of Mindoro Island.

[2] Most easily charted in the rise of journals such as *Ethnobotany Research and Applications*; *Journal of Ethnobiology and Ethnomedicine*; *Journal of Ethnopharmacology*; *Journal of Ethnobiology*; or *Economic Botany*, some of which are free-access internet publications.

[3] Lenaerts-Spadafora 2008a, 13-16.

[4] E.g. Oliveira 2008.

[5] Kampô frog secretions: Lima 2008; other relevant discussions: Lenaerts 2008; Brightman 2008.

[6] See the recent studies of the case among the Babungo in NW Cameroon by Simbo 2010, and in the Midland area of Zimbabwe by Maroyi 2011.

[7] E.g. Lieban 1967; Buckley 1985; Gimlette 1991; Clapp-Crook 2002; AbouZid-Mohammed 2011; Maroyi 2011.

[8] Cf. Riddle 1987. Dioscorides, *Med*. includes a section on animal parts (2.1-81 = 1: 121-65 Wellmann), though it is usually ignored by modern scholars who study the ancient pharmacopœia, cf. Gordon 2010, 252.

pedocles, with Thracian Zalmoxis and Abaris.[9] To that extent, the notion of rhizotomist tends to dissolve into numerous different sub-specialisms, themselves changing and adapting over time (a point I return to); but for heuristic purposes I propose here to treat the category as a whole.

Such specialisation co-existed with a widespread awareness within the society at large, mainly due to the responsibility of the head of the family to ensure so far as he could the physical well-being of his entire household, including slaves and livestock, of useful plants, especially medicinally-useful plants and other substances, together with some simple incantations.[10] I take it that contrasts such as those between tame/wild, light/dark varieties were crucial distinguishing criteria in this widespread knowledge of plant-lore – at any rate they are fundamental to Theophrastus' classifications.[11] The preservation and memorisation of such procedures, including actual recipes, formed an important part of the private, household, role of such men. Moreover, because of the concentration of medicinal recipes in the Hippocratic gynaecological treatises, it has become usual now to assume that many ordinary women likewise acquired knowledge of, and practical experience in using, herbal remedies relating to gynaecological problems, including of course obstetric ones.[12]

Questions of rationality

An initial issue that requires some discussion is that of rationality. Two contrasting modern views perhaps require a word or two, the one over-estimating the positive knowledge of the rhizotomic tradition, the other tending to simplify its procedures and reasoning.[13] The first suggests that iatromagical practitioners had much the same attitude as the writers of medical herbals, who usually made an attempt to specify the curative property at least of the relevant part of the plants they listed – styptic, diuretic, emollitive and so on. Even though these properties are often in fact fanciful, such a conception is an important component of a rationalistic medicine.[14] It has often been argued that it was empirical

[9] Lanata 1967, 46-51; Scarborough 1991; Faraone 2010, 146-52.

[10] Totelin 2009, 96. The *locus classicus* is of course Cato, *De agr*. 156-60; animal-health, e.g. Varro, *De re rust*. II 3, 8: *quaedam scripta habere magistros pecoris* [in this case, goats], *quibus remediis utantur ad morbos quosdam earum ac vulneratum corpus ...*

[11] Cf. Stannard 1982, 16-17.

[12] Following King 1998, 132-33, Totelin 2009, 112-13 expresses some scepticism about this model.

[13] A sensible general discussion in Deininger 1998.

[14] Cf. Stannard 1961, 514-18; Goltz 1966; 1974, 179-94; Harig 1980; Scarborough, 1987a; Scarborough-Nutton 1982, 191-92; Lloyd 1983, 119-35.

knowledge of their effects or properties that lay behind the use of many if not most of the plants in the Graeco-Roman magical tradition.[15] This is a version of a view commonly held in one form or another among folklorists.[16] It may well be true that rhizotomists generally possessed extensive empirical familiarity with the plants they collected – as I have pointed out, the number of plant varieties and uses known to Traditional Medical Practitioners is sometimes astonishing.[17] But empirical knowledge of habitat, appearance and (claimed) properties is by no means the same as the possession of empirical grounds for particular uses.[18] Even today, it is virtually impossible to produce chemically-constant and effective phyto-therapeutic preparations which can be guaranteed to contain no poisonous or allergenic substances, not least because almost nothing is known of the mutual effect of the complex of biologically active substances to be found in any medicinal plant.[19] In 2007 it was reported in the press that the Indian government is proposing to spend about $40 million to assess the country's herbs scientifically, and select those suitable for serious investigation by pharmaceutical companies. Despite the existence of a complex system of traditional medicine, Ayurveda, virtually nothing is known about whether, let alone how, its 80,000 treatments function.[20] *A fortiori*, given the uncontrolled conditions of ancient collection and preparation, with one or two exceptions, it was impossible for rhizotomists to have more than the haziest notions of the effects of particular species.[21] The empirical properties that were considered important in the context of iatromagical praxis were overwhelmingly symbolic ones, which could be evoked in relation to equally symbolic features of afflictions. That is, folk-healers interrogated the natural world for its significance not its use.

There is a contrasting tendency to devalue the reasoning of the folk-magical tradition as well as its empirical plant-lore. Thus a recent commentary on one of the amulets prescribed in the *Cyranides* against bleeding from the anus or from the upper part of the body, which includes a mulberry, observes: "popular

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[15] E.g. Tupet 1976, 56-91; cf. Buechi 1982, 261. Tupet was seriously misled by the fantastic theories of J.-M. Pelt.

[16] E.g. Möse 1967. Münsterer speaks more cautiously of two routes into the pharmacopoeia, "[der] der reinen, oft zufälligen Erfahrung" and "[der] der Überlegung und Spekulation" (1967, 291-92).

[17] See n.7 above.

[18] A distinction rather muffled by Scarborough 1991.

[19] This type of biochemical analysis is however becoming a standard in publications such as *Journal of Ethnopharmacology* and *Economic Botany*.

[20] *The Economist* no. 8542, Aug. 18-24th (2007) p. 67.

[21] This was certainly also the case with the recipes in the Hippocratic Corpus: Totelin 2009, 111-39.

medicine, seeing blood in the mulberries' colour, believed it would be helpful against haemorrhages".[22] Such an inference does justice neither to the empirical knowledge nor to the powers of reason of rhizotomists. Indeed its main ideological function is to reinforce the preconception that magical thinking is loose, fuzzy, muddled if not down-right silly. Cognitively, it rests upon the conviction that the analogies and correspondences discovered by the antique versions of the 'Doctrine of signatures' were held in themselves to be the basis of curative property.[23] Although there are indeed cases in which this is true, as often as not the claim is a convenient over-simplification.[24] The chief difficulty in arriving at a more nuanced view is of course the elliptical and transmutative mode of reasoning typical of rhizotomic medicine.

There seem to me to be two fundamental questions regarding rhizotomist practice. The first relates to the rationality of the practitioners' use of substances taken from the natural world, the degree to which it would have been possible for a competent individual to give an account of why he prescribed a given recipe in a particular case, of the nature of the match between perceived problem and solution. Such an account would be rational if it fulfilled two minimal conditions: if it were not self-contradictory, and if it were not to contradict either local 'common-sense' factual knowledge or local specialist factual knowledge. All modern anthropological accounts of herbalists' preparations suggest that they are, in general, rational in this sense, and we should not expect Graeco-Roman, or Graeco-Egyptian, preparations to be different.[25] The only *pharmaka* of which no account whatever could be given are the miraculous – and decidedly elusive – concoctions which appear in the wider social discourse about the meaning and location of magic, notably in literary accounts of magical activity,[26] and the occultists' *mirabilia*, beginning with the plant the gods name *moly*.[27] Neither has substantial roots in a practical tradition, though the latter excited the minds of literate practitioners from a relatively early period.[28] The limits of rationality here are to be found in the social pressures favouring bluff.[29]

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[22] Waegemann 1987, 97 on *Cyran.* 1, 12 pp.70-72 Kaimakis.

[23] Cf. Amigües 1995.

[24] Cf. Stannard 1982, 14-15 for three simple cases; for others, see Gordon 2007.

[25] Croizier 1968; Endicott 1970; Buckley 1985; Clapp-Crook 2002. It may of course be that the TMPs selected, the anthropologists' informants, tend to be particularly intelligent and able exponents of their art.

[26] Cf. Fauth 1999, 114.

[27] Homer, *Od.* 10, 281-306. See p. 9. below.

[28] Stannard 1962 provides an exhaustive account of ancient enquiries into the identity of *moly*; cf. André 1958, 234-41; Ducourthial 2003, 127-33.

[29] Lloyd 1987, 15, 28, 109 etc.; 1990, 79.

The second question concerns the type of account that rhizotomists, granted that this is not a uniform category, were capable of giving of the sources of the power of the natural items (in our sense) they used. In my view, wise women, if comparative evidence is anything to go by, felt no need to provide such second-order explanations. But pressure upon rhizotomists to give some sort of an account of their practice does seem to become perceptible as the field of medical service became more diverse – in other words, as competition increased and the authority to intervene became a contested domain. Within the area of iatro-magical practice itself, one type of competition for rhizotomists came from purifiers and diagnosticians of daemonic attack, who disposed of a completely different nosology and treatment. Other types are represented by the Asclepiads specialising in (aristocratic) wounds sustained in sport and war; the appearance of itinerant *iatroi* in the late Archaic period, who sold their services from city to city, and some of whom came to serve as public physicians, as in late fifth-century Athens (e.g. Plato, *Gorg.* 456bc);[30] the rise of healing hero-cults, among which that of Asklepios ultimately became massively dominant, progressively expanding to absorb dozens of purely local healing shrines; and finally the rather diverse type of medical practice based on explicit theories – whatever their relation to the actual treatment procedures and dietetics – we know as Hippocratic, with the corpus of texts assembled in the Alexandrian period, which attempted vigorously to shoulder other practices aside, particularly as regards wealthier patients.[31] In the course of time, the "corrupting" Mediterranean brought new authoritative forms of healing cult, such as that of Serapis,[32] new types of magical information from Babylonia and Egypt,[33] the practice of individual thaumaturges, and Jewish specialisms such as exorcism.[34] All this of course within the wider context of the very considerable socio-political and socio-economic changes that took place in Antiquity, with their long-term implications for literacy and discursivity.

[30] On Demodocus of Croton, see Squillace 2008.

[31] A competent résumé in Wickkiser 2008, 7-50, irrespective of her rather odd thesis in chaps. 5-6. I am also less than persuaded of her thesis that the rise of temple medicine correlates with the interest of Hippocratic medicine in announcing its limitations – i.e. the incurable went to the temple.

[32] Bricault 2008. For "corrupting", see Horden-Purcell 2000, 342-400.

[33] Gordon 1997, 131-39; Dickie 1999.

[34] Sfameni Gasparro 2008.

Historicising rhizotomic practice

Although it is usually dismissed as a mere archaic survival, trapped in traditionalist aspic, changes to rhizotomic traditions did indeed occur, particularly in the relation between practitioner and patients and in the discursive forms employed, even if we are hardly in a position to write a proper historical account. Theophrastus, for example, makes clear that much of the information about plants and their properties at the disposal of the Peripatetics in the fourth century BCE was supplied directly or indirectly by *pharmakopôleis* at (regular) markets, some of whom, such as Thaseas of Mantinea and his pupil Alexias, and an earlier Eudemus active in Athens in the early fourth century BCE, certainly experimented with their effects.[35] Some later rhizotomists, such as Crateuas, were highly literate and even provided colour illustrations of the plants they wrote about.[36] The market-situation in an important city, and the accompanying need to drum-up trade, created a situation very different from the ideal-typical conception of the practical herbalist operating as an acknowledged expert in, say, a Thessalian village. By Theophrastus' time, moreover, it was possible to construct on the basis of previous written collections, a fairly detailed herbalist map of the eastern Mediterranean.[37] Even though it remained to a large extent a knowledge-*practice*, transmitted through apprenticeship and practical training, botanico-medical knowledge thus tended to become in addition a textual knowledge, and could thus be subjected to various forms of distortion and sclerosis, for example in the creation of handy but standardising, often alphabetical lists,[38] the indiscriminate multiplication of applications (familiar from modern popular hand-books of medicinal herbs),[39] or the composition of written recipes, which, as Totelin has rightly suggested, are by no means identical to the underlying orally-transmitted knowledge.[40] It has plausibly been argued that elements of rhizotomic lore were absorbed and 'purged' by the Hippocratic tradition.[41] Another important form of distortion, to which I shall return, is the imposition of explicit occultist schemes, such as the idea of sym-

[35] Theophr., *HP* IX 16, 8-9; 17,2-3; Aristophanes, *Plut*. 884; cf. Robert 1907, 903-04 no.16; Scarborough 1978; Samama 2006.

[36] The testimonia and fragments in Diosc., *Med.* vol. 3, 139-46 ed. Wellmann. For later iatromagical texts surviving on papyrus, see De Haro Sánchez 2004.

[37] Theophr., *HP* VI 3, 1-3; 9, 15-16.

[38] Dioscorides, *Med*. Praef. 3 (= Wellmann 1, p. 2 ll.12-15) comments on the disadvantages of alphabetic ordering.

[39] A good example in Borengässer 1998.

[40] Totelin 2009, 18; see also the discussion of *Culpeper's Complete Herbal* (first ed. 1649) by Goody 1977, 60-62.

[41] Stannard 1961; Scarborough 1987a; Laskaris 1999.

pathy versus antipathy, or correlations with astronomical and astrological considerations and/or formal schemes. Neither, in my view, had any place in rhizotomic practice until literate schemes came to have some limited impact in the late Roman period.[42]

I want however to go beyond these familiar points to argue that as rhizotomic practice experienced pressure from competing types of healing practice in the fifth and fourth centuries, and increasingly thereafter, it responded in two major ways. One, as we have seen in the cases of Eudemus and Thaseas, was to attempt to defend their authority as experts by public, indeed advertised, resort to experimental proof of their claims. The second was to concentrate their claims to special authority on selected real plants commonly used in healing procedures at a variety of levels. As Ducourthial argues:

> Le seconde ensemble est composé des plantes communes, fréquemment employées comme plantes médicinales, mais censées posséder des vertus supérieures à celles qui leur sont généralement prêtées ou encore des propriétés d'une autre nature. Ces plantes ne sont pas magiques par essence, elles le deviennent si elles ont été récoltées en respectant des prescriptions minutieuses, inspirées par des considérations propres à la magie, et si elles sont utilisées suivant un mode d'emploi particulier.[43]

The second strategy, in other words, picked up from the social discourse about magical phenomena the idea of marvellous or magical herbs, whose efficacy was as unbounded as the plants were unidentifiable, and used it to enhance the status of selected real plants. These then became correspondingly hard to find: the lengthy tour of the famous Thessalian locations of magical plants undertaken by Ovid's Medea hyperbolically exaggerates a subjective herbalist claim.[44] From the practitioner's point of view, collecting the ingredients – and especially the herbs and plants – useful for healing (but also for malign purposes) came to be difficult and fraught with danger. In other words the claim that plants had 'magical powers' was initially a device taken over from the social discourse about magic in order to lend greater authority to rhizotomists' claims in the increasingly complex market for healing.[45] And it took an entirely

[42] Contrast Nasemann 1990, 106, who claims that the scheme of sympathy/antipathy was "[eine] vor allem im Volksglauben verbreitete Annahme".

[43] Ducourthial 2003, 121.

[44] Ovid, *Met*. VII 220-36 Tarrant; cf. Hopfner 1921-24, 1 §464 and Bömer's commentary *ad loc*. The herbs listed in the derivative passage, Seneca, *Medea* 707-27, come from all over the world, including Germany (Suebi), Baetica and the Caucasus (derived from Apoll. Rhod., *Arg*. III 851-7, 864-66 – which may itself refer to Sophocles' *Rhizotomoi*, cf. R. L. Hunter *ad loc*.). Seneca does not however specify how they fell into Medea's hands.

[45] Cf. Buckley 1985, 140: "It is important to note that medicines [among the Yoruba of southern Nigeria] which have an incantation or which contain a ritual, do not differ from those

appropriate form for such a knowledge-practice, namely the further elaboration of the rituals prescribed for the collection of selected plants, rituals whose overall effect was now to construct their imputed magical efficacy. In effect then, this second response to the market situation involved infringing the rationality-rule about not contradicting local 'common-sense'.

Rituals of separation

We may distinguish five groups of such special rhizotomic rules in relation to the collection of plants.[46] In what follows, it has proved impossible effectively to separate material gleaned from the social discourse about magical practice, which is always evaluative and distorting, from more or less neutral historical material.

a. Gathering techniques

Ovid's Medea is allowed to choose between two methods of collecting her choice herbs, between pulling up whole and snipping off: ...*placitas* (i.e. *herbas*) *partim radice revellit, partim succidit curvamine falcis aenae*.[47] In this representation there are two main alternatives: cutting (i.e. severing the stalk with a sharp instrument, without the roots) and pulling or digging up whole (i.e. together with the roots). The ideological basis of such parodic agriculture being obvious, it has been claimed that the most usual method was plucking with the hand.[48] "La plante magique par excellence", *moly*, is said in an authorial intervention to be χαλεπὸν δέ τ᾽ ὀρύσσειν ἀνδράσι γε θνητοῖσι, 'hard to grub up, for mortals at any rate' (*Od*. 10, 305-06), which implies that the choice between cutting and digging up was already of importance to herbalists, and thus widely known. Later stories about *moly* chose to elaborate upon precisely this feature of the Homeric representation. Pliny, for example, recounts that he had met a *peritus herbarum medicus*, a medical practitioner experienced in the use of plant-drugs, who told him that a specimen could easily be brought to him (Pliny) from Campania since it had recently been dug up – with a root thirty feet long, and that broken short because the ground was so stony.[49]

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that do not."

[46] The standard, though now more or less unreadable, account of these rules is Delatte 1938; Martini 1977 is much better. For the sake of simplicity, I omit the large question of the collection of animal parts.

[47] Ovid, *Met*. VII 226-27.

[48] Delatte 1938, 130.

[49] *Nat.* XXV 27. Pliny's story seems to be an attempt to reconcile the disagreement between

The decision not to cut provided scope for further distinctions which could then become the basis of new (arbitrary) rules: 'plucking', 'digging up', 'tapping' and so on. Each of these options might itself generate further possible distinctions. For example, 'digging up' could be distinguished from 'up-rooting'. 'Up-rooting' could in turn be subdivided into 'up-rooting with the hand' and 'up-rooting without being touched by hand'. Another variation focuses upon a contrast between 'plucking (by hand)' and 'biting off': thus leaves of mint may be bitten off the plant in the kitchen-garden and chewed to cure ailments of the spleen.[50] And finally there might be a different rule for collecting one part, such as the the root, from that for collecting others, say the stem or the leaves.[51]

The opposite pole of the basic distinction was also rewarding, in relation to the instrument to be used for cutting. First, there might be a question of the metal to be used. Although it is often claimed that bronze alone was appropriate, this is yet another instance of a modern pseudo-rule – the text chiefly cited is always the same: Macrobius, *Sat.* V 19,7-11. Macrobius here sets out to answer a particular question, why does Vergil at *Aen.* IV 513 specify that bronze sickles (*aeneae falces*) had been used to cut the herbs with which Dido attempted to quell her passion? Part of his answer consists in citing another passage which is always quoted in this connection, a fragment by Sophocles from the lost *Rhizotomoi*.[52] But in fact the poetic tradition is far from unanimous about the issue of metal, and the documentary evidence from outside the poetic tradition suggests that it is quite arbitrary whether a recipe did or did not specify the metal of the utensil to be used or avoided.[53] There is certainly no reason to use an argument from silence: that where no mention is made of a rule, there we should assume that (say) iron was to be avoided.[54] It was only in the poetic

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the Homeric tradition that it was hard to dig up and those who were inclined to identify the plant with *panakeia*, which Theophrastus says was not at all difficult to dig up (*HP* IX 15.7).

[50] Pliny, *Nat.* XX 151.

[51] Alexander of Tralles, 2 p. 585 Puschmann.

[52] *TrGF* 3, frg. 534. 6-7. The other text always cited is Ovid, *Met*. VII 226-27 (already quoted); for others, see Pease on Vergil, *Aen.* IV 513.

[53] For the poetic tradition, see Tupet 1976, 39-43. The Graeco-Egyptian magical papyri, though not concerned with root-cutting, also reveal arbitrary differences in respect of the metal to be employed for rings, pots, knives and *lamellae.* Equally arbitrary are the religious prohibitions upon particular metals which are no doubt the source of the rhizotomists' rules: Le Roy 1986, 286ff.

[54] The herbalist tradition certainly sometimes specified that iron should not be used for specific purposes: for example, rings formed from myrtle twigs untouched by iron cure swellings of the testicles (Pliny, *Nat.* XV 124); the power of *dracunculus* is greater if it is not touched by iron (XXIV 149). But these injunctions should not be generalised, as they are, e.g. by Hopfner 1921-24, 1, §599f., since they are mere options in constructing a far more extensive set of rules. It is the set that counts in the construction of the praxis, not the individual details.

tradition that the authority of Sophocles caused local colour to be taken as a general rule; and there the pseudo-rule had its own function as an ingredient of the stereotype of the outlandishness of magical practice.[55]

Second, the character of the instrument to be used for cutting. The poetic tradition frequently mentions sickles. This has an obvious resonance, since it presumably refers to the rules for normal agricultural labour, which are inverted or parodied by women (in poetry root-cutters are almost invariably women) collecting potent plants for nefarious purposes.[56] Unfortunately, it is probably merely *ben trovato*, without foundation in the actual practice of rhizotomists; but other substitutes for knives or spades might be called for – an ordinary iron nail, for example,[57] or an animal bone;[58] Seneca's Medea picturesquely uses a fingernail.[59] Alternatively, the number of blades might come into question: should the knife be double or single-bladed?[60]

Implicit in all this is the assumption that one would have at any rate to touch the plant. Once this assumption is made explicit, it can itself become the subject of a negative rule: pick this plant without touching it with your hands. A series of possible methods, and implied narratives, then opens up: the best known is Aelian's account of the collection of the peony with the aid of a ravenous dog.[61] Since the plant is lethal if picked by hand, it must be gathered by means of a ruse. One end of a rope is tied to a starving dog, the other looped 'from as far away as possible' around the base of the plant. When the dog is offered food, it rushes forward, and so uproots the plant; but of course itself dies at once. Once it has killed, the plant is rendered innocuous, set free for a second career, the cure of ailments.[62] The note of parody here is unmistakable.

[55.] Typical of the confident, but quite unfounded, tone of older philological commentary is Austin's remark on *Aen*. IV 513: "Bronze is universal in such a connexion", when all he means is "this is a common literary *topos*". Some amusing consequences follow from the assumption that there was an invariable rule about not using iron in magic: for example, the claim that the reed in Cato, 160 must have been broken manually in order to avoid 'prejudicing' its magical virtue by contact with iron – when the recipe itself immediately afterwards clearly supposes that a knife can be used to cut it (Laughton 1938, 53); or that *ferra* (Seneca, *Medea* 728) must mean "loosely blade, knife" and not "iron (blade)": de Costa, *ad loc*.; Viansino 1993, 577 ad loc. is rightly more cautious.

[56.] Apart from the passages of Sophocles and Vergil cited above, see esp. Ovid, *Met*. VII 227 with Bömer's note *ad loc*.; *Ep*. VI 84; V. Fl. VII 364-370 (imitated from Apollonius). Lucan lay claim to superior knowledge by making no reference to sickles at VI 438-91.

[57.] Pliny, *Nat.* XXVI 24.

[58.] Alexander of Tralles, 2 p. 585 P.

[59.] *Medea* 730.

[60.] *PGrMag* XIII 92, though in connection with sacrifice not herb-cutting.

[61.] *Nat*, XIV 27.

[62.] Cf. Gordon 1987, 59-60, 84-86. Another version in Josephus, *BJ* VII 6, 3 (6, 593f. Niese).

b. Body-movements

Another area rewarding for rule-generation was that of body-movement. One of the simplest and most expressive rules is circling the plant a specific number of times, which evidently marks a claim: 'This is a ritual action'.[63] The same end is served by scoring a circle around the plant with a sword.[64] Alternatively, the collector might have to face in a particular cardinal direction, East or West, or in a purely contingent direction, windward.[65] Or one might have to face in two different directions at the same time, the head turned away from the plant, the body towards it.[66] The hand to be used to cut or pluck may also be specified, often the left,[67] as may the fingers to be employed (e.g. thumb and ring-finger).[68] Sometimes sheer difficulty seems to be the aim, as when the use of the ring-fingers alone – identified here, as often elsewhere, as the 'medicinal-fingers' – is specified.[69] Most elaborately, one might have to perform a dance in front of the plant.[70] Finally, a casual event, glancing backwards at the spot, may become the focus of a specific injunction: "do not turn (and look) back after picking the plant".[71] The non-event has, as it were, become a phoneme in the system of (arbitrary) differences which constructs the power assigned to herbs in the rhizotomic tradition.

Diodorus of Tarsus, *De fato* 43, ap. Photius, *Bibl*. p.215a 33-37 (4, 27-28 Henry), elaborates on the theme of 'difficult to collect', but has no space for the dog.

63. Cf. Maas 1913; Pax 1957.

64. Pliny, *Nat.* XXV 50; cf. XXIII 103; XXV 107. Theophrastus mentions similar rules a couple of times: *HP* IX 8, 7-8.

65. East: ibid. IX 8, 5; Pliny, *Nat.* XXV 50; windward: Theophrastus, *HP* IX 8, 8; cf. Scarborough 1978, 359.

66. Sophocles, *Rhizotomoi*, *TrGF* 3, frg. 534. 1-2. Macrobius, who quotes the fragment, adds that the aim was to ensure that Medea herself was not killed by the harmful *effluvium* from the plants, *ne vi noxii odoris ipsa interficeretur* (*Sat*. V 19, 9). Such naturalizing 'explanations' constitute third-order protection again recognition of the arbitrariness of the rules.

67. Left: Pliny, *Nat.* XXI 143 (*iris* or *xyris*); 176 (*parthenium*); XXII 50 (Magi: leaf of *pseudoanchusa*); XXIII 103 (quince root); XXV 107 (*verbenaca*); XXVI 24 (*sideritis*); Marcellus of Bordeaux, *Med.* XIV 52 [1:242.22f. N-L] (grape, to protect the uvula); XXVI 41 [2:436.34-35] (*artemisia*, cf. Meid 1996, 24). Where the hand is not specified, it presumably did not matter. Pliny, *Nat.* XXVII 140 requires the operation to be performed with one hand only, not further specified.

68. Marcellus, *Med.* XIV 65 [1:244.24 N-L]; XXXI 33 [2:546.29 N-L]; Alexander of Tralles, 2 p.583 P.

69. Marcellus, *Med*. XXV 13.

70 Theophrastus, *HP* IX 8, 8.

71. Pliny, Nat XXI 176 – an implicit 'negative *historiola*' through the allusion to the story of Orpheus and Eurydice.

c. Offerings to the plant or earth

Some texts specify the offering of milk or some other offering generally associated with the cult of the earth or the dead, without always making it clear whether the plant or the earth is the supposed recipient.[72] This ambiguity is surely deliberate. There is a collective, public commitment to maintaining belief in the enduring power of the dead and, more generally, of the supposed powers of the underworld. The public commitment is individualised and concretised in uncanny tales of ghosts, graves and the undead. The rhizotomist fuses this collective commitment to his personal concern with a particular plant. More precisely, the reference to a ritual – and not the complete libation with honey, oil and wine – ordinarily used to appease the powers of the underworld, intimates the otherness of the world to which the plant is deemed properly to belong.[73] The plant is, as it were, relocated by the libation at the meeting-point between two worlds.[74] A similar ambiguity is created when incense is burned at the time of picking.[75] The burning of incense evokes a sacrificial occasion within civic or domestic cult, and more generally, the opening of communication with divinities conceived as inhabiting the space above the earth. To burn incense when gathering a plant is to assimilate that action to the wider contexts within which such burning was ordinarily considered appropriate.[76]

Generally speaking, such rituals add to the symbolic content of the gathering process not so much by increasing the number of possible rules as by offering an implicit commentary on the meaning or value to be ascribed to the plant or its gathering. As such, they are similar to the third category.

[72.] Evidence for such offerings is not plentiful. Theophrastus mentions the practice in relation to the plant *panakes* (*HP* IX 8, 7); Pliny cites the Magi for the specific injunction to offer combs (reading *favis* with André, Mayhoff and the older editors, not *fabis*, which seems to be a jeu d'esprit of Bidez and Cumont 1938: 2, 171, frg. O 34; the *mss* read *faucibus*) and honey to the earth *ad piamentum* when collecting *verbenaca* (*Nat.* XXV 107). It is important in the Graeco-Egyptian plant-collection ritual cited below.

[73.] Graf, 1980.

[74.] In the Graeco-Roman tradition, milk is a standard offering, though usually with honey, wine, oil and/or water, to the earth and to the dead beneath the earth: cf. Aechylus, *Pers.* 610-22; Apollonius Rhodius, *Arg.* III 1200-20 (to Hekate). Alone: Tibullus, I 1, 36; 2, 50 (Lenz-Galinsky) with K. F. Smith's notes; Statius, *Theb*. IV 544-7.

[75.] Cf. Galen's attack on Pamphilus, *De simpl. med.* 7 (11, p.793-97 K.).

[76.] Cf. Graf, 1991: 191.

d. Address to plant

We sometimes hear of injunctions to address a prayer or conjuration to the plant as it is being picked.[77] From the point of view of pragmatic linguistics, speech to inanimate objects is one of the characteristic devices of religious systems: in general, like offerings to putative divine beings, such acts renegotiate the boundaries between the real and the imaginary. In magical practice, such addresses are part of a strategy of renegotiating the boundaries between classes of living being. Theophrastus commonsensically begins the *History of Plants* by remarking that we do not find in plants ἤθη καὶ πράξεις, character and action, these being the defining characteristics of animals (and higher beings).[78] To address a plant as one gathers it is to 'act as if' it is at least worth talking to, and thus by implication does indeed possess, among other characteristics of beings that are worth talking to, ἤθη καὶ πράξεις. It is the attribution of the power to act which is here crucial.[79] Moreover, the type of speech often prescribed, prayer, is the type of utterance specified in religious contexts for addressing divinities.[80] The only significant differences between the prayers addressed to gods and those to plants lie in the degree of public commitment to the maintenance of the fiction and, sometimes, the moral character of the powers supposed to be at issue.

The utterance is however not invariably a prayer. One might simply greet the plant before saying any other word that day, thus treating it as though it were a (peculiar kind of) human being.[81] Alternatively, the rule might be to name the patient,[82] or announce the reason for which the plant is being gathered.[83] At its most elaborate, such an explanation might also be combined with a command to the plant and an account of how the cure is to work:

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[77] For example, *PGrMag* IV 287-95; 2978-3001; Alexander of Tralles, 2 p. 585 P. [= Heim 1892 no.167; cf. nos.124-30]; cf. Delatte 1938, 98-110. On the sole basis of [Plutarch], *de fluviis* 5,2 he defends the notion that a single cry might also be uttered. In Ovid's version, the triple *ululatus* is uttered as part of a preliminary ritual, before Medea has even got into her chariot to hunt for herbs (*Met.* VII 190-92).

[78] *HP* I 1,1.

[79] In his version of the ravening-dog story (n. 62 above), Diodorus of Tarsus claims that the plant tries to elude the rhizotomist by changing its position. This is παρὰ φύσιν, for "moving about is not possible for things with roots".

[80] Late examples of prayers ascribed to *rhizotomoi* or *herbarii* from *Cod. Vindobonensis* 93 (XIth century CE) are re-printed in Heim 1892 nos.124-6. Sub-literary examples from the same document are to be found as nos.128 (prayer to Terra Mater) and 129 (prayer to all herbs).

[81] Pliny, *Nat.* XXV 145.

[82] *Nat.* XXII 38; cf. Heim 1892 nos. 1-11; 15.

[83] *Nat.* XXII 50; cf. Heim 1892 nos. 18-33.

> I summon you into the house of Phileas so that you may cure the pain in the feet/hands of NN (male/female). Take
>
> the *pneuma* of your mother, Earth, and her power and dry up the feet/hands of NN (male/female).[84]

The allusion to *pneuma* is a clear indication that this derives proximately from a learned scheme, although it presumably derives at some remove from a charm by a rhizotomist. The plant may also be addressed after being plucked, as it is put to work.[85]

Finally, Pliny mentions a rule stated by some to apply to the collection of the plant Dog-bur (*lappa canaria*). This utterance is a very brief *historiola*: the collector is supposed to mention that the plant's healing property was discovered by Minerva.[86] According to Köves-Zulauf, this utterance is itself the enabling device: "die geheime Potenz der Pflanze wird durch den Spruch verfügbar".[87] I believe this to be a quite false inference, an example of the modern habit of inventing theories of magic which are then foisted onto antiquity. Rather, the *historiola* legitimates a practice, in this case of healing, by pseudo-historical reference – a quite standard function of history in the ancient world.[88]

e. Specification of time

The tension between the world deemed normal and the world of the rhizotomist is evident in the prescriptions relating to the time of picking. The medical writers on plants never allude to specific rules about this, but they are regular in the magical tradition.[89] Plants to be used for iatromagical purposes are often supposed to be gathered at some hour of the night or at points of marked transition, sunset, twilight, dawn, sunrise. The rule may be even more localised: "before the sun strikes them".[90] Such rules are functions of prior be-

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[84] Alexander of Tralles, 2 p.585 P.

[85] *PGrMag* IV 3173-87.

[86] *Nat.* XXIV 176. A fuller version is known from the *Anecdotum Latinum*: Heim 1892 no. 108; cf. 109 (=Marcellus, *Med*. XXV 13) and 124-26 (from *Cod. Vind.* XCIII).

[87] Köves-Zulauf 1972, 162.

[88] Cf. Gabba 1981, 60-61. Stannard 1982, 21-22 makes the general point about protection of magical claims through narrative.

[89] Theophrastus, *HP* IX 8, 5. The medical tradition was of course aware in general of a relation between location, season, temperature etc., and medicinal properties, e.g. Dioscorides, *Med.* Praef. 6-7 (1 p. 3-4 Wellmann) with Scarborough and Nutton 1982, 218.

[90] Theophrastus, ibid.; Marcellus, *Med.* XXVI 41 [2:436.34f. N-L.], *mane ante solis ortum*. The character of such rules excludes the possibility that they are to be related to common-sense considerations of the influence of weather, season, and location upon the natural effectiveness of medicinal plants.

liefs about the character of magical activity in the Graeco-Roman tradition.

The choice of time was suitable for further elaboration by the later occult tradition. One possibility lay in transferring the rule from a specific time of day/night to an arbitrary moment – a procedure clearly modelled upon the divinatory technique of cledonomancy. Thus the Magi recommended storing the first anemone one saw in a season in a red cloth for use as a phylactery against fever.[91] Or the moment chosen might be related to the plant's natural life-cycle, such as the instruction to remove the pith from *buglossa* when the plant is withering away.[92] A more arcane procedure involved correlating iatromagical operations with astrological schemes.[93]

Rules for marking days or hours as 'prosperous' or 'infelicitous' by reference to chronocrators, houses and the phases of the moon, one branch of catarchic astrology in fact, could easily be adopted by literate rhizotomists as part of a move towards linking different branches of the occult.[94] Moreover, some attempt was made fairly early to systematise such choices – we know of two such esoteric tracts belonging to the period before 100 CE.[95] By the fourth century CE, such correlations appear to have been *de rigueur* for any self-respecting practitioner. The astrological manuscripts contain numerous references to books entitled *The Book of Hermes Trismegistos to Asclepius on the plants of the seven stars, or ... on the plants of the zodiac*, or *The Sacred Book*, which, though in their extant form usually Byzantine, often contain material from the imperial period.[96] The so-called 'Eighth Book of Moses' (= *PGrMag* XIII) provides a nicely decorative correlation between plants and planets (24-26), though it rather spoils the effect by including a different one in another section (354-6). It also provides two slightly different lists of the 'proper in-

[91] Pliny, *Nat.* XXI 166. On the Magi in this special sense, see Gordon 2010, 253-54.

[92] *Nat.* XXVI 116; it is not clear whether this is to be done while the plant is whole; from the later mention of leaves to be used as a phylactery, it may be supposed that a stem is first plucked and then scraped.

[93] For the specific case of the peony, one of the most significant rhizotomic plants, see Olivieri 1937.

[94] E.g. Marcellus, *Med.* XVI 101: *herba, quae Gallice calliomarcus, Latine equi ungula vocatur, collecta luna vetere liduna die Iovis ...*; on the trend as a whole, see Gundel 1968.

[95] One, *The Plants controlled by the zodiacal signs*, is found in two quite different recensions, the 'Thessalus-text' (which is ascribed in the Madrid codex to Harpocration) and the 'Hermes-text'; each recension is itself found in varying versions (cf. Hopfner 1921-24, 1, §475-77; Gundel and Gundel 1966: 30; most reliably, Friedrich 1968, 13-36). One of them seems to date from as early as I^p. The other text, *The thirty-six sacred plants of the horoscopes*, was used by Pamphilus in his six books *On physical properties* (Galen, 9 p.797 K.); cf. Bidez-Cumont 1938, 1: 116; Festugière 1950, 56-9; 77; 137-46; Gundel-Gundel 1966, 18.

[96] E.g. P. Boudreaux in *CCAG* 8, 3: 153f.; M.A.F. Šangin, *CCAG* 12: 74f. §27; cf. Festugière 1950, 1: 146-60; Gundel-Gundel 1966, 18-19.

censes' for each of the seven planets.[97] Astrological requirements might also be related to the natural cycle of the plant, as in Marcellus of Bordeaux' haemorrhoid remedy employing the leaf-buds of the mulberry tree: 'At the eighth hour of the thirteenth day of the lunar cycle before the leaves of the mulberry tree come out or burgeon...'.[98]

Constructing marvellous power

One value of this framework of options lay in its utility as an inventory. According to Theophrastus, rhizotomists commonly employed specific rules for individual species.[99] By varying the rules to be applied, the practitioner could create groups of plants with similar symbolic values. That is, the individual was free to construct groups of rules in accordance with his own view of the significance and value of different plants (although there is no ancient evidence that this in fact how these rules were used). These groupings could be further varied by the treatment of the plants after collection – they could be used fresh, dried, boiled, pulped or rotted; and by the significance allocated to the various parts, leaves, roots, stalk, flowers, seeds and juice.[100] The informal constraints upon this freedom would be those of the local tradition within which the individual was apprenticed.[101] Some of these innovations would survive through pupils or apprentices; and some might, in one form or other, enter local folklore – and perhaps eventually a compilation of magico-medical herbal and animal remedies such as the pseudonymous works of Pythagoras and Democritus which are among the volumes cited by Pliny as his sources for Books XX-XXXII.[102]

Underlying this value of practical classification, however, is a more important function, the construction of the objective power of the plant (or animal-

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[97] *PGrMag* XIII 14-20; 352-4. The relation between the three different versions of the same revelatory ritual in this text is complex: see Smith 1984.

[98] *Med.* XXXI 33. This is a fine example of the apparently highly specific injunction that could in practice scarcely be fulfilled, since the basal moment is quite unpredictable.

[99] *HP* IX 8, 6-8; the same seems to be implied by Galen's remarks on Pamphilus' collection of incantations and offerings to plants: *De simpl. med*. 7 = 9 p.793 K.

[100] Patera 1994.That is, in exactly the same way as in non-magical folk-medical and Hippocratic practice: Scarborough 1978, 358-59; Stannard 1982, 19; Totelin 2009, 55.

[101] Pliny, *Nat.* XXV 16 notes that there are no names for many discoveries about the properties of plants: *multis inventis desunt nomina*. The framework of choices I have outlined surely made naming to a large extent unnecessary. But it is also true that names and descriptions of characteristics and methods and are only indispensable within a written tradition.

[102] *Nat.* XXI 13-14. See Delatte 1938, 14, for a rather mixed list of known authors of such herbals.

part) to change a fraction of the world. To all appearance, these rules are individually arbitrary; they are at least frequently under-determined.[103] But considered as a technique of distancing, they construct a 'space' around the item selected by the practitioner. This space is generally double: the rhizotomist first observes rules which separate him or her from the world of ordinary behaviour and social relations. He then proceeds to pick the plant under specific constraints that serve to differentiate these from normal pragmatic actions employed for other plants. The total effect of the rules is to enter the plant into a new register: it ceases to be what it actually is, a constituent of the natural world. It acquires a charged, sometimes actually dangerous status, becoming subject to a different system of rules, meanings and expectations.

From the observer's point of view, it is this conceptual relocation of the plant (or animal-part) that makes the item especially effective. Each time the practitioner fulfils the proper rituals of collection, he reproduces part of a system which transfers selected elements of the natural world into the social world where they can be used to alter fates. But the rhizotomist's subjective experience is of protecting himself from the power already present in the items he collects: for him, they are powerful in an objective sense, a fact merely recorded by the procedures for collecting them. Once the system exists, it produces collateral objectifications. One kind is represented by the belief that root-cutters could reverse a cure by replanting the herb in question: Pliny records such claims in relation to the wild iris, the plantain, *ranunculus*, *sideritis* and *artemisia*.[104] Another is what may be called the apparent condition, which serves to assert the existence of mysterious powers without intending that they should ever be tested. Examples might be the injunction: "If you dig this this plant up whole, you will die";[105] a Graeco-Egyptian test of the authenticity of the plant *kentritis* reads: '(If) the juice [of the plant] is applied to the wing of an ibis (it weakens the "black edge"), the feathers will fall off when they are touched.[106] A third type distinguishes between the force of medicinal plants

[103] By under-determined I mean that no sufficient explanation can be offered by the practitioner of why he acts as he does: the act rests upon a mass of unstated (and partly unstatable) assumptions and motives. Only the observer (if indeed anyone) is likely to be in a position to make these implicit assumptions explicit and so render the action intelligible.

[104] Respectively, *Nat.* XXI 144; XXV 174; XXIV 174; XXVI 24.

[105] Pliny, *Nat.* XXX 18.

[106] *PGrMag* IV 801-4. I take it that τὸ ἀκρομέλαν, apparently a *hapax*, denotes some specific part of the wing, where the flight feathers originate. Hopfner 1921-24, 1, §501, translated χαλασθέν as 'schlaffe(?)' (limp). He also offered a far-fetched explanation of this test, which (as usual) he saw as based on a theory of sympathy. At least in the Early-Modern period, the temperature of mordants used in oil-gilding was tested by means of pigeon- or hen-feathers, and I would guess that a standard Egyptian technology has here been adapted to marvellous ends.

naturally propagated and those whose growth was brought about by external intervention – scattered by swallows in the case of the plant χελιδών.[107] From the point of view of the system as a whole, the function of such beliefs is to suppress consciousness of its arbitrariness: Nature is itself irrepressibly full of marvels.

Perhaps the best way of representing the character of such rules is to try to assign them to the categories suggested by the pragmatic-linguist John Searle.[108] He distinguished between constitutive and regulative rules. The latter regulate behaviour that exists independently of, and logically prior to, the rules, such as rules for cooking and eating. The former create the behaviour they define. The classic example is the rules for games: chess does not exist except by way of the rules which constitute it. Regulative rules may be added to constitutive rules: it is not considered good form to break the rules too often in football. This distinction makes excellent intuitive sense (even though there are a few rules that cannot satisfactorily be assigned to one or other class exclusively), and may be combined with the distinction between actors' and observer's assumptions or models. Formally, the rhizotomists' rules parade themselves as rules of etiquette, regulative rules governing behaviour which might occur anyway. They appear to be rules specifying the conditions under which one may safely gather inherently powerful plants. I contend that they are in fact constitutive rules, that without them there would be no power, no 'game' at all. The claim that they are merely regulative protects the deeper claim about causal chains that the system makes.

The rhizotomists claimed that without the rules for picking, the plants were dangerous; this danger was the correlate of their natural power for good or evil. By observing the rules, though, they created the danger - and so the power. It is impossible at this distance to exclude the possibility that some such 'special' rules had always existed. But as historians we need to be wary of claims to timelessness. Although both Theophrastus and Pliny, our main sources, are at best only indirect witnesses, both make it clear that rules such as these, which Delatte for example took to be the general and universal rules of the practice, only applied to certain herbs, not to all. It is tempting to relate the development of such distinctions both to the general responsibility of households for their own practical remedies, on the one hand, and to the increased competition developing in the field of health during the Classical and cetainly also later periods. There is, I would say, no simple story here 'from magic to reason'. On the

[107] *Hippiatr. Cant*. VIII 6 (2, 136f. O-H.) = Africanus, *Kestoi*, p. 225 Vieillefond.

[108] Searle 1969, 33-42; cf. Ahern, 1982. For a recent attempt to apply aspects of pragmatic linguistics to magical discourse, see Kropp 2008.

contrary, the idea of the marvellous power of certain plants demanding special ritual treatment was a strategy adopted by some rhizotomists in an effort to maintain their authority in the market. As with all strategies, there was a price to be paid.

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