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CLASSES IN THE CLASSICS: HISTORICAL CHANGES IN PLANT CLASSIFICATION IN TWO TIBETAN MEDICAL TEXTS

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Anthropologists have long been interested in how people organise their worlds and what such ordering can indicate about human similarities and differences. Areas of interest have included categories of kin, those of social and political groups, and ideas of 'raw' and 'cooked' peoples. In ethnobiology, an area of study that has grown out of the discipline of anthropology and that examines the knowledge about the natural world among communities of people or 'ethnic groups' (ethnos), interest has for a long time centered on classification of natural kinds: plants, animals, and other natural phenomena.[1] The underlying premise of such studies is that an analysis of natural-kind classification can reveal conceptual ordering of the natural world. In this article, I take an historical approach to classification by examining the categories of plants as specified in two Tibetan medical texts, the classic *Four Tantras* (*Rgyud bzhi*) and the contemporary text *Crystal Mirror* (*Shel gyi me long*), with reference to several other medical texts as well. I show that recognised categories of plants, as presented in these canonical medical texts, have changed throughout the history of Tibetan medicine. There is not absolute concordance between various texts as to the exact number and kind of plant categories nor to which category a particular plant should be assigned. This has important implications for

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[1] Classification of natural kinds has provoked particularly interesting debate about univeralist versus relativist claims for human cognition among anthropologists and cognitive scientists. Essentially the argument revolves around whether an 'objective' reality like the natural world (as opposed to the social world, which is inarguably constructed by humans) can be classified differently among human groups. See especially Berlin (1992), Atran (1998), Ellen & Reason (1979).

studies of classification, which have largely focused on asynchronic systems and do not adequately focus on the dynamics of classification. In addition, the present work is more generally significant to studies of Tibetan medicine, for it can reveal the cognitive anchorings of the science and art of the Tibetan medical tradition, especially as such orientations have changed throughout time. With this article, then, I examine plant classifications in Tibetan medicine while simultaneously exploring just how such constructions are products of historical change. I argue that one of the most significant changes between early and later texts of Tibetan medicine is the introduction of a hierarchy developed from Linnaean science.

My interest in studying plant classification began in the abstract world of theory. As a graduate student immersed in both theory and abstractions, I formulated an area of study that had not yet been undertaken in Western anthropology or ethnobiology: a study of Tibetan medicinal plant classifications. I was not quite sure about all the details of such a study but, being a cultural anthropologist, my interest primarily was in working with Tibetan doctors. I did just that during the course of my dissertation fieldwork, in southern Kham (northwestern part of Yunnan Province), in the town of Rgyal thang—since May 2002 officially called 'Shangrila'—for a total of one year (primarily during 2001 and 2002). During my fieldwork I quickly learned that a study of plant classifications in the concrete was much more complicated than I had imagined in the abstract, for two reasons in particular. First, the Tibetan doctors with whom I worked explained to me that there are a variety of ways of classifying plants. This came as a surprise to me, since much of the theoretical work in ethnobiology and natural-kind classification appears to assume that there is an overriding primary type of classification within a classificatory domain in any cultural/ethnic/linguistic group. Second, besides the fascinating and important connections to social context that must be

considered in a study of natural-kind classifications,[2] an essential motif that resurfaced again and again among doctors with whom I studied was the importance of texts. Texts have established precedent, especially in something like classification; Tibetan doctors acknowledge such precedent as a crucial aspect of the Tibetan medical system. As was explained to me, Tibetan medicine is not just a system of medicine, it is also a lineage of knowledge transmission; much of this knowledge is embedded in texts. Therefore, I found myself needing to study not just people and their knowledge but canonical texts as well. Nonetheless, although I herein examine plant categories in texts, it should be remembered that my orientation to this study is in the context of plant classifications among the doctors with whom I studied, and I make frequent reference to this context.

Classification of *materia medica*

Before looking specifically at the classifications of plants in these texts, I will begin with a brief overview of the general classification of *materia medica*—that is, all materials that are used medicinally in the Tibetan medical system—in these texts. I do this for three reasons. First, doctors will quite often begin an explanation of plant classifications by enumerating all of the categories of *materia medica*, not just plants. Because Tibetan doctors primarily conceive of plants as medicine, their orientation is plants in context with, not in segregation from, other medicinal ingredients. Second, classifications in contemporary texts of Tibetan medicine that are used by the doctors with whom I studied are always of the full *materia medica*. That is, plant-only classifications are not part of the textual repertoire of these doctors. Third, in examining classifications of all *materia medica*, I want to highlight important overall changes in classificatory schema—changes that are not just limited to plants. This includes changes in hierarchical structuring as well as foundational characteristics that

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[2] Exploration of this context is a primary focus in my dissertation (see Glover 2005).

determine categorical membership. These changes have important ramifications for the ways that contemporary doctors conceptualise categories.

The *Four Tantras* (*Rgyud bzhi*)

A compilation of four books, the *Four Tantras* is perhaps the most important historical canon of institutional Tibetan medicine. Its origin may date back to the 8th century although most scholars agree that all four books were unlikely to have been written at the same time. Authorship is traditionally attributed to the Buddha himself, however the physician Yuthog Yonten Gonpo, the younger (G.yu thog pa yon tan mgon po gsar pa), an important 11th-century doctor of Tibetan medicine, probably had a substantial role at least in arranging, if not actually writing, parts of the work. The original core text around which the *Four Tantras* is written was most likely Sanskrit, which was translated into Tibetan in the 8th century or earlier.[3]

Book II of the *Four Tantras,* the *Explanatory Tantra* (*Bshad pa'i rgyud*), contains a total of 31 chapters. Three of these chapters (19-21) concern formulation of medicines, the various properties of medicines, and classification of *materia medica*. The chapters are divided as such: Chapter 19, Medicines: Taste and Post-digestive Taste (*Ro dang zhu rjes*); Chapter 20, Medicines: Efficacy (including potency, strength, and attributes) (*Nus pa: nus, stobs, yon tan*); Chapter 21, Medicines: Compounding (*Sbyar thabs*).

In the section that discusses efficacy (*nus pa*) in Chapter 20, *materia medica* are divided into eight categories based on nature, essence, or substance (*ngo bo*). It is important to note the location of these classifications in the chapter on efficacy (a point I will elaborate on below). Efficacy refers to three aspects of a medicinal substance: potency (*nus*), strength (*stobs*), and attributes (*yon tan*).

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[3] Finckh 1978, however, cites Unkrig's analysis that the *Four Tantras* is actually of Tibetan origin, not translated from Sanskrit. Unkrig's analysis is largely based on the argument that if the *Four Tantras* truly is of Sanskrit origin (and of such antiquity) it should have been incorporated into the important Buddhist canon the *Bstan 'gyur*, which it was not. See Finckh 1978:12-15.

The *Four Tantras* states that the efficacy (*nus pa*) of a medicine is in part dependent on its nature/essence (*ngo bo*) as well as on its taste (*ro*). Just what constitutes nature/essence in the early texts is, of course, an important question, and one that is particularly difficult to answer definitively. Clearly there seems to be some relation between nature/essence and physical characteristics; yet the relation is not always reliable, as we shall see (e.g. some tree-like plants are classified with herbaceous plants in the *Four Tantras*). Thus physical characteristics are a sufficient but not a necessary condition for classification according to nature/essence. Instead, nature/essence is more dependent on the composition of five elements (earth, *sa*; water, *chu*; fire, *me*; air, *rlung*; and space. *nam 'mkha*) in a substance, which in turn affects the efficacy of that substance.

The eight categories of *materia medica* in the *Four Tantras* are as follows:

1) *Rin po che yi sman* (precious medicine, i.e. metals and stones).

2) *Sa sman* (earth medicine).

3) *Rdo'i sman* (stone medicine, i.e. metals and minerals).

4) *Shing sman* (woody plant medicine or tree medicine). Dash (1995) translates this as herbal medicine. This comes in 10 types (*bcu ru 'gyur*), depending on which part of the plant is utilised: roots (*rtsa ba*), trunk (*ldum bu*), stems (*sdong po*), branches (*yal ga*), pith (*rkang*), bark (*zhun pa*), exudates/gum (*thang chu*), leaves (*lo ma*), flowers (*me tog*) and fruit (*'bras bu*).

5) *Rtsi sman* (exudant medicine, i.e. materials that exude sticky substances or strong scents. These are derived from roots, trees and animals (*rtsi sman rtsa shing srog chags las byung ba*).

6) *Thang sman* (medicine from the plains). Dawa (1999) translates this as medicine with strong roots; Dash (1995) translates it as decoction medicine. This is made from the following five (*lnga ru 'gyur ba yin*): roots (*rtsa ba*), tender branches (*ngar pa*), leaves (*lo ma*), flowers (*me tog*), and fruit (*'bras bu*).

7) *Sngo sman* (herbal medicine). Dash (1995) translates this grouping as salads and notes that these are plants used in green or raw form.

8) *Srog chags sman* (animal medicine).

The *Four Tantras* does not give descriptions or definitions of each of these categories, although it does give examples. However, examples for categories four, five and six (*shing sman, rtsi sman*, and *thang sman*) are all listed together; that is, the *Four Tantras* does not divide up the examples for each of these categories, indicating which example is a representative of which category. Why they are listed together is not at all clear. Thus it is difficult to know which substances fall under which category. It is important to note that I have had to rely on the the *Blue Beryl* (*Baidur sngon po*), a 17th-century text written by the Fifth Dalai Lama's regent, Sangye Gyatso, for interpretation of examples of *shing sman, rtsi sman,* and *thang sman.* While this is not ideal (specification in the original text would have been more desirable), the *Blue Beryl* is generally recognised to be an edited edition of the *Four Tantras* and not a new text in its own right.[4]

Worthy of note are the various translations possible for these categories. Vaidya Baghwan Dash's glosses of some of these categories, particularly *thang sman* ('decoctions')[5] and *sngon sman* ('salads'), are especially intriguing.[6]

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[4] Sangye Gyatso attempted to clarify many ambiguities from the *Four Tantras* in his text, although some scholars have argued that in the process he committed errors. In regards to examples of categories, as inserted by Sangye Gyatso, critics point to the fact that only four examples are given for *shing sman* in the *Blue Beryl* but that 10 possible types of *shing sman* are enumerated (both in the *Four Tantras* and the *Blue Beryl*). Therefore, the argument goes, logic dictates that there must be more than four examples in the combined grouping of *shing, rtsi,* and *thang sman* in the *Four Tantras,* since 10 possibilities cannot be derived from four examples. See Clark: 139. Of course this is based on an assumption that *all possible materia medica* are listed in the *Four Tantras* —a fair but possibly inaccurate assumption.

[5] I have chosen to use the gloss 'medicine from the plains' for *thang sman*, in large part because this is how my main consultant, Doctor Ma Liming, explained this term to me. I will elaborate on his explanation below.

What these translations suggest is that some of the categories may be based on how the substance is to be processed and/or what the final form is that the medicinal substance will take. In addition, if we consider the translation of *thang sman* as being 'medicine from the plains,' then where substances (plants) grow is an important distinguishing characteristic of this group (and habitat undoubtedly affects a plant's *ngo bo*, nature/essence, and its composition of five elements). I will elaborate on the importance of these category translation challenges below.

The Crystal Mirror (*Shel gyi me long*)

The Crystal Mirror is a recently published volume having a name very similar to an historic work.[7] Written by Gaway Dorje (Dga' ba'i rdo rje), a renowned doctor of Tibetan medicine of Chamdo, it was published in Beijing in 1995. The text is in Tibetan but also contains Chinese names for most *materia medica.* Similar to an important 18th-century text, the *Crystal Garland* (*Shel gong 'phreng*), the *Crystal Mirror* is largely concerned with descriptions of *materia medica* and contains nearly 900 colour photos of most specimens discussed in the text.

The ten classifications of materia medica in the *Crystal Mirror* are as follows:

1) *Gter dngos kyi rigs* (treasures).

i *Rin po che'i sman* (precious medicine).
ii. *Sa rdo'i sman* (earth and stone medicine).

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[6] Dash's translation of *thang sman* as 'decoctions' is corroborated by Rechung 2001.

[7] Rechung Rinpoche (2001) states that the famous 8th-century physician Champashila (Bi byi in Tibetan) translated a text (I suspect from Sanskrit, although it is not stated so) titled *Rgyud shel gyi me long.* I do not know the contents of this text, although Champashila supposedly added forty-two chapters on anatomy to the existing fifty chapters of the original book; given this information, there does not appear to be a strong resemblance with the contemporary *Shel gyi me long* text.

iii. *Tshwa sna'i sman* (salt medicine).

2) *Rtsi shing gi rigs* (exudents and woody plants, or plants).

   i. *Rtsi* (exudent medicine).

   ii. *Shing* (woody medicine), with 7 divisions (*sde*): fruit (*'bras bu*), flowers (*me tog*), leaves (*lo ma*), trunk/stems (*sdong po*), small branches (*yal phran*), bark (*pags pa*), gum/sticky matter/ exudent (*tshi ba thang chu*).

   iii. *Sngo ldum* (herbaceous medicine).

   iv. *'Bru'i* (grain medicine)

3) *Srog chags kyi rigs* (animals)

   i. *'O thung sde tshan* (mammals)

   ii. *Bya rigs sde tshan* (birds)

   iii. *Skam chu gnyis gnas dang 'bu srin gyi sde tshan* (non-aquatic & aquatic worms and insects, which includes reptiles, fish, and crustaceans)

In this text, there are some remarkable changes in categories and overall classification. The author divides *materia medica* into ten categories, which fall under three main divisions or kinds (*rigs*):[8] treasures (including minerals, stones, and salts), exudents and plants, and animals. This is a new hierarchical ordering in Tibetan medical texts, one that seems particularly driven by a concerted effort to organise *materia medica* into orders familiar to the modern subject: minerals, plants, and animals. While one might argue that these divisions could have existed at the time of writing of the *Four Tantras* (Tibetans may have acknowledged some important differences between a rock, a tree, and a person, for example),[9] they do not exist as overtly marked

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[8] The level of these divisions would equate probably more directly with English 'kingdom' but I have chosen to retain the more literal meaning of the Tibetan term *rigs*. *Rigs* is used in terms such as *mi rigs* (human kind, humanity; also used to translate Chinese 民族 *minzu*, 'nationality' or 'ethnic group') where the meaning is clearly not as general as 'kingdom.'

[9] Interestingly, while I was interviewing a village doctor in the Dechen area (northwest of Rgyal thang), I found that the basic divisions I assume exist between a

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categories in the text. In addition, the elaborated section on 'animals' seems especially in keeping with contemporary scientific interpretations of the divisions between mammals, birds, reptiles, and insects (although the latter two get classed together in the text), divisions that do not exist in the *Four Tantras* (nor the *Blue Beryl* or the *Crystal Garland*, which I will discuss below). I would argue that these changes clearly reflect the influence of modern science on traditional conceptualisations of natural kinds, an influence that has undoubtedly increased within the past several decades.

The hierarchical restructuring introduced by Gaway Dorje has the added effect, I suggest, of equalising categories in a way that is nonexistent in earlier texts. Since kind (*rigs*) becomes an organising principle, categories of *materia medica* in the *Crystal Mirror* are all based on constitutional similarities of material substance. That is to say, plants, animals, and minerals are all different because they are made of different types of matter, at least at some level. These categories are not defined by considerations of preparation, habitat, root quality (as seems plausible for some categories in the *Four Tantras*) or more generally nature/essence (*ngo bo*) as related to efficacy. So while the ten categories of materia medica in the *Four Tantras* may be defined by slightly different criteria for each category, the *Crystal Mirror* superimposes the overriding criterion of type of substance on all materials. This in effect creates categories that are calibrated and 'equalised' to be based on the overriding principle of substance; such a principle does not appear to exist in the *Four Tantras*. Even if one could argue that *ngo bo* (nature/essence) is the primary principle according to which categories are recognised in the *Four Tantras*, such a principle is not based on substance but rather in the interactive energies of the five elements.

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rock, a tree, and a person were not so basic to him. He had a very difficult time explaining if/how these three were different and seemed little impressed by my explanations based on sentience and biological functioning. There does seem to be evidence to suggest that a basic contrast between plants, animals, and people is commonly recognised cross-culturally, however, as pointed out to me by Gene Hunn.

Lastly, the categories of materia medica in the *Crystal Mirror* (as with the *Crystal Garland*) are not discussed in the context of efficacy. In fact, efficacy as a topic in its own right is not highlighted at all in this text. I will return to a discussion of this point below.

RGYUD BZHI   *SHEL GYI ME LONG*

*Gter dngos kyi rigs (Treasures)

Rin po che yi sman (Precious Medicine) ⟶ *Rin po che'i sman* (Precious)

Sa sman (Earth Medicine) ⟶ *Sa rdo'i sman* (Earth, Stone)

Rdo'i sman (Stone Medicine)

Tshwa sna'i sman (Salt)

Rtsi shing gi rigs (Plants)

Shing sman (Woody Medicine) ⟶ *Shing sman* (Woody Medicine)

    rtsa ba (roots)
    ldum bu (trunks)
    sdong bu (stems)   *sdong po* (stems)
    yal ga (branches)   *yal phran* (small branches)
    rkang (pith)
    zhun pa (bark)   *pags pa* (bark)
    thang chu (exudent/gum)   *tshi ba thang chu* (exudent)
    lo ma (leaves)   *lo ma* (leaves)
    me tog (flowers)   *me tog* (flowers)
    'bras bu (fruit)   *'bras bu* (fruit)

Rtsi sman (Exudent Medicine) ⟶ *Rtsi sman* (Exudent Medicine)

Thang sman (Medicine from the Plains)

Sngo sman (Herbal Medicine) ⟶ *Sngo ldum sman* (Herbal)

'Bru'i sman (Grain Medicine)

Srog chags sman (Animal Medicine) ⟶ *Srog chags kyi rigs* (Animals)
'o 'thung sde tshan (mammals)
bya rigs sde tshan (birds)

skam chu gnyis gnas dang 'bu srin gyis sde tshan (non-aquatic & aquatic insects [and reptiles])
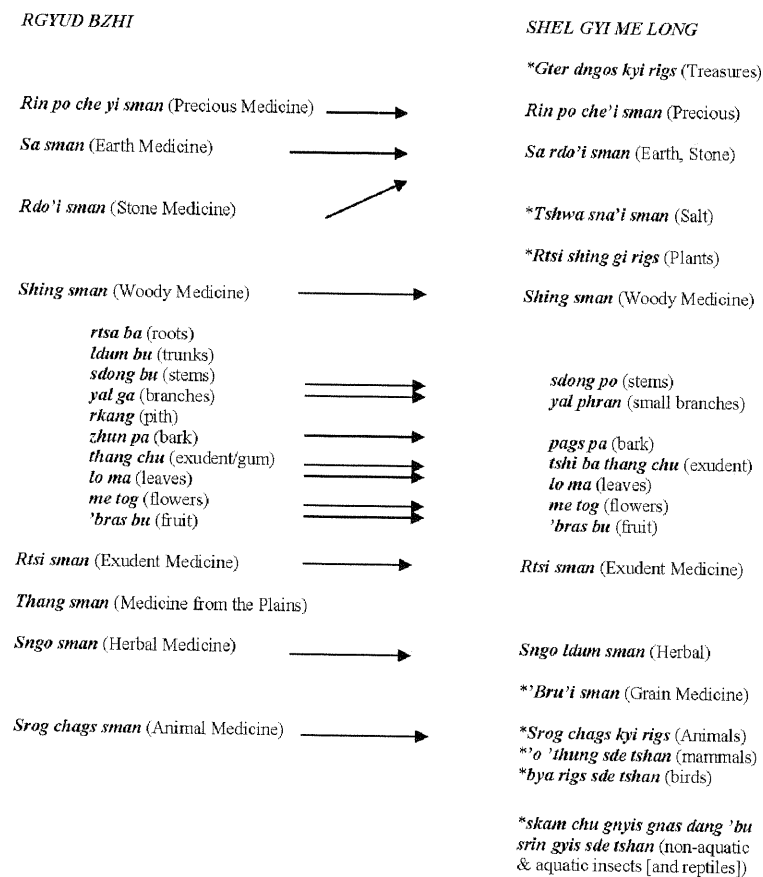
Figure 1. Diagram comparing categories of *materia medica* in *Four Tantras* and *Crystal Mirror*. A * indicates a 'new' category (appearing in *Crystal Mirror* but not in *Four Tantras*).

Classification of plants: comparison of *Four Tantras* and *Crystal Mirror*

Having established the context within which we find plant classifications (that is, in the larger context of all *materia medica* of Tibetan medicine), let us now examine more closely plant classifications in these two texts. While the *Four Tantras* is memorised, at least in part, during a doctor's formal education, the *Crystal Mirror* is used as a reference book among the doctors with whom I studied, particularly for identification purposes while doctors are in the field collecting plants.[10] There are five main points of difference between the classification of plants in the *Four Tantras* and the *Crystal Mirror*, to which I now turn.

First, as related above, the *Four Tantras* does not categorise 'plants' into any higher order, as the *Crystal Mirror* does with the category *rtsi shing gi rigs*. *Rtsi shing* appears to be a neologism that can be glossed as the general term 'plant' or flora. It appears this is the meaning of the term as used in the *Crystal*

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[10] Another important text in the study of classification is the *Crystal Garland of Medicine* (*Shel gong 'phreng*) written by Geshe Tenzin Phuntsok (Bstan 'dzin phun tsogs) (b.1672), in either 1727 or 1737. The *Crystal Garland* has 13 categories of *material medica*. Although this text does not appear to be extensively utilised by most doctors (this is not a text, for instance, which was readily at hand in doctors' offices or clinics nor did it seem that parts of it were committed to memory), it is studied during the course of a doctor's training. One of the doctors with whom I worked especially urged me to locate a copy to study since my primary interest was in plant classification. (Locating some of these texts in China was not easy. A friend of a friend finally found a copy of the *Crystal Garland* in Lhasa and brought it back to Zhongdian for me.) In the present analysis the *Crystal Garland* is useful because of its interpretive insight and as an important historical link between the *Four Tantras* and the *Crystal Mirror*. Two Chinese texts utilised by Rgyal thang doctors, *Diqing Zang yao* and *Zang yao zhi*, use completely different classificatory systems than either the *Four Tantras*, *Blue Beryl*, *Crystal Garland* or *Crystal Mirror*. It is important to note that while these two Chinese-language texts were often referenced for various information (plant descriptions and locations, and alternate names, for example), the classificatory schema contained within them did not appear to be utilised, at least not explicitly.

Mirror, given that three of the four categories within this order include plant-only material exclusively. And yet clearly the category of *rtsi* is one that includes non-plant materials and seems to be based upon the characteristic of exuding a sticky substance; thus the order *rtsi shing* cannot be translated strictly as 'plants' in the context of medical texts (and indeed in a local context, *rtsi shing* does not appear to mean the general term 'plant' to most people in Rgyal thang). One of the doctors with whom I worked had strong reservations about using *rtsi shing* as an accurate translation of the modern Chinese term *zhiwu* ('plant'); in fact, he explicitly stated that *rtsi shing* is an incorrect translation of *zhiwu*.[11] Thus the *Crystal Mirror* appears to be referring to *rtsi shing* as generalised 'plant,' although the use of this term in both written and spoken Tibetan in the medical context is complicated by other connotations of the term. (Interestingly, this is not the case for Chinese *zhiwu* and while in the field I found that *zhiwu*, a modern term derived from Japanese, was used most

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[11] The ambiguity about the boundaries of these categories might be usefully attended to by way of prototype theory; this states that category membership is often determined by reference to a prototypical member (the prototype), which is the most psychologically salient representative of the category. The famous example usually given is that a robin is a prototypical bird for most English-speaking North Americans (its image is drawn upon first and foremost as representing the category 'bird'). A penguin, on the other hand, is not a prototypical bird and generally is not immediately thought of as the most salient example of 'bird' (see Rosch 1981; Lakoff 1973). Prototype theory relies on consensus (a survey of a community in the Amazon basin would reveal a different prototypical bird than a robin, for instance). The theory is also largely based on psychological analysis of reasoning and judgment. Because of its orientation in the latter, I find that it is difficult to successfully apply the concept of a prototype in the present analysis of plant classification in medical texts because I simply do not have the data to do so. It would be interesting, for instance, to examine what doctors consider the prototypical members of each of these categories presented in the various texts to be (rather than examining the examples—with no indication of which are prototypical—given in the texts). This brings up an important difficulty of an analysis that relies on textual information alone.

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effectively both by myself and the doctors to refer to generalised plant or flora.) The lack of a generalised term for 'plant' in the *Four Tantras* is not surprising and is in fact quite common in traditional systems throughout the world. We can speculate that the use of *rtsi shing* in the contemporary text *Crystal Mirror* reflects the influence of modernity and Western science.

Second, as also stated above, the *Crystal Mirror* uses physical characteristics as the primary determining characteristic for plant classification, unlike the *Four Tantras* which classifies according to nature/essence (*ngo bo*) as related to efficacy. Plants with especially woody stems (such as *Rhododendron sp.*, *Berberis sp.*, *Juniperus sp.*, *Rosa sp.*, *Myricaria sp.*) are categorised as *shing sman* (woody medicine) in the *Crystal Mirror* rather than *sngo sman* (herbal/salad medicine) as they are in the *Four Tantras*. *Shug pa tsher can* (*Juniperus sp.*), shown in Figure 2, is a good example of this change. In the *Four Tantras*, *shug pa tsher can* is classified under the category *sngo yi sman* (herbal medicine); in the *Crystal Mirror* the same plant is classified under *shing sman* (woody medicine). Assuming that *shug pa tsher can* refers to more or less the same plant in the two texts,[12] it could be argued that *shug pa tsher can* is classified as *sngo* (herb) in the *Four Tantras* according to its nature whereas it is classified in the *Crystal Mirror* according to having the morphological

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[12] This issue of plant identification is particularly difficult, especially in the *Four Tantras* where little descriptive detail is given of plants. (This may have been one of the concerns of Sangye Gyatso, the author of the *Blue Beryl*, when he commissioned the painting of the medical *thangkas*, many of which have a fair amount of detail to aid identification.) While it is true that even contemporary doctors complain that one name may be used for two completely different plants, this appears to be the case among certain groups of plants, particularly herbaceous ones. Exact species identification of *shug pa tsher can* in the *Four Tantras* may be impossible, but it is reasonable to assume that identification at the level of genus, *Juniperus*, is accurate.

characteristic of being woody (*shing*).[13] The significance of this is that contemporary doctors utilise the classifications of later texts; they consider *shug pa tsher can* a woody medicine, not an herbal one. So it appears that the importance of morphology as a determining characteristic in classification has had some effect on the classificatory schema used by contemporary doctors, at least in Rgyal thang.

Figure 2. Shug pa tsher can; photo by Denise M. Glover

Third, the category of *thang sman* disappears in the *Crystal Mirror*. The plants categorised as *thang sman* in earlier texts (namely, the *Four Tantras, Blue Beryl* and the *Crystal Garland*) become classified in the *Crystal Mirror* according to physical distinctions: those with woody stems get classified under Woody Medicine (*shing sman*) while those with herbaceous stems get classed under Herbal Medicine (*sngo ldum sman*). For example, *star bu* (sea buckthorn, *Hippophae sp.*), shown in Figure 3, is classified in earlier texts as *thang sman* whereas it is classified in the *Crystal Mirror* as *shing sman. Ma nu* (*Inula racemosa*), shown in Figure 4, is also classified as *thang sman* in earlier texts but then classified as *sngo ldum sman* in the *Crystal Mirror*. Contemporary

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[13] This re-classification of *shug pa tsher can*, and indeed of other genera listed above, is existent in the *Crystal Garland* and may have been initiated by author Tenzin Phuntsok himself.

Rgyal thang doctors with whom I worked used the classificatory schema of the *Crystal Mirror* for both *star bu* and *ma nu*, at least in part.
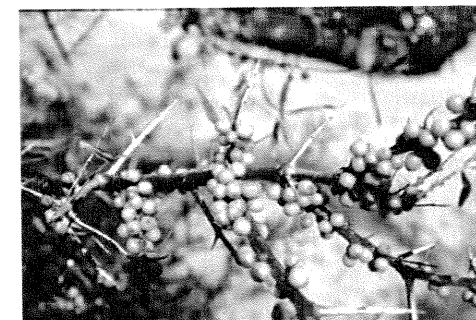

Figure 3. *Star bu*, photo by Daniel Winkler

If we use Dash (1995) and Rechung (2001) for an interpretation of *thang sman* as Decoctions, the omission of this category possibly signals that an earlier distinction in preparation becomes less important as a classificatory element. If we accept Dawa's (1999) interpretation of *thang sman* as being those plants with 'strong roots,' we could perhaps surmise that the quality of roots has become less important in classifying schema. If Pasang Yonten Arya (1998), Yonten Gyatso (personal communication), and the doctors with whom I worked are correct that *thang sman* means 'medicines from the plains,' then perhaps where plants grow has less importance in current classifications. Whichever way we interpret the meaning of this category, the eliding of *thang sman* indicates that morphology becomes the overriding concept for classification in the *Crystal Mirror*.[14] It is highly possible that the eliding of the category *thang*

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[14] Rgyal thang doctors do not appear to use the category *thang sman* very much. Once in the field when I asked my main consultant, Ma Liming, about this category he said that *thang sman* is actually a sub-category of *sngo sman*. Later, after my fieldwork was complete and I was closely examining the categories of texts, I wrote to Dr Ma and asked about the meaning of *thang sman*. He wrote back and explained that the

sman in recent texts published in the PRC could be due to a desire to eliminate interpretive variation and therefore promote a standardisation that does not include this category.[15]

Tibetan *thang* means 'plains' and that the Chinese equivalent is 平坝上药 *pingba shang yao* (literally, 'medicine on the plains'). In my letter I mentioned that I have seen other works that explain this category as being decoctions, and suggested that perhaps the *thang* is actually from Chinese 汤 *tang* ('soup'); he responded that this is incorrect. There is a difference, he noted, between *thang sman* and *sman thang*, the latter term which means decoctions (Chinese 汤药 *tang yao*). Dr Ma's interpretation is corroborated by Pasang Yonten Arya's work as well as by Yonten Gyatso (personal communication) but is in contrast with that provided by Dash (1995) and Rechung (2001) and possibly Dawa (1999).

[15] I am inclined to think that this may be the case rather than the possibility that the eliding of *thang sman* has actually influenced the way that doctors think about the meaning of this category, for two reasons. First, the *Crystal Mirror* is a very recent text, published in 1995; all of the doctors with whom I worked and whose glosses on the term *thang sman* I have referred to began their medical training before 1995. Thus this work itself is very unlikely to have influenced their thinking so profoundly in such a short period of time, not being available during the formative years of their medical training. Second, there does not appear to be a consistent difference between how this term is interpreted among doctors within the PRC and those in exile, as one would expect if there were to be a direct influence from this text (which is used in the PRC but not in exile). Of course the assumption with which I am working is that the eliding of this category did not exist in medical training before the publication of the *Crystal Mirror* nor in recent publications (and training) in exile, which may prove to be incorrect.
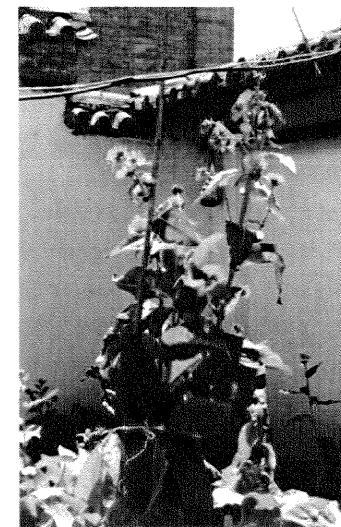
Figure 4. *Ma nu*, photo by Denise M. Glover

Fourth, the category of grain (*'bru*) gets transplanted from a category of foodstuff (*zas*) in the *Four Tantras* (Chapter 15) to one of medicine (*sman*) in the *Crystal Mirror*, under the category *rtsi shing rigs*, 'exudents and plants.'[16] The doctors with whom I worked readily admit that foodstuff has important medicinal properties and will prescribe eating or avoiding certain food as an important regimen of treatment, although foodstuff does not appear to be an ingredient in compounded medicines. Interestingly, I never heard doctors refer to such foodstuffs as medicines (*sman*) during the course of my fieldwork, although in a recent letter from one of my consultants, he indicates that crops (*lo thog*) are a type of 'plant medicine' (*skye dngos sman*). Thus it could be that grains are *logically* a type of medicine, but *semantically* they are thought

[16] In the *Crystal Garland*, grains are categorised under the class of 'crop medicine from the fields' (*zhing gi lo thog las byung ba'i sman*) and this may have been the transitioning point were grains moved from being a type of foodstuff (crops) to being labeled a type of medicine (*sman*).

more of as a type of food (an argument made by linguist Anna Wierzbicka, 1984). In the *Crystal Mirror*, however, grains are reclassified as plants since this is the category under which grains fit best (they are certainly not a mineral or an animal). Again, the overriding concern with adhering to categories of Western science stands out.

Fifth, under the category of *shing sman*, the *Four Tantras* establishes ten morphological aspects of the plant to consider, while the *Crystal Mirror* recognises only seven. The aspects missing in the later text include roots (*rtsa ba*), trunks (*ldum bu*), and pith (*rkang*). Although I am not certain of this, I suspect that this is another signal that strict morphological considerations for classification as *shing sman* were not in place in the early texts. Although trees have roots, trunks, and pith, these parts are generally not utilised very extensively (possibly due to difficulty in access) in the Tibetan medical system. Thus the fact that these parts are *included* in the category of *shing sman* in the *Four Tantras* may signal that this category included members that were not woody-stemmed trees. Thus, one could surmise that the meaning of *shing* has changed to refer most explicitly to morphology, at least in the medical context.

Conclusion

The most general characteristic of *materia medica* classifications in the *Crystal Mirror* (and other contemporary medical texts, both Chinese and Tibetan), is the influence of modern science. This is most apparent in the overall hierarchical structure, where life-form ('kingdom') categories recognised by 20th-century Linnean classification (plant, animal, mineral) are those with the highest levels of inclusion.[17] Classification of plants in the *Crystal Mirror* is

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[17] The tripartite organisation of organic and inorganic matter into plants, animals, and minerals can actually be traced back to Carl Linnaeus, the 18th-century Swedish botanist and taxonomist who is famously known for introducing binomial nomenclature into the sciences. Biologists in the 21st century now argue that there are at least five major kingdoms or, in some schemas, three major domains (above the level of kingdom) of organic life, with minerals being excluded from these classifications (since

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based primarily on the principle of physical characteristics/morphology rather than that of nature/essence as in the *Four Tantras* (and also the *Blue Beryl*). While physical characteristics may be a factor in a plant's nature/essence, it is not explained as such in the early medical texts; at least the particular nature/essence of a plant is not dependent upon physical characteristics alone. Nature/essence also depends on taste (*ro*), aftertaste (*zhu rjes*), and potency (*nus pa*), which are themselves dependent on the composition of five elements. It is not so much that the *Crystal Mirror* ignores the important characteristics of taste, aftertaste, and potency, but rather that *they are no longer organising principles of classification* as they are in early texts. One could thus summarise that modern texts are organised more like texts of science than those of medicine, as the earlier texts are. While certainly contemporary texts maintain important information about the medicinal uses and properties of plants, this information is no longer the central organising principle of *materia medica.*

Given this summary, from an anthropological perspective it is important to ask what effects contemporary medical texts may have on the classificatory propensities of Tibetan doctors. I will conclude briefly by addressing this question. We have seen there are quite clear effects in terms of how particular plants get classified and I have indicated that doctors tend to follow the classifications of the *Crystal Mirror* in terms of highlighting physical characteristics as an important classificatory principle. Yet such effects are not hegemonic. In fact, it may be that the effects of privileging physical characteristics as an important principle of classification is in part mitigated by the other classificatory schemas that Tibetan doctors engage with. In particular, during the course of my research, I found that classifying plants according to the disorder(s) they treat was an especially salient schema and appeared as the most common way of classifying plants in sorting tasks that I asked doctors to

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they are not biological). Yet I would argue that the Linnaean approach can still be considered 'modern' in that it has held sway in the natural sciences until quite recently and may in fact continue to be the more influential schema to the modern subject (except those trained in biology).

perform.[18] Interestingly, this type of classification (according to disorder) is specified in the *Four Tantras* (Book II, Chapter 21) but not in contemporary texts, including the *Crystal Mirror*. Although modern texts do include information on which disorders plants treat, given along with information on taste, potency, physical description of the plant, its flowers, etc., none of them actually group plants by disorder(s) treated. This is quite revealing given the predominance of classifying plants by disorder among Tibetan doctors in Rgyal thang. It seems to indicate that although doctors adhere somewhat to the classificatory schemas of newer texts (*shug pa tsher can* is considered a type of *shing sman*, in accordance with the *Crystal Mirror*, for example) they also utilise a system of classification that has not been modified for centuries: classification by disorder. In addition, it appears that some of the classifications of Western science as exemplified in the *Crystal Mirror* have not quite caught on (i.e., the use of neologism *rtsi shing* as 'plant' or the category of grains (*'bru*) as medicine), at least among the doctors with whom I studied. This points to the complexity of plant and *materia medica* classifications among Tibetan doctors, as multiple classificatory schemas are used for multiple functions.[19] In addition, it shows that both contemporary and historical texts are

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[18] Such tasks are commonly used in the field of ethnobiology. One is asked to sort items (photos, names written on pieces of paper, or actual specimens) into piles according to those which 'belong together' (instructions are usually phrased in this generalised manner). The idea of these tasks is to obtain an understanding of categories and categorical membership within a particular domain (in addition, the sorting needs to be accompanied by discussion).

[19] Classification according to physical characteristics, as exemplified in the *Crystal Mirror*, could potentially be beneficial for two inductive purposes. First, if one wanted to quickly locate or reference information on a particular plant, one would simply have to know the basic morphology of the plant in question (essentially, if it is a tree, an herb, or a grain) and then the plant could be easily located under the proper category (assuming one knew the name of the plant). If one had forgotten the taste, potency, heating/cooling characteristics of a plant and/or could not remember which disorder(s) the plant treated, morphology would be an easy, observable characteristic to focus on.

influential in the cognitive worlds of these doctors as they continue to practise the art and science of Tibetan medicine in the PRC.

Secondly, if one came upon a plant while collecting but did not know much about the plant (less probable for experienced doctors, but not for novices), one could also use morphology as a reference with which to locate the plant in the text.

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