

Some Preliminary Remarks on Human and Animal *Materia Medica* in Tibetan Medicine

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1. Introduction

There probably has never been a medical system, past or present, that did not make use of some animal-derived products.¹ The phenomenon of zootherapy—that is, using therapeutics based on medicines obtained from animals, or ultimately deriving from them—occurs all over the world and reaches back into antiquity.² Domestic and wild animals, as well as their byproducts, were important ingredients in drugs used for curative, protective, and preventive medicine. They were employed by physicians in Mesopotamia, Egypt, Rome, and Greece.³ The medical traditions in Asia made ample use of animals and their products. Regarding Chinese medicine, it is estimated that about thirteen percent of all medicinal substances derive from animals.⁴ According to some authors, more than 1,500 animal species can be utilized for medicinal purposes.⁵ An even higher percentage of animal-based substances can be found in the Indian tradition of Ayurveda. It seems that about fifteen to twenty percent of its *materia medica* derives from animal products. They are frequently recorded in the classical texts of Ayurveda. In the *Suśruta-saṃhitā*, one finds approximately two hundred and twenty-five types of animals, while one also reads of two hundred and thirty types of animals and three hundred and eighty types of animal substances in the *Caraka-saṃhitā*.⁶ Naturally, the use of animals is not limited to the written treatises of the prevailing Ayurvedic tradition but can also be found

¹ I would like to thank Andrew Taylor and Lucia Galli for editing the English version of this essay.

² Alves and Rosa (2005: 2).

³ Alves et al. (2014).

⁴ Still (2003: 118).

⁵ Alves and Rosa (2005: 2).

⁶ Unnikrishnan (1998: 2).

in folk medicine as well. A recent review summarising and analysing the data in fifteen research works on zootherapeutic practices in different parts of India concludes that about one hundred and nine animals are used in two hundred and seventy medical applications.⁷

The medical traditions of China and India had a lasting impact on Tibetan medicine, an influence that can partially be observed in the use of some specific animals and the substances obtained from them. Naturally the use of animals and animal-derived products was also based on indigenous knowledge, independent from the medical systems of neighbouring countries. It seems that zotherapy was an integral part of the expertise of each Tibetan doctor. However, there are only a few studies addressing this subject in some depth. In the nineties, Virinder Singh prepared a list of wild animals used in Tibetan medicine for the Indian branch of TRAFFIC, a non-governmental organization that monitors the wildlife trade.⁸ He did not carry out fieldwork but drew his information from a booklet on Tibetan drugs compiled by Tsewang Jigme Tsarong that was published in Kalimpong in 1986.⁹

He found more than a hundred drugs containing animal substances. In 2005, Chandra Prakash Kala conducted fieldwork in Ladakh and Lahaul-Spiti in northwestern India between 1998 and 2001 in order to evaluate the current practice of *am chi*, traditional practitioners of Tibetan medicine. He also recorded the ingredients used for Tibetan drugs. He found that the use of animal organs is a common practice among *am chi*. He documented thirty-eight animal species, the majority of which—thirty-one—were species of wild animals. He states,

The use of wolf tongue and antelope horns was admitted by 95% of amchis, which indicates the significance of these organs in Tibetan medicine. The most costly organs used by amchis were the musk pod of musk deer and gall bladder of Asian elephant.¹⁰

Kala's fieldwork provided precious insight into the *am chi*'s tradition but was also limited to a specific research area and to contemporary practices. A recent ethno-pharmacological study on animal-derived products in Tibetan medicine done by Bhutanese and Australian

⁷ Mahawar and Jaroli (2008: 10).

⁸ See Singh (1990). The report is not dated. The TRAFFIC web site lists it under January 1980 but this date is impossible, because books are listed in the bibliography that were issued between 1976 and 1990. Moreover, the first edition of Tsarong's book appeared in 1986 (see next footnote).

⁹ Tsarong (1986).

¹⁰ Kala (2005: 1335).

scholars combined the evaluation of three written sources on Tibetan medicine together with modern books on Tibetan drugs in Bhutan and oral interviews with Bhutanese senior physicians for confirmation. They then identified the scientific names for the animals on the list they had obtained. They found

73 natural products belonging to 29 categories derived from 45 medicinal animals (36 vertebrates and 9 invertebrates), comprising of 9 taxonomic categories and 30 zoological families. Out of 116 formulations currently produced, 87 of them contain one or more extracts and products obtained from 13 medicinal animals to treat more than 124 traditionally classified illnesses.¹¹

Their results impressively show that animals were and still are an essential and constitutive part of therapeutical and pharmacological knowledge in the Bhutanese form of traditional healing that is based on Tibetan medicine.

The present article intends to supplement and broaden the findings given above by taking a historical approach, examining five clinically-oriented treatises from the 11th to the 15th centuries and two drug lists from the 19th and 20th centuries. The main objective is to discern which animals were used and how frequently they occur. The ethno-pharmacological uses or traditional medical indications will not be considered, for they are too numerous to list and discuss in this paper. This must be left for future research, probably in the form of specialised studies on specific animals. The traditional classification of animals in Tibetan medicine will also not be outlined here as I have already discussed it in detail in a paper already in press.¹² The Western identification of the animals in Tibetan medicine always takes the most common identification.¹³ Before examining some selected Tibetan works, I will make some remarks and briefly introduce four animal-derived substances that were very commonly used in Tibetan medicine.

2. *Common wild animal materia medica*

When speaking about the frequency of animal use in Tibetan medicine, one must begin with a note of caution. As mentioned above, in this paper I will examine how often certain animals occurred in historical Tibetan written treatises, but this does not

¹¹ Yeshi et al. (2017: 192).

¹² Czaja (in press).

¹³ One should note, however, that there occasionally existed different views in publications on Tibetan *materia medica*.

mean that we can be certain how frequently they were actually employed by Tibetan doctors. One would need data on the frequency of illness in Tibet, but such statistics and figures are totally absent for Tibetan medicine. There is also no tradition of case studies recorded by doctors in the past, as is found in Chinese medicine for instance. Moreover, the dosage of an ingredient is usually not recorded in medical works. So we remain completely uninformed about the quantity of a given animal product, whether it was just a very tiny amount or a substantial portion. Similarly, we cannot be certain about the use and application of specific therapies and drugs in practice. In other words, the inclusion of therapies and drugs does not tell us how popular they were among practitioners, how often they were applied and prescribed (regardless of the frequency of a given illness but as part of a style of practice of individual doctors or of a family tradition). Another very important aspect is the constant and popular substitution of *materia medica* in Tibetan medicine.¹⁴ Naturally this also concerns animals and the substances derived from them. We can only speculate whether a doctor actually used an animal-derived ingredient or regularly substituted it. One may express a further note of warning regarding the data drawn from the treatises examined in this paper. A comparison is only partially possible, because each treatise has its own agenda, providing a selection of medical instructions that were not intended to deal with all diseases to the same extent. On the other hand, this lack of information might also be a kind of advantage, as it allows one to learn about the use of animals as a historical practice. Furthermore, one should be aware of the clear distinction between clinically-oriented treatises and drug lists. The latter evidently developed out of the former, but in the doctor's need to provide a concise and practical catalogue of drugs (and their ingredients and indications) the authors usually omit external therapies, diet instructions, and many other medical measures. Strictly speaking, the occurrence of animals in clinical works and drug lists are not comparable. Nevertheless I believe that to be worth doing, because none of them—clinical works and drug lists—could claim to represent Tibetan medicine alone; both shape and reflect the practical use of *materia medica*. Lists of drugs gained more importance from the 18th century onwards and show, to a certain degree, on which drugs doctors most relied.

Before investigating the use of animals in some clinical works, I would like to briefly introduce four products that came from wild animals and were very frequently used in Tibetan medicine. It is

¹⁴ On substitution, see Sabernig (2011) and Czaja (2017).

impossible to consult any Tibetan medical work without reading their names on every second or third page. I think it is therefore justified to group them together. These four very common wild animal products used in Tibetan medicine were honey, musk, bear's bile, and bezoar. Tibetan doctors distinguished several kinds of honey. For example, bsTan 'dzin phun tshogs (b. 1672) distinguishes eight types of honey based on colour, the site of collection, their basic effect on humans, and which animals produced the honey.¹⁵ In Tibetan medicine, honey was mainly used as a vehicle delivering the drug to a disease (*sman rta*). It seems that there was no beekeeping as such in Tibet, and honey had to be traded mainly from Nepal.¹⁶ Modern research on honeybee products, such as honey, propolis, and royal jelly, speaks of various health benefits based on honey's antibiotic, antiviral, and antifungal properties.¹⁷ Musk, a substance from the gland or pod of a musk deer, was an important trading commodity in the past.¹⁸ It was and still is widely used in Tibetan and Chinese medicine. As musk is still highly sought after in present times, musk deer farming has been established in order to meet the high demand.¹⁹ In Tibetan medicine, it could be used to eliminate poison and for numerous other medical indications. It is a very frequently used ingredient in various Tibetan drugs. Equally regularly used was the bile of the Asian black bear in Tibetan and Chinese medicine, also in the form of the dried gallbladder with bile. The use of bear's bile was very widespread. Its Tibetan medical indications are too diverse to be listed here. For instance, Tibetan doctors employed it in wound treatment as it was said to remove rotten tissue and generate new one. Modern research attributes a wide range of pharmacological actions to it and has found evidence of its antimicrobial and anti-inflammatory effects. The fourth very common animal product in Tibetan medicine is known as *giwam* or *giwang* (*gi wam*, *gi wang*). It has been identified as an elephant's bezoar, enterolith, intestinal calculi, gallstone, or bile.²⁰ It seems that it corresponds to the medicinal substance called *rocana* or *gorocana* in Indian Ayurveda. The former can be understood as bezoar in general, and the latter is usually interpreted as cow's bile, solidified ox-bile, or

¹⁵ *Shel gong shel phreng* 454/10.

¹⁶ Crane (1999: 284f.).

¹⁷ See for instance Pasupuleti et al. (2017).

¹⁸ See Akasoy and Yoeli-Tialim (2007) and King (2011). The musk deer is generally identified with the dwarf musk deer (that is, the Chinese forest musk deer), the Alpine musk deer, or the Siberian musk deer. For references see Czaja (2017).

¹⁹ See for instance Yang et al. (2003); Meng et al. (2011).

²⁰ Sabernig (2011: 89).

a gallstone formed in bile inside the gallbladder of cattle.²¹ Today *giwam* is the gallstone from domestic buffalos or cows.²² Bhutanese doctors import it every year from India. In this article, I will use the simple term bezoar. Unless otherwise indicated, it refers to *giwam*, the bezoar of an elephant or ox. The animal substance *giwam* was traditionally used to alleviate contagious fever, poisoning, liver diseases, and fever of solid viscera. Due to the importance of this group of very common animal products, I will list them separately when discussing the occurrence of animal *materia medica*, as they can be considered as possessing a special status in Tibetan medicine. In the next paragraph, I will examine some selected Tibetan medical treatises, briefly introduce these works, provide data on domestic and wild animals (including humans), and offer some preliminary thoughts at the end.

3. *Animals in clinical treatises*

The selected treatises were written between the 11th and the 15th centuries. Their authors were well-known physicians who wanted to share their knowledge with their pupils and future generations of doctors. The treatises are of differing length and their range of subjects varies. Some represent a compilation of medical instructions handed down within a certain family or medical tradition. Some have only a single author. In sum, they allow an insight into the practical side of this formative phase of Tibetan medicine.

3.1. *The Black Pithy Volume of Oral Instructions*

During the 11th century, a doctor named sKyes bu me lha came to the Tibetan regions from his homeland, located somewhere to the west of Tibet. It seems that his theoretical knowledge and his practical expertise had a lasting influence on Tibetan medicine. There are several written texts said to be authored by him, but it seems that only one work survived and is extant. It is entitled *The Black Pithy Volume of Oral Instructions* (*Be'u bum nag po*). It is a collection of about forty practical instructions dealing with a variety of subjects. It includes diagnostic techniques, such as the taking of a pulse, methods of examining urine, faeces, and vomit, as well as internal and external therapies, such as medication, blood-letting, and moxibustion for various diseases.

²¹ See Siklós (1996: 133 n. 52); Dash and Kashyap (1980: 202); Dash (1991: 186); Sharma (1992: 461); Sharma and Dash (1997 vol. 4: 479).

²² Yeshe et al. (2017: 199).

A survey of human and animal *materia medica* produces the following data:

| | human and common animal <i>materia medica</i> | number of occurrences |
|---|---|-----------------------|
| 0 | human | 19 |
| 1 | honey | 49 |
| 2 | musk | 41 |
| 3 | bear's bile | 32 |
| 4 | bezoar | 27 |

Fig. 1 — Number of occurrences of human *materia medica* and of the four most common animal *materia medica* in The Black Pithy Volume of Oral Instructions

| | domestic animal <i>materia medica</i> | number of occurrences |
|---|---------------------------------------|-----------------------|
| 1 | sheep | 32 |
| 2 | <i>dzomo</i> | 19 |
| 3 | pig | 15 |
| 4 | cow / ox | 15 |
| 5 | goat | 12 |
| 6 | donkey | 5 |
| 7 | dog | 3 |

Fig. 2 — Number of occurrences of domestic animal *materia medica* in The Black Pithy Volume of Oral Instructions

| | wild animal <i>materia medica</i> | number of occurrences |
|---|-----------------------------------|-----------------------|
| 1 | shellac | 25 |
| 2 | crab | 23 |
| 3 | rhino | 11 |
| 4 | wild yak | 7 |
| 5 | serow | 6 |
| 6 | wolf | 5 |
| 7 | scorpion | 1 |

Fig. 3 — Number of occurrences of wild animal *materia medica* in The Black Pithy Volume of Oral Instructions

Reviewing how often animals and their products occur in this medical collection (Fig. 1–3), it is evident that honey and musk are the most important of the animal products listed above. Bear's bile and bezoar also figure highly. Among domestic animals, sheep are most highly valued by sKyes bu me lha, mainly because of the meat. The *dzomo* (*mdzo mo*), a female yak-cattle crossbreed, gives yogurt and buttermilk.²³ The pig provided meat among other products (he did not use pig excrement. This is important because pig's excrement could be used for medical purposes, see below). The cow and ox gave not only meat, butter, and yogurt, but also urine. It appears that the most cherished substances from wild animals came from shellac, followed by crabs as a close second. They had to be brought from regions to the south of Tibet, as did rhinoceros' horn. The usage of these *materia medica* is not due to the foreign origin of sKyes bu me lha, but is, as we will see, common in Tibetan medicine. He often recommends the use of the horn and the meat of wild yaks, which is interesting because this is in contrast to the other physicians discussed in this article. They use them rarely compared to the other animal *materia medica*.

3.2. The Four Tantras

Yon tan mgon po's fundamental treatise offers a wealth of information on treating diseases. Its third part, the *Instructional Tantra*, deals with numerous illnesses in ninety-two chapters. Its last part, the *Subsequent Tantra*, contains chapters on medicinal powder, pills, and other drugs for a great variety of ailments. If one searches for *materia medica* of human origin, one finds a rather high number of human body parts and substances used for medicinal purposes (Fig. 4).

| | human and common animal <i>materia medica</i> | number of occurrences |
|---|---|-----------------------|
| 0 | human | 246 |
| 1 | honey | 291 |
| 2 | bear's bile | 263 |
| 3 | musk | 184 |
| 4 | bezoar | 120 |

Fig. 4 – Number of occurrences of human *materia medica* and of the four most common animal *materia medica* in the Four Tantras

²³ On the *dzomo*, see Mizuno and Lobsang Tenpa (2015: 141f.).

Furthermore, one can also recognize that honey and bear's bile occupy the top ranks among the four most common animal *materia medica*, whereas musk and bezoar occur in significantly fewer numbers (Fig. 4). The section on domestic animals is led by *materia medica* deriving from cows and oxen. They are followed in succession by goat, sheep, horse, pig, and others. Yaks and their hybrids are just of medium importance. The top position of cattle can probably be explained by the huge influence of Ayurvedic medicine in Yon tan mgon po's work (Fig. 5, 6):

| | domestic animal <i>materia medica</i> | number of occurrences |
|----|---------------------------------------|-----------------------|
| 1 | cow / ox | 178 |
| 2 | goat | 127 |
| 3 | sheep | 96 |
| 4 | horse | 66 |
| 5 | pig | 65 |
| 6 | fish | 57 |
| 7 | donkey | 54 |
| 8 | dog | 45 |
| 9 | poultry | 31 |
| 10 | yak / <i>dri</i> ²⁴ | 32 |
| 11 | <i>dzomo</i> | 29 |
| 12 | cat | 11 |
| 13 | <i>bamen</i> ²⁵ | 3 |
| 14 | mule | 1 |
| 15 | <i>töl</i> ²⁶ | 1 |
| 16 | camel | 1 |

Fig. 5 – Number of occurrences of *materia medica* coming from domestic animals in the Four Tantras

| | animal <i>materia medica</i> | number of occurrences |
|---|------------------------------|-----------------------|
| 1 | urine | 91 |
| 2 | milk | 20 |
| 3 | butter | 14 |
| 4 | meat | 14 |
| 5 | yogurt | 13 |
| 6 | dung | 12 |
| 7 | buttermilk | 11 |
| 8 | thin hair | 4 |
| 9 | bile | 3 |

²⁴ The Tibetans call only the male yak. The female is called a *dri* ('bri).

²⁵ A *bamen* (*ba men*) is the term for buffalo-calf or the *bamen* deer. The latter is a crossbreed between the wild Indian gaur, also called the Indian bison, and the domestic cow, see Mizuno and Lobsang Tenpa (2015: 143).

²⁶ A *töl* (*rtol*) is a crossbreed between a *dzomo* and a yak.

| | | |
|----|--------|---|
| 10 | bone | 2 |
| 11 | kidney | 2 |
| 12 | horn | 2 |
| 13 | spleen | 1 |
| 14 | hoof | 1 |
| 15 | blood | 1 |
| 16 | skin | 1 |
| 17 | heart | 1 |

Fig. 6 — Number of occurrences of materia medica from cow and ox in the Four Tantras

In Indian medicine and ritual, the “five products derived from a cow” (*ba yi nam lnga, pañcagavya*) have immense importance, and usually consist of milk, curd, buttermilk, urine, and dung. Particularly, cow’s urine was considered to have medicinal properties and was used for therapeutic purposes in Indian medicine.²⁷ Tibetan physicians, especially those whose expertise was based on the Indian tradition of the *Aṣṭāṅgahr̥daya-saṃhitā* medical treatise, such as Yon tan mgon po and Darma mgon po, frequently recommended the use of cow’s urine in their works.

| | wild animal <i>materia medica</i> | number of occurrences |
|-----|-----------------------------------|-----------------------|
| 1 | shellac | 54 |
| 2 | rhino | 53 |
| 3 | cowrie shell | 47 |
| 4 | snake | 38 |
| 5 | crab | 38 |
| 6 | blister beetle | 35 |
| 7 | red deer | 34 |
| 8 | serow | 24 |
| ... | ... | ... |
| 96 | stink bug | 1 |

Fig. 7 — Number of occurrences of wild animal materia medica in the Four Tantras

Regarding wild animal *materia medica*, the *Four Tantras* made use of shellac, freshwater crab, and rhino horn more often than other body parts and products of wild animals, as in the *The Black Pithy Volume of Oral Instructions* by sKyes bu me lha, but it is supplemented by cowrie shells and snakes (Fig. 6). The blister beetle played an important role in cleansing the “channels” (on this see below).

²⁷ For cow urine in Ayurveda, see Randhawa (2010); Randhawa and Sharma (2015).

3.3. Medical Treatments. A Royal Treasury

The work *The Royal Treasury* (*Rgyal po'i dkor mdzod*) is a medical text authored by Grags pa rgyal mtshan (1147–1216) and probably later edited by his nephew Kun dga' rgyal mtshan (1182–1251). It shows a medical tradition practiced at that time at the monastery of Sa skya. The treatise describes treatments for various ailments and diseases, especially head injuries. Substances from humans are frequently mentioned in *The Royal Treasury*. The four commonly used animal products, beginning with musk, and followed by bear's bile, honey and bezoar, all appear with high frequency (Fig. 8).

| | human and common animal <i>materia medica</i> | number of occurrences |
|---|---|-----------------------|
| 0 | human | 120 |
| 1 | musk | 30 |
| 2 | bear's bile | 29 |
| 3 | honey | 24 |
| 4 | bezoar | 16 |

Fig. 8 – Number of occurrences of human *materia medica* and the four common animal *materia medica* in the Medical Treatments. A Royal Treasury

The group of domestic animals are dominated by goat, sheep, horse, dog, and cattle. The four most common wild animals are represented by rhino, shellac, red deer, and crab (Fig. 9, 10).

| | domestic animal <i>materia medica</i> | number of occurrences |
|---|---------------------------------------|-----------------------|
| 1 | goat | 31 |
| 2 | sheep | 17 |
| 3 | horse | 12 |
| 4 | dog | 11 |
| 5 | cow / ox | 7 |
| 6 | pig | 4 |
| 7 | donkey | 4 |
| 8 | yak | 2 |
| 9 | poultry | 2 |

Fig. 9 – Number of occurrences of domestic animal *materia medica* in Medical Treatments. A Royal Treasury

| | wild animal <i>materia medica</i> | number of occurrences |
|---|-----------------------------------|-----------------------|
| 1 | rhino | 12 |
| 2 | shellac | 10 |
| 3 | red deer | 8 |
| 4 | crab | 6 |
| 5 | conch-shell | 4 |

| | | |
|-----|-------|-----|
| 6 | fish | 4 |
| 7 | wolf | 3 |
| 8 | serow | 3 |
| ... | ... | ... |
| 26 | raven | 1 |

Fig. 10 — Number of occurrences of wild animal materia medica in Medical Treatments. A Royal Treasury

The middle ranks are taken by conch-shell, fish, wolf, and serow. If one examines the domestic goat, sheep, horse, and dog, one further learns which body parts and substances were of interest for the authors of *The Royal Treasury* (Fig. 11).

| | | | | | | | | |
|---|--------|----|--------|----|-------|----|----------|----|
| | goat | 30 | sheep | 17 | horse | 12 | dog | 11 |
| 1 | meat | 10 | meat | 7 | bone | 3 | dung | 5 |
| 2 | milk | 5 | fat | 2 | milk | 2 | hair | 3 |
| 3 | blood | 5 | bezoar | 2 | dung | 2 | testicle | 1 |
| 4 | hair | 3 | kidney | 1 | mane | 2 | bone | 1 |
| 5 | bone | 2 | liver | 1 | blood | 1 | brain | 1 |
| 6 | butter | 2 | dung | 1 | urine | 1 | teeth | 1 |
| 7 | dung | 2 | skull | 1 | | | | |
| 8 | urine | 2 | bone | 1 | | | | |
| 9 | bezoar | 1 | | | | | | |

Fig. 11 — Number of occurrences of specific domestic animal materia medica in Medical Treatments. A Royal Treasury

As expected, one finds meat, milk, and butter for the diet a patient would need to consume in order to keep healthy, yet many substances were not used for eating or drinking but rather as part of preparing drugs and applications. The latter is most evident in the usage of a dog's different body parts and its excrement. Reviewing the tables, it is obvious that animals were just as important for diet as for drugs and applications. It also reveals that Tibetan doctors did not only make use of native fauna, but also relied to a high degree on animals found in neighbouring areas, such as the Himalayan region, Bhutan, and India. This means that trade in animal products was a necessity for their medical practice.

The tabular overview also shows that livestock were extremely important for affordable health care, as were wild animals. Interestingly, yaks and hybrids played only a minor role in medical treatments compared to goats, sheep, horses, and so on. Notably, it is possible that the high importance of goats, sheep, and horses for human medicine corresponds to an interesting economic model based on pastoralism in Central Asia and Tibet. In a recent study on

the emergence of agriculture on the Tibetan Plateau, it is argued that the

earliest agriculture was based on millets (broomcorn and foxtail) and was accompanied by a pig-based economic system. This early economy, which likely originated in western China, was later replaced by a better adapted system, similar to those identified in Central Asia. The later system was based on crops such as wheat, barley, peas, and millets, as well as sheep and goat pastoralism. Wild resources obtained through hunting, fishing, and foraging appear to have been complements to the diet on the Tibetan Plateau.²⁸

It could be that a transition toward pastoralism took place in Central Asia in a period between approximately 800 B.C.E and 400 C.E. d'Alpoim Guedes et al. write, "[...] an economic system almost exclusively based on sheep, goat, and horse pastoralism quickly spread across Central Asia and brought with it a distinct cultural package [...]"²⁹ More research is needed to illuminate the relationship between folk medicine and elite medicine in Tibet. Perhaps for the moment one can work on the assumption that the tradition of using animals and their products to maintain human health did not begin with the formation of a written (and oral) body of medical knowledge that we call today 'Tibetan medicine.' I especially believe that in medicine the principle 'one keeps what one knows' is at work, even across generations, often regardless of the opinions of the established medical tradition, simply persevering in what has proved beneficial by experience. In other words, sheep, goats, and horses provided men with what they needed for their daily life, as well as in cases of sickness, as a kind of time-proven clinical experience.

In contrast to this, the absence of yaks, otherwise seen as the very symbol of Tibetanness, is noticeable. Yaks play a minor role for diet, drugs, and applications. Interestingly, this agrees with an observation made by Daniel J. Miller on pastoralism in Tibet: "yaks are generally thought to characterize Tibetan nomadic production, however, in much of western Tibet sheep and goats are more important economically" (it seems that he used the term western Tibet for the region of Tsang).³⁰ Miller gives an interesting example from the Pha lha nomad area of northwestern Ngam ring County. He found that the sheep in possession of a large nomad family only represented 28% of the livestock biomass, although contributed about 60% of total income. Goats were 21% of the livestock biomass and contributed

²⁸ d'Alpoim Guedes et al. (2013: 255).

²⁹ *ibid.*: 263.

³⁰ Miller (1999: 18f.).

35% of the income. The ratio for yaks looked very different. They only contributed 5% of total livestock income but comprised 46% of total livestock biomass.³¹ It is evident that sheep and goats were of high economic value. Naturally how a livestock herd was put together differed regionally. Nomads usually raise a mix of different animal species that vary across regions according to rangeland factors and suitability of landscape. Across most of western Tibet, sheep and goats are more common than yaks. The former are usually milked, while in the eastern Tibetan Plateau yaks were more commonly used to supply milk products.³² Seen from this perspective, i.e. the historic development of pastoralism and its economic aspects, the high medicinal value of sheep, goats, and horses is less surprising, as they were an important source of both income and well-being. On the other hand, yaks and hybrids were unimportant or less important in Tibetan medicine, at least in central Tibetan medical treatises. It is safe to say that livestock was a pillar of human health care; Tibetan medicine would not exist without it. Therefore any research on animal use in Tibetan medicine must include the use of domesticated animals and not just wild animals. I will say more on both, especially with regard to specific medical issues, in the following paragraph where I discuss the work of a doctor who was active decades after the *Medical Treatments: A Royal Treasury* was composed.

3.4. Concise Outlines and Abridged Outlines

gTsang stod Darma mgon po, who compiled both of the treatises mentioned above, lived in the 13th century. He belonged to a famous medical school known as Cher rje after its founder Cher rje Zhang ston zhig po. It emerged during the 12th century in Mang yul, a region close to Nepal. It seems that its medical expertise was deeply rooted in the Indian Ayurvedic treatise *Aṣṭāṅgahrdaya-saṃhitā*. It is said that Cher rje Zhang ston zhig po had three main pupils, Darma mgon po being one of them. He spent his life in the region of Mang yul, with prolonged stays in Gung thang and sKyid rong. It is reported that he established a centre for the study of the *Aṣṭāṅgahrdaya-saṃhitā* and related texts in bSam rdzong in Mustang, in present-day Nepal. We are relatively well-informed about his medical views because of the existence to present day of two of his compilations, entitled the *Concise Outlines* and the *Abridged Outlines*. They contain more than a hundred brief treatises on various medical

³¹ *ibid.*: 19.

³² *ibid.*: 18.

subjects. Most of them deal with the treatment of diseases, but their author also explains how to diagnose an illness, locate 'channels' (of major importance for blood-letting and moxibustion), and make compounded drugs, among many other subjects.

If one searches his compilations for recommended human body parts and excretions, one finds the comparably high number of one hundred and twenty cases (Fig. 12).

| | human and common animal <i>materia medica</i> | number of occurrences |
|---|---|-----------------------|
| 0 | human | 120 |
| 1 | honey | 179 |
| 2 | bear's bile | 136 |
| 3 | musk | 133 |
| 4 | bezoar | 93 |

Fig. 12 – Number of occurrences of human *materia medica* and the four common animal *materia medica* in the Concise Outlines and the Abridged Outlines

The four commonly used animal products occupy a high percentage out of total animal substances used. Honey takes the first position, undisputed even in comparison with all human, domestic, and other wild animal substances. It is followed by bear's bile and musk, which are virtually level. Bezoar (of an elephant or cattle) takes the fourth place. The important group of domestic animals is led by cattle, followed by goats in second place, with horses, sheep, and dogs occupying the following positions (Fig. 13).

| | animal <i>materia medica</i> | number of occurrences |
|----|------------------------------|-----------------------|
| 1 | cow / ox | 173 |
| 2 | goat | 117 |
| 3 | horse | 69 |
| 4 | sheep | 68 |
| 5 | dog | 61 |
| 6 | pig | 35 |
| 7 | donkey | 33 |
| 8 | <i>dzomo</i> | 29 |
| 9 | yak / <i>dri</i> | 27 |
| 10 | poultry | 23 |
| 11 | cat | 21 |
| 12 | camel | 8 |
| 13 | <i>yung</i> ³³ | 3 |

³³ A *yung* (g.*yung*) is a crossbred between yak and cow.

| | | |
|----|---------------|---|
| 14 | water buffalo | 1 |
| 15 | <i>töl</i> | 1 |

Fig. 13 – Number of occurrences of domestic animal materia medica the Concise Outlines and the Abridged Outlines

Pigs, donkeys, *dzomo*, male and female yaks, poultry and cats take the middle positions. If one examines the wild animals recommended by Darma mgon po for medicinal purposes, one finds crabs taking the leading position, followed by rhinos, red deer, and snakes (Fig. 14). The blister beetle takes fifth place (on this see below).

| | wild animal <i>materia medica</i> | number of occurrences |
|-----|-----------------------------------|-----------------------|
| 1 | crab | 40 |
| 2 | rhino | 38 |
| 3 | red deer | 36 |
| 4 | snake | 32 |
| 5 | blister beetle | 31 |
| 6 | shellac | 30 |
| 7 | serow | 27 |
| 8 | wolf | 26 |
| 9 | sparrow | 24 |
| 10 | fish | 23 |
| 11 | bearded vulture | 23 |
| 12 | peacock | 19 |
| 13 | cowrie shell | 19 |
| 14 | fox | 15 |
| 15 | rock agama | 14 |
| ... | ... | ... |
| 82 | fish eagle | 1 |

Fig. 14 – Number of occurrences of wild animal materia medica in the Concise Outlines and the Abridged Outlines

It might be interesting to take a closer look at some specific groups of *materia medica*. Human body parts and excretions vary noticeably (Fig. 15).

| | human products | number of occurrences |
|---|----------------|-----------------------|
| 1 | bile | 25 |
| 2 | flesh | 20 |
| 3 | urine | 17 |
| 4 | hair | 16 |
| 5 | bone | 13 |
| 6 | skull | 11 |
| 7 | milk | 11 |

| | | |
|----|-------------|---|
| 8 | faeces | 9 |
| 9 | blood | 6 |
| 10 | fat | 1 |
| 11 | unspecified | 1 |
| 12 | unspecified | 1 |

Fig. 15 – Number of occurrences of human *materia medica* in the Concise Outlines and the Abridged Outlines

The gallbladder with bile is the most important substance. It corresponds to an overall high appreciation for bile of animal origin in Tibetan medicine. In descending order follow: flesh, urine, hair, bone, skull, milk, faeces, blood and fat. It is obvious that human organs are lacking in comparison with animal organs, which were used in medical treatment. Moreover, if one further examines the top-ranking cattle, one learns that their urine, milk, and butter were the foremost utilized substances (Fig. 16).

| | <i>materia medica</i> of cow, ox and calves | number of occurrences |
|----|---|-----------------------|
| 1 | urine | 46 |
| 2 | milk | 30 |
| 3 | butter | 21 |
| 4 | meat | 17 |
| 5 | yogurt | 17 |
| 6 | dung | 14 |
| 7 | horn | 6 |
| 8 | buttermilk | 5 |
| 9 | bile | 4 |
| 10 | teeth | 4 |
| 11 | skin | 3 |
| 12 | dairy goods | 2 |
| 13 | hooves | 2 |
| 14 | hair | 2 |
| 15 | lungs | 2 |
| 16 | blood | 2 |
| 17 | kidney | 1 |
| 18 | blood | 1 |
| 19 | bones | 1 |
| 20 | penis | 1 |
| 21 | testicles | 1 |
| 22 | entrails (?) | 1 |

Fig. 16 – Number of occurrences of *materia medica* coming from cows, oxen, and calves in the Concise Outlines and the Abridged Outlines

Urine was often used to prepare medicine or administered for the intake of drugs. The same applies to milk and butter, but they also

had a huge importance for the dietary modifications of a patient. Meat and dietary products also played a role in a patient's diet. In general, cows were more important than oxen and calves (Fig. 17).

| | cow <i>materia medica</i> | 126 | ox <i>materia medica</i> | 37 | calf <i>materia medica</i> | 20 |
|----|------------------------------|-----|-----------------------------|----|-------------------------------|----|
| 1 | urine | 42 | meat | 8 | dung | 3 |
| 2 | milk | 27 | horn | 6 | milk | 3 |
| 3 | butter | 18 | dung | 5 | urine | 3 |
| 4 | yogurt | 14 | teeth | 3 | yogurt | 3 |
| 5 | dung | 6 | bile | 3 | butter | 3 |
| 6 | meat | 7 | hooves | 2 | lungs | 2 |
| 7 | buttermilk | 5 | skin | 2 | meat | 2 |
| 8 | dairy goods | 2 | hair | 2 | entrails (?) | 1 |
| 9 | kidney | 1 | blood | 2 | | |
| 10 | bile | 1 | urine | 1 | | |
| 11 | blood | 1 | bones | 1 | | |
| 12 | teeth | 1 | penis | 1 | | |
| 13 | skin | 1 | testicles | 1 | | |

Fig. 17 – Number of occurrences of *materia medica* coming from cow, ox and calf in the Concise Outlines and the Abridged Outlines

Cow's urine was by far the most significant substance because it possesses medicinal properties in Ayurvedic medicine, while the Cher rje medical tradition was mainly based on Vāgbhāṭa's fundamental treatise *Aṣṭāṅgahr̥daya-saṃhitā* and its commentaries.

A mix of body parts and products used for diet and for drugs and applications can also be observed for other domestic animals in Darma mgon po's compilations. A good example are goats (Fig. 18).

| | goat <i>materia medica</i> | number of occurrences |
|----|----------------------------|-----------------------|
| 1 | blood | 16 |
| 2 | milk | 13 |
| 3 | urine | 9 |
| 4 | fat | 8 |
| 5 | horns | 7 |
| 6 | hair | 7 |
| 7 | yogurt | 6 |
| 8 | milk | 6 |
| 9 | meat | 5 |
| 10 | beoar | 5 |
| 11 | skin | 5 |
| 12 | buttermilk | 4 |

| | | |
|----|---------------|---|
| 13 | bone | 3 |
| 14 | dung | 3 |
| 15 | bile | 3 |
| 16 | testicles | 3 |
| 17 | lungs | 2 |
| 18 | liver | 2 |
| 19 | brain | 2 |
| 20 | milk products | 2 |
| 21 | stomach | 1 |
| 22 | marrow | 1 |
| 23 | hooves | 1 |
| 24 | teeth | 1 |
| 25 | penis | 1 |
| 26 | heart | 1 |
| 27 | spleen | 1 |

Fig. 18 – Number of occurrences of goat materia medica in the Concise Outlines and the Abridged Outlines

Darma mgon po knows of twenty-seven body parts and products deriving from a goat that could be beneficial in medicine. Interestingly, blood takes first place. It is used in drugs and external applications, especially liquid medicaments in the form of drops and ointments. The same usage applies for goat's urine. It appears that goat's organs were also occasionally used.

To get a more complete view of Darma mgon po's use of animals and their products, one can examine the birds he utilized in his medical practice (Fig. 19).

| | bird <i>materia medica</i> | number of occurrences |
|----|----------------------------|-----------------------|
| 1 | sparrow | 24 |
| 2 | bearded vulture | 22 |
| 3 | peacock | 19 |
| 4 | eagle-owl | 13 |
| 5 | cinereous vulture | 12 |
| 6 | pigeon | 10 |
| 7 | cormorant | 9 |
| 8 | snowcock | 9 |
| 9 | magpie | 5 |
| 10 | partridge | 5 |
| 11 | long-eared owl | 3 |
| 12 | hoopoe | 2 |
| 13 | chough | 1 |
| 14 | <i>bu</i> ³⁴ | 1 |

³⁴ The bird *bu* (*bya lbu*) could not be identified.

| | | |
|----|------------|---|
| 15 | fish eagle | 1 |
|----|------------|---|

Fig. 19 – Number of occurrences of materia medica coming from birds in the Concise Outlines and the Abridged Outlines

Interestingly, the sparrow is the most common. The bearded vulture and the peacock occur less frequently and occupy lower positions. Eagle-owl, cinereous vulture, pigeon, cormorant, and snowcock are in the middle. Magpie, partridge, long-eared owl, hoopoe, chough, the bird *lbu* (unidentified), and fish eagle represent roughly the lower third in this list. A few times in Darma mgon po's works, he does not specify which bird should be used, but instead just says that one should take bird droppings, bird eggs, and so on (Fig. 20).

| | bird materia medica | number of occurrences |
|---|---------------------|-----------------------|
| 1 | bird droppings | 6 |
| 2 | meat eating bird | 4 |
| 3 | bird feathers | 3 |
| 4 | bird meat | 3 |
| 5 | bird eggs | 2 |

Fig. 20 – Number of occurrences of unspecified bird materia medica in the Concise Outlines and the Abridged Outlines

Summing it up, one can say that Darma mgon po's recommended usage of animals and their products is strongly influenced by the Ayurvedic tradition of the *Aṣṭāṅgahr̥daya-saṃhitā*. This is not just evident in the predominant position of cows and oxen among the domestic animals, but also elsewhere for specific wild animals. In some medical instructions, Darma mgon po copied or paraphrased entire paragraphs from this Indian medical treatise. One has the impression that in a few instances he was probably not fully aware of the true nature of specific animals mentioned in the Tibetan translation of the *Aṣṭāṅgahr̥daya-saṃhitā* that he consulted. One therefore finds the name in a corrupted form, making the meaning of the original text incomprehensible. This can be seen, for instance, in the case of *godhā*, a Sanskrit term for a kind of lizard. This also casts doubt on whether all animals mentioned by Darma mgon po were actually used in practice or were in some cases only written conventions without practical implications. Reviewing the animals in Darma mgon po's compilations, one finds that a large percentage were used for the treatment of illnesses caused by demons, very frequently in the form of fumigations. This relates to a general practice in Tibetan religion wherein one makes an incense offering to

wrathful *dharmapālas* that usually includes flesh and fat of human or animal origin. The chosen animal can correspond to the vehicle of the deity, as in the case of the *dharmapāla* rDo rje legs pa, who has a ram as his vehicle and is worshipped with incense that can include goat's meat and fat, sense organs, and solid and hollow viscera.

3.5. Ten Million of Instructions. Relics

The *Ten Million of Instructions. Relics* is a compilation of medical treatises authored by mNyam nyid rdo rje (1439–1475). It contains approximately one hundred and eighty treatises, covering all medical subjects, mainly therapies for certain diseases. In the past, slightly differing versions of this compilation existed. They often included later works of his pupils or works said to be written by him.

If one counts how often human body parts and excretions occur in this medical compilation, one obtains a rather high number (Fig. 21).

| | human and common animal <i>materia medica</i> | number of occurrences |
|---|---|-----------------------|
| 0 | human | 286 |
| 1 | musk | 353 |
| 2 | bear's bile | 172 |
| 3 | honey | 158 |
| 4 | bezoar | 145 |

Fig. 21 — Number of occurrences of human *materia medica* and of the four most common *materia medica* in the Ten Million of Instructions. Relics

They are topped only by musk, one of the four most common animal *materia medica*. There is clear gap between musk and the three remaining animal products, which are rather close together in terms of their frequency of occurrence. The leading domestic animals, namely goats, cattle, sheep, horses, *dzomo* and pigs continue to maintain a dominating presence as seen in earlier medical treatises (Fig. 22).

| | domestic animal <i>materia medica</i> | number of occurrences |
|---|---------------------------------------|-----------------------|
| 1 | goat | 92 |
| 2 | cow / ox | 84 |
| 3 | sheep | 58 |
| 4 | horse | 57 |
| 5 | <i>dzomo</i> | 56 |
| 6 | pig | 54 |
| 7 | yak / <i>dri</i> | 43 |
| 8 | dog | 34 |

| | | |
|----|-------------|----|
| 9 | poultry | 15 |
| 10 | donkey | 14 |
| 11 | <i>töl</i> | 3 |
| 12 | <i>yung</i> | 1 |

Fig. 22 — Number of occurrences of domestic animal materia medica in Ten Million of Instructions.
Relics

The list of wild animals offers some surprises (Fig. 23).

| | wild animal <i>materia medica</i> | number of occurrences |
|-----|-----------------------------------|-----------------------|
| 1 | blister beetle | 112 |
| 2 | salamander | 66 |
| 3 | rhino | 57 |
| 4 | cowrie shell | 53 |
| 5 | crab | 46 |
| 6 | sparrow | 42 |
| 7 | snake | 33 |
| 8 | peacock | 31 |
| 9 | red deer | 31 |
| 10 | fish | 29 |
| ... | ... | ... |
| 174 | raven | 1 |

Fig. 23 — Number of occurrences of wild animal materia medica in the Ten Million of Instructions.
Relics

The first position is taken by the blister beetle. Then follows a group comprised of salamander, rhino, cowrie shell, crab, and sparrow. A long list of animals starting with snakes forms the large middle part. The top rank of the blister beetle requires some explanation. It was mainly used in Tibetan medicine to cleanse the 'channels' and probably every physician had some medical instructions on this treatment that included blister beetles. It was known that blister beetles are poisonous, and doctors had developed several techniques to make sure that the poison is neutralized before the beetle is used in drugs and applications.³⁵ The next surprise in the list of wild animals is the salamander. It seems that this frequent use is a kind of specialty of mNyam nyid rdo rje. It often occurs in the context of the practice of essence extractions, tonics, and elixirs to maintain health, treating the aged, and restoring virility.³⁶ The next three animals—rhino, cowrie shell, and crab—were frequently used in Tibetan medicine in general and had to be traded from regions to the south of Tibet.

³⁵ For more information, see Czaja (in press).

³⁶ On this practice, see Gerke 2012a, 2012b, Cantwell 2017.

3.6. Medical treatises in comparison

In this section, I will draw some comparisons between the clinical treatises. I will begin by comparing the animal classes found in the *Four Tantras* and *Ten Million of Instructions. Relics*. Then I will examine birds as a specific class of animals in all clinical treatises and make a few remarks on the use of vultures in Tibetan medicine. Finally, I will compare the percentage of the main categories, namely humans and domestic and wild animals, in these sources.³⁷

The wild animal classes in the *Four Tantras* distribute as follows (Fig. 24):

| | wild animal class | number of occurrences |
|---|-------------------|-----------------------|
| 1 | arachnids | 13 |
| 2 | bivalve | 24 |
| 3 | malacostraca | 38 |
| 4 | fishes | 57 |
| 5 | reptiles | 11 |
| 6 | snail | 140 |
| 7 | birds | 166 |
| 8 | insects | 393 |
| 9 | mammals | 885 |

³⁷ The percentages on Tibetan *materia medica* in this article are roundings.

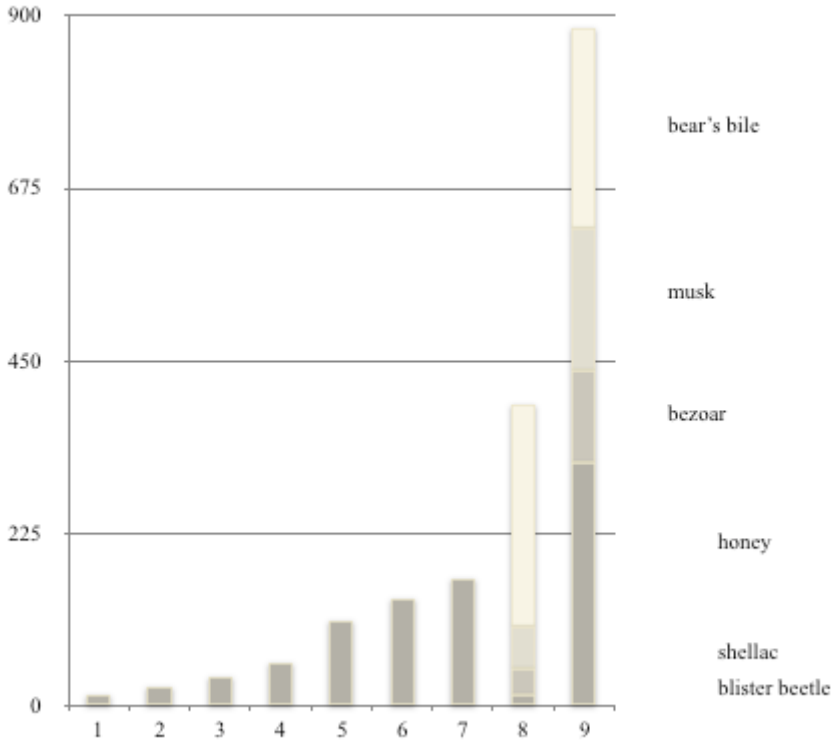
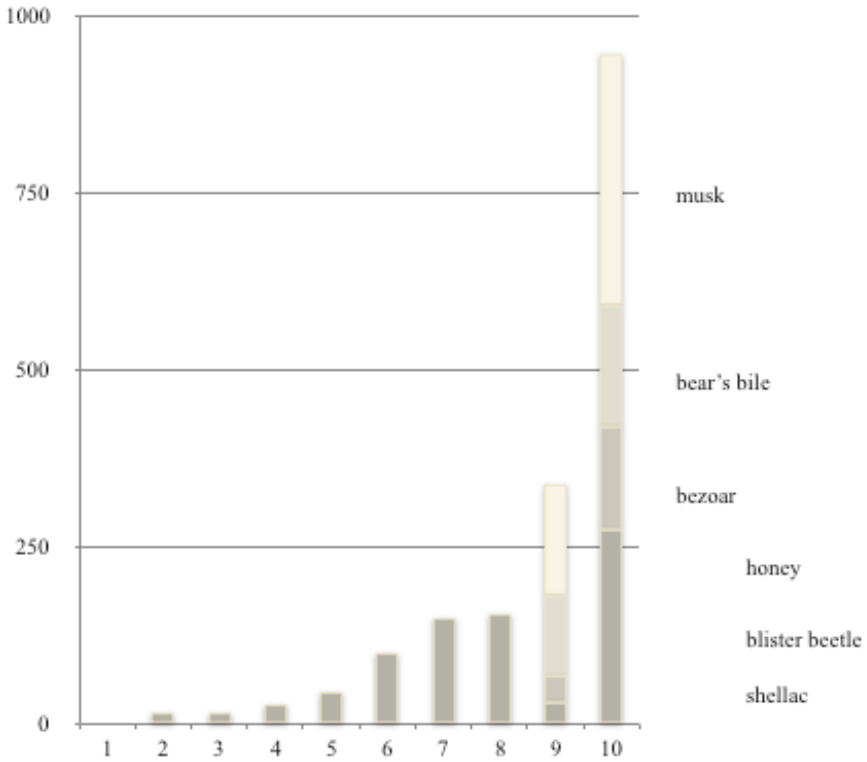


Fig. 24 — Number of occurrences of wild animals in the Four Tantras according to taxonomic class

The class of arachnids, such as scorpions, takes the lowest position in terms of quantity. There are only thirteen instances in which animals of this class are mentioned in the *Four Tantras*. The next ranks are occupied with animals that do not appear more than a hundred times in the source. They are comprised of bivalve, malacostraca, and fish. The classes of reptiles, snails, and birds occur between a hundred and two hundred times each. The largest group consists of insects and mammals. The animal classes in the *Ten Million of Instructions. Relics* is comparable (Fig. 25).



| | wild animal class | number of occurrences |
|----|-------------------|-----------------------|
| 1 | ascomycota | 1 |
| 2 | bivalve | 16 |
| 3 | arachnids | 17 |
| 4 | fishes | 29 |
| 5 | malacostraca | 46 |
| 6 | snails | 100 |
| 7 | reptils | 150 |
| 8 | birds | 157 |
| 9 | insects | 339 |
| 10 | mammals | 945 |

Fig. 25 — Number of occurrences of wild animals in the Ten Million of Instructions. Relics according to taxonomic class

The classes with less than a hundred occurrences are comprised of ascomycota, bivalve, arachnids, fish, and malacostraca. Snails, reptiles, and birds appear between a hundred and two hundred times. Again insects and mammals are the largest classes. To sum up,

mammals (musk, bear's bile and bezoar) occupy the first position, insects (honey, shellac, blister beetle) the second, and birds the third. The next ranks are taken by reptiles and sea and freshwater snails.

As shown above, the class of birds ranks below insects and mammals in both treatises. If one adds up the bird species found in all five treatises, one finds the peacock in the top position, surely because in Tibetan medicine it was thought that it would be beneficial against poisons (Fig. 26).

| | bird <i>materia medica</i> | number of occurrences |
|----|---|-----------------------|
| 1 | peacock | 74 |
| 2 | Eurasian tree sparrow (<i>mchil ba</i>) | 66 |
| 3 | cinereous vulture | 49 |
| 4 | bearded vulture | 44 |
| 5 | eagle-owl | 24 |
| 6 | cormorant | 11 |
| 7 | snowcock | 24 |
| 8 | long-eared owl | 11 |
| 9 | Eurasian tree sparrow (<i>nas zan</i>) | 13 |
| 10 | hill pigeon | 8 |

Fig. 26 — Number of occurrences of bird *materia medica* in all five clinical treatises

This is based on beliefs coming from the Indian Ayurveda. The second position is occupied by the sparrow. There are two terms for this bird in Tibetan and it is currently unclear whether they refer to the same or different species. In publications on Tibetan *materia medica*, they are regarded as identical. If so, the sparrow would take over the top position in this ranking. The sparrow was intensively used by Darma mgon po and mNyam nyid rdo rje, but not by Yon tan mgon po. The list also reveals the high importance of vultures, especially the cinereous vulture and the bearded vulture. According to bsTan 'dzin phun tshogs (b. 1672), various body parts and excretions of the bearded vulture could be used for medical purposes. A doctor might utilize its inner organs, such as its heart, gall-bladder, and stomach. He could also make use of its eyes, throat, legs, bones and meat. Its droppings and urine too could be beneficial.³⁸ Similarly, the throat and stomach of the cinereous vulture could be of use for a Tibetan doctor. He could utilize not only its meat and brain but its feathers and droppings as well.³⁹

³⁸ *Shel gong shel phreng* 382/11, 384/11, 385/6, 388/14, 390/15, 394/, 400/18, 410/16, 413/21.

³⁹ *ibid.*: 384/11, 390/17, 396/22, 400/17, 408/13, 410/16.

It might be also interesting to compare all five treatises in terms of the respective share of human, domestic and wild animal *materia medica* (Fig. 27).

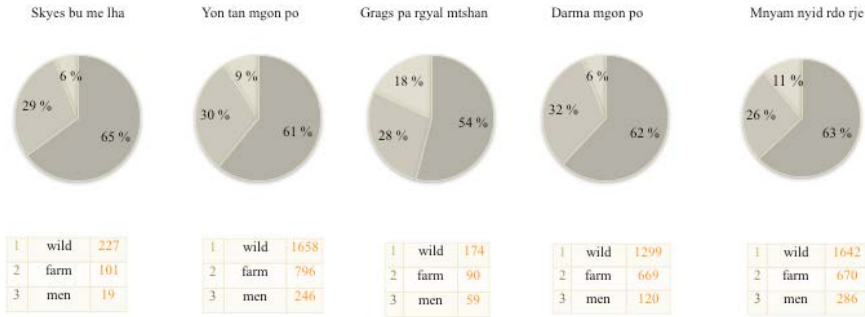


Fig. 27a – Percentage distribution of human, domestic and wild animal *materia medica* in all five clinical treatises

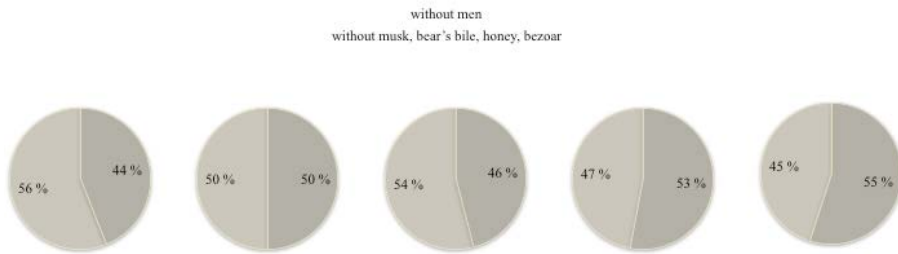


Fig. 27b – Percentage distribution of domestic and wild animal *materia medica* without the four common animal *materia medica* (below)

The upper row of diagrams shows the percentage if one includes both humans and the four common animal substances, i.e. musk, bear's bile, honey, and bezoar. The lower row of diagrams shows medicines lacking products from humans and the four common animal substances. In all five cases, the wild animals occupy the first rank, followed by domestic animals and humans. Interestingly, the percentage share of each category is quite similar. On average, human body parts and excretions made up approximately 10%, domesticated animals around 29%, and wild animals about 61%. If one excludes human *materia medica* and the four common animal substances, one obtains a percentage distribution of domestic and wild animals that is nearly equal. This means that not just wild animals, but domestic ones as well, were indispensable for maintaining human health.

It is interesting to juxtapose some of these findings and interpretations with other medical sources, especially with drug lists of a much later date, as done in the following section.

4. *Animal materia medica in drug lists*

The first treatise was composed by O rgyan Theg mchog, alias O rgyan bsTan 'dzin rgya mtsho (b. 19th cent.), a personal physician of the Thirteenth Dalai Lama. It is entitled *A Beautiful Ornament for the Concise Outlines. A Treasury of Medicine of Ambrosia* (*Zin tig mdzes rgyan bdud rtsi'i sman mdzod*). This work is actually a kind of supplement to another famous drug list authored by Kong sprul Blo gros mtha' yas, alias Yon tan rgya mtsho (1813-1899/1890). Kong sprul's work written in 1872 bears the title *A Collection of Concise Outlines. Drops of Ambrosia* (*Zin tig gces bsdus bdud rtsi'i thigs pa*). It was an important work but the difficulty in finding the relevant drugs in it was a serious shortcoming. O rgyan Theg mchog's treatise was meant to remedy this situation, so doctors could use it more easily. He described four hundred and seventy-nine drugs, arranged in accordance with the disease categories. If one tallies both the drugs containing and not containing human and animal body parts and animal-derived products, one finds that one hundred and sixty-nine drugs, or around 35%, possessed no such ingredients, and three hundred and ten drugs, or 65%, possessed such ingredients. There were animal *materia medica* of seventy-seven species. The number of human body parts and excretions was high but not exceedingly high (Fig. 28).

| | human and common animal <i>materia medica</i> | number of occurrences |
|---|---|-----------------------|
| 0 | human | 78 |
| 1 | musk | 132 |
| 2 | bezoar | 95 |
| 3 | bear's bile | 67 |
| 4 | honey | 11 |

Fig. 28 — Number of occurrences of human *materia medica* and the four common animal *materia medica* in *A Beautiful Ornament for the Concise Outlines. A Treasury of Medicine of Ambrosia*

Reviewing the four common animal products, one notices the low frequency of honey, with only eleven occurrences. The remaining substances of musk, bezoar, and bear's bile show the usual high number of occurrences but with distinct gaps between each. This indicates that one hundred and twenty drugs, or around 25%, contain

musk, ninety-four drugs, or around 20%, contain (elephant's or ox) bezoar, and sixty-six drugs, or approximately 18%, contain bear's bile. Concerning the use of domestic and wild animals, there are a few surprises (Fig. 29, 30).

| | domestic animal <i>materia medica</i> | number of occurrences |
|-----|---------------------------------------|-----------------------|
| 1 | pig | 28 |
| 2 | cow | 10 |
| 3 | goat | 9 |
| 4 | sheep | 9 |
| 5 | horse | 6 |
| 6 | dog | 6 |
| 7 | poultry | 6 |
| 8 | <i>dri</i> | 5 |
| 9 | donkey | 3 |
| ... | ... | ... |
| 16 | <i>dzomo</i> | 1 |

Fig. 29 – Number of occurrences of domestic animal *materia medica* in A Beautiful Ornament for the Concise Outlines. A Treasury of Medicine of Ambrosia

| | wild animal <i>materia medica</i> | number of occurrences |
|-----|-----------------------------------|-----------------------|
| 1 | rhino | 39 |
| 2 | crab | 34 |
| 3 | shellac | 18 |
| 4 | bearded vulture | 16 |
| 5 | cowry | 16 |
| 6 | red deer | 15 |
| 7 | blister beetle | 11 |
| 8 | conch-shell | 11 |
| 9 | fossils | 11 |
| ... | ... | ... |
| 56 | mammot | 1 |

Fig.30 – Number of occurrences of wild animal *materia medica* in A Beautiful Ornament for the Concise Outlines. A Treasury of Medicine of Ambrosia

The most noticeable is the top position held by the pig, which will be explained below. The remaining domestic animals, such as cows, goats, sheep, and horses correspond to the clinical medial treatises. The section of the wild animals is led by rhinos and crabs. They are followed by a group consisting of shellacs, bearded vultures, cowry, and red deer. Similarly, the blister beetle and the conch-shell frequently occur in clinical works, as discussed above.

However, the occurrence of fossils is noteworthy. They are known as 'dragon's bone' (*'brug rus*) in Tibetan medicine, the same

designation as in Chinese medicine (龙骨 *lónggǔ*). They are usually the mineralized vertebrae and bones of the extremities, mostly of mammals such as deer, elephants, mammoths, and so on. They were recommended in the clinical treatises discussed above, like the *Four Tantras* by Yon tan mgon po, the *Concise Outlines* and the *Abridged Outlines* by Darma mgon po and the *Ten Million of Instructions. Relics* by mNyam nyid rdo rje. However, they do not occur very frequently. They appear only four times in the entire *Four Tantras*, ten times in the *Concise Outlines* and the *Abridged Outlines*, and twelve times in the *Ten Million of Instructions. Relics*. They were used for a variety of ailments and diseases, such as bone fractures and wound treatments. The comparatively high occurrence of fossilized bones in O rgyan Theg mchog's drug list is therefore unusual.

The second list of drugs considered in this paper was written by mKhyen rab nor bu (1883–1962) in 1951. It bears the title *The Book on Medical Compounds Essential for the Practice. An Excellent Vase of Ambrosia (Lag len nyer mkho'i sman gyi sbyor dpe bdud rtsi'i bum bzang)*.⁴⁰ It has to be seen in connection with a second work authored by him a few years before in 1949. This second work is a drug list entitled *A Summary of the Healing Potentials of Medical Compounds. Elegant Sayings of Happiness and Well-being (Sman sbyor gyi nus pa phyogs bsdus phan bde'i legs bshad)*.⁴¹ It describes eighty-five drugs, but he gives only their names and their healing potentials. As a result, mKhyen rab nor bu wrote another work in 1951, in which he provided the ingredients and their quantity for these eighty-five drugs and many others. I consulted the work *An Excellent Vase of Ambrosia* to gather information on animal parts and products. It contains one hundred and thirty-one drugs in total. Thirty drugs, or around 23%, are without animals. The majority, one hundred and one drugs, or around 77%, have human and animal parts and products. Altogether the animals belong to sixty different species.

Compared to O rgyan Theg mchog's drug list, the number of human body parts and excretions is similar. Whereas they can be found in approximately 16% of the drugs in the former drug list, around 18% of the drugs in the latter drug list contain them (Fig. 31).

| | human and common animal <i>materia medica</i> | number of occurrences |
|---|---|-----------------------|
| 0 | human products | 24 |
| 1 | musk | 47 |

⁴⁰ Mkhayen rab nor bu ([1951] 2007).

⁴¹ *Ibid.*

| | | |
|---|-------------|----|
| 2 | bezoar | 23 |
| 3 | bear's bile | 15 |
| 4 | honey | 3 |

Fig. 31 — Number of occurrences of human *materia medica* and the four common animal *materia medica* in An Excellent Vase of Ambrosia

The frequency and distribution of the four common animal products is also comparable. The first rank is taken by musk, followed by bezoar and bear's bile. Honey is in fourth place and occurs only three times. Expressed as a percentage, honey is found in around 3% of all drugs in both treatises (Fig. 34, see below). Bear's bile is an ingredient of approximately 22% of all drugs in O rgyan Theg mchog's list and around 17% in mKhyen rab nor bu's list. Moreover, O rgyan Theg mchog adds bezoar to around 31% of all drugs, while mKhyen rab nor bu adds it in around 26%. The most common ingredient, musk, occurs in 43% of the drugs recommended by O rgyan Theg mchog. This is less than the approximately 53% in mKhyen rab nor bu's work. Thus the difference between both lists is not significant and would have more or less similar implications on the demand for these four animal products. Musk would be a highly sought-after ingredient and honey was much less important for a doctor using the drugs on these lists.

Both drug lists are also comparable in their usage of other body parts and products coming from wild animals (Fig. 32).

| | wild animal <i>materia medica</i> | number of occurrences |
|-----|-----------------------------------|-----------------------|
| 1 | crab | 10 |
| 2 | rhino | 6 |
| 3 | cowry | 4 |
| 4 | pangolin | 4 |
| 5 | shellac | 4 |
| 6 | dragon bone | 3 |
| 7 | beared vulture | 3 |
| 8 | snake | 3 |
| 9 | cinereous vulture | 2 |
| ... | ... | ... |
| 22 | fox | 1 |

Fig. 32 — Number of occurrences of wild animal *materia medica* in An Excellent Vase of Ambrosia

Crabs, rhinos, cowry, and shellacs were often used by mKhyen rab nor bu to compound drugs. One also finds fossils, alias 'dragon's bones', among his ingredients. A special case is the occurrence of the

Chinese pangolin.⁴² The domestic animals also correspond in both drug lists (Fig. 33).

| | domestic animal <i>materia medica</i> | number of occurrences |
|---|--|-----------------------|
| 1 | pig | 8 |
| 2 | goat | 5 |
| 3 | cow / ox | 3 |
| 4 | horse | 2 |
| 5 | dog | 2 |
| 6 | <i>dri</i> | 1 |
| 7 | sheep | 1 |

Fig. 33 — Number of occurrences of domestic animal *materia medica* in An Excellent Vase of Ambrosia

Again, as in the case of O rgyan Theg mchog, pigs appear most often in the list of recommended drugs. If one compares the first six animals of O rgyan Theg mchog's drugs with a clinical treatise such as *The Royal Treasury* by Grags pa rgyal mtshan, the large percentage of pigs becomes very obvious. In Grags pa rgyal mtshan's work they comprise only approximately 8% of animal parts and products, but 41% in the list of O rgyan Theg mchog. If one takes a closer look at which parts and products of the pig were mainly used by O rgyan Theg mchog, one learns that around 82% are pig faeces. These are customarily added in the form of so-called 'black camphor' (*gar nag, gar bu nag po*), i.e. pig faeces burnt until they turn into powder. There are various drugs called Garnag-5, Garnag-8, Garnag-10, in which pig faeces constitutes the main ingredient. They were and are prescribed to cure various ailments like indigestion. The difference between the clinical treatises and the drug lists on this question might possibly be explained by how these drug lists came into existence. The drugs were drawn from a great variety of medical texts like the *Supplement to the Tantra of Instructions* (*Man ngag lhan thabs*) by Sangs rgyas rgya mtsho (1653–1705). This very influential treatise emphasized potent substances and drugs that in some regards might be seen as 'tantric' medicine.

Finally, one can compare the four very common animal substances in all medical works (Fig. 34).

⁴² See Czaja (2017: 146f.).

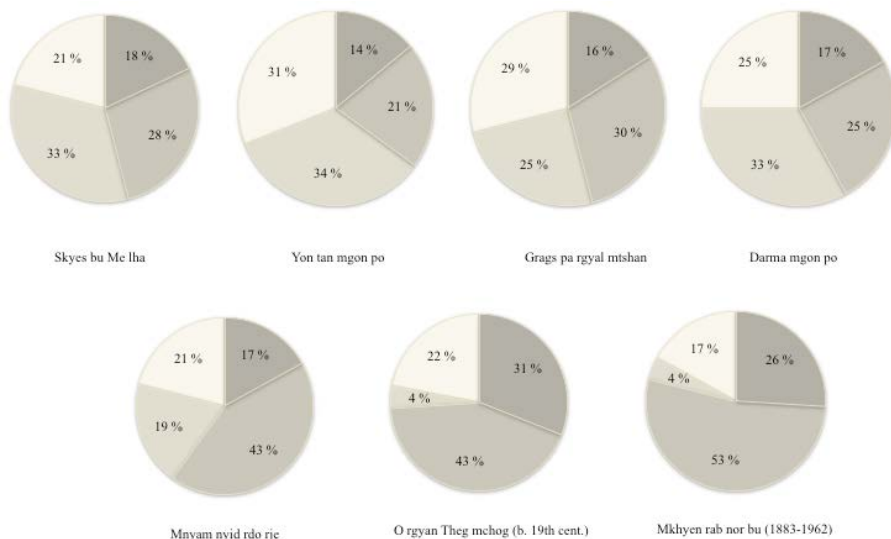


Fig. 34 — Percentage distribution of the four common animal materia medica in the five clinical treatises and in both drug lists

The diagrams show the percentage share of each category in this group. The four upper diagrams document a similar distribution with insignificant differences. It seems that the four clinical treatises written between the 11th and 13th centuries show a high level of conformity in this regard. The lower diagrams differ. There is a clear increase in musk and bear’s bile, and a decrease in honey and bezoar. More research is required to fully explain this difference. Perhaps one of the reasons might be that musk and bear’s bile were often used in wound treatment. Maybe there was a higher demand for both because of a prolonged warfare from the 15th century onwards in Tibet, but more studies are necessary to substantiate such a hypothesis.

5. Concluding remarks

There is no doubt that human and animal *materia medica* were an integral and important part of Tibetan medicine. Tibet’s medical tradition would hardly be imaginable without them. The survey given above demonstrates that one should not underestimate the *materia medica* of human origin, as they constituted an elementary means to cure ailments. Today we mainly speak of wildlife resources and their huge impact, as they are seen as a medicinal resource, but we often overlook domestic animals and their products. It is safe to say that both domestic and wild animals were equally significant in Tibetan medicine for treating diseases and maintaining human

health. It is evident that livestock was not just essential to generating an income and securing one's livelihood, but also to healing illnesses and staying healthy as well. It seems that in Tibetan medical thinking medicinal resources from domestic and wild animals, together with human *materia medica*, formed a unified whole. Moreover, it is clear that not all wild animals were used for medicinal purposes. One can also recognize clear differences as some animals were much more frequently utilized than others.

Some animal *materia medica* originated from neighbouring countries and had to be traded to be used in medical practice. Their high occurrence suggests that they were needed for effective medical treatment. It might be that they were sometimes substituted. Summing it up, it is worth exploring the world of Tibetan human and animal *materia medica* further as it will also help to understand Tibet's medicine more accurately.

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