

# Pasture Management, Indigenous Veterinary Care and the Role of the Horse in Mustang, Nepal

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## INTRODUCTION

Once a major thoroughfare for the trade of salt and grain between Tibet and Nepal's southern hills, the Mustang District in Nepal's western Himalayas remains a trading route to this day. This boot-like piece of land jutting north into western Tibet is cold, high-altitude steppe, caught in the rain shadow of Dhaulagiri Himal to the west and the Annapurna massif to the east. Much of the district lies above 2,500m, coming to a peak at 8,167m — the summit of Dhaulagiri. The Kali Gandaki River is the backbone of this district; its source is located near the Tibetan border, flowing south towards the northern Indian plains. Mustang is flanked by the Nepalese districts of Manang to the east and Dolpa to the west; the Tibetan frontier stretches north from Mustang's borders.

Mustang is one of the most remote areas in Nepal and is second in terms of the sparsity of population (Thakali 1994: 45). The district covers an area of over 3,500 sq. km. and is divided into 16 Village Development Committees (VDCs), which function as local political units. According to the 1992 Census, the total population of

the district was 14,319, not including area residents such as government and army officials, police, development workers, and Tibetan refugees (Thakali 1994: 45). Mustang can be socially and geographically divided into four regions: Lo (the northern, restricted area); Baragaon (villages of ethnically Tibetan people who live in and around the Muktinath Valley); Panchgaon; and Thak Sat Sae (villages clustered around Jomsom, the district headquarters and settlements along the Thak *Khola*, a segment of the Kali Gandaki located south of Jomsom).

Though the people of Mustang live within the geographic boundaries of Nepal, their history is also tied to Tibetan religion and culture, geography, and politics. Until 1769, when the Ghorka King, Prithivi Narayan Shah, and his army 'unified' what was a land of many small kingdoms and created the kingdom of Nepal, much of present-day Mustang was ruled by independent kings and feudal lords. These regions were, at times, closely linked to adjoining kingdoms of Western Tibet and, during other periods of history, politically linked to Lhasa, the capital of Central Tibet.<sup>1</sup> Before the unification of Nepal by

<sup>1</sup> The Raja of Lo, for instance, continued to pay tithes to Lhasa until the 1950s. For more information about the historical connections between Tibet and Mustang, see Jackson 1978, Vinding 1988, and Ramble 1993 a and b.

the Gorkha king, areas of Mustang were ruled by kings from Jumla, a region to the southwest. The only remnant of these kingdoms is the still-intact kingdom of Lo, an area corresponding to the northern third of Mustang District.

Although Lo is now open on a restricted basis to foreign travellers, the kingdom was closed to foreigners, with rare exceptions, until 1992. The lower Mustang areas (much of Baragaon, Panchgaon, and Thak Sat Sae) lie along the Annapurna Circuit, the most heavily trekked route in Nepal. The entire district lies within the Annapurna Conservation Area — the largest protected area in Nepal. Development programmes, tourism management, and so on are primarily overseen by the Annapurna Conservation Area Project (ACAP), a division of the King Mahendra Trust for Nature Conservation (KMTNC).

This paper describes traditional grazing practices in Mustang and indigenous veterinary techniques, specifically as they relate to horses. Although horses only comprise a small fraction of the total domestic livestock kept by Mustang residents, they are the fulcrum of social status and one of the most significant measures of wealth. Similarly, equine care is the most intricate and developed of all local veterinary practices. Adequate pasture land, sustainable management of these resources, productive animal husbandry, and access to effective and reliable veterinary care are integral to local subsistence in Mustang.

## **MUSTANG'S PASTORAL MANAGEMENT SYSTEMS**

### **Agro-Pastoralism**

The people of Mustang survive through a combination of animal husbandry, agricul-

ture, and trade — a lifestyle similar to the nomadic and semi-nomadic pastoralists of the Tibetan frontier and the Central Asian plains. In general, pastoralism refers to the way of life of pastoralists, their socio-economic institutions, and their land-use systems. This includes communities of nomads (so-called 'pure' pastoralists), as well as communities who live by various systems of transhumance; other forms of animal husbandry in which the pastoral component is a dominant feature are also a factor in their survival mechanisms (Miller 1995:2). This latter definition encompasses the agro-pastoralists of Mustang.

Variations in altitude, geography, and climate throughout Mustang give rise to a range of agricultural practices and growing seasons; in general, however, sustaining oneself through land cultivation alone is nearly impossible in most places throughout the district. The people of Mustang rely heavily on animal husbandry to survive. As such, access to sufficient and good-quality grazing lands is indivisible from a viable agro-pastoral lifestyle. Just as maintaining the health of one's stock is of primary concern (as healthy and/or malnourished animals are unproductive), the quality and quantity of an area's pastures, as well as the methods for managing these vital resources, determine the wealth and define the futures of agro-pastoralist communities such as those in Mustang.

The status of grasslands and the number of pastures, as well as cultivation cycles and practices, vary greatly within Mustang. A harsh climate and high altitude, as well as lack of cultivable land, dung for fertilizer, water for irrigation, and labour sharply limit cultivation (Jackson 1994:3). The villages of upper Mustang<sup>2</sup> only cultivate their fields once a year, planting in late winter (Febru-

ary-March) and harvesting in late fall (October). Barley (naked and husked varieties)<sup>3</sup>, wheat, buckwheat (bitter and sweet varieties), sweet peas, and mustard comprise the bulk of the year's yield. Some families grow green vegetables and radishes as well as apples and peaches in private fields and orchards. Settlements in lower Mustang plant and harvest twice a year, sowing in mid-February, reaping in May, and planting again in late May/early June for harvest in October. Settlements from Taya to Marpha (villages in Baragaon and Panchgaon, respectively) are famous for their apples. Large orchards line fields and nudge up against homes. These apples are locally consumed, as well as dried, distilled, and marketed in Pokhara and Kathmandu.

Despite their relative wealth, even the villagers of lower Mustang offset their income and low-yielding fields by keeping domestic livestock. Yet, the further north one travels, the more dependent these communities become on animal husbandry. The area's geography also changes dramatically as one moves up the Kali Gandaki towards Lo. Clusters of Alpine forest (particularly Juniper, Spruce, and Fir) and jagged, rocky trails segue into rolling hills and plains cross-hatched by cavernous valleys of cadmium, ochre, and vermilion-coloured earth. Pasture lands virtually devoid of trees sur-

round villages and stretch towards the snow line. The trail to the Tibetan border is a ribbon of road that seems arbitrarily fashioned along this western stretch of the Tibetan Plateau. Although cultivated fodder (grains and grasses) helps offset free-range grazing for horses, donkeys, mules, cows, and yak crossbreeds to varying degrees, all of these animals depend on area pasture resources for survival. Yak, sheep, and goats rely exclusively on free range for fodder.

### External Perspectives

In *People's Participation in Range Management: The Case of Mustang, Nepal*, Thapa (1990:6) describes the rangelands of upper Mustang as part of a bleak, dry landscape in which the majority of land is barren, uncultivable, and used for natural grazing. Despite local reliance on animal husbandry, the range is "denuded due to overuse and lack of proper management practices." The livestock population is double the carrying capacity of the rangeland (Rajbhandari and Shah 1981 in Thapa 1990:7). Brown (1983:19) describes a similar situation in his *Recommendations for Revegetation and Management of Denuded Lands in Mustang, Nepal*. Upper Mustang's range is scattered with spiny bushes, not all of which are palatable; few fodder trees

<sup>2</sup> For the purposes of this paper, I will refer to 'upper' and 'lower' Mustang. In contrast to the border drawn at Kagbeni which equates 'upper' Mustang with the restricted area, I draw this border between the villages of Samar and Tsele; whereas all villages from Samar north cultivate their fields only once annually, settlements from Tsele south cultivate twice a year (with several exceptions). The religious, geo-political, and linguistic divisions of settlements in Mustang District are much more complicated (see Schuh 1990 and Ramble 1994, 1995).

<sup>3</sup> According to Manzardo, when the people of Thak Khola reduced their production of hulled barley, a localised cost spiral began in the area. It soon became the local equivalent of an 'oil shortage', as the lack of this grain began to drive up transportation costs and with it, the cost of all other goods in the area. One can conclude that the heavy production of hulled barley in this area is directly linked to the needs of animal husbandry (1994:24). Without this fodder, the extensive and lucrative Thakali (people from Thak Khola) mule trains would be much less efficient and profitable.

exist in the area. As dung and low bushes are collected for fuel, the fertility of rangeland soil has suffered. These practices also accelerate soil erosion (Thapa: 1990:7).

Shortages of fodder, particularly free-range grasses, are becoming more acute due to the declining status of area pastures and Mustang residents' lack of access to Tibetan pasture land in winter. The Chinese invasion of Tibet gave rise to political changes between the governments of Nepal and China, eventually disrupting the centuries' old transhumance patterns. In 1983, the two governments enacted an agreement which stipulated that the movement of animals from both countries would be completely stopped by April 1988, a policy affecting about 21,000 head of livestock in Mustang alone (Thapa 1990:15). Whereas people from upper Mustang once moved their herds (particularly yaks, sheep, and goats) to pastures on the Tibetan Plateau for winter, this practice was essentially stopped.

His Majesty's Government of Nepal (HMG) realised that the closing of Tibet for grazing purposes would have a severely effect on pasture land and fodder availability in regions like Mustang. In response, the government introduced the Northern Area Pasture Development Programme (NAPDP), in collaboration with the Department of Livestock Services (DLS). This programme was particularly geared towards range management and fodder development in four 'critical' and six 'emerging' forest/feed crisis districts (Thapa 1990: 17). DLS, in conjunction with UNDP/FAO, also launched a similar programme in these four districts, including Mustang. Although the status of grasslands in lower Mustang is generally considered better than the status of those to the north, the entire district retains a repu-

tation as an area in dire need of grassland and pasture management assistance.

Thapa (1990: 49) isolated several indigenous rangeland management activities practised in upper Mustang, most of which were connected to rotational grazing, with additions such as altering the number of animals per range at different seasons, weeding pasture lands, and "asking China to help" alleviate winter pasture problems. The other primary pasture management practice mentioned by Thapa's informants was the levying of fines for herders caught grazing outside their designated village grazing areas. Forage needs in lower Mustang are primarily met by buying hay from lower Mustang, harvesting fodder from private fields, and moving animals south for the winter (Thapa 1990: 51). When asked about pasture management issues, ACAP programme officers based in lower Mustang have said that indigenous pasture management systems are limited to rotational grazing and charging fines to those who graze their animals outside their home range. Changes in property distribution and shifts in marriage structures (from polyandry to monogamy) might also be affecting overall range management throughout the district, according to ACAP.

The informants in both Thapa's thesis and Brown's report trace their management practices to those of their parents and ancestors. Likewise, ACAP and CARE Nepal field staff in Mustang mentioned that pasture management systems, like farming techniques, are integral to the overall social, cultural, and historical framework of Mustang and have been practised for generations. Thapa (1987), CARE Nepal, and ACAP personnel all mention, however, that locals are 'unaware' of problems caused by overgrazing and their roles in contributing to these problems. "Villagers are prac-

*tising the traditional system of management, but that alone is not adequate to produce more forage in such an overgrazed and overpopulated rangeland"* (Thapa 1990: 24).

According to such assessments, the people of Mustang are marginally conscious of the critical state of their ranges, as well as their roles in contributing to these problems. Indigenous systems are seen as too weak and inadequate to face the challenges of effective and sustainable resource management. Although there is value in such statements, these assertions leave one with an incomplete — and, therefore, inaccurate — picture of the status of grasslands and pasture management in Mustang. In addition to examining the workings of indigenous management systems externally, one must — as much as is possible — glimpse the internal perspectives of these systems.

### **Internal Perspectives, Historical Precedents and Political Change**

Local responses to questions like *"Do you have enough pastureland to sustain your animals?"*, *"(How) has the quantity and quality of wild and cultivated fodder changed within your lifetime?"*, or *"How do you look after your pastures?"* vary substantially throughout Mustang. The 'upper'/'lower' Mustang divide, intricacies of social stratification, and educational levels of informants all have a bearing on local awareness of such issues and, therefore, answers given. Nevertheless, it is possible to isolate trends and general assumptions regarding local perceptions of the status of area grasslands.

On the whole, the people of lower Mustang say that they are less pressed for rangelands than their northern neighbours. Glacial runoff forms relatively lush valleys near the base of the Nilgiri Himal; the

Muktinath Valley and other areas of lower Mustang harbour clusters of Alpine forests and grasslands. In upper Mustang, a virtually treeless landscape and stretches of sandy plains frame dry, difficult local realities. Whereas a Thakali living in Thini (a village across the Kali Gandaki from Jomsom) might reveal that the availability and quality of pasture land has declined in his lifetime, he is hard pressed to say his livelihood has significantly changed due to these shifts. A Loba (person from Lo) from Samzong village, for instance, would most likely say that the problem of inadequate pasture land has caused him much loss of livelihood in recent years. He might point to problems such as rivers and other water supplies drying up and insufficient winter pastures as the sources of such changes in pasture quantity and quality.

Throughout Mustang, weather patterns, fluctuating numbers of livestock, lack of access to Tibetan pasture land in winter and, to a lesser extent, fear of ghosts of Khampa guerrilla forces who occupied Mustang during the 1960s and 70s are some of the primary factors shaping local perceptions of rangeland resources.

First, weather patterns — particularly fluctuations in rain and snowfall — have direct implications for rangeland quality, and therefore, local perceptions of this quality. Adequate snow and rainfall leave pastures green, grasses long, and water sufficient according to Mustang residents from Monthang in the north to Marpha in the south. Likewise, either extreme (e.g., lack of rain or particularly heavy and/or early snow) produces devastating effects on pasture land and, consequently, livestock. Such shifts in weather also directly correlate to the amount of water available for irrigation: cultivated grasses and grains for fodder and human consumption become less sufficient and more expensive when water is in short

supply. Massive, quick climatic changes resulting in disasters such as floods and landslides can also have instant and devastating effects on local grazing land. For example, Chhoser (a VDC north of Monthang) was ravished by floods in 1986; this event destroyed a significant amount of the area's cultivated land as well as free ranges.

The number and kinds of livestock kept by Mustang residents vary both from village to village and from household to household, depending on overall community wealth, individual family income, and available range and fodder resources. This availability, however, is inextricably tied to weather patterns. Death from cold and/or starvation, during particularly harsh winters is not uncommon. Similarly, if rain and snowfall have been good for several seasons, locals tend to increase their herds, maximising profit when conditions are good and guarding against future losses. As such, the pasture management systems practised by the people of Mustang tend to fall outside the concept of 'carrying capacity' and function instead on an opportunistic model of rangeland use.<sup>4</sup> This is particularly true of sheep and goat herds, and is further exemplified by the rapidly decreasing number of yaks and their crossbreeds raised in Mustang since the closing of the Tibetan border to migrant herds in winter (Blumont 1996).

In the last twenty years, however, the number of horses kept by people in Mustang has continued to increase. Fifteen years ago, the Muktinath Valley had very few horses. Only wealthy families could afford to own these animals. Although *Thakali(s)* living between Jomsom and Tukche have a long history of keeping mules, the number and quality of horses in this area have also increased in the last two decades. Twenty years ago, the village of Monthang was home to, at most, 150 horses; now the village keeps over four hundred. The reasons for this increase are primarily tied to the wealth generated by tourism (in Mustang's unrestricted area), the hope of generating such wealth in the future (in the northern, restricted territory), and the social status connected to horses themselves.

*Thakali(s)* and Tibetan-speaking people who live in the unrestricted area of Mustang have augmented their herds of both horses and mules, renting riding horses and supplying trekking companies or individual trekkers with horses or mules to porter goods. Each riding horse earns owners between Nepali Rs 300 and 700\* per day; porter horses and mules earn between Rs 200 and Rs 350 per day.<sup>5</sup> Age-old *Thakali* mule trains now not only deal in Tibetan salt and Nepalese grains; they also carry expedition gear, beer, sodas, and choco-

<sup>4</sup> For more information on these concepts, and their implications for future range management strategies in the Himalayas and Tibetan Plateau, see Miller 1997.

<sup>5</sup> The rental price of both porter horses and riding horses are subject to change depending on season and the availability and price of fodder. Ironically, the prices for these services are more expensive in the unrestricted areas (particularly Jomsom) than they are in the restricted areas of Mustang. Whereas the former continues to become more expensive, and more 'luxurious', for independent trekkers, the latter continues to scrape what little benefit they can from 'organised group' trekking tours. Competition induced by trekking companies looking for the best bargain on porter animals has created fierce price wars in upper Mustang, particularly for porter horses. Trekking companies rent from the lowest bidder; locals are desperate to make what little profit they can, instead of having their animals sit idle in the village. Even though fodder is more expensive in upper Mustang, locals are renting pack animals for as low as Rs 180 per day. A porter horse consumes at least Rs. 100 per day in feed costs, if not Rs 150 or more, rendering the profit margin virtually nil.

\* There are 63 Nepalese rupees to one US \$.

lates to sell to trekkers. Although *Thakali*(s) are known as savvy traders and middlemen, they have increased their wealth by fortifying herds of porter animals.

Now that upper Mustang is open to foreigners on a restricted basis, *Loba*(s) have increased the number of horses kept in the hopes of benefiting from tourism. Trekkers in this and other restricted areas of Nepal are required by government regulation to porter in all food and fuel, thereby minimising environmental impact. Given such stipulations, one of the only ways that locals reap some benefit from tourism is to rent horses for riding and portering. As such, those who can afford to keep more horses (particularly in Monthang) have begun to do so.

Horses in Mustang, as with other nomadic and semi-nomadic communities across Tibet and the Central Asian plains, denote wealth and prosperity. To increase one's holdings of these animals directly correlates to one's social status. This simple fact has a bearing on the intriguing relationship to Mustang's pastures. The people of both upper and lower Mustang recognise that the increase in horses has direct negative effects on the availability of adequate pasture land for other domestic animals. Horses also consume cultivated fodder and grains at an alarming rate, compared to other livestock. And yet, because of the wealth and status this increase implies, locals have been reluctant to reduce horse herds.

Political changes in Tibet have brought about economic upheaval among pastoralists throughout northern Nepal, disrupting traditional trading patterns. These events have also had vast effects on local rangeland and livestock production systems (Miller 1995:7). In the wake of the

Dalai Lama's flight from Tibet in 1959, Tibetan pastoralists fled (with their livestock, when possible) into Nepal. Mustang's relatively easy access to Tibet, as well as its historical ties to pastoral communities on the other side of the border, precipitated the entry of large numbers of refugees to Nepal across Mustang's border. This dramatically increased environmental pressures on rangelands, leading to heavy grazing and declines in rangeland productivity. Similarly, the Sino-Nepali agreement of 1983 changed the lives of Mustang people, particularly those from Lo. This political sanction increased demands on scarce winter rangelands within Mustang's borders. The closing of the Nepal/Tibet border to winter transhumance has caused *Loba*(s) to shift their winter migration patterns; they now move south to Pokhara with horses, mules, donkeys, sheep, and goats. Yaks, however, cannot live in the lowland heat of Nepal's middle hills. Consequently, very few yaks and their crossbreeds are currently raised in Lo. What yaks remain must survive on greatly reduced areas of winter pasture in upper Mustang — areas that, according to locals, are becoming increasingly less productive. These negative trends are attributed both to a general feeling that the area is drying up (see Blumont 1996), and to competition between sheep and goat herds and yaks for limited high-altitude winter range.

Finally, when asked about the status of their grasslands, the people of Mustang often refer to *Khampa* occupation of Mustang in the 1960s and 70s. The *Khampa*(s) were Tibetans (primarily, though not exclusively, from Kham in eastern Tibet) who engaged in guerrilla warfare against China's People's Liberation Army. The *Khampas* — fierce warriors and reputed horsemen — based themselves in Mustang from the early 1960s until 1974. They established

camps, monopolised trade along the Kali Gandaki, set up supply posts, and instituted rotating credit systems for Mustang residents. Their troops' demands for firewood, building materials, food, and animal fodder, however, greatly increased human impact on local resources.<sup>6</sup> Given the nature of the *Khampa's* plight, and the fact that they were regarded as both heroes and bandits, it was difficult for locals to enforce community regulations on firewood use and pasture exploitation on these guerrilla warriors. Today, the *Khampas* are often blamed for deforestation and the depletion of precious grassland resources throughout Mustang.<sup>7</sup>

In contrast to external perspectives on pasture management, as exemplified by reports like those of Thapa, the people of Mustang have engaged in complex systems of grazing management for centuries. Historically, management of Mustang's grasslands is primarily in the hands of the village headman (*rgan-pa*). In the case of Monthang and the surrounding villages, the Rajah of Lo often handled such responsibilities. The headman position, chosen from among a village's noblemen, rotates every few years. The headman's responsibilities include mitigating disagreements over grazing and irrigation rights, as well as setting and collecting fines for those villagers caught breaking rotational grazing rules. The *rgan-*

*pa* also played an integral role in determining herd size and local prices for domestic animals (Schuh 1990:5). Village constables (*rol-po*) were traditionally in charge of enforcing community regulations regarding the use of natural resources.<sup>8</sup>

"Enquiries in all the settlements of Baragaon and Panchgaon," writes anthropologist Charles Ramble in 'Rule by Play in Southern Mustang', "suggest that...the position of headman (*rgan-pa*) has altogether ceased to exist, apparently in consequence of the introduction of the Panchayat System in the 1960s. While it is clear that there has been more or less rapid political change in most of these communities, it is not always clear what the change has been from" (1993:228).

In some lower Mustang communities, village *rgan-pa(s)* have been replaced by VDC heads, or *mukhiya(s)*. Enquiries into the status of these posts in upper Mustang yield different results; although the positions of *rgan-pa* and *rol-po* throughout Lo have changed, they have not disappeared. Sometimes *rgan-pa* and *mukhiya* or VDC chairman sit side by side and share decision-making; at other times, they are the same person. The situation is also complicated by the presence of the Rajah of Lo. The Rajah spends, on average, half his time mediating conflicts, i.e., inheritance dis-

<sup>6</sup> For more information on the *Khampa(s)*, see John Avendon's *In Exile from the Land of Snows*, Michel Peissel's, *Mustang: The Forbidden Kingdom*, Thakali 1994, Balestracci 1989.

<sup>7</sup> In the villages of Chuksang (Tshug), for example, there is evidence of trees that were felled by *Khampa(s)*. Ironically, an old *Khampa* is currently in charge of protecting the area from wood poachers (Ramble and Seeber 1995:115).

<sup>8</sup> Ramble's article *Civic Authority and Agrarian Management in Southern Mustang* also outlines complex systems of local resource management, the shadows of which only are referred to in accounts such as Thapa's and Brown's reports. Topics from seed planting and practices to irrigation rosters, in addition to grazing patterns and rights are referred to in the primary sources discussed in Ramble's piece. Also see Vinding and Ramble 1987 and Schuh 1990.



putes, irrigation disputes, grazing disputes, and so on. Though Nepalese justice is available a few days' walk south in Jomsom, the *Loba(s)* often prefer the *Rajah* to mitigate their disagreements (Laird 1992:86).

Although grazing rights and pasture management systems vary throughout Mustang's history, these systems generally contain the following components: rotational grazing according to season, type, and number of animals; the levying of fines for outsiders who use community resources, as well as for community members who violate set grazing rules; and a system of shepherding which varies across the spectrum of domestic stock. As Manzardo writes, "*The Thakali(s) developed an efficient management programme for their pasture areas, controlling access and charging outsiders for its use...Their example could be applied to other areas of Nepal*" (1984:30).

Likewise, the people of upper Mustang continue to regulate the use of their pastures. A look at the specifics of horse grazing provides a window into these systems.

### **The Specifics of Horse Grazing and Relevant Migration Patterns**

Although horses are less of a luxury item in Mustang than they are in purely nomadic areas across the Tibetan frontier (Goldstein and Beall 1990:72), these animals are generally not as productive as other live-

stock such as mules, yaks, or yak-cow crossbreeds — particularly when comparing levels of productivity to overall fodder consumption. Horses must be stabled, shod (in the case of riding horses), and given supplementary feed most of the year. As horses are pivotal indicators of social status, they are often kept (relatively) fat at the expense of the health and nutrition of other animals, or even humans.<sup>9</sup> The price of horses in Mustang has also risen in recent years. Whereas one could buy a good riding horse for Rs 3,500 in 1974 (Manzardo 1984:25), people now routinely pay between Rs. 60,000 and Rs. 150,000 for an animal of comparable quality.<sup>10</sup> After accounting for national inflation in the last 20 years, this is still a significant increase.

Manzardo suggests that because "horses are neither strong nor economical...they need to be replaced on a systematic basis" (1984:31). Though this assertion is valid in strictly economic terms, it does not account for the social and cultural roles that horses fill in Mustang, the historical niche they occupy in upper Mustang during harvest,<sup>11</sup> or the increasingly productive role that horses are playing in Mustang.<sup>12</sup> Likewise, one cannot discount the fact that the equine presence creates attitudes and value judgments that are part of what Robert Ekvall in *Fields on the Hoof*, his book on Tibetan pastoralism, called a "horse-culture modal personality" (Miller 1995:5).

Unlike yaks, which spend their entire lives

<sup>9</sup> In Monthang, horses are often fed much of the sweet pea crop each year. These legumes are one of the major sources of protein (in addition to mutton, yak meat, and dairy products) that comprise local diet. People who want to appear wealthier than they are tend to use a good portion of their sweet pea yield to keep horses healthy. Eggs and mustard oil, a luxury in most of upper Mustang, are also given to horses. If alternative sources of horse fodder were available (such as subsidised oat or barley grains, or increased production of alfalfa), or if the number of horses decreased, nutritional standards of the people of Lo might improve (Wandgu, pers. com. 10/96).

<sup>10</sup> In equivalent \$US, this is a price increase from approximately \$65 to between \$1,200 and \$2,300.

on free ranges, horses move between free ranges and private homes as much as they travel up and down the Kali Gandaki to earn their keep. The management of horses differs across community lines as well as across Mustang's variegated geography. Two communities' pasture management systems in relation to horses — those of Jomsom and Monthang — will be presented and compared to illustrate this point.

In Jomsom, most households own at least one horse. Many families (particularly those directly involved with tourism or trade) own three or more horses. During the winter, grazing one's horses is an individual responsibility. These animals are usually let out to drink in the morning and are then led by a family member to nearby winter pastures (usually fields of spiny bushes on ridges directly above Jomsom, or along the Kali Gandaki river bed) where they roam freely throughout the day, returning home at night. Horses' diets are supplemented by green hay and grasses collected from fields and dried during the fall; if a horse is ridden, it is often given between four and eight *manna* (ca. 2 manna/kg) of grain in addition to grass each day.

Before fields are planted in early spring, and once they have been harvested in fall, horses (as well as other domestic animals) are allowed to forage for roots and grass in fallow fields. However, once fields have

been planted, owners of horses caught grazing in fields pay Rs 20 per animal per day and double at night. This rule is strictly enforced. Funds collected are given as compensation to owners of violated fields. During the spring, horses continue to move between lower winter pastures and private stables. Responsibility for care remains in the hands of individual horse owners, though the distances travelled to reach grazing pastures increase as snow melts; a gradual transition between the use of winter and summer grazing pastures begins. Grazing land is considered communal property. Villagers tend to keep their horses away from high altitude pastures until summer to maximise regeneration. Borders of local pasture are based on centuries' old village relations, are recorded in village documents (*bem-chag*), and are primarily enforced by the village *mukhyia*.

From approximately mid-June to late September, horses are grazed on high altitude pasture land surrounding Jomsom. At this time, the care of horses and pastoral management become a community responsibility. Horses are often released for weeks at a time to graze high in the mountains surrounding Jomsom. Informal groups are formed among friends and relations in which one person is chosen to be the *rtadzi*, or 'horse shepherd' on a rotational basis. Approximately every week, one of these people will travel to the high pas-

<sup>11</sup> In lower Mustang, people thresh newly reaped harvest. In Lo, however, horses almost exclusively supply this labour. Horses carry sheaves from the fields and are then driven in circles to thresh grains, particularly wheat and peas. Incidentally, the Rajah still drives his own team of horses during harvest (Laird 1992:86). Cultural taboo prevents mules from doing this work.

<sup>12</sup> Given the increasing difficulties in keeping yaks due to lack of winter pasture, and given the general increase in the number of horses throughout the District, it might be economical to keep yak herds at a minimum and rely on horses to a greater extent (Blumont, pers. com. 10/96). Now, economic reality is expressing this idea. Lo Monthang's VDC Chairman, one of the few people who owns yak in Monthang, just sold his herd to Tibetans because he can no longer afford to keep them given the lack of winter pastures. The Rajah of Lo is now contemplating a similar move (Bista, J. pers. com. 11/96).

tures and check on his group's horses, bringing down any horses that are needed for work. *Rta-dzi(s)* discuss grassland conditions with each other and determine rotational grazing schedules. Unlike geldings, stallions, and unpregnant mares, pregnant mares and foals are kept closer to the village, and staked near fields to graze on their perimeters.

This pattern continues during the fall, though people begin to move progressively lower in altitude as the weather turns cold. Once this happens, the *rta-dzi* system shifts again. Instead of leaving horses unattended for days, animals are brought home to the village each night. As such, the rotational responsibilities of horse owners increase. If a person owns three horses, for example, he will be responsible for watching all the horses belonging to his group for three days. This pattern continues until fall harvest is complete, at which time horse grazing becomes an individual responsibility once again.

This system used to operate without the exchange of money; horse watchers were paid in kind (i.e., given grain, alcohol, etc) by other members of their collective when it was their turn to check on the horses. With the influx of cash to the local economy and increasing wealth generated by tourism, however, Jomsom residents have begun hiring lower status villagers or migrant labourers to watch their horses. This shift has generated local income for poorer community members. However, some Jomsom residents believe this change is having deleterious effects on local pastures because the hired help do not have a vested interest in — nor knowledgeable about — practising sustainable and traditional rota-

tional grazing since they do not own many horses, or, in the case of migrant workers, are not familiar with the terrain.

Horse grazing methods in Monthang are markedly different from those in Jomsom. Due to the frigid, barren winter climate of Lo, lack of winter pasture land, and the insufficiency of both animal fodder and food for human consumption, many people from Monthang migrate to Pokhara, a village in the middle hills below Mustang, for about three months each winter. *Loba* take well over a hundred porters and about as many mules and donkeys combined when they make this move.<sup>13</sup> This exodus serves several purposes: it allows the 'best' horses to remain in Mustang, their health and feeding patterns relatively undisrupted by the journey south, difference in climate and food, and the burden of carrying supplies north again in the spring; this migration also helps offset the price of stores such as corn, rice, and sugar for *Loba(s)*. Such lowland commodities are otherwise very expensive for *Loba(s)* because they are either flown to Jomsom from Pokhara or portered north by other people's pack animals. This migration pattern is based on both the fodder needs of Mustang's horses, mules, and donkeys and on their capacity for work. Horses that are not taken to Pokhara survive on measly stores of grain and hay and spend most of their time in family stables during the snow-covered winter. They are cared for by family members or locally-hired hands.

During this winter migration, poorer families become the caretakers of other people's animals as well as their own. The same rotational system (e.g., three horses equal three days shepherding duty) applied in

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<sup>13</sup> Many people from Mustang also migrate in the winter to India — particularly Assam and Benares — where they trade in sweaters.

Jomsom during late fall is used by *Loba(s)* during the winter. After reaching Pokhara, *Loba(s)* establish temporary residences on the southern edge of town and are allowed to graze their horses, mules, and donkeys in empty fields. Although *Loba(s)* are given free access to this grazing land, they must rent living quarters nearby. If a *Loba* animal is caught in a cultivated field, however, the animal's owner must pay about Rs 100 per animal, per day. Usually, if one horse wanders into a field, several others follow. Available fallow grazing land is insufficient and of poor quality. Fences dividing cultivated and fallow land are often flimsy. Two *Loba(s)* are often responsible for watching between one and two hundred animals at one time.<sup>14</sup> Consequently, the grazing fines incurred by *Loba* in a given year is significant and often more than *Loba(s)* can afford to pay.

After *Losar* (Tibetan New Year), *Loba(s)* slowly begin to migrate north, usually reaching Monthang in March. During spring, horses graze in pasture areas near the village. If a horse is caught in a field during the day, the charge is Rs 10-20 per animal; if a horse is caught grazing in a field at night, the fine is Rs 500. This dramatic increase is said to be levied because owners of such horses are suspected of deliberately placing their horses in someone else's field. This increase, compared to the Rs 40 charged in Jomsom for the same offense, is also a testament to the shortage of cultivated land in upper Mustang. Fines are managed by the *mukhya* and help offset the violated field owner's losses.

The *rta-dzi* system in Monthang begins with the first signs of summer and continues until the beginning of harvest in late September/early October. Unlike in Jomsom, poor

villagers apply for this work and are selected by the *mukhya* based on their knowledge of horse care and previous herding experience. Monthang employs three *rta-dzi(s)* each year, even though only two *rta-dzi(s)* are on duty at any one time; in smaller villages in Lo, two people are employed for this job. These shepherds are paid in kind: seven *phaktin* (approx. 14 manna or 8kg) of grain per horse for the three to four months they work each year. Once *rta-dzi(s)* are chosen they have the option of continuing this job until they want to 'retire'. Usually, people spend about three years employed in this capacity — enough time for poorer families to build up some surplus grain to offset difficulties incurred because they have small fields.

During the first month of summer, horses are led at dawn to pastures within about four hours of Monthang. They return to the village at dusk. Although it is generally said that *rta-dzi(s)* have full range over where they choose to graze, local convention holds that *rta-dzi(s)* are reprimanded by fellow villagers if they go to the same pasture more than one day in a row (Wangdu, pers. com 10/96). At this time, a third of the village horses (about 150 animals) are shepherded each day; others that are either being used for work or riding, as well as pregnant mares, remain close to the village.

From early July to early September, horse shepherding takes on a dual role. *Rta-dzi(s)* split their time between bringing about 150 horses in and out of the village each day and watching another 150-200 animals who are left to graze on high pastures for several weeks at a time. Horse herders tend to move about 12 hours a day in the lower pastures. Every three days, one of the *rta-*

<sup>14</sup> As many of the men go to India for trading, women often take on extra shepherding responsibilities in addition to household and child care duties.

dzi(s) walks up to the high pastures to check on the other horses, shift pasture areas, and report any deaths or injuries due to snow leopard or wolf attacks; this regular human presence is also locally regarded as a deterrent against such attacks.

Harvest work begins in mid-to late September with grass cutting — first of the Rajah's fields and then of individual family plots. At this time, horses are brought down from high summer pastures for the winter. A large portion of village horses are busy hauling bundles of grass, barley, wheat, mustard, and sweet peas from family fields to threshing grounds outside Monthang's walls at this time. Once harvest work begins, *rta-dzi(s)*' contracts end until the next summer. It is not unusual for shepherds to spend time working the Rajah's fields — labour for which they are paid.<sup>15</sup>

Although there is some discussion among villagers in Monthang that the current *rta-dzi(s)* are 'lazier' than their predecessors (Wandgu, pers. com 10/96) — or that, since the coming of democracy to Nepal in 1990, shepherds are less compelled to adhere to traditional rotational grazing patterns (Bista, G. pers. com 8-9/96) — many villagers believe their horse grazing systems are efficient.

### **Contradictions, Communication Gaps, and Need for Further Study**

Internal perspectives on the status and management of Mustang's grasslands vary greatly from external perspectives. Pasture management as it relates to horses is just one example of this divide. Assessments of Mustang's grasslands as overgrazed or denuded resources in a state of crisis — or

assertions that indigenous pasture management systems should be altered in order to be effective rather than harmful — might be accurate. However, dismissing local practices as inadequate and uninformed disregards the efficacy of systems that are highly refined and often centuries in the making. This emphasis on local 'mismanagement' also dismisses effects on grazing lands caused by climatic changes occurring throughout the Himalayas and the Tibetan Plateau (Blumont 1996). Although such changes might necessitate the people of Mustang altering aspects of their agro-pastoral lifestyles, disregarding existing resource management systems renders useless viable templates which, if used as a model for development strategies, might provide insight into successful management of the area's scarce grassland resources.

Despite theoretical efforts to 'improve' the quality of pasture lands and range management in Mustang by programmes such as the NAPDP, very little has actually been done. As the village *mukhya* of Monthang recalls, "About ten years ago, there was some talk of the government giving us money and guidance to help us improve our pastures and increase fodder production. But we never saw anybody come to help. About five years later," he continued, "I found out that the money we were supposed to receive for this purpose ended up going to the District Development Committee in Jomsom" (Bista, G. pers. com. 5/96)

The Department of Livestock Services (DLS) tried to start an alfalfa (*N. khote*) and fodder tree plantation outside the village of Gemi in Lo. Though there are still some trees and clusters of grasses in this walled compound, the management of this project

<sup>15</sup> In 1956, the *Loba* were emancipated from supplying the Rajah with a certain amount of 'coryee' or forced labour by a decree passed by the Nepal Congress Party during the time of the current Rajah of Lo's father (Laird 1992:86)

has fallen apart. DLS officials maintain that they have handed the project over to the villagers; nobody from the DLS office in Jomsom has visited the site in years. Some Gemi villagers maintain that it is a 'government' plantation and they are not sure how to deal with management issues because of the ambiguity of ownership. Other locals view the plantation as community property, yet because they were only marginally involved in the planning and implementation of this venture, they are not compelled to maintain the plantation compound. According to ACAP's Project Manager for Upper Mustang, ACAP has contemplated revitalising this 'dead' project, though nothing towards this end has been introduced to date.

Concomitantly, a \$32 million venture funded by USAID in 1980, called the 'Resource Utilisation and Conservation Project' was implemented in three districts, including Mustang. Among other things, this project was supposed to address forage and fodder needs. Although the capital injected into Mustang through petty contract work, construction, and transport during this project should not be discounted, the programme's long-term prognosis was largely deemed a failure (Thakali 1994:73). Although both ACAP and CARE Nepal have done some work on fodder development and community forestry in Mustang — with a certain amount of success — little research has been conducted to understand and incorporate indigenous practices into these development programmes.

Efforts to combine research carried out on historical, cultural, and religious knowledge about Mustang by Ramble, Vinding, etc. with development feasibility studies or actual work plans are virtually non-existent. Yet indigenous systems can neither be comprehended nor constructively built upon with

only shallow historical understanding. Linguistic and cultural divides make bridging the gap between 'external' and 'internal' views precarious, though this is not an impossible task. If these gaps in understanding are left untouched, however, a host of contradictions arise which makes creating development programmes and making valid recommendations about pasture management and other issues very difficult.

Development workers are quick to assert that community-based grass roots' programmes involving 'people's participation' should be the mould into which development ventures are cast. However, promoting people's participation, as such, is not only a matter of getting locals to elucidate their needs, but also requires that one understands how these needs are conceptualised, where motivation and a sense of civic duty reside. Real dialogue over a long period of time between development workers and locals remains a rare occurrence. Planners must recognise that local people are not simply users but managers of their environments. Subsistence farmers and herders need to be perceived as part of the solution to grassland management rather than the problem if current rhetoric regarding people's participation is ever to be translated into practice (McVeigh 1994:2).

In their description of Pala nomads from Western Tibet, Goldstein and Beall write, "As one Tibetan county official commented, 'The nomads have to be educated to understand that just rearing more and more animals is not the answer'. This attitude, which appears pervasive among government officials, dismisses the traditional local system as destructive, and rejects a priori the possibility that it might allow the nomads a decent livelihood over the long-term without exponential growth in herds and the

destruction of their resource base. Our findings, in fact, suggest that the traditional pastoral system was sophisticated and may have done just what the nomads claim, allowing them to thrive on the harsh Tibetan Changtang for centuries" (1990:177).

Although lack of access to Tibetan pasture and increasing numbers of horses kept by Mustang residents are both placing extra pressure on area grasslands, few studies have been conducted — with or without people's participation — in an attempt to determine just how degraded Mustang's pastures are. Likewise, study of historical records of weather patterns (which, in the case of Lo, date back to the 14th century), as well as extensive, thorough study of the area's climatic shifts with the use of available computer technology and satellite imagery have not been conducted. Further study is required if the choreography of people, animals, and pasture in Mustang are to be accurately understood.

## MUSTANG'S TRADITIONAL VETERINARIANS

### Historical Context

Indigenous pasture management systems and the status of rangelands are interconnected with local veterinary care which, in turn, affects the productivity and health of Mustang's domestic livestock. Unproductivity dovetails from lack of fodder and insufficient grasslands. Similarly, without reliable methods for dealing with disease among their animals, agro-pastoralists are faced with the prospect of regularly losing income and wealth.

In Mustang, as in other Himalayan areas,

responsibility for the sick (both humans and animals) is primarily the responsibility of the village doctor (*amchi*). These people are also generally householder-priests (*sngags-pa*), married religious practitioners whose principal teachers are often their own fathers. *Amchi(s)* do not practice medicine full-time; like everyone else in a society of subsistence farmers and pastoralists, they have their own fields to plant and animals to tend.

Although Tibetan veterinary science is a discipline in and of itself, animal care finds its roots within the larger traditions of Tibetan medicine. Likewise, though specialists in veterinary care do exist throughout Tibet and the Himalayas, village *amchi(s)* often double as local veterinarians. In Mustang, village *amchi(s)* might also treat animals, particularly horses.

Much of the knowledge about equine care in Mustang finds its theoretical roots within a corpus of Tibetan texts devoted to hippology and hippiatry. These books, some of which are believed to be translations of Sanskrit treatises, exist in a variety of extant forms.<sup>16</sup> Some of these works are beautifully illustrated. These texts are generally referred to as *tap-sho*. One book that contains several folios has been compiled and republished in China. In addition to this popular reprinted work (on sale in bookstores in Lhasa, Dharamsala, and Kathmandu), many *tap-sho* are found in Mustang. The personal libraries and family archives of the Rajah of Lo, local *amchi(s)*, village *lama(s)* (priests), and other families house many a horse text. Many of the books found in Mustang seem to be hand copies of texts from other sources in Central Tibet, as they are written in classi-

<sup>16</sup> The most significant contribution to the study of these literary sources to date has been made by Anne-Marie Blondeau (1972). Her work on the subject draws on both Indian and Tibetan sources, including sources found in the Dung Huang caves, Gansu Province, PRC.

cal Tibetan. (Mauer, pers. com. 3/97). Some of these texts are complete, while others exist in fragments. None of the sources catalogued to date<sup>17</sup> contain a colophon, rendering questions about dates, origins, and ownership difficult to answer (Mauer 1995). Yet, given similarities between the content of Dung Huang texts and Mustang folios, "the available texts have kept alive a continuous written record of Tibetan veterinary medicine" (Mauer 1995).

Veterinary care in Mustang has also been greatly influenced by the presence of the *Khampa(s)*. Excellent horsemen, the *Khampa(s)* are often credited with introducing practices such as horse-shoeing and a variety of training techniques to Mustang residents. The *Khampa(s)* quite successfully instilled the notion that horses imported from the Tibetan plains were stronger, more beautiful, and more valuable than their local counterparts — a socioeconomic gauge that remains valid to this day. In addition to this more general knowledge, the *Khampa(s)* were said to have brought veterinary texts with them. This literary background, in addition to their practical expertise regarding things equine, aroused local interest. Many of Mustang's aging veterinarians were trained, at least in part, by *Khampa(s)*.

### Training: The Oral - Literary Divide

Although a substantial number of *tap-sho* exist in the private libraries and village monasteries of Mustang, much of the knowledge about veterinary practice and general horse care is an oral tradition. Though methodological parallels exist between what is written and what is practised, much of the veterinary care actually performed in

Mustang is only tangentially derived from these theoretical sources. Local veterinarians often view these texts as the basis for their knowledge about hippiatry and hippology; however, very few of these practitioners actively refer to such documents in the course of treatment. Rather, the veterinarian's mere possession of a *tap-sho* — the theoretical ability to consult these books — is more often an affirmation of the practitioner's legitimacy than a medical guide.

Unlike Mustang's *amchi* tradition — in which medical and religious knowledge is passed from father to son through structured study and rigorous meditation retreats — and although some *amchis* double as veterinarians, many of the area's most renowned horse doctors have learned their craft by observation and out of necessity. Only some of these practitioners are literate in Tibetan. One noted exception is the current Rajah of Lo. A skilled equestrian and horse doctor, Jigme Palbar Bista has spent many years studying his *tap-sho(s)* and has passed this knowledge on to a select few. However, his expertise — an understanding grounded as much in theory as in practice — is rare.

### Diagnosis and Treatment

Two of the primary healing techniques employed by Mustang's local veterinarians are moxibustion or cauterization (*me-btša'*) and blood-letting (*grag-rgyab*). These methods are shared by Mustang's neighbours; other peoples of the Himalayas and Tibet practise similar procedures on their horses and mules, yaks, *dzo(s)* (yak-cow crossbreed), and cattle. Moxibustion and blood-letting are also practised in the treatment of human ailments within Tibetan medical tradi-

<sup>17</sup> Photographing and cataloguing these texts on microfilm has been conducted by the Nepal German Project in High Mountain Archaeology and the Nepal German Research Centre, Tibetan Manuscript Division.



tions. Benefits of these treatments include healing broken 'wind' (*rlung*), decreasing oedema, and lowering the possibility of infection.

For horses in particular, the application of fire to the skin and the letting of blood are used as preventative measures against disease and for curing various ailments. If one horse in a village catches a cold, for example, the owners of neighbouring horses might ask a local veterinarian to apply the tip of a hot iron rod to five places on the horse's face: at the base of each ear, on the outside of each nostril, and at the centre of the upper lip. This treatment is said to prevent the spread of a cold. Respiratory problems, particularly pneumonia, are quite common in Mustang. Brisk winter winds, lack of sufficient winter grazing lands, and time spent in poorly ventilated, dirty stalls give rise to such problems — many of which begin as common colds. As such, lowering the risk of contagion is a vital component of indigenous preventative care systems.

At the end of the fifth Tibetan month (mid-late July), horses are bled from the veins on their nostrils. This blood is collected, mixed with grains, and then fed back to the horse. Along with this treatment, horses are also bathed in cold water. This combination of the letting of 'bad' or 'old' blood and then restoring this blood to the body as food, as well as shivers induced by the cold bath, is said to replenish a horse's strength and cleanse all impurities from the animal's system. This blood-letting — more common in upper than in lower Mustang — is also believed to hasten the formation of new blood which helps animals adjust to changes in altitude encountered during the shift from winter to summer pastures.

After this annual regimen is completed, horses are given a week to a month's rest. Interestingly, this down-time corresponds to the shift from one grazing system to another. After this blood-letting period (*smal*), most horses are no longer brought back and forth between the village and summer pastures daily. Instead, they move to high altitude pastures where they graze virtually unattended for weeks at a time. This illuminates the relationship between indigenous pasture management systems and traditional veterinary care. In this case, *Loba(s)* are practising rotational grazing on the one hand and taking care of their horses on the other. These two vital practices do not passively coexist; rather, each facilitates the other. Such an example provides new insights into concepts of resource management.

Although moxibustion and blood-letting are often used independently of each other, these techniques are also used in combination to cure a variety of lamenesses. For instance, if a horse or mule moves downhill carrying too heavy a load, or if a horse is being ridden quickly and then trips on a stone — common occurrences in these mountains and on the flats of Mustang's river valleys — the animal can injure either its shoulder or hip, causing instant lameness. Though there exists much variation on both the causes of such problems and their treatment, one of the most common methods for curing lameness includes letting blood around the irritated area and then applying heat points in a protective circle around the region. This problem is often diagnosed as a separation of skin from muscle and bone, causing bad wind and blood to collect in the affected area. Blood is let in small amounts with the tip of a pointed metal instrument (*gtsag-bu*). After blood is let, the local veterinarian will sometimes insert a hollow tube into the

wound, blow 'new' wind into the space between skin and muscle, and then prick this inflated area with his *gtsag-bu*, deflating the now 'cleansed' area. A hot stone is then rubbed over the area to re-bind skin, muscle, and bone. Other times, blood-letting wounds are sutured closed with hair from the horse's own mane or tail; this, along with cauterisation around the wounds, helps cure the lameness. Occasionally, local veterinarians carefully pierce around tendons and ligaments with a needle and let out fluid in order to cure a lameness. This technique bears an uncanny resemblance to the allopathic method of needle-point firing.<sup>18</sup>

Like its allopathic counterparts, Tibetan veterinary medicine describes several different types of colic, a gastro-intestinal and digestive problem that can be fatal.<sup>19</sup> However, unlike western medicine which primarily relies on enemas, walking the horse, administering drugs which stop intestinal contractions, and surgery to cure this problem, Mustang's veterinarians treat various forms of colic with a combination of blood-letting and herbal remedies. A newly diagnosed case of *hre*, or what western medicine calls 'gastric dilation', is treated by piercing the vein on the underside of the horse's tongue in several places, massaging out the build-up of black, foul-smelling blood, and then rubbing salt across the tongue. Local veterinarians explain that this disease is caused by horses eating mouldy or dirty fodder, particularly grasses that have

been infected by human waste. Horses tend to paw at the ground, roll, pick at their food, and stop urinating when this disease is in its early stages. A horse's stomach also tends to bloat. If caught at this stage, the blood-letting alone cures *hre*; horses are eating, drinking, and urinating regularly within an hour. If the disease remains untreated for some time, other methods of treatment are used. Herbal medicines are administered. Sometimes a piece of wool is saturated with a foul smelling mixture of fermented sheep dung, water, and 'khimo' (a blue mineral used to make dye) and this is then swabbed on to a horse's bit. The horse is then ridden slowly for several hours. The author has witnessed several severely ill horses recover from advanced *hre* within a day. Other types of colic are diagnosed by observing slight differences in the temperature of a horse's breath. Treatments, as well as the causes of these divergent kinds of colic, significantly vary by local standards.

Such examples only hint at the diversity and viability of local veterinary techniques. As Dr. Punel, Jomsom's head veterinarian and a *bhotia*<sup>20</sup> from the Manang District, commented, "The traditional doctors here have isolated many subtle, highly effective treatments for lameness, infections, and the gastro-intestinal problems from which horses often suffer. Although these local practitioners could benefit from the use of things like penicillin and regular de-worming, I think I have as much to learn from them about

<sup>18</sup> Needle-point firing involves the insertion of needles into various deep tissues including tendons, ligaments, and bones (O'Connor 1980:252)

<sup>19</sup> For general definitions of the different kinds of colic, see Hawcroft (1990:177-181).

<sup>20</sup> *Bhotia* is a Nepali term for ethnically Tibetan people. The word is often used with pejorative overtones, denoting those who practice Buddhism, eat meat, and drink alcohol. The fact that Dr. Punel is a *bhotia* is significant, as he is not as biased against local veterinary techniques as some other government veterinary workers who cannot relate culturally to the communities in which they are working.

treating horses as they can learn from me" (pers. com. 9/96).

### Current Occupational Status

Cultural conventions surrounding *amchi* (and Tibetan veterinary) traditions dictate that these practitioners never ask for money in exchange for their services. Patients (or animal owners, as the case may be), offer payment in kind. Sometimes cash is given, but grain, alcohol, or other foodstuffs more often serve as compensation. Although this system was once viable, it no longer is, according to Mustang's local healers. Now that Mustang is largely a cash-oriented economy (due to tourism and changes in trade and migration patterns), and given the high national inflation rate, local *amchi*(s) and veterinarians cannot afford to provide adequate care. Similarly, the lack of economic incentive involved in such work has dissuaded the sons of aging local veterinarians to continue this work. The son of one of Mustang's most renowned horse doctors, for example, is an engineer.

Integrally related to this decline in the occupational status and overall tradition of local veterinarians is the poor quality of schooling available in Mustang. Like other ethnically Tibetan hinterland areas of Nepal, most of Mustang's schools (with the possible exception of schools in Jomsom) do not maintain national — let alone international — levels of instruction. Teachers are generally under-supported by the government and are often cultural outsiders. In addition, courses are taught in Nepali or Nepali and English medium, despite the fact that many local children have a very limited comprehension of the national language. Teaching literary and/or colloquial Tibetan is not sanctioned. As a result, children who come from prosperous families, or those who find sponsors,

are sent to school in Pokhara, Kathmandu, or places like Darjeeling and Kalimpong in India. Although many of these children will grow up literate in Nepali, Tibetan, and English, few will return to settle in their villages. Poorer children who remain in rural schools receive marginal formal education and rarely become literate in Tibetan — the language which records their history and culture, including *tap-sho*(s) and other medical texts. Youngsters who are both capable and interested in maintaining such healing traditions are rare.

Not surprisingly, the number of locals who doctor animals has declined in recent years. Forces like those mentioned above have changed the relationship of people to their animals in Mustang, particularly in their ability to care for domestic livestock. Despite all this, the majority of people in Mustang, when asked about maintaining the health of their animals, prefer local systems of care derived from Tibetan medicine.

In contrast, HMG's veterinary offices (located throughout Mustang) are rarely used by locals. Aside from the rare visit to purchase saddle sore ointment or antibiotics (two items in whose efficacy locals have come to believe), these clinics are viewed with skepticism by Mustang residents. Though inexpensive (almost all procedures only cost a five-rupee registration fee) and equipped (at least half the year) with anesthesia, sterile needles, worming medicine, etc, these clinics tend to go unused, particularly for equine care. Locals view veterinary technicians as people who might know how to cure a sheep of parasites, but who don't know much about the subtleties of horse care. Nevertheless, as the number of local practitioners decreases, livestock owners often find themselves with little option besides trusting their animal's health to Nepali clinic workers.

One prime example of this phenomenon is castration. According to Loba(s) and Mustang's other Tibetan-speaking inhabitants, this operation should be conducted by a person specifically trained in equine castration — often a person of lower caste according to Tibetan social stratification. Before this procedure, the owner should consult the lunar astrological calendar to determine an auspicious day on which the operation should occur. Tibetan cultural frameworks include a litany of stipulations regarding the details of this operation; above all, conducting a proper castration demands that the practitioner know the locations of a stallion's three channels (*rtsa*). These channels, or 'veins' as they can be literally translated, each correspond to different aspects of a horse's vital energy. Of these, one is directly linked to the horse's ability to move at the *dru*, a fast, four-beat trot that is the most revered of all gaits. A horse's performance at the *dru* is one of the determining factors in the horse's value. If a castration is performed without carefully severing and then separating this vein, the horse's *dru* can be easily 'broken', leaving the owner with a very expensive beast of burden — a fate considered worse than death for a fancy mount.

Several skilled castrators once lived in Mustang; none remain. Before the closing of the Tibet/Nepal border, many people from Mustang took their stallions across the border to Tibet where this operation was performed. This is no longer an option for most people, save Loba elite who can sometimes move across the border with a touch of impunity. As a result, people of Mustang now hand over their uncut studs to the Nepali veterinary clinicians. According to these Jomsom-based veterinarians, no horse has ever died as a result of their work. Nevertheless, locals often scoff at the skills of these practitioners. And yet these

same people are leading their stallions with more regularity into Jomsom's whitewashed veterinary compound, their expressions slightly pained.

### CONCLUSION: THE CASE FOR INDIGENOUS KNOWLEDGE

In his introduction to *The Mollas of Mustang*, David Jackson writes, "Five hundred years ago, a diverse and colourful stream of travellers made their way along the roads that lead to Lo Mustang. In those days, a person standing at the gates of the capital city might see Indian pundit(s) and yogi(s), Tibetan traders with their trains of donkeys and sheep, pilgrims bound for Mount Kailash. Today, however, it is hard to imagine that Lo Mustang was ever such a thriving centre, for it is now one of the most remote, backwards, and inaccessible valleys in the Nepal Himalayas" (1984:ix).

In many ways, Jackson's assessment of Mustang is depressingly accurate, especially in relation to the restricted area of this district. Nevertheless, as much as Mustang might be classified as 'backwards' and 'undeveloped', as much as this region is defined by crumbling ruins and the ghosts of cave dwellers and kings, the area's living culture continues to change, evolve, and struggle to subsist. The people of Mustang are ever aware that they exist at a crossroads between modern and medieval lifestyles. Though frontier environments such as Mustang are just coming under the influence of the modern world (Miller 1995:3), theirs is a history as rich and as capable, as intricate and as eccentric as the next enclave of civilisation.

Local people like those from Mustang are often labelled 'victims' of failed development schemes or categorised as unenlightened masses who hinder the

progress 'development' implies. While there are elements of truth to both ends of this spectrum, a more accurate picture exists somewhere in the middle. To assume that local people have no idea what is happening to them — and no control over the course that their own culture takes — as well as to assume that cultural changes would not naturally occur is naive, ahistorical, and ethnocentric. Such reasoning can have devastating effects on the integrity and viability of pastoral lifestyles.

Influences such as tourism, development, national and international trade, politics, and ensuing shifts in culture and economy are having profound effects on indigenous knowledge in Mustang. The status of pasture management and traditional veterinary care exemplify such trends: Mustang, an area on the periphery of national consciousness for centuries, is now gaining international attention. There is interest in preserving the area's unique and fragile ecosystems. The World Wildlife Fund for Nature (WWF), for example, recently identified 200 ecoregions with an inherent biodiversity that sustains life on earth. Among the critical, endangered, and vulnerable categories of these ecoregions are Nepal's eastern and western Himalayan Alpine grasslands and steppes (such as Mustang). Yet the ways locals have been managing and caring for their resources for centuries are largely misunderstood or not addressed.

Thapa writes, "*The traditional bias of the veterinary approach in the Department of*

*Livestock Services contributes to the pasture and fodder problems of Nepal*" (1990:24).

This statement can be applied to Mustang. Without adequate access to trustworthy animal care, livestock production levels decline and the number of unproductive animals can increase, thereby stepping up pressure on local grasslands. Since HMG has not made it a priority to train or support their DLS staff in remote places like Mustang, such agencies often do more harm than good, while indigenous traditions continue to decline. Likewise, HMG has not considered supporting local veterinary practitioners, or traditional medicine as a whole, in areas like Mustang.<sup>21</sup> Similarly, *rta-dzi(s)* are storehouses of information about the quality of area pastures and their management. These shepherds (particularly in Lo) also keep scrupulous oral records of the number, colour, sex, health, and habits of village animals. This detailed knowledge remains untapped.

The continued ability of Mustang people to care for their horses and other animals with a sense of confidence in their own traditions depends on the transmission — be it literary, oral, or a combination of the two — of this knowledge to younger generations. Ironically, though the number of horses in Mustang has increased in recent years, the number of local veterinarians and *amchi(s)* continues to decline, primarily for economic reasons. Although 'culture' is never a stagnant entity, how will coming generations care for their horses? To whom will they turn? Learning requires the pres-

<sup>21</sup> One notable exception involves Dr. Punel. This Jomsom-based veterinarian hired a local *amchi* from Monthang to be the HMG veterinary office representative in Monthang VDC. This relationship continued for several months before the Monthang-based *amchi* had to quit the job due to the death of his father (who was the Rajah's physician and astrologer) and his subsequent additional responsibilities. Both Punel and the local *amchi* viewed this arrangement as a means of combining local knowledge with allopathic care and were disappointed when this relationship terminated. Punel hopes to foster similar relationships in the future. Such actions have not been encouraged by his superiors (pers. com. 9.96).

ence of an adept teacher and a motivated student. Skills honed by observation become hollow skills when younger eyes turn towards other disciplines. Several highly skilled local veterinarians and *amchi(s)* are willing to pass on the science and art of this practice. Unless younger people view this occupation as economically viable (even part time), however, they will not be compelled to maintain these traditions.

The conservation of grassland resources and indigenous pastoral systems are integrally linked to the perpetuation of local veterinary practices and, therefore, the overall health and productivity of Mustang's herds. Without access to adequate pasture and fodder, animals will not be productive. Without sustainable and effective mechanisms for combating disease, herds risk death and people face devastating loss of livelihoods. Support from both within and without a given community is necessary to carry these valuable and viable systems of animal care into the future.

There is an old Tibetan adage that likens the Buddhist concept of 'mind' to a horse: a powerful vehicle rendered useless if undisciplined and untrained. This saying can be taken as a metaphor for the important role indigenous knowledge should play in addressing pastoral concerns. Respecting and building upon such knowledge, as well as supporting local healers and traditional medicine, should be a top priority in Himalayan and Tibetan rangeland environments like Mustang.

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