A NOTE ON YAK-KEEPING IN HUNZA (NORTHERN AREAS OF PAKISTAN) (1)

by

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INTRODUCTION

Agriculture in the high mountain oases of the Karakoram would be impossible without an additional system of animal husbandry which uses the vertical zonation of vegetation with its distinct ecological differences in each belt (fig. 1).

The areas of permanent settlements are mainly located in the desert steppes zone (with a precipitation of 100 to 150 mm/year) where agriculture is entirely based on irrigation. Up to an altitude of 2500 meters above sea level double cropping occurs with a sequence of barley — maize and/or wheat — millets (*Setaria italica L.*, *Panicum miliaceum*) or buckwheat (*Fagopyrum esculentum*, *Fagopyrum tataricum*). This is only possible on these relatively poor soils through application of enormous quantities of farmyard manure (20-40 tonnes/ha, cf. Whiteman 1985). "Alpwirtschaft" (2) guarantees extra pastures, a supplement to the nutrition, and allows a sufficient production of the necessary amount of manure in the homestead after the return of the animals from the high pastures which is essential for double cropping.

In the former principality of Hunza (an autonomous state until 1974) in the Northern Areas (the former Gilgit Agency) of Pakistan, (Fig. 2), we find an "Alpwirtschaft" which shows cultural differences according to the social system of the three main ethnic groups -Shin, Burusho, Wakhi- of this region and according to their location in ecological belts. The Shin settled in the lower parts of the Hunza Valley up to the village of Hindi (2100 m) ; the Burusho dominate the central part of the valley between Murtazabad and Nazimabad with the highest population (2606 households out of 4441 households). Some Burusho families migrated under the direction of the ruler of Hunza to newly established villages in the Shin and Wakki region. The upper part of the Hunza Valley from Gulmit to the border of the Chinese Autonomous Province of Xinjiang is populated by wakhi people. They settle mainly in the *Tehsil* Ghujal of the Hunza Subdivision. Only in this area of Hunza Yaks form part of the livestock and Wakhi people are predominantly their owners.

The permanent settlements of Yak-holders are located in an altitude range from 2550 m (Pasu) to 3500 m (Shimshal). Besides Yak-keeping farmers depend more on

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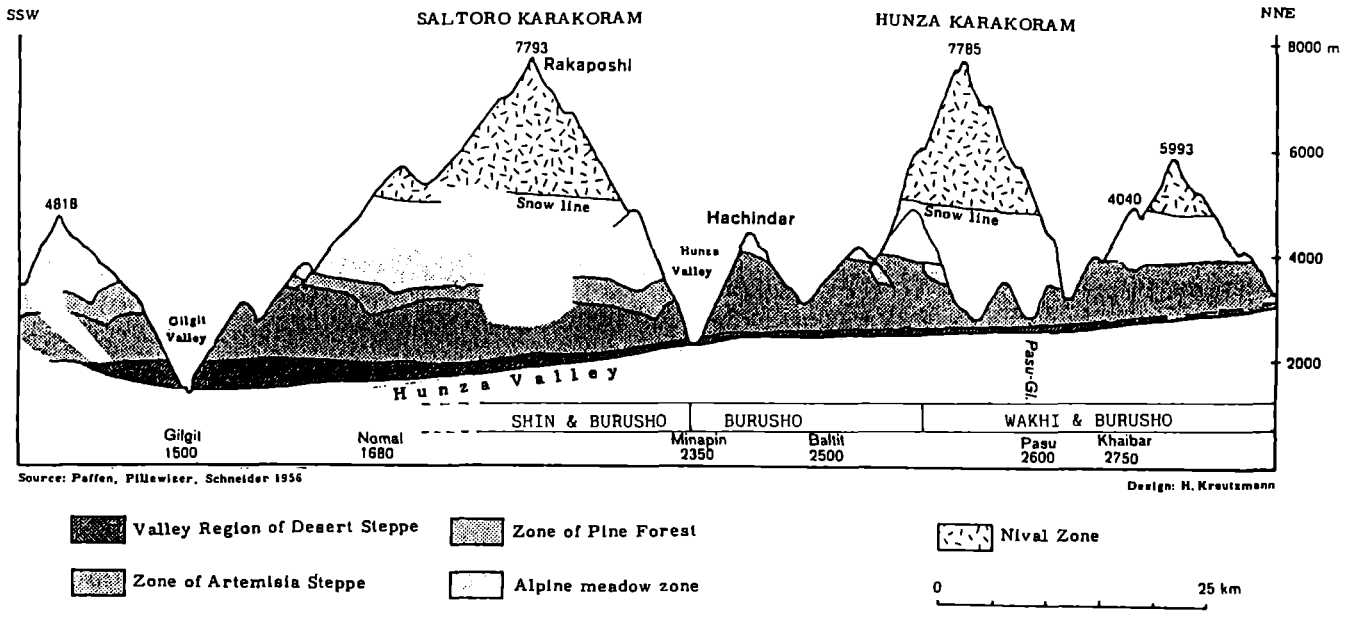

Fig. 1.- Vegetation Profile (elevation multiplied by a factor of 5).

animal husbandry (sheep, goats, cattle) here than in the lower lying double cropped parts of the Hunza Valley. In *Tehsil* Ghujal single cropping with barley, wheat, peas, beans, and potatoes prevails, exclusively. The first Wakhi settlers came to this region at the end of the 18th/beginning of the 19th century after the expulsion of Kirghiz pastoralists by the ruler of Hunza. He accepted these Wakhi migrants of Ismaili faith as his tributaries and settled them in newly founded irrigated oases (Kreutzmann 1986). *Ilban* (taxes) had to be paid in kind with Yaks, goats and sheep. The ruler also claimed forced labour, e.g., they had to take his herds to the Mintaka/Kilik/Khunjerab Passes for grazing and to the *pameer* (in Wakhi language : high pasture) to the north of the present border between the Northern Areas of Pakistan and the Chinese Autonomous Province of Xinjiang, i.e. Sarikol, Taghdumbash Pamir, Raskam.

Livestock numbers are less in Burusho villages in Ghujal than in Wakhi settlements because they were founded only recently (1900–1960) and therefore had less access to high pastures, as most of them had been distributed much earlier.

ANIMAL HUSBANDRY IN THE WAKHI REGION OF HUNZA

The cultivated area of farms in Hunza is very small. The average farmsize in Ghujal is 1 to 2 ha per household and therefore one would expect high livestock numbers (Saunders 1983). Surprisingly, the statistical data (Tab. 1) for Ghujal show a relatively small number of animals. One explanation is that in this traditionally overpopulated area with smallholdings concentrated in oases, only a few households can nowadays entirely live on agriculture. For example, in Pasu less than 1/5 of all

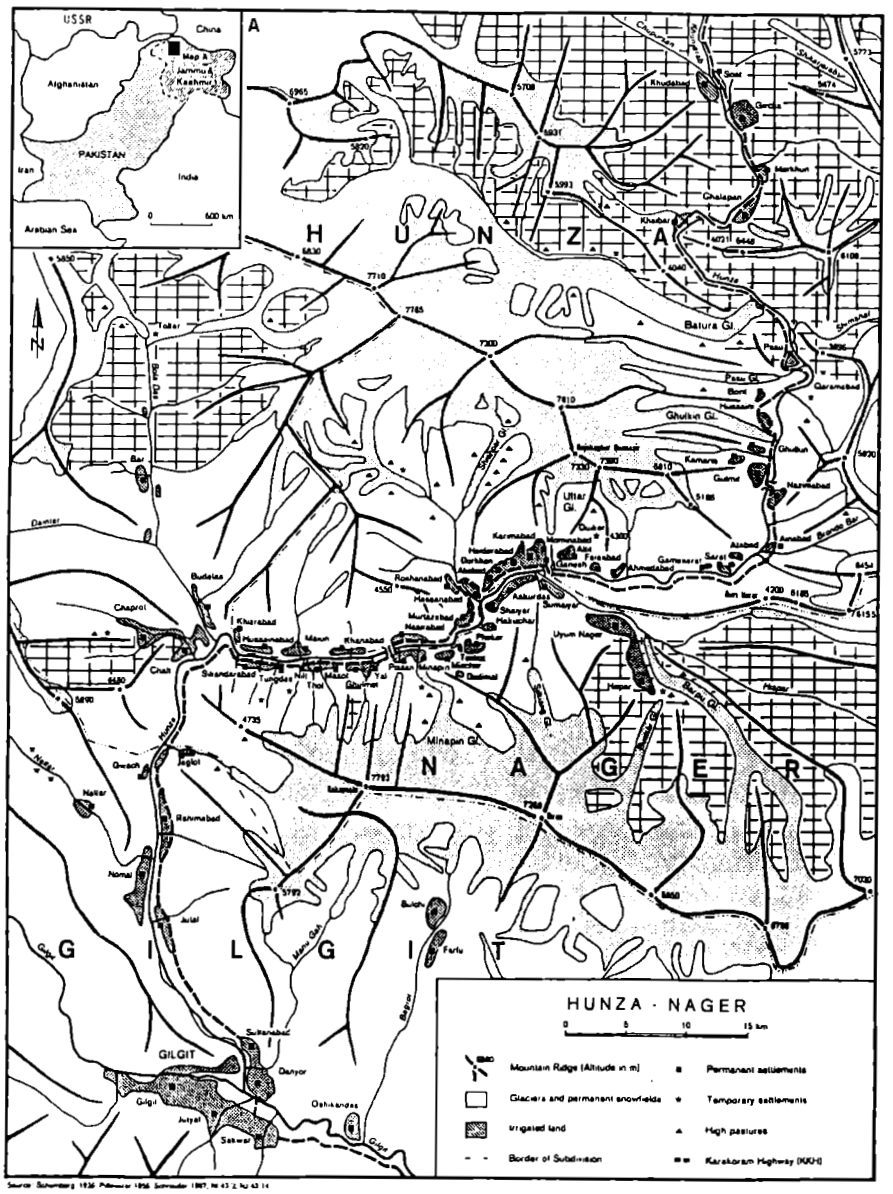

Fig. 2. Map of the Hunza-Valley in the Northern Areas of Pakistan, ⊟ Yak-keeping area.

Village	Dominant ethnic group	Number of households[2]	Yaks	Cattle[1]	Sheep/ Goats	Yaks per household	Cattle[1] per household	Sheep/Goats per household
Ainabad	Burusho	15	--	174	204	--	11.60	13.60
Nazimabad	Burusho	128	--	516	936	--	7.31	7.31
Gulmit	Wakhi	208	--	2217	1119	--	10.66	5.38
Ghulkin	Wakhi	83	--	409	1916	--	4.93	23.08
Hussaini	Wakhi	50	--	N.A.	N.A.	--	N.A.	N.A.
Pasu	Wakhi	61	83	344	1673	1.36	5.64	27.43
Shimshal	Wakhi	123	436	253	7573	3.54	2.06	61.57
Khaiber	Bur./W.	52	--	180	1200	--	3.46	23.08
Ghalapan	Wakhi	6	--	N.A.	N.A.	--	N.A.	N.A.
Morkhun	Wakhi	36	49	173	1547	1.36	4.81	42.97
Gircha	Wakhi	27	10	87	849	0.37	3.22	31.44
Sost	Bur./W.	61	38	191	1401	0.62	3.13	22.97
Jamalabad	Burusho	24	11	84	975	0.46	3.50	40.63
Khudabad	Burusho	70	--	206	957	--	2.94	13.67
Misgar	Burusho	111	5	159	1598	0.05	1.43	14.40
Chupursan	Bur./W.	246	84	905	6270	0.34	3.68	25.49
Tehsil Ghujal	majority Wakhi	1301	716	5898[3]	28218[3]	0.55[4]	4.74[3]	22.67[3]

1) without Yaks
2) average household size in Hunza according to AKRSP-Engineering section: 8.3 members
3) excluding Ghalapan, Hussaini
4) average number of Yaks per household(villages with Yakbreeding only): 1.20

Source: Aga Khan Rural Support Programme(AKRSP)-Livestock Census, Gilgit 1985

Tab. 1.- Villagewise Livestock-distribution in Tehsil Ghujal, Hunza.

monetary incomes derive from "tilling the earth". Outmigration in search of better education, obtaining employment as a mountain guide, etc., is mainly responsible for this phenomenon.

The opening of the Karakoram Highway in 1978 increased mobility enormously. Only a few settlements are still without any access to roads, for example, Shimshal - 60 km away from the Karakoram Highway - can only be reached on foot in 2 to 3 days on a difficult path. This distant village has by far the highest numbers of livestock and is the only one which is self sufficient in the production of food grain in Hunza. The numbers of 3.54 Yaks and 61.57 goats/sheep per household are significantly higher than in the other settlements.

The "Livestock Census" of AKRSP (Aga Khan Rural Support Programme, Gilgit) does not provide any information on the age and sex of Yaks. According to Dr. Farman Ali, Project Veterinarian in AKRSP, there is no tradition of Yak cross-breeding with cattle in Hunza, or in other Subdivisions of the Gilgit District (Nager, Haramosh, Gupis, Yasin). Similarily, there is no cross-breeding in the Wakhan of Afghanistan among the Wakhi settlers (Shahrani 1979 : 75). The vocabularies of the Burusho and Wakhi do not include any words for crossbreeding. The termini for "Yak" are given in Tab. 2.

Bos grunniens	Language			
	Burushaski		Wakhi	
	Lorimer	Berger	Lorimer	Kieffer
male Yak	[illegible]	[illegible]	[illegible]	[illegible]
female Yak			[illegible]	[illegible]
Yak calf			[illegible]	[illegible]

Tab. 2.- Termini for "Yak" in Burushaski and Wakhi

Sire	Dam	Progeny Male	Progeny Female	Remarks
Yak	Cow	Zoi	Zumo	Zumo is best milker Zoi is best plough bullock
Bull	Yakmo	-	-	This cross is not known
Yak	Zumo	Gar	Garmo	Garmo and Tulmo are good
Bull	Zumo	Tul	Tulmo	milkers, but inferior to Zumo
Yak	Garmo	Brch	Brehmo	
Bull	Garmo	Garyu	Garyumo	
Yak	Tulmo	Tulyo	Tulyamo	
Bull	Tulmo	Lachu	Lachu	An useless animal
Yak	Brehmo	Yak	Yakmo	i.e. reversion to Yak type, but not quite pure as tails and hair are affected
Bull	Brehmo	Brimyo	Brimyomo	
Yak	Brimyomo	-	-	This cross is not known

Notes: The milk of the Yakmo is much richer than that of the cow, but is limited in quantity . The milk of the Zumo is nearly as rich as that of the Yakmo and she gives a much greater quantity (2 1/2 to 3 seers a day, but with good food will give up to six seers (1seer= 1kg))

Source: Gilgit Agency Diaries 1921-1930, p.102 in the India Office Library and Records
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Tab. 3.- Known Cross-breds in the Gilgit Agency in 1926.

Only herders on the Deosai Plateau and the Baltis of the Northern Areas who speak a Tibetan dialect are cross-breeding Yak with cattle in the region of Ganche, Hushe, Khapalu, as their eastern neighbours in Ladakh do. The administrative border of Baltistan with the Gilgit District roughly seperates the areas where cross-breeding takes place from those where it does not, and corresponds with the distribution of ethnic groups. Tab. 3 gives a list of known cross-breds in the Gilgilt Agency in 1926.

PASTURING IN GHUJAL

Generally, sheep and goats outweigh the livestock numbers. They are taken to the high pastures from spring to autumn and spend the winter in the permanent settlements. On the contrary, the pattern of pasturing for adult male Yaks is different, they are kept on the pastures with goats and sheep (May to September/October). During the summer period the non-milk giving Yaks are grazed near the snowline (4500-5000 m) high above the temporary settlements of the shepherds (3500 m) with corrals for the other animals. These Yaks are only tended during the winter months by a few shepherds on the *pameer*. For example, in Shimshal six men out of 123 households alternately stay there during the cold season. In certain grazing areas these Yaks are only checked from time to time, on 2nd November 1985 on the Khunjerab Pass 62 Yaks from Sost, Morkhun and Gircha could be seen at an altitude of 4600 m where they would spend the whole winter.

While in the Burusho area of Hunza women are traditionally not allowed to stay on the high pastures and the men fulfill all the tasks in this "territory of the fairies" (cf. Jettmar 1975), in the Burusho area of Yasin (3) and in the Wakhi area of Ghujal, there exists a different concept of "Alpwirtschaft" : Here the women are solely responsible for tending the animals on the pastures from April/May to September/October where they do the milking, butter-making, gathering of firewood for *qurut*-production (in Wakhi language : *qurut* = dried milk curd ; Lorimer 1958:107). Men only participate in leading the animals

to the different stages of the pasture settlements, do the ploughing and harvesting for a single crop of barley, and control from time to time the whereabouts of the non-milk giving Yaks in the upper reaches of the pastures. Yaks are rarely used as pack animals but for one occasion: carrying the supplies and ustensils up and milkproducts on the way down from the pastures. The main occupation of the shepherds is the daily leading of the animals to the grazing grounds which are sometimes 1 to 2 hours away from the pasture settlement. In the meantime the processed milk in the form of *paei* (yoghurt) is churned into butter. After separating the *roɣ.ʌn* (butter) the remainder is boiled down for hours on the only fuel available - juniper wood - and then the dried product (called *qurut*) is formed into small lumps and placed on the roof of the huts to dry out in the sunshine until it reaches its final waterless condition.

MARKETING OF ANIMALS AND PRODUCTS

In October/November the majority of the Yaks are back in the permanent settlements. Those animals which are to be sold in the cold season are gathered, either for selling to a tradesman from Lower Hunza/Gilgit who comes directly to the villages of Ghujal, or are sold directly by the farmer himself. After the second crop has been harvested all fields in the oases of Hunza and Gilgit are open for free grazing ; this makes it easier for the trader with his herd to wander from village to village and offer his animals for sale. In this season some people buy animals and make a small profit by slaughtering them and selling the meat to their fellow villagers. There is only one professional butcher in Hunza who operates a small shop in Aliabad (Central Hunza) all year round. The price of meat reflects the esteem of different animals :

1 kg Goat/sheep	22 Rs
1 kg Yak	15 Rs
1 kg Beef	13 Rs

The peak season for buying Yaks, goats and sheep is before 21st December - *tumushalin-*, the local New Year. This date marks the time for the slaughtering of animals for the whole winter season up to April. Every family stores at least one goat by hanging the meat in the cool and dry store. Shimshali and rich families elsewhere can afford to buy a whole Yak, whose value lies between 4000 - 6000 Rs. Other Yak products for marketing are *sherma* (rugs) woven from Yak hair and wool, which are necessary for every household as sleeping mats for the whole family. Short Yakhair is plaited into ropes, are used for carrying heavy loads. Yaktails are turned into dusters.

RECENT DEVELOPMENTS OF ANIMALS HUSBANDRY

The Livestock Census of 1985 indicates an enormous decrease in livestock numbers when compared with colonial reports. Also during the fieldwork (Aug.-Dec. 1984, Mar. -Nov. 1985) it became obvious that outmigration and locally improved educational facilities reduce manpower for agriculture, e.g. children attend school instead of grazing the herds. This development was intensified after the construction of the first jeep road and especially since the opening of the Karakoram Highway in 1978. National and international development agencies promote the use of chemical fertilizers as their strategies are focussed on intensifying grain production. The dependence on farmyard manure is reduced through increased application of chemical fertilizers and the development agencies advertise cooperative efforts in buying them, offer fertilizer loans with no interest, supply extension training courses and new high yielding wheat varieties which demand chemical fertilizers.

In connection with animal husbandry AKRSP tries far reaching measures which can have significant consequences for the future : vaccination of all animals, improvement of local cattlebreeds by artificial insemination with New Jersey-semen from USA, increasing the quality and amount of fodder and introduction of *pashmina* goats, whose soft, fine undercoat can be processed to cashmere wool, on a large scale for higher profits in livestock-keeping. All these development projects are in an early stage and the response of the local population has to be awaited. The Yak is left out of all these considerations although it is the only animals which appears to be fat and healthy compared to the skinny stallfed cows of the permanent settlements at present.

CONCLUSION

In general, it can be noted that the transition from subsistence farming to part-time farming, i.e. transfer of the daily workload to women and elder men and occupation of the former full time farmer in Government Service, as driver, shopkeeper, etc., somewhere else, caused a rapid decrease in livestock numbers. In the first place, overgrazing is not the main problem here, but lack of manpower leads to an exhaustion of easily accessible pastures and abandonment of remote grazing areas. For the future one can expect a further reduction of the number of Yaks in Hunza and consequently most of the *pameer*-areas, which are only suitable for these "high altitude" adapted animals, will no longer form a part of the sophisticated system which uses all the ecological zones.

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NOTES

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(2) "Alpwirtschaft" : This term is used in English literature for "mixed mountain agriculture" (Guillet 1983 : 562) or as "economy based on alpine pastures" (International Geographical Glossary). In French language : "élevage avec estivage". While in the European Alps "Alpwirtschaft" is dominated by bringing cattle to the high pastures, in the Karakoram high numbers of sheep, goats and some Yaks are put there.

(3) Oral communication by Susan York, London.

REFERENCES

AKRSP, 1985.- *The Aga Khan Rural Support Programme - Livestock Census* (compiled by Dr. Alnasir Babul and Dr. Farman Ali, Gilgit) (unpublished).

BERGER, H., (forthcoming).- *Das Hunza-Burushaski.*

BONNEMAIRE, J./JEST, C., 1976.- Index des termes tibétains utilisés dans cet ouvrage pour la désignation des animaux, pp. 165-167 *in* : Le Yak. Son rôle dans la vie matérielle et culturelle des éleveurs d'Asie centrale. *Ethnozootechnie*, n° 15.

DOR, R., 1976.- Note sur le yak au Pamir. pp. 126-132, *in* : Le Yak. *Ethnozootechnie*, n° 15.

Gilgit Agency Diaries 1921-1930 p. 102 (unpublished).

GUILLET, D., 1983.- Toward au Cultural Ecology of Mountains. The Central Andes and the Himalaya Compared. *Current Anthropology*, 24 : 561-574.

JETTMAR, K., 1975.- *Die Religionen des Hindukusch*. Stuttgart : Kohlhammer.

KIEFFER, C., 1978.- Einführung in die Wakhi-Sprache und Glossar, pp. 345-374, *in* : de Grancy, R., and R. Kostka (eds): *Grosser Pamir*. Graz : Akademische Druck- und Verlagsanstalt.

KREUTZMANN, H., 1986.- Oases of the Karakorum : The Evolution and Social Organization of Irrigation in Hunza (Northpakistan), *in* : Allan, N.J.R. (ed) : *Human Impact on Mountains*, Rowman and Allanhead (forthcoming).

LORIMER, D.L.R., 1935-1935.- *The Burushaski Language*. 3 vol. (Instituttet for Sammenlignende Kulturforskning, Serie B : Skrifter XXIX). Oslo : H. Aschehoug.

LORIMER, D.L.R., 1958.- *The Wakhi Language*, 2 vol. London : School of Oriental and African Studies, University of London.

PAFFEN, K.-H./PILLEWIZER, W./Schneider, H.J., 1956.- Forschungen im Hunzakarokorum. *Erdkunde*, 10 : 1-33.

SAUNDERS, F., 1983.- *Karakoram Villages*. Gilgit : FAO Technical Publication (mimeographed).

SHAHRANI, M.N.M., 1979.- *The Kirghiz and Wakhi of Afghanistan. Adaptation to Closed Frontiers*. Seattle and London : University of Washington Press.

WHITEMAN, P.T.S., 1985.- *Mountain Oases*. Gilgit : FAO Technical Publication (mimeographed).