

Profiles of Agro-Pastoral Nepalese and Rural Processing Method of Milk in Nepal

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From October 2nd to November 18th in 1978, we carried out an investigation about rural processing of milk in Nepal.

Our investigation in 1978 was preliminary for the execution of the main investigation which will be carried out in 1979 for the purpose to get useful information about dairying and milk processing in the northern part of the southern Asia, and to trace the culture relating to milk utilization back to its origin. Therefore, this report is provisional, and our full investigative reports will be published after the performance of the main investigation.

Investigation

1. Outline of Nepal

Nepal is bounded on the north by the Tibet region of the People's Republic of China and on the south, east and west by India. Its length is approximately 965 km from east to west and its breadth varies from 145 to 241 km from north to south. Nepal has an approximate area of 14,080,000 ha as shown in Table 1 and its about 14% area is arable land and another 14% area is permanent pasture (Phot. 1). In these areas, most of the Nepalese are engaged in agriculture and animal farming. Nepal has population about 12,880,000 and its about 95% is agricultural people.

Geographically, the country of Nepal falls into the following three regions ; (1). Tropical region, Tarai province (150~250 meters above sea level) where is located in the southern part of Nepal. (2). Central region, where is generally called midland of Nepal (600~2,500 meters above sea level). In this region, sub-Himalayan mountains are ranked and serried. (3). Snow region, the northern high land.

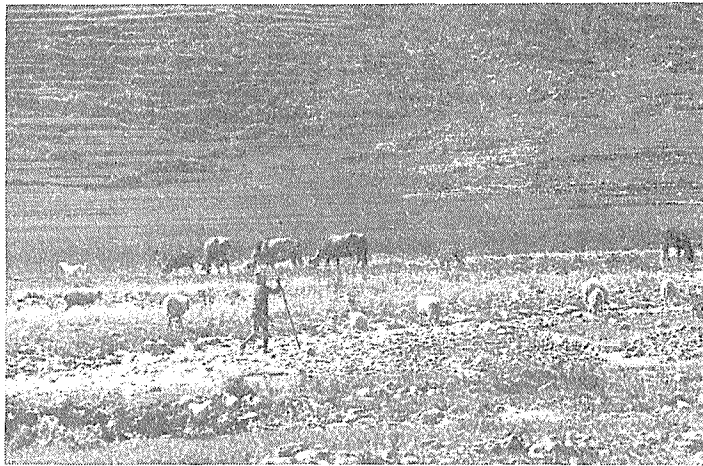
2. Agricultural situation

The outline of land use for agriculture in Nepal was shown in Table 1 in contradistinction to that in Japan. In such a mountainous country as Nepal, the

Table 1. The land use and the population in both Nepal and Japan.

	Nepal	Japan
Land use	— (10 thousand ha) —	
Total area	1408	3723
Arable land	201	442
Irrigated arable land	19	269
Permanent crop	1.4	61.5
Permanent pasture	200	50.6
Forest	445	2487
Population	— (10 thousand) —	
Total	1288	11277
Agricultural	1199	1552

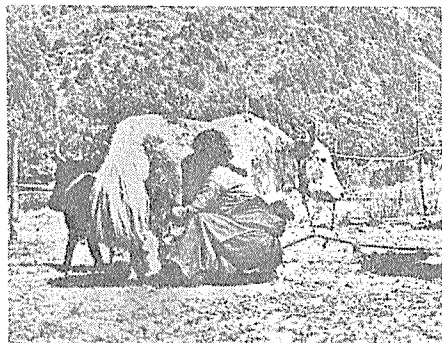
(FAO and the Government of Nepal statistics in 1976)



Phot. 1 Cattle land in the suburbs of Pokhara.

climatic conditions usually present most intricate patterns. Such patterns were geographically classified in brief into the three regions mentioned above.

On the other hand, from the stand point of agricultural geography, agricultural regions in Nepal can be also classified into the following four groups; (1). Tarai region; This region is located in the southern part of Nepal and is a representative rich paddy field in Nepal. (2). Midland region (wet-farming region); This region is sandwiched between the great Himalayas and Tarai, and runs from east to west in parallel with the great Himalayas. This region is of mild climate in summer season, being affected by the monsoon blowing from the Indian plains. (3). High land region (dry-farming region); This region is located in Tibetan plateau. In this



Phot. 2 A yak and a milkmaid.



Phot. 3 A butter-making cottage nestling in the folds of the mountains.



Phot. 4 Terraced fields marching up the steep hillside.

region, irrigation is indispensable for agriculture.

Being different from the wet-farming region, the arable land in such high land area is considerably restricted by climatic condition. Due to long and severe winter type climate and to exceeding dryness, Tibetan plateau is single-crop region. Therefore, the people who live in this region has been forced to practice cattle-breeding. As generally well known, "Yak" and "Nak" are most representative and useful domestic animals for milk production (Phot. 2 and 3) and land cultivation. (4). The border area with wet- and dry-farming regions ; This region is extending over fairly large domain and is suited to agriculture. Most part of this region has been possessed by large and small land owners. This land-lord system in Nepal, on the other hand, is considered to have prevented agriculture in Nepal from modernization.

Generally speaking, farmers in Nepal work hard. The arable lands in Nepal have well been cultivated and give us a deep impression like that the people have cultivated the lands toward the heaven (Phot. 4).

3. Live-stock and live-stock products.

In Nepal, live-stock such as cattle, sheep and goats are usually put to permanent pasture. The estimated number of live-stock in Nepal was shown in Table 2. From this Table, it can be noted that the number of cattle, buffalos, sheep, goats and pigs in Nepal greatly exceeds the number of these animals in Japan.

In spite of such superiority in the number of these domestic animals in Nepal to those in Japan, the amounts of both meat and milk produced are extremely lower than those in Japan (Table 3).

Table 2. The estimated number of live-stock in both Nepal and Japan.

	Nepal	Japan
	— (10 thousand) —	
Cattle	665 (♀ 52%)	373
Buffalos	393 (♀ 86%)	
Sheep	230 (♀ 76%)	1
Goats	237 (♀ 79%)	9
Pigs	32	746
Chickens	2040	24947

(FAO and the Government of Nepal statistics in 1976)

Table 3. The live-stock products estimated in both Nepal and Japan.

	Nepal	Japan
	— (10 thousand tons) —	
Beef		29.8
Buffalo meat	1.7	
Mutton and Lamb	0.7	
Goat meat	1.0	
Pig meat	0.5	105.7
Poultry meat	2.1	69.0
Total	6.5	214.1
Cow milk	20.7	526.5
Buffalo milk	45.8	
Yak and Chauri milk	0.25	
Butter and Ghee	0.83	4.4
Egg	1.3	185.6

(FAO and the Government of Nepal statistics in 1976)

Table 4. Food ingesta and caloric intakes by both Nepalese and Japanese in 1972-74.

	Nepalese	Japanese
Calories/day/person		
Total	2018	2832
Vegetable products	1877	2307
Animal products	142	525
Protein/day/person (g)		
Total	49.7	85.5
Vegetable products	42.2	45.3
Animal products	7.5	40.1
Fat/day/person (g)		
Total	27.2	70.2
Vegetable products	17.3	35.1
Animal products	10.0	35.1

(FAO statistics in 1972-1974)

From Table 4, it can be further noted that caloric intake, and protein- and fat-ingesta by Nepalese are generally low, compared with those by Japanese. This fact strictly indicates that dietary life is quite different in quality between Nepalese and Japanese.

4. Milk processing

The main places of our investigation in 1978 were Kathmandu, Kodari, Pokhara, Bhairawa, Jomosom, Lukla and Paphulu, and the main trekking routes were shown in Fig. 1.

Throughout the present investigation, we obtained a certain evidence that milk

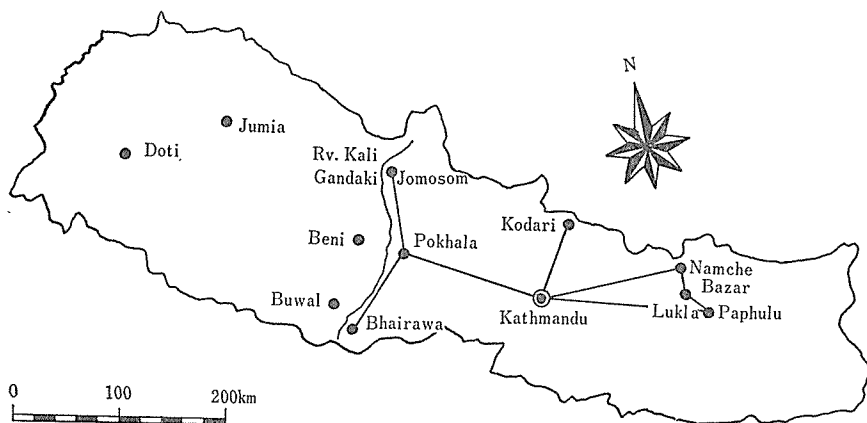


Fig. 1 The main routes of our trekking in Nepal.

processing techniques in the present days were able to be traced their origins back to the modes of the simple dairy processing in Nepal. We also have a firm belief that we will be able to understand well the ancient culture relating to the utilization of milk in Nepal, by studying the following milk products such as cheese, yoghurt and butter.

On the other hand, it can be generally said that there distributed five big cultural areas in Nepal, that is, Tibetan cultural area in the northern part of Nepal, Indian cultural area in the southern part, Islam cultural area in the western part, Assam-tribe's cultural area in the eastern part and Himalayas cultural area in the central part of Nepal²⁾. However, these cultural areas are not considered to have independently existed without any influences of the other cultural areas. They must have interacted each other extending over long period.

Because of our superficial learning about Nepal, there were many difficulties for us to make thorough observation on the historical evidence relating to the eating habits of Nepalese.

We can now draw a firm conclusion that the culture relating to the eating habits of each tribe in Nepal is very conservative. This fact is very valuable for us to understand the history of each tribe.

Because of our very short term stay in Nepal, we had to narrow the matters for investigation chiefly to the following one; manufacture of butter and of "bothe chiya", a kind of milk tea which has habitually been taken among the tribes of Tibetan origin.

The results and discussion classified by each regional group were as follows :

(1). Observation in and around Namche Bazar.

The main tribes in this region are Sherpa and other tribes of east-northern Nepalese. They speak several Tibetan dialects and have cultures and regions of Tibetan origin.

We have gotten many information about the life-style of Sherpa from various descriptions¹⁰⁾. As can be understood from the derivation of the term of "Sherpa", "Sher" in Sherpa represents "east" and "pa" in Sherpa represents "person" in Tibetan. Therefore, the term of "Sherpa" represents "eastern" when all is said. Sherpa is usually classified into a family of Tibetan²⁾.

A butter churn which has habitually been used by Sherpa is cylindrical tub type. This type of churn is usually made of bamboo. When they make butter with this type of churn, they use a churner attaching a small piece of plate, and move it upward and downward in a churn until butter is made (Fig. 2). This type of churn is called "Dongmo" in a Tibetan dialect, and used not only for the manufacture of butter but also for the manufacture of bothe chiya. Bothe chiya is a kind of drink which has habitually been drunk by the east-northern Nepalese with

or between meals. It well resemble green tea of Japan (cha) in customary uses, but is quite different from green tea of Japan in nutritional values, namely the former is abundant in fat and protein, and the latter is only table luxurious drink and can not be substituted for meals.

The cylindrical tub type churns have widely distributed all over the world and can be found in the Mongolia People's Republic and ancient Ireland, not to mention neighboring Bhutan. Especially, in the Mongolia People's Republic this type of churn has been widely used for the manufacture of Koumiss and fermented milk⁸⁾. These facts strictly indicate that the cylindrical tub type churns have close relationship to the northern culture. Therefore, it can be quite possible to say that this type of churn is one of the most significant cultural inheritances of the Tibetan culture, and that the cultures of the east-northern Nepalese and Sherpa relating to their milk utilization are also of the Tibetan cultural origin.

We mentioned above that milk utilization can be classified into the following three original manufacturing patterns such as acid milk manufacture, cheese manufacture and butter manufacture, and that these milk products have played an important role in the social lives of both the east-northern Nepalese and Sherpa. In this connection we can point out very interesting problems how Sherpa and the east-northern Nepalese have manufactured these milk products, using single instruments, how they have accepted and fit these products well with their eating habits, and how they have created their culture on the basis of their eating habits.

(2). Observation in and around Pokhara and Jomosom.

We gazed with deep interest in this region, because most of the tribes living in the valley of the Rv. Kali Gandaki are quite different from the tribes of Tibetan origin. Most of the tribes living in the valley of the Rv. Kali Gandaki usually use languages of Mongolian origin. Summarizing the reports of the predecessor who had ever visited these regions, we can consider that the regions including Pokhara and Jomosom are ones of the representative parts where have bridged the cultural gaps between the cultures of East and West.

As generally be known, Tukuhe where is located in this regions is the native place of Thakhali tribe. Thakhali is one of the representative tribes in this region and usually engages in agriculture, live-stock farming and commerce, and leads a seasonal nomadic life. This tribe also bears striking resemblance to Newar tribe in



Fig. 2 Manufacture of butter with a tub type churn (Dongmo).
(sketched by the authors).

their habits of going on a pedding tour. Generally speaking, Thakhali is diligent and eager in education.

It is not too much to say that Thakhali has contributed their efforts to the modernization of Nepal, just as Newar tribe has equally contributed. The parent language of "Thakhali" which means "head family" or "ancient" exactly, simbolizes the actual state of Thakhali.

By the way, most of the old persons of Thakhali are fond of drinking bothe chiya and the young persons like juliyo chiya. This custom closely resemble that of Japanese people. In Japan, elder people are fond of drinking green tea (cha) and young people willingly drink coffee.

Although this tribe considerably succeeded to the most part of the culture of Tibetan, we have some hegitation in accepting that Thakhali has used cylindrical tub type churns. The reason is that the region around Jomosom was a center of trade in the old time¹⁾, and various cultures prospered in there by the influence of itinerant trade by Thakhali.

We also observed that cylindrical tub type churns were widely used in Tsumji, where is located in the eastern part of the Rv. Kali Gandaki and in the northern part of Ganesh Himal. Although we can not find the names of the tribes in Tsumji in any literatures, we have confidence that the most representative one is Gurung. This tribe is considered to be of Tibetan origin from the facts that they widely uses cylindrical tub type churns and that Tamang tribe living in the southern district nearby Gale tribe is also of Tibetan origin¹⁰⁾.

In 1960 TAKAYAMA⁵⁾ reported that the method of manufacture of butter in Torbo region located in the western part of the Rv. Kali Gandaki was quite different from those in the eastern regions of the Rv. Kali Gandaki. This description arouse our strong interest in making survey of the mode of manufacture of butter in this region. According to the literatures, representative tribe living in this region is Thakur tribe^{2,6)}. This tribe actually uses quite different type of churn from the cylindrical tub type churn. As shown in Fig. 3, a person puts an amount of fermented milk in a bag made of stomach skin of calves, breathes into the bag until it fills out and then shakes it slowly holding it between his arms and knees.

This type of churn is called "Kahlwa" in a Tibetan dialect and considered to be one of the simplest and the most native churns in the world. This type of churn is widely used for the manufacture of butter not only in the northern part of Kashmir and in Karakorum mountainous district but also in the middle and near East, and in the districts along the shore of the Mediteranean³⁾. If we call the regions where the cylindrical tub type churns are used as zones of the northern origin, the regions where the skin bag type churns are used can be called as zones of the central part origin. The zones of the central part origin have strongly been



Fig. 3 Manufacture of butter with a skin-bag type churn (Khalwa). (sketched by the authors).



Fig. 4 Manufacture of butter with a rotary type churn (Thaykiy). (sketched by the authors).

influenced by the Islam culture. We also observed that Thakhur tribe widely ranges from Torbo region to Kogbeni where is in the northern district of Jomosom.

We could find another type of butter churn in Beni where is about 45 miles down the Rv. Kali Gandaki from Jomosom. This type of churn is quite different from the other two types of churns mentioned above. This rotary type of churn is made of wood or from porcelain clay, and called "Thaykiy" (Fig. 4).

Distribution of this type of churn strictly indicates that the culture of India has distributed to the upper stream of the Rv. Kali Gandaki, because this type of churn is usually find in India^{3,4,9}).

As mentioned above, we can draw a conclusion that the regions in and around Pokhara-Jomosom, i. e, the regions along the Rv. Kali Gandaki are exactly considered to be the places which had ever bridged the culture gaps between the cultures of East and West.

We are planning to investigate the regions in and around Jomosom in the next year.

(3). Observation in and around Jumia and Doti.

Because of our very short term stay in Nepal, we could not visit Jumia and Doti where are located in the western part of Nepal. It is generally known that the most representative tribe living in these regions is Thakur tribe and that other ones are Bura and Rukha tribes^{2,7}). Bura and Rukha tribes are both living in the west-northern regions of Saipal mountains. These tribes have strongly been subjected to the influence of the culture of India. Among these tribes only Thakur tribe is engaged in agriculture and livestock farming.

We are going to visit these places in 1979 and hope to get many valuable information by studying their culture and the modes of their lives in more detail.

(4). Observation in and around Kathmandu.

Newar tribe has inhabited the Kathmandu valley and contributed to the creation of Hymalayan culture and Nepalese culture. As the parent language of a word "Newar" bears meaning "a head man", this tribe has positively naturalized Indian culture and advanced their urban culture, supporting to the Royal Family of the Kingdom of Nepal.

The arable lands around the Kathmandu have been well cultivated and gave us a deep impression like that the people have cultivated the lands toward the heaven. Those minute utilization of lands also gave us an impression how the people have struggled against nature extending over long and long years.

In earlier time the people living in and around Kathmandu also made butter extensively with the tub type churn, but such simple method for the manufacture of butter has yearly been disappearing since a modern milk plant was constructed in Kathmandu in 1958.

(5). Observation in and around Butwal and Bhairawa.

We pointed out that the type of butter churns used around Kathmandu and around Beni was of Indian cultural origin.

From such geographical distribution of these butter churns, the butter churns used in the regions of Butwal and Bhairawa were also considered to be of the same type as those described above. However, we could not obtained detail information about culture relating to the milk utilization in these regions due to our short term stay in Nepal and to the facts²⁾ that the people living in there have mainly engaged in agriculture rather than in live-stock farming, and that there have not historically existed a master race in these regions.

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Summary

This investigation is aimed to study the relationship between the utilization of milk and the civilization of several tribes in the northern part of the southern Asia.

We have carried out our present investigation, narrowing the matters for investigation chiefly to the simple patterns of manufacture of butter, thereby explored the origins of the cultures relating to milk utilization by several tribes in Nepal.

Although it can't avoid that we may make some mistakes in the process of drawing a conclusion from the observations obtained in our present investigation, we are confident that there exist three different types of butter churns (Dongmo, Khalwa and Thaykiy) in Nepal. These churns expressed concretely the big three cultures, that is, Tibetan culture, Islam culture and Indian culture which have greatly influenced to today's national character of Nepal.

We actually observed that the culture of Islam has widely and deeply diffused in Nepal. This fact well coincided with our knowledge which we had obtained from several sorts of literatures extending over long years.

In near future, we are going to investigate each cultural area in Nepal in more detail as much as possible.

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ネパールの農牧民と素朴な乳加工の概要

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要 約

南アジア北部地域における乳利用と各民族文化との繋がりを知る目的から、本調査では乳利用の実態を素朴なバター製造の様式の中に求めつつ、ネパールにおける乳利用文化の起源を探った。

実施および文献による調査結果に基づいて導き出した記述に若干の誤謬は避け難いが、結果は次の如く要約される。

ネパールは厳しい自然環境の中の農牧業を主軸にした王国である。しかし、その農牧は南部亜熱帯的タライ地方の湿潤農業から、北部のネパール・ヒマラヤの南に張り出したチベット的風土の荒涼たる高原乾燥農牧業に至るまで種々の特質を持っている。それらを総括した耕地、牧畜、生活の概要は表1, 2, 3, 4に示したが、必ずしも合理的で豊かであるとは言えない。

また、そのネパールの農村に様式を異にする三種類のバターチャーン、即ちドンモ、キャルワ、テキが存在することを確認した。これらのバターチャーンは今日におけるネパールの国民性の確立に多大な影響を及ぼしたチベット文化、イスラム文化それにインド文化の三大文化をそれぞれ具象したものとして理解される。特に、イスラム文化がネパール国内に深く、強く侵入していることが、本調査を通じその現実を垣間見ることが出来た。

今後、ネパールにおける各文化圏について更に詳細に調査する予定である。