

The Dairy Situation in China

From the Government Bureau of Economic Information

THE Chinese knew little of dairying until the foreigner came and taught those in the coast cities the value of cow's milk and butter and cheese as a food. Mare's milk was used, and today one may sometimes see in the native city of Shanghai a mare being led, a bell tied to her head, through the streets so that milk may be furnished fresh as desired, as is done in some countries of Europe from cows and goats.

Dairymen find an increasing demand in China for cow's milk, because both of the increasing number of foreigners here and the growing number of Chinese who understand the value of dairy products as a food. Some dairies have been serving customers for a number of years, and other dairy farms are being started. The following Shanghai dairies are listed in the *North China Daily News* Hong Book: Aikosha, American, Culty, Inshallah, Ivy, Kalgan, and Tung Woo. The Liberty and several others are not listed.

The Inshallah, one of the larger dairies of Shanghai, had 122 cows and calves at the first of April, 1923. The management of this farm has 20 acres two miles from the city where bulls, weaned calves and cows not producing milk are kept. When cows become fresh, they are brought into the city to quarters from which milk is distributed daily.

In Shanghai dairymen use bottles of various sizes. Some distribute milk in 22-ounce bottles, some in 19-ounce bottles and some in 20-ounce bottles, the last being the size more generally used. These sizes are referred to as large bottles. Half sizes are spoken of as small bottles. The Inshallah Dairy sells its large size for 25 cents, and its 11-ounce bottle for 13 cents. The same sizes of bottles have been used by this farm since its beginning, more than thirty years ago, and the prices have never been changed.

In Canton not longer than twenty-five years ago there were no cows used for dairy purposes. Now there are more than 600 animals of European breeds and about 100 buffaloes in that city kept only for milk. All dairies in Canton are

managed by Chinese, and their customers are nearly all Chinese. In Hongkong there are several hundred cows kept for dairying.

Most of the European cows in the dairies of Canton and in the Chinese dairies of Hongkong are of mixed stock. All the well-known dairy breeds are represented, although, the Shorthorn, usually spoken of as a beef-and-dairy animal, predominates. Blood of the other breeds rank in something like the following order: Holstein, Guernsey, Ayrshire, and Jersey. The Hongkong Dairy Farm Co., owned and managed by British, has more Holstein cows than any other breed. This dairy has from 600 to 900 cows of dairy breeds, but no water buffaloes, which are now thought of as possible dairy animals.

Figures showing the number of imported pureblood cattle serving in dairies in China are not available. The Cully Dairy at Shanghai brought from Scotland about 40 Ayrshire-animals in 1922, these to be used on their farm at Shanghai. Their experiment of bringing stock from Europe they considered successful, and a second order, not yet arrived, of seventy-odd animals was made a few months after arrival of the first consignment.

Foreign dairies in Shanghai find it best to import animals of foreign stock, since they give milk richer and in larger quantity than do cows which have not been subject to the many generations of selective breeding which the European lines have undergone. Some dairies in China have been stocked wholly or partly by animals brought here from Japan.

At various times dairy stock bulls have been imported into that country. These have been bred to native cows there, and animals of this mixture are to be found in dairies in Shanghai. In the north of Japan there are said to be some excellent herds of European cattle and a few of these find their way to China the presence of some of the animals in China of Japanese extraction is due to the fact that when a cow is found in Japan to be tubercular, it is ordered killed or disposed of outside the country.

The most common serious disease to which cattle in the Orient are subject is rinderpest, it attacking dairy animals as well as water buffaloes and other cattle. According to Professor C. O. Levine of Canton Christian College. "It is somewhat like the chronic form of hog cholera in that it is usually accompanied by fever and it causes lesions in the

inner lining of the intestines, but it is not always so fatal as is cholera among hogs. A method of immunizing with anti-rinderpest vaccine has been developed by the veterinarians in the Bureau of Agriculture of the Philippine Islands which renders the animals immune for two years or longer." Animals imported here were given anti-rinderpest treatment.

Cattle plague was prevalent in the western district of Shanghai in January and September of 1922 in the northern district in November. In the outbreak in the northern district, when the disease first appeared, there were 17 non-immune cows in the dairy affected. Of this number, 12 contracted the disease, 9 died, 3 recovered and the remainder were apparently saved by timely inoculation.

A survey made near the end of 1922 by the health department of the Shanghai Municipal Council of licensed dairies in, or near, the foreign settlement gave the following information:

Location and Details	DISTRICT			
	Northern	Eastern	Western	Total
Licensed Dairies within Settlement limits-	1	12	10	22
Milk-producing animals therein	7	343	314	664
Licensed Dairies outside Limits but on Municipal Roads	8	—	8	16
Milk-producing animals therein	278	—	232	510
Licensed dairies in French Concession-	—	—	4	4
Milk-producing animals therein	—	—	220	220

Some of these are foreign-owned, but most are of Chinese capital and management. The public seems to feel that not all dairies supplying Shanghai take sufficient precautions to secure proper sanitation and health protection, and from time to time this feeling is indicated by agitation in the Shanghai press. A committee has recently been looking into the Shanghai dairy situation with a view to making recommendations as to what legislation might be desirable. Those invited recently by the Municipal Council to serve as an advisory committee to assist in assuring a pure milk supply for Shanghai were Sir Edward Pearce, Doctors Jackson and Marshal and O. M. Green, H. V. Hummel, P. Peebles, V. J. S. Rumble and J. H. Teesdale.

In Shanghai the health departments of the International and the French Concessions have dairy inspecting and licensing regulations. Once a dairy in the International

Settlement meets a number of rule conditions concerning care of milk, cleanliness of workers, etc., it is given a license permitting sale of milk.

Inspection averaging in frequency twice a week is made of dairies in the settlement. Samples, mostly taken from distributors during the early morning, are collected with a view to testing for water adulteration or for possible removal of fat. When milk indicating adulteration or fat removal of more than a certain percent, is found, a fine is imposed, and according to the regulations, the license may be withdrawn when the Council thinks it proper to do so.

Milk, to pass the Shanghai health department's test, must contain a minimum of 8.5 per cent of solids, not fat. The minimum of fat required is 3.25 per cent. Considerable buffalo milk is sold in the settlement, and this, being of a high fat and solid content, is often subject to water adulteration. For testing samples which give doubtful results from other examinations, the cryoscopic test, determining the freezing point, is used. Data is being kept with a view to making a change in the standards required by the bureau.

Under present rules the Shanghai health department finds it not possible to prevent agents of cow owners outside the settlement, sometimes producing milk under insanitary conditions, from entering the settlement and selling. It is felt that much more severe laws for dealing with persons bringing in milk from unlicensed dairies should be placed on the books. Following are the licensing requirements in the International Concession:

1. That the license be not transferable.
 2. That the General Municipal Rate payable in respect of the said premises be paid within fourteen days after the date on which it shall become due for payment.
 3. That the neighbourhood and immediate surroundings of the dairy be healthy.
 4. That the premises shall be constructed and maintained in accordance with the requirements of the Commissioner of Public Health.
 5. That the walls and ceilings be whitewashed in January and July each year.
 6. That no one shall eat, sleep or dwell in the dairy, nor shall it be in direct communication with a dwelling house.
 7. That no person with any communicable disease shall be employed or remain on the premises.
 8. That the workers and their clothing be clean and that they wash their hands before milking.
 9. That the workers and their families be vaccinated and submit to any other prophylactic measure that may be advisable.
 10. That pails, bottles, tins, strainers and other utensils be thoroughly scalded immediately after use and be kept in the milk house until again used.
 11. That milk be removed from the cow-house without delay and kept in the milk house until delivery.
 12. That all milk, cream or butter be stamped with the seal of the dairy and that the carts, baskets, etc., used in delivery bear the name of the dairy, and the licensee be responsible for all produce sold under that mark,
That the distributors shall carry a proper distributing ticket and dairy produce found being delivered without these tickets be liable to confiscation.
 13. That the licensee keep a list of customers for inspection.
 14. That no spitting be allowed within the dairy, that proper means be taken to prevent the access of flies and dust to the dairy produce, and that the business be conducted with due regard to the requirements of Public Health and to the satisfaction of the Commissioner of Public Health.
 15. That free access be given to officers of the Council, charged with the duty of inspection of licensed premises.
 16. That samples be furnished when required for examination or analysis by the Commissioner of Public Health, and that if any dairy produce be found to be of poor quality adulterated, or unfit for food it may be confiscated and the licensee be liable to prosecution.
 17. That no gratuities of any kind be paid any employee of the Council.
 18. That immediate notice be given to the nearest Public Health Office of all deaths and cases of sickness occurring on the premises, and in the families of licensee and employees.
 19. That on a breach of any of its conditions the licence be subject to withdrawal or suspension by the Council and the licensee be liable to prosecution.
- Security.* At the discretion of the Council. *Fee.* \$2 per quarter.

Experiments have been carried on in the south of China at the Canton Christian College, with the idea of discovering if it may not be feasible to use water buffaloes as milk-producing animals. C. O. Levine, professor of animal husbandry at the College, is the author of articles on "The Water Buffalo—A Tropical Source of Butter Fat" which appeared in the *American Journal of Heredity*, and "The Water Buffalo for Dairy Purposes" in the *Lingnaam Agricultural Review*, printed by the College.

The milk of the water buffalo is pure white, and butter made from the milk is the same color. It is wholesome and palatable when produced under sanitary conditions. Students and teachers, both European and Chinese, at the College prefer buffalo milk to European cow's milk, according to Professor Levine's articles. The objectionable flavor often associated with buffalo milk is usually due to the production of the milk under insanitary conditions which generally prevail in village dairies.

At Kowloon, across the bay from Hongkong, there is a herd of about 20 Indian buffalo cows managed by Indians. The buffaloes in this herd have been imported from the region of Delhi, in the northern part of India. These buffaloes are different from the Chinese buffaloes, being much larger, some of them five feet tall at the withers. They have large spiral horns, and for this reason they are known as the "ram's horn" buffalo in the Philippine Islands, where they are being imported for dairy purposes. The milk, according to Dr. Gibson, the colonial veterinarian of Hongkong, contains about the same percent of fat as that of the Chinese buffalo. The ram's horn animals are said to give as much as 60 pounds of milk a day in India when well fed.

One of the reasons perhaps why few buffalo cows are used for dairy purposes in China is that they give but little milk, and while the milk contains about three and one-half times as much fat and nearly twice as much total solids as does European cow's milk, it usually sells for the same price. Cows which have not been specially bred for milk production, animals which were selected from herds of ordinary buffalo cows, produce as much as 10 pounds of milk a day for several months.

China is becoming a consumer of condensed milk, although it is yet a luxury for most Chinese. At least one company which imports milk is attempting in Shanghai, through small board signs to advertise its product to the middle and lower classes. Importations of condensed milk in China in 1919 amounted to 402,326 dozen tins. In 1920 the importations dropped to 89,533 dozen and in 1921 to 38,397 dozen. Statistics showing the 1919 and 1921 imports in full, including the source or trans-shipping point of the order follow:

	1919		1921	
	Value		Value	
	Doz.	Hk.	Doz.	Hk.
<i>Imported From</i>	<i>Tins</i>	<i>Tacls.</i>	<i>Tins</i>	<i>Tacls.</i>
Hongkong.....	120,545	252,753	29,827	88,987
Macao.....	583	1,224	626	1,624
French Indo-China.....	2,399	5,630	3,678	9,972
Singapore, Straits, etc.....	203	1,104	89	454
British India.....	1,900	5,380	280	1,088
Great Britain.....	7,653	11,844	533	4,373
France.....	3,992	6,041	.....	.....
Italy.....	.....	.....	1,520	5,955
Russia and Siberia by land frontier.....	4	8	.....	.....
Russia Pacific Ports.....	45	174	.....	.....
Korea.....	5,514	11,520	1,424	5,714
Japan (including Formosa)	53,423	104,739	4,888	14,980
Philippine Islands.....	1,464	4,972	.....	.....
Canada.....	31,614	64,367	.....	.....
U. S. of America (includ- ing Hawaii).....	218,951	353,384	3,305	10,001
Australia, New Zealand, etc.	16,333	37,087	.....	.....
Direct Gross Import	464,623	858,227	46,170	143,143
Re-exported Abroad	62,297	113,666	7,773	38,915

Total Net Import 402,326 744,561 38,397 104,233

China imports some cheese, most of which comes from America. The Netherlands are second in cheese shipments here, and Great Britain third. Following is a detailed report of cheese importations into China in 1921:

<i>Imported</i>	<i>Piculs.</i>	<i>Val. Hk. Tls.</i>
Hongkong.....	51	2,577
French Indo-China.....	5	594
British India.....	18	1,067
Great Britain.....	133	11,476
Germany.....	23	1,807
Netherlands.....	291	20,850
Belgium.....	1	93
France.....	32	1,705
Switzerland.....	1	86
Italy.....	19	1,720
Russia Pacific Ports.....	33	1,750
Korea.....	8	456
Japan (including Formosa)..	1	64
Canada.....	110	6,359
U. S. of America (including Hawaii).....	1,360	80,872
Australia, New Zealand, etc..	18	888
Direct Gross Import	2,104	132,374
Re-exported Abroad	2	158
Total Net Import	2,102	132,216

Butter to the value of more than three-quarters of a million taels was brought into China in 1921. The total, estimated in piculs of 133 1/3 pounds, was 10,922, a large amount of which was from Australia, either directly or through Hongkong. Detailed statistics showing butter imports for 1921 follow:

<i>Imported</i>	<i>Piculs</i>	<i>Val. Hk. Tls.</i>
Hongkong.....	3,729	282,866
French Indo-China.....	37	3,136
British India.....	1,070	54,877
Great Britain.....	223	14,542
Denmark.....	20	3,269
Netherlands.....	4	409
France.....	131	10,325
Austria and Hungary.....	88	7,725
Russia and Siberia by land frontier.....	525	31,170
Russia Amur Ports.....	2	175
Russia Pacific Ports.....	13	977
Korea.....	14	738
Japan (including Formosa).	239	15,135
Philippine Islands	1	52
Canada	112	8,175
U. S. of America (including Hawaii).....	1,729	150,311
Australia, New Zealand, etc,	3,254	237,802
Direct Gross Import	11,191	820,684
Re-exported Abroad	269	21,095
Total Net Import	10,922	799,589