

Frogs Fetch Foreign Exchange

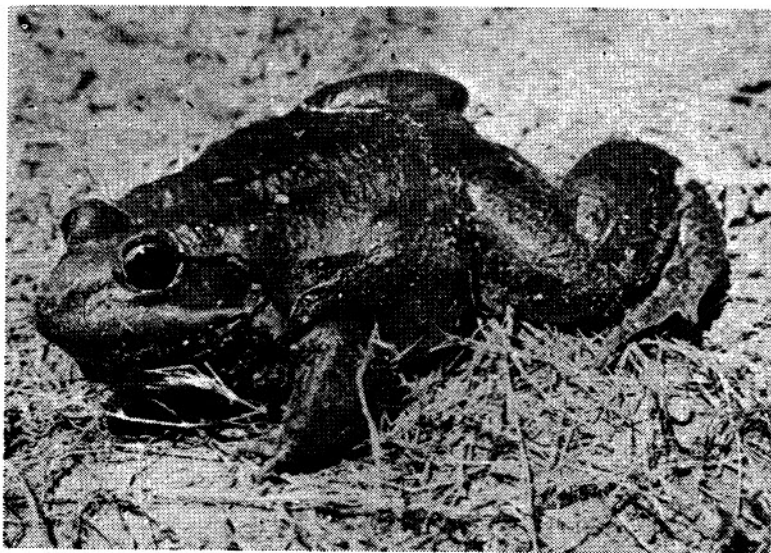
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The frog which used to pass uncared for by the humans until a few years back excepting probably by the students of Zoology in colleges and universities, has recently come up very much in the news as an important export commodity earning valuable foreign exchange for our country. Formerly, the frogs made their existence felt only in the beginning of the southwest monsoon when they generally make a hell of a noise in all low lying marshy places and paddy fields, partly because of the happiness of coming out of their hibernation and enjoying the freshes and mostly because this happens to be their mating season. Now it is a common sight in almost all swampy and low lying places in Kerala, Madras, Mysore, Maharashtra and Andhra states to see people at night times with bright petromax lanterns, scooping nets tied to poles and gunny bags on their shoulders moving about in search of frogs. These creatures get stunned by the dazzling light of the lanterns and remain stationary when they are either scooped out

by the net or caught by the hand if in reach and deposited in the gunny bag. At day-break they are delivered to the processing factories where they are butchered and frozen for export. The common varieties of frogs caught in our country are the bull frog (*Rana tigrina*) and *R. hexadactyla*.

Freezing :

Only the pair of hind legs from the frog is used by the freezing industry, the rest of



The Bull Frog

the body which contains comparatively little edible flesh being wasted. The hind legs are held together rather tightly by the left hand of the butcher when the body of the frog straightens up. It is then held over a wooden block placed on the ground and the body severed from the legs about two centimeters above the waist line by a single cut with a sharp knife. The skin on the legs is easily peeled off, the claws trimmed and the main blood veins pulled out through an incision made at the knee joint. It is then washed clean, each individual pair of legs wrapped with polythene paper and fastened with rubber bands. They are then individually quick frozen preferably in a blast freezer to a temperature of -40°C , graded according to size and weighed quantities packed in cardboard or plywood boxes.

In the case of the smallest varieties, sometimes block freezing as in the case of prawns is adopted according to the buyers' stipulations. However, only half pound and one pound blocks are generally frozen. They are

then stored at -23°C , shipped in holds held at the same temperature which is maintained until it reaches the consumer as in the case of prawns.

Export Market :

Even though frogs are frozen and exported from Cochin, Mangalore, Goa and Bombay, the bulk of the export is from Cochin. Almost the whole of our frozen froglegs is consumed by the United States of America and France where they are considered to be a table delicacy. Even though people in our country have a sentimental feeling against eating them, some of the more well-to-do set of people have recently taken to it more as a fashion than a necessity. Frogleg meat is considered to be as tasty as chicken meat.

Processing and export of froglegs from India commenced only from the latter half of the last decade and the phenomenal progress achieved from then onwards can be seen from the following figures :



Frozen Froglegs

Export of Frozen Froglegs from India.

Year	Quantity Kg.	Cost Rupees.
1959	93,574	4,73,788
1960	4,08,243	15,22,552
1961	2,48,900	12,13,368
1962	3,90,731	22,98,581
1963	5,13,553	31,91,611
1964	3,31,669	16,50,414
1965	3,84,876	22,83,306
1966	4,67,216	44,18,524
1967	7,85,774	88,16,813
1968	4,52,310	48,91,310

Conservation :

The importance of this commodity in our economic development can be realised when we come to know that the Indian Standards Institution has formulated quality standards for this product and the Government of India have introduced compulsory pre-shipment inspection for it from 1st March 1966. Due to the ever increasing demand for the product in the external markets, people in our country started catching the frogs indiscriminately so that a certain amount of fear about their depletion has been felt by the authorities. The Government of India have consequently made it a policy from the last 3 to 4 years to ban export of froglegs during the months of June and July, which as pointed out earlier, is the breeding season for the frogs. The Government and some of their agencies have also been ceased of the importance of increasing the frog population, for which a special Officer has been appointed some time back to suggest necessary ways and means. The Indian Council of Agricultural Research and the Government of Kerala have already started schemes for culturing frogs as is done in some other countries like Japan. One difficulty in culturing frogs is believed to be the problem of feeding them, being able to feed on live preys only.

By-Products :

As pointed out earlier, the body portion of the frog is now being wasted. But, if the fatty tissues from the body are separated and boiled with water, a golden yellow oil rises to the surface which can be laddled out. The oil as well as the leg meat are said to be specific cure for asthma. Even though no reference to this effect is available in literature, the author knows of individuals having been completely cured of asthmatic complaints by administering the frog oil orally. The rest of the body can be cooked with

water, pressed, dried and powdered, when a fine poultry or cattle feed is obtained.

A Humane Problem

While cutting the froglegs, the processors insist on having them cut from the live ones, as otherwise the meat happens to be highly contaminated by micro-organisms. When the legs are severed they make a big hue and cry and both parts of the body struggle a lot before life becomes extinct. The Society for the Prevention of Cruelty to Animals has therefore approached the Government of India to device means of cutting the legs without making them feel the pain. Some of the Government agencies were consequently requested to investigate the problem in detail. Electrocutation of the frogs before cutting the legs were not successful because, even though shorter exposures to electric current paralysed the frogs, they revived after a while, whereas, longer exposures brought about a certain amount of charring of the flesh, which is not desirable or permissible in the product. It has now been reported that if live frogs are taken in a net and dipped in 10% common salt solution for 10 minutes, they become narcotised and do not revive again. The legs can then be cut easily without any struggling on the part of the frogs. Common salt appears to be toxic to the frogs.

The Bacteriological problem

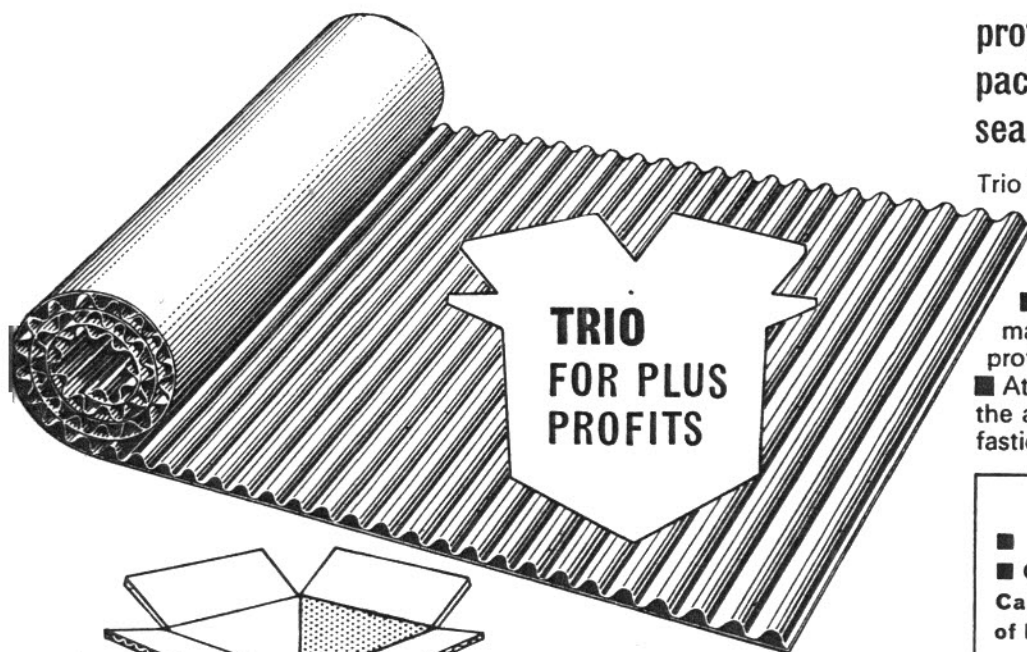
Since frogs are always encountered in marshy surroundings, it is only natural that their surfaces are highly contaminated by micro-organisms including the pathogenic types like *Escherichia coli*, faecal streptococci and salmonella. If the legs are cut without sufficient precautions, these bacteria contaminate the flesh to varying degrees, part of which will be carried through the various stages of processing including the finished product. Fortunately enough, all these bacteria are of the type what we call

“terrestrial” and common salt is as much toxic to them as to the frogs. Hence the brine dip treatment described above has got the added advantage of destroying almost all the microbial population generally associated with live frogs.

Impact on Society

Even though export of froglegs does not apparently affect the human society in India and is all the more desirable from the point of view of earning valuable foreign exchange, it certainly disturbs the balance of nature to some extent and the recent spontaneous multiplication of mosquitoes in this part of the country is attributed to the large scale

capture of frogs which otherwise feed voraciously on them. If this is true, it is certainly going to have a profound influence on the health of the people of Kerala where mosquito-borne diseases like filariasis and malaria are prevalent to a very considerable extent. Let us hope that by adopting judicious conservation measures, and scientific methods of artificial culturing, the balance of nature can be kept up as far as possible so that simultaneously with the earning of the much needed foreign exchange for the developmental activities of our country, the frogs continue to keep mosquito population under control, thereby protecting the human race from mosquito-borne diseases.



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