

and entities which are non-mental, non-ideational though these enter into the relation known as knowledge. Thus, the description of Dvaita as "concrete idealism" is a distortion. Dvaita is Realism. (In Indian philosophy *Tattva-vada* is contrasted with *Maya-vada*—i.e., Realism is contrasted with Illusionism.) Dvaita is emphatically not the idealism of Spinoza, Berkeley, Bradley, Kant and others. It is not idealism at all. It must be observed that idealistic systems which make or enter into cheap compromises with Realism, and similarly, Realistic systems which coquette with Idealism "pure" or "concrete" must both be banned from decent metaphysical company. And then, "concrete idealism" is better contrasted with "abstract idealism". A system can both be "pure" and "concrete". There is no antagonism between the two. All attempts wherever and by whomsoever made to bring Dvaita under "idealism" must fail. Dvaita is Realism. Secondly, Idealism is not the only fashionable or rational world-view.

Again, Prof. Venkata Rao has drawn but a doubtful parallelism between Bradley's "My station and its duties" and the Gita

ideal of "Svadharmā". If, for instance, one, be he a peon or a prime-minister, does his duty and draws his salary would that be the "path of realisation"? (p. 221). Bradley does not touch even the remotest fringe of Karma-Sanyasa (Sankara) and Karma-Yoga (Ramanuja and Madhva) interpretations of the Gita. I am afraid such doubtful parallelisms may not promote correct and sympathetic understanding between the East and the West for the securing of which presumably they are drawn.

These comments, I must add in conclusion, will not touch the general excellence of the treatment of the different topics by Prof. Venkata Rao. After completing a study of the volume, readers will get just a picture of disjointed snap-shots of the problems of philosophy. "One is surprised", writes Prof. Venkata Rao, "at the wealth of philosophical material waiting to be interpreted" (Preface). He has ample opportunities for study and research and I am sure at the earliest possible one, he will concentrate his attention on some one work "waiting to be interpreted" and develop his thesis in an independent unified volume.

R. NAGA RAJA SARMA.

MILK IN RELATION TO HEALTH

MILK provides the closest approach to an ideal diet and it has a special value in the Indian dietary where it forms the only source of first class animal proteins. From the nutritional standpoint a consumption of 1½ lbs. of milk per day may be considered absolutely necessary for an adult. Repeated surveys that have been carried out on this subject in India have, however, shown that the consumption is far below this optimum. The latest survey of the Agricultural Marketing in India in their report on "Marketing of Milk in India and Burma"* shows an average *per capita* consumption of milk and milk products at 7 ozs. of milk per day. Milk from Indian animals is no doubt very rich in fat (average 6 per cent.) compared to that produced in other countries (average 3.5 per cent.) and if milk consumed in India is toned down to this lower fat percentage the *per capita* intake of milk would be increased to 10.5 ozs. Of course,

it is a debatable point whether so much importance could be attached to fat alone. The protein percentage of milk of Indian breeds of cattle is no doubt slightly higher than in milk of Western breeds but this is nothing compared to the very high fat percentage in the former and the mineral salts are by no means higher. Hence this dilution cannot be justified from the nutritional point of view. Even considering this higher figure as correct there is still a very great and urgent need for increasing the production and consumption of milk in this country.

Fortunately the value of milk and milk products for human nutrition is well known to consumers in India and this has been preached by her sages from most remote times. This was not so in many other countries but once the science had proved the value of milk, people were quick to take advantage of these new discoveries and today India has much to learn from their example. The first essential for milk production is a well balanced food for the animals. India has about a third of the

* *Report on the Marketing of Milk in India and Burma* (Manager of Publications, Delhi), 1941, pp. iii + 54. Price As. 8 or 9 d.

world's cattle population but many of these animals have to live on straw. The tendency to breed animals without any planning further makes this shortage acute. It is thus quite essential to have a proper record of the performance of each animal with the object of keeping only the profitable ones and weeding out those that are unprofitable. In India the number of milch animals whose record is maintained comes to only about 0.03 per cent. This unthrifty character of indigenous cattle is further illustrated by the figure for the milk production quoted in the above report. The average annual milk yield for cows varies from 65 lbs. to 1,825 lbs. Buffalo in comparison, is a better milk producer but the controversy as to whether India should get all milk only from cows or buffaloes is premature. All these resources must be harnessed for to-day's needs. For the development of dairy industry on proper lines it is quite essential that breeding should be done on scientific basis and a record of every animal maintained. This will of course be beyond the economical means of individual farmers but much can be achieved by village co-operative organisations.

The greatest stimulant to milk production is to increase the demand for milk, and under Indian conditions the attention must be focussed on the rural areas. One of the striking points brought out by the Agricultural Marketing Report is that even in rural areas of important dairy districts about 20 per cent. of the families, including children, do not consume any milk or milk products. When there is a local excess of milk it is usually converted into ghee. One of the chief attractions for the villager to make ghee is no doubt the ready cash it brings. But this is rather an uneconomic method of disposing off milk as the price realised by sale of ghee is much less and also because quite a large amount of the "lassi" produced as a bye-product is, contrary to the general belief, wasted.

The milk problem in the urban centres of India is also acute. The most undesirable aspect of this problem is that about 60-70 per cent. of the milk requirement is supplied by the animals housed within the municipal limits. The cost of maintenance in such centres is necessarily very high and due to economic reasons there is any amount of cruelty practised on dumb animals. These animals are slaughtered as soon as they go dry and this is a great drain on the cattle

wealth of the country, as usually the animals brought to the cities are the best of their type. This and restricted transport facilities make the price at which milk is sold in urban centres very high in spite of the fact that milk is delivered in a crude state, no processing or bottling is done and also the chemical and hygienic quality of the samples is doubtful. Adulteration is practised on an extensive scale. The report has suggested a tentative scheme for the distribution of milk in the urban centres which is worth considering as need for some such co-operative organisation is badly felt. The suggestion made in the report about "toning" of milk to a standard butterfat percentage is also very valuable. It is estimated that in urban areas about 46 lakh maunds of skimmed milk is produced as a bye-product of creamery butter industry and if this can be used to mix with our fat rich milk, the same quantity of milk can be made to go round further.

Another aspect of milk production to which so far little attention has been paid is its degree of cleanliness. Unfortunately it is very difficult to distinguish by ordinary human senses good from safe milk. The report gives some very enlightening illustrations under which milk is to-day produced and sold in the urban centres. They need wider publicity within this country to arouse the consumers from their apathy. Unless there is a genuine demand and appreciation for clean milk, producers can hardly be expected to pay much heed to the conditions of production. On the other hand, any indirect method of making bad milk good is sure to be expensive to the country in the long run. The universal practice is to boil the milk and though the extent of boiling differs in different parts of the country, on an average it can be estimated that at least 5 per cent. of all the valuable constituents are lost. Another common procedure is to keep the milk simmering all throughout the day in confectioners' shops. Here the loss of nutrients will no doubt be much greater.

Production of milk and particularly of clean milk are closely bound up with the market price. In almost all the countries where dairy industry has been organised the control of milk prices has been the first and essential step. The State also gives its full share in the organisation of the dairy industry. Without this help the state of things in these countries would not have

been much different from what prevails in India to-day. At present it is difficult to estimate whether the Indian producer is working at a profit or loss but from the few data that are available and their comparison with the cost as estimated on some of the systematically run farms, it is clear that the producer has to be satisfied if he does not incur any loss. For example, it has been shown that there was a steady fall in the price of wholesale milk during the last ten years. An industry that rests on such slender basis cannot progress. A thorough reorganisation is necessary. This need not necessarily mean an increase in the price of milk from what prevails to-day. It is estimated that the cost of running the Milk Marketing Scheme in England comes to less than 1 per cent. of the value of milk sold. This cost is insignificant considering the great boon it has proved to the community. Similar results could be achieved in India too.

In India dairying is pursued largely as a side line and the whole industry, though colossal in its magnitude, has an individualistic outlook. Production of milk and rearing of good milch animals are, on the other hand, quite intricate processes. Hence a new orientation in the outlook is essential. For progress, co-operation is necessary and for

bettering the condition of the dairy industry the absence of village co-operative organisations is urgently felt. It is such co-operative societies alone that can decide the breeding policy, create means to put it in practice, the price at which every villager will sell his milk and milk products, the quality of food that will be grown, the quantity of milk every child in the village will receive and so on. These village centres may in turn be linked with consumer's co-operative unions in the urban centres and thus a countrywide organisation set up. When the rural areas are organised the urban problem will be solved automatically or at least without much difficulty. The object of such co-operative centres should not merely be more profit for its members. Side by side it must increase the consuming capacity of the members and by better education help them to select or produce right type of food.

The problem of nutrition is thus closely linked up with better organisation of the dairy industry of the country, for, better diet means always more milk. In the past few years the milk problem in India has been widely discussed and learned theses produced. It is now time to translate these suggestions into practice.

N. N. DASTUR.

CENTENARIES

Sharp, Abraham (1651-1742)

ABRAHAM SHARP, an English mathematician, was born in Bradford in 1651. After apprenticing to a merchant at Manchester, he moved to Liverpool and devoted himself to mathematics. From 1684 to 1690 he was employed under Flamsteed in the newly founded observatory at Greenwich and in 1688 he graduated with extraordinary accuracy a mural circle for that observatory.

Sharp calculated π to 72 places and the logarithms of all numbers from 1 to 100 and of all primes upto 1100 to 61 places.

Sharp died near Bradford, 18 July 1742.

Dallinger, William Henry (1842-1909)

WILLIAM HENRY DALLINGER, an English biologist, was a Wesleyan minister by profession. From 1870 to 1880 he pursued

microscopic researches into minute pathogenic organisms. This gave him a mastery of microscopical technique and earned him reputation for his classical investigations into the life-history of some micro-organisms, particularly flagellates. In one instance he had an individual monad under observation continuously for thirty-two hours. Incidentally he threw much light on the then controverted question of abiogenesis.

One of his investigations proved the futility of the ordinary precaution of boiling for sterilising. For it proved that though the temperature of boiling water was fatal to monads in an active state, their spores could stand a temperature upto 300°.

Dallinger died at Lee, Kent, 7 November 1909.

University Library,
Madras.

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