

# **Report of the thirteenth meeting of the Nutrition Advisory Committee of the Indian Research Fund Association.**

## **Contributors**

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**REPORT OF THE THIRTEENTH MEETING OF THE NUTRITION ADVISORY  
COMMITTEE OF THE INDIAN RESEARCH FUND ASSOCIATION  
HELD IN NEW DELHI, ON THE 28th NOVEMBER, 1945.**

**COMPOSITION OF THE COMMITTEE.**

**PRESENT :**

- Lieut.-Colonel C. A. Bozman, I.M.S., Public Health Commissioner with the Government of India (*Chairman*).
- Professor S. P. Agharkar, Professor of Botany and Head of the Botany Department, University College of Science, Calcutta.
- Dr. K. P. Basu, Reader in Chemistry, and In-charge of the Biochemical Laboratory, University of Dacca, Dacca.
- Khan Bahadur Dr. A. H. Butt, Director of Public Health, Punjab, Lahore.
- Dr. B. C. Guha, Chief Technical Adviser to the Government of India, Department of Food, New Delhi.
- Dr. V. N. Patwardhan, Assistant Professor of Biochemistry, Seth G. S. Medical College, Bombay.
- Dr. G. Sankaran, Professor of Biochemistry and Nutrition, All-India Institute of Hygiene & Public Health, Calcutta.

Sir Theodore Gregory, Economic Adviser to the Government of India, Mr. John Sargent, Secretary, Education Department, Government of India, Mr. H. R. Stewart, C.I.E., Vice-Chairman, Imperial Council of Agricultural Research, Major G. Williamson, O.B.E., Animal Husbandry Commissioner with the Government of India, and Dr. W. R. Aykroyd, C.B.E., M.D., Sc.D., Director, Nutrition Research Laboratories, Coonoor, were unable to be present.

The following were present by invitation :—

- Dr. Bashir Ahmad, Assistant Director, Council of Scientific and Industrial Research, University Buildings, Delhi.
- Dr. S. Ahmad, Nutrition Officer, Public Health Department, Bihar, Patna.
- Dr. (Miss) Kamala Bhagvat, Assistant Director, Nutrition Research Laboratories, Coonoor.
- Dr. R. E. Dadachanji, Nutrition Officer, Finance Department (Supply), Haffkine Institute, Bombay.
- Dr. M. B. Daver, Nutrition Officer, Medical and Public Health Department, Hyderabad (Deccan).
- Dr. P. V. George, Nutrition Officer, Public Health Department, Madras.
- Mr. T. Gonsalves, Assistant Secretary, Indian Research Fund Association.
- Mr. W. H. Kirby, Rationing Adviser to the Government of India, Department of Food, New Delhi.
- Dr. K. Mitra, M.B.E., Deputy Director Rationing (Nutrition), Government of India, Department of Food, New Delhi.
- Dr. D. M. Roy, Nutrition Officer, Public Health Department, Central Provinces, Nagpur.



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PAGE 2.

*Insert the following names after the name of Lieut.-Colonel  
B. H. Smith, I.M.S., Assistant Director (Nutrition), Medical Directorate,  
Delhi.*

Dr. S. S. De, Lecturer in Food Technology, Indian Institute of  
Science, Bangalore.

Professor V. Subrahmanyam, Professor of Biochemistry, Indian  
Institute of Science, Bangalore.

Kurnool and were of the rough and ready type advocated for rapid surveys. This method was, however, soon abandoned in favour of the more classical type of enquiry. The enquiry revealed that in these areas the consumption of rice has fallen markedly while that of millets has increased, it is probable that the cost of rice and the difficulties in obtaining it in these areas of shortage accounts for this finding. Among the pulses red gram is both largely grown and consumed in these areas. The consumption of the protective foods, e.g. green leafy vegetables, milk and its products, is almost negligible. The survey seems to establish that in these parts of Madras it has been possible for a working class population to manage to continue to live in the absence of adequate supplies of rice by utilising grains normally neglected in this area.

An important feature of the work has been the biometric studies which have been taken up in order to attempt to find out a basis of an age, weight and height standard from which the state of nutrition of children may be assessed. These biometric analyses are by no means complete and the progress of this work will be watched with considerable interest.

At the Nutrition Laboratory where the technical staff available is inadequate attempts have been made to work out certain recipes for palatable preparations of ragi and to experiment with the incorporation of food yeast into various food preparations. Material has been collected to open a nutrition museum as soon as suitable premises become available.

*H.E.H. the Nizam's Dominion:* The Nutrition Advisory Committee, the formation of which was taken up last year, has been functioning during the year under investigation.



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Dr. M. V. Radhakrishna Rao, Assistant Director, Department of Nutrition and Experimental Pathology, Haffkine Institute, Parel, Bombay.

Lieut.-Colonel B. H. Smith, I.M.S., Assistant Director (Nutrition), Medical Directorate, Delhi.

#### 1. TO CONSIDER THE PROGRESS OF NUTRITION WORK IN PROVINCES AND STATES.

The Committee considered reports of work carried out in Madras, H.E.H. the Nizam's Dominions, Hyderabad (Deccan), Bihar, the Punjab, Bombay and the Central Provinces and Berar. A brief account of the work is given below:—

*Madras*: The report submitted was on work carried out for the half-year ending 31st October, 1945. Madras has only recently appointed a nutrition officer and nutrition activities have experienced the teething difficulties that so frequently happen in the setting up of a new organisation. Work has been concentrated mainly on the following subjects:

- Diet surveys carried out on a regional basis.
- Enquiries into deficiency diseases;
- Biometric studies;
- Studies of vital statistics in relation to food and nutrition;
- Health education work through exhibitions and cinema shows;
- Laboratory work;
- Popularisation of the compost methods of the disposal of town refuse in small municipal towns.

Diet surveys were carried out in the deficiency districts of Bellary and Kurnool and were of the rough and ready type advocated for rapid surveys. This method was, however, soon abandoned in favour of the more classical type of enquiry. The enquiry revealed that in these areas the consumption of rice has fallen markedly while that of millets has increased, it is probable that the cost of rice and the difficulties in obtaining it in these areas of shortage accounts for this finding. Among the pulses red gram is both largely grown and consumed in these areas. The consumption of the protective foods, e.g. green leafy vegetables, milk and its products, is almost negligible. The survey seems to establish that in these parts of Madras it has been possible for a working class population to manage to continue to live in the absence of adequate supplies of rice by utilising grains normally neglected in this area.

An important feature of the work has been the biometric studies which have been taken up in order to attempt to find out a basis of an age, weight and height standard from which the state of nutrition of children may be assessed. These biometric analyses are by no means complete and the progress of this work will be watched with considerable interest.

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During the year under review work has been concentrated mainly on school feeding schemes; on the setting up of milk booths for the distribution of milk to children and expectant mothers; on mobile canteens and on canteen feeding arrangements. In all these great difficulty has been experienced in obtaining the necessary supplies of milk and various methods are under consideration to overcome this. In the school feeding scheme it is proposed to give 8 ozs. of reconstituted milk plus seasonal fruits and vegetables and some form of carbohydrate in the form of biscuits, etc. On account of the shortage of milk distribution at the milk booths has been restricted to children below two years and pregnant and nursing mothers. In order to get over a very real difficulty which concerns the supply of milk to persons who need it but do not like to approach a public place to obtain their supply, arrangements have been made to deliver the necessary quota to them at their own houses with the levy of a small charge.

It is hoped that the mobile canteens which will be set up will serve the purpose of demonstration kitchens as well as offering to the public prepared food at cost price. It is hoped also that by selling cheap and thus attracting a large number of clients these mobile restaurants may pay their way to a great extent. Those canteens which are run in connection with industry are already popular and at least 30,000 workers in the city are utilising the facilities thus afforded. Refreshments are served during rest hours and attempts are being made to introduce a scheme whereby a mid-day meal may be made available.

The nutrition organisation of the State also carried out repeat surveys of sample groups of families in Hyderabad city and publicity and propaganda work. On the purely technical side investigations into the incidence of fluorosis have been prosecuted.

*Bihar*: During the year under review the nutrition officer who has been working for some years in Bihar was loaned by his Government for a Central Government appointment. His place has, however, been taken by another nutrition officer and work in this Province which was among the earliest to take up this subject has not been interrupted.

Dietary surveys were undertaken into the food intake of Oraon families, these being one of the aboriginal tribes in the district of Ranchi. The idea was to compare the results obtained in this case with those obtained from a survey completed last year of Munda families in the same district. It was found during this investigation that the nutritional state of the Oraon children as compared with the Munda children was better due apparently to a more liberal intake of food.

On the laboratory side studies were carried on into protein metabolism with an interchange of cereals in the diets by human feeding experiments. Samples of mustard seed were analysed at the request of the Prison authorities and other samples were received from other sources.

In this Province education, propaganda and publicity work has always been prominent and this was continued as usual during the year under review.

When the Committee were considering the record of the analysis of four samples of common types of meal which were reported by the nutrition officer emphasis was laid on the necessity for having analysis of diets in families checked wherever possible by analysing cooked diets in institutions. It was recommended that the recorded results should always include a description of the method



of cooking. The actual method of sampling cooked food to be adopted in individual cases will of course have to be determined by the individual worker.

*Bombay:* The Government of Bombay have taken up the question of nutrition seriously and much work has been done in this Province on many items of this important problem. The distribution of milk in the city of Bombay and its suburbs is subsidised and now covers very large number of persons who receive this article of food at 50% concessional rate. The cost to Government for subsidising this scheme is at present over Rs. 1,20,00,000 per annum. The usual difficulties of obtaining milk supply in adequate quantities are being met partly by the importation of large quantities of separated milk powder. In addition a special farm has also been started with nearly 1,000 milk buffaloes. Other schemes which are receiving attention in the Province concern the development of more foodstuff, both protective and others, such as cereals, pulses, vegetables, fish, poultry and eggs.

The Bombay Government have started an experiment by taking over the mass feeding of unmarried personnel and recruits at the police headquarters at Thana. Each man is charged Rs. 15 per month, the balance of the expenditure being met by Government. The scheme met with some trouble in its early days as those participating were accustomed to somewhat more bulky feeds than the balanced diet provided at the community feeding centre, but it has now become popular and the police authorities have recommended to Government that similar facilities should be provided at four other centres in the Province. The clerical staff at the Secretariat, Bombay, are also being included in another community feeding experiment where at a charge of six annas per meal a fairly balanced vegetarian meal is supplied. The overhead charges of this scheme are being borne by Government. A sum of nearly rupees one lakh has been spent on the construction of a suitable building and the provision of furniture and equipment. Yet a third experiment has been instituted in a rural area in Poona. Students at various centres there can now at a cost of Rs. 10 per month join a community feeding experiment which has already caused a distinct improvement in the health of those participating. Some progress is recorded with the setting up of canteens for industrial workers, though the general circumstances of life of this class of person in Bombay make the introduction of such schemes difficult.

School feeding continues to receive attention and over 1,20,000 children attending compulsory primary education in schools are concerned. The scheme gives to those children who are reported to be below standard six ounces of milk with or without the addition of shark liver oil free of charge per day. The giving of this milk is supervised by school teachers and the Corporation has been spending nearly five lakhs of rupees on this. It should be understood that this scheme is in addition to the Government subsidised scheme referred to above. An interesting development in the feeding of school children is a proposal to introduce the giving of a tablet prepared at the Haffkine Institute which will contain shark liver oil, vitamin A and vitamin D. It has been found possible to make a very palatable tablet using chocolate and as soon as the necessary tableting machine arrives it is hoped that some 200,000 children will be able to receive a tablet daily.

This scheme was discussed at length by the Committee and the opinion was recorded that to meet the minimum nutrition requirements in the country it is desirable to give to those population groups that need them multi vitamin



tablets containing other important minerals. If such tablets are not readily available, Provincial Governments should consider whether it would be possible to follow the lines of the scheme now being considered by Bombay Government. In all cases where this scheme is introduced periodic checks must be carried out on the vitamin content of the tablets distributed.

A special rapid nutrition survey carried out in Thana city revealed that the class of population most unfavourably placed from the point of view of nutrition was the clerical middle class, 48% of whom were suffering from what could be described as clinical malnutrition. The corresponding figures for other classes are 15% for the labouring class and 23.5% for the school going population. These surveys have indicated also that some 32% to 66% of the population was subject to clinical malnutrition. Other work in this connection included school surveys which seemed to indicate that enlargement of tonsils is a defect that ranks high among this class of the community.

*Punjab*: The Punjab Public Health Department is concerned with nutrition activities and under its auspices a survey was carried out in the winter of 1944-45 in Ambala District. In addition a diet survey lasting for a week of 170 families at four centres was also carried out. The five-year experiment on the prevention of simple goitre through using iodised salt entered its fourth year and the results, as already reported, continue to appear to be very encouraging. Various samples of foodstuffs, waters, etc. were analysed during the year. The Director of Public Health reports that nutrition work in this province is making steady though somewhat slow progress and he hopes that a scheme for establishing a nutrition unit in Kangra Valley now before Government will be sanctioned. This unit when it gets to work should considerably improve the state of health of a population known to be suffering from malnutrition.

In accordance with the recommendation of the Food Requirements Sub-Committee of the Nutrition Advisory Committee in 1944 a scheme has been submitted to Government for nutrition planning in which the annual requirements of both humans and livestock have been calculated as against the average annual production figures of various foodstuffs. In this scheme stress has been laid on the necessity for formulating a scientific food policy with particular reference to the requirements for protective foods. If approved such a policy should help to make the province self-supporting in respect of its food.

Proposals have also been submitted to expand the nutrition section of the Department of Public Health by establishing a nutrition research laboratory at provincial headquarters. As in past years publicity work through lectures, literature and posters was carried out.

*Central Provinces and Berar*: The Nutrition section of the Public Health Department of this province only came into being late in April 1945 when a nutrition officer was appointed. Work has however already been started in diet surveys in both urban and rural areas and a special investigation has been undertaken regarding the various factors influencing the occurrence of lathyrism. The province is experiencing some difficulty on account of the incidence of this disease and the importance of this was realised by the Committee.

It was decided that the nutrition officer of the Central Provinces should make a special reference to those members of the Nutrition Advisory Committee who are already working on this problem in order that he might as soon as possible be in possession of the latest information and the latest views on its causation and prevention. The Committee also felt that this was a subject to



which the attention of the Clinical Research Advisory Committee should be invited.

Mr. W. H. Kirby, Rationing Adviser to the Government of India, at the conclusion of the above review spoke on the wider aspects of food and nutrition policies. He stressed the great need for cooperation between the various authorities who are concerned in work of this nature. He expressed the thanks of his department for the facilities afforded at the Nutrition Research Laboratories, Coonoor, in the way of lectures delivered by the Director, Dr. W. R. Aykroyd, to representatives from Provinces and States who are concerned with food policy. He indicated some of the practical lines along which his department are considering how the general nutrition state of the people might be improved in the immediate post-war years and he referred to the publicity activities of the Food Department making a plea for contributions from all those working on the subject of nutrition.

2. TO CONSIDER THE DRAFT OF THE TECHNICAL REPORT OF THE SOYA BEAN SUB-COMMITTEE REGARDING WORK DONE ON SOYA BEAN UNDER THE I.R.F.A.

The report was accepted with a slight modification as explained in the Report which is printed as Appendix I to this report.

3. TO CONSIDER A NOTE ENTITLED "NOTE ON THE RESULTS OF DIET SURVEYS IN INDIA—PART II" PREPARED BY DR. W. R. AYKROYD, C.B.E., M.D., SC.D., DIRECTOR, NUTRITION RESEARCH LABORATORIES, COONOR, AT THE REQUEST OF THE NUTRITION ADVISORY COMMITTEE (NOVEMBER 1944).

The Committee considered this note and decided that Dr. Aykroyd should be asked to recast it so as to produce it in the form adopted in the note on this subject which he had prepared in 1939.

4. TO CONSIDER A NOTE REGARDING A PAPER ENTITLED "STUDIES ON PROTEIN, FATS AND MINERAL METABOLISM BY DR. K. P. BASU, D.Sc., PH.D., READER IN CHEMISTRY, DACCA UNIVERSITY, DACCA.

The Committee considered that since Dr. Basu had in his note referred to all the published work on human experiments connected with this subject that have been carried out in India it should be published.

5. TO CONSIDER CERTAIN DOCUMENTATION ON 'VITAMIN ENRICHED RICE-ROCHE PROCESS' RECEIVED FROM MESSRS. HOFFMAN LA ROCHE INC. AND A NOTE ON THE SUBJECT PREPARED BY DR. W. R. AYKROYD, C.B.E., M.D., SC.D., DIRECTOR, NUTRITION RESEARCH LABORATORIES, COONOR.

The Committee having considered this note, discussed the question of the fortification of rice and recommended that a Sub-Committee be appointed to investigate the question of the fortification of staple foodstuffs in all its aspects. They suggest the Sub-Committee should be composed of the following :—

Dr. Bashir Ahmad  
 Dr. K. P. Basu  
 Dr. (Miss) Kamala Bhagvat  
 Dr. B. C. Guha  
 Dr. V. N. Patwardhan  
 Dr. G. Sankaran



The Committee recommended that this Sub-Committee should work in the closest collaboration with the organisation in the Food Department which is considering the question of the fortification of foodstuffs.

*Proceedings of the meeting of the Milk and Milk Products Committee of the I.C.A.R. held in New Delhi on the 30th October, 1945.*

The Chairman reported to the Committee that he had been asked particularly to bring to their notice results obtained in a research carried out into the vitamin A content of ghee and the nutritive value of vanaspati by the Imperial Veterinary Research Institute in a report for the year 1944-45 discussed at the meeting referred to under this heading. The Chairman read to the Committee the results of this research as recorded in a paper considered by the Milk and Milk Products Committee. The Committee recorded that they heard of this with interest and recommended that further work be carried out under the auspices of the I.C.A.R. on this important subject. The Chairman stated that details of this work as available in the proceedings of the meeting of the Milk and Milk Products Committee will be circulated to members.

6. TO REVIEW WORK IN PROGRESS AND CONSIDER THE QUESTION OF CONTINUATION OR OTHERWISE OF THE ENQUIRIES.

The Committee recommended the continuation of the following enquiries :

(i) Nutrition researches under Dr. W. R. Aykroyd at the Nutrition Research Laboratories, Coonoor.

(ii) Ascorbic acid enquiry at the University College of Science and Technology, Calcutta.

(iii) Enquiry on the formation, function and variations of plasma proteins in health and disease under Mr. N. C. Datta at the Grant Medical College, Bombay.

(iv) Nutrition research unit under Dr. K. P. Basu at Dacca University, Dacca.

(v) Nutrition research unit under Dr. V. N. Patwardhan at the Seth G. S. Medical College, Bombay.

(vi) Enquiry into estimation of vitamin A activity of plant foods under Dr. Bashir Ahmad at the Laboratories of the Board of Scientific and Industrial Research, University Buildings, Delhi.

NOTE.—In order to expedite the work of the enquiry the appointment of an additional worker was recommended.

(vii) Enquiry on the role of nutritional factors in hepatic cirrhosis under Dr. M. V. Radhakrishna Rao at the Haffkine Institute, Bombay.

(viii) Enquiry on the chemical nature and nutritional availability of food iron at the University College of Science and Technology, Calcutta.

(ix) Enquiry on poor rice diets and food preparations in common use in South India under Miss D. Pearson at the Women's Christian College, Madras.

(x) Enquiry on the evaluation of proteins in terms of haemopoietic activity and the relation of dietary protein to blood and muscle haemoglobin under Professor M. Damodaran at the University Biochemical Laboratory Triplicane, Madras.



The following enquiries have already terminated or will terminate this year :—

- (i) Enquiry on protein metabolism by human feeding experiments under Dr. K. Mitra at the Public Health Laboratories, Bankipur, Patna.
- (ii) Enquiry into methods of treating sick starving destitutes in Calcutta based on the All-India Institute of Hygiene and Public Health, Calcutta.
- (iii) Enquiry on beri beri in Cocanada under the Director, Nutrition Research Laboratories, Coonoor.

The following new enquiries were recommended :—

- (i) Nutrition research unit under Dr. B. C. Guha at the University College of Science and Technology, Calcutta.
- (ii) Nutrition research unit under Professor V. Subrahmanyam at the Indian Institute of Science, Bangalore.

NOTE.—In recommending the establishment of this unit the Committee pointed out that behind the idea of establishing nutrition units was the intention of so disseminating this work that local Governments should be stimulated to themselves contribute to the advancement of the science of nutrition. There was also the question of affording facilities for continued employment of existing I.R.F.A. employees.

- (iii) Enquiry on the nutritive value of soya-bean milk under Dr. S.S. De at the Indian Institute of Science, Bangalore.

NOTE.—The importance of the introduction of human experiments as early as possible into the field of this enquiry was stressed.

- (iv) Enquiry entitled "Preparation of anti-rachitic substances under Professor B. V. Bhide at the Maharaja Pratap Singh Chemical Laboratory, S. P. College, Poona.

The following enquiries were not recommended :—

- (i) Enquiry into causes and prevention of rancidity and standardisation of common edible oils and fats under Prof. M. N. Goswami, Head of the Department of Applied Chemistry, University College of Science and Technology, Calcutta.
- (ii) Enquiry on beri beri pellagra, riboflavin deficiency, post puerperal neuritis under Dr. T. K. Raman, Professor of Therapeutics, Andhra Medical College, Vizagapatam.
- (iii) Enquiry on the metabolism of manganese under Mr. M. N. Rudra at the Prince of Wales Medical College, Patna.
- (iv) Enquiry on biochemical changes in diabetes and other metabolic diseases in the tropics under Dr. J. P. Bose, Officer-in-charge of the Department of Biochemistry and Diabetes, School of Tropical Medicine, Calcutta.



## APPENDIX I

## Nutrition Advisory Committee, Indian Research Fund Association.

## REPORT OF THE SOYA BEAN SUB-COMMITTEE, NOVEMBER 27th, 1945.

The Sub-Committee had before them for discussion a draft report on "Soya Bean" compiled by Dr. W. R. Aykroyd on their behalf. The report was discussed at some length. A few typographical errors were corrected. Suggestions regarding (a) the removal of ambiguity of expression at some places; (b) additional references to published work; (c) recasting of some tables with the addition of fresh data and (d) the inclusion of Dr. Basu's work on soya bean milk were agreed to unanimously and consequential changes made in appropriate places. The Sub-Committee also agreed to delete the first paragraph on page 30, as it was felt that its inclusion was unnecessary.

The Sub-Committee felt that the conclusion on page 31 could be more suitably worded and agreed on the following paragraphs to be added as numbers 12 and 13 in continuity with the rest of the Chapter VII.

(12) Although soya bean contains more fat, minerals, vitamins and 'available' proteins than other pulses, it has, for some unknown reason, not proved itself superior to other pulses within the range of the experiments reported here. It is, however, possible that soya bean may, as has been pointed out elsewhere, prove a better supplement than other pulses to typical Indian diets which are quantitatively inadequate and based on cereals. Further work on this aspect is desirable.

(13) Taking the results obtained so far into consideration, the Sub-Committee is of the opinion that as a supplement to typical Indian diets based on cereals, but supplied adequate in quantity, soya bean has no special advantage over common Indian pulses.

The Sub-Committee is not in a position therefore to advocate immediately the encouragement of the production of soya bean on a wide scale in India for use as a substitute for Indian pulses. The question should, however, be reconsidered if and when further evidence on the nutritive value of soya bean becomes available.

With the above mentioned modifications the draft report was adopted by the Sub-Committee.

The Sub-Committee then heard an account from Professor V. Subrahmanyam, of the interesting work on soya bean milk which he and his colleagues have been carrying out at the Indian Institute of Science, Bangalore. The actual proposal for an enquiry will be discussed by the Nutrition Advisory Committee.



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COMMITTEE OF THE INDIAN RESEARCH F  
HELD IN NEW DELHI, ON THE 28th NO

COMPOSITION OF THE COMMITTEE

PRESENT :

- Lieut.-Col  
Gov  
Professor  
me  
Dr. K.  
Lab  
Khan Ba  
Dr. B. C  
men  
Dr. V. N  
Col  
Dr. G. S  
of I  
Sir  
Mr. John  
Mr. H.  
Research  
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Nutrition  
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Dr. Bash  
Res  
Dr. S. A  
Dr. (Miss  
Coo  
Dr. R. E.  
Institute, Bombay.  
Dr. M. B. Daver, Nutrition Officer, Medical and Pu  
Hyderabad (Deccan).  
Dr. P. V. George, Nutrition Officer, Public Health Depa  
Mr. T. Gonsalves, Assistant Secretary, Indian Research  
Mr. W. H. Kirby, Rationing Adviser to the Governme  
of Food, New Delhi.  
Dr. K. Mitra, M.B.E., Deputy Director Rationing (N  
India, Department of Food, New Delhi.  
Dr. D. M. Roy, Nutrition Officer, Public Health Depar  
Nagpur.



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