

INDIAN STATISTICAL INSTITUTE

Ninth Annual Report ; 1940-41

The present report gives a brief review of the Institute's activities in the ninth year of its existence. In spite of growing uncertainty under war conditions, our work was continued on normal lines. It became, however, increasingly difficult to maintain intellectual contact with countries outside India.

THE FOURTH SESSION OF THE INDIAN STATISTICAL CONFERENCE, BENARAS, 1941.

The Conference was opened by His Excellency Sir Maurice Hallett, Governor of the United Provinces of Agra and Oudh, on the 2nd January 1941 in the Baroda Gaekwar Library Hall of the Hindu University. Sir Sarvapalli Radhakrishnan, Vice-Chancellor of the Hindu University, welcomed the members and visitors as Chairman of the Reception Committee. The Hon'ble Sir Girja Shankar Bajpai, Member-in-charge of the Department of Education, Health and Lands, Government of India, in his address as General President emphasized the social value of statistics. He exhorted statisticians to proclaim their purpose and explain their activities in language that was intelligible to the ordinary citizen; and pointed out the need for generous financial support from Government and public-spirited industrialists and persons interested in national welfare. After the presidential address the Honorary Secretary presented the Annual Review; and the function was brought to a close with a vote of thanks proposed by Prof. B. N. Singh, Local Secretary of the Conference.

The first academic session of the Conference was held jointly with the Anthropology Section of the Science Congress on the 3rd January and was presided over by Prof. K. P. Chattopadhyaya of the Calcutta University. Prof. D. D. Kosambi of Ferguson College, Poona, gave an interesting summary of an ingenious application of statistical methods for studying the chronology of ancient Indian coins. Mrs. Channell Bhow of the Statistical Laboratory presented a paper dealing with the correlational analysis of anthropometric material relating to Bengali castes.

A special discussion on Teaching of Statistics was held in the evening of the 3rd January and was presided over by Prof. V. V. Narlikar of the Hindu University. Among those who participated in the discussion may be mentioned the names of Prof. John Maclean (*Wills College, Bombay*), Dr. P. V. Sukhatme (*Imperial Council of Agricultural Research*), Mr. K. Kishore (*Agricultural College, Coimbatore*), Prof. Rameshwarthi (*Ajmer College*), Mr. Subhasiv Sengupta (*Statistical Laboratory*), Quazi Motaber Hossain (*Dacca University*), and Prof. P. C. Mahalanobis at whose suggestion a committee was appointed to prepare a report on the subject. The discussion was continued on the 8th January when Professors Mackean, Madhava and Sundaramma Sastry (*Madras University*) described the lines on which statistical courses were being given in their respective Universities.

A joint session for Theoretical Statistics was held with the Mathematics and Statistics Section of the Indian Science Congress on the 4th January with Dr. C. W. B. Normand, Director General of Observatories, in the chair. After a general discussion on problems of discrimination and classification various papers on theoretical subjects were presented.

A joint session with the Medical Section of the Indian Science Congress was held on the 4th January and was presided over by Dr. J. B. Grant, Director of the All India Institute of Hygiene and Public Health. A number of papers was presented some of which evoked keen discussion in which statisticians, bio-chemists, and medical men participated. Dr. Grant in his concluding remarks stressed the importance of such joint discussions and hoped that such joint meetings would continue to be arranged in future.

As in previous years, a joint session was arranged with the Agricultural Section of the Indian Science Congress with Mr. K. Ramiah in the chair. A large number of papers dealing with different aspects of agricultural statistics had been submitted of which only a few could be taken up for discussion. Applied Economics Section held two sessions under the chairmanship of Prof. K. B. Madhava on the 4th and 8th January. Many interesting papers were read which were followed in many cases by discussions. As usual a number of receptions and social functions were arranged by the Local Committee for which our best thanks are due to them.

INDIAN STATISTICAL INSTITUTE

RESEARCH AND SPECIAL ENQUIRIES

Theoretical researches were focussed on four topics: (1) measures of statistical divergences with appropriate exact distributions; (2) design of experiments; (3) design of large-scale sample surveys and (4) model sampling experiments with non-normal populations. A good deal of work has been done in the fourth subject and a preliminary note was communicated to a joint session of the Indian Science Congress and the Statistical Conference at Benares in January 1941.

D-Statistic: Work has been continued under the leadership of S. N. Roy who worked out the sampling distribution on the null (or equal dispersion) hypothesis of a set of p -statistics which form the appropriate measure of the divergence in the case of multi-variate problems. The case of heterogeneous dispersion was also investigated. Prof. Fisher in a letter written in 1940 characterized this work as one of the most important recent advances in statistics. But much yet remains to be done and further research is in progress.

Design of Experiments: Important contributions were made to the mathematical theory of the design of experiments by R. C. Bose, K. R. Nair, K. Kishor and others. Interesting relations were obtained between fundamental simplex at infinity in space of n -dimensions and components of main effects and interactions which marked an advance towards the solution of the problem of confounding in the general factorial design.

Design of Sample Surveys: The sampling survey, which is now recognized to be the most efficient method for large-scale enquiries, has continued to engage a good deal of attention; and important advances have been made in the technique of such surveys. The mathematical theory is based on the joint use of two important functions, namely, the variance (or error) function and the cost function. The chief object is to determine the optimum size and number of sample units and the best way of distributing them over the whole area under survey in such a way that the precision of the final results may be as high as possible at any assigned level of expenditure; or alternatively, to determine the best size, number and distribution of sample units required to attain any assigned degree of accuracy in the final results at a minimum cost. We are giving below a brief account of some of the schemes in which the new method was used during the year under review.

Jute Census Scheme: This was the fourth year of the scheme which had been started in 1937 to devise a method for estimating accurately the acreage under jute. The sample survey in 1940 covered eight representative jute growing districts of Bengal, namely, Dacca, Mysorengingh, Tipperah, Rangpur, Bogra, Rajshahi, Jessore and Naula and a comprehensive report was submitted in November 1940. Information was collected for 41,345 sample units of various sizes covering a total area of 20,535 square miles. The whole survey was laid out in the form of two interpenetrating but independent half-samples, information for each of which was collected by entirely different sets of field workers. The agreement between the final results of the two half-samples was highly satisfactory. The margin of error was of the order of two or three per cent. This shows that the present method can be safely used for obtaining results of sufficient accuracy for all practical purposes. As in 1939 a block grant to the Institute was sanctioned by the Indian Central Jute Committee for statistical work. Sanction was also given for a provincial survey on a full scale covering nearly 80,000 square miles at an estimated cost of about one and a half lakhs of rupees in 1941. Work under this Scheme was progressing satisfactorily at the time of writing this report.

Crop Estimating Survey: Jute 1940. An exploratory crop-cutting experiment on jute was undertaken in the year under review, and a field survey was carried out in 13 mouzas in 4 districts (Mysorengingh, Dacca, Rangpur and Tipperah). A technical report is under preparation.

Paddy: Mysorengingh Area 1939-40. A design for large-scale crop-cutting experiments in certain *Phasae* (Foliole Circles) in Mysorengingh had been prepared and the field data had been collected in 1939-40. The analysis was completed this year, and a comprehensive report was submitted to the Revenue Department of Bengal. The figures supplied by us have been accepted as the basis of re-assessment of land revenue.

Paddy: South Bengal 1940-41. The Institute has been helping the Government of Bengal since 1939 in organizing extensive crop-cutting experiments on paddy in the Burdwan-Hooghly-Howrah Flushing and Irrigation area. A design in three compartments was prepared this year; and the field work was carried out smoothly during the winter season of 1940-41. The material is under analysis.

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Sugarcane : United Provinces 1940. A design was prepared and extensive crop-cutting experiments were carried out on sugarcane during the winter season of 1940 in two districts in the United Provinces in a scheme financed by the Imperial Council of Agricultural Research.

Wheat : United Provinces 1941. A similar scheme for crop-cutting experiments on wheat (financed by the Government of U. P.) was prepared and field work was started in March 1941.

Cinchona : At the request of the Government of Bengal the Hon. Secretary visited the Cinchona Plantation at Mungpoon in July to explore the possibility of devising a statistical method for forecasting the yield of cinchona bark. Two schemes of an exploratory nature were prepared; and very promising results have been obtained. Further work is in progress.

Cotton : 1941. A co-ordinated scheme for estimating the yield of cotton for an exploratory survey in three Provinces, the Punjab, Madras and the Central Provinces, was prepared; and it is expected that field work under this scheme (which is financed by the Indian Central Cotton Committee) would start in the winter season of 1941.

Enquiry into Labour Family Budgets in Bengal. A scheme for an enquiry into labour family budgets was prepared early in 1940 for consideration by the Bengal Board of Economic Enquiry. The scheme was approved and field work was started in June under the technical guidance of the Hon. Secretary. A little later the Institute was officially entrusted with the enquiry and a block grant was sanctioned for this purpose by the Government of Bengal. Preliminary enumeration at two centres, Jagadhal and Budgetulga, was completed by December 1940; and the first stage of the work was started in the Assam area January 1941. The collection of family schedules in the Jagadhal area was started at the end of December in 1940 and was practically completed by the end of March 1941. The work is progressing smoothly.

Nagpur Tea Survey. An enquiry into the prevalence of drinking of tea in Nagpur City was organized by the Indian Tea Market Expansion Board between May and August of 1940 with our technical help and guidance. The general plan of the sample survey was designed and the statistical report was prepared in the Statistical Laboratory. Material relating to nearly 1600 families was classified by expenditure levels, occupation, and religion; and the report covered a variety of topics such as the proportion of families and persons taking tea, consumption of tea and milk in each family, the rate of literacy etc. The Board made a contribution of Rs. 2,250 to the Institute for this work.

Public Preference Survey. Certain preliminary experiments were carried out in January 1941 on mass-observation. The results obtained were encouraging; and arrangements were made in March 1941 for starting a sample survey of public preference in three centres in Bengal, namely, Calcutta, Kankonara, and Anand.

Other activities of the Hon. Secretary. On May 1, 1940, the Hon. Secretary was appointed Chairman of the Nagpur Textile Enquiry Committee by the C. P. Government. The Committee was required to examine whether any sickness allowance should be granted to cotton operatives in Nagpur on account of the rise in the cost of living due to the war; what the rate of allowance, if any, should be; how it should be adjusted from time to time and from what date it should be paid. The committee started its proceedings at Nagpur on the 9th May and submitted its report on the 18th May 1940. All the recommendations were accepted by Government.

The Hon. Secretary attended the meetings of the Indian Central Cotton Committee in Bombay in August 1940, of the Imperial Council of Agricultural Research in New Delhi in November 1940, and a Special Entomological Committee in New Delhi in March 1941 in connexion with various statistical matters. He also served on various committees of the Bengal Board of Economic Enquiry, Bengal Agricultural Research Committee, Price Control Advisory Board of Bengal etc. and he was recently appointed President of a Committee for an Enquiry into the Yield and Cost of Cultivation of Crops in Bengal.

STATISTICAL ENQUIRIES

As in previous years a large number of enquiries from all parts of India was attended to during the year under review. The distribution by subjects and by provinces is given below :—

*By subjects :—*Agriculture 81; Anthropology 3; Economic and Business Statistics 30; Education 17; Forest Research 7; Industry 11; Mathematical Statistics 12; Medical 20; Meteorology and Irrigation 14; Miscellaneous 20; Total 216.

*By Province :—*Assam 10; Bengal 86; Bihar 2; Bombay 9; C. P. 6; Central 31; Madras 6; Orissa 5; Punjab 7; Sind 8; U. P. 33; Others 12; Total 216.

INDIAN STATISTICAL INSTITUTE

STATISTICAL LIBRARY

The Library has extended into a big room, an extension rendered necessary by its rapid growth in size and in the number of its issues. The number of books purchased during the year was 191; the number received for review in *Banbhya* was 42, and the number presented to the Library was 72. The Library is at present receiving 364 annuals and 345 periodicals appearing more often than once a year. The number of books and periodicals issued for reference and on loan during 1940-41 was 6768. Sustained efforts were made to improve the service of the Library, the author catalogue was revised, and a subject catalogue is under preparation. The weekly notes and monthly bulletins containing lists of selected articles from periodicals were continued.

TRAINING AND EXAMINATIONS IN STATISTICS

During the year under review 16 officers from Bengal, Bombay, Barua, U.P., Punjab, and Sind came on deputation to the Institute for training in statistical theory and technique. Mr. K. Raghavan Nair was in charge of this section.

Since January 1939 people other than those sent on deputation have been admitted to a standard course of one year. A number of students who had joined in January 1940 and a few other advanced students were admitted as apprentices for professional training. Besides practical classes and projects 6 theoretical lectures per week were given on an average by Messrs S. N. Roy, K. R. Nair, S. Sengupta, Mrs. C. Bose, Messrs. K. Kishen, M. Ganguli, V. G. Pundharkar, B. N. Datar and K. S. Banerjee. A graduated course of special lectures on the design of experiments and application of Galois Fields and finite geometries to such problems was delivered by Mr. R. C. Bose, Lecturer, Calcutta University. Mr. A. R. Sinha, of the office of the Director General of Commercial Intelligence and Statistics, kindly agreed to deliver a course of symposium lectures dealing with the various aspects of Economic Statistics. Prof. P. C. Mahalanobis gave in addition an advanced course of 8 lectures on professional aspects of statistics. The training class was under the charge of Mr. K. Kishen (upto August 1940), Mr. B. N. Datar, (September 1940-January 1941), and Mrs. C. Bose (since January 1941).

Institute Examinations in Statistics. The examinations for Statisticians' Diploma Part 1 and Computer's Certificate part 1 were held from 8th to 12th January 1941. There were nine candidates for the diploma and three for the certificate examinations. The Board of Examiners consisted of Prof. K. B. Madhava (*Mysore University*), Dr. P. V. Sukharno (*Delhi*), Mr. R. C. Bose (*Calcutta University*), and Prof. P. C. Mahalanobis.

STATISTICAL STAFF

As in previous years earmarked and block grants were received by the Institute from various sources for special enquiries and reports. The scientific work of the Statistical Laboratory was, however, carried on as usual on a unitary basis. During the year under review the workers were organized in the form of a basic staff who were engaged on long range works and projects and purely temporary workers who were recruited for short time projects.

During the year under review a large number of young workers left us to accept more permanent posts elsewhere. Mr. Kunwar Kishen, M.A. who had joined the Institute in May 1938, resigned his post of Assistant Statistician in August 1940 to take up a new appointment under the Government of U.P. as Statistician, Agricultural College, Cawnpore. Mr. Kishen in collaboration with Mr. R. C. Bose had made valuable contributions to the mathematical theory of the design of experiments. Mr. M. Ganguli, B.Sc. (Statistics, London), who had joined the Institute in September 1939 and had been awarded a Research Fellowship of the Institute, resigned in August 1940 to accept the post of Statistician under the Indian Jute Mills Association. Mr. V. G. Pundharkar, B.Sc. (Economics, London), who had joined in March 1939 and had been awarded a Research Fellowship of the Institute, left in September 1940; he had been working mainly on economic problems. Mr. B. N. Datar M.Sc. (Statistics, London), joined the Laboratory in July 1940, and was appointed a Research Fellow in September; he took leave from January 1941 to join a new statistical post in Baroda State. Mr. A. C. Banerji, B.Sc. (Economics, London), and Mr. K. Gupta M.Sc. (Economics, London), who had joined in July and August 1940 respectively left to accept posts elsewhere in January 1941. Messrs. Suprenkas Sen, M.Sc., Amiya Das Gupta, M.Sc., and Phani Bhusan Bhattacharya M.Sc. left us during the year under review to accept statistical posts of various kinds. Besides senior workers mentioned above, about ten computers resigned their posts on securing better employment elsewhere. They had served the Laboratory with ability and loyalty; and although we keenly feel the loss in the Laboratory we wish them a successful career.

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PROVIDENT FUND.

The question of starting a Provident Fund had been under consideration for a very long time. The proposal was accepted in principle at a meeting of the Council held on 23rd April 1940. After further consideration by the Council on the 30th July 1940 and 2nd January 1941 the Provident Fund was actually started from 1st January, 1941 with a 'basic contribution of one anna in the rupee from each worker and an equal contribution from the employers'.

The need of stabilising the work of the Institute in order to give a sense of security to the workers is, however, urgent. We trust and hope that the Institute will receive public support in this matter.

VISITORS

As in previous years a large number of visitors came to see the work of the Institute among whom the names of the following persons may be specially mentioned :

Dr. Sir B. S. Bhattacharya (Director, Board of Industrial and Scientific Research); Dr. D. M. Bose (Director, Bose Institute); Dr. W. Burns (Agricultural Commissioner with the Government of India); Mr. Nuranabi Chaudhury I.C.S. (Secretary, Department of Local Self Government, Bengal); Mr. C. D. Doshmukh, C.I.E. I.C.S. (Secretary, Reserve Bank of India); Mr. L. R. Fawcus, C.I.E., I.C.S. (Member, Board of Revenue and Chairman, Board of Economic Enquiry, Bengal); Dr. J. B. Grant (Director, All India Institute of Hygiene and Public Health); Mr. A. S. Hazra, I. C. S. (Secretary, Department of Agriculture and Industries, Bengal); Dr. P. L. Hsu (Professor of Mathematics, University of Free China, Chungking); Dr. J. L. Hydrick (Rockefeller Foundation); Dr. C. E. Jones, I.C.S. (Secretary, Finance Department, Government of India); Mr. Ranga Reddy (Additional Revenue Secretary, Hyderabad State); P. M. Khargat, Esq., C.I.E., I.C.S., (Vice-Chairman, Imperial Council of Agricultural Research) Prof. P. J. Thomas (Professor, Madras University and Chairman, Fact-Finding Committee); Mr. M. W. M. Yezla, C.I.E., I.C.S. (Census Commissioner).

LOCAL BRANCHES OF THE INSTITUTE

The work of the Institute in the matter of popularising the study of statistics among students and businessmen in India has been progressively helped by the activities of the various Branches. Increasing interest has been taken in the work of the Branches generally, and the local Secretaries have tried to meet the same by arranging a number of valuable lectures to cater to a wide variety of tastes. It has also helped to stimulate a serious study of the subject amongst students of different places and to create a persistent demand for fuller courses in some of the Provincial Universities.

BOMBAY BRANCH

The Bombay Branch had another year of vigorous activity under the leadership of Sir Homi Mehta as President, and Prof. John Maclean and Mr. Murnanjan as Joint Secretaries. The following lectures were arranged during the course of the year:—

7th August 1940.	Prof. P. C. Mahalanobis :	Extensive Sampling.
25th September 1940.	Sir Homi Mehta :	Financial Control during this War and the last War.
14th October 1940.	Dr. V. G. Pannu :	Inheritance of Quantitative Characters in Plants.
29th November 1940.	Mr. K. M. Panseband :	War and Inflation.
17th December 1940.	Mr. M. Vaidyanathan :	The best use of Agricultural Statistics.
18th January 1941.	Mr. V. Ramanatha Ayyar :	Some Quantitative Problems of Plant Breeding.
14th February 1941.	Prof. G. M. Sankpal :	A Study of Working Class Family Budgets.
24th March 1941.	Prof. R. P. Shrinre :	Examination Statistics.
4th April 1941.	Prof. D. D. Kosambi :	Chronology of Punched Coins.

(Joint Meeting with the Royal Asiatic Society, Bombay)

The Vice-Chancellor of the Bombay University was very helpful and sympathetic throughout; and the use of the University School of Economics and the Royal Institute of Science was always made available for the meetings of the Bombay Branch through his kind offices. Mr. B. O. Khos also evinced keen interest in the activities of the Branch.

A series of introductory lectures on Statistics were given by Prof. Maclean in the Wilson College during September and October 1940. From November 1940 to March 1941 Dr. Favur, Prof. Sankpal, Mr. Koshal and Mr. M. Vaidyanathan and Prof. Maclean kindly delivered a course of lectures on Statistics and its application. The attendances were very large to start with and were clear pointers of the great demand for instruction in Statistics; they fell off however at the end when advanced subjects were discussed. An enquiry into the employment of educated persons was contemplated with the services of a paid investigator through the kind offices of the President, Sir Homi Mehta. Owing to certain practical difficulties, the work, however, could not be undertaken during the year. The financial aspect of the Branch unfortunately was not very bright. The payments of the membership dues had been unusually tardy and it was decided to invite individual members to make donations towards the working expenses of the Branch.

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POONA BRANCH

Prof. V. O. Kale and Prof. D. O. Karve continued to be President and Local Secretary of the Branch, respectively, and the membership strength remained unchanged. The meetings of the Branch, other than those convened for formal purposes, were attended by a large circle of persons. Two special lectures were delivered on statistical subjects which were highly appreciated:—

Prof. M. R. Paranjpe : Correlation between Geometry & Algebra Marks at the Bombay Examinations.

Prof. V. O. Gokhale : Statistical Results of an Agricultural Farm in the Deccan.

MADRAS BRANCH

As usual the work of the Branch was done in active co-operation with the Department of Economics of the University. Prof. P. J. Thomas and Mr. N. Sundararama Sastry were re-elected President and Secretary respectively in the meeting held on 10th September 1940. It is a pleasure to note that the President of the Branch was appointed Chairman of the Fact-Finding Committee (Hamilton and Mills) of the Government of India. The following papers were read at the meetings of the Branch which were open to the public and well attended.

August 1940. Mr. A. N. Krishnan Nair: An Analysis of Family Budgets of Madras labourers.

September 1940. Mr. R. Colletti, I.C.S. (Joint Registrar of Co-operative Societies): Some important Graphical Representations.

December 1940. Mr. C. N. Nayagam (Statistician in the Public Health Department, Government of Madras): Book-keeping of Population.

Lucknow Branch: The Lucknow Branch had been functioning for a long time with the Bureau of Economic Intelligence of the U. P. Government with Mr. D. P. Mukerji, the Director of Public Information, as Local Secretary. With the transfer of the Bureau to Cawnpore and the subsequent reversion of Mr. Mukerji to the Lucknow University, arrangements are being made for re-organization of the Branch in co-operation with the University of Lucknow.

Mysore Branch: The Mysore Branch was under the charge of Prof. K. B. Malhava as Secretary. The work was done as usual in active co-operation with the departments of Mathematics, Mathematical Economics, and Psychology. With the exception of Calcutta this is the only centre where actual teaching work in statistics is proceeding regularly. We are glad to note that Prof. K. B. Malhava was elected a Fellow of the National Institute of Sciences in 1940.

Lahore Branch: Dr. N. K. Banu continued to be the Secretary of the Lahore Branch. We have much pleasure in recording that a Knighthood was conferred on the Hon'ble Sir Manohar Lal, the President of the Lahore Branch.

Sandhya: THE INDIAN JOURNAL OF STATISTICS

Two issues of the Journal were published during the year. Since the outbreak of War great difficulty was being experienced in making necessary typographical arrangements. To overcome this difficulty a Monotype machine with special attachment for composing mathematical matter was ordered from England in May 1940, and was received in January 1941. The price of the machine is Rs. 28,854; one-third instalment of the price was paid with the help of a guaranteed advance of Rs. 9,000 from Prof. P. C. Mahalanobis in his personal capacity. Special efforts are being made to raise donations for this purpose. It is hoped that as soon as the printing of the fifth volume is completed it will be possible to arrange regular publication of Sandhya.

MISCELLANEOUS

We have great pleasure in recording that Knighthoods were conferred on two of our Vice-Presidents, Lala Shrinam of Delhi and the Hon'ble Mr. Manohar Lal of Lahore. Prof. K. B. Malhava, Secretary in charge of the Mysore Branch, was elected a Fellow of the National Institute of Sciences; and Prof. P. C. Mahalanobis was elected President of the Section of Mathematics and Statistics of the Indian Science Congress to be held at Dooars in 1942.

The Calcutta University gave statutory recognition to statistics as a full subject for the B.A. and B.Sc., M.A. and M.Sc., examinations during the year under review. A committee was appointed to report on teaching arrangements, and efforts are being made to open University classes in statistics from July 1941.

AUDITED ACCOUNTS FOR 1940-41

Indian Statistical Institute : Receipts and Payments Account for the year ending 31st March, 1941 : General Fund

RECEIPTS		PAYMENTS	
	Rs. A. P.		Rs. A. P.
To Opening Balance	811 0 0	By Research staff (including part-time work)	11,087 9 0
" Bank	3,701 0 0	" Books and Journals	1,702 4 0
" Subscriptions .. .. .	.. .. .	" Laboratory Equipments	1,878 8 3
" Grants from the Govt. of India	388 4 0	" Establishment & Travelling	1,344 11 3
" Examinations & other fees	10,462 0 0	" Printing, Postage & Stationery	2,045 9 6
" Miscellaneous Receipts	742 0 0	" Domestic Refreshment	80 0 0
" Library Deposits	410 0 0	" Statistical Conferences	1,879 5 0
" Interest on investments .. .. .	.. .. .	" Pensions, Fund Contributions	2,303 0 0
" Ex-gratia	2,000 0 0	" Other	323 0 0
" Ex-ante grant for Sankhya .. .. .	.. .. .	" Monotype Eastern Company	8,864 2 0
" Advances from Prof. Mahalanobis	0,000 0 0		
		By Closing Balance—Cash in Hand ..	965 3 3
			34,080 5 3

* For payment of one third instalment of cost of Monotype machine and accessories

5, HARTSON STREET, CALCUTTA.
The 24th April, 1941.

Examined and Found Correct.
F. C. NARAYAN & Co., Auditors,
Chartered Accountants,
Circular Road, Calcutta.

Sankhya : Receipts and Payments Account for the year ending 31st March 1941.

RECEIPTS		PAYMENTS	
	Rs. A. P.		Rs. A. P.
To Opening Balance—		By Press bills & paper	1,582 11 3
Bank	870 8 3	" Establishment	280 0 0
" Subscriptions	84 14 3	"	263 7 0
" Grants from the Govt. of India .. .. .	.. .. .	By Closing Balance—Bank	2,482 0 6
	2,000 0 0		
	2,482 0 0		

6, HARTSON STREET CALCUTTA.
The 23rd April, 1941.

Examined and Found Correct.
F. C. NARAYAN & Co., Auditors,
Chartered Accountants,
Circular Road, Calcutta.

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Indian Statistical Institute : Receipts and Payments Account for the year ending 31st March, 1941 (Earmarked & Special Enquiries Fund).

RECEIPTS		PAYMENTS		
	Rs.	A. P.	Rs.	A. P.
<i>Block Grant from the Indian Central Jute Committee</i>				
1. Jute Census Scheme, 1940	20,038	0 0	..	..
" Old advance realised	8,584	3 0	..	11,086
" Advance from Indian Statistical Institute	3,192	3 6	..	8,587
	31,814	0 6	..	3,200
	31,814	0 6	..	5 3
<i>2. Jute Census Scheme, 1941</i>				
(a) To Block Grant	7,500	0 0	..	10,821
" Advance from Indian Statistical Institute	11,448	7 6	..	7,547
	18,948	7 6	..	14 0
	18,948	7 6	..	430
	18,948	7 6	..	0 0
<i>(b) To Photographic Experiments</i>				
	7,500	0 0	..	7,549
	7,500	0 0	..	4,753
	7,500	0 0	..	14 0
<i>Block Grant from the Government of Bengal</i>				
3. Burdwan-Hooghly-Howrah Scheme	1,134	0 0	..	7,500
" To Opening Balance	8,250	0 0	..	8,588
" To Block Grant	6,354	0 0	..	4,085
	6,652	0 0	..	15 0
	6,652	0 0	..	9,384
	6,652	0 0	..	0 0
<i>4. Burdwan-Hooghly-Howrah Scheme, 1941</i>				
" To Opening Balance	3,131	12 0	..	4,724
" To Block Grant	1,892	0 0	..	1,797
	5,023	12 0	..	14 0
	5,023	12 0	..	6,622
	5,023	12 0	..	0 0

AUDITED ACCOUNTS FOR 1940-41

Indian Statistical Institute : Receipts and Payments Account for the year ending 31st March, 1941 : (Emarked & Special Enquiries Fund).
(Contd.)

RECEIPTS		PAYMENTS	
Rs.	A. P.	Rs.	A. P.
5. Mypensing Crop-cutting Scheme	..	..	..
To Unspent Balance of the previous	2,574 3 0	By Disbursements—	2,520 7 0
To Block Grant	4,000 0 0	Salaries & other allowances ..	3,122 7 0
		Other expenses .. .. .	.. .. .
6. Labour Family Budget Enquiry Scheme	8,574 3 0	By Closing Balance .. .. .	.. .. .
To Block Grant	8,000 0 0	7. Labour Family Budget Enquiry Scheme	.. .. .
		By Disbursements—	4,881 8 0
7. I. C. A. R. Schemes for Sugarcane Pest Survey	2,680 0 0	Salaries & other allowances ..	2,281 3 2
To Unspent Balance of the last year	2,680 0 0	Travel, printing, contribution, & other	184 1 3
8. Other Grants & Contributions	2,880 0 0	Materials	150 7 3
Advances realised	7,829 15 3	By Closing Balance .. .. .	.. .. .
Grants from Excise Commissions ..	100 0 0	8. Other Grants & Contributions	.. .. .
Contribution from Indian Central Jute	1,200 0 0	By Disbursements—	824 2 0
Commissioner Malabar's service ..	4,310 1 0	Salaries & other allowances ..	408 8 0
Contributions from Forest salaries & Prov.	.. .. .	Other expenses .. .. .	.. .. .
Closing Balance 1. Burdwan-Hooghly	4,088 10 0	By Closing Balance .. .. .	.. .. .
" 2. Burdwan-Hooghly	1,797 14 0	9. Other Grants & Contributions	.. .. .
" 3. Burdwan-Hooghly	1 11 0	By Disbursements—	1,432 7 8
" 4. I. C. Cutting Comps. for	1,440 6 0	Advance to Jute Census of 1940 ..	1,432 7 8
" 5. Sugarcane Pest Survey .. .. .	.. .. .	Advance to Jute Census of 1941 ..	883 10 8
		By Closing Balance 1. Bank	3,258 9 8
	20,480 14 3		

Examined and found correct,
F. C. Nandi
Chartered Accountant.

6, RAJYOG STREET, CALCUTTA.
The 23rd April, 1941.

APPENDIX 1. LIST OF PAPERS PUBLISHED AND
REPORTS SUBMITTED IN 1940-41.

1. A REVIEW OF THE APPLICATION OF STATISTICAL THEORY TO AGRICULTURAL FIELD EXPERIMENTS IN INDIA (REVISED), By P. C. Mahalanobis. *The Indian Journal of Agricultural Science*, Vol. X, Part 2, April 1940.
2. STATISTICAL NOTE ON CROP-CUTTING EXPERIMENTS ON PADDY IN MYHENSINGH. By P. C. Mahalanobis. (Submitted to the Government of Bengal, May 1940).
3. THE DISTRIBUTION OF THE ROOT-MEAN SQUARE OF THE MULTIPLE CORRELATION CO-EFFICIENT ON THE MULTI-VARIABLE NORMAL HYPOTHESIS. By S. N. Roy and Purusendu Bosa. *Science and Culture*, May 1940.
4. ON THE REDUCTION FORMULAE FOR THE INCOMPLETE PROBABILITY INTEGRAL OF THE STUDENTISED D^2 -STATISTIC. By S. N. Roy and Purusendu Bosa. *Science and Culture*, June 1940.
5. THE DISTRIBUTION OF THE ROOT-MEAN SQUARE OF THE SECOND TYPE OF THE MULTIPLE CORRELATION CO-EFFICIENT. By S. K. Roy and Purusendu Bosa. *Science and Culture*, July 1940.
6. PRELIMINARY REPORT ON THE SAMPLE CENSUS OF THE AREA UNDER JUTE. By P. C. Mahalanobis. (Submitted to the Indian Central Jute Committee, August 1940).
7. STATISTICAL NOTE FOR AGRICULTURAL WORKERS. No. 25. A SIMPLIFIED METHOD OF ANALYSIS OF QUASI-FACTORIAL EXPERIMENTS IN SQUARE LATTICE WITH A PRELIMINARY NOTE ON JOINT ANALYSIS ON YIELD OF PADDY AND STRAW. By K. R. Nair and P. C. Mahalanobis. (*The Indian Journal of Agricultural Science*, Vol. X, Part 4, August 1940).
8. RAIN STORMS AND RIVER FLOODS IN ORISSA (WITH A MAP). By P. C. Mahalanobis. *Sankhyā*, Vol. 5, Part 1, September 1940, 1-20.
9. ON THE PROBLEM OF CONFOUNDING IN THE GENERAL SYMMETRICAL FACTORIAL DESIGN. By R. C. Bose and K. Kishen. *Sankhyā*, Vol. 5, Part 1, September 1940, 21-38.
10. BALANCED CONFOUNDED ARRANGEMENTS FOR THE G^2 TYPE OF EXPERIMENT. By K. H. Nair. *Sankhyā*, Vol. 5, Part 1, September 1940, 57-70.
11. ON HIERARCHICAL SAMPLING, HIERARCHICAL VARIANCES AND CONNECTION WITH OTHER ASPECTS OF STATISTICAL THEORY. By S. N. Roy and Kalihankar Banerjee. *Science and Culture*, September 1940.
12. NOTE ON THE EXPENDITURE ON TEA AMONG WORKING-CLASS FAMILIES IN HOWRAH AND KANAKPURA. By P. C. Mahalanobis (Submitted to the Tea Market Expansion Board, October 1940).
13. THE DISTRIBUTION OF THE MEAN FOR CERTAIN BESSEL FUNCTION POPULATION. By M. P. Shrivastava. *Science and Culture*, October 1940.
14. REPORT ON THE SAMPLE CENSUS OF THE AREA UNDER JUTE IN BENGAL IN 1940. By P. C. Mahalanobis (Submitted to the Indian Central Jute Committee, November, 1940).
15. DISCUSSION ON THE MATHEMATICAL THEORY OF THE DESIGN OF EXPERIMENTS. By R. C. Bose. *Sankhyā*, Vol. 5, Part 2, February 1941, 168-174.
16. INDEX OF BUSINESS ACTIVITY IN INDIA. By P. R. Roy and H. Sinha. *Sankhyā*, Vol. 5, Part 2, February 1941, 170-190.
17. SOME PROBLEMS OF FIELD OPERATIONS IN LABOUR ENQUIRIES. By A. N. Bose. *Sankhyā*, Vol. 5, Part 2, February 1941, 229-230.
18. EFFICIENCY OF THE METHOD OF GROUP AVERAGES IN PARABOLIC CURVE FITTING. (Summary) By K. R. Nair and M. P. Shrivastava. *Sankhyā*, Vol. 5, Part 2, February 1941.
19. SCALES OF EQUIVALENCE IN FAMILY BUDGET ENQUIRIES. (Summary) By V. G. Pendharkar. *Sankhyā*, Vol. 5, Part 2, February 1941.
20. REPORT ON THE ENQUIRY INTO THE PREVALENCE OF DRINKING OF TEA IN NAGPUR. By P. C. Mahalanobis (Submitted to the Tea Market Expansion Board, March 1941).
21. THE DISTRIBUTION OF THE NON-NULL HYPOTHESIS OF THE STATISTIC: THE RATIO OF 'BETWEEN STANDARD DEVIATION' AND 'WITHIN STANDARD DEVIATION'. By S. N. Roy. *Science and Culture*, March 1941.

APPENDIX 2. TRAINING COURSES 1940-41.
OFFICERS AND SENIOR WORKERS ON DEPUTATION

1. P. M. Salvekar, B.Sc. (*Statistical Assistant, Institute of Plant Industry, Indore*). February, 1940—October 1940.
2. Muhammad Shafiq, B.A. (*Office of the Director of Public Instruction, United Provinces*). February—October 1940.
3. P. G. Choudhury, B.Sc., M.B., D.P.H., (*Office of the Director of Public Health, Bengal*). February—April 1940.
4. L. N. Phukan, B.Sc., (*Chemical Assistant, Jorhat Form, Assam*). February—March, 1940.
5. G. M. Sanjpal, M.A. in Economics (Cantab.), (*Professor, Sydenham College of Commerce, Bombay*). April, 1940. (Economic statistics).
6. J. S. Raj, M.A. (Math.), M.Sc. (Lond.), Lecturer in Economics, (*University College, Rangoon*). April—May, 1940. (Economic and Business statistics).
7. K. M. Sen, B.Sc. (*Botany Department, University College of Science and Technology, Calcutta*). May, 1940.
8. Anant Pandey, M.A. (Math.), Teacher, (*A. V. High School, Anupshahr, U.P.*). May—June, 1940. (Educational Statistics).
9. Sahai Singh, M.Sc. (Math.), Vice-Principal, (*Balwan Rajput College, Agro, U.P.*). June—July, 1940. (Field Experiments).
10. Ram Lall Singh Kashyp, M.A. (Math.), L.T., Assistant Master, (*Anglo-Sanskrit High School, Fatehpur, U. P.*). June, 1940. (Elementary Statistical Methods).
11. Ohulam Mohammad, B.Sc. (Agri.), Agricultural Assistant, (*Punjab Agricultural College, Lyallpur, Punjab*). June—August, 1940. (Field Experiments).
12. Uttam Chand Taibna, M.A. (Math.), Statistical Assistant, (*Punjab Physiological Scheme, Lyallpur, Punjab*). June—August, 1940. (Agricultural and Biological Statistics).
13. G. H. Seth, M.A. (Math.), Lecturer in Mathematics, (*Hindu College, Delhi*). July—September, 1940. (Actuarial Statistics).
14. E. R. Dronngde, B.A. (Math.), B.Com. (Lond.), Lecturer in Commerce, (*Sydenham College, Bombay*). July—October, 1940. (Economic and Business Statistics).
15. M. T. Mathija, M.A., Professor of Mathematics (C. & S. College, *Skidarpur, Sind*). October—November, 1940. (Mathematical Statistics).
16. P. G. Choudhury, B.Sc., M.B., D.P.H., Superintendent of Vital Statistics (on probation), (*Department of Public Health, Bengal*). January 1941—.
17. S. T. Lakhani, B.Sc. (Maths. and Physics), (*Office of King George V Institute of Agriculture, Sahiwal, Sind*). January 1941—.
18. Banwari Ram, Inspector Rural Development U.P. January 1941—.
19. Hrishikesh Mukherjee, B.Sc. (*Forest Research Institute, Dehra Dun*). February 1941—.
20. Ajay Chandra Das Gupta, M.Sc. (*Forest Research Institute, Dehra Dun*). February 1941—.

ADVANCED STUDENTS AND APPRENTICES

1. M. P. Shrivastava, M.Sc. (*Nagpur*) January, 1939—still working.
2. M. Abdul Wali, M.A. (Omanin): July, 1939—still working.
3. B. N. Malhotra, B.A. (*Delhi*): C.A.I.I.B. January—May, 1940.
4. Bibhutoob Sircar, M.Sc. (*Calcutta*). January—December, 1940.
5. S. C. Sengupta, M.Sc. (*Calcutta*). January—December, 1940.
6. S. S. Shrikhande, B.Sc. (*Nagpur*) January—December, 1940.
7. Phani Bhuan Bhattacharjee, M.Sc. (*Allahabad*) January—December, 1940.
8. Gauri Dayal Nathur, M.A. (Agri), January, 1940—.
9. S. P. Subramanian, B.Sc. (*Annamalai*). January, 1940—.
10. S. N. Chaudhuri, M.Sc. in Mathematics (*Nagpur and Allahabad*). February—December, 1940.
11. Vaid Prakash Sui, M.A. (*Punjab*). February—December, 1940.
12. C. Radha Krishna Rao, B.A. (*Madras*), January 1941—.
13. Parmatma Sharan B.A. (U.P.), January 1941—.
14. Jaya Chandra Gupta, M.A. (U.P.), January, 1941—.
- *15. Om Prakash, M.Sc. (*Allahabad*) January, 1940—.
- *16. P. N. Chowdhury, M.Sc. (*Calcutta*) July, 1940—.
- *17. S. M. Chattopadhyay, M.Sc. (*Calcutta*) September, 1940—.
- *18. A. K. Pal, M.Sc. (*Dacca*) September, 1940—.
- *19. B. N. Sen Gupta, M.A. (*Calcutta*) January, 1941—.

*Apprentices.

INDIAN STATISTICAL INSTITUTE

PROCEEDINGS OF THE ANNUAL GENERAL MEETING, 24th APRIL, 1941.

The Annual General Meeting of the Indian Statistical Institute was held at 4-30 p.m. on Thursday the 24th April, 1941 in the chamber of the President Sir Badridas Goenka, Comilla Bank Building, 4, Clive Ghat Street, Calcutta.

Sir Badridas Goenka, Kt., President of the Institute, was in the Chair.

The following members were present :—

Dr. P. N. Banerjee (Calcutta).
 Mr. R. C. Bose (Calcutta University).
 Prof. K. N. Chakravarti (Presidency College, Calcutta).
 Mr. J. V. Joshi (Director General of Commercial Intelligence & Statistics, Calcutta).
 Mr. K. R. Nair (Statistical Laboratory, Calcutta).
 Mr. S. N. Roy (Statistical Laboratory, Calcutta).
 Mr. S. Sen Gupta (Statistical Laboratory, Calcutta).
 Dr. H. Sinha (Calcutta University).
 Prof. J. C. Sinha (Presidency College, Calcutta).
 Prof. P. C. Mahalanobis (Honorary Secretary).

ANNUAL REPORT AND AUDITED ACCOUNTS.

1. Prof. P. C. Mahalanobis, Honorary Secretary, placed before the meeting the Annual Report and Audited Accounts for 1940-41 as approved by the Council, and mentioned that the accounts had been audited by Messrs. P. C. Nandi & Co., Chartered Accountants.

Resolved that the Annual Report and Audited Accounts (annexed) for 1940-41 be adopted.

Proposed by Mr. J. V. Joshi

Seconded by Prof. J. C. Sinha

(Carried unanimously).

ELECTION OF OFFICE-BEARERS AND MEMBERS OF THE COUNCIL.

2. Prof. P. C. Mahalanobis, Honorary Secretary, reported that, in accordance with Bye-law 3 for the election of office-bearers and members of the Council, nominations for 1941-42 approved by the Council of the Institute had been circulated together with the notice of the Annual General Meeting on the 9th April 1941. As the number of nominations was in no case in excess of the number of offices no voting was necessary and no voting paper was therefore issued.

The election of the following office-bearers and members of the Council as circulated was then announced from the Chair.

President

Sir Badridas Goenka, Kt., C.I.E.,

Indian Chamber of Commerce, Calcutta.

Vice-Presidents

Dr. P. N. Banerjee, M.A., D.Sc., M.L.A.,

Calcutta.

Mr. J. H. Burdier,

Messrs. Jardine, Skinner & Co., Calcutta.

Sir A. H. Ghose, Kt., M.L.A.,

Messrs. A. H. Ghose & Co., Calcutta.

Dr. T. E. Gregory, D.Sc.,

Economic Adviser to the Government of India,

Delhi.

Dr. John Mathai, D.Sc., C.I.E., I.E.S. (Retd.)

Messrs. Tata & Sons, Ltd., Bombay.

Dr. S. P. Mookerjee, M.A., B.L., M.L.A., D.Litt.,

President, Council of Post Graduate Teaching

Bar-at-Law.

in Arts, Calcutta University.

Dr. C. W. B. Normand, C.I.E., M.A., D.Sc., F.N.I.

Director General of Observatories, Poona.

Sir Shri Ram, Kt.,

Delhi Cloth and General Mills, Delhi.

Sir C. V. Raman, D.Sc., F.R.S., N.L.

Indian Institute of Science, Bangalore.

The Hon'ble Mr. Justice T. J. V. Raghunath,

Judge, Calcutta High Court.

B.A., Bar-at-Law, C.I.E., I.C.S.,

Bengal National Chamber of Commerce.

Mr. Naini Ranjan Barker, M.L.A.,

Treasurer

Dr. Satya Churn Law, M.A., B.L., Ph.D.,

Calcutta.

F.Z.S., M.B.O.U.,

PROCEEDINGS OF THE ANNUAL GENERAL MEETING

Secretary

Prof. P. C. Mahalanobis, B.Sc., M.A., F.R.S.,
F.N.I., I.E.S.,
Statistical Laboratory, Calcutta.

Joint Secretaries

Prof. K. N. Chakravarti, M.Sc.,
Mr. K. Raghavan Nair, M.A., M.Sc.,
*Presidency College, Calcutta,
Statistical Laboratory, Calcutta.*

Members of the Council for 1941-42

Mr. B. P. Adarkar, M.A.,
Dr. Nazir Ahmad, O.B.E., M.Sc., Ph.D.,
F. Inst. P.
Mr. R. C. Bose, M.A.,
Prof. S. N. Bose, M.Sc.,
Mr. P. H. Carpenter, F.I.C., F.C.S.,
Mr. E. T. Cordwell,
Dr. J. B. Grant, M.D., Dr. P. H.,
Prof. L. C. Jain, M.A., LL.B., D.Sc.,
Mr. J. V. Joshi, M.A.,
Prof. F. W. Levi, Dr. Phil. Nat.,
Mr. K. C. Mahindra, M.A.,
Mr. N. C. Mehta, B.A., I.C.S., Bar-at-Law,
Mr. A. C. Mukherji, M.A., Dip. de Statisticien,
F.S.S.,
Dr. U. S. Nair, M.A., Ph.D.,
Dr. K. K. E. Raja, L.R.C.P. & S., D.P.H.,
D.T.M. & H.,
Mr. B. Ranga Reddy
Mr. S. N. Roy, M.Sc.,
Dr. H. C. Sinha, M.Sc., Ph.D.,
Prof. J. C. Sinha, M.A., Ph.D.,
Dr. P. V. Sukhatme, Ph.D., D.Sc.,
*University of Allahabad,
Director, Cotton Technological Laboratory,
Bombay,
Lecturer, Calcutta University,
University of Dacca,
Chief Scientific Officer, Indian Tea Association,
Tockin, Assam,
Messrs. Hind & Co., Calcutta,
Director, All India Institute of Hygiene and
Public Health, Calcutta,
University of the Punjab, Lahore,
Director General of Commercial Intelligence &
Statistics, Calcutta,
University of Calcutta,
Messrs. Martin & Co., Calcutta,
Secretary to the Govt. of the United Provinces,
Lucknow,
Director of Statistics, Baroda State, Baroda,
Travancore University, Trivandrum,
Assistant Public Health Commissioner with the
Government of India, Delhi,
Joint Revenue Secretary, H. E. H. the Nizam's
Govt., Secunderabad,
Statistical Laboratory, Calcutta,
Lecturer, Calcutta University,
Presidency College, Calcutta,
Statistician, Imperial Council of Agricultural
Research, Delhi.*

RECOMMENDATIONS FROM THE COUNCIL

3. Considered the resolution of the Council dated 24th April 1941 regarding the revision of the syllabus for the Computer's Certificate Examination.

Resolved that the syllabus for the Computer's Certificate Examination as revised by the Special Committee be adopted.

*Proposed by Prof. P. C. Mahalanobis
Seconded by Dr. H. C. Sinha (Carried unanimously).*

4. Considered the resolution of the Council dated 24th April 1941 recommending the election of the Hon'ble Sir Girja Shankar Bajpai, K.C.S.I., K.B.E., C.I.E., I.C.S., Member-in-charge of the Department of Education, Health & Lands, Government of India, as an Honorary Member of the Institute.

Resolved that the Hon'ble Sir Girja Shankar Bajpai be elected an Honorary Member of the Institute.

*Proposed from the Chair
(Carried unanimously).*

APPOINTMENT OF AUDITORS.

6. Prof. P. C. Mahalanobis, Honorary Secretary, stated that Messrs. P. C. Mandi & Co., Chartered Accountants, had kindly agreed to audit the accounts of the General Fund of the Indian Statistical Institute free of charge as in previous years. It was proposed however that an honorarium of Rs. 350 should be paid to him out of the Barmarket and Special Enquiries Fund for auditing the accounts relating to this Fund.

INDIAN STATISTICAL INSTITUTE

Resolved that Messrs. P. C. Naruli & Co., Chartered Accountants, be appointed auditors for the year 1941-42; and an honorarium of Rs. 350 be paid out of the grant for *Kennedock and Special Enquiries Fund* for a detailed audit of this Fund.

Proposed by Prof. J. C. Sinha

Seconded by Mr. J. V. Joshi

(Carried unanimously).

APPOINTMENT OF COMMITTEES.

6. Resolved that as recommended by the Council the *Journal Committee* be constituted as follows:—
Prof. S. N. Bose, Prof. John Mackean, Prof. K. B. Malhotra, Mr. N. C. Mehta, Mr. T. J. V. Roxburgh, Prof. N. R. Sen, Mr. J. V. Joshi, Dr. H. Sinha, Dr. P. V. Sukhatme, Prof. P. C. Mahalanobis (*Editor, ex-officio*) with Mr. R. C. Das as Secretary.

Proposed by Prof. J. C. Sinha

Seconded by K. R. Nair

(Carried unanimously).

Radhika Goska,
Chairman.

P. C. Mahalanobis,
Honorary Secretary.

INDIAN STATISTICAL INSTITUTE

PROCEEDINGS OF THE COUNCIL, DATED 24th APRIL, 1941.

A meeting of the Council of the Indian Statistical Institute was held at 4-0 p.m. on Thursday the 24th April 1941 in the chamber of the President Sir Badridas Goenka, Comilla Bank Buildings, 4, Cive Ghat Street, Calcutta.

Present: Sir Badridas Goenka (*President*) in the Chair.

Dr. P. N. Banerjee, Mr. R. C. Bose, Prof. K. N. Chakravarti, Messrs. J. V. Joshi, B. N. Roy, S. Sen Gupta, Dr. H. Sinha, Prof. J. C. Sinha and Prof. P. C. Mahalanobis (*Honorary Secretary*).

1. Proceedings of the meeting of the Council dated 8th April 1941 were read and confirmed.

ANNUAL REPORT AND ACCOUNTS, 1940-41.

2. Prof. P. C. Mahalanobis, *Honorary Secretary*, placed before the Council the Annual Report and Audited Accounts for 1940-41 (circulated).

Resolved that the Annual Report and Audited Accounts be passed and forwarded to the Annual General Meeting.

STATISTICAL CONFERENCE, 1942.

3. The *Honorary Secretary* reported that an informal letter had been sent to the Hon'ble Sir Akbar Hydari enquiring whether he would be able to preside over the 1942 session of the Indian Statistical Conference, but no reply had been received as yet.

PROVIDENT FUND SCHEME.

4. The *Honorary Secretary* reported that informal discussions with officials of the Government of India were still proceeding regarding the recognition to the Provident Fund under the Provident Funds Act XIX of 1925.

RESEARCH FELLOWSHIPS.

5. The *Honorary Secretary* reported that besides four Research Fellows (1) Mr. Mohorlal Ganguli, (2) Mr. Kunwar Kishen (3) Mr. V. G. Pendharkar and (4) Mr. B. N. Datar who had left the Institute in order to accept posts elsewhere as already reported to the Council on the 25th February, another Research Fellow, Mr. Atindra Nath Bose, who had been awarded a Fellowship from the 1st April 1940, had informed the *Honorary Secretary* that he was likely to leave the Institute in July 1941. Only one Research Fellow, Mrs. Chameli Bose, was continuing her work in the Laboratory. Besides her, one Research Scholar, Mr. N. T. Mathew, who had joined in July 1940, was also proceeding with his studies.

REVISION OF SYLLABUS FOR INSTITUTE EXAMINATIONS.

6. The *Honorary Secretary* reported that the Special Committee consisting of Prof. K. B. Madhava (Mysore), Mr. R. C. Bose (Calcutta), Dr. H. Sinha (Calcutta) and Prof. P. C. Mahalanobis (*Secretary*) which was appointed on 8th April to report on the revised syllabus of the Computer's Certificate Examination, had recommended the adoption of the revised syllabus with certain minor modifications.

Resolved that the syllabus for the Computer's Certificate Examination as revised by the Special Committee be adopted and be forwarded to the Annual General Meeting for Confirmation.

7. The *Honorary Secretary* stated that it would be desirable to hold more than one examination for different Parts of the Computer's Certificate during the year.

Resolved that the *Honorary Secretary* be authorized to take necessary action for holding the Institute Examinations in Statistics more than once in a year if this be found practicable.

JOURNAL COMMITTEE.

8. Resolved that the Council recommend to the Institute the reconstitution of the Journal Committee as follows:—

Prof. S. N. Bose, Prof. John Maclean, Prof. K. B. Madhava, Mr. N. C. Mohita, Mr. T. J. Y. Roxburgh, Prof. N. R. Sen, Mr. J. V. Joshi, Dr. H. Sinha, Dr. P. V. Sukhatme, Prof. P. C. Mahalanobis (*Editor, ex officio*) with Mr. R. C. Bose as *Secretary*.

COMMITTEE FOR EXAMINATIONS IN STATISTICS.

9. The *Honorary Secretary* reported that in accordance with the Rules of the Examinations Committee it was necessary for the Council to elect three members of the Examination Committee.

Resolved that

- (1) Dr. S. P. Mukherjee
- (2) Prof. S. N. Bose
- (3) Prof. N. R. Sen

be elected members of the Examinations Committee.

INDIAN STATISTICAL INSTITUTE

BUDGET FOR 1941-42.

10. The Honorary Secretary placed before the meeting the draft budget for 1941-42. Resolved that the following budget estimate (General Fund) for 1941-42 be passed:—

	Rs.	A.	P.		Rs.	A.	P.
Opening Balance	955	3	3	Research Staff & honorarium	12,000	0	0
Grant from the Govt. of India	16,000	0	0	Books & Journals	1,000	0	0
Grant from the Govt. of India (earmarked for Sankhya)	2,000	0	0	Laboratory equipment	1,000	0	0
Membership fee	1,000	0	0	Contribution for Journal	760	0	0
Examination & other fees	1,400	0	0	Establishment and travelling	1,500	0	0
				Postage, stationery & contingency	1,500	0	0
				Earmarked for Sankhya	2,000	0	0
				Closing Balance	645	3	3
	20,395	3	3		20,395	3	3

At the suggestion of Dr. P. N. Banerjee it was agreed that the accounts of the Earmarked and Special Enquiries Fund should be kept entirely separate so that liabilities on account of any special enquiries should not fall on the General Fund. It was also agreed to make a suitable allocation from the Earmarked and Special Enquiries Fund for postage, stationery and other contingent expenses.

11. The Honorary Secretary stated that as the work in connexion with special enquiries and projects was becoming very heavy it would be probably necessary to create a post of a whole time Assistant General Secretary. After general discussion the Council was of opinion that this would be extremely desirable and the suggestion was accepted in principle. The Honorary Secretary was requested to put up definite proposals for consideration by the Council.

RECOMMENDATIONS TO THE ANNUAL GENERAL MEETING.

12. The Honorary Secretary suggested that the Hon'ble Sir Girja Shankar Bajpai, K.C.S.I., K.B.E., C.I.E., I.C.S., Member-in-charge of the Department of Education, Health, & Lands, Government of India be elected an Honorary Member of the Institute.

Resolved that the Council recommend the election of the Hon'ble Sir Girja Shankar Bajpai as an Honorary Member of the Institute.

ELECTION OF MEMBERS.

13. The following person was elected a member of the Institute:—

Mr. G. BANU, B.A., F.S.A.A., F.C.I.S., R.A. Incorporated Accountant,
4 Hastings Street, Calcutta.

JOURNAL OF APPLIED STATISTICS.

14. Considered a letter dated 3rd April 1941 from Mr. N. Sundara Rama Sastry, Secretary of the Madras Branch of the Indian Statistical Institute, suggesting that in view of the irregular publication of Sankhya the members be permitted to receive four issues of the journal for one year's membership irrespective of the time of publication of the journal.

The Honorary Secretary stated that attempts were being made to publish a supplement to Sankhya in the form of a journal of applied statistics which would be published regularly. It was intended to make this journal less technical and more popular in the sense of having a wider appeal for economists, businessmen, administrators and workers in applied statistics. In case the proposed journal of applied statistics could be issued at an early date it would be possible to offer a choice of one of the two journals to the members of the Institute.

Resolved that the proposal of the Honorary Secretary for publishing a supplement to Sankhya dealing with applied statistics be accepted in principle provided that this did not involve any financial liability so far as the funds of the Institute were concerned.

MISCELLANEOUS.

15. The Honorary Secretary reported that during a recent visit to New Delhi in the third week of April he saw the Hon'ble Sir Girja Shankar Bajpai, Mr. J. D. Tyson and Mr. G. S. Bowman of the Department of Education, Health and Lands, and Mr. C. E. Jones and Sir Raghavendra Rao of the Finance Department in connexion with the work of the Institute. He had submitted on behalf of the Institute two applications to the Government of India for (a) a non-recurring grant for typographical arrangements for Sankhya: the Indian Journal of Statistics and (b) an additional recurring grant of Rs. 20,000 per year for the Indian Statistical Institute.

Resolved that the action of the Honorary Secretary be approved.

Badridas Coomra,
Chairman.

P. C. Mahalanobis
Honorary Secretary.