

INDIAN STATISTICAL INSTITUTE.

FIFTH ANNUAL REPORT 1936-37*

The Indian Statistical Institute sustained two heavy losses by death during the year under review.

SIR RAJENDRA NATH MOOKERJEE 1854—1936.

Sir Rajendra Nath Mookerjee, the first President of the Indian Statistical Institute, died in Calcutta on the 18th May, 1936. Born in 1854 in a small village near Calcutta, by his own efforts he became the acknowledged leader of commerce and industry in Bengal. He had truly appreciated the importance of statistics for the future progress of India, and came forward readily at the age of 78 to preside over the inaugural meeting of the Institute held on the 17th December, 1931. Since then he worked as the President of the Institute for more than four years, and retired from this office in April, 1936 only three weeks before his death. He used to take a personal interest in the work of the Institute, and attended every meeting of the Council and of the Institute until failing health made it impossible for him to do so. The Institute owes its very existence to his active interest, for without the lead given by him it would not have been possible to start its work in its present form.

A Special Meeting of the Indian Statistical Institute was held on the 31st July, 1936 at which an obituary resolution was passed. A short sketch of his life was published in *Sankhyā*, Vol. 2, Part 3.

PROF. KARL PEARSON 1857—1936.

Karl Pearson was born on the 27th March, 1857 and died on the 27th April, 1936. He was the most eminent statistician of his time, and by his life long labours as the Editor of the *Biometrika* and the *Annals of Eugenics*, as a teacher, and as the founder of a new school of research, succeeded in placing the science of statistics on a secure foundation. He was interested in the progress of statistical studies in India, and showed his sympathy with the aims and objects of the Institute by agreeing to be elected its first Honorary Fellow in 1933.

An obituary resolution was passed at a Special Meeting of the Institute held on the 31st July, 1936. A short memoir and a note on Karl Pearson's statistical writings were published in *Sankhyā*, Vol. 2, Part 4.

A STATISTICAL CONFERENCE IN INDIA.

The decision to organise a Statistical Conference in India in January 1938 marks a notable advance. In September 1934 the Honorary Secretary had discussed this question with Dr. D. B. Meek, then Director-General of Commercial Intelligence and Statistics, who supported the proposal. The Hon'ble Sir James Grigg, Finance Member, Government of India, had also kindly agreed to help in this matter. Owing to Dr. Meek's departure from India in December 1934 no further action was however taken. Dr. John Matthai, the present Director General of Commercial Intelligence and Statistics, who was approached by the Honorary Secretary in this connexion in July 1935, suggested that the first Conference might be held in 1936. The question was raised independently by Dr. Nazir Ahmad, Director, Cotton Technological Institute, Matunga, in July 1936. The proposal was considered by the Council of the Indian Statistical Institute in August 1936, and the Hon. Secretary was authorised to get in touch with different centres of statistical work in India to ascertain and report to the Council at an early date the possibility of holding meetings in different places in India of the Indian Statistical Institute or statistical conferences either independently or in conjunction with the Indian Science Congress, the Indian Economic Conference, or other scientific organisations.

The Honorary Secretary prepared a note on the subject which was considered by the Council of the Institute at a meeting held on the 2nd April, 1937. As far as it could be ascertained general

* The Annual Report and Audited Accounts were adopted at the Annual General Meeting of the Indian Statistical Institute held at the Statistical Laboratory, Calcutta, on the 27th April, 1937.

opinion was definitely in favour of organizing a Statistical Conference in India. It would not only give opportunities for the presentation and discussion of scientific and technical papers including methods of standardisation and improvement of the collection of primary statistics, but would serve a most useful purpose in establishing personal contacts between statistical workers in different parts of the country. The Conference would also help in focusing public attention on the scope and importance of statistics, in securing grants from Government departments and public bodies, and in opening channels of private donations for the support of statistical studies and research.

It was pointed out in the Secretary's report that there were practical difficulties in starting a statistical section as an integral part of either the Indian Science Congress or the Indian Economic Conference. This plan was also open to objections on other grounds. Modern statistics has close affiliations with both economics and the positive sciences, and it is neither possible nor desirable to exclude either. In this situation it was considered advisable to start a Statistical Conference with an independent organization of its own, but working in close co-operation with both the Indian Science Congress and the Economic Conference. This could be most conveniently achieved in practice by holding the Statistical Conference in alternate years, in the same place as the Science Congress and the Economic Conference. It would then be possible to hold joint meetings and joint discussions by arrangement with these two organizations. In this plan statistics would serve as a connecting link between science and economics, and would foster active co-operation between the two which would be beneficial in every way.

After careful consideration of the question the Council approved of the principle of organizing an Indian Statistical Conference with an independent constitution of its own but in active co-operation with the Indian Science Congress and the Indian Economic Conference.

The proposal of holding the first session of the Conference in Calcutta in January 1938 was also generally approved. An important reason in favour of this decision was that the Jubilee Session of the Indian Science Congress would be held in Calcutta at about the same time and would be attended by a large group of distinguished foreign scientists.

INVITATION TO PROF. R. A. FISHER TO VISIT INDIA.

An important decision was made by the Council this year in inviting Prof. R. A. Fisher to visit India during the cold weather of 1937-38. Originally a mathematical Fellow of the Gonville and Caius Colleges, Cambridge, he joined the Rothamsted Agricultural Station and made mathematical statistics his special subject of research at the suggestion of Sir John Russell. A paper on the "Frequency Distribution of the Values of the Correlation Coefficient" published in 1915 initiated important researches in the theory of exact sampling distributions in recent years. The memoir "On the Mathematical Foundations of Theoretical Statistics" was published in 1921, and a little later in 1922 the paper on field experiments which led to the development of the theory of design of experiments. This has revolutionised the technique of research in agriculture, industry, biology, psychology and other studies involving multiple factors of variation. The book on the "Genetical Theory of Natural Selection" in 1928 gave a new direction to researches in genetics and heredity. In 1929 Prof. Fisher was elected a Fellow of the Royal Society, and in 1933 succeeded Karl Pearson in the Galton Chair in the University of London.

The methods developed by Prof. Fisher are being extensively used in India. A beginning has also been made in this country in researches in analytic statistics, a subject of rapidly growing importance in which Prof. Fisher is the recognised leader. It was felt that his help at this juncture would be invaluable for organising the future programme of statistical studies in India.

In consultation with Mr. S. P. Mookerjee (Vice-President of the Indian Statistical Institute, and Vice-Chancellor of the University of Calcutta), the Hon. Secretary wrote unofficially on behalf of the Institute to Prof. R. A. Fisher suggesting that he should visit India next winter (1937-38). Prof. Fisher in his letter, dated the 19th February, expressed his willingness to come to India in December 1937-January 1938, and stated that the invitation being from a scientific society, he would ask for an honorarium of only £200 besides expenses. The University of Calcutta have decided to invite Prof. Fisher to give a short course of lectures on mathematical statistics at the Calcutta University and have sanctioned an honorarium of Rs. 2,000 for this purpose. With this assurance of co-operation from the University of Calcutta, the Council of the Institute decided on the 2nd April, 1927 to send Prof. Fisher a definite invitation on behalf of the Indian Statistical Institute to visit India next winter, and it is hoped that Prof. Fisher would be able to accept it. A Guarantee Fund has been opened to meet the expenses in connexion with Prof. Fisher's visit, and it has been decided to seek the co-operation of scientific institutions and universities in India in this matter.

SCHEME OF EXAMINATIONS IN STATISTICS.

Appreciable progress has been made in connexion with the scheme of examinations for the award of diplomas and certificates for proficiency in statistics which had received formal sanction of the Institute at the last annual meeting in April 1936. In order to maintain adequate scientific standards it had been decided that at least one examiner and one moderator in each examination should be appointed from among well-known statisticians from outside India. We are glad to report that Messrs. A. L. Howley (London), R. A. Fisher (London), H. S. Pearson (London), A. C. Aitken (Edinburgh), J. Wishart (Cambridge) and J. U. Irwin (London) have kindly agreed to act either as moderators or examiners. It is hoped that the first examinations will be held at an early date.

REPORT ON OFFICIAL STATISTICS.

The Report of the Committee for Official Statistics which was adopted at a meeting of the Council last year was widely circulated, and the recommendations made in this report have been receiving careful consideration by the Government of India. The Report was favourably received by different Chambers of Commerce and other bodies interested in this question.*

GRANT FROM THE GOVERNMENT OF INDIA.

A grant of Rs. 5,000 per year was sanctioned by the Government of India in 1935 on certain conditions which were accepted by the Institute. In accordance with these conditions we had undertaken responsibilities of three different kinds: (a) to attend to enquiries of a statistical nature, (b) to give special courses of training (extending from one month to a year in duration) in analytic statistics to officers who may be sent by Government departments or recognised scientific and educational institutions to the Statistical Laboratory, Calcutta, on deputation for this purpose, and (c) to take up special investigations in statistics. As regards the research programme it had been agreed that subjects for investigations would be taken up as far as practicable in the following order of preference:—(1) mathematical and theoretical statistics; (2) educational and biometric (including medical and public health) studies; and (3) statistics relating to economics and other subjects.

There is a Standing Committee for Research which during the year under review consisted of the following persons:—

Dr G. S. Dose, *Head of the Psychological Department, University of Calcutta.*

Sir Bryce Burn, *Vice-Chairman, Imperial Council of Agricultural Research (nominated by the Government of India).*

Mr. P. H. Carpenter, *Chief Scientific Officer, Tocklai Tea Experimental Station.*

Prof. K. B. Mallava, *University of Mysore.*

Dr. John Matthis, *Director General of Commercial Intelligence and Statistics, India.*

Dr. C. W. B. Normand, *Director General of Observatories, India.*

Mr. T. J. V. Roxburgh, *I.C.S., Judicial Secretary, Bengal.*

Mr. B. M. Sen, *Principal, Presidency College, Calcutta.*

Prof. N. R. Sen, *Ghosh Professor of Mathematics, University of Calcutta.*

Dr. H. Sinha, *University of Calcutta.*

Prof. P. C. Mahalanobis (Secretary).

The Research Programme for 1936-37 was settled by circulation in June 1936, and various questions were discussed with individual members of the Committee from time to time.

Mr. Samarendra Nath Roy, who had joined in November 1935, continued his work on theoretical statistics. Mr. Jaisuchandra Sen who had been appointed in 1935 for work on group tests of intelligence had resigned in January 1936 to take up an educational appointment elsewhere. The post was not filled as no competent research assistant in this subject was available on an allowance of Rs. 75 per month which was all that could be set apart for this purpose. Dr. P. V. Sakhatme, Ph.D. (London) was given this allowance as a part-time worker in theoretical statistics for about three months (July-September, 1936). He went away in October 1936 on his appointment as Statistician in the Imperial Institute of Sugar Technology, Cawnpore. Mr. K. Raghuvaran Nair, M.A. (Madras), formerly research student in statistics in the University of Madras, who started work in November 1936, is at present drawing this allowance. He is working mainly in applied statistics. A number of junior computers on allowances of from Rs. 25 to Rs. 50 per month were paid out of the fund set apart for research.

* At the Annual General Meeting of the Institute held on the 27th April, 1935, there was a general discussion on the need of improving Indian Official statistics. Dr. John Matthis (Director General of Commercial Intelligence and Statistics) explained what action was being taken by Government in this connection. Dr. P. N. Banerjee, Mr. W. Littlewood (Messrs. Mackinnon Mackenzie & Co.), Mr. A. L. Cameron (Bengal Chamber of Commerce), Mr. K. L. Dhandhania (Narayan Chamber of Commerce), Mr. H. D. Ghosh (Bengal National Chamber of Commerce), Dr. H. Sinha and Prof. P. C. Mahalanobis participated in the discussion.

RESEARCH WORK.

Research and advanced studies in statistics under the auspices of the Institute were carried on as usual in the Statistical Laboratory, Calcutta. Besides the grant from the Government of India, earmarked grants were also received by the Statistical Laboratory from the Imperial Council of Agricultural Research and other sources. The work in the Laboratory is however organised on a unitary plan, and a consolidated report of the work done during the year under review is given below.

Work in different branches of theoretical and applied statistics was conducted under the general guidance of P. C. Mahalanobis. Rajchandra Bose and Sureshchandra Nath Roy continued their researches in mathematical statistics. Seshubhus Sekhar Bose worked mainly on the application of statistical theory in agricultural field experiments, and also on certain topics in theoretical statistics. Smiliter Kumar Bosejee and Jitendra Mohan Sen Gupta were in charge of the computation work.

Mathematical Statistics. Tables of the percentage values of the D'-statistic for odd number of variates had been completed last year, and similar work was finished this year for even number of variates. It involved a preliminary tabulation of a previously untabulated Bessel function by laborious numerical integration. Interesting statistical interpretations of Rectangular Co-ordinates and their simple functions were discovered which, it is hoped, would prove useful in the study of sampling distributions of practical importance. Following Romanowsky some work has been done on the calculation of mixed moments of statistical parameters, and it has been shown that certain differential operators and matrices of differential operators play a fundamental part in determining such moments. The distribution of means of samples drawn from Mackay's Bessel function population has been found to be of the same form as the parent population. Properties of a Bessel function distribution, and the relative efficiency of various estimates of the regression coefficient were also studied. A table of one-tenth per cent. values of the ratio of variances was prepared and published.

Agricultural Research. A great deal of work was done in connexion with the analysis and interpretation of results of field experiments. A few topics of general interest are mentioned here. The method of estimating individual yields in the case of mixed up plots was discussed last year; appropriate standard errors for testing the treatment means including mixed up yields have been now obtained, and it has been shown that the loss of information with two mixed up plots corresponds to the blurring value of half a degree of freedom. A statistical analysis of the yield of the permanent manurials conducted over 22 years in Pusa has been published, in which the rates of annual deterioration in soil fertility under the different organic and inorganic fertilisers have been determined. The optimum shape and size of plot for sugarcane experiments was determined from a study of a uniformity trial experiments in Bihar and Assam. A preliminary study has also been made of certain data relating to rind hardness in relation to lignification in sugarcane.

Biometry and Anthropometry. By kind permission of Lt. Col. M. Das, I.M.S., Superintendent of the Alipore Central Jail, a survey of blood-pressure of over 2000 convicts in the Alipore Central Jail was completed with the help of Dr. J. C. Gupta of the Carmichael Medical College, and Dr. P. Ghosh of the Calcutta Medical School.

Work has also proceeded on anthropometric data relating to certain Bengal castes collected by Dr. Bhupendra Nath Datta; to Assam, Kaks, Garo, Marring, Meas Nagos and Hajongs collected by Mr. Jyotsna Kumar Bose; and to Malabar and Malers collected by Mr. Sankar Sarkar. Profile photographs are also being slowly collected with the help of the new Profiloscope designed and constructed in the Laboratory.

Nutrition Research. The statistical analysis of data relating to height and weight of more than 5000 school children belonging to different schools and communities in Midna, which were sent by Dr. W. R. Aykroyd, Director, Nutrition Research Laboratories, Coomoor, was completed during the year, and a report will be shortly published.

Forest Research. A statistical study was made of the effect of root-competition on the growth of teak trees on the basis of data supplied by the Imperial Institute of Forest Research, Dehra-Dun. The proportion of heart-wood and sap-wood in teak was studied in relation to the diameter of the plant at breast height (d.b.h.), age and height of the plant.

Radio Research. The connexion between thunderstorms and upper air ionisation was investigated by statistical methods on the basis of data collected by Prof. S. K. Mitra and his co-workers in the University College of Science, Calcutta.

Economic Statistics. A paper on "Should we Devalue the Rupee?" prepared by Mr. Sudhindra Nath Sen and Dr. H. C. Sinha was presented before the Agra session of the Indian Economic Conference, and has been published in its proceedings. Valuable data relating to the indebtedness of 423 families in villages near Bolpur, which were collected by Mr. Santipriya Bose of the Visva-Bharati Institute of Rural Reconstruction, have been statistically analysed in detail.

Hooghly-Howrah Flushing and Irrigation Scheme. At the instance of the Government of Bengal a statistical note was prepared on the scheme of irrigation of an area measuring 916 square miles lying in Burdwan, Hooghly and Howrah districts. The actual rainfall during the period 1901-1935 was studied to find out by how much it fell short of the actual requirements for paddy in each season. How far the defect could be made up from the water available in the Damodar river was also determined. The yield of paddy during the same period was studied in detail and estimates were made regarding the increase in the yield which would have been obtained if the irrigation scheme had been in operation during the whole of this period. This note has been printed by the Government of Bengal.

Survey of Hand-loom Weaving Industry in Bengal. A survey of hand-loom weaving industry in Bengal was conducted by the Statistical Laboratory on behalf of the Bengal Board of Economic Enquiry at a cost of about eighteen thousand rupees. The survey was conducted according to the method of representative sampling with the *maaza* as the sampling unit. The information was collected mostly in the form of sub-samples, and statistical controls were provided in the form of replicated investigations of about five per cent. of the families by independent workers. The survey covered about 8000 weaving, and 2000 non-weaving (mainly agricultural) families in thirteen districts. The family form comprised over 250 items relating to income, expenditure, debt, weaving and agricultural productions, etc. A more detailed survey was made of family budgets for about 1000 families, and of about 100 important cloth markets in different districts. Mr. Nihar Chandra Chakravarty, M.A., of the Bengal Civil Service, was placed on special duty as Supervisor, and a temporary staff of two inspectors, fourteen investigators, and four computers were engaged for this work. A preliminary report on data relating to the first eight districts surveyed was prepared by the Supervisor, and has been already published by the Government of Bengal. Detailed statistical analysis of the data is proceeding, and a full report will be issued in due course.

ADVANCED WORKERS.

The following persons were given short courses of training in statistics during the year under review:—

- Mr. K. V. Sastri, M.Sc., *Department of Mathematics, Hindu University, (March-July, 1936).*
 Mr. E. W. Franklin, M.A., B.T., *Spence Training College, Jubbalpur, (May-June, 1936).*
 Mr. V. K. Handicker, B.A., B.T., *Inspector of Schools, Indore, (May-June, 1936).*
 Mr. S. C. Chakravarty, M.Sc., *Demonstrator, Institute of Agricultural Research, Hindu University, Benares, (May-June, 1936).*
 Mr. S. P. Saksena, M.A., B.Com., *Lecturer in Economics, University of Lucknow, (May-June, 1936).*
 Mr. A. N. Banerjee, M.A., *Lecturer in Economics, University of Lucknow, (May, 1936).*
 Mr. Fariduddin Ahmed, M.Sc., *Department of Agriculture, Bengal, (May, 1936).*
 Mr. S. N. Chakravarty, M.Sc., L.T., *Science Teacher, U. P. Govt. High School, Fatehpur, (May-June, 1936).*
 Mr. G. Venkatchalam, M.Sc., *Institute of Agriculture, Benares, (May-July, 1936).*
 Dr. S. C. Roy, M.B., D.P.H., D.T.M., *All-India Institute of Hygiene and Public Health, (April, 1936).*
 Dr. B. N. Pramanik, M.Sc., Ph.D. (Lond.), D.I.C., *Asst. Agricultural Chemist, U. P. (July-September, 1936).*
 Mr. K. Kissen, M.A., *Statistical Assistant to Plant Physiologist, Botanical Laboratory, Govt. College, Lahore, (June-September, 1936).*
 Mr. P. P. Chandra, B.Sc. (Lond.), B.A., *Divisional Superintendent of Agriculture, Manipal, (July-September, 1936).*
 Mr. V. N. Vaidhakar, B.A., *Horticultural Officer, Bengal, (September, 1936).*
 Mr. K. L. Khanna, B.Sc. (Agr.), *Superintending Specialist, Govt. of Bihar, (September, 1936).*
 Mr. Narmada Ranjan Sengupta, B.A., *Sub-Registrar, Govt. of Bengal, (August-October, 1936).*
 Mr. S. C. Chakravarty, M.Sc., *Department of Agriculture, Hindu University, Benares, (October-November, 1936).*
 Mr. G. G. Nawalke, B.A., *Department of Agriculture, Baroda, (November-December, 1936).*
 Mr. A. F. Patel, B.A., *Breeding Assistant, C. R. R. Scheme, Department of Agriculture, Baroda, (November-December, 1936).*
 Mr. G. K. Saut, B.Sc., *Assistant, Chemistry and Agronomy Section, Institute of Plant Industry, Indore, (January, 1937—still working).*
 Mr. M. A. Kakasai, B.Sc., P.F.S., *Extra Asst. Conservator of Forests, Forest Research Institute, Dehra Dun, (January-March, 1937).*
 Mr. N. Parameswaran Pillai, M.A., B.L., *Education Department, Travancore State, Trivandrum, S. India, (February, 1937—still working).*

STATISTICAL ENQUIRIES.

The distribution of enquiries by subjects and provinces is shown below:—

- By subjects—Agriculture 90; Anthropology 3; Economics 3; Education 7; Forest Research 4; Medical 4; Physiology 2; Irrigation 2; Mathematical Statistics 5; Miscellaneous 1. Total 116.
 By Provinces—Assam 7; Bengal 64; Bihar & Orissa 10; Bombay 2; Burma 2; Central Provinces 2; Madras 5; Panjab 6; United Provinces 11; Others 7. Total 116.

VISITORS

The Hon'ble Sir Akbar Hydari, the Prime Minister of Hyderabad, visited the Statistical Laboratory on the 22nd December, 1936. He was especially interested in the application of the statistical method in national welfare work, and it is hoped that he would give this question further consideration at an early date.

Sir John Russell, D.Sc., F.R.S., Director of the Rothamsted Experimental Station, London, who came to India at the request of the Government of India to review the work of the Imperial Council of Agricultural Research, officially inspected the Laboratory on the 22nd January. He took a keen interest in every phase of the activities in the Laboratory and expressed satisfaction with the quality of the work. It is gratifying to note that he made several public references to the work of the laboratory during his tour in India. His visit has given great encouragement to all our workers, and has established valuable personal contacts.

Mr. N. C. Mehta, I.C.S., (Officiating Vice-Chairman, Imperial Council of Agricultural Research) paid an official visit on the 2nd November, 1936. Mr. N. Brodie (Director, Industrial Research Bureau, Government of India) came to the Laboratory on the 23rd February, 1937, and discussed possibilities of the application of the statistical method in industrial research. Among other visitors may be mentioned Mr. B. Arora (Statistical Officer, H. B. Ry.) ; Mr. M. Carbery (Director of Agriculture, Bengal) ; Mr. P. H. Carpenter (Chief Scientific Officer, Indian Tea Association, Assam) ; Mr. A. F. Cliff (Secretary, Indian Central Jute Committee), all of whom came here to discuss various questions of statistical interest. Dr. N. K. Bose (Mathematical Officer, Punjab Irrigation Research Laboratory, Lahore) worked here for some time on the statistical analysis of certain data relating to Punjab canals.

MEETINGS OF THE INSTITUTE.

By kind permission of Mr. B. M. Sen, Principal, Presidency College, meetings of the Institute were held in the Presidency College, Calcutta and various subjects of statistical interest were discussed. A lecture on the "Life and Work of Karl Pearson," was given by P. C. Mahalanobis and has been published in *Sankhyā*. Dr. P. V. Sukhatme who had just returned to India after a course of study and research in the Biometric Laboratory, London, gave a series of talks on recent researches in statistics with special reference to his own investigations. The use of rectangular co-ordinates in the study of sampling distributions of various statistical parameters formed the subject of a series of lectures by Mr. R. C. Bose. Other lectures were also arranged to help the less advanced statistical workers including the computing staff of the Laboratory.

A Special Meeting of the Institute was held on the 31st July, 1936 at which obituary resolutions were passed in memory of Sir R. N. Mookerjee and Karl Pearson.

Four meetings of the Council of the Institute were held on the 31st July, 1936, 19th February and 2nd and 27th April, 1937, at which a large amount of business was transacted.

POONA BRANCH.

Prof. D. G. Karve was the Secretary of the Poona Branch throughout the year. The number of life members at the Branch was 12 and of local members 2.

Dr. S. R. Saver read a paper on 'Obtaining a fit better than that given by the method of least squares,' which was followed by a discussion in which several members, including professors of mathematics, took part. The paper will be published in *Sankhyā* in due course.

Prof. D. R. Gadgil was kind enough to conduct on behalf of the Institute four weekly classes in elementary statistical methods, which were attended by research students and staff of several institutions in Poona. Our best thanks are due to Prof. Gadgil and Dr. Saver for their valuable help.

As anticipated in the report of the last year, the Government of Bombay agreed to supply to the Branch its annual publications. These are now being received and notes regarding their statistical importance contents will soon begin to be published in *Sankhyā*.

Several members of the Branch connected with the University of Bombay are trying to secure the inclusion of statistics in the examination curricula for degree examinations. Some progress has been made in this matter, and it is hoped that under the revised degree courses of the University, Statistics will get its proper place.

The members of the Branch personally advised several official and non-official workers regarding the statistical side of the latter's work.

MYSORE BRANCH.

Prof. K. B. Madhava was in charge of the Mysore Branch which worked in association with the Departments of Psychology and Economics of the University of Mysore. The survey of vagrants

MISCELLANEOUS.

We note with pleasure the appointment of the Hon'ble Mr. N. R. Sarker, Vice-President of our Institute, as the Finance Minister of Bengal, and of Dr. S. C. Law, our Treasurer, as the Sheriff of Calcutta.

Some progress has been made in connexion with our efforts to get statistics recognised as an independent subject for study in the Indian Universities. The report of the Committee on Examinations in Statistics was circulated by the Inter-University Board to all the Universities in India. A note was also prepared on the subject by Prof. P. C. Mahalanobis for consideration by the University of Calcutta, and it is hoped early action will be taken in this matter.

Mr. Subhendra Sekhar Bose, one of the workers in the Statistical Laboratory was awarded the Frenchand Roychand Studentship of the University of Calcutta for a thesis on "the Theory of Distribution in Statistics and its Application", which was classified as a subject under the applied mathematics group. Mr. Bose has also been appointed an Honorary Lecturer in Statistics in the Post-Graduate Classes of the Calcutta University.

MEMBERSHIP.

The number of Life Members is at present 25, and of Ordinary Members, 147.

AUDITED ACCOUNTANTS.

Our best thanks are due to Messrs. P. C. Nandi & Co., Chartered Accountants, who worked as Honorary Auditors.

Receipts and Payments Account for the Year ending 31st March, 1937.

RECEIPTS.		EXPENDITURES.	
To Opening Balance.		By Research Staff	3,047 9 6
Cash	63 14 3	" Books and Journals	824 6 9
Bank	2,353 9 0	" Calculating Machines etc. ...	1,650 10 0
	2,417 7 3	" Contribution to Sankhyā	500 0 0
" Subscription.		" Part time Clerk and Peon ...	253 8 0
Ordinary Members	812 11 0	" Postage	498 4 2
Life Members	150 0 0	" Stationery and Contingency (In-	
	962 11 0	cluding travelling)	497 9 3
" Grant from Govt. of		" Bank charges	0 8 0
India	5,000 0 0	" Contribution to Branches	2 8 0
		" Closing Balance	
		Bank	1,653 15 0
		Cash	51 3 0
			1,705 2 0
	8,380 2 3		8,380 2 3
		Examined and Found Correct.	
		P. C. NANDI & Co., Hony. Auditors,	
		Registered Accountants	
		Chartered Accountants.	

1, HASTINGS STREET,
CALCUTTA,
The 22nd April, 1937.

CONCLUSION.

The record of work in the first five years is not unsatisfactory. The need of statistics for the future progress of the country is being increasingly recognised. The Institute has helped appreciably in this movement, and we hope it will continue to do so in future.

P. C. MAHALANOBIS,
Hony. Secretary.

THE INDIAN STATISTICAL INSTITUTE

Proceedings of the Annual General Meeting, 27th April, 1937.

The Annual General Meeting of the Indian Statistical Institute was held in the Statistical Laboratory, Presidency College, Calcutta, at 4-0 p.m. on Tuesday the 27th April, 1937.

In the absence, out of India, of Sir E. C. Beethall, President, Mr. S. P. Mookerjee (Vice-Chancellor of the Calcutta University), Vice-President of the Institute, was in the Chair.

The following members were present :-

Dr. P. N. Banerjee, M.L.A.
Mr. S. S. Bose (Statistical Laboratory, Calcutta).
Mr. K. N. Chakravarti (Presidency College, Calcutta).
Mr. D. C. Ghose (Banjab University).
Mr. H. C. Ghose (Calcutta University).
Mr. H. I. Ghosh (Bengal National Chamber of Commerce).
Mr. W. Laidlaw (Messrs. Mackinnon Mackenzie, Calcutta).
Mr. S. K. Maumder (Registrar, Joint Stock Companies).
Dr. J. Matthai (Director General of Commercial Intelligence & Statistics).
Mr. T. Chapman Morrison (Bengal Chamber of Commerce).
Mr. N. P. Datta (Education Department, Travancore State).
Dr. K. C. K. E. Raja (All-India Institute of Hygiene & Public Health).
Mr. H. K. Sanyal (City College, Calcutta).
Dr. H. Sinha (Calcutta University).
Dr. J. C. Sinha (Presidency College, Calcutta).
Mr. P. C. Mahalanobis (Secretary).

Messrs. A. L. Cameron, A. T. Oliver and N. D. Harris (Bengal Chamber of Commerce), Mr. A. L. Datta (Indian Chamber of Commerce), Messrs. K. L. Dhamdhanu and G. Mohata (Marwar Chamber of Commerce), Messrs. R. C. Bose, S. N. Ray, Raghavan Nair, G. M. Panchang, C. K. Sant, Deva Raj, A. G. Sen and S. Banerjee also attended by invitation.

On the proposal of Prof. P. C. Mahalanobis seconded by Mr. W. Laidlaw, Mr. S. P. Mookerjee was voted to the Chair.

ANNUAL REPORT AND AUDITED ACCOUNTS.

1. The Secretary placed before the meeting the Annual Report and Audited Accounts for 1936-37 as approved by the Council, and mentioned that the accounts had been audited free of charge by Messrs. P. C. Nandi & Co., Chartered Accountants.

Resolved that the Annual Report and Audited Accounts for 1936-37 (previously circulated) be adopted.

Proposed by Dr. P. N. Banerjee

Seconded by Mr. W. Laidlaw

(Carried unanimously).

ELECTION OF OFFICE-BEARERS AND MEMBERS OF THE COUNCIL.

2. The Secretary reported that in accordance with the revised bye-laws for the election of office-bearers and members of the Council for 1937-38 nominations approved by the Council of the Institute had been circulated on the 22nd February, 1937, and the final list was circulated together with the notice of the Annual General Meeting. 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 office-bearers and members of the Council as circulated was then announced from the Chair.

President

Sir E. C. Beethall, Kt.,

Bengal Chamber of Commerce.

Vice-Presidents

Dr. P. N. Banerjee, M.A., D.Sc., M.L.A.
Sir George R. Campbell, M.L.C.,
Mr. D. P. Khastan, M.A.
Dr. John Matthai, D.Sc., C.I.E., I.E.S.
Mr. S. P. Mookerjee, M.A., B.L., M.L.C.,
Bar-at-Law.

Dr. C. W. R. Normand, D.Sc.
Sir C. V. Ramon, D.Sc., F.R.S., N.L.
Lah Shri Ram, M.A.
Prof. M. N. Saha, D.Sc., F.R.S.
The Hon'ble Mr. Nalini Ranjan Sarker.
Mr. B. M. Sen, M.A., I.E.S.

Treasurer

Dr. Satya Charu Law, M.A., B.L., Ph.D., Sheriff of Calcutta.
F.Z.S., M.B.O.U.,

Secretary

Prof. F. C. Mahalanobis, B.Sc., M.A., I.B.S., Statistical Laboratory, Calcutta.

Joint Secretaries

Dr. H. Sinha, M.Sc., Ph.D. University of Calcutta.
Dr. K. C. K. B. Raja, L.R.C.P. & S., D.P.H., All-India Institute of Hygiene & Public Health,
D.T.M. & H., Calcutta.

Members of the Council for 1937-38

Mr. B. P. Adarkar, M.A. University of Allahabad.
Dr. Naair Ahmed, M.Sc., Ph.D., Director, Cotton Technological Laboratory,
Mumbai, Bombay.
Dr. S. K. Banerji, D.Sc. Indian Meteorological Department.
Dr. G. S. Bose, M.B., D.Sc. Head of the Department of Psychology, University
of Calcutta.
Mr. S. S. Bose, M.Sc., P.R.S., Statistical Laboratory, Calcutta.
Prof. P. H. Carpenter, F.I.C., F.C.S., Chief Scientific Officer, Indian Tea Association.
Prof. K. N. Chakravarti, M.Sc., Presidency College, Calcutta.
Prof. H. L. Dey, D.Sc., University of Dacca.
Mr. H. C. Ghosh, M.A., P.R.S., University of Calcutta.
Mr. H. D. Ghosh, M.A., Bengal National Chamber of Commerce.
Dr. B. S. Gaha, M.A., Ph.D., Indian Museum, Calcutta.
Mr. W. Laidlaw, C.A., Messrs. Mackinnon Mackenzie & Co., Calcutta.
Prof. J. Maclean, M.A., M.Sc., Wilson College, Bombay.
Mr. N. C. Mehta, B.A., I.C.S., Secretary, Imperial Council of Agricultural
Research.
Prof. Radha Kamal Mukherjee, M.A., P.R.S., University of Lucknow.
Mr. T. J. V. Roxburgh, B.A., I.C.S., Judicial Secretary, Bengal.
Prof. N. R. Sen, D.Sc., Ghosh Professor of Applied Mathematics, Uni-
versity of Calcutta.
Prof. J. C. Sinha, M.A., Ph.D., Presidency College, Calcutta.
Dr. P. V. Sakhatave, M.Sc., Ph.D., Statistician, Imperial Institute of Sugar
Technology, Cawnpore.
Rao Bahadur M. Vaidyanathan, M.A., L.T., Statistician, Imperial Council of Agricultural
Research.

ELECTION OF OFFICE-BEARERS OF BRANCHES.

3. Resolved that the following persons be elected Chairmen of the Branches noted against their names and ex-officio Vice-Presidents of the Institute for 1937-38 :

Prof. V. G. Kale (Poona), Sir H. P. Moily (Bombay).
Proposed by Mr. P. C. Mahalanobis
Seconded by Dr. J. Matthai (Carried unanimously).

4. Resolved that the following persons be elected local Secretaries of the Branches of the Institute for 1937-38 :-

Prof. K. B. Mahiava (Mysore), Principal D. G. Karve (Poona), Prof. G. S. Gharye and Mr. S. R. Deshpande (Bombay).
Proposed by Mr. P. C. Mahalanobis
Seconded by Dr. J. Matthai (Carried unanimously).

ELECTION OF PROF. R. A. FISHER AS AN HONORARY FELLOW.

5. The Secretary reported that the proposal for electing Prof. R. A. Fisher as an Honorary Fellow of the Indian Statistical Institute had been approved by the Technical Committee.

Resolved that Prof. R. A. Fisher be elected an Honorary Fellow of the Indian Statistical Institute.

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

STATISTICAL CONFERENCE.

6. The Secretary placed before the meeting the proceedings of the Council dated the 2nd and 27th April, 1937 relating to the proposal for starting a Statistical Conference in India.

(f) Resolved that the recommendations of the Council be accepted and the proposal for starting a Statistical Conference in India be approved.

6f) Resolved that a General Committee with members from all over India and a Reception Committee in Calcutta be formed in due course for the organisation of the Statistical Conference, and the membership of these committees be open to members of the Indian Statistical Institute and also to other persons.

6ff) Resolved that a Working Committee consisting of the following persons with powers to co-opt be appointed for taking necessary action in this connexion:—

Dr. P. N. Banerjee, Sir Edward C. Bentham, Dr. G. S. Bose, Sir George Campbell, Mr. H. C. Ghosh, Mr. Ravi Kay, Mr. W. Laillaw, Dr. S. C. Law, Mr. S. P. Mookerjee, Dr. K. C. K. E. Raja, The Hon'ble Mr. N. R. Sarker, Mr. B. M. Sen, Dr. H. Sinha, with Prof. P. C. Mahalanobis as Secretary.

Proposed by Dr. J. Matthai

Seconded by Dr. J. C. Sinha

(Carried unanimously).

JOURNAL COMMITTEE.

7. Resolved that the Journal Committee be constituted as follows:—

Prof. S. N. Bose, Prof. K. B. Madhava, Mr. N. C. Mehta, Mr. T. J. Y. Roxburgh, Prof. N. R. Sen, Dr. H. Sinha, Prof. P. C. Mahalanobis (Editor, ex-officio) with Mr. H. C. Ghosh as Secretary.

Proposed by Dr. J. C. Sinha

Seconded by Mr. K. N. Chakravarti

(Carried unanimously).

APPOINTMENT OF AUDITORS.

8. Resolved that this meeting place on record its appreciation of the services rendered by Messrs. P. C. Nandi & Co., Chartered Accountants, as Honorary Auditors, and that they be requested to serve as Honorary Auditors for 1937-38.

Proposed by Dr. P. N. Banerjee

Seconded by Mr. W. Laillaw

(Carried unanimously).

9. The Secretary placed before the meeting the Budget of the Institute for 1937-38 as passed by the Council on the 27th April, 1937. (To be recorded).

10. At this stage Mr. S. P. Mookerjee left the meeting and on the proposal of Prof. P. C. Mahalanobis seconded by Mr. S. S. Bose, Dr. P. N. Banerjee, Vice-President, was voted to the Chair. The meeting was then adjourned for tea till 4-30 P.M. at the same place.

Adjourned Annual General Meeting of the Indian Statistical Institute.

The adjourned Annual General Meeting of the Indian Statistical Institute was held in the Statistical Laboratory, Calcutta, at 4-30 P.M. on Tuesday the 27th April, 1937. On the proposal of Prof. P. C. Mahalanobis seconded by Dr. H. Sinha, Dr. P. N. Banerjee, Vice-President of the Institute, was voted to the Chair.

DISCUSSION ON INDIAN OFFICIAL STATISTICS.

A general discussion was opened by Dr. H. Sinha on the need of improvement of Indian Official Statistics. Dr. John Matthai (Director General of Commercial Intelligence and Statistics) stated that the Report of the Committee on Official Statistics (which had been adopted) at the Annual Meeting of the Institute in April 1936) was being carefully considered by the Government of India, and explained what action was being taken in this connexion. Mr. W. Laillaw (Mackinnon, Mackenzie & Co.), Mr. A. L. Cameron (Bengal Chamber of Commerce), Mr. K. L. Dhandhanias (Marwari Chamber of Commerce) placed their views before the meeting. Dr. P. N. Banerjee offered thanks on behalf of the Institute to the Chambers of Commerce and other visitors for participating in the proceedings of the meeting. He then left the meeting, and the Chair was taken by Dr. John Matthai, Vice-President of the Institute. Mr. H. D. Ghosh (Bengal National Chamber of Commerce) offered a few suggestions regarding railway statistics. Dr. Matthai in a short reply gave an assurance of a sympathetic consideration of all proposals for improving Indian Official Statistics. Prof. P. C. Mahalanobis made an appeal for the active co-operation of the Chambers of Commerce in the use and interpretation of official statistics and proposed a vote of thanks to Dr. John Matthai. The meeting terminated at 5-40 P.M.

P. N. BANERJEA,
Chairman.

P. C. MAHALANOBIS,
Hon. Secretary.

Proceedings of the Council of the Indian Statistical Institute, 19th February 1937.

A meeting of the Council of the Indian Statistical Institute was held in the board-room of Messrs. Hind & Co. Chartered Bank Buildings, Calcutta, at 3.0 p.m. on Friday the 19th February, 1937.
Present: In the absence of Sir B. C. Benthall, President of the Institute, Mr. W. Laidlaw was voted to the chair.

Messrs. S. S. Bose, K. N. Chakravarti, H. C. Ghosh, H. D. Ghosh, K. C. K. E. Raja, H. C. Sinha, and P. C. Mahalanobis (*Secretary*).

Proceedings of the Council dated 31st July, 1936, confirmed.

1. Proceedings of the Council dated 31st July, 1936 were read and confirmed.

Election of Office-bearers and Members of the Council.

2. P. C. Mahalanobis, Secretary, placed before the Council the Bye-laws relating to the election of office-bearers and members of the Council.

Resolved that in accordance with Bye-law 4 the following persons be recommended for election as office-bearers or members of the Council for the ensuing year.

President: Sir E. C. Benthall, Kt.

Vice-Presidents: Dr. P. N. Banerjee, M.A., D.Sc., M.L.A., Sir George R. Campbell, M.I.C., Mr. D. P. Khaitan, M.A., Dr. Jolin Mathai, D.Sc., C.I.E., I.E.S., Mr. S. P. Mookerjee, M.A., B.L., M.L.A., Barr-at-Law, Dr. C. W. B. Narasim, D.Sc., Sir C. V. Ramon, I.A.S., F.R.S., N.L. Lals Shri Ram, B.A., Prof. M. N. Saha, D.Sc., F.R.S., The Hon'ble Mr. Nalini Ranjan Sarkar, Mr. B. M. Sen, M.A., I.E.S.

Treasurer: Dr. Satya Churn Law, M.A., B.L., Ph.D., P.Z.S., M.B.O.U.I.

Secretary: Prof. P. C. Mahalanobis, M.A., I.E.S.

Joint Secretaries: Dr. H. Sinha, M.Sc., Ph.D., Dr. K. C. K. E. Raja, L.R.C.P. & S., D.P.H., D.T.M. & H.

Members of the Council: Mr. B. P. Adarkar, M.A., Dr. Nazir Ahmed, M.Sc., Ph.D., Dr. S. K. Banerji, M.Sc., D.Sc., Dr. G. S. Bose, M.B., D.Sc., Mr. S. S. Bose, M.Sc., F.R.S., Mr. P. H. Carpenter, F.I.C., F.C.S., Prof. K. N. Chakravarti, M.Sc., Prof. H. L. Day, D.Sc., Mr. H. C. Ghosh, M.A., F.R.S., Mr. H. D. Ghosh, M.A., Dr. B. S. Guha, M.A., Ph.D., Mr. W. Laidlaw, C.A., Prof. J. Marlan, M.A., M.Sc., Mr. N. C. Mehta, B.A., I.C.S., Prof. Raulha Kamal Mukherjee, M.A., F.R.S., Mr. T. J. V. Roxburgh, B.A., I.C.S., Prof. N. R. Sen, D.Sc., Prof. J. C. Sinha, M.A., Ph.D., Dr. P. V. Sukhatme, M.Sc., Ph.D., Rao Ishlahar M. Vaidyanathan, M.A., L.T.

3. Resolved that Mr. W. Laidlaw and Mr. Subhendu Sekhar Bose be appointed Scrutinisers for counting the votes.

Election of Prof. R. A. Fisher as an Honorary Fellow.

4. P. C. Mahalanobis, Secretary, reported that in accordance with Rule 1, clause (d), the Technical Committee had recommended the election of Prof. R. A. Fisher, Galton Professor in the University of London, as an Honorary Fellow.

Resolved that the proposal be included in the Agenda for Annual Meeting.

Confirmed

WALTER LAIDLAW,
Chairman, 24-37.

P. C. MAHALANOBIS,
Secretary

Proceedings of the Council of the Indian Statistical Institute, 2nd April, 1937

A meeting of the Council of the Indian Statistical Institute was held at 4.0 p.m. on Friday the 2nd April, 1937 in the Durbihanga Building, Calcutta.

Present: Mr. W. Laidlaw was voted to the Chair.

Messrs. S. S. Bose, K. N. Chakravarti, J. C. Sinha, K. C. K. E. Raja, H. Sinha, P. C. Mahalanobis (*Secretary*).

Proceedings of the Council dated 19th February, 1937, confirmed.

1. Proceedings of the meeting of the Council dated, 19th February, 1937 were read and confirmed.

Prof. R. A. Fisher's visit to India.

2. Prof. P. C. Mahalanobis, Secretary, reported that in consultation with Mr. S. P. Mookerjee (Vice-President of the Indian Statistical Institute, and Vice-Chancellor of the University of Calcutta)

he had written unofficially on behalf of the Institute to Prof. R. A. Fisher suggesting that he should visit India next winter (1937-38). Prof. Fisher in his letter dated 19th February expressed his willingness to come to India in December 1937-January 1938, and stated that the invitation being from a scientific society, he would ask for an honorarium of only £200 besides expenses. The Syndicate of the University of Calcutta have recommended to the Senate that Prof. Fisher be invited to give a short course of lectures on mathematical statistics at the Calcutta University, and that an honorarium of Rs. 2,000/- be sanctioned for this purpose.

It is suggested that the co-operation of other scientific institutions and universities interested in this matter should also be invited and they should be asked to contribute to a guarantee fund to be opened for this purpose. It is estimated that the cost of Prof. Fisher's visit would amount to about Rs. 6,000/-; to this must be added the expenses for visiting places other than Calcutta, but such expenses would be recovered from the co-operating institutions. Prof. Mahalanobis has already written unofficially to the local Branches of the Institute and to a few other persons in this connexion.

(i) Resolved that Prof. R. A. Fisher be invited to visit India during the cold weather of 1937-38 and an honorarium of not less than £200 besides first class return passage and living expenses or hospitality be guaranteed for this purpose.

(ii) Resolved that a Guarantee Fund be opened in this connexion and institutions and Universities desiring to utilize the services of Prof. Fisher be invited to contribute to this Fund.

(iii) Resolved that a Committee consisting of the President, Mr. S. P. Mookerjee, Mr. W. Lalluon, the Treasurer, and the Secretary with powers to co-opt be appointed to make all necessary arrangements in connexion with Prof. Fisher's visit.

Nominations for election of office-bearers and members of the Council for 1937-38.

3. The Secretary reported that no fresh nomination has been received for election as members of the Council. Information has however been received that Sir C. G. Arthur, Kt., M.C. will be away from India this year and it has been suggested that his name should be withdrawn from the list of members of the Council.

(a) Resolved that as Sir C. G. Arthur, Kt., M.C. would be away from India this year his name be withdrawn from the list of nominations for election of members of the Council for 1937-38.

(b) Also resolved that in order to comply with Bye-law (1) which requires that there shall be twenty members of the Council of whom not less than eight must be elected from among members in Calcutta, Prof. N. R. Sen, D.Sc. (Ghosh Professor of Applied Mathematics, University of Calcutta) be nominated as a member of the Council in place of Sir C. G. Arthur.

4. The Secretary reported that a nomination paper signed by five members has been received proposing the election of Sir George Riddick Campbell, M.L.C. (Bengal Chamber of Commerce), as Vice-President of the Institute.

Resolved that the Council accepts this nomination and recommends the election of Sir George R. Campbell, M.L.C. as Vice-President of the Institute for 1937-38.

In view of the fact that the number of nominations is not in excess of the number of offices to be filled next year resolved that no voting paper be issued but the members be informed of the actual position.

Statistical Conference.

5. Read the following report submitted by the Secretary:—

A STATISTICAL CONFERENCE IN INDIA.

[1] The question of organizing an Indian Statistical Conference has been under consideration for some time. In September 1934 Prof. P. C. Mahalanobis had discussed this question with Dr. H. B. Meek, then Director-General of Commercial Intelligence and Statistics, who had strongly supported the proposal. The Hon'ble Sir James Grigg, Finance Member, Government of India, also had kindly agreed to help in this matter. Owing to Dr. Meek's departure from India in December 1934 no further action was however taken. In July 1935, Prof. Mahalanobis wrote to Dr. John Matthal, the present Director General of Commercial Intelligence and Statistics, who suggested that the first conference might be held in 1936. The question was raised independently by Dr. Nazir Ahmed, Director, Cotton Technological Institute, Matunga in July 1936. The proposal was considered by the Council of the Indian Statistical Institute in August 1936, and the following resolution was passed in this connexion.

Resolved that Prof. P. C. Mahalanobis, Honorary Secretary, be authorized to get in touch with different centres of Statistical work in India to ascertain and report to the Council

at an early date the possibility of holding meetings in different places in India of the Indian Statistical Institute or statistical conferences either independently or in conjunction with the Indian Science Congress, the Indian Economic Conference, or other scientific organisations.

(2) As far as it can be ascertained general opinion is in favour of organizing a Statistical Conference. It will not only give opportunities for the presentation and discussion of scientific and technical papers, and of methods of standardisation and improvement of the collection of primary statistics, but will be useful in other ways. People from different provinces and Indian States, both official and non-official, will be brought together in such a Conference, which will enable personal contacts being established between statistical workers in different parts of the country. In the present unorganised condition of statistical studies in India, there is scarcely any social stimulus to research outside two or three big centres; an Annual Conference will give encouragement to workers in isolated centres by bringing them in touch with other workers. A Conference will also help in focusing public attention on the scope and importance of statistics, in securing grants from Government departments and public bodies, and also in opening channels of private donations for the support of statistical studies and research.

The volume of statistical work has increased rapidly in recent years in India, and in case a Statistical Conference is started there will be no dearth of papers. It may be stated with confidence that the general standard will be as high as that of papers presented before the Indian Science Congress or the Economic Conference, and that the total number of papers will be considerably greater than that usually presented before some of the smaller sections of the Indian Science Congress. The case in favour of a Statistical Conference may therefore be considered as established.

(3) The organization of the proposed Statistical Conference may be now considered. On the mathematical and analytic side of statistical work there are certain advantages in keeping in touch with the Indian Science Congress, especially with the sections of Physics and Mathematics, Agriculture, Medicine, Anthropology, and Psychology. During the last two or three years, the question of opening a Statistical Section was informally discussed with the authorities of the Indian Science Congress, but the response has not been sufficiently encouraging.

The organization of the Indian Economic Conference is more unitary and centralized than that of the Indian Science Congress, and there are difficulties in fitting in a Statistical Section in the existing scheme.

It does not therefore seem feasible to start a statistical section as an integral part of either the Science Congress or the Economic Conference. Apart from practical difficulties, this plan is also open to objections on other grounds. Modern statisticians have close affiliations with both economics and the positive sciences. It is neither possible nor desirable to exclude either. In this situation the best course will be to start a Statistical Conference which will have an independent organization of its own but which will work in close association with both the Science Congress and the Economic Conference. This can be most conveniently achieved in practice by holding the sessions of the Statistical Conference, in alternate years, in the same place as the Science Congress and the Economic Conference. It will be then possible to hold joint meetings and joint discussions by arrangement with these two organizations. In this plan statistics will serve as a connecting link between science and economics, and will foster a close co-operation between the two which will be beneficial in every way.

(4) The next point requiring consideration is the place and time of the first Statistical Conference. Three proposals have been received in this connexion. Prof. Ghurye, Secretary of the Bombay Branch, has suggested that the Conference should be held in Bombay just before the Christmas holidays this year (1937) at about the same time as the session of the Population Conference. Mr. P. H. Carpenter has suggested the second or third week of December 1937 in New Delhi. The third proposal is to have the Statistical Conference in Calcutta in the first week of January 1938 at about the same time as the Jubilee Session of the Indian Science Congress which will be attended by a large group of distinguished British and foreign scientists.

A great city, the simultaneous session of the Population Conference, and the existence of a local Branch of the Statistical Institute are the points in favour of Bombay. In New Delhi the chief attraction is the help and presence of the high officials of the Government of India. In favour of Calcutta it may be pointed out that a very large number of scientific workers will gather there next January. The high officials of the Government of India will also be present there at that time. Finally in Calcutta we may count on the active co-operation of the members of the Statistical Institute as well as of the workers in the Statistical Laboratory. Calcutta would thus combine the advantages of both Bombay and Delhi.

(5) Having considered the report submitted by Prof. P. C. Mahalanobis, Honorary Secretary, it was resolved that the Council approves of the general principle of organizing an Indian Statistical

Conference with an independent constitution of its own, but in active co-operation with the Indian Science Congress and the Indian Economic Conference.

(ii) Resolved that the proposal of holding the first Session of the Conference in Calcutta in January, 1938 be also generally approved.

(iii) The Hon. Secretary be authorized to write to the Indian Science Congress and the Economic Conference seeking their co-operation in this matter.

(iv) Resolved that the Hon. Secretary be requested to circulate a note on this subject inviting the opinion of members and local Branches of the Institute, and the matter be placed before the next Annual Meeting of the Institute.

Arrangements for the Annual Meeting

6 Resolved that the following agenda for the Annual Meeting be approved but the Secretary be authorized to fix the actual date and also to include such other items as may be considered necessary.

- (1) Annual Report and Audited Accounts.
- (2) Election of Office-bearers and members of the Council.
- (3) Proposal for election of Professor R. A. Fisher as an Honorary Fellow of the Indian Statistical Institute.
- (4) Proposal for starting a Statistical Conference in India.
- (5) Election of Committees.
- (6) Appointment of Auditors.
- (7) Miscellaneous.

Letter from the Secretary, International Committee of Scientific Management.

7. Considered a letter from the Secretary, International Committee of Scientific Management suggesting that steps should be taken for the formation of a National Committee in India.

Resolved that the Secretary be authorized to help in this matter without however making any commitments on behalf of the Institute.

Confirmed

S. P. MOOKERJEE,
Chairman, 27-4-37.

P. C. MAHALANOBIS,
Hony. Secretary.

Proceedings of the Council of the Indian Statistical Institute, 27th April, 1937

A meeting of the Council of the Indian Statistical Institute was held in the Statistical Laboratory, Presidency College, Calcutta, at 3-30 p.m. on Tuesday the 27th April, 1937.

Present: Mr S. P. Mookerjee (*Vice-Chancellor of the Calcutta University*) Vice-President in the Chair. Messrs. P. N. Banerjee, S. S. Bose, K. N. Chakravarti, H. C. Ghose, H. D. Ghosh, W. Lalilaw, J. Matilni, K. C. K. E. Raja, H. Sinha, J. C. Sinha, and P. C. Mahalanobis (*Hon. Secretary*).

On the proposal of Prof. P. C. Mahalanobis seconded by Prof. J. C. Sinha, Mr. S. P. Mookerjee was voted to the Chair.

Proceedings of the Council dated 2nd April, 1937 confirmed.

1. Proceedings of the Council Meeting dated 2nd April, 1937 were read and confirmed.

Draft Annual Report and Audited Accounts.

2. Resolved that the Draft Annual Report and Audited Accounts (circulated) be approved and forwarded to the Annual Meeting.

Budget Estimates for 1937-38.

3. Resolved that the following budget estimates for 1937-38 be approved and be placed before the Annual Meeting for information:—

	Rs. A. P.		Rs. A. P.
Opening Balance	1,705 2 0	Research Staff	3,500 0 0
Grant from the Government of India	5,000 0 0	Books and Journals	1,000 0 0
Grant from the Government of India (earmarked for Sankhya for 2 years)	4,000 0 0	Contribution to Journal	500 0 0
Membership Fees	1,250 0 0	Laboratory equipments	500 0 0
Miscellaneous	44 14 0	Establishment including travelling	500 0 0
		Contribution to Branches	50 0 0
		Postage, Stationery and Contingency	750 0 0
		Government grant earmarked for Sankhya	4,000 0 0
		Closing Balance	1,200 0 0
TOTAL	12,000 0 0	TOTAL	12,000 0 0

Arrangements for the Statistical Conference.

4. The Secretary reported that several members have written expressing approval of the proposals regarding the organisation of the Statistical Conference in January 1938.

Resolved that the Council recommends to the Institute that the proposal for starting a Statistical Conference in India be approved, a General Committee with membership from all over India be formed for this purpose, and a Working Committee consisting of the following persons with powers to co-opt be appointed to take all necessary action in this connection:—

Dr. P. M. Banerjee, Sir Edmond Bevilhassell, Sir George Campbell, Mr. H. C. Ghosh, Mr. Reil Kar, Dr. S. C. Law, Mr. W. Laidlaw, Mr. S. P. Mookerjee, Mr. Chapman Mortimer, Dr. K. C. K. H. Raja, The Hon'ble Mr. N. R. Sarkar, Mr. B. M. Sen, Dr. H. Sinha with Prof. P. C. Mahalanobis as Secretary.

Election of Members.

5. Resolved that the following persons be elected members of the Indian Statistical Institute: Mr. B. Arora (Calcutta); Dr. Puresh Nath Chatterjee (Calcutta); Mr. B. A. Cornish (South Australia), The Director of Agriculture, United Provinces (Lucknow); The Director, Sir Doodaji Tata Graduate School (Bombay); Mr. Trilokya Nath Dutta (Calcutta); Mr. J. C. Ghose (Calcutta); Mr. Lakshma Nath Ghosh (Agra); Mr. P. V. Krishna Iyer (New Delhi); Mr. D. F. Kapadia (Bombay); Mr. K. Kissen (Lahore); Mr. N. K. Majumdar (Calcutta); Dr. N. P. Mehta (Kanchi); Mr. Chapman Mortimer (Calcutta); Mr. A. C. Mukherjee (Baroda); Mr. N. Parameswaran Pillai (Tiruchendur), The Principal, Haregowindia Lakhnoidhand College of Commerce (Ahmedabad); Dr. V. K. R. Rao (Madras); Mr. H. K. Sanyal (Calcutta); Mr. N. S. Rama Sastry (Madras); The Secretary, Scientific Library Committee (Nagpur), The Secretary, P'lyog (Parishad) Development Board (Nepal); Mr. Tarakumar Sen (Calcutta); Dr. P. V. Sukhatme (Cawnpore).

Grant from the Government of India.

6. The Secretary reported that the Government of India grant to the Institute will terminate at the end of the current financial year. He also reported that during his visit to Delhi early in April he had discussed the question of the renewal of the grant with Sir G. S. Bopai and Mr. M. S. A. Hydar, Secretaries to the Government of India, Department of Education, Health and Lands.

Resolved that Prof. P. C. Mahalanobis be authorized to take necessary action in this matter.

Issue of Imprest Cash.

7. (i) Resolved that the Treasurer be authorized to issue to the Secretary an imprest cash up to a limit of Rs. 2,000/- (Rupees Two Thousand only) at a time on a written requisition from the Secretary.

(ii) Resolved that the Treasurer be authorized to issue to the Secretary the grant of Rs. 4,000/- (Rupees Four Thousand only) earmarked for Sankhyal when the same is received from the Government of India.

Opening of an Account with the Imperial Bank of India.

8. Resolved (1) that for operating on the Imprest Cash Account, the Imperial Bank of India, be and are hereby appointed Bankers to the Indian Statistical Institute, and a second account be opened with them.

(2) That all cheques on this second banking account be signed and all bills, notes, and other negotiable instruments be drawn, accepted, and made on behalf of the Institute by the Secretary of the Institute for the time being.

(3) That cheques, bills, notes and other negotiable instruments payable to the Institute may be endorsed for the Institute by the Secretary of the Institute for the time being.

(4) That a copy of these Resolutions, signed by the Chairman, be handed to the Bank, together with specimens of the necessary signatures.

S. P. MOOKERJEE,
Chairman.

P. C. MAHALANOBIS,
Hon. Secretary.