

## INDIAN STATISTICAL INSTITUTE

### Sixteenth Annual Report : 1947-48

With the advent of the new era in the history of India, the Indian Statistical Institute looks forward to a bright future. Throughout its sixteen years of existence the Institute has played a pivotal part in the development of the sciences of statistics in India, and its pioneering efforts have met with a good deal of success. But like most other academic and scientific bodies, it lacked active support in the form of adequate maintenance grants from the Government and survived so long on contract jobs. However, in future, the Institute hopes to receive generous help from the Government of India, specially because, being the premier institution for theoretical and applied research in the science of statistics, the Institute can help in a significant manner in the economic and scientific development of the country.

The political division of India naturally affected the Institute adversely. The partition of Bengal resulted in the stoppage of the crop survey work in August 1947, long before the normal schedule and about 80 workers from the computation section had to be discharged to bring the expenditure of the Institute within the limits of the new resources.

Prof. P. C. Mahalanobis was elected Honorary Secretary of the Institute, but in view of his impending departure from India, he did not take over charge. Prof. S. N. Bose very kindly continued to work as Honorary Secretary during the greater part of the year till 1 February 1948 when Prof. Mahalanobis took over charge.

#### REORGANIZATION OF THE INSTITUTE

The Government of India had sent to the Institute in 1946 certain proposals for its reorganization. The Council of the Institute submitted to Government in January 1946, a comprehensive scheme for the purpose. The Education Ministry sent their reply to the Institute in January 1947, which was carefully considered at a series of meetings of a special committee, held in Calcutta in April 1947, and presided over by Sir C. D. Deshmukh. Prof. Mahalanobis was present at these meetings, and also at the meeting of the Council on 14 May 1947 in which a modified scheme was finally adopted for submission to Government.

A joint conference was held in Delhi on 25 August 1947, and was attended by Sir John Saragout, Dr. D. M. Sen and H. S. Verma of the Ministry of Education, and Y. K. Puri of the Ministry of Finance on behalf of the Government of India, and Sir C. D. Deshmukh, S. N. Ray, Prof. K. B. Madhava, N. C. Chakravarti, S. N. Roy, and S. B. Sen on behalf of the Institute. Prof. S. N. Bose who went to Delhi, was unfortunately unable to be present at the discussion on account of illness. Prof. Mahalanobis was unable to attend as he had to leave for America, a few days earlier, to attend a session of the U.N. Statistical Commission.

Certain tentative agreements were reached at the Delhi meeting on the basis of which the Ministry of Education in October 1947 sent their revised proposals, a copy of which was forwarded to Prof. Mahalanobis who was still abroad. He had different views in certain matters, and he sent his considered opinion in the form of a note at the end of November 1947 from Mexico City. Prof. Mahalanobis returned to India at the end of December 1947, and it was arranged to take up the matter for consideration by the Council in January 1948 when Sir C. D. Deshmukh, the President, was expected to come to Calcutta. Owing to heavy pressure of other work, the President was obliged to cancel his visit, and after consulting him through letters, the subject was fully discussed by the Council on 17 February 1948, and a reply was sent to Government next day. A few days later on 25 February 1948 Prof. Mahalanobis had the opportunity of discussing the matter jointly with H. V. R. Iyengar (Principal Private Secretary to the Prime Minister) and Sir S. R. Bhatnagar (at that time the Education Secretary) in Delhi. Prof. Mahalanobis discussed the matter further with Dr. Tara Chand (Education Secretary) and Sri Ramsayya of the Ministry of Finance in Delhi early in April; and it is hoped that a final decision would be reached in this matter in the near future.

In case an agreement is reached, it would be necessary to undertake an extensive revision of the constitution of the Institute. At least three months' notice must be given of all amendments to its rules, and amended rules have to be confirmed at a subsequent general meeting of the members of the Institute. The Council has suggested to Government that the reorganization of the Institute should begin as soon as an adequate grant is sanctioned by Government, but a period of six months should be allowed for making changes in the constitution.

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### SCIENTIFIC ACTIVITIES

#### (1) RESEARCH

Both theoretical and applied researches along lines initiated earlier continued during the year under report while certain new lines of work were also started. A list embodying the results of such investigations is given in Appendix I.

#### (2) CROP SURVEY WORK IN BENGAL

A three-year scheme for estimating the acreage and yield of certain crops during the *amau* and *aman* seasons in Bengal by statistical sampling (which had been sanctioned by the Government of Bengal in 1944) terminated in March 1947. In December 1946, the Government of Bengal had decided to discontinue the sample survey of crops after the termination of the three-year scheme. Prof. Mahalanobis during a short stay in India, however, got the question reopened in January 1947 when a conference was held in Calcutta which was attended by the Chief and other Ministers, and by Dr. W. E. Deming, the Sampling Adviser from Washington, and Prof. Mahalanobis. The general opinion at this conference was in favour of continuation of sample survey of crops, but no formal decision was taken by the Bengal Cabinet. In April 1947, the Institute was informally asked by H. S. Subrwardy, (then Chief Minister of Bengal) to continue the survey on an extended scale. Advances of three lakhs of rupees were given to the Institute by the Bengal Government, during the next three months, but no formal orders were issued; a subsequent grant of Rs. 2.2 lakhs was sanctioned by Government of (undivided) Bengal for work for the preparation period. After the partition of Bengal on 16 August 1947, the Hon'ble Sir Khwaja Nazimuddin, the Premier of East Bengal, gave verbal instruction to have the jute-*amau* survey in East Bengal completed at an estimated cost of Rs. 1,20,000. The West Bengal Government also desired the work to be continued at an estimated cost of Rs. 1,18,400 the unfinished portion of the work in the jute-*amau* season and *aman* season of 1947-48. In January 1948, the West Bengal Government asked the Institute to take up sample surveys for ascertaining the outputs of *rabi* (winter) crops and the seed requirements for different varieties of potato crops in West Bengal at an estimated cost of Rs. 1,32,000. The work in both East Bengal and West Bengal was completed as per schedule. Formal sanction of the original scheme was given by the West Bengal Government in January 1948, and the sanctioned grant was paid in full before the close of the financial year. The formal sanction of the East Bengal Government for payment of the stipulated grant of Rs. 1,20,000 had not been received upto the time of writing this report.

*Design of the Survey:* Except for an increase in the number of grids to enable reliable estimates of acreage and yield being made for administrative 'sub-divisions' (comprising on an average about 852 sq. miles) instead of for administrative 'districts' (comprising about 2683 sq. miles) as was the previous practice no change was made in the technical design of the survey upto the end of the jute-*amau* season.

As in previous years the whole province was divided into 1200 zones of approximately equal size (84 sq. miles), of which 1050 zones (leaving out certain hill tracts and forests) were covered by the survey. For estimating crop acreages, 140 sample-units or square shaped grids, each of size 2.25 acre, were located at random within each zone. The grids were arranged in the form of two independent and interpenetrating networks of sub-samples, each sub-sample consisting of 80 grids out of which 20 grids were common to both sub-samples. The two sub-samples were surveyed by two independent sets of field investigators thus supplying two independent estimates of crop acreage. The set of 20 common or 'duplicated' grids supplied two independent sets of records of the same set of grids, a detailed comparison of which gave a good check on the reliability of the field work.

The total number of grids used for the whole province was nearly 1,50,000. During the *aman* season survey in West Bengal, the distribution of grids was based on administrative *thanas* (each comprising 80 sq. miles on an average) to make subdivisional estimates more easily available.

Owing to the desire of the Government of undivided Bengal to have the work carried out on an expanded scale with a view to securing sub-divisional estimates, nearly 250 additional field staff were recruited and trained for field work in April and May, 1947, but following the discontinuance of the work in East Bengal, most of this additional staff and also a portion of the old trained staff had to be discharged during September—November, 1947.

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In the *aman* season, owing to the change over from 'sons' to 'thanas' units, the field programme was revised, and a new geographical distribution was made of the field staff. Two contiguous thanas were placed under two investigators, one surveying the first half-sample in both the thanas while the second investigator surveyed the second half sample. One Inspector was placed in charge of 3 or 4 such parties, one Chief Inspector over 3 or 4 such Inspectors, and an Assistant Superintendent supervised the work of 3 to 4 Chief Inspectors' charges.

Crop-cutting work was done in two different blocks selected at random within each thana. Each investigator was required to cut at least 9 samples from plots in grids (already surveyed for crop acreage) selected at random in each block. Each cut consisted of 3 concentric circular sub-cuts, common centre being located at random within the plot.

The *robi* (winter) season's work offered serious difficulties. For one thing, Government's request for this survey was made to the Institute in the beginning of February 1948, when some of the winter crops had already been harvested. Other winter crops were also expected to be harvested very soon. There was no time to make adequate preparatory arrangements, and hence it was decided to select at random a number of thanas on the basis of available information relating to acreage under winter crops, and conduct a survey by personal enquiries in a number of villages chosen at random in each thana selected. To enable the field work being started in the middle of February 1948 the field staff had to be put through a rapid course of training in this new type of survey, improvised at short notice. The survey was to continue till about the middle of April 1948.

Crop-cutting work on winter crops raises special technical difficulties. It has not been possible to study the problem adequately to evolve a suitable technique. A trial sampling method has been devised for general use in this season, with one or two alternative methods in the way of small-scale experiments.

*Field work:* The survey in the *jute-aw* season in undivided Bengal began from the last week of April 1947. Work in East Bengal continued till the middle and in West Bengal upto the end of October 1947. Work in the *aman* season in West Bengal started during the first fortnight of October 1947 and continued till the middle of January 1948. Sanction for the survey of winter crops was received only during the first week of February 1948 and field work started from the fifteenth of that month.

*Analysis of data:* Tabulation of the field material was so arranged that estimates could be submitted to Government within 10 days from the receipt of the primary records from the field.

Final estimates for *jute* and *aw* paddy were submitted to Government on 19 November 1947. Progressive estimates for *aman* paddy were submitted on 6 December 1947, 10 January 1948 and 3 February 1948; and final estimate on 9 March 1948.

### (1) ALL INDIA POPULATION STATISTICS (V-SAMPLE SLIPS)

*Expanded Scheme:* The transfer of information from the 1941 Census slips (every fiftieth slip or 2% sample) to Hollerith cards was started in 1945 with a block grant of Rs. 3,73,000 sanctioned by the Home Department of the Government of India. A more comprehensive scheme at an estimated cost of Rs. 11,39,000 for the punching and tabulation of the material relating to the Indian Union was later sanctioned by the Government of India and was taken up in September 1947. The object of this project is to reconstruct many of the standard census tables which were not prepared (as a retrenchment measure) after the primary material had been collected in the Indian Census of 1941. Every fiftieth individual slip had been, however, ordered to be preserved, and the present reconstruction is based on the information contained in such slips. The most important of the tables now being prepared are the age tables. Construction of life tables, and a study of the sampling technique applicable to a population census also form a part of this project.

*Volume of Work:* The work comprises the coding of 22 items of information recorded on 58,40,000 sample slips, and the punching of the same on Hollerith cards. Preparation of the tables would require about 15,000 hours of tabulation involving a total card passage of 2,10,29,000. The existing equipment consisting of 1 Tabulator, 2 Sorters, 1 Reproducer, 23 Key Punches and 17 Verifiers has been in operation for a long time; and orders for two additional Tabulators, one Sorter and two Reproducers were placed with the British Tabulating Machine Co. in August 1947.

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*Arrangements for work:* During the communal riots, when accommodation in Calcutta became a problem especially for the non-Bengali staff which had been recruited to deal with scripts other than Bengali, the Institute suggested opening a number of centres in different parts of India. This proposal was approved in principle by the Government of India, but no action could be taken as provincial authorities were not able to provide necessary facilities. For convenience of work in Hindi and Urdu scripts, arrangements were, however, made to revive the centres at Giridih where the main library, records and stores were still being accommodated. Work is at present proceeding in three centres: Calcutta, Baranagore and Giridih.

*Progress of work:* Good progress was made during the last 7 months (September 1947 - March 1948) of the financial year. Coding and punching of 11.4 lakhs of slips for Bengal and Assam were completed; 9.4 lakhs of Bihar and Orissa slips were coded and over 4 lakhs of Bihar slips punched; preliminary sorting of 11 lakhs of U.P. slips was completed, and the sorting of 4 lakhs of C.P. slips almost finished. The coding of U.P. slips at Giridih and Mairwa slips at Baranagore is proceeding at a high speed.

Machine Tabulation of West Bengal slips in all the primary stages was finished, and the final stages of analysis are being pushed through with a view to submitting an interim report at a very early date.

*Work-Audit:* One special feature introduced this year was the system of work-audit at all stages of primary operations, especially in coding and punching. The work-audit section now consists of a staff of eight auditing clerks and two inspectors working at Baranagore, Calcutta and Giridih. Dummy slips with wrong entries and dummy punched cards with wrong columns were deliberately substituted at random for a small proportion of cards. At the stage of verification or checking, these dummy cards must come out together with other wrongly coded or wrongly punched cards. If the checking work is not done properly some of the dummy cards would not be detected. The number of undetected dummy cards thus supply an excellent control over the performance of the checkers. This system of checking led to an appreciable improvement in the standard of work in the primary stages. The total volume of material that passed through the work-audit comprised approximately 11,50,000 slips in coding and 6,80,000 cards in punching stages, involving the insertion of about 30,000 dummy cards.

### (4) ECONOMICS OF AGRICULTURAL LABOUR AND RURAL INDEBTEDNESS

During the year under report the work on the project, undertaken in 1946 on behalf of the Department of Agriculture and Co-operative Credits and Rural Indebtedness of the Government of Bengal was continued beyond the stage indicated in the last annual report.

A report on rural indebtedness on the basis of the earlier survey was prepared and submitted to the Government of West Bengal on 27 September 1947, and a similar report relating to East Bengal was submitted to the Government of East Bengal on 19 December 1947. Further analysis of the materials collected in the second survey is proceeding.

### (5) ENQUIRY INTO THE ECONOMY AND STATISTICS OF ROAD DEVELOPMENT

Work on this project, undertaken on behalf of the War Transport Department of the Government of India, was continued during the year under report. Field work and Hollorith tabulation of the information collected had been completed previously and interim reports analysing the data on Sitamarhi and Bolopur centres had also been submitted.

During the year 1947-48, analysis of data relating to the remaining five centres was completed and reports were submitted at intervals, the last one being on 3 January 1948.

A study is now proceeding on certain general aspects of road traffic movements. For this purpose the Agricultural Department of the Government of West Bengal was contacted, and some additional information was collected. A consolidated report containing a comparative study of the material relating to all the seven centres is under preparation.

### (6) ENUMERATION OF PORTAL TRAFFIC

The enquiry in connection with the enumeration of unregistered articles was continued during the year under review. The enquiry which was initiated in February 1947 in Bombay on the same lines

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as the earlier Calcutta enquiry mentioned in the previous annual report was completed and a report was submitted to the Posts and Telegraphs Department in May 1947.

Some data were collected and some work was done in connection with an enquiry about telegraph and telephone traffic.

### (7) MISCELLANEOUS PROJECTS

**Delhi Refugee Population :** At an urgent request of the Government of India (communicated to the Institute by H.E. the Governor of West Bengal on 25 September 1947) S. B. Sen, J. M. Sengupta and D. M. Ganguly were sent by Prof. S. N. Bose, Honorary Secretary, to estimate by statistical sampling the number of refugees housed in Humayun's Tomb and Purana Quilla camps in Delhi. They left by air on 29 September, studied the problem on the spot, gave a quick estimate of the total number, which was acknowledged by the Government to be quite useful for purposes of certain immediate executive decisions, and submitted a note to the Government of India suggesting a scheme for a sample survey of the refugees.

**Blood Pressure Survey :** This is an old project. Some analysis was done during the year, and a report is under preparation.

### (8) MISCELLANEOUS ENQUIRIES

During the year under review a number of statistical enquiries were attended to. The distribution of more important items by provinces are shown below :

West Bengal 20 ; Bombay 3 ; Rest of India 8 ; East Pakistan 4 ; Foreign 2.

### (9) HOLLERITH SECTION

**Staff :** The Hollerith Section was fully organized this year with a staff of 34, the statistical wing being under an Assistant Statistician and the Machine wing consisting of a Machine Supervisor and a team of junior assistants in actual operation, 3 distributors and 18 punch operators.

**Machine Equipment :** The present equipment consists of 40 Key Punches, 28 Verifying Punches two Sorters, one Tabulator, one Summary Reproducer Punch and a Multiplier unit.

**Volume of work handled :** The total number of cards punched and verified comes to about 14 lakhs of various column capacities. Sorting comprised 26.0 lakhs of cards-passages consuming 2589 hours ; Tabulation, 27.0 lakhs of cards consuming 1840 hours ; Reproduction, 20.9 lakhs of cards consuming 1510 hours ; and Multiplication, 4.7 lakhs of cards consuming 727 hours.

### (10) COST ACCOUNTING SECTION

The cost accounting section played an important role in the year under review in the handling of big projects specially in the Bengal Crop and Economic Surveys and the Population Data project. Primary compilations and subsequent analysis carried out on the punched card system, represent a large volume of material involving the daily output records of a staff exceeding 200 in number covering over 200 different items of operation. The total volume of work handled in this section during the year is estimated approximately at 60,000 worker-item-day units of output and corresponding time records. On the basis of standard rates of (a) output per unit of time, and (b) wage rates per unit of production for each different operation (with deductions at appropriate rates for mistakes), it is possible to find the money value of the total production of each worker in each month. A tentative system of bonus on production above minimum standard rates was in operation throughout the year. A total disbursement of approximately *two lakhs* of rupees based on a total volume of work of 2167 computer months was effected through this section. The preparation of the pay rolls after making deductions for mistakes, and adding bonus payments for production had to be completed in time every month. Continuous records of output and time are being kept from month to month, on which objective standards are being gradually built up.

The bonus system is at present under examination. It is proposed to increase the bonus incentive to a more than proportional rate, and it is hoped that the new system would be brought into operation at an early date.

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### (11) TRAINING SECTION (STUDENTS AND OFFICERS)

It was reported last year that eleven students had been admitted to the training course for the session ended in June 1947; of these five passed the qualifying examination held at the end of the session. During the current session (July 1947 to June 1948) eleven students have been admitted. Besides these students, a number of officers on deputation also attended the training course lectures. For other officers on deputation with inadequate mathematical knowledge, a parallel one-year course, overlapping to some extent with the other courses, was arranged; and in addition they were given facilities to work, under the guidance of statisticians on current projects. Two officers who had been deputed by the Government of C. P. & Berar for training in the operation of Industrial Statistics Act 1942, were sent after some preliminary training in the Institute, to the Provincial Statistical Bureau to gain practical experience in collecting factory returns.

### (12) TRAINING SECTION (PROBATIONERS)

A new system of admitting probationers for professional training was introduced last year. About 12 young men who had taken their Master's degree either in Statistics or in Economics (with statistics as special subject) were admitted as probationers and were assigned various kinds of project and professional work. On the whole, the system worked successfully to the advantage of the Institute as well as the probationers themselves.

### (13) INSTITUTE EXAMINATION

The examination for the award of the Statistician's Diploma Part I, was held in July 1947 simultaneously at two centres, Calcutta and Poona; and of 15 candidates for the examination 10 actually sat for it but none got a pass in all the papers. The names of candidates who got a pass in some of the papers are given in an appendix.

The Computer's Certificate Examination Part I was held in May 1947 and 107 candidates sat for it. In paper 1A(1) 83 appeared and 23 passed; in 1A(2) 67 appeared and 23 passed; in 1B(1) 67 appeared and 27 passed; in 1B(2) 58 appeared and 21 passed; in 1C(1) 19 appeared and 4 passed; and in 1C(2) 18 appeared and 3 passed.

### (14) LIBRARY

The Institute is now maintaining a Central Library at Calcutta and two branch libraries at Baranagore and Giridih.

During the year under review 761 volumes were added to the Library of which 99 volumes were received as presentations from the different learned societies and scientific men in India and abroad.

The Library also received regularly 403 periodical publications of which 252 were on an exchange basis, 40 from various Government Departments and Scientific Societies as presentation copies, and 111 were subscribed. Many of the pre-war exchange arrangements have been renewed.

The number of borrowers increased to 188. The total number of books and periodicals issued through the Reference and the Lending Sections of the Central Library was 12,978.

*Workers' Circulating Library*: 221 volumes were added to the Library of which 81 were in English and 140 in Bengali. The books at three centres were interchanged at regular intervals. The total number of books issued were 1920, 8880, 2176 in Calcutta, Baranagore and Giridih respectively.

### (15) PHOTOGRAPHED SECTION

The number of exposures with the micro-film camera taken during the year under review was 4548, of which 3040 were photoprints of books, documents, tables, and charts etc., 1476 copies were made from maps, acre-plates etc.

### (16) BAHENYA : THE INDIAN JOURNAL OF STATISTICS

*Arrangements relating to Bahenyā* : *The Indian Journal of Statistics*. In accordance with the recommendation of the Annual General Meeting held on 22 April 1947, the Council of the Indian Statistical Institute at its meeting of 2 May 1947 set up a Reviewing Committee to "explore the possibility and consider

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the desirability of the Institute taking over from the Statistical Publishing Society the journal *Sankhyā*. The following were members of the Committee: S. N. Bose, R. C. Bose, N. C. Chakravarti, K. P. Chattopadhyay, S. N. Ray, K. B. Madhava and S. N. Roy (convener).

The Committee met on two occasions in May, and reviewed all relevant material including a note prepared by Prof. P. C. Mahalanobis giving the history of the journal and a note from the Secretary, Statistical Publishing Society replying to certain queries made by Prof. S. N. Bose, Honorary Secretary of the Institute. A copy of the draft report was also sent to the President who did not think it necessary to make any comments.

The Committee in its report dated 25 June 1947 was of unanimous opinion that "it will not be expedient for the Institute to take over the journal '*Sankhyā*' from the Statistical Publishing Society, and that the co-operative arrangements subsisting so long between the Institute and the Statistical Publishing Society be continued after a revision of the existing terms, and that the revised agreement between the Institute and the Society be reviewed at the end of 5 years." These recommendations were approved by the Council of the Institute on 14 August 1947, and a formal agreement between the Institute and the Publishing Society was executed and registered on 23 March 1948.

During the year under review parts 2 and 3 of Vol. 8 were published and part 4 is almost ready for publication.

### (17) LOCAL BRANCHES

**Bombay:** In November 1947, a course of lectures in 'Economic Statistics' was organized for the benefit of post-graduate students in economics, sociology and allied subjects, employees in various commercial organisations and members of the staff of the Reserve Bank of India, at the University School of Economics. Lectures were delivered twice a week by Dr. N. S. R. Sastry and K. C. Cheriyan. It is proposed to conduct a short test at the end of the course.

A sample survey to measure the diet and health conditions of middle-class families in certain residential areas of Bombay City was organized by this Branch with the help of a grant of Rs. 5,000/- from the Reserve Bank of India. The work is being conducted with a staff consisting of students of the School of Economics who volunteered to do the work, a few women investigators and a few doctors. The technical part of the work is being supervised by K. C. Cheriyan of the Reserve Bank of India and also by Dr. D. T. Lakdawall, Reader in Economics, University of Bombay. About 700 middle-class families are being enumerated. It is hoped that this survey would give valuable information regarding the diet and health conditions of the middle-class families of Bombay.

Dr. W. A. Shewhart of the Bell Telephone Laboratories, New York, visited Bombay both in December 1947 and in March 1948 and delivered a series of lectures on Quality Control to various organisations in Bombay, like the All-India Manufacturers' Organization, the Tele-Communication Engineers' Association, Indian Institution of Engineers, the Indian Institute of Metals and the Textile Association (India). Under the auspices of this Branch, a public lecture was arranged on 10 December 1947 and a group discussion on the statistical theory relating to Quality Control on 28 February 1948.

**Poona:** Poona was recognized as a centre for the Statistician's Diploma (Part I) Examination this year and the examination was duly conducted by the Poona Branch. Two candidates appeared for the examination of whom one got a pass in one of the two theoretical papers and in both the practical papers.

Prof. D. R. Gadgil was appointed a member of the Commodities Prices Board during the year; he later on resigned. Prof. D. G. Karve was busy throughout the year with the work of the committee (of which he is the Chairman) appointed by the Bombay Government to report on the reorganization of the Government Secretariat. N. V. Sovani's report on "Population and Fertility in Kolhapur City" is now in the press.

### (18) DR. SHEWHART'S VISIT

Dr. W. A. Shewhart (of the Bell Telephone Laboratories, U.S.A.) who is the 'father of the Quality Control movement', was invited jointly by the Indian Statistical Institute, the Indian Standards

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Institution and the Indian Science Congress Association to visit India to help initiating Quality Control Movement in this country. He reached India on 13 December 1947 and stayed here till 4 March 1948.

During this period he visited 33 factories and industrial organizations and gave advice in technical matters to managers and proprietors of these organizations; addressed 35 meetings including a session of the Indian Science Congress held at Patna in January 1948 and held 30 round table conferences with industrialists and Government officials. Besides such engagements he also had a large number of informal discussions.

He succeeded in creating, as nobody else could do, a countrywide interest in the application of Statistical Quality Control methods in industry, in appreciation of which the Council of the Institute adopted the following resolution on 17 February 1948.

"The Council of the Indian Statistical Institute places on record its deep appreciation of the great services rendered by Dr. W. A. Shewhart to the cause of advancement of statistical science and the development of Quality Control methods in India by his untiring personal efforts during his visit to this country. His profound knowledge, keen appreciation of Indian needs, and sincere desire to help India will have an enduring influence on the industrial development of the country."

### (10) CONFERENCE ON STANDARDIZATION AND QUALITY CONTROL

A Conference on Standardization and Quality Control was convened at the Indian Statistical Institute, Calcutta under the joint auspices of the Indian Standards Institution, and the Indian Statistical Institute, and was inaugurated on 8 February 1948 by H. E. Sri C. Rajagopalachari, Governor of West Bengal. Dr. W. A. Shewhart (Bell Telephone Laboratories, U.S.A.) guided the deliberations in which more than 180 representatives from industries in different parts of India participated.

Before the business of the conference started, the following resolution moved by Prof. P. C. Mahalanobis was adopted by all present standing in a few for two minutes.

"This Conference feels deeply the loss of Mahatma Gandhi, who kindled in our age the spiritual light to unite mankind, and, in conformity with his ideals and unceasing devotion to constructive work, pledges itself to the service of the Nation in the various fields of endeavour represented here, namely, science, technology, industry, administrative."

Professor Mahalanobis welcomed H. E. the Governor of West Bengal and introduced Dr. Shewhart. His Excellency in his inaugural address referred to the commendable work that was being done at the Indian Statistical Institute. Standardization and Quality Control, remarked His Excellency constituted the culture and civilization of industry. The fundamental principles were rational control and harmonious adjustment and common working together of different parts and activities. His Excellency welcomed Dr. Shewhart and thanked him for coming to India to help in the development of Indian industry. His Excellency wished the Conference and the Quality Control movement in India all success. Messages were read conveying the best wishes of the Hon'ble Dr. S. P. Mookherjee, Minister in charge of Industries and Supply, and President of the Indian Standards Institution; Sir C. D. Doshmukh, Governor of the Reserve Bank and President of the Indian Statistical Institute; Sir M. Visweswaraya, President of the All-India Manufacturers' Organisation; and Sir S. S. Bhatnagar, Director, Council of Scientific and Industrial Research.

Dr. W. A. Shewhart of the Bell Telephone Laboratories who was elected President of the Conference, then gave his Presidential address on the technique of statistical Quality Control, and its application in securing the most economic utilization of available resources in man and material for the production of goods to satisfy human wants.

On February 9, 10, 11, 12, and 14 the conference held whole day sessions for lectures and discussions. Dr. Shewhart delivered a course of five lectures, one on each day, on the following topics:

- (1) Some fundamental concepts of Quality Control.
- (2) Statistical Quality Control in Research and Development.
- (3) Statistical Quality Control in Design and Specification.
- (4) Statistical Quality Control in Production.
- (5) Statistical Quality Control in Inspection.



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Prof. P. C. Mahalanobis delivered five lectures, one on each day, on Sampling Inspection Plans. Besides these, there were two lectures by N. T. Mathew (Indian Statistical Institute) on the 'Construction of Control Charts', and lectures by Dr. A. V. Sukhatme (Tata Iron and Steel Co. Ltd., Jamshedpur) on 'Quality Control methods in the Steel Industry'; G. D. Mathur (formerly of Calico Mills, Ahmedabad) on 'Quality Control methods in the Textile Industry'; Dr. L. C. Verma (Director, Indian Standards Institution) on the 'Scope and activities of the Indian Standards Institution', and Dr. U. S. Nair (Head of the Department of Statistics, Travancore University) on 'Service to the nation through a statistical bureau'. The afternoons on the last two days were devoted entirely to round table discussion of questions raised by the delegates.

A 16 mm. technical sound film on quality control made in July 1947 by Johns Manville & Co. and sent on loan to India, was shown at the close of the inaugural session and on subsequent days, and was much appreciated.

An exhibition of Quality Control literature, and of interesting features of work relating to some of the projects undertaken by the Institute was arranged by the members of the staff.

*Indian Society for Quality Control*: On the initiative of Mr. B. K. Rohatgi (President of the Engineering Association of India) special meetings of the Conference were convened on 10 and 13 February and resolutions were adopted to form a new society called the Indian Society for Quality Control for the promotion of the statistical Quality Control movement in India. A provisional working committee was set up for this purpose on which a number of members of the Institute were elected members. The present address of the Society is 102A, Netaji Subhas Road, Calcutta.

### (30) MISCELLANEOUS

*Prof. Mahalanobis's visit abroad*: Prof. Mahalanobis, who had been away in connection with U.N.O. Conferences, returned to India on 15 April 1947 and stayed here till 8 August 1947 when he left India again for statistical conferences abroad, from which he came back to India on 19 December 1947. While abroad he attended the second session of the United Nations Statistical Commission in New York at the end of August 1947, the International Statistical Conference in Washington from 7-18 September 1947 as the leader of the Indian delegation and presided over the first session of the United Nations Sub-commission on Statistical Sampling which met in New York at the end of September 1947 and over one of the sessions of the World Statistical Congress.

He was elected Vice-President of the International Statistical Institute for the Washington session, and was re-elected Vice-President for the period 1947-49, and acted as Chairman of the Committee of five set up for the revision of the constitution of the International Statistical Institute. He was also elected Vice-President of the International Biometric Society which was established in September 1947.

He made an extensive tour of United States, Canada, Mexico, England and Switzerland and in the course of his tour gave lectures and had conferences in New York, Washington, Chapel Hill, Raleigh, Ottawa, Toronto, St. Louis, Berkeley, Los Angeles, Mexico City, London, Oxford, Paris, Geneva and Bern.

*Government of India Rehabilitation and Development Board*: In February, 1948 at the request of the Government of India, Prof. Mahalanobis agreed to help as Honorary Consulting Statistician in the work of the recently established Rehabilitation and Development Board.

*Prof. R. C. Bose's visit abroad*: Professor R. C. Bose left for the U.S.A. on a lecture tour at the end of July 1947. He delivered a course of lectures at Virginia Polytechnic (Blacksburg) for one month, attended the World Statistical Congress as a member of the Indian delegation, a Conference of Biometricians at Woods Hole, and delivered a series of lectures as Visiting Professor in the Columbia University, New York; and at the time of writing the report he was at the Institute of Statistics in North Carolina as a Visiting Professor. He participated in several discussions at the International Statistical Conference, and was elected a member of the Council of the International Society of Biometricians.

## INDIAN STATISTICAL INSTITUTE

*Indian Science Congress* : S. N. Roy presided over the statistics section of the Patna Session of the Indian Science Congress. Besides him, Mrs. C. Bose, N. T. Mathew, A. Das, D. M. Ganguly, P. Mukherjee, M. Nag, A. Ghosh, M. Ganguly, S. K. Pal, and S. Bhattacharjee attended the session as official delegates of the Indian Statistical Institute. Prof. Mahalanobis was General Secretary of the Science Congress up to the end of the Patna Session, but he resigned from this Office as he was again due to go abroad shortly.

*Other Conferences* : Four delegates T. Choudhury, A. Das, K. Dutta, and S. Bhattacharya from the Institute attended the Economic Conference held in Calcutta, in December 1947; two delegates K. Dutta, and S. Bhattacharya attended the Conference on Agricultural Economics held at Roorkee; two delegates D. B. Lahiri, and A. Bhattacharyya attended the Mathematical Conference held at Waltair.

### GENERAL ARRANGEMENTS

#### (1) STATISTICAL LABORATORIES OF THE INSTITUTE

*General* : As in previous years the statistical work was done at three places : Calcutta, Baranagore and Giridih. In the beginning of the year, the Giridih branch was very weak, but a large portion of the Population Data work was transferred to this Branch from September 1947. The following table shows the number of workers at these centres as compared with last year.

	Calcutta		Baranagore		Giridih		Total	
	31 March 1947	31 March 1948	31 March 1947	31 March 1948	31 March 1947	31 March 1948	31 March 1947	31 March 1948
Place-rate	11	5	85	54	—	37	97	96
Monthly	68	68	111	108	3	17	182	193
Total	79	73	197	162	3	54	279	289

*Staff* : There were considerable changes in the technical staff of the Institute during the year under review. Dr. A. N. Bose and S. Raja Rao, two old workers of the Institute rejoined as part-time Assistant Secretary and Statistician respectively. Dr. R. C. Bose left for the U.S.A. on a lecture tour in July 1947 and was away during the remaining period of the session. S. B. Sen left in January 1948 to join on deputation the United Nations Statistical Office at Lake Success, New York. Among technicians, C. Dasgupta resigned, A. K. Gayen proceeded to Cambridge for higher studies, H. Nag Choudhury joined the Reserve Bank of India, P. Choudhury accepted a research fellowship offered by the Calcutta University, N. Ganguly accepted the post of Statistical Assistant in the Indian Central Jute Committee, and M. Nag left to join the post of Assistant Statistician in the Anthropological Survey of India. Besides these, a number of junior workers left the Laboratory to join better paid posts in the Statistical Bureau of the Government of West Bengal and other places. The strength of the staff of the Computing Section was reduced following the stoppage of the Crop Survey grant from the East Bengal Government after the partition of the province.

*Calcutta Branch* : The main office, library, photographic section, training and research section and the section for advanced computation continued as before to function in Calcutta mostly in the Presidency College, and to some extent in hired buildings.

*Baranagore Branch* : The main bulk of the computational work in the large projects was done by the computing section located at Baranagore. The Hollerith Section, as before, continued to be housed at Baranagore.

A new building at 89 Barrackpore Trunk Road (one house off from Amrapali, 87 Barrackpore Trunk Road) was hired on a lease of two years from October 1947, and certain portions of the work were removed there. A large section is, however, still located at Amrapali.

*Giridih Branch* : The main library, a large volume of records and papers, and a good deal of stores had all along continued to be kept at Giridih with a small skeleton caretaker staff. Active work was revived in the month of September 1947, by the transfer of a great deal of primary work in connexion with coding of census slips relating to Bihar, U. P., C. P. and Bihar. A technician was posted in the

## ANNUAL REPORT FOR 1947-48

Branch as Superintendent to organise the coding of Bihar alpa; oodars with knowledge of Hindi, Urdu and Kaithes were recruited locally. By the end of the year, the strength of staff was increased to a total of 84, inclusive of those detailed for inspection, cost-accounting and work-audit activities.

**Sajboni Club :** With special grants sanctioned for amenities for local workers, the old 'Sajboni Club' has been revived, and a tiffin-club has been started. The Institute mess at Kamalabas has also been re-opened for the benefit of the residential workers and visitors.

**Field Organisation :** N. C. Chakravarti, Assistant Secretary, Department of Agriculture, Forest and Fisheries, whose part-time services had been lent by the Government of Bengal for conducting the field operations under the Institute, remained in charge of the work during the year. The field staff under him consisted of one Deputy Superintendent, 8 Assistant Superintendents, 20 Chief Inspectors and about 550 field workers in the jute-cum season, which was reduced to one Deputy Superintendent, 6 Assistant Superintendents, 12 Chief Inspectors and about 250 field workers (excluding clerks) in the aman and rabi seasons when work was done in West Bengal alone.

### (2) LOCAL BRANCHES OF THE INSTITUTE

**Bombay :** During the year under review, Sir Homi M. Mehta, F.R.S., F.C.I.S.E., was re-elected President for another year; and the Vice-Presidents were Prof. C. N. Vakil, Prof. J. Maclean, Dr. V. R. Khanolkar, Prof. L. S. Vaidyanathan, Dr. H. J. Bhabha and Mr. R. G. Saraiya. Dr. N. S. R. Sastry and Prof. G. S. Priolkar were the joint Secretaries and K. M. Frenochand, the Honorary Treasurer. Three Executive Committee meetings were held during the year under review.

Dr. N. S. R. Sastry, who was deputed by the Reserve Bank of India to attend the International Statistical Conference in Washington in September 1947, took this opportunity to visit various statistical organisations in America and hold discussions with heads of departments.

The work of this Branch is being carried on with the active co-operation of the staff in the Statistical Division of the Reserve Bank of India and the staff of the School of Economics and Sociology, University of Bombay. Sir C. D. Deshmukh, President of the Institute, has been all along taking great personal interest in the work of the Bombay Branch.

**Poona :** Rao Bahadur D. L. Sahasrabudhe was the President of the branch and N. V. Sovani, the Local Secretary during the year under review.

The balance in the current account of the Branch was Rs. 404-8-0 on 1 March 1947. Expenses in connection with postage, etc. came to Rs. 4-0-0. The amount held as current deposit in the bank stood at Rs. 416-14-0 on 1 March 1948.

No reports have yet been received from other local branches of the Institute.

### (3) CALCUTTA UNIVERSITY STATISTICS DEPARTMENT

In the absence of Dr. R. C. Bose, the permanent incumbent, S. N. Roy officiated as the Head of the Post-graduate Department of Statistics in the Calcutta University, and Mrs. C. Bose continued to be an honorary lecturer in that Department.

### (4) PRESIDENCY COLLEGE STATISTICS DEPARTMENT

A. Bhattacharyya continued to work as the Honorary Professor and Head of the Under-graduate Department of Statistics of the Presidency College. P. K. Banerjee, one of the workers of the Institute, was a whole-time lecturer, and T. Choudhury, an honorary lecturer in the same department.

### VISITORS

During the year under review a large number of distinguished visitors came to the Institute, among whom may be mentioned : Prof. S. Tushnhamod, University of Tashkent, U.S.S.R. (Delegate from Uzbekistan to the Inter-Asian Relations Conference); Mr. H. I. Poleman (Chief, Indian Division, Library of Congress, Washington); Prof. C. G. Clark (Director of Bureau of Industry, Financial Adviser to the Treasury and State Statistician, Queensland, Australia); Dr. L. C. Yerman (Director, Indian Standards Institution); Mr. E. Steinbock (C/o Lever Brothers Ltd.); Miss F. Ady (Statistical Adviser to the Government of Burma); Mr. W. R. Naidu (Economic & Statistical Adviser and Deputy-Secretary, Ministry of Agriculture, India) etc.





RECEIPTS

Survey of the Economic Condition of Agricultural Labourers

	No. A. P.	Rs. A. P.	By salary and allowance	Rs. A. P.	No. A. P.
To Unspent balance of last year	.. .. .	11,027 13 0	.. .. .	2,237 16 0	.. .. .
			.. .. .	251 16 0	11,027 13 0
			.. .. .		
			.. .. .		

Survey of Yields from Rainfall

To Advance from Institute	.. .. .	1,030 15 0	By amount overspent last year	1,187 8 0	
			.. .. .	27 13 0	
			.. .. .	27 13 0	1,030 15 0

Road Development Scheme (Ministry of War Transport, Govt. of India)

To Block grant	.. .. .	35,000 0 0	By repayment of advance	25,782 1 8	
			.. .. .	5,722 13 0	
			.. .. .	3,495 13 0	
			.. .. .	11 6 9	35,000 0 0

U. P. Wheat and Sugarcane Scheme

To Unspent balance of last year	.. .. .	1,757 11 3	By salary and allowance	1,163 5 0	
			.. .. .	168 10 3	
			.. .. .	168 10 3	1,757 11 3

Population Census (Home Ministry, Govt. of India)

To Unspent balance of last year	28,370 2 0		By salary and allowance	1,85,010 11 3	
.. .. .	1,00,000 3 0		.. .. .	1,04,745 11 3	
.. .. .		2,32,805 0 3	.. .. .		2,32,805 0 3

G. HARTOGH STREET, CALCUTTA.  
The 18th April, 1968.

Expenditure and Fund Control  
P. V. S. Chatterjee, Commissioner,  
Rural Development Administration.

PAYMENTS

Santhya : Receipts and Payments Account for the year ending 31 March, 1948.

RECEIPTS		PAYMENTS	
To Opening balance	Rs. 81 14 3	By allowance	Rs. 350 0 0
Bank	Rs. 1,264 2 3	.. Press bills and paper etc.	Rs. 8,877 14 0
.. Subscriptions	Rs. 1,826 0 8	.. Expenses for contingent expenses	Rs. 196 7 3
.. Grant from the Government of India	Rs. 7,113 0 8	.. Closing balance	Rs. 119 11 0
.. Rockefeller Foundation grant	Rs. 2,000 0 0	Cash	Rs. 1,665 9 8
	Rs. 660 0 0	Bank	Rs. 11,048 7 0
	Rs. 11,048 7 0		

6, ELSTON STREET, CALCUTTA.  
The 28th Apr-1, 1948.

Examined and Found Correct.  
P. C. N. S. S. S.  
Chartered Accountants,  
Registered Accountants.

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APPENDIX I. List of papers published in 1947-48

1. BHATTACHARYYA, A. (1947): On some analogues of the amount of information and their use in statistical estimation, *Sankhyā* 8(2).
2. BHATTACHARYYA, S. (1947): A note on the scale of minimum wage for the jute mill workers of Bengal, *Sankhyā* 8(3).
3. BOSE, C. (1948): Bias in double sampling technique, *Proc. Ind. Sc. Congress*.
4. BOSE, R. C. (1947): On a resolvable series of balanced incomplete block designs, *Sankhyā*, 8(3).
5. DAS, A. (1948): On missing plot technique, *Proc. Ind. Sc. Congress*.
6. DAS, A. (1948): Analysis of variance in a multivariate case, *Proc. Ind. Sc. Congress*.
7. DAS A., (1948): On multiple and partial canonical correlation coefficients, *Proc. Ind. Sc. Congress*.
8. DAS, A. and DUTTA, K. (1947): Problems of agricultural labour in India, *Ind. Journ. Econ., Conference number*.
9. GANGULY, D. M. (1948): Improvement in the economic condition of the Bengal cultivator as a result of Debt Cancellation Act, *Proc. Ind. Sc. Congress*.
10. GANGULY, D. M. (1948): Crop Estimation in India, *Proc. Ind. Sc. Congress*.
11. GAYEN, A. K. (1948): Statistical estimate of time saving due to decimalization of coins, weights and measures in India, *Science and Culture*, 13(8).
12. MARALANDBI, P. C. (1948): Recent experiments in statistical sampling in the Indian Statistical Institute, *J. R. S. S.*, 10(4).
13. MATHEW, N. T. (1947): Factors influencing the relative proportion at birth of the two sexes, *Sankhyā*, 8(3).
14. MATHEW, N. T. (1947): Tapioca as a solution of the food problem, *Science and Culture*, 12(7).
15. MATHEW, N. T. (1948): Decrease of sex-ratio in order of birth, *Proc. Ind. Sc. Congress*.
16. MATHEW, N. T. (1948): Statistical study of the influence of age, height, weight, marital status and religious community of persons on their blood pressure, *Proc. Ind. Sc. Congress*.
17. MATHEW, N. T. (1948): Relation of 'Border-bias' to size of cut in crop cutting experiments, *Proc. Ind. Sc. Congress*.
18. MATHEW, N. T. and GANGULY, A. (1948): Statistics relating to rotation of crops in Bengal obtained as a bye-product of sample survey of crop-areage, *Proc. Ind. Sc. Congress*.
19. ROY, S. N. (1947): Notes on testing of composite hypothesis, *Sankhyā*, 8(3).
20. ROY, S. N. (1948): Sufficiency and testing of composite hypothesis, *Proc. Ind. Sc. Congress*.
21. ROY, S. N. (1948): An outline of some modern theories of statistical inference, *Presidential Address, Session of Statistics, Ind. Sc. Congress*.
22. ROY, S. N. (1948): On an optimum property of multivariate tests obtained from linear components, *Proc. Ind. Sc. Congress*



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### APPENDIX 2. List of Reports submitted in 1947-48

1. *Enquiry into the economics and statistics of road development*: Reports of the traffic and economic surveys conducted at Sherguili, Jehanabad, Harinrjar, Mohana and Topoi were submitted to the Government of India on 28 May 1947, 27 August, 1947, 11 October 1947, 20 November 1947, and 3 January 1948 respectively.
2. *Enquiry into the economics of agricultural labour and rural indebtedness*: An interim report on the position of rural indebtedness in West-Bengal was submitted to the government of West Bengal on 27 September 1947 and the interim report on the position of rural indebtedness in East Bengal was submitted to the government of East Bengal on 19 December 1947.
3. *Bengal crop survey 1947-48*: Final estimates of jute and aus paddy were submitted to the government of West Bengal on 19 December, 1947. Progressive estimates for aman paddy were submitted to the government of West Bengal on 6 December 1947, 10 January, 1948, 3 February 1948. The final estimate for aman paddy was submitted on 9 March 1948.
4. *Enumeration of postal traffic*: A report on the enumeration of postal articles in the Bombay circle was submitted to the Posts and Telegraphs Department on 30 May 1947.
5. *Delhi refugee population*: A note suggesting a scheme for correctly assessing the number of refugees in the Humayun's Tomb and Purana Quila camps in Delhi was submitted to the government of India on 4 October 1947.

### APPENDIX 3. List of Officers on Deputation

1. BHADURY, T., M.B.B.S., D.P.H., (*Office of the Director of Public Health, U. P.*).
2. BROTHKRAK, P. S., M.COM., (*Office of the Director of Industries, C. P. & Berar*).
3. KHAN, M. Y., B.A., LL.B., (*Department of Statistics, H.E.H. the Nizam's Government, Hyderabad*).
4. KHARE, G. P., M.A., (*Office of the Director of Education, West State, Central India*).
5. LAULKA, G. O., M.A., (*Department of Statistics, H.E.H. the Nizam's Government, Hyderabad*).
6. NAIK, Y. S., B.COM., (*Office of the Director of Industries, C. P. & Berar*).
7. PATSIAK H., M.A., (*Office of the Director of Public Health and Inspector General of Prisons, Orissa*).
8. RAGHAVAN, S. S., M.A., (*National College, Madras*).
9. SEN, T., M.A., (*Department of Public Health, Bengal*).
10. SETHURAMAN N., M.A. (*National College, Madras*).
11. TIN, U., (*Department, of Agriculture, Burma*).
12. VERMA, N. S., M.A., (Econ.), M.A. (Eng.), (*Office of the Labour Commissioner, U.P.*).

## INDIAN STATISTICAL INSTITUTE

### APPENDIX 4. List of Trainees

1. BIRKHOI, R. S., M.A., (U.P.).
2. CHATTERJEE, C. K., M.A., (Bengal).
3. GHOSH, M., B.A., (Bengal).
4. MALPANI, M. G., B.A., (U.P.).
5. RAO, B. S., B.Sc., (Mysore).
6. ROY, K., M.A., (Bengal).
7. ROY CHOWDHURI, S., M.A., (Bengal).
8. SINGHA, P., M.A., (Bengal).
9. SUBRAMANIAN, N. S., B.A., (Tanjore).

### APPENDIX 5. Statistician's Diploma Examination, July 1947

Name of the candidate	Papers in which the candidate has passed
1. DATTA, R. A.	Paper I (theoretical) and papers III & IV (practical)
2. KANTASWAMY, A.	Paper I (theoretical)
3. KUB, J. M.	Paper I (theoretical) and paper II (theoretical)
4. KARENSA MURTY, P. B.	Paper I (theoretical)
5. RAMASWAMI, T. K.	Paper I (theoretical)
6. SARDAL, S. K.	Paper I (theoretical)
7. WAKAR, M. A.	Paper I (theoretical) and paper II (theoretical)

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## INDIAN STATISTICAL INSTITUTE

### Proceedings of the meeting of the Council of the Indian Statistical Institute dated 30 April 1948

A meeting of the Council of the Indian Statistical Institute was held at 4.0 p.m. on Friday, the 30th April 1948, in the Statistical Laboratory, Presidency College, Calcutta.

*Present:* Prof. S. N. Bose in the chair.

*Members:* Samarendra Nath Roy, Sudhir Kumar Banerjee, Sadasiv Sen Gupta, Nihar Chandra Chakravarti, Prof. Haricharan Ghosh, and Prof. K. N. Chakravarti (Joint Secretary).

1. The proceedings of the Council dated 16th April 1948 were read and confirmed.

2. *Appointment of Scrutiniser:* Prof. K. N. Chakravarti (Joint Secretary) reported that he had received a communication stating that Mrs. C. Bose, one of the Scrutinisers appointed in connection with the election of Office Bearers and members of the Council for the year 1948-49, would not be able to take up the work of scrutiny on account of her illness and asked for the Council's direction in the matter having regard to the procedure prescribed.

Resolved that as the situation was an unforeseen one and immediate action was necessary, Mr. Sadasiv Sen Gupta be appointed a scrutiniser in place of Mrs. C. Bose in anticipation of the approval of the General Meeting and be requested to take up the work immediately along with Mr. Samarendra Nath Roy so as to be able to report the result of scrutiny at the meeting of the Annual General Meeting coming off that afternoon. The Chairman of the meeting was requested by the Council to report this action to the General Meeting for approval.

3. *Election of members:* Resolved that the following gentleman be elected as an ordinary member of the Institute:

Mr. Bihāshendu Sarkar, B.Sc. (Hons), Student in the Institute of Science, Bangalore, 66 Harrison Road, Calcutta.

4. *Budget estimates for 1948-49:* Prof. K. N. Chakravarti (Joint Secretary) placed before the meeting the Budget estimates of the Indian Statistical Institute for the year 1948-49 as approved by the Finance Committee.

Resolved that the Budget estimates of the Indian Statistical Institute for the year 1948-49 be passed.

5. *Sankhyā account for 1947-48:* Professor K. N. Chakravarti (Joint Secretary) placed before the meeting the Sankhyā Accounts for the year 1947-48 which could not be incorporated in the Annual Report and the Audited Accounts on account of printing difficulties.

Resolved that the Sankhyā Account be passed and forwarded to the Annual General Meeting.

6. *Recommendation to the Annual General Meeting:*

(i) *Hon. Life Membership:* Resolved that the following gentlemen be recommended for election as Hon. Life Members of the Indian Statistical Institute under the provisions of Rule 1(e) of the Memorandum of Association.

1. Dr. S. P. Mookherjee, M.A., B.L., D.Litt., Bar-at-Law.

2. Mr. H. S. Suhrwardy, Bar-at-Law.

(ii) Professor K. N. Chakravarti, Joint Secretary, stated that there was a recommendation of the Council dated 19th April 1947 proposing a change in the date of holding the Annual General Meeting of the Institute not later than the last date of May in each year. This recommendation, he stated, had been placed before the Annual General Meeting of 1947 which decided that it should be placed before a subsequent general meeting after sufficient notice had been given to members. The recommendation and the decision had been circulated to all members as part of the proceedings of the Annual General Meeting of 1947 through "Sankhyā" and members' attention had also been drawn to this by a letter dated 19th April 1948, intimating that the recommendation was proposed to be taken up for consideration in the Annual General Meeting of 1948.

Resolved that the action taken in the matter be approved.

## INDIAN STATISTICAL INSTITUTE

7. *Appointment of Committees:* Professor K. N. Chakravarti, Joint Secretary, stated that it had been customary in some of the previous years to appoint the Finance Committee and Journal Committee etc., before the Annual General Meeting and to report the names of members constituting such committees to the Annual Meeting. As rule 7(d) of the Institute's Memorandum of Association indicated that these were actually Committees of the Council, he suggested for the Council's consideration that election of these Committees should be left over for the new Council to be elected at the ensuing Annual General meeting.

Resolved that the appointment of these Committees be left over to be done by the new Council to be elected and the matter be reported to the Annual General Meeting for approval.

### 8. *Notified resolutions and proposed changes of rules:*

(i) *Holding of a General Meeting of the Institute at the venue of the Science Congress:* Professor K. N. Chakravarti, Joint Secretary, drew the attention of the members to the resolution on this subject proposed to be moved by Mr. Purnendu Kumar Bose at the Annual General Meeting. He stated that the Council at its last meeting had accepted the resolution in principle. He, however, suggested that the Council might recommend to the Annual General Meeting the adoption of the resolution in an amended form so as to read as follows:

"This Annual General Meeting of the Institute recommends to the Council of the Institute that arrangements should, if possible, be made to hold a General Meeting of the Institute every year during the Annual Session of the Indian Science Congress at the venue of the said Science Congress".

The suggestion was approved by the Council.

(ii) *Proposed changes in rules:* Professor K. N. Chakravarti, Joint Secretary, placed before the meeting certain resolutions proposing changes in rules 1(a), 1(b) and 12, which different members had notified for moving at the Annual General Meeting and enquired if the Council would like to make any recommendation on the subject to the Annual General Meeting. In this connexion he placed before the meeting a letter received from Mr. C. Ranganathan, I.F.S., President of the Forest Research Institute, Dehra Dun, opposing the proposed changes.

Resolved that the Council would make no recommendation in the matter but that the Joint Secretary should read out the letter of Mr. C. Ranganathan in the Annual General Meeting, when the proposal of changing rule 1(a) was discussed.

S. N. Bose  
Chairman.

K. N. Chakravarti  
Joint Secretary.

Indian Statistical Institute: Budget Estimates For 1948-49

RECEIPTS		PAYMENTS			
Particulars	Actual in 1947-48	Proposed Budget for 1948-49	Particulars	Actual in 1947-48	Proposed Budget for 1948-49
Opening balance .. .. .	—	1,07,331	Salary and allowance (including research staff) ..	4,20,146	5,25,000
Membership fee .. .. .	3,110	3,000	Leave salary and gratuity .. .. .	—	58,000
Training fee and other receipts .. .. .	2,034	2,000	Provident fund .. .. .	44,243	15,500
Block grants from Government .. .. .	7,012	6,000	Travelling allowance (including conveyance ..	10,698	10,000
Block grants from Government of West Bengal ..	—	—	Books and journals .. .. .	7,894	20,000
Block grants from Government of Orissa .. .. .	—	—	Laboratory Equipments .. .. .	23,037	25,000
Block grants from Government of Madhya Pradesh ..	—	—	Postage .. .. .	11,091	11,000
Block grants from Government of Madhya Pradesh ..	—	—	Other expenses (telephone, electric charges etc.) ..	24,425	25,000
Ministry of War Transport : Economics & .. .. .	1,08,630	2,75,000	Auditors fee .. .. .	1,000	1,000
Ministry of Education .. .. .	—	—	Workers' Circulating Library .. .. .	849	10,700
Block grants from Government of West Bengal ..	35,609	5,52,400†	Bank charges .. .. .	2,850	3,000
Block grants from Government of West Bengal ..	4,29,950	27,000†	Grant for Sankhya .. .. .	806	1,000
Block grants from Government of West Bengal ..	21,450	—	Indian Science Congress: Travelling for delegates ..	2,050	2,650
Block grants from Government of West Bengal ..	24,750	—	Indian Science Congress: other expenses .. .. .	1,057	2,000
Block grants from Government of West Bengal ..	44,343	—	Indian Science Congress: Travelling for delegates ..	1,657	2,000
Bentals realised .. .. .	13,854	11,012	Hire of other equipments and other .. .. .	5,97,778	4,75,000
Indian Mining Association .. .. .	4,06,200	—	Other equipments and other .. .. .	84,390	80,000
Indian Mining Association .. .. .	1,400	—	Contribution to Statistical Publishing Society ..	4,264	4,000
Govt. of India, Dept. of Agri. .. .. .	850	—	Contribution to Statistical Publishing Society ..	1,580	2,000
Govt. of India, Dept. of Agri. .. .. .	160	—	Provident fund advances to subscribers .. .. .	—	20,000
Govt. of India, Travelling expenses for inquiry ..	1,310	—	Leave salary and provident fund contributions (Payments) ..	7,258	20,000
Members' contributions .. .. .	5,670	—	Investment .. .. .	46,863	40,000
Provident fund interest .. .. .	1,469	100	Subscriptions to other Society .. .. .	3,200	300
Housing scheme sale proceeds .. .. .	349	—	Subscriptions to other Society .. .. .	11,767	—
Library deposits .. .. .	10	—	Shriwardi Bose Memorial Fund .. .. .	3,103	—
Library deposits .. .. .	10	—			
Deficit estimates .. .. .	—	1,64,807			
		12,58,617†			13,26,650

\* As no int. nation has been received from the Government of India about its organisation, the usual annual grants have been shown.

† These are expected grant-in-aids for which no int. nation has been obtained.

## INDIAN STATISTICAL INSTITUTE

### Proceedings of the Annual General Meeting dated 30 April, 1948

The Annual General Meeting of the Indian Statistical Institute was held at 4-30 p.m. on Friday, the 30th April 1948, in the Presidency College, Calcutta.

Prof. S. N. Bose took the chair.

Proposed by Mr. Purnendu Kumar Bose-

Seconded by Mr. Nihar Chandra Chakravarti

The following members were present :

Members: Purnendu Kumar Bose, Nistaran Chakravarti, Sudhir Kumar Banerjee, T. Choudhury, Gour Chandra Mallik, H. K. Nandi, Saroj Kumar Dutt, Birendranath Ghosh, Nani Gopal Banerjee, Narsyan Ch. Banerjee, N. T. Mathew, Amalendu Ganguly, S. Chakravarti, J. K. Haldar, S. Dhar, H. D. Baroi, P. K. Chatterjee, Prabhat Sinha, N. C. Maitra, S. S. Bose, Nalini Kanta Ghose, Sambhu Nath Halder, S. C. Roy, A. Mazumdar, Indu Chaudhury, Birendra Ch. Gope, Pradyot K. Mazumdar, Ramaprasad Ghosh, Surend Ch. Sarkhel, Sukumar Ch. Sen Gupta, Dibakar Maitry, S. C. Das Gupta, Arun K. Ganguly, Haribhajan Choudhury, Mousi Mohan Mukherjee, Chitta R. Baroi, A. Barman Ray, H. Ghosal, J. M. Sen Gupta, D. Ganguli, J. N. Talukdar, R. K. Kar, D. D. Bose, D. Banu, A. Purkayastha, K. C. Banerjee, P. K. Bhoomik, P. K. Banerjee, A. Bhattacharyya, M. N. Ghosh, H. C. Ghosh, Nihar Ch. Chakravarti, K. C. Basak, B. K. Chaudhuri, and Prof. K. N. Chakravarti (Joint Secretary).

1. *Annual Report and Audited Accounts:* The Joint Secretary presented to the meeting the Annual Report and Audited Accounts for the year ending 31st March 1948 as approved by the Council, a copy of which had already been circulated to all members. He regretted that the circulated copy contained a number of misprints for which he had also circulated a list of corrections later on. He also stated that for want of time, the Sankhya accounts could not be incorporated in the printed report. He was permitted by the meeting to present these accounts as part of the Annual Report containing audited accounts and the Annual Report and the Audited Accounts passed by the Council was presented accordingly. The Chairman invited observations on the Annual Report and Audited Accounts from members before it was adopted by the meeting.

Mr. P. K. Bose drew the attention of the members to the line "it is hoped that a final decision would be reached in this matter in the near future" in the Annual Report on the reorganization of the Institute, and requested to have more definite information on this point if it was not confidential.

The Chairman told the meeting that no additional information other than what had been reported was available in the records and no final decision of the Government of India on the reorganization of the Institute had been received by the Institute.

Mr. P. K. Bose then referred to the inadequacy of reading accommodation in the Institute Library at Calcutta. In this connection he referred to the assurance given by the Hon. Secretary of the Institute in the last Annual General Meeting to make arrangements in this respect when the reorganization of the Institute would be effected. As the reorganization of the Institute was still pending and it was difficult to say when it would materialize, he suggested, as an interim measure, that at least two rooms/condominium rooms be provided for the Library in Calcutta to enable the members to make fruitful use of the Institute Library. He also stated that as most of the members were engaged outside, it would be convenient to the members if the Institute Library could be kept open till 6-30 or 7-0 p.m., a practice that was followed by the Calcutta University Library.

The Joint Secretary agreed to place these suggestions before the Council for consideration.

Mr. P. K. Bose also wanted to know with reference to the accounts what was meant by 'leave salary' shown on the payments side. Mr. M. N. Ghose wanted to know how the leave salary was calculated. The Joint Secretary explained the meaning of the term and stated that leave salary was calculated more or less in accordance with the rules obtaining in Government offices. Mr. N. C. Chakravarti explained

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In detail the rules that were in force for the calculation of leave salary in the case of Government employees. In reply to a further question whether leave salary was paid only in the case of a worker actually enjoying leave, the Joint Secretary said that except in cases of illness, when the pressure of work made it impossible to release the worker, leave salary was occasionally paid to him by a corresponding debit in his leave account. Mr. P. K. Bose expressed the view that this practice was undesirable because such reduction of actual leave told upon the efficiency of the workmen of the Institute by reducing their rest. He suggested discontinuance of the practice.

Mr. P. K. Bose also wanted to know what use had been made of the sum received from the Indian Mining Association. He was informed that this amount had been received in payment of the costs incurred for preliminary work done in connection with investigation which the Association had asked the Institute to take up but had eventually abandoned.

Mr. B. N. Ghosh expressed surprise that none except Prof. P. C. Mahalanobis knew exactly what was happening regarding the reorganization of the Institute. He enquired if effect had been given to any part of the Reorganization Scheme.

The Chairman replied that matters were at the moment in the negotiation stage and any decision proposed to be taken finally have to be presented to the General Meeting for approval. No question of giving effect to any part of the Reorganization Scheme could arise before the reorganization was approved of by the Government of India and the General Meeting of the Indian Statistical Institute.

Mr. B. N. Ghosh asked if definite plans had been made out for dividing the Institute into separate sections in order that work might be carried on more efficiently.

The Chairman replied that this question could only be taken up when the proposed reorganization came to be effected.

Mr. B. N. Ghosh enquired if the Institute had been receiving any money from the Government of India before the reorganization. The Chairman replied that whatever money had been received from the Government of India had been shown on the Receipt side of the Statement of Accounts.

Mr. B. N. Ghosh referred to two items on the Payments side of the Account relating to the grant for Sankhya and contribution to Statistical Publishing Society and wanted to have these clarified.

The Joint Secretary in reply stated that the first item represented payments for Sankhya of Rs. 2000/- received from the Government of India earmarked for it for the year 1947-48 and Rs. 650/- received from the National Institute of Science also earmarked for it for the same year.

The second item represented the arrears contribution from the Institute to the Statistical Publishing Society under the existing arrangements in respect of copies of the journal which had been supplied to the Members of the Institute.

Mr. H. K. Nandi said that the annual report did not contain any information as to what had been done about certain enquiries, e. g., Blood Pressure Survey, Survey of Yields from Rainfall, etc.

The Chairman observed that the Annual Report could not give details of every small item of the Institute's activities but give information about important matters. He, however, invited members conversant with the enquiries cited to state what had been done.

Mr. N. T. Mathew said that the Blood Pressure Survey was an old research project which was going on since 1935. It was given to them on the understanding that they should devote time to it as and when they could do so. The preparation of the report had been undertaken but it had been found that some more work was necessary before it could be completed. He expected to complete this work soon so that the report could be finally drafted without any further delay. As regards the rainfall scheme, Mr. A. Bhattacharyya reported that work on this could not be proceeded with due to the inadequacy of the data available from the Bogal Government. The expenditure on this head shown in the accounts was actually adjustment of expenditure incurred during the previous year.

Mr. Nandi also stated that he understood the report on the U.P. Anthropometry Survey had been prepared and would be published very soon. He enquired in what stage the report was.

Mr. N. T. Mathew informed the meeting in reply that most of the work was complete and the report had been drafted by Prof. Mahalanobis and Dr. D. N. Majumdar. Publication of the report was awaiting the final review of the draft by the authors.

## INDIAN STATISTICAL INSTITUTE

Mr. Nandi also wanted to know if there had been any definite recommendation by the Sample Survey Sub-committee set up by the Institute in 1945 on the controversial issue of the efficiency of the size of cut used in sample surveys of crops.

Mr. N. C. Chakravarti explained the different sizes of samples which were being used in the West Bengal Sample Survey of crops. He mentioned that attempts had been made to have a joint experiment on the efficiency of various sizes used by the I.S.I., I.C.A.R. etc. in cooperation with the I. C. A. R. but without any satisfactory response.

About the recommendation of the Sample Survey Sub-committee, the Chairman observed that replies to such questions should be sought by sending in a previous notice.

Mr. M. N. Ghosh wanted to know if there was any planning department of the Institute. The Chairman replied in the negative.

Mr. Hariharan Ghosh moved that the Annual Report and Audited Accounts as presented to the Annual General Meeting be adopted and passed. This was seconded by Mr. Nihar Chandra Chakravarti.

The Annual Report and Audited Accounts for the year 1947-48 were then unanimously passed by the meeting subject to such minor verbal and drafting changes as might be found to be necessary.

2. *Election of office-bearers and members of the Council.* The Chairman stated that as one of the scrutineers fell ill, she could not take up the scrutiny of ballot-papers. The Council at a meeting held that afternoon had appointed Mr. Sadaiv Sen Gupta in her place and the work of scrutiny had already begun in anticipation of approval by the General Meeting. As it would take some time before the work could be completed, he proposed that the consideration of the item might be taken up later. He asked for the approval of the Annual General Meeting to the actions already taken and proposed in the matter.

This was unanimously agreed to.

3. *Reorganization of the Institute.* The Joint Secretary stated that he had nothing to add to what had already been stated in the Annual Report about it. The item was inserted in the agenda in the hope that some communication might be received from the Government of India in time to leave it placed before the Annual Meeting but no communication had so far been received.

4. *Recommendations from the Council.* (i) The Joint Secretary placed before the meeting the recommendation of the Council for electing the following persons Honorary Life members of the Institute under rule 1(c) of the Memorandum of Association:

- (1) Dr. S. P. Mookerjee, M.A., B.L., Bar-at-Law, D.Litt.
- (2) Prof. S. N. Bose, M.Sc., F.N.I.
- (3) Mr. H. S. Suhrawardy, Bar-at-Law.

Mr. H. K. Nandi wanted an assurance that the proposed election of Hon. Life members would have no connection with the election of office-bearers and members of the Council which had just been postponed.

In reply to the point of order raised, the Chairman observed that the question before the meeting was whether a particular recommendation of the Council would or would not be accepted. It was open to the members to reject the recommendation if for any reason they felt that they could not accept the recommendation either at that time or absolutely. If there was any objection to the acceptance of the recommendation he would put the matter to vote. He replied that it was not open to any member to raise questions of any assurance in this connection.

The recommendation of the Council was accepted unanimously.

(ii) *Date for holding the Annual General Meeting of the Institute.* The Joint Secretary made the following statement:-

"Rule 18 of the Rules of the Institute requires that all changes proposed in Rules should be notified to all members not less than three months before the date of the General meeting at which they are proposed to be considered. In the present case the question of amending Rule 3(a) to enable the Annual General Meeting to be held at or before the end of May instead of at the end of April was raised in the last Annual General Meeting, and it was decided that the proposed change should be discussed at a subsequent general meeting after circulation to the members.



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"The proceedings of the Annual General Meeting were as usual circulated by publication in the 'Sankhya' to all members of the Institute and it was considered by the Secretariat of the Institute that the circulation of the proceedings which included the proposal would be deemed as notifying the proposal to the members of the Institute. No separate notice for the proposed amendment was, however, circulated to members three months before the present meeting but the attention of all members was again drawn to the proposal contained in the proceedings of the last Annual General meeting, by a letter from the Joint Secretary dated 19th April 1948.

"A question may be raised as to whether in the circumstances stated, the proposed amendment can be deemed to have been properly notified within the meaning of Rule 15 of the Memorandum of Association.

"I would recall to the members that this amendment was proposed because having now to deal with a budget of between Rs. 12 and 18 lakhs, the Secretariat of the Institute found it almost impossible to close and ascertain the accounts, finish the audit and place the audited statement of accounts together with the various financial and other statements of the Institute before the Annual General Meeting within such a short period as one month. It is therefore considered essential to give at least two months' time for holding the Annual General Meeting so that the accounts, reports etc. can be properly prepared and scrutinized before being presented to the Annual General Meeting.

"It is considered that in the circumstances stated the proposed amendment would be acceptable to all members of the Institute.

"It is not for the Annual General Meeting to decide whether in view of the innocuous nature of the nature of the amendment, the circulation of the recommendation with the proceedings of the Annual General Meeting of 1947 should be deemed to be sufficient compliance with the provisions of Rule 15 and the present recommendation be taken into consideration and a decision taken thereon. If the meeting decides to do so, well and good. If, however, the meeting decides that a more formal notice under Rule 15 should be given for introducing this amendment, we will beg leave to withdraw the present recommendation and present it at some future General Meeting in due course."

Mr. N. C. Chakravarti proposed that the recommendation of the Council be accepted so that the amended rule 2(a) might read as follows:

An Annual General Meeting shall be held not later than the last day of May in each year to consider the Annual Report and Accounts, to elect office-bearers and members of the Council, to appoint auditors and to consider any other business which may be brought forward in the manner prescribed in the Bye Laws.

Mr. Nistaran Chakravarti seconded the proposal which was carried unanimously.

5. *Appointment of Auditors.* Resolved that Messrs. P. C. Nandi & Co., Chartered Accountants, be appointed auditors for the year 1948-49.

Proposed by Mr. Nistaran Chakravarti

Seconded by Mr. Nihar Chandra Chakravarti

and carried unanimously.

6. *Election of Committees.* The Joint Secretary stated that he had been directed by the Council of the Institute to report to the General Meeting that it had been customary in some of the previous years to report to the Annual General Meeting the names of members constituting different Committees of the Council such as the Finance Committee, the Journal Committee, etc. These committees, as would appear from Rule 7(d) of the Memorandum of Association, were committees to be elected or rather appointed by the Council and it was therefore not strictly necessary according to rule to report the matter to the General Meeting. The matter used, however, to be conventionally reported to the Annual General Meeting.

The Council had considered the matter. They were of opinion that the appointment of such committees ought to be made not by the outgoing Council but should be done by the Council elected at the Annual General Meeting. The outgoing Council therefore deemed it inadvisable to appoint any Committees which they proposed to leave to the Council which would be elected that day. The Joint Secretary reported the action of the Council to the Annual General Meeting for their information and approval.

It was unanimously resolved that the action proposed be approved.

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7. *Noted Resolutions.* (i) Mr. P. K. Bose moved the following resolution which was seconded by Mr. Manindranath Ghosh:-

"Since the Indian Statistical Institute draws its membership from all parts of India; since every member of the Institute ought to be given facility for taking part in at least one general meeting of the Institute; and since if all the general meetings are held at Calcutta, members residing outside Calcutta are always placed under a disadvantage in attending these meetings;

So this Annual General Meeting of the Institute recommends to the Council of the Institute that arrangements should be made to hold a General Meeting of the Institute every year during the annual session of the Indian Science Congress Association at the venue of the said Science Congress session."

In moving this resolution Mr. P. K. Bose made two observations (1) only 41.8% of the members of the Indian Statistical Institute belonged to Calcutta and the remaining 58.2% lived outside. In view of these circumstances, it would be justifiable to hold a General Meeting of the Institute every year at the venue of the Science Congress; and (2) nearly all the scientific organisations held their annual meetings along with the Indian Science Congress and the Indian Statistical Institute also should fall in with them. With these observations he moved that the resolution be passed.

The Joint Secretary made a statement saying that he had been desired by the Council to inform the meeting that the Council had an opportunity of considering the proposal contained in the resolution moved. The Council agreed in principle to the proposal and would make attempts for holding a General Meeting of the Institute during the annual session of the Indian Science Congress. On the recommendation of the Council, he, however, suggested that the proposed resolution be amended by the insertion of the words 'if possible' after the words 'arrangements should' in the second line of the second paragraph of the proposed resolution. He was also desired to suggest that the first paragraph of the proposed resolution being in the nature of an explanation might be omitted from the resolution to be passed, as well as the word 'so' in the beginning of the second paragraph, and the word "Association" in the last line of that paragraph.

Mr. D. M. Ganguly opposed the main resolution. Mr. N. C. Chakravarti supported the proposal of the Joint Secretary. The amendment moved by the Joint Secretary was then put to the vote and carried.

The original resolution amended as above was then put to vote and carried and it was accordingly resolved that "This Annual General Meeting of the Institute recommends to the Council of the Institute that arrangements should, if possible, be made to hold a General Meeting of the Institute every year during the annual session of the Indian Science Congress at the venue of the said Science Congress Session."

(ii) Mr. H. K. Nandi moved the following amendment to Rule 1(a) of the Memorandum of Association of the Institute.

Delete the portion "They shall be elected by the Council and"; and in its place "The Council may admit a fit and proper person, having a university degree in arts, sciences or other faculties and interested in statistics as an ordinary member of the Institute. He". So that the amended rule 1(a) should read as follows:

"The Council may admit a fit and proper person having a University degree in Arts, Sciences, or other faculties and interested in Statistics, as an ordinary member of the Institute. He shall pay such fees and subscriptions as may be laid down in the Bye Laws from time to time. Any ordinary member on payment of such a consolidated sum as may be prescribed in the Bye Laws, shall be entitled to be termed a Life Member."

In moving the amendment to rule 1(a) Mr. Nandi said that he was anxious that the membership of the Institute should be confined to persons genuinely interested in Statistics. He regretted that quite a number of matriculates and even some non-matriculates had been admitted as Members of the Institute last year. If people liked, it was open to them to become Associate members of the Institute and take advantage of the facilities offered by the Institute but a person should be a graduate in order to be a member with the voting right.

He was seconded by Mr. P. K. Bose.

The Joint Secretary read out a letter he had received in this connection from Mr. C. Rangana-  
than, President, Forest Research Institute, Dehra Dun, opposing the proposed changes in rule 1(a).

## ANNUAL REPORT FOR 1947-48.

Mr. N. C. Chakravarti opposed the amendment. He failed to understand how a University degree in any subject could be treated as proof of interest in Statistics. An artificial restriction of this nature would surely exclude from the membership of the Institute a large number of persons genuinely interested in Statistics. There were hundreds of businessmen, industrial and banking officers and workers vitally interested in Statistics and people who had made statistical work their career and profession, many of them might not be graduates. He wondered if the Institute was expected to thrive by shutting out such people from membership. There were many distinguished public men and even Ministers who were not graduates but were interested in Statistics.

Mr. Nandi replied that in case of distinguished persons who were not graduates, the Council could elect them as Fellows, or Associate Members and merely the absence of voting right could in no way restrict their taking interest in Statistics.

The Chairman then put the motion in vote and it was declared lost.

Mr. M. N. Ghosh moved the following resolutions to amend Rule 1(b) and Rule 12 of the Memorandum of Association of the Institute.

Rule 1(b): Replace 'Technical Committee' in the fourth line by 'Council.'

Rule 12: Delete this Rule.

In supporting this resolution Mr. B. N. Ghosh pointed out that in the Annual General Meeting of 1946 it was stated that the Technical Committees were not functioning for a long time in view of which the Technical Committees should be abolished and necessary alterations and other arrangements should be made in the Bye Laws of the Institute.

Mr. Nihar Chandra Chakravarti supported the resolution and it was carried unanimously.

8. *Miscellaneous.* Questions and answers then followed. Mr. B. N. Ghosh proposed that the questions asked by members and answers given thereto should be incorporated in the proceedings of the Annual General Meeting.

The Chairman said that the practice had hitherto been otherwise and if any member so desired he should try to do so by moving a specific resolution on it after giving due notice.

The meeting was then adjourned for half-an-hour, to enable the work of the scrutineers to be finished and the result reported to the Annual General Meeting.

The meeting re-assembled at 7-30 p.m.

The Chairman called upon Messrs. Samarendraknath Roy and Sadaiv Sen Gupta who had been appointed scrutineers for counting votes in connection with the annual election to submit the report of their scrutiny of ballot papers.

The scrutineers submitted to the meeting a list showing the number of votes received by each person mentioned in the voting papers. The Chairman then declared that the following persons were duly elected as office-bearers and members of the Council of the Institute for the year 1948-49.

### *President*

Sir C. D. Deshmukh, C.I.E. .. .. . *Governor, Reserve Bank of India.*

### *Hon. Vice-President (having filled the office of President)*

The Hon'ble Sri N. R. Sarker .. .. . *Finance Minister, Government of West Bengal.*

### *Vice-Presidents*

Dr. S. K. Banerjee, D.Sc. .. .. . *Director General of Observatories, Delhi.*

Prof. S. N. Bose, M.Sc. .. .. . *University of Calcutta.*

The Hon'ble Dr. S. P. Mukherjee, M.A., B.L.,  
D. Litt., Bar-at-law, M.L.A. .. .. . *Minister for Industry and Supply, Govt. of India.*

Sri A. C. Mukherji, M. A., Dip. de Statisticien. .. .. . *Director of Statistics, Baroda.*

Dr. K. C. K. E. Raja, L.R.C.P., & S., D.P.M.,  
D.T.M. & H. .. .. . *Deputy Director General of Health Services, New Delhi.*

Sir Shri Ram .. .. . *Delhi Cloth and General Mills, Delhi.*

The Hon'ble Mr. Justice T. J. Y. Roxburgh, B.A.,  
Bar-at-law, C.I.E., I.C.S. .. .. . *Judge, Calcutta High Court.*

Mr. H. S. Sahasrwardy .. .. . *Calcutta.*

## INDIAN STATISTICAL INSTITUTE

	<i>Treasurer</i>
Dr. Satya Churn Law, M.A., B.L., Ph.D., F.Z.S., M.B.O.U.	.. .. Calcutta.
	<i>Secretary</i>
Prof. F. C. Mahalanobis, F.R.S. ..	.. .. Statistical Laboratory, Calcutta.
	<i>Joint Secretaries</i>
Prof. K. N. Chakravarti, M.Sc. ..	.. .. Presidency College, Calcutta.
Sri Saranveeranath Roy, M.Sc. ..	.. .. University of Calcutta.
	<i>Members of the Council</i>
Sri Sushir Kumar Banerjee ..	.. .. Statistical Laboratory, Calcutta.
Srimati Chameli Bose, B.Sc. (London) ..	.. .. Statistical Laboratory, Calcutta.
Prof. R. C. Bose, M.A., D.Litt. ..	.. .. University of Calcutta.
Sri Nihar Chandra Chakravarti, M.A. ..	.. .. Asst. Secretary to the Govt. of West Bengal, Department of Agriculture.
Sri Nataran Chakravarti, M.A. (Cantab.) ..	.. .. Director, Provincial Statistical Bureau, Government of West Bengal.
Prof. F. P. Chattopadhyay, M.Sc. (Cantab.) ..	.. .. University of Calcutta.
Sri B. Das Gupta, M.A. ..	.. .. Secretary to the Government of West Bengal, Finance Department.
Sri Mohanlal Gargoli, B.Sc. (London) ..	.. .. Statistician, Indian Jute Mills Association, Calcutta.
Prof. H. C. Ghosh, M.A. ..	.. .. University of Calcutta.
Prof. S. M. Korwala, M.A. (Cantab.) ..	.. .. Presidency College, Calcutta.
Sri K. Kishen, M.A. ..	.. .. Statistician, Department of Agriculture, Government of the U. P., Lucknow.
Prof. K. B. Mathava, M.A., A.I.A. ..	.. .. Mysore.
Dr. E. R. Nair, M.A., M.Sc., Ph.D. (London) ..	.. .. Statistician, Forest Research Institute, Dehra Dun.
Dr. U. S. Nair, M.A., Ph.D. (London) ..	.. .. University of Transvaar, Transvaar.
Sri S. N. Ray, C.I.E., I.C.S. ..	.. .. Administrator, Calcutta Corporation.
Dr. N. Sundarama Sastri, M.A., M.Sc., Ph.D. (London) ..	.. .. Director of Statistics, Department of Research & Statistics, Reserve Bank of India, Bombay.
Sri Sakshir Sen Gupta, B.Sc. (London) ..	.. .. Statistical Officer, E.I.Ry., Calcutta.
Prof. J. C. Sinha, M.A., Ph.D. ..	.. .. Presidency College, Calcutta.
Dr. P. V. Sukhatme, Ph.D., D.Sc. (London) ..	.. .. Statistical Adviser, Indian Council of Agricultural Research, New Delhi.
Prof. C. D. Thompson ..	.. .. University of Allahabad.

Mr. H. K. Nandi raised a point of order saying that according to Rule 3 of the Memorandum of Association Mr. H. S. Suktawady who was not a member of the Institute, was not eligible for election as an office-bearer and it would be a contravention of the rule to elect him as such.

The Chairman held that there was no specific rule in the Memorandum of Association saying that the office-bearers of the Institute must be members of the Institute and it was clear that the framers of the rules had in mind those persons who had distinguished themselves in scientific work or other walks of life for the benefit of the Institute to be elected as office-bearers of the Institute.

Mr. H. K. Nandi accepted the ruling of the Chair under protest and wanted to have his protest recorded.

Mr. N. C. Chakravarti moved a vote of thanks to the Chair and said they were all sincerely grateful to Prof. S. N. Bose for the great interest he had been taking in the work of the Institute. Everyone knew how he had carried on the burden of the office of the Secretary for a period of about two years at a great sacrifice. They all appreciated the trouble he had taken that day and the time he had spent in presiding over the Annual Meeting and conducting the proceedings so ably.

The vote of thanks was carried unanimously.

B. N. Bose.

Chairman.

K. N. Chakravarti.

Joint Secretary.