

INDIAN STATISTICAL INSTITUTE

THIRTY-FIRST ANNUAL REPORT

April 1962—March 1963



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CALCUTTA - 35

INDIAN STATISTICAL INSTITUTE
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1. *Genesis* : The genesis of the Indian Statistical Institute goes back to the early twenties when a small group of young enthusiasts gathered round Professor P. C. Mahalanobis, then Professor of Physics in the Presidency College, Calcutta, to discuss and work on problems of mathematical statistics. From theory to practice was a natural transition, and soon enough this group was thinking in terms of research projects and application of statistical methods to solve practical problems. This group of workers, in what came to be known as the Statistical Laboratory, was obtaining from 1928 an annual research grant of about Rs. 2,500 from the Imperial (now Indian) Council of Agricultural Research for work relating primarily to agricultural field trials. It was at the initiative of this group that the Indian Statistical Institute was brought into existence by a resolution passed at a public meeting held in December 1931 under the chairmanship of the late Sir R. N. Mookerjee who was elected the first President of the Institute and held that office for five years (1931-36). The Institute was registered on 28 April 1932 as a non-profit distributing learned society under the Societies Registration Act XXI of 1860. Against a single worker, a part-time computer and a total expenditure of Rs. 238 in the first year, the Institute had, at the end of the thirty-first year (31 March 1963), a staff of over 2000 paid workers, the total expenditure (including capital expenditure) during the year being of the order of Ra. 148 lakhs. The enactment of the Indian Statistical Institute Act in 1959 marked a further stage in the progress of the Institute, recognising it as an institution of national importance and empowering it to confer degrees in statistics. Courses for Bachelor of Statistics (B.Stat.) and Master of Statistics (M.Stat.) degrees were accordingly started in July 1960 ; arrangements were also made for studies leading to the Ph.D. degree.

2. *Objects* : According to its Memorandum of Association, the principal objectives of the Institute are "to promote the study and dissemination of knowledge of and research on statistics and other subjects relating to planning for national development and social welfare; to provide for, and undertake, the collection of information, investigations, projects, and operational research for purposes of planning and the improvement of the efficiency of management and production."

3. *Historical Background* : The Indian Statistical Institute had its origin in the successful use of statistical methods for solving practical and scientific problems. The practical application of statistical methods, has in its turn, continually thrown up problems of theoretical or mathematical interest. Moreover, forty years ago, statisticians or computers were not available in India. So, at an early stage of the Institute's history arrangements had to be made to provide training and to start external examinations of proficiency at different levels. In this way, research, project work and training have always been closely integrated in the Institute.

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From the very beginning, the workers of the Institute have been associated with Government agencies in promoting the use of statistical methods in economic and social affairs in a comprehensive sense. Work done in the nineteen-twenties on rainfall and control of floods led to recommendations which supplied the basis for the prevention of floods in North Bengal and in Orissa, and for the development of the Damodar Valley Project in West Bengal. In 1930, first calculations were given for a combined flood control and electric power project in Orissa; this led to the Hirakud Hydro-electric Project in the fifties. Some early work in meteorology, anthropology, and biology had also opened new techniques for multi-variate analysis.

Work on errors of agricultural field trials served to establish contact with R. A. Fisher as early as 1925 within a couple of years of his first formulation of the design of experiments. In 1930, with the help of a grant from the Government of India, the Statistical Laboratory (predecessor of the Institute) introduced the Fisherian technique for agricultural field trials in India before this approach had been adopted in other countries outside U.K. Research on design of experiments became an important part of the Institute's programme and its workers have made important theoretical contributions which have won international recognition. In 1933 the Institute started *Sankhyā : The Indian Journal of Statistics* as its official organ which soon became a leading journal in the world in its own field.

Systematic studies on the design and organization of large-scale sample surveys were started in 1937 with financial assistance from the Government. These led to annual surveys for the estimation of crop production in Bengal from 1941 onwards; these are still continuing and were extended to other provinces. Early in 1950 the Institute took the initiative in starting the National Sample Survey (NSS) Organisation of the Government of India which very soon developed into the most comprehensive and continuing socio-economic survey in the whole world. The Institute has always been responsible for the design, tabulation and other technical work of the NSS, in collaboration with government agencies. The object is firstly to collect information which is required by the Government for purposes of planning and administrative decisions, and secondly, to make further improvements in the methods of sample surveys.

The Institute also became involved in work on population data. Primary data for the population census of India was completed in early 1941. There was a simple count of the number of males and females, but tabulation was abandoned as a measure of war economy. At the desire of the Government, the Institute constructed all the detailed census tables for the 1941 census on the basis of a two per cent sample of the original census enumeration slips which had fortunately been preserved. After independence, at the desire of the Government, the Institute organized the Central Statistical Unit in New Delhi in early 1949 and maintained it for more than two years for Government statistical work until the Central Statistical Organisation was founded in 1951. The Institute thus became more and more closely associated at a technical level with the statistical work of the Government.

Promotional efforts for Statistical Quality Control (SQC) of production were started in the mid-nineteen-thirties and the first training courses in SQC were organized by the Institute in 1945. SQC Units were started a few years later and are being now maintained in nine important industrial centres in India, as a service agency for both public and private

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enterprises, financed partly from service fees and partly from the Government grants. The Institute had also taken the initiative in starting the Industrial Management Research Unit for Planning (IMRUP) in early 1956, but handed it over three years later to the Productivity Council established by the Government.

In November 1954 the late Prime Minister Jawaharlal Nehru inaugurated studies on planning in the Indian Statistical Institute in Calcutta which led to the formulation in March 1955 of the Draft Plan-frame to supply the basic strategy of economic development for the Second Five-Year Plan of India. Since then the Institute has been engaged in research and studies on economic planning in close collaboration with the Planning Commission and other Government agencies.

Research and training programmes were also steadily developed and gradually covered a wide range of subjects. On the theoretical side these included mathematics, probability, information theory, statistical inference, design of experiments, multi-variate analysis, etc. Work on the more practical application of statistical methods included large-scale sample surveys, and advanced studies and research in demography, sociology, economic planning, and operations research, and also in a number of social and natural sciences.

During the last forty years the use of statistical methods has been rapidly expanding in India as in other countries of the world. It is being increasingly recognised that there is great need and scope for the application of statistical methods in all branches of observational and experimental sciences, both social and natural, as well as in commerce and industry, administration, and a wide range of public affairs. Statistics is thus gradually emerging as a key technology of the present age in something like the same way as engineering had emerged as a multi-discipline technology in the nineteenth century.

The Indian Statistical Institute has started new research and training programmes as a path-finder in this movement. The aim is to enable its students and research workers not only to acquire knowledge of statistical theory but also to gain some knowledge and practical experience of the methods of observation, measurement, surveys and experimentation and the processing and analysis of data in a number of social and natural sciences. The policy is to establish small units for pioneering research in different subject fields in order to obtain from them a continuing supply of live material which would be suitable for the application of statistical methods. Such material could be used for training purposes or would offer opportunities for research in developing statistical methods to suit new needs.

The Institute has strong units for work in mathematics, statistical theory and applied statistics including sample surveys. The Institute has established from time to time research units for anthropometry, biology, biometry, botany, crop science, demography, documentation and library science, electronics and precision instruments, geological studies, haematology, historical studies, operations research, psychometry, rainfall and flood studies, regional surveys etc., besides a special unit for cottage industries. The intention is to organize these units round research personnel and not on the basis of subject fields. Particular units may be discontinued if research workers of ability leave the Institute or if research is not of a pioneering nature or does not supply useful material for research and training programmes in statistical methods. Some units have been, in fact, closed down,

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The importance of such research and study units was endorsed by the Government of India in a communication from the Cabinet Secretariat dated 15 June 1962 in the following way :

"Government accept the view that statistics being a new technology, it should be open to the Indian Statistical Institute to establish and maintain research and study units in subjects other than theoretical and applied statistics, to offer facilities for research and application of statistical methods and for provision of training in such methods. The number of such units would depend on the availability of really able research scientists and also on the funds available to the Institute. Similarly, in furtherance of the purposes as set out in Section 5 of the Indian Statistical Institute Act, the Institute may establish and maintain units for the study of different languages (including translation units, library sciences, documentation, etc.) and for auxiliary studies and teaching in different subjects including humanities."

In this way recognition was won of the important new concept of statistics "as a key technology of our age", to quote Sir Ronald Fisher's words. This, it is hoped, would ensure its proper and vigorous development at the Indian Statistical Institute.

4. *Membership* : During 1962-63, 27 new members of different categories were enrolled, 9 members discontinued and 4 died, raising the total membership of the Institute to 557. The number includes 69 life (including one ordinary member who became a life member during the year), 303 ordinary, 5 institutional, 40 sessional and 134 student members. There are six honorary life members.

5. *Annual General Meeting* : The Annual General Meeting was held on 31 October 1962 to transact the business under the constitution, namely, the election of the Chairman, Vice-Chairmen, Treasurer, Secretary, Joint Secretaries and members of the Council and the adoption of the General Report and Statement of Accounts for 1961-62 audited by Messrs. Lovelock & Lewes, Chartered Accountants. The President and Vice-Presidents who were elected on 30 October 1961 continued to function during 1962-63, and a fresh election is due not later than October 1963. A list of the President, Vice-Presidents, Chairman and other office-bearers and members of the Council is given in Annexure 7. The Statement of Accounts for the year 1962-63 is given in Annexure 1.

6. *Council Meetings* : The Council of the Institute met eight times during the period—on 20 June, 31 July, 29 August, 28 September, 31 October, 18 December 1962, 12 February and 18 March 1963. Of these, four were joint meetings with the Governing Body of the Research and Training School, namely, those on 29 August, 28 September, 31 October and 18 December 1962. Important business transacted are briefly mentioned in Annexure 3.

7. *Meetings of the Finance Committees* : The Finance Committee of the Council and the Finance Committee of the Governing Body of the Research and Training School met jointly on 29 August and 30 October 1962, to consider the budget proposals, audited statement of accounts, report of the *ad-hoc* committee on the allocation of expenditure and other matters.

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The *ad-hoc* Joint Committee of the Research and Training School and of the Council of the Institute met on 17 and 28 August and 30 October 1962. The Committee examined the allocation of expenditure for the different projects and submitted its report to the Finance Committees of the Governing Body and of the Council. A list of members of the Committee is given in Annexure 7.

8. *Institute Staff*: Professor P. C. Mahalanobis worked as Honorary Secretary as well as the Director of the Institute. Shri Saradindu Basu continued as the Joint Director and the Joint Secretary, and functioned both in Delhi and Calcutta. Shri Nihar Chandra Chakravarti, Joint Secretary, looked after certain secretarial, constitutional and legal matters while Shri Sudhir Kumar Chowdhuri, the other Joint Secretary, was in charge of administration in Calcutta. Shri Pitambar Pant worked as Honorary Joint Secretary in charge of the Planning Unit, SQC and some administrative work in New Delhi.

9. *New Appointments*: The technical and senior staff of the Institute was strengthened during the year by the addition of the following persons. The date of joining is shown against each name.

Research and Training School: Bakshi, Subhendu, M.Sc. (Geology), (24 April, 1962); Brody, Elmer J., formerly Professor of Mathematics, University of Malaya, Singapore, (1 June 1962); Chatterjee, Anutosh, M.Sc. (Tech.) (28 May 1962); Mitra, Sujit Kumar, Ph.D. (Statistics), (1 August 1962); Parthasarathy, K. R., M.A. (Math.), Three-year ISI training, Ph.D. (ISI), (1 September 1962); Sengupta, Sugata, M.Sc. (Geology), (1 May 1962); Sengupta, Supriya, M.Sc. (Geology), (1 September 1962); Varadhan, S. R. S., B.Sc. (Hons.), (1 September 1962); Varadraj, V. S., B.Sc. (Hons.), D.Phil., (22 November 1962).

Planning Division and Regional Survey Unit, Delhi: Balasubramanian, V. N., M.A. (Econ.) (1 February 1963); Bhatia, V. G., Ph.D. (Math.) (17 May 1962); Minhas, B. S., M.A. (Econ.), M.S. (Illinois), Ph.D. (Stanford) (1 October 1962); Singh, Jagdish, M.A. (Geology), (1 August 1962); Tayat, Ramesh G., M.A. (Econ.) (1 February 1963).

Administration: Das, Tarun Kumar, B.Com., A.C.A., (Accounts, 1 January 1963); Mukherjee, Santipriya, M.A. (Com), A.I.C.W.A., A.C.A., (Accounts, 10 November 1962); Sen, Robi, B.Sc., (1 December 1962).

N. R. Das, retired Chief Engineer, Calcutta Improvement Trust, acted as a Consulting Engineer from 1 September 1962.

10. *Honours and Awards, RTS*: Dr. C. R. Rao received on 23 March 1963 the Shanti Swarup Bhatnagar Memorial Award of the Council of Scientific and Industrial Research for the year 1959 for notable contributions to mathematical statistics and he handed over the cheque to the National Defence Fund. He was elected Chairman, Indian National Committee for Statistics, and a member of the Council of National Institute of Sciences. Professor T. A. Davis was elected Fellow, Linnean Society of London.

SQC: Shri Srinagabhusana was elected Vice-President of the following organisations in Bangalore: Quality Control Association; Mysore State Productivity Council; Operations Research Association; and as member, Managing Committee, Institute of Management. Shri C. A. Setty became an Associate Member, Institute of Engineering Inspection, London.

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11. *Conferences and Scientific Tours Abroad*: Professor P. C. Mahalanobis attended the following conferences: Twelfth Session of the United Nations Statistical Commission, New York, May 1962; Conference on International Cooperation and Partnership, Vienna, July 1962; International Conference on Higher Scientific and Technological Education, Moscow, September 1962; and the United Nations Conference on 'The Application of Science and Technology for the Benefit of Less Advanced Countries', as a member of the delegation from India, Geneva, February 1963.

Dr. C. R. Rao, Head of the Research and Training School, attended a mathematical colloquium held from the 4th to 9th June 1962 at Clermont, France, as an invited speaker at the Third Death Centenary of Blaise Pascal.

Professor Monimohan Mukherjee, *Planning Division, Calcutta*, attended the Middle East Conference of the International Association for Research in Income and Wealth, Istanbul, August 1962.

12. *Study Tours Abroad*: Shri L. S. Bhatt (*Regional Survey Unit, Delhi*) left in September 1962 to work on the staff of the Liverpool University, U.K.; Shri Jagdish Bhagwati (*Regional Survey Unit, Delhi*) went to Japan in May 1962 in connection with the work of the Committee for Studies on Economic Development in India and Japan; Professor T. A. Davis (*Crop Science, R.T.S.*) went to Ceylon for three weeks in December 1962 to advise the Ceylon Coconut Department, Government of Ceylon. Dr. M. Krishnan (*Madras Branch*) went to the University of Chicago for advanced studies from October to December 1962. Shri Biswanath Mukherjee (*Haematology, R.T.S.*) went to Switzerland and U.K. on a study tour for about nine months from May 1962. Shri N. T. Mathew (*Statistical Quality Control Unit, New Delhi*) visited Japan, U.S.A., U.K. and five European countries from April to July 1962 to study the development of Statistical Quality Control. Dr. K. R. Parthasarathy (*Mathematical Statistics, R.T.S.*) worked in the Moscow University for one year from November 1962. Dr. J. Sethuraman (*Mathematical Statistics, R.T.S.*) went to the U.S.A. in July 1962 for advanced studies in the University of North Carolina, U.S.A. Shri D. K. Bose (*National Sample Survey*) and Shri N. S. Iyengar (*Planning Division, Calcutta*) went abroad for advanced studies in econometry. Dr. Bhubendra Chandra Das (*Biometry*) and Dr. Rhea Stagner Das (*Appraisal*) were on study leave in the USA during the year under review.

13. *Research and Training School*: During the period under review, the Research and Training School worked under the direction of Dr. C. R. Rao, as the Head of the Division of Theoretical Research and Training. Research was carried out in advanced probability, mathematics, theoretical statistics, and statistical methods. Several units for applied research and science laboratories attached to the Research and Training School did research under the following heads: Dr. Biswanath Prasad Adhikari (*Anthropometry*), Dr. Prabhat Ranjan Pal (*Biochemistry*), Professor Subodh Kumar Roy (*Botany*), Professor Trupapur Antony Davis (*Crop Science*), Dr. Pran Kumar Dey (*Chemistry*), Dr. Jogabrata Roy (*Data Processing*), Shri Manapadom Venkateswarier Raman (*Demography*), Shri Samar Kumar Mitra (*Electronics*), Dr. Nalini Kanta Bose (*Flood Research*), Dr. Bimalendu Raichaudhuri (*Geological Studies*), Dr. Sujata Chaudhuri (*Haematology*), Dr. Shibabrata Chatterjee (*Psychometric Research and Service*); and Dr. Ramkrishna Mukherjee (*Sociology*). Dr. Abraham Matthai was in charge of the International Statistical Education Centre. A list of scientific papers is given in Annexure 5.

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The electronic computers were used not only for the Institute's own work but also for that of other scientific institutions. A list of problems solved by the computers for departments of the Institute and other scientific institutions is given in Annexure 6. Work was continued on the joint project for the design and construction of two solid state digital computers in collaboration with the Jadavpur University. A number of research papers prepared by the Electronics Division is listed in Annexure 5. Shri Samar Kumar Mitra was the head of the Division during the year.

Research in some of the units was carried out with the collaboration of guest-scientists from abroad, such as Professor C. Borge, University of Paris (*Graph Theory*), Professor J. A. Gallagher, Oxford University and Dr. A. Seal, Cambridge University (*Historical Studies*), Dr. P. L. Robinson, University College, London (*Geological Studies*), and Dr. J. Rosenberg, University of Paris (*Biochemistry*), who gave lectures and participated in seminars and research consultations.

14. *Training Courses* : The selection tests for admission of students to the various courses were held in June 1962 at eight centres. This was the third year since the B.Stat. (4-year course) and M.Stat. (2-year course) degree courses were started in 1960, after the coming into effect of the ISI Act (No. 57 of 1959) empowering the Institute to award degrees. Research scholars for the Ph.D. degree were also selected. In addition to the regular B. Stat. and M. Stat. courses, the following training courses were conducted by the Research and Training School in 1962-63 :

1. Advanced Summer Course for Statisticians, Bangalore, May-June 1962.
2. One-year Post-M.Sc. Apprentice Course from July 1962.
3. Statistical Officer's Course in New Delhi jointly with the Central Statistical Organisation (CSO) for 6 to 9 months from September 1962.
4. Special Short-duration Individual Training for Officers on Deputation.
5. One-year Evening Course in Statistics at Delhi, in collaboration with the CSO from March 1962; new session began in March 1963.
6. Six-month Advanced Course in Statistics in New Delhi, in collaboration with the CSO; beginning in July 1962.
7. One-year Evening Course in Statistics at Bombay, Calcutta, Hyderabad, Madras and Trivandrum from March 1962; new session began in March 1963.
8. One-year Training Course in Documentation Research at Bangalore from June 1962.
9. Six-month Course on Punched Card Data Processing System at Calcutta. Two sessions: May 1962-October 1962 and November 1962-April 1963.
10. Computer's Training Courses in Calcutta, Junior and Senior. Two sessions: March 1962-September 1962; and September 1962-March 1963.
11. Occasional courses on special subjects.
12. Courses at the International Statistical Education Centre in collaboration with the International Statistical Institute, 9 months, from July 1962, under a Board of Directors with representatives of the International Statistical Institute, the Indian Statistical Institute and the Government of India.

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The Evening Course on Punched Card System at Calcutta was converted into a six-month course with effect from March 1962. A table showing the number of students in the various courses is given in Annexure 2.

15. *Professional Examinations*: The professional examinations were held during the year at 6 centres in India (Bangalore, Bombay, Calcutta, New Delhi, Madras and Poona) on the basis of the bye-laws and syllabi for the award of Professional Diplomas and Certificates in Statistics that were revised and put into force from 16 January 1962.

The Statistician's Diploma Examination was held twice in the year and the diploma was awarded to 11 candidates. The Computer's Certificate Examination was also held twice in the year. The Statistical Field Survey (Senior and Junior) Certificate Examinations were held in November 1962. Altogether 297 candidates had registered for these examinations, 272 appeared and 157 had passed in one part or another of these examinations and 18 were awarded certificates of proficiency.

16. *International Statistical Education Centre (ISEC)*: Twentyfive students from six countries attended the 16th Term and Special Courses of the International Statistical Education Centre (ISEC), Calcutta. The Government of India awarded nine fellowships for the 16th Term under the Technical Cooperation Scheme of the Colombo Plan. Two fellowships were also awarded to candidates from Japan with the help of funds provided by the Government of India.

17. *Visiting Professors*: During the year, over twenty distinguished foreign scientists participated in the research, training and other activities of the Institute. Academician A. N. Kolmogorov (*USSR Academy of Sciences and Professor of Mathematics, University of Moscow*) was a guest of the Institute in April—May 1962. He conducted seminars, and gave a series of lectures in Calcutta and at the Summer Course held at Bangalore. Among other scientists may be mentioned Professor Claude Berge (*Director of Research, National Centre for Scientific Research, France*), Professor Stevan Dedijer (*Institute of Theoretical Physics, University of Lund, Sweden*), Academician J. Kozesnik (*Vice-President, Czechoslovak Academy of Sciences*), His Excellency E. Mateev (*Council of Ministers and Academy of Sciences, Bulgaria*) and Dr. Gunter Menges (*Director, Institute for European Statistics, University of Saar, West Germany*). Professor J. A. Gallagher (*University of Oxford*) and Dr. P. L. Robinson (*University of London*) who had been appointed Honorary Visiting Professors of the Institute worked in India for extended periods.

18. *Second Convocation*: The Institute held its Second Convocation for awarding M.Stat. and Ph.D. degrees on 14 April 1963. Certificates to the trainees of the International Statistical Education Centre were also distributed at this function. Professor S. N. Bose, F.R.S., National Professor, and a Vice-President of the Indian Statistical Institute, presided and Professor Arthur Linder, Ph.D., M.D., Professor, University of Geneva and Federal Technological Institute, Zurich, delivered the Convocation address. Professor P. C. Mahalanobis made a general review of the educational activities.

Five candidates were awarded the Ph.D. degree, 20 the M.Stat. degree by examination and 2 the M.Stat. degree by thesis.

19. A *Special Convocation* was held on 28 April 1962 to confer on Professor A. N. Kolmogorov the D.So. degree (*honoris causa*) of the Institute.

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20. *Planning Division : Delhi :* During 1962-63, the Planning Unit of the Indian Statistical Institute at New Delhi continued studies on economic planning under the guidance of Shri Pitambar Pant, Honorary Joint Secretary of the Institute in close collaboration with the Perspective Planning Division of the Planning Commission. Five papers by staff members and visiting experts were published in different journals (Annexure 5) and eleven working papers and technical notes were prepared.

Calcutta : The main subjects of study in Calcutta were national income and allied topics, studies on consumption and levels of living, econometric and economic studies. Ten papers by the staff were published in outside journals (Annexure 5) and twenty-four working papers and technical notes were prepared. Shri Monomohan Mukherjee was in charge of the Calcutta Unit.

21. *National Sample Survey (NSS) Project :* This division of the Institute functioned as the technical wing of the Government of India's National Sample Survey Organisation. The 17th and the 18th rounds of the regular socio-economic surveys and the Annual Survey of Industries for 1960 and 1961 were in operation during the year. About ten different country-wide enquiries were conducted in each of the socio-economic surveys. The activities of the Division during the year covered the following types of work.

(a) The statistical planning of surveys, including sample designs, concepts and definitions, methods for collecting primary information, preparation of schedules of enquiries, and training of field workers and technical work relating to field enquiries.

(b) Programmes of statistical processing and laying down of detailed specifications for the field investigators.

(c) The conduct of field work in West Bengal and Bombay City together with experimental researches for the improvement of sample design and techniques.

(d) The processing of NSS data including the preparation of technical programmes for the purpose.

The processing and tabulation work covered data collected in the 14th, 15th, 16th and 17th rounds of socio-economic surveys, the sample survey of manufacturing industries up to the 8th round, the annual survey of industries in 1959, and family living surveys (middle class and working class). The tabulation and processing work was done in Calcutta (Baranagar), in New Delhi with the help of the Army Statistical Office of the Government of India, and in Giridih (Bihar). The number of schedules scrutinised was half a million; the number of cards punched, four millions; and of card passages, forty-two millions.

The sample size for the 18th round was increased to thrice the size of the 17th round, resulting in a very heavy load of processing work. The NSS staff was increased by about five per cent to cope with the additional work. There was, however, no increase in the number of tabulators, sorters and other machines, the total equipment consisting of sixteen tabulator units with necessary auxiliary machines, of which eight units were in Calcutta and four each in Delhi and Giridih.

Fifteen reports were printed and twenty draft reports submitted to the Government in the course of the year (Annexures 4.1 and 4.2). Shri Nema! Chandra Ghosh was in charge of the NSS work in the Institute during the year.

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22. *Development Workshop*: Two high-speed electronic sorters were produced during the year and the total production so far is nineteen. Two desk calculators were also fabricated, bringing the total to six. The workshop was entrusted by the Government of India with the production of a number of special components for defence requirements. Seventy-three apprentices were being trained in the workshop under the Apprenticeship Training Scheme.

23. *Statistical Quality Control (SQC)*: The SQC Units worked during the year under review at nine centres in Bangalore, Baroda, Bombay, Calcutta, Coimbatore, Delhi, Madras, Ernakulam and Trivandrum. The number of factories being serviced by the SQC Units increased from 80 in the previous year to 93. A United Nations Team of four experts toured the country for about three months at the request of the Indian Statistical Institute for the planning of promotional and training efforts of the Institute in the field. The team submitted two interim reports and a preliminary draft of recommendations. Shri Suresh Chandra Sen, Adviser, guided the work on Statistical Quality Control during the year.

The Policy Advisory Committee on SQC (*Chairman*: Shri C. D. Deshmukh and *Convenor*: Shri P. Pant) met on 40 June 1962 and 2 February 1963, and made various recommendations.

24. *Documentation Research and Training Centre (DRTC)*: The Documentation Research and Training Centre was established in June 1962 at Bangalore and worked under the guidance of Dr. S. R. Ranganathan as Honorary Professor. The training programme started with 8 post-graduate trainees as the first centre in India to provide facilities for training and continuous research in documentation to meet the needs of scientific research institutions.

24.1 *Library*: The Library has a collection of 98,000 volumes of books and bound journals, 23,280 reprints, monographs and specialised technical reports as also a large collection of maps, microfilms and photo-prints. During the year, the Library added 4,679 books and received 2,033 periodicals. Scientific and technical publications in different foreign languages, particularly Russian and Japanese, were received from various agencies under the exchange arrangements. The Library continued to issue documentation lists and compiled subject bibliographies and reading lists in different subjects. English translations were provided to the research workers from Russian, Chinese, Japanese, German, Spanish, Czech, Italian and French languages. Besides documentary reproduction work, the photographic unit attached to the Library provided photographs required by the scientific departments. The Museum and Central Records made systematic acquisitions, indexing and filing of specimens, maps and other materials.

25. *Publications*: The following were published:

Sankhyā: The Indian Journal of Statistics, Volume 24 of Series A, Parts 2, 3 and 4.

Samvadadhvam, House Journal of the Indian Statistical Institute, Vol. 5, Nos. 2 and 3, and No. 4.

Three books in the Indian Statistical Series were published jointly by the Statistical Publishing Society and the Asia Publishing House under the auspices of the Indian Statistical Institute:

The Approach of Operational Research to Planning in India by Professor P. C. Mahalanobis.

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The Bengal Peasant from Time to Time by Tara Krishna Basu assisted by Hashim Amir Ali and Jiten Taluqdar.

Mysore State : A Regional Synthesis (Volume II) : by A. T. A. Learmonth with contributions from V. L. S. Prakasa Rao, A. M. Learmonth, L. S. Bhat, M. N. Pal and S. Sathyanarayana.

26. *Visitors* : Over 300 visitors from India and 25 other countries visited the Institute during the year.

27. *Construction of Buildings* : The construction of five multi-storeyed buildings was started during the year, one in the west of the Institute's main buildings at 203 Barrackpore Trunk Road for the Research and Training School and four other buildings meant for students' hostels, guest houses and staff quarters at 205 Barrackpore Trunk Road. Two floors of each of the five buildings were completed by March 1963 and added a floor space of about 27,400 sq.ft. Additional floor space of 2,200 sq.ft. was built for the Computing Section at Giridih.

A small geological museum was constructed to house various objects of geological and palaeontological interest including good specimens of dinosaurs discovered by the Geological Studies Unit.

28. *Branches : Mysore State Branch* : There were 35 members of different categories at the end of the year. The office bearers of the Branch for 1962-63 were elected at its ninth annual general body meeting on 25 May 1962. The Statement of Accounts for 1962-63 was audited by certified auditors.

The report on Industrial Estate, Guindy, received appreciative reference from the Director of Industries and Commerce, Madras. The sub-committee on the survey on Distribution of Dust, etc., in Industrial Plants contacted some officials regarding the incidence of dust of various types which is likely to pollute the air.

A Technical Committee for Statistical Assistance was constituted by the Mysore Branch to help organizations with statistical assistance.

The Statistician's Diploma and Computer's Certificate examinations and the selection tests for admission to the B.Stat. and M.Stat. courses of the Indian Statistical Institute were held during the year at the Bangalore centre.

A Seminar on Inventory Control organised jointly by the Mysore State Branch and the Quality Control Association, Bangalore, was inaugurated by Shri S. Nijalingappa, Chief Minister of Mysore, on 26 February 1963. Seventy-five delegates from over 24 industries and organisations participated.

Other lectures and seminars were organised by the Branch and addressed by distinguished foreign professors like Academician A. N. Kolmogorov, Member, USSR Academy of Sciences and Professor of Mathematics, Moscow University; Dr. K. Winkelbauer, Assistant Director, Institute of Information Theory and Automation, Czechoslovak Academy of Sciences.

INDIAN STATISTICAL INSTITUTE

Bombay Branch : The Council of the Bombay Branch met on 25 September 1962 and decided that two separate accounts should be opened—one for the Branch and the other for head office receipts. The Council also decided tentatively that 35,000 square feet of space would be required for its use.

The work of the seventeenth round, NSS, was completed during the period and the formation of blocks for the Urban Frame Work was taken up. The field work of the eighteenth round was started in February 1963. The Bombay Branch organised a training camp for both the Bureau and ISI investigators.

A number of distinguished foreign professors visited the Branch and gave lectures.

Kerala Branch : The Kerala Branch was started in April 1961. The One-year Evening Course in Statistics organised under the joint auspices of the Indian Statistical Institute and the University of Kerala was inaugurated in March 1963. Forty-eight applications were received for admission to the course, and 19 were finally selected.

A local management committee was formed.

Annexure 1 : Auditors' Report and Audited Statement of Accounts

**AUDITORS' REPORT TO THE CHAIRMAN AND THE MEMBERS OF
THE INDIAN STATISTICAL INSTITUTE**

We have examined the Receipts and Payments Accounts in respect of Current Expenditure, Capital Accounts and the Subsidiary Fund Accounts of the Indian Statistical Institute for the year ended 31st March 1963, with the books and records maintained by the Institute and subject to the following remarks have found them to be in accordance therewith :—

1. No physical verification of Stores have been made.
2. Advances made in respect of Travelling and other dues have not, in all cases, been adjusted or recovered.

Calcutta
16th October 1963.

Sd/- LOVELOCK & LEWES
Chartered Accountants

INDIAN STATISTICAL INSTITUTE

Indian Statistical Institute : Receipts and Payments Accounts

<i>To Receipts</i>		Rs. n.P.	Rs. n.P.
1. Opening balance :			
i) Cash in hand and at Banks with Baranagar and other sub-offices including Translation Unit in Japan	...	2,70,255.81	
ii) Unadjusted advances of 1961-62	...	2,18,447.17	
iii) Loans unrecovered from staff for educational and house building purpose etc. as per Inet account	...	30,637.34	
iv) Security Deposits	...	21,820.30	
v) Books for R.T.S. Students and Workers	...	12,377.99	5,53,338.61
<hr/>			
2. Membership subscription	...		3,344.66
3. Fees for Training Course and Sale proceeds of syllabus etc.	...		39,636.64
4. Tuition Fees for language classes	...		725.00
5. Examination fees and other receipts	...		15,019.00
6. Receipts from produce at Giridih Experimental Farm etc.	...		3,005.31
7. S.Q.C. Receipts from non-governmental source, Membership fee, Training fee and Service charges etc.	...		3,30,780.50
8. Receipts for work done by :			
i) Development Workshop (part of the CMEL of R.T.S.)	...	85,729.84	
ii) UNTAA Workshop	...	44,805.00	
iii) R.T.S. Data Processing Unit	...	1,50,000.00	2,80,424.84
<hr/>			
9. Block Grants from the Government of India for non-Project Sectors :			
.1 Research and Training School	...	15,71,330.00	
.2 Computing Machine and Electronic Laboratory	...	4,46,480.00	
.3 International Statistical Education Centre	...	1,31,030.00	
.4 Statistical Quality Control	...	4,00,000.00	
.5 Pilot Project for Surveys in Regional Planning	...	96,600.00	
.6 Economic Wing	...	4,10,580.00	
.7 Operational Research Unit	...	4,54,580.00	
.8 Utilisation of Soviet Equipment (UNTAA)	...	5,50,980.00	40,67,680.00
<hr/>			
10. Payment by Government of India for National Sample Survey and allied activities :			
.1 Paid directly to the Institute against end results and end products	...	41,50,000.00	
.2 Advance paid to the Institute against delivery of end results	...	15,00,000.00	
.3 Paid through Army Statistical Organisation	...	60,000.00	57,10,000.00
<hr/>			
11. Receipt for minor projects :			
.1 Amount received from Director of Health Services, Government of India for Demographic Studies	...		50,331.00
.2 Amount received for tabulation service	...		2,188.74
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12. Amount received as sale proceeds of Institute's own publication			1,218.00
<hr/>			
13. Sub-total (2-12) :			1,05,05,963.89

THIRTY-FIRST ANNUAL REPORT 1962-63

(current expenditure) for the year ended 31 March 1963

		<i>By Payments</i>	
		Rs. nP.	Rs. nP.
1.	i) Salary, dearness allowance and remuneration to teachers etc.	81,30,331.44	
	ii) Employer's contribution for workers' Provident Fund (outstanding liabilities as per contra)	4,35,131.16	65,71,462.00
2.	Travelling expenses		3,30,783.51
3.	Overtime allowances		4,77,472.28
4.	Contribution to Leave Salary Fund		6,091,83.61
5.	Contribution to Gratuity Fund		2,61,078.00
6.	Visiting Professors, Foreign Scientists, Fellows and Experts		2,41,321.59
7.	Scholarships, Stipends, Fellowship allowance and other assistance to trainees		2,05,132.64
8.	Prizes to workers for initiative etc.		5,973.75
9.	Machine Tabulation Expenses :		
	i) Hire and maintenance of Tabulating equipment, Key Punches and Verifiers including freight, transport and other charges	7,84,478.88	
	ii) Cost of cards and cabinets etc.	2,37,894.11	
	iii) Service charges to I.I.M.	22,686.39	
	iv) Service charges to R.T.S.—Data Processing Unit	1,50,000.00	
	v) Payment to Army Statistical Organisation direct by Government of India as per contra	60,000.00	12,55,059.38
10.	Printing and Publication		2,36,160.67
11.	Society type activities		23,708.69
12.	Examination expenses		31,674.30
13.	Books and journals (including cost of binding etc.)		1,41,322.85
14.	Microfilm, photo and audiography		17,118.08
15.	Expenses of Translation Unit in Japan		10,413.80
16.	Laboratory and Workshop stores, tools and minor accessories		2,29,933.15
17.	Materials and other charges for experimental farming and rice research scheme at Giridih etc.		8,742.11
18.	Repairs, replacement and maintenance of office equipment, furniture and accessories		1,19,888.44
19.	Stationeries and consumable stores		1,82,544.15
20.	Other miscellaneous expenses viz. advertisement, insurance premium, law charges, cooly, cartage, conveyance and other petty expenses like hot weather contingencies etc.		1,34,231.22
21.1	Electricity and telephone charges	1,87,947.18	
21.2	Postage, telegram charges, M.O. commission, freight etc.	60,537.73	2,48,484.91
22.	Audit fees and expenses :		
	1 Lovelock & Lewtas	20,777.20	
	2 P. C. Nandi & Co.	4,000.00	24,777.20
23.	Bank charges and interest		2,65,941.39
24.	Rent, rates and taxes (including those of field, camps and out-station offices)		1,09,023.69
25.	Repairs, and/or maintenance of buildings, lands etc. and petty construction		1,81,776.11
26.	Transport		80,255.28
27.	Worker's Welfare and amenities (including overtime tiffin and meal charges)		2,67,484.26
28.	Sub-total (1-27) :		1,24,68,918.25

INDIAN STATISTICAL INSTITUTE

Indian Statistical Institute : Receipts and Payments Accounts

		<i>To Receipts</i>	
		Rs. nP.	Rs. nP.
14.	Ford Foundation Grant held in deposit account with American Express Co. Inc.:		
1.	Receipts during the year (\$10,000)	47,275.00	
2.	Refund of travellers cheques	305.00	
3.	Reimbursement of Library equipment purchased during 1961-62	29,838.23	77,418.83
15.	Rockefeller Foundation Grant held in deposit account with American Express Co. Inc.:		
1.	Receipts during the year (\$10,000)	47,050.00	
2.	Refund of travellers cheques	5,800.74	52,860.74
16.	Amount received from the Government of India, Ministry of Finance in reimbursement of disbursements to the trainees of INEC under the Technical Co-operation Scheme, Colombo Plan for parts of 1961-62 and 1962-63		60,738.22
17.	Discretionary Development Grant received from Government of India		2,50,000.00
18.	Arrear dues received from:		
i)	Government of India for non-project sectors 1960-61	34,940.00	
ii)	Government of India for Project work during 1960-62	50,000.00	84,940.00
19.	Calcutta Metropolitan Planning Organisation for certain services (arrear)		15,000.00
20.	Miscellaneous receipts viz. sale proceeds of waste paper, waste cards etc.		8,887.14
21.	Sundry Deposits payable (as at the close of the year)		35,028.25
22.	Outstanding liabilities for payment:		
i)	of Employer's share of contribution to ISI General Provident Fund for 1962-63	4,35,131.16	
ii)	to Leave Salary Fund:		
As per last account	8,01,991.43		
Less amount repaid during the year	60,000.00	6,41,991.43	
iii)	to Gratuity Fund:		
As per last account	5,71,774.39		
Add during the year	2,01,078.69	8,32,853.08	19,09,975.87
23.	Outstanding liabilities for goods and services		4,55,833.66
24.	Income-tax realised from workers to be paid to Income-tax authorities		1,14,533.80
25.	Amount due to workers on account of unpaid T.A., salaries etc.		54,020.09
26.	Amount due to suppliers and contractors		740.75
27.	Amount due to visiting professors, etc.		3,213.25
28.	Amount due to Hospitality and House Committee (Surplus)		55,637.08
29.	Temporary advances taken from Provident Fund Account to meet expenditure during the year		1,00,000.00
30.	i) Overdraft from State Bank of India, Shyambazar (against transfer of proportionate amount of securities from safe custody account to overdraft account)	20,04,773.78	
ii)	Cash credit advance from State Bank of India, Shyambazar Branch against guarantee from Government of India	34,80,661.35	55,84,435.13
31.	Sub-total (14-30):		88,47,857.81
32.	Grand Total (1+13+31):		1,99,07,169.91

THIRTY-FIRST ANNUAL REPORT 1962-63

(current expenditure) for the year ended 31 March 1963

<i>By Payments</i>		Rs. nP.	Rs. nP.
29.	Expenditure incurred against Ford Foundation Grant for staff training abroad etc. including cost of Library equipment		82,858.20
30.	Expenditure incurred against Rockefeller Foundation Grant for research and training purposes		14,495.38
31.	Disbursement of fellowship allowances to IBEC trainees under Colombo Plan		35,213.67
32.	Discretionary Development grant received from Government of India transferred to Development Fund No. II Account		2,50,000.00
33.	Outstanding liabilities for payment of Employer's contribution (incorporation of balances as per last account):		
	i) ISI General Provident Fund	4,17,097.59	
	ii) Leave Salary Fund	6,91,991.43	
	iii) Gratuity Fund	8,71,774.38	16,80,863.41
34.	Outstanding liabilities for goods and services (incorporation of balance as per last account)		1,03,437.88
35.	Sundry deposits (incorporation of balance as per last account)		58,808.41
36.	Loan to staff for educational and house building purposes, relief loan etc. (as at the close of the year)		24,888.89
37.	Purchase of books for R.T.S. students and workers		15,735.44
38.	Security Deposits paid by Institute (recoverable) (as at the close of the year)		10,720.30
39.	Advance against T.A. and other dues against which bills are awaited and/or under examinations for adjustment		2,68,530.17
40.	Advances to suppliers, contractors etc. against goods and services		11,299.26
41.	Advances against special projects and experiments (mainly for Geological Studies Unit)		32,349.22
42.	Imprest cash and/or working capital with different departments, sections, units etc.		81,595.08
43.	Advances to visiting professors		17,462.38
44.	Festival and other recoverable advances		9,747.95
46.	Amounts in respect of which accounts and statements submitted by Shri J. M. Paramanand, Accountant of Bangalore Sub-office through O.C. Bangalore have not been accepted for different reasons, treated as suspense pending results of investigation		54,544.65
46.1	Repayment of loan taken from Capital expenditure account in 1961-62		1,18,000.00
46.2	Repayment of loan taken from Leave Salary Fund		2,45,000.00(a)
47.	Cash credit advances from State Bank of India against guarantee from Government of India (as per last account)		22,65,358.16
48.	Overdraft from State Bank of India (as per last account)		13,80,525.23
49.	Temporary advance to Capital Expenditure Account during the year		2,90,000.00
50.	Closing Balance:		
	Cash in hand and at Banks with Barsanagar and other outlying offices including Translation Unit in Japan (Rs. 4,448.84 with Nath Bank Ltd. in liquidation)		2,91,030.01
51.	Sub-total (29-50):		74,38,241.66
52.	Grand Total (28+51):		1,98,07,159.91

(a) Out of temporary loans amounting to Rs. 6,50,000/- taken from funded accounts for current expenditure remaining unpaid upto 31.3.63, an amount of Rs. 2,45,000/- (item no. 46.2 of expenditure side) having been repaid and a fresh loan of Rs. 1,00,000/- (item no. 29 of receipt side) having been taken during the year under report, the position of outstanding loans as at the close of the year 1962-63 comes as under:

i) Gratuity Fund	3,18,000.00
ii) Supervision Fee Fund	60,000.00
iii) Development Fund No. I	27,000.00
iv) Provident Fund	1,00,000.00
	Rs. 5,05,000.00

In terms of our report of even date.
Edj. LOVLOCK & LEWIS
Chartered Accountants.

Calcutta,
18th October, 1963.

INDIAN STATISTICAL INSTITUTE

Indian Statistical Institute : Receipts & Payments Accounts for the year ended 31 March 1963

VISITING PROFESSORS AND FELLOWS FUND

To Receipts

Rs. nP.

1. Opening Balance :

Cash in hand and at Banks	...	...	...	113.13
				<u>Rs. 113.13</u>

By Payments

Rs. nP.

1. Closing Balance :

Cash in hand and at Banks				113.13
				<u>Rs. 113.13</u>

In terms of our report of even date.

Calcutta,
18th October 1963.

Bd/- LOVELOCK & LEWIS.
Chartered Accountants.

THIRTY-FIRST ANNUAL REPORT 1962-63

Indian Statistical Institute : Receipts & Payments Accounts for the year ended 31 March 1963

LEAVE SALARY FUND

				<i>To Receipts</i>	
				Ra. nP.	Ra. nP.
1. Opening Balance :					
i)	Cash in hand and at Banks	...	...	9,389.29	
ii)	Temporary advances recoverable as per last account from :				
a)	Capital Expenditure Account	...	...	38,000.00	
b)	Current Expenditure Account	...	...	2,45,000.00	2,92,389.29
2. Employer's contribution to the fund for the year 1962-63					6,00,183.61
3. Recovery of Employer's contribution outstanding with the Institute up to 1961-62 (in part)					50,000.00
					<u>Ra. 9,51,572.00</u>
				<i>By Payments</i>	
				Ra. nP.	Ra. nP.
1. Leave Salary Payment :					
i)	Value of earned leave enjoyed	...	...	3,99,278.17	
ii)	Payment in lieu of leave refused	...	...	5,41,639.90	9,40,918.07
2. Closing Balance :					
i)	Cash in hand and at Banks	...	...	10,654.83	
ii)	Temporary advances made to :				
a)	Capital Expenditure Account as per last account	...	...	38,000.00	
	Less : Realised during the year	...	...	38,000.00	nil
b)	Current Expenditure Account as per last account	...	...	2,45,000.00	
	Less : Realised during the year	...	...	2,45,000.00	nil
					<u>10,654.83</u>
					<u>Ra. 9,51,572.00</u>

Note : The following amounts which were payable from the Current Expenditure account to the fund during the years mentioned, have remained unrecovered up to 31.3.63 :

i)	For 1959-60	...	...	21,400.00
ii)	For 1960-61	...	...	74,150.97
iii)	For 1961-62	...	...	5,96,440.48
				<u>6,91,991.43</u>
	Less amount recovered during 1962-63	...	...	50,000.00
	Balance outstanding	...	...	<u>6,41,991.43</u>

In terms of our report of even date.

Calcutta,
16th October 1963.

Sd/- LOVLOCK & LEWIS
Chartered Accountants.

INDIAN STATISTICAL INSTITUTE

Indian Statistical Institute : Receipts & Payments Accounts for the year ended 31 March 1963

DEVELOPMENT FUND No. 1

To Receipts

	Rs.	nP.	Rs.	nP.
1. Opening Balance :				
i) Cash in hand and at Banks 	11,521.94			
ii) Temporary advances recoverable as per last account from :				
a) Capital Expenditure Account 	81,000.00			
b) Current Expenditure Account 	27,000.00		1,19,521.94	
			<u>Rs. 1,19,521.94</u>	

By Payments

	Rs.	nP.	Rs.	nP.
1. Closing Balance :				
i) Cash in hand and at Banks 	11,521.94			
ii) Temporary advances made as per last account to :				
a) Capital Expenditure Account 	81,000.00			
b) Current Expenditure Account 	27,000.00		1,19,521.94	
			<u>Rs. 1,19,521.94</u>	

In terms of our report of even date.

Calcutta,
16th October 1963.

Sd/- LOVELOCK & LYLES
Chartered Accountants.

THIRTY-FIRST ANNUAL REPORT 1962-63

Indian Statistical Institute: Receipts & Payments Accounts for the year ended 31 March 1963

DEVELOPMENT FUND No. II			
<i>To Receipts</i>			
	Rs. nP.		Rs. nP.
1. Opening Balance :			
i) Cash in hand and at Banks	51,886.47		
ii) Advances recoverable from Capital Expenditure Account as per last account	2,09,000.00		
iii) G. P. Notes at cost (face value Rs. 50,000 -) as per last account	45,533.75		
iv) Value of assets acquired and other outlays as per last account	4,73,189.01		7,70,610.13
2. Amount of Development grant for the year 1962-63 transferred from Current Expenditure Account			2,50,000.00
3. Interest received on investment in G.P. Notes			1,400.00
4. Recovery against capital outlay (Rent)			35,539.76
			Rs. 10,66,646.89
<i>By Payments</i>			
	Rs. nP.		Rs. nP.
1. Expenditure on assets acquired and other outlays as per last year's account			4,73,189.01
2. Expenditure for construction of sheds and structures at 169, G.L. Tagore Road incurred during 1961-62 now adjusted by transfer from Capital Expenditure Account to Fund Account			0,850.43
3. Capitalised rental of telephone on O.Y.T. Scheme for Delhi Office deposited during 1960-61 transferred from security deposit account			2,000.00
4. Earnest money and Law expenses for purchase of private treaty, of			
i) Rose Villa (earnest money)	1,000.00		
ii) Biraja Kutir (law and contingent expenses)	412.50		1,412.50
5. Repairs, renovations and petty constructions etc. at :			
i) Rose Villa	28,451.58		
ii) Health Home	1,968.12		
iii) RTS Hostel at 206 B.T. Road	12,792.65		
iv) 169, Gopal Lal Tagore Road	28,875.89		72,088.24
6. Closing Balance :			
i) Cash in hand and at Banks	2,358.26		
ii) Temporary advances made to Capital Expenditure Account as per last account	2,09,000.00		
iii) Stock of building and other materials	2,64,212.80		
iv) G.P. Notes at cost (face value Rs. 50,000 -)	45,533.75		5,11,104.81
			Rs. 10,66,646.89

In terms of our report of even date.

Calcutta,
16th October 1963.

Sd/- LOVELOCK & LEWIS
Chartered Accountants

INDIAN STATISTICAL INSTITUTE

Indian Statistical Institute: Receipts & Payments Accounts for the year ended 31 March 1963

SUPERVISION FEE FUND			
<i>To Receipts</i>			
	Rs.	n.P.	Rs. n.P.
1. Opening Balance :			
i) Cash in hand and at Banks	8,842.36		
ii) Advance recoverable from Current Expenditure Account as per last account	60,000.00		68,842.36
2. Advances recoverable as per last account from :			
i) Small Industries Experimental Unit run by the Institute ...	32,051.60		
ii) Small Industries Experimental Unit in villages ...	3,192.90		35,244.40
3. Cost of land at Baranagar and Giridih as per last account ...			
			1,12,218.11
			Rs. 2,16,304.87
<i>By Payments</i>			
	Rs. n.P.	Rs. n.P.	Rs. n.P.
1. Temporary advances to Small Industries Experimental Unit run by the Institute as per last account			
	32,051.60		
<i>Add</i> : During the year	974.61	33,026.11	
<i>Add</i> : Advances as per last account to carry out experiment in village units	3,192.90		36,219.01
2. Land at Baranagar and Giridih as per last account ...			
			1,12,218.11
3. Closing Balance :			
i) Cash in hand and at Banks	7,887.76		
ii) Temporary advances to Current Expenditure Account as per last account	60,000.00		67,887.76
			Rs. 2,10,304.87

In terms of our report of even date.

Calcutta,
18th October 1963.

Sd/- LOVELOCK & LEWIS
Chartered Accountants.

THIRTY-FIRST ANNUAL REPORT 1962-63

Indian Statistical Institute: Receipts & Payments Account for the year ended 31 March 1963

GRATUITY FUND					
<i>To Receipts</i>					
				Rs. nP.	Rs. nP.
1. Opening Balance :					
i) Cash in hand and at Banks	...	...	...	2,833.46	
ii) Temporary advances recoverable from :					
a) Capital Expenditure Account as per last account	...	...	...	4,57,000.00	
b) Current Expenditure Account as per last account	...	...	...	3,18,000.00	7,77,833.46
					7,77,833.46
<i>By Payments</i>					
				Rs. nP.	Rs. nP.
1. Gratuity payments					
	...	...	...		131.22
2. Closing Balance :					
i) Cash in hand and at Banks	...	...	...	2,702.24	
ii) Temporary advances made to :					
a) Capital Expenditure Account as per last account	...	...	...	4,57,000.00	
b) Current Expenditure Account as per last account	...	...	...	3,18,000.00	7,77,702.24
					7,77,833.46

Note : The following amounts which were payable from the Current Expenditure Account of the Institute to this fund during the years mentioned have remained unrecovered up to 31.3.63 for :

i) Year 1959-60	...	...	...	Rs. 1,48,164.00
ii) Year 1960-61	...	...	...	1,73,339.95
iii) Year 1961-62	...	...	...	2,60,270.44
iv) Year 1962-63	...	...	...	2,61,078.09
				Rs. 8,32,853.08

In terms of our report of even date.

Calcutta,
16th October 1963.

Sd/- LOVLOCK & LEWIS
Chartered Accountants.

INDIAN STATISTICAL INSTITUTE

Indian Statistical Institute: Receipts & Payment

		Rs. nP.	Rs. nP.
I.S.I. GENERAL			
<i>To Receipts</i>			
1.	Opening Balance :		
	i) Cash in hand and at Banks	14,35,748.13	
	ii) G.P. Notes at cost as per last account (face value— Rs. 22,70,000)	18,74,784.29	
	iii) National Savings Certificate as per last account (present value Rs. 1,17,000)	1,00,000.00	
	iv) Loan outstanding to the workers as per last account	4,58,108.00	38,68,640.42
2.	Employer's contribution due to fund on account of 1961-62 received from Institute during the year		4,17,007.59
3.	Workers own subscription to the fund during the year		4,35,131.16
4.	Employer's contribution to the fund for the year		nil (a)
5.	Workers' voluntary subscription to the fund during the year		31,111.52
6.	Interest received during the year against loan given to members		34,755.29
7.	Interest on investment :		
	i) G. P. Notes	98,975.81	
	ii) Short Term Deposit	11,468.49	
	iii) For deferred payment by Institute on account of employer's contribution for 1961-62 repaid during the year	20,854.80	
	iv) Overriding interest on securities utilised by ISI for obtaining overdraft from the Bank during year 1961-62	25,550.60	
			Rs. 40,43,585.67

(a) An amount of Rs. 4,35,131.16 was due to the fund on 31.3.63 as employer's contribution, but was not paid by the Institute for want of resources. This amount and interest for deferred payments thereof along with overriding interest in respect of securities is expected to be recovered during 1963-64.

(b) An amount of Rs. 13 lakhs was kept in short term deposit with the State Bank of India. Before maturity, Government of India floated 4½% loan and it was decided to invest the aforesaid amount of fixed deposit in that security. Arrangement was made with the State Bank to advance funds for the purchase of those 4½% securities on the hypothecation of the short term deposit with them. The amount of interest shown was charged by the Bank for this transaction. It may be mentioned that as against this, an amount of Rs. 11,468.49 was received as interest, vide item 7 (ii) of the Receipt side.

THIRTY-FIRST ANNUAL REPORT 1962-63

Accounts for the year ended 31st March 1963

PROVIDENT FUND

By Payments		Rs. nP.	Rs. nP.
1.	Payments to workers : their P.F. dues (on leaving services) ...		1,16,776.88
2.	Payments of interest to workers on closing of accounts as in item No. 1 above		13,683.95
3.	Repayment of workers' voluntary subscription		30,172.84
4.	Payment of interest to workers against withdrawal of their voluntary subscription		3,589.51
5.	Payment of interest to Bank on account of overdraft taken against short term deposit		7,810.79(8)
6.	Short term deposit with State Bank of India	13,00,000.00	
	Less : amount repaid by the Bank on maturity	13,00,000.00	nil
7.	Loan to members :		
	Outstanding from previous year	4,58,108.00	
	Since added during the year	7,74,731.00	
	Less : amount realised during the year	12,32,839.00	
		6,85,371.60	5,86,967.50
8.	Temporary advances to ISI Current Expenditure Account during the year		1,00,000.00
9.	Closing Balance :		
	i) Cash in hand and at Banks		8,29,800.93
	ii) G.P. Notes at cost as per last account	18,74,784.29	
	Since added during the year (face value of G.P. Notes—Rs. 36,70,000/-)	13,00,000.00	31,74,784.29
	iii) National Savings Certificates as per last account (prosent value Rs. 1,21,000/-)		1,00,000.00
			Rs. 40,43,585.67

In terms of our report of even date.

Calcutta,
16th October, 1963

Ed. LOVELOCK & LEWIS
Chartered Accountants.

INDIAN STATISTICAL INSTITUTE

Indian Statistical Institute: Receipts & Payments on Capital Accounts

		<i>To Receipts</i>	
		Rs. nP.	Rs. nP.
1. Opening Balance :			
i)	Cash in hand and at Banks	324.15	
ii)	Stock of building and other materials for work under progress and other construction etc. (as per last account) ...	5,02,907.48	
iii)	Unadjusted advance/part payment of 1961-62	77,395.97	
iv)	Advances recoverable from the Institute Current Expenditure Account as per last account	1,18,000.00	6,98,627.60
2. On account payment received from Government of India against current year's capital expenditure			17,10,000.00
3. Fund received from Government of India to meet capital expenditure for the calculating machine project—UNTA ...			2,50,000.00
4.1 Refund of deposit from Land Acquisition Collector on account of dropping of proposal of acquisition of Bustoos adjacent to 203 and 204 B. T. Road		10,160.00	
.2 Received by transfer from Current Expenditure Account—law and contingent charges deducted by the Land Acquisition Collector out of the deposit for acquisition of above land		430.00	10,690.00

THIRTY-FIRST ANNUAL REPORT 1962-63

for the year ended 31st March 1963

		<i>By Payments</i>	
		Rs. nP.	Rs. nP.
1. Expenditure on land and properties :			
1.	Part payment in advance towards acquisition of land at 155, 160, 165 and 166/1, G. L. Tagore Road (Rs. 5,300/- paid in 1957-58).	91,354.71	
2.	Amount paid to Government of Mysore for acquisition of land in Bangalore	1,52,918.92	
3.	Amount paid to Government of Madras for acquisition of land at Madras	15,000.00	
4.	Amount paid for purchase by private negotiation (with the permission of the Collector) of land in Baroda	17,988.17	2,77,261.80
2. Expenditure on buildings, sheds and structures including electric installations : ...			
1.	Construction of building at 203 B.T. Road	3,42,204.53	
2.	Construction of building at 205 B.T. Road	5,49,177.56	
3.	Sheds and structures at 203 B.T. Road	3,082.58	8,94,464.67
3. Expenditure on machinery, equipment etc. :			
1.	Furniture (both of general type and laboratory type) for offices in Baranagar and Calcutta and for Library and out-lying offices	90,619.87	
2.	Electrical equipment for laboratories, teaching classes, buildings and other purposes	60,381.36	
3.	Laboratory equipment	2,11,583.47	
4.	Construction equipment	33,891.85	
5.	Office machineries and equipment	44,981.51	
6.	Calculating machines	35,556.00	
7.	Motor vehicles (4 jeep cars with winches)	88,875.88	5,65,889.94
✓ Library :			
1.	Books and Journals	75,736.90	
2.	Equipment	11,056.75	86,792.65
5. Expenditure for Electronic Sector :			
1.	For the joint project for the construction of Electronic Computers and accessories	53,963.84	
3.	For the Development Workshop and Electronic Laboratory Sub-total : (1-3)	1,39,030.19	1,03,044.03
			20,17,463.09

INDIAN STATISTICAL INSTITUTE

Indian Statistical Institute: Receipts & Payments on Capital Accounts

<i>To Receipts</i>		Rs. nP.	Rs. nP.
5. Transfer of expenditure met from Capital Expenditure Account during 1961-62 :			
.1 to Development Fund No. II for construction of sheds and structures at 169, G. L. Tagore Road	6,850.43		
.2 to Current Expenditure Account for additional electrical fittings at rented houses	3,784.46		10,634.80
6. Recovery against capital outlay on account of :			
.1 Victoria Front Printing Press	8,000.00		
.2 Repairs etc. of rented houses in Giridih	674.00		8,674.00
7. Temporary loan taken from Current Expenditure Account to meet capital expenditure during the year			3,90,000.00
8. Outstanding liabilities for goods and services			1,14,658.90
Total :			Rs. 31,93,185.39

THIRTY-FIRST ANNUAL REPORT 1962-63

for the year ended 31 March 1963

By Payments

	Rs. nP.	Rs. nP.
6. Punching and Tabulating equipment		1,67,730.15
7. O. Y. T. Telephones (2 Nos.)		5,080.00
8. Expenditure for repairs, renovations, etc. at 202 B. T. Road		45,137.77
9. Workshop—UNTAA :		
.1 Construction of sheds at Gooptu Niwas	1,02,517.12	
.2 Installation of high tension electricity lines	86,723.62	
.3 Matching equipment—Lathe etc.	72,390.15	2,61,830.89
10. Recoverable Capital Expenditure (Crop-cutting apparatus)		37,222.20
11. Temporary advances made to current Expenditure Account as per last account	1,18,000.00	
Less : realised during the year	1,18,000.00	nil
12. Repayment of loan taken from Leave Salary Fund ...		38,000.00(a)
13. Advances/part payments against purchase of machinery and equipment, construction materials etc.		1,18,431.09
14. Cash in hand and at Banks		1,838.87
15. Closing stock of building and other materials for work under progress and other construction etc.		5,10,661.33
Total :		Rs. 31,93,185.39

(a) Out of temporary loans amounting to Rs. 7,85,000.00 taken from funded accounts for capital expenditure remaining unpaid upto 31.3.62, an amount of Rs. 38,000/- (item No. 12 of expenditure side) having been repaid during the year under report, the present position of outstanding loans at the close of the year 1962-63 comes as under :

i) Gratuity Fund	Rs. 4,57,000.00
ii) Development Fund No. I	81,000.00
iii) Development Fund No. II	2,09,000.00
	Rs. 7,47,000.00

In terms of our report of even date.

Calcutta,
16th October, 1963.

Sd/- LOVLOCK & LEWIS
Chartered Accountants.

INDIAN STATISTICAL INSTITUTE

Annexure 2 : Admissions to Courses

2.1 RESEARCH AND TRAINING SCHOOL

sl. no.	courses	number		
		applied	appeared at selection tests	admitted
FULL-TIME COURSES				
1.	Research and Advanced Studies	108	103	38(a)
2.	One-year Post-M.Sc. Apprentice Course	—	—	8
3.	M.Stat. 1st year	200	165	28
4.	M.Stat. 2nd year (by promotion)	—	—	14
5.	B.Stat. 1st year	557	452	28
6.	B.Stat. 2nd year (by promotion)	—	—	25
7.	B.Stat. 3rd year (by promotion)	—	—	20
8.	Statistical Officers' Course (jointly with the CSO)	—	—	27
9.	Officers on Deputation	—	—	13
10.	International Statistical Education Centre (selected by the International Statistical Institute)	—	—	23
11.	Six-week Advanced Summer Course for Statisticians (May-June 1962)	—	—	27
11	Full-time Courses sub-total	865	720	251

(a) includes 11 continuing from the previous year, and two foreign students.

PART-TIME AND EVENING COURSES

1.	One-year Evening Course in Statistics, Part I, Calcutta			
1.1	March-September 1962	233	155	32
1.2	September 1962-March 1963	152	101	24
2.	One-year Evening Course in Statistics, Part II, Calcutta			
2.1	March-September 1962	—	—	14
2.2	September 1962-March 1963	—	—	17

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sl. no.	courses	number		
		applied	appeared at selection tests	admitted
3.	Computer's Training Course, Junior, Calcutta			
3.1	March-September 1962	161	109	24
3.2	September 1962-March 1963	101	74	35
4.	Computer's Training Course, Senior, Calcutta			
4.1	March-September 1962	—	—	10
4.2	September 1962-March 1963	—	—	19
5.	Three-month Evening Course on Punched Card Systems, Calcutta, March-June 1962	125	65	21
6.	Six-month Evening Course on Punched Card Systems, Calcutta, November 1962-April 1963	71	50	18
7.	One-year Evening Course, Delhi (in collaboration with the CSO) March 1962-February 1963	—	—	40
8.	Six-month Advanced Course in Statistics, Delhi (in collaboration with the CSO)			
8.1	September 1961-March 1962	—	—	20
8.2	July 1962-December 1962	—	—	17
9.	One-year Evening Course for Statisticians			
9.1	Bombay : May 1962-April 1963	—	—	30
9.2	Madras : February 1962-February 1963	97	75	28
9.3	Trivandrum : March 1963-September 1963	48	34	20
9.4	Hyderabad : (in collaboration with the Indian Institute of Economics)	47	39	26
17	Evening Courses, sub-total	1035	702	305
28	Courses total	1900	1422	646

INDIAN STATISTICAL INSTITUTE
2.2 STATISTICAL QUALITY CONTROL

TRAINING COURSES

sl. no.	courses	number of trainees
1.	Basic Course on Quality Control, Bangalore, October–November 1962	25
2.	Appreciation Lectures on SQC, Bangalore, July 1962	25
3.	Basic Principles of Quality Control, Bangalore, September 1962	12
4.	An Introductory Training Course on SQC Methods, Bombay, August–September 1962	32
5.	A Special Introductory Training Course on SQC Methods for the Textile Industry, Bombay, December 1962–January 1963	21
6.	An Advanced Course on SQC for the Chemical Industry, Bombay, March 1963	21
7.	A Basic Training Course on SQC, Calcutta, November–December 1962	21
8.	Appreciation Course on SQC (under the auspices of the Calcutta Productivity Council), Calcutta, March 1962	14
9.	A Basic Training Course on SQC for the Sugar Industry, Poona, September–October 1962	23
10.	A Course on Basic Techniques of SQC, Baroda, February–March 1963	13
10. Courses : total		207

Annexure 3 : Important Business transacted in Council and Governing Body (R.T.S.) Meetings*

20 June 1962 : Organisational relationship with the Government of India consequent on the Institute becoming a part of the public sector with a large measure of autonomy, after the Indian Statistical Institute Act was brought into operation from April 1960.

31 July 1962 : Report of the Statutory Committee; formation of the NSS Committee; appointment of Dr. P. L. Robinson, Ph.D., University College, London, as Honorary Visiting Research Professor.

29 August 1962 : Formation of a company, Sankhyā Yantra (Private) Ltd.; additional dearness allowance for the staff; the revised budget estimates for 1962-63 and provisional budget proposals for 1963-64; approval of the results of the Statistical Diploma and Computership examinations of the Institute; arrangements relating to the investment of Provident Fund money; setting up of a Committee for preparing estimates of current expenditure for three to five years; appointment of Dr. J. A. Gallagher, Dean of Trinity College, Cambridge, as Honorary Visiting Research Professor.

* Meetings on 29 August, 28 September 31 October and 18 December 1962 were held jointly by the Council of the Indian Statistical Institute and the Governing Body of the Research and Training School.

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28 September 1962 : Revision of Provident Fund Rules; sanction of additional dearness allowance; joint project for the construction of electronic computers in collaboration with the Jadavpur University; arrangements for the purchase of land at Bangalore.

31 October 1962 : Reappropriation proposals for 1961-62; Auditor's Report and Audited Statement of Accounts for 1961-62.

18 December 1962 : Enlargement of the Works Committee; report on Sankhyā Yantra (Private) Ltd.; report of the Works Advisory Committee; arrangements for the services of a Consulting Engineer; arrangements relating to the Board of Trustees; bye-laws or standing orders relating to accumulated leave salary; salary scales for senior scientific staff; appointment of Finance Committees, Examinations Committee and Journal Committee; utilisation of Discretionary Development Fund.

12 February 1963 : Election of members of the Board of Trustees; proposals to be submitted to the Government and Statutory Committee; the financial position; Standing Service Orders; economy and other measures taken in connection with the National Emergency.

18 March 1963 : Results of Statistical Examinations; report of the NNS Estimates Committee; revision of estimates of capital expenditure; approval to the Award of Ph.D. and M.Stat. Degrees; arrangements regarding the manufacture of calculating machines; the distribution of *Sankhyā* outside India.

Annexure 4 : List of National Sample Survey Reports

4.1 PRINTED REPORTS

sl. no.	report no.	title
1.	59	Tables with Notes on Pattern of Household Ownership and Possession of Land in Rural Areas, 1950-51 to 1953-54 (Eighth Round : July 1954-April 1955).
2.	60	Tables with Notes on Farming Condition and Practices in Rural Areas-1953-54 (Eighth Round : July 1954-April 1955).
3.	61	Notes on the Results of the Land Utilisation Survey and Crop-cutting Experiments (Eleventh Round : August 1956-February 1957).
4.	62	Report on Employment and Unemployment (Ninth Round : Supplementary, May-November 1955).
5.	63	Tables with Notes on Employment and Unemployment in Urban Areas (Thirteenth Round : September 1957-May 1958).
6.	64	Indian Villages : A Study of Some Social and Economic Aspects (Thirteenth Round : September 1957-May 1958).
7.	65	Tables with Notes on Animal Husbandry (Eleventh Round : August 1956-January 1957).
8.	66	Report on Land Holdings (4) Rural Sector, States (Eighth Round : July 1954-April 1955).

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sl. no.	report no.	title
9.	67	Tables with Notes on Housing Condition (Twelfth Round : March-August 1957).
10.	68	Tables with Notes on Rural Indebtedness (Eighth Round : July 1954-April 1955).
11.	69	Notes on the Results of the Land Utilisation Survey and Crop-cutting Experiments (Twelfth Round : March-August 1957).
12.	70	Technical Paper on Sample Design (Fourteenth Round : July 1958-June 1959).
13.	71	Consumer Expenditure by Levels of Household Expenditure (Thirteenth Round : September 1957-May 1958).
14.	72	Tables with Notes on Milk Production (Twelfth Round : March-August 1957).
15.	73	Some Results of the Land Utilisation Survey and Crop-cutting Experiments (Fourteenth Round : July 1958-June 1959).

4.2 DRAFT REPORTS SUBMITTED TO THE GOVERNMENT OF INDIA

(The date of submission is given in brackets)

1.	97	Tables with Notes on Consumer Expenditure (Preliminary)(Fifteenth Round : July 1959-June 1960) (18 April 1962).
2.	98	Tables with Notes on the Survey of Scheduled Industries 1958 : The Sample Survey of Manufacturing Industries, 1958 (10 April 1962).
3.	68	Tables with Notes on Small-Scale Manufacture : Rural and Urban (Household Enterprises Smaller than Registered Factories) (Fourteenth Round : July 1958-June 1959) (30 October 1962).
4.	99	Tables with Notes on Consumer Expenditure in Urban Areas (Fourteenth Round : July 1958-June 1959) (30 July 1962).
5.	100	Tables with Notes on Livestock Products (Fifteenth Round : July 1959-June 1960) (30 July 1962).
6.	101	Tables with Notes on Household Non-Registered Trade (Fifteenth Round : July 1959-June 1960) (31 July 1962).
7.	102	Technical Paper on Sample Designs of Working Class and Middle Class Family Living Surveys, 1958-1959 (5 September 1962).
8.	103	Tables with Notes on Consumer Expenditure (Eleventh and Twelfth Rounds: August 1956-August 1957) (28 September 1962).
9.	104	Tables with Notes on Capital Formation (Fifteenth Round : July 1959-June 1960) (25 October 1962).
10.	105	Tables with Notes on Household Non-Mechanised Transport and Utilisation of Working Animals (Fifteenth Round : July 1959-June 1960) (25 October 1962).

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sl. no.	report no.	title
11.	106	Tables with Notes on Disposal of Cereals by Producer Households in Rural Areas (Fifteenth Round : July 1959-June 1960) (27 October 1962).
12.	107	Tables with Notes on Consumer Expenditure in Rural Areas (2) (Fourteenth Round : July 1958-June 1959) (30 October 1962).
13.	108	Tables with Notes on the Annual Survey of Industries 1959(1) (Sample-Sector, Summary Results) (20 December 1962).
14.	109	Report on Type-study on Consumption and Disposal of Cereals and Capital Formation by Households, 1959-60 (12 March 1963).
15.	110	Rates of Birth, Death and Growth of Rural Population (Fifteenth Round : July 1959-June 1960) (30 January 1963).
16.	111	Tables with Notes on Urban Labour Force (Sixteenth Round : July 1960-August 1961) (31 January 1963).
17.	112	Some Results of the Land Utilisation Survey and Crop-cutting Experiments (Sixteenth Round : July 1960-August 1961) (31 January 1963).
18.	113	Tables with Notes on Consumer Expenditure (Preliminary) (Sixteenth Round): July 1960-August 1961 (12 March 1963).
19.	115	Tables with Notes on the Annual Survey of Industries, 1960 (Sample Sector, Summary Results) (12 March 1963).
20.	115	Tables with Notes on Indian Villages (Fourteenth Round : July 1958-June 1959) (23 March 1963).

Annexure 5: List of Scientific Papers

5.1 PUBLISHED PAPERS

1. BANDYOPADHYAY, S. (with Chattopadhyay, K.) (1962): Notes on the Method of Studying Rural Society. *Man in India*, 42, 3.
2. ——— (with Chattopadhyay, K.) (1963): A Note on Variations in the Levels of Living in Rural Areas. *Indian Journal of Agricultural Economics*, 18,1.
3. ——— (with Mukherjee, R.) (1963): Social Research and Mahalanobis's D³. *Contributions to Statistics*, Volume presented to Professor P. C. Mahalanobis on the occasion of his 70th birthday.
4. BANERJEE, S. K. (1962): The Problem of Testing Linear Hypothesis about Population Means and M-Tests. *Sankhyā*, 24, sr. A.
5. BASUMALLICK, S. (1962): Crystal-optic Study on Secondary Overgrowth in Quartz. *American Mineralogist*, 47, 1473-1478.

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6. BISWAS, RANEN (with Dutta Majumdar, Dwijesh) (1963): A Correlation Method of Reproduction. *Indian Journal of Physics*, 37, 4.
7. BISWAS, S. (1963): A Study of Amenorrhoea after Child Birth and its Relationship to Lactation Period. *Indian Journal of Public Health*, 1.
8. BRAHMACHARY, R. L. (1963): Free Amino Acids in the Small Limnaea and their Changes with Morphogenesis. *Experientia*, 19, 143.
9. ——— (1963): Free Amino Acids in the Small Limnaea and their Changes with Morphogenesis—II. *Experientia*, 19, 225.
10. ——— (1963): Progressive Localisation of Neutral Red Positive Region in Limnaea Embryos. *Experientia*, 19, 317.
11. ——— (1963): The Free Amino-acid Pattern in Tadpole Tails. *Experientia*, 19, 322.
12. CHAKRABORTY, B. (with Malakar, C. R. and Poti, S. J.) (1962): Reliability of Data Relating to Contraceptive Practices. *Research in Family Planning*, Princeton University Press, Princeton.
13. CHAKRAVARTI, M. R. (1962) (with Gates, R. R. and Mukherjee, D. P.): Final Pedigrees of y-chromosome Inheritance. *American Journal of Human Genetics*, 14, 4.
14. ——— (1963): Dermatoglyphics in Anthropology. *Journal of Social Research*, 6, 1-2. Also in the book *Some Aspects of Applied Physical Anthropology*; edited by Vidyarthi, L. P. and Verma, B. K.
15. ——— (1963): Ethnic Bearing of the Dermatoglyphic Studies in India. *Acta Geneticae Medicae et Gemellologiae*, 12, 4.
16. ——— (1963) (with Mukherjee, D. P.): Dermatoglyphics of the Tribes and Castes of Manipur and Nagaland. *Bulletin, Department of Anthropology*, 11, 1.
17. ——— (1963) (with Chaudhuri, S. and others): Haematological and Anthropological Study of Some Tribes and Castes of South India and North-East India. *Proceedings, 9th Congress, International Society of Blood Transfusion*, 1.
18. ——— (and Verma, B. K.) (1963): Records of γ -chromosome Inherited Hairy Ears. *Proceedings, 50th Session, Indian Science Congress, Delhi*.
19. CHATTERJEE, A. (1963): Trends in Labour Productivity in Jute Industry. *West Bengal Labour Gazette*, January.
20. CHATTERJEE, I. (1962): A Single Species Cattle Economy. *Agricultural Situation in India*, October.
21. ——— (1962): The Production, Availability and Requirement of Milk in India and its States. *Journal of Science Club*, XV, 4.
22. ——— (1962): The Factors Effecting the Production, Availability, and Requirement of Milk in India and its States, *Journal of Science Club*, XV, 4.

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23. CHATTERJEE, S. (1962) : Relation Between the Manifest and Inventoried Interest of College Freshmen. *Journal of Vocational and Educational Guidance*, IX, 4, 96-100.
24. ——— (with Mukherjee, Manjula) (1962) : Relation Between Kuder Preference Record and a Non-Verbal Interest Inventory modelled after it to suit Indian Conditions, *Journal of Psychological Research*, 6, 3.
- (1). CHATTOPADHYAY, K. (with Bandyopadhyay, S.) (1962) : Notes on the Method of Studying Rural Society. *Man in India*, 42,3.
- (2). ——— (with Bandyopadhyay, S.) (1963) : A Note on Variations in the Levels of Living in Rural Areas. *Indian Journal of Agricultural Economics*, 18,1.
- (17). CHAUDHURI, S. (with Chakravarti, M. R.) (1963) : Haematological and Anthropological Study of Some Tribes and Castes of South India and North-East India. *Proceedings, 9th Congress, International Society of Blood Transfusion*, 1.
25. DAS, B. C. (1962) : Regeneration of Prothrombin Activity by Plasma Albumin and Globulin Fractions. *Nature*, 195, 4862, 668-670.
26. ——— (1962) : Age-specific Changes in Mortality, Disability, and Demand on Chronic Disease Hospitals. *Systems Research Center Report, SRC 21-M-62-5, Case Institute of Technology*, Cleveland, Ohio, 1-74.
27. ——— (1963) : Age-specific Mortality, Hospitalization, and Morbidity as Measures of Demand on the English Health System. *Report to the U.S. Department of Health, Education and Welfare*, 1-68.
28. ——— (with Das, Rhea S.) (1962) : Age-specific Mortality and Morbidity in Relation to Community Health Performance and Demand on Hospital Facilities. *Operations Research Group Report, Case Institute of Technology*, Cleveland, Ohio, 1-86.
29. ——— (with Das, Rhea S.) (1963) : Effects of β -naphthoxyacetic Acid on Tillering and Grain Production in Rice. *Botanical Gazette*, 124, 270-274.
- (28). DAS, RHEA S. (with Das, B. C.) (1962) : Age-specific Mortality and Morbidity in Relation to Community Health Performance and Demand on Hospital Facilities. *Operations Research Group Report, Case Institute of Technology*, Cleveland, Ohio, 1-86.
- (29). ——— (with Das, B. C.) (1963) : Effects of β -naphthoxyacetic Acid on Tillering and Grain Production in Rice. *Botanical Gazette*, 124, 270-274.
30. DAVIS, T. A. (1962) : Vegetative Propagation in Coconut. *Nature*, 196, (4857), 904-905.
31. ——— (1962) : Asymmetrie and Entrag Bei Kokospalmen. *Experimentia*, 18, 321-322.
32. DAVIS, T. A. (1962) : Appareil pour L'escalade du onotier et des autres palmiers & tronc tissue. *Ol'eagineux*, 17, 613-616.
33. ——— (1962) : Rejuvenation of Coconut Palms. *World Crops*, 14, 256-250.
34. ——— (1963) : The Dependence of Yield on Asymmetry in Coconut Palms *Journal of Genetics*, 68, 186-215

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35. ——— (with Pillai, N. K.) (1963): Exhaust of Macro-nutrients by the Coconut Palms, *Indian Coconut Journal*, 16, 1.
36. DEY, B. and MAITRA, T. (1963): Origin and Distribution of Rural Income in India. *Economic Weekly*, XV, 24.
37. DEY, P. K. (1962): Azotobacter Inoculation, Radioisotopes, Fertilizers and Cowdung Gas Plant. *ICAR*, Publication, 314-316.
38. DUTTA MAJUMDAR, DWIJESH (1963): Studies on Recording and Reproduction of Digital Data on and from Magnetic Drum Surface. *Indian Journal of Physics*, 37, 87-100.
39. ——— (1963): Some Aspects of Magnetic Drum Computers (*Proceedings, Conference of Automation and Computation Scientists in India, I.E. (India)*).
40. ——— (1963): Computers and Control Engineering. (*Proceedings, Conference of Automation and Computation Scientists in India, I.E. (India)*).
- (6). ——— (with Biswas, Ranen) (1963): A Correlation Method of Reproduction. *Indian Journal of Physics*, 37, 4.
41. GALINA, SDASUIK (1962): Economic Regionalisation in the USSR: Some Remarks. *Sankhyā*, 24 sr. B.
42. GUPTA, P. B. (1962): The Population Problem in India. *Seminar, Population Control Issue*, 33.
43. HANURAV, T. V. (1962): An Existence Theorem in Sampling Theory, *Sankhyā* 24, sr. A, 327-330.
44. ——— (1962): Some Sampling Schemes in Probability Sampling. *Sankhyā*, 24, sr. A, 421-428.
45. ——— (1962): On Horvitz and Thompson Estimator. *Sankhyā*, 24, sr. A, 429-436.
46. JAIN, S. L. (1962): Monogenea of Indian Fresh-water Fishes, XI, New Trematodes Belonging to the Genus Dactylogyrus, Diesing, 1850. *Proceedings, First All India Congress of Zoology, Pt. 2*, 432-439.
47. LARIBI, D. B. (1963): Multi-subject Survey. *Contributions to Statistics*, Volume presented to Professor P. C. Mahalanobis on the occasion of his 70th birthday.
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5.2 PAPERS SUBMITTED AND ACCEPTED FOR PUBLICATION

(The journal to which the paper is submitted for publication is mentioned within brackets)

1. BANDYOPADHYAY, S. (with Chattopadhyay, K.): Caste Ranking in Some West Bengal Villages (An Exploratory Formulation). (*Bulletin of the Anthropological Survey of India, Calcutta*).
2. ——— (with Chattopadhyay, K.): A Method of Classifying Family Structures. (*The Eastern Anthropologist*).

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3. ——— (with Chattopadhyay, K.): Some Considerations on the Human Factors in Urban Planning. (*Geological Review of India*).
4. ——— (with Chattopadhyay, K. and Mukherjee, R.): A Note on the Use of Societal Factors for Stratification in Social Surveys. (*Bulletin of the Cultural Research Institute, Tribal Welfare Department, Government of India*).
5. BHAWATI, JAGDISH: The Pure Theory of International Trade—A Survey. (*Economic Journal*).
6. BHATTACHARYA, N.: A Property of the Pareto Distribution. (*Sankhyā*).
7. ———: On Some Variable Elasticity Engel Curve Forms. (*Sankhyā*).
8. ——— (with Ganguly, D. N. and Mitra, Biswanath): On the Intercorrelations Between Total Length, Total Weight and Weight of Flesh in Pure Water Prawn. (*Indian Agriculturist*).
9. BISWAS, S.: An Analysis of the Ante-natal Pattern and its Relationship to Maternal Health Conditions in a Hospital Population. (*Journal of the Indian Medical Profession*).
10. BRAHMACHARY, R. L.: The Changing Pattern of Neutral-red Staining with Morphogenesis in Certain Polychaete Embryos. (*Experimentia*).
11. CHAKRABORTY, B.: Methodology for the Calculation of Intrinsic Rate of Death. (*Population Review*).
12. ———: Social Class Mortality Indices in Calcutta City, 1949-60. (*Indian Journal of Public Health*).
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14. CHAKRAVARTI, M. R. (with Mukherjee, D. P.): Dermatoglyphic Affinities of the Castes and Tribes of Nilgiri Hills, Madras. (*Zts. Morph. Anth.*).
15. ——— (with Mukherjee, D. P.): Eye Colour and Mongolian Fold in Khasi-European Crosses. (*Mankind Quarterly*).
16. ——— (with Mukherjee, D. P.): Dermatoglyphic Approach to the Mundari Ethnic Problem. (*Zts. Morph. Anth.*).
17. ———: Dermatoglyphics of the Mundas of Ranchi District, Bihar (India). (*Japan Association. Criminology*).
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21. CHATTERJEE, G. S. and MAITRA, T.: A Study of Income from Trade in India. (*Papers on National Income and Allied Topics, VIII*).
22. CHATTERJEE, S. (with Mukherjee, Manjula): Relation Between Interest and Achievement (*Indian Journal of Psychl.*)

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23. ——— (with Mukherjee, Manjula): A Study of Co-workers Ratings. (*Productivity, National Productivity Council*).
24. ——— (with Mukherjee, Manjula): Psychological Tests and Accidents in Industry, A Review. (*Quarterly Journal of South Eastern Railway*).
25. ——— (with Mukherjee, Manjula): Stability of Measured Interest. (*Education and Psychology*).
- (1) CHATTOPADHYAY, K. (with Bandyopadhyay, S.): Caste Ranking in Some West Bengal Villages (An Exploratory Formulation). (*Bulletin, Anthropological Survey of India, Calcutta*).
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44. MALAKAR, C. R. : Conflicting Values among Social Classes in Relation to Fertility Control (*Journal of Family Welfare*).
45. MAZUMDAR, H. : Corporate Saving Propensities : Statistical Analysis and Economic Interpretation (*D. P. Mukherji Commemorative Volume*).
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- (23). ——— (with Chatterjee, S.) : A Study of Co-workers Ratings. (*Productivity, National Productivity Council*).
- (24). ——— (with Chatterjee, S.) : Psychological Tests and Accidents in Industry. A Review. (*Quarterly Journal of South Eastern Railway*).

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- (25). ——— (with Chatterjee, S.): Stability of Measured Interest. (*Education and Psychology*).
47. MUKHERJEE, R.: Urbanization and Social Transformation in India. (*International Journal of Comparative Sociology*).
48. ———: Socio-economic Factors in Children's Body Development. (*Indian Journal of Social Research*).
49. ———: Village Studies in India. (*Indian Journal of Social Research*).
- (4). ———: (with Bandyopadhyay, S. and Chattopadhyay, K.): A Note on the Use of Social Factors for Stratification in Social Surveys. (*Bulletin of the Cultural Research Institute, Tribal Welfare Department, Government of India*).
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52. ———: Effect of Vitamin B₆ on the Swelling of Rat Liver Mitochondria. (*Nature*).
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54. PIPLAI, T.: Level of Living in Rural India. (*Indian Journal of Agricultural Economics*).
55. ———: Transport Problems in West Bengal. (*Economic Times*).
56. RAMAN, M. V.: Knowledge and Practice of Contraception in India: A Survey of Some Recent Studies. (*Artha Vijnana*).
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58. RAO, C. R.: First and Second Order Asymptotic Efficiencies of Estimations. (*Annals de la Faculté des Sciences de Clermont*).
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Annexure : 6. Electronics Division and Data Processing Unit

COMPUTER PROGRAMMES IN THE ELECTRONICS DIVISION

sl. no.	type of problem	sponsoring authority	numerical method and check	programmed by
1.	Solution of Second Order Simultaneous Linear Differential Equations	B. R. Nag, Department of Radio Physics and Electronics, Calcutta University	Adam's Method of Integration with Milno's Check	Mohit Kumar Ray
2.	Evaluation of a Function arising from the Problem on Binding Energy of Atoms	Physics Department, Science College, Calcutta University	Evaluation of a Function with Double Computation Check	Mohit Kumar Ray
3.	Solution of Partial Diff. Eqn. of Second Order	P. K. Das, Department of Meteorology, Government of India	Integration by the Method of Relaxation	Mohit Kumar Ray
	Computation of Trajectories of Shells	Research Establishment, Government of India, ARDE, Kirkee, Poona	Integration by the Method of Runge-Kutta with Milno's Check	Mohit Kumar Ray
5.	Problem on Slip-field of Semi-infinite Plastic Material	P. Banerjee, Civil Engineering Department, B.E. College, Sibpur	Solution of Differential Equations by the Method of Characteristics	Mohit Kumar Ray
6.	Evaluation of Two Functions arising out of the Solution of Equations for a Rotational Flow of a Non-Newtonian Fluid	Department of Mathematics, Indian Institute of Technology, Khar-gpur	Evaluation of Two Functions	Mohit Kumar Ray
7.	Problem on Turbulence	Atomic Energy Establishment, Trombay, Bombay	Calculation of Correlation and Fourier Analysis	Bimal K. Chanda
8.	Problem on Turbulence	Atomic Energy Establishment, Trombay, Bombay	Computation of Auto-correlation, Cross-correlation, Quadrature and Spectra Analysis	Bimal K. Chanda
9.	Computation of Certain Formulas involving Bessel Functions	Applied Physics Laboratory, Science College, Calcutta University	—	Bimal K. Chanda
10.	Solution of Linear Equations with 20 Unknowns	Department of Statistics, Calcutta University	Pivotal Condensation Method with Row-sum Checks	Rabindra Nath Bose
11.	Solution of a Group of Linear Equation with Different Number of Unknowns	Department of Statistics, Calcutta University	Pivotal Condensation Method with Row-sum Checks	Sourindra M. Mukherjee
12.	Numerical Integration Problems	Defence Research Institute, Kanpur	Simpson's Rule of Integration	Sourindra M. Mukherjee
13.	Computation of Trajectory	Research Establishment, Government of India, ARDE, Kirkee, Poona	Runge-Kutta Method of Integration with Double Computation Check	P. K. Mitra

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SCIENTIFIC COMPUTATION AND STATISTICAL ANALYSIS IN THE
DATA PROCESSING UNIT

sl. no.	project	requisitioned by	no. of cards (in thousands)	tabulation hours
1.	Basic Statistical Tables	Dr. A. Matthai, Indian Statistical Institute	10	115
2.	2 ⁷ Factorial Experiment on Coconuts	Professor T. A. Davis, Indian Statistical Institute	2	35
3.	Rh-factor in Pregnant Women	Dr. C. R. Rao, Indian Statistical Institute	1	20
4.	Scoring of Admission Tests for Research and Training School and Christian Medical College, Vellore	Research and Training School, Indian Statistical Institute	12	30
5.	West Bengal School Final Marks	Dr. A. K. Gayen, Indian Institute of Technology	10	120
6.	Primary Teachers' Aptitude Test	Shri G. Chatterjee, Director of Public Instruction, Tripura	5	250
7.	High Altitude Physiology	Himalayan Institute of Mountaineering	—	10
8.	Tables of Ratios	Dr. M. N. Murthy, Indian Statistical Institute	—	25
9.	Forecasting Rain Water Inflow into DVC Dams	Manager, Reservoir Operations, Maithon	—	Planning under progress

PROCESSING OF SURVEY DATA IN THE DATA PROCESSING UNIT

sl. no.	project	requisitioned by	no. of cards (in thousands)	tabulation hours
1.	Sch. 14.0 (Family Planning) of NSS 16th Round	National Sample Survey, Indian Statistical Institute	44	850
2.	Sch. 3.0 (Price) of NSS 16th Round	National Sample Survey, Indian Statistical Institute	57	35
3.	Growth of Family Size	Shri J. M. Sengupta, Indian Statistical Institute	2	30
4.	Sch. 12.0 (Population) of NSS 15th Round	National Sample Survey, Indian Statistical Institute	800	200
5.	Fractile Tables Sch. 1.0 (Consumers' Expenditure) of NSS 7th Round and 15th Round	Shri J. K. Aikat, Indian Statistical Institute	40	90

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Annexure 7 : List of Office-bearers and Members of the Council, Governing Body and Members of the Committees of the Council and Governing Body

President : Shri C. D. Desmukh, D.So.

Vice-Presidents : Professor S. N. Bose, F.R.S.; Professor D. R. Gadgil, M.A., M.Litt.; Dr. Q. M. Hussain, M.A., Ph.D.; Dr. Zakir Hussain, M.A., Ph.D.; Professor K. B. Madhava, M.A., A.I.A.; Dr. K. C. K. E. Raja, L.R.C.P. and S., D.P.H., D.T.M. and H.; Sir Shri Ram.

THE COUNCIL: 1962-63

Chairman: Sir D. N. Mitra.

Vice-Chairmen: Shri B. B. Ghosh; Shri K. P. Goenka; Shri S. C. Roy; Shri Vishnu Sahay; Shri D. N. Mukherjee.

Treasurer: Dr. S. C. Law, M.A., B.L., Ph.D., F.Z.S., M.B.O.U., F.N.I.

Secretary: Professor P. C. Mahalanobis, F.R.S., D.Sc.

Joint Secretaries: Shri S. Basu, M.So.; Shri N. C. Chakravarti, M.A.; Shri S. K. Chowdhuri, B.A.; Shri Pitambar Pant, M.So.

Members: Shri S. K. Acharyya, Bar-at-Law; Shri R. Banerjee, I.A.S.; Shrimati Chameli Bose, B.Sc. (London); Professor H. C. Ghosh, M.A., P.R.S.; Shri S. Gupta, B.Sc. (Eng.) (London), I.S.E. (Retd.); Shri D. B. Lahiri, M.Sc.; Shrimati Nirmalkumari Mahalanobis; Shri N. T. Mathew, M.A., M.Sc.; Shri Kumar Mitter; Shri M. Mukherjee, M.A.; Shri J. K. Pande, M.A.; Lala Bharat Ram; Dr. C. R. Rao, M.A., M.Sc., Ph.D. (Cantab.); Shri S. Anantharamakrishnan; Shri R. G. Saraiya, B.A., B.Sc., J.P.; Shri Satis Chandra Sen, M.A., L.L.B.; Shri S. C. Sen, B.A. (Cantab.); Shri S. Sengupta, M.Sc. (Dacca), B.Sc. (London).

Government Nominees to the Council: (1) Additional Secretary, Department of Statistics (Shri P. C. Mathew, I.C.S. up to December 1962) and Cabinet Secretary (Shri S. S. Khera, I.C.S. from March 1963); (2) Joint Secretary, Ministry of Finance (Shri A. C. Bose, I.A.A.S., up to December 1962 and Shri R. P. Padhi from January 1963); (3) Chief Director, National Sample Survey (Shri R. Prasad).

GOVERNING BODY OF THE RESEARCH AND TRAINING SCHOOL: 1962-63

Sir D. N. Mitra, Chairman (*ex-officio*); Professor P. C. Mahalanobis, Director-Secretary (*ex-officio*); Mr. Dinesh Bahl, Managing Editor, Capital (Private) Ltd., (*Associated Chambers of Commerce of India*); Dr. S. N. Sen, M.A., Ph.D. (*Indian Economic Association*); Shri G. Basu, B.A., F.C.A., F.S.A., F.C.I.S., F.I.C., W.A., M.L.C., J.P. (*Federation of Indian Chambers of Commerce and Industry*); Dr. K. R. Nair, M.A., Ph.D., Joint Director, *Central Statistical Organisation*; Joint Secretary, *Ministry of Finance, Department of Expenditure, Government of India*; (Shri A. C. Bose, I.A.A.S., up to December 1962 and Shri R. P. Padhi from January 1963), Dr. V. S. Huzurbazar, Professor and Head of the Department of Mathematics and Statistics, Poona University (*National Institute of Sciences of India*); Dr. N. S. R. Sastry, M.A., M.Sc., Ph.D. (*Reserve Bank of India*); Dr. Ram Behari, M.A.,

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Ph.D., So.D. (Cantab.), Professor and Head of the Mathematics Department, Delhi University (*Inter-University Board*); Professor S. N. Bose, F.R.S.; Professor K. B. Madhava, M.A., A.I.A., F.N.I.; Dr. C. R. Rao, M.A., M.Sc., Ph.D. (Cantab.); Shri S. Basu, M.Sc.; Shri N. C. Chakravarti, M.A.; Shri Pitambar Pant, M.Sc.; Sir Shri Ram (up to January 1963) and Shri Kumar Mitter (from February 1963) (*Council of the Indian Statistical Institute*).

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