

the discussion on Applied Statistics, Professor Benoy Kumar Sircar explained the use of statistics in economic planning with special reference to Russia. Census figures of Bengal, enquiry on behalf of "Capital" into the budgets of Anglo-Indian and European families in Calcutta, the Labour Office inquiries in Nagpur, the defects of Laspeyer Index and the method of sample surveys were brought into the scope of the discussions. In the course of the development of each bit of scientific knowledge there comes a time when the experimental technique must be questioned. Are they adequate to furnish the demanded precision of results? Is the most helpful point of attack in the laboratory methods or in the experimental material? Fortunately statistical methods supply answers in many cases with little or no extra labour in collecting data, provided only that slight but necessary modification be included in the plan of the experiment. This possibility has been brought to the foreground in a very clear manner in the analysis of agricultural statistics, and quite naturally that subject claimed a session for itself in the discussions. The Chairman, Mr. R. C. Bose, drew attention to the use of Finite Geometries in furnishing completely general solutions for all problems concerning Symmetrical Factorial Designs. The scope of the teaching of Statistics in Indian Universities, with equal emphasis on analytical and descriptive statistics, elicited good discussion in which Prof. F. W. Levi, Prof. P. C. Mahalanobis, and Mr. Tu Yun Sun of the National Tsing Hua University, took part. Earlier in the day, Dr. B. C. Roy, as Chairman of the Reception

Committee, had narrated the measures taken in that direction by the Calcutta University.

No account of the Statistical Conference can be complete without reference to the work of the Calcutta Statistical Laboratory and to the journal *Sankhya*, both of which, as His Excellency rightly acclaimed, are "monuments to the foresight and indefatigable labours of Professor Mahalanobis to whose devoted enthusiasm for statistics India is deeply indebted". The Statistical Laboratory has undertaken with great success a large number of inquiries on behalf of the Government of India as well as Provincial Governments and of States such as the production of important food crops like paddy and wheat, cash crops like jute and sugarcane. It has investigated problems of flood control and irrigation, anti-malaria measures, nutritional programmes, cinchona production, average lifetime of rupee notes in circulation and so on. The list of papers published and reports submitted during 1942 includes no fewer than thirty titles from ten different authors. The financial condition of such an Institute must undoubtedly be above anxiety, but in the words of the Honorary Secretary, "this year, for example, no less than two lakhs of rupees will have been spent, but in three months' time our income may literally drop to zero because we have no permanent grants or endowments. Though this very insecurity has developed our self-confidence, there is a point beyond which such insecurity begins to exert a harmful influence". It is to be hoped that the contingency last indicated may never arise.

K. B. M.

## CENTENARIES

### Banks, Joseph (1743-1820)

JOSEPH BANKS, British botanist and pioneer explorer, was born in London, 13 February 1743. He was immoderately playful till his fourteenth year when he suddenly became a botanist in a burst of schoolboy enthusiasm. One fine summer evening he had stayed bathing in the Thames so long, that he found that all his companions had gone. Walking back leisurely along a lane, he was struck by the beauty of the flowers on either side. He immediately decided to learn botany. He learned from a woman employed in collecting herbs for a druggist's shop paying her six pence per lesson. When he went home for the next holidays, he picked up Gerard's *Herball* in his mother's dressing room. This not only described his plants but also contained engravings of them. When he went to Oxford in 1760, botany was not taught there. But his enthusiasm for the subject made him go to Cambridge and bring a private tutor.

His father's death brought him an ample fortune and an estate. He, therefore, left Oxford in 1763. But his superior attainments in natural history secured for him Fellowship of the Royal Society as early as 1766.

The epic days of scientific exploration began

with Banks, who obtained permission to accompany Captain Cook in his *Endeavour* taking his own technical staff with him. The *Journal* which he kept was utilised in the relation of that famous voyage round the world (1768-1771). It was admirably kept and he never let a day pass without an observation. After changing several hands the *Journal* was finally deposited in the British Museum and was not printed till Hooker edited and published it in 1896.

Banks was elected President of the Royal Society in 1778 and his drive caused quite a stir in the Society and in spite of much revolt from some he kept that position till his death. Though his writings were very few and some of them still remain as manuscripts in the British Museum, he employed himself with extraordinary zeal and industry to collecting and observing. His contribution to the growth of science was even greater as a munificent and influential patron. His vast collections and his library, the biggest of its kind in the country, were freely accessible to all scientific men and his house in Soho Square was the focus of science. His library is still preserved by itself in a room of the British Museum and his collections, at South Kensington.

He was scientific adviser to George III,

whom he persuaded to purchase a house in 1818 to provide a Herbarium and a Library for the Kew Gardens. The use of the house was, however, delayed by the death of both. George IV sold it to the nation in 1824 for £84,000 to clear his debts. William IV gave it away to the Duchess of Cumberland. It was not till 1837 that Victoria lent it to the Gardens and it was not discovered till 1876 that it had been already purchased from George IV.

Banks was fair to the core in his attitude towards foreign naturalists. Sometimes it was even proved embarrassing. For example, when the collections made by La Billardiere fell by fortune of war into the British hands, Banks managed to have them handed back to France, saying that he would not steal a single botanic idea from those who had gone in peril of their lives to get them. Ten times were parcels addressed to the Royal Garden at Paris, captured by English cruisers and each time they were returned.

Banks died at Spring Grove, 19 June 1820.

### Seed, Miles Ainscough (1843—1913)

MILES AINSCOUGH SEED, the inventor of the dry plate, was born in Preston, 24 February 1843. He became vitally interested in photography, then in its infancy and began experimenting with different processes for making and developing photographic plates. Finding the conditions in his native land unfavourable, he migrated to the United States in 1865. After several years of persistent effort, he succeeded in hitting upon the idea of the dry plate and established in 1882 the M. A. Seed Dry Plate Co., in St. Louis. By reason of his tenacity and personal visits and propaganda he overcame the prejudice of photographers against his new invention. Eventually it turned out that his dry plate was the first one sensitive enough to be used for X-ray purposes and for astronomical photography.

Seed died at Pelham, 4 December 1913.

Madras University Library,

February 4, 1943.

S. R. RANGANATHAN.

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## SCIENCE NOTES AND NEWS

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**Germination of Ergot.**—In his letter dated December 16, 1942, Mr. A. B. Bose, Botany Laboratory, Carmichael Medical College, Calcutta, writes:—"It has been brought to my notice by Prof. H. P. Chaudhuri of the Punjab University, that after the publication of Dr. Pushkar Nath's note in *Current Science* (1941, p. 488), Prof. Chaudhuri got a new collection from Simla and it was from this collection that he kindly sent me some material. The material was not, therefore, obtained from Dr. Pushkar Nath as stated by me previously (*Curr. Sci.*, 1942, p. 439) due to misapprehension."

**Manufacture of Newsprint, Cheap Papers and Boards in India.**—The possibility of utilising indigenous raw materials for the manufacture of cheap newsprint has received attention from a long time past. But, till recently the Indian demand for newsprint was so limited that it was hardly economic to put up a plant even if other conditions permitted such a step. But this market has steadily expanded and quite apart from this, war conditions have compelled a thorough review of the feasibility of Indian manufacture of these imported commodities. Such a review is contained in an interim report by Messrs. M. P. Bhargava and S. Kartar Singh (*Indian Forest Bulletin*, No. 108, 1942. Price As. 9 or 10d.) whose conclusions are not very encouraging. After experimenting with various Indian species, three of conifers, seven of broad-leaved species and three bamboos, these authors find fir and spruce (available in fair quantities in certain parts of India), quite suitable for newsprint production while three of the broad-leaved species were considered promising. Unfortunately, however, the two conifers abound in areas where cheap power is not available so that the pros-

pects for a thriving Indian newsprint industry are none too favourable just at present. The bulletin contains sixteen samples of paper with their composition of mechanical pulp and chemical pulp indicated. The sober conclusions recorded in this bulletin should be helpful in dispelling facile optimism about ambitious but ill-conceived schemes for newsprint production in the country.

**Factors Governing the Adhesion of Tin-Bearing Metals.**—The Tin Research Institute's publication No. III records a comprehensive study of the factors governing the adhesion of tin-base bearing alloys to various backing metals, including steel, bronze, copper, brass and cast iron, by W. T. Pell-Walpole, J. C. Prytherch, and B. Chalmers. The conditions for obtaining efficient bonds are considered, and the many factors affecting these conditions in manufacturing operations are examined. A large number of tests are described which indicate the most suitable methods of preparing and tinning the bearing shell, and of casting and cooling the lining. The results of thousands of individual tests show the effects of variations in alloy composition, mould design, temperature of metal and mould, and rate and direction of cooling, in relation to both hand-pouring and die-casting and also to centrifugal methods of production. The part played by shrinkage cavities at or near the bond is also examined, and methods of operation are suggested by which this trouble may be avoided. Copies of this paper may be obtained free of charge from the Tin Research Institute, Fraser Road, Greenford, Middlesex.

**Plywood Tyres.**—According to *Indian Forester*, a note in *Timber Trade Journal* of July 1942 mentions a plywood tyre taking the