

chairman of many important public bodies. He was short of stature, lively and friendly in manner, but perhaps rather too fond of indulging his delight in lengthy exposition. He was an able administrator. In the later stages of his career, however, he spent much time on his outside commitments.

In 1917 Salisbury married Mabel Elwin-Coles, who died in 1956 after a long illness. There were no children.

A. R. Clapham

C. T. Rajagopal

PROFESSOR Cadambathur Tiruvenkatacharya Rajagopal, a mathematician of considerable standing in India, and solely responsible for the survival in Madras of the Ramanujan Institute, died on 25 April 1978. Even more, perhaps, than his numerous original contributions to mathematics and its history (which were substantial by any standards), it is his devotion to the cause of mathematics in India and to the survival of the Institute (which he served in various capacities from 1951 to 1971) which made him a unique figure in an important period of the history of Indian science, deserving to be remembered by future generations of Indian scientists.

C. T. Rajagopal was born on 8 September 1903. His father, Cadambathur Tiruvenkatacharya, was in the judicial service of the Madras Presidency (now Tamil Nadu). His early education was in Madras; he took his Master's degree in the Madras Presidency College (where many of the most distinguished scientists of India, including Sir C. V. Raman, have been students). There he soon came under the influence of Professor K. Ananda Rau, himself a mathematician of great distinction, who had been G. H. Hardy's student and Ramanujan's contemporary in Cambridge. Ananda Rau is well known and remembered for his valuable contributions to the theory of Tauberian theorems, function-theory and the theory of Dirichlet series; and his tastes and interests were decisive for the orientation of Rajagopal's future scientific career.

After graduating from the Presidency College, Rajagopal joined the Madras Christian College as a lecturer. In 1951, T. Vijayaraghavan, on his appointment as director of the Ramanujan Institute, invited him to join its faculty; the story of Rajagopal coincides with that of the Institute for the following twenty-five years.

The Ramanujan Institute was founded in 1951 as a private institution

by the late Sir Alagappa Chettiar, a noted philanthropist of South India, as 'a small remembrance of a great man (Srinivasa Ramanujan). Its first director, T. Vijayaraghavan, was perhaps the most talented among G. H. Hardy's former students; he died at a comparatively early age in 1955; Rajagopal took over the directorship from him. Already at that time the financial status of the Institute seemed shaky, since Alagappa Chettiar's fortune was melting away; T. Vijayaraghavan's family was left unprovided for, and an appeal to the Prime Minister (the late Jawaharlal Nehru) had to be made in order to rescue them from utter poverty.

In April 1957, when Alagappa Chettiar died, the fate of the Institute hung in the balance; Rajagopal wrote to one of us (S.C.) that the Institute 'will cease to exist on the first of next month,' whereupon the addressee wrote to the Prime Minister, explaining the origin of the Institute and the seriousness of its condition. Nehru's prompt answer was refreshing: 'Even if you had not put in your strong recommendation in favour of the Ramanujan Institute of Mathematics, I would not have liked anything to happen which put an end to it. Now that you have also written to me on this subject, I shall keep in touch with this matter and I think I can assure you that the Institute will be carried on.'

And it was; but haltingly and precariously for the next twelve years. The responsibility for the Institute was divided between the U.G.C. (the federal University Grants Commission) and a reluctant University of Madras. There is no doubt that the Institute would not have survived had it not been for Rajagopal's continuing year after year with an uncertain appointment and often as the sole 'permanent' member of the Institute. In 1963 the future of the Institute and Rajagopal's own means of survival were so much in doubt that he wrote us in the following terms: 'In twenty-one years of service as a teacher (of which the first year was spent in Annamalai University and the rest in Madras Christian College), my salary rose from Rs.100 p.m. to about Rs.240 p.m. and earned for me a provident fund of nearly Rs.8,000. In the next twelve years of my service, in the Ramanujan Institute, my salary scale was Rs.500 - 50 - 800 until I was made a professor with effect from 1st March 1962 on Rs.850 p.m. in the present Madras University scale of Rs.800 - 50 - 1,250. However, my service in the Institute has left me with no savings and no retirement benefits. Thus, after a professional life of thirty and odd years, I find myself without the means to live in complete independence . . .'

But Rajagopal did continue to serve the Institute for the following six years, and at long last, in August 1967, the Ramanujan Institute was finally adopted by the University of Madras, and in July 1969 a new director was appointed. Its subsequent fortunes do not concern us here; but this left Rajagopal with no pension; not a single *naya paisa* (the new half-penny), as he himself wrote; the undersigned, singly or jointly, must have written dozens of letters to various authorities during the years 1963-1978 to secure for him a modest stipend of Rs.500 p.m.

Despite such administrative and personal worries and frustrations, and without ever an opportunity for visiting any centre of mathematics in Europe or the United States, Rajagopal maintained an unabated output of competent, worthwhile mathematical research, well appreciated by co-workers in his favourite fields, chiefly Tauberian theorems and entire functions. In the latter part of his life, he became actively interested in the history of medieval Indian mathematics, to which he contributed a number of important papers, partly in collaboration with others; the last one, a joint article with M. S. Rangachari, appeared only a few weeks before Rajagopal's death, in C. Truesdell's well-known *Archive for History of Exact Sciences*, vol. 18, pp. 89-102, 1978. There it is shown that a number of power-series expansions for trigonometric and inverse trigonometric functions, discovered in the 17th century by Gregory, Newton and Leibniz (and independently, about the same time, by the Japanese Seki), had been known to Kerala mathematicians more than a century before.

Professor C. T. Rajagopal is survived by his wife, Mrs. Rukmini Rajagopal (now living in straitened circumstances, it must be pointed out, due to the lack of provision for a pension fund at the Ramanujan Institute). Tragically, Rajagopal's death occurred just as a grant had been approved to support the continuation of his and M. S. Rangachari's historical investigations, which were to appear eventually as a monograph on Kerala mathematics.

India may well have produced mathematicians of greater versatility and depth than C. T. Rajagopal, and will, one hopes, produce more such in the future; but none has served the cause of mathematics more selflessly nor with greater devotion. As both of us happen to have been personally associated, for many years, with this modest and talented man, we find it fitting that his long years of service be placed on record.

S. Chandrasekhar
André Weil