

Marine Resource Management: Conflict and Regulation in the Fisheries of the Coromandel Coast. Maarten Bavinck. Sage Publications India Pvt Ltd, M-32 Market, Greater Kailash 1, New Delhi 110 048. 2000. 394 pp. Price: Rs 595.

Maarten Bavinck's book is the result of his research on the inshore fisheries along the Coromandel Coast of Tamil Nadu. Three distinct social groupings, namely the artisanal fishermen, mechanized boat fishermen and government officers from the Fisheries Department have been studied; their attempts at structuring inshore fishing, their interactions with regard to a common pool resource and the frictions that arise between them, form the contents of this book. The book is divided along these lines with the focus on one particular inshore water body and makes interesting reading. The convergence of artisanal fishermen, the technologically better-mechanized fishermen and the fisheries department, on inshore fishing grounds gives rise to conflicts. These differences are accommodated, but without actual cohesion or focus. The author sees the lack of synchronization and a common set of objectives as major problems affecting the fisheries industry in this region.

That fisheries management is a political issue is amply brought out in this book. Sea tenure studies, which relate to sea-based property rights and the utilization of fish stocks, have links with the field of law and management. A review of the work of scholars exploring the problems of tenure systems is provided in the first chapter. Despite India's extensive coastline and vast fishing population, the author claims that no study of the sea tenure system has been conducted before. This study has been conducted in and around Chennai with random surveys of 21 settlements along the Coromandel Coast. The second chapter traces the way fisheries along the coastline have changed since policy-makers started, in the 1950s, to create their version of the 'blue revolution'. In the author's words, the blue revolution unleashed new forces and generated new dynamics. New boats and fishing gear formed one facet of the FAO's blue revolution programme. On the positive side were the training centres started for fishermen between 1956 and

1964, which are still functional. The other part of the story was the conflicts that arose due to the introduction of technology. In Tamil Nadu, the blue revolution was synonymous with the growth of mechanized-boat fishing. To promote mechanized-boat fishing, the government introduced hire-cum-purchase schemes. The protests of artisanal fishermen led to the large-scale riots of 1977 and 1978. The environmental aspect of all this exploitation was the depletion of resources and erosion provoked by harbour construction schemes. This is a detailed study of the artisanal fisherfolk, their social patterns, religious aspects, fishing, income sharing and administration structure in the fishing village of Kalvimanagar and the meager involvement of the fishermen in boat fishing. Even minute details in their everyday life, such as crowding around the mechanic while he repairs the engine of their boat is detailed. Of interest is the sexual distribution of labour among artisanal fishermen, women are excluded from sea tenure, but play a central role in land-based social relations.

The other social group studied is that of Royapuram, north Chennai, the largest and wealthiest mechanized-boat fishing site in Tamil Nadu. It also combines these characteristics with a political clout, probably due to the nearness to the government, as the author suggests. The fundamental divide between the artisanal and mechanized-boat fishermen is well brought out. The latter's pursuit of money, the politics of boat-owner associations, the all-powerful driver of the boat and the middlemen indicate the struggle for existence. The involvement of high capital costs in mechanized fishing puts enormous pressure to maintain fish production, which forces the fishermen to go to sea at every available opportunity. They are thus termed 'biosphere fishermen', depleting resources. Their utter disregard for the 'three mile rule' (out of bounds for mechanized-boat fishermen), and the violence that erupts out of this disregard can be seen in the various case studies reported. Both at sea and in political encounters, mechanized-boat fishermen have a clear advantage.

The third party in this study is the Fisheries Department and its officials. Both the regions in this study fall under the Fisheries Development Offices of Madras and Chingleput districts. The increasing political interference in the

functioning of this department, the well-established corruption and the absence of environmental concerns such as the depletion of resources in any public debate, is a familiar story. The last three chapters cover in detail the inability of the officers to exert effective control over fishing practice, their apprehensions about going out to sea for patrol, their view of the illiterate fishermen and their lack of coercive power. Sea tenure is treated as a multi-dimensional concept, where power differentials tend to follow a regular pattern. Small-scale fishing implies small-scale power. The larger-scale sector is generally urban-based, highly capitalized and seen by the national government as more significant and economically promising. Hence the preoccupation of Fisheries Department officials with the events in Royapuram. The role of the Fisheries Department in the interactions at sea is conspicuous by its absence. The highlight of this study is that it challenges the academic viewpoint of the supremacy of the state. From the study on the Coromandel Coast it is the fishermen who appear to be powerful. The author surmises that probably being single-caste settlements (a high degree of caste consciousness and ethnic affiliation is displayed), it offers more opportunity for clarity of identity and authority and of initiatives for the common good. This is a well-researched book, the limitation being its restricted geographical focus.

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Gleanings of the Past and the Science Movement. Arun Kumar Biswas. The Asiatic Society, 1 Park Street, Kolkata 700 016, India. 2000. 441 pages. Price: Rs 300.

This book deals with an important period of Indian science. Mahendra Lal Sircar (1833–1904), a medical practitioner, founded the Indian Association for the Cul-

tivation of Science (IACS) in 1876. Raman and Ramanujan were not even born then and the other pioneers of Indian science, J. C. Bose, P. C. Ray and Asutosh Mookerjee were in their teens. At that time, there was no serious desire among the Indians to do science and the colonial British rulers were not interested to sponsor scientific research in India.

Obviously, Sircar was a visionary. His views, ideals and missionary zeal are eloquently expressed in his many addresses as Secretary of IACS at its annual meetings. He had a deep sense of patriotism. He tried politely for funds from the British government, but failed to get them. IACS did not receive any government grant in the first fifty years of its existence. Instead of complaining about it, he maintained a very cordial relation with the British government, but he cautiously kept IACS free from all government influences. About the aims and objectives of IACS, Mahendra Lal said, 'The sole function of the Association (IACS) will be science-learning and science-teaching. We should carry on unaided by (British) government or more properly speaking, without seeking its aid. I want freedom for the institution. I want it to be solely native and purely national'. During Mahendra Lal's tenure many scientific lectures were organized at IACS. J. C. Bose and Asutosh Mookerjee were associated with IACS as teachers and P. C. Ray as a student. He could build a laboratory and library with the donations received from many rich Indians. Unfortunately, original research did not start at IACS in Sircar's lifetime. Though he was unhappy about it, he stuck to his conviction till the end of his life. In his last address as a Secretary of IACS he wrote 'I reiterate my conviction that if our country is to advance at all, it can only be by means of science. To this end, I have given the best part of my life, but I am sorry to leave this world with the impression that my labours have not met with the success it deserves'.

It was C. V. Raman who initiated original scientific research at IACS in 1907. He discovered the Raman effect at IACS in 1928 for which he was awarded the Nobel Prize in 1930. At a civic reception after the Nobel Prize, Raman said, 'To two men (M. L. Sircar and Asutosh Mookerjee), especially, I owe a debt of gratitude that can never be repaid. It was the late Dr Mahendra Lal Sircar, who, by

founding the Indian Association for the Cultivation of Science, made it possible for the scientific aspirations of my early years to continue burning brightly. Dr Sircar devoted a lifetime of labour to the institution he created and equipped in the hope that it would some day be utilized for the advancement of science in India. Its doors were open, awaiting the arrival of someone. That arrival happened to be myself. Dr Sircar did not, alas live to see his aims accomplished. It is IACS which first afforded me opportunities for scientific research'.

The present book contains the diaries of M. L. Sircar for the period 1873–75 and 1896–99. It also contains his son A. L. Sircar's diary for the period 1884–94. The book is divided into six chapters. Every chapter begins with an elaborate commentary by the author followed by the actual contents of the diary and numerous notes at the end.

Many famous persons maintain personal notebooks in which they discuss their aims and future plans and also note down their personal anguishes and ecstasies. Surprisingly, the entries in both the diaries (M. L. Sircar's and his son's) do not reflect the lofty ideals of M. L. Sircar. Most of the entries are very brief and are almost completely devoid of emotions. However, there is a very touching account about Mahendra Lal's relation with a young girl from Bombay, Anna Pandurong (pp. 67–80). Anna visited IACS in 1881 and became so moved by Mahendralal's ideals that she adopted him as her father and Mrs Sircar as her mother. That Sircar was indeed touched by Anna's affection was evident by the fact that in the diary he copied large portions of the letters written by Anna and her encouraging words. These words were extremely important because as mentioned earlier, Sircar did not find too many young Indians interested in his idea of creating a scientific research institute.

The other important thing one learns by reading the diary, is Sircar's very liberal view on religion. Ramakrishna and Vivekananda, two very well-known spiritual leaders, were Sircar's patients. Sircar however, did not have very high respect for them or in general, to any religious reformer. This is evident in Sircar's note written on 27 October 1874 (p. 25): 'Spent the evening alone reading Renan's life of Jesus. I have been reading almost every evening Gospel of St

Mathews. Lives of religious reformers are worth deeply studying. They point to many moral lessons. Among others they show how greatness and littleness, strength and weakness are combined in the same individual. Religious reformers are the products of the reactions from conservatism, but ultimately they in their turn establish a new form of conservatism. They commence with attempts to liberate the human mind, but they end in exchanging it with new fetters'.

Sircar was against worship of idols. On 13 February 1898, he wrote: 'Miss Nobel's (Sister Nivedita, Vivekananda's follower) lecture (on worship of Hindu goddess Kali) at the Albert Hall. The lecture invited criticism. S. N. Tagore and N. Chatterjee spoke condemning idolatry. I was asked to speak which I did rather violently, attacking idolatry (p. 214 and p. 332)'. Another important note is as follows, '24 February 1874: Read "Buddhist Pilgrims". After Fa-Hien, Hiuen Tsang was the most remarkable man that came on a pilgrimage from China to India. His firmness and resolution were worthy of a better faith than Buddhism (p. 18)'. Throughout his own life, M. L. Sircar displayed a firmness and resolution similar to Hiuen Tsang's. After these views expressed by Sircar, chapter IV (Mahendra Lal and Ramakrishna) seems largely unnecessary and misplaced.

Though he had a background in medical science, Sircar used to teach physics(!) at IACS. He wrote only one or two sentences about his own lectures and demonstrations which he presented to common public and sometimes in the Viceroy's house. The topics of his talks were highly contemporary ones, e.g. the famous Crooke's tube or cathode ray experiments, conservation of energy or relation between electricity and magnetism. The author quotes K. S. Krishnan mentioning that Sircar was very close to discover the electron. This claim may, perhaps, be debated. But it is quite inspiring to note that Sircar identified the latest trends in contemporary research in physics and could actually perform some of these experiments in India. Such demonstrations always generate confidence among the students.

For people interested in the history of Indian science, Sircar's diary is likely to generate a kind of nostalgic feeling which one gets after reading his/her grandfather's diary. The diary contains the

names of Sircar's famous patients, Sircar's numerous engagements and meetings with people ranging from the Viceroy of India to many Maharajas (who were prospective donors) and the numerous cultural functions attended by him. Sircar's diary describes the wholesome life led by one of the best intellectuals born in India in the last century and is thus an important historical document.

I did not like a few things in this book. In the diaries, some words or phrases

were written in Bengali. The author has not provided English translations of these. This makes the book difficult for a general reader. It is also extremely awkward to continuously shuttle between the author's commentary, actual entries of the diary and the notes given at the end of the chapters. It would have been much better if a straightforward biography of M. L. Sircar could be written, with excerpts of his highly inspiring speeches delivered as Secretary of IACS, along with his diary.

But in spite of these shortcomings, as an ardent fan of Sircar and Raman, I enjoyed this book.

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PERSONAL NEWS

M. A. Viswamitra: Crystallographer and structural biologist

An obituary

M. A. Viswamitra, the distinguished crystallographer and structural biologist, passed away on 10 April 2001, at Bangalore, at the age of 68. Ironically, the end came just as he finished speaking at a condolence meeting for G. N. Ramachandran who passed away on 7 April. Viswamitra is survived by his wife Meera, son Sanjaya and a large number of students, colleagues and friends.

Born on 14 November 1932 at Shimoga in Karnataka, he obtained his B Sc from Mysore University and M Sc from the Banaras Hindu University before joining the Ph D programme at the Physics Department of the Indian Institute of Science, Bangalore in 1955 under the supervision of S. Ramaseshan. His doctoral work involved the X-ray structure analysis of copper potassium oxalate dihydrate and copper ammonium oxalate dihydrate. He was also involved in instrumentation, including the construction of a Weissenberg camera for low temperature crystallography. He obtained his Ph D in 1960 and was appointed a lecturer in the Physics Department in 1963. In late 1965 he left for Oxford to work with Dorothy Hodgkin. During the short period between obtaining his Ph D and proceeding for his first stint abroad, Viswamitra established himself as an independent scientist and a worthy successor to Ramaseshan who left for the Indian Institute of Technology, Madras in

1962. During this period, he made important contributions to structural studies on borazines and the metal complexes of antipyrine. His important contribution during this period was the structure analysis of dimethylsulphoxide using the low temperature equipment that he designed and constructed.

Viswamitra worked in the laboratory of Dorothy Hodgkin for nearly two and half years. His major contribution at Oxford concerned the structure analysis of thioestrepton, an antibiotic with a complex molecular structure. The solution of the structure using sulphurs as 'heavy' atoms demonstrated his virtuosity in Patterson vector methods. Ferrodermin is the other structure he was involved in while at Oxford.

Viswamitra returned to Bangalore early 1968 and initiated two lines of investigations. The first involved high temperature crystallography, up to temperatures above 2000°C, including very clever instrumentation. The second marked the beginning of his involvement with nucleic acids for the rest of his life. He and his students were among the first to determine the structures of many mononucleotides. He also developed many collaborative interactions, particularly with Olga Kennard's laboratory at Cambridge, England. The seventies were the golden period in his scientific career. His group made seminal contributions to the detailed structure of nucleic acids. The high point of this effort was to solve the structure of tetranucleotide ATAT during the second half

