2
Science in Africa and in South Africa: A Historical Review

Science and Africa

Despite holding rich resources of minerals, metals and oil, most of the African continent remains poor. Forty-five per cent of the population of sub-Saharan Africa is extremely poor (Burns et al., 2006). Education indicators in Sub-Saharan Africa are also well below the average of developed nations. The region provides higher education to just 3.5 per cent of the college-age population as against 60 per cent in developed nations (Zeleza, 2002). Science and scientific research in Africa need to be looked at against the background of this grim reality. Worthington, in his monumental work *Science in the Development of Africa* (1958), captures the situation of science in Africa:

In the 1920s, there were few scientists and not much was done for them . . . In the 1930s conditions were beginning to improve, but nearly all science was on a territorial and isolated basis . . . In the 1940s many organizations took shape, especially designed to enable scientific men and women to do good work. In the 1950s the territorial and regional barriers are breaking down through inter-African cooperation. By the 1960s we may see African science taking its full and proper place in the development of the continent. (Worthington, 1958, cited in Keay, 1976: 88)

In this passage, Worthington touches upon two key points: science was receiving a place in the development of Africa, and scientific collaboration within the continent was beginning to take shape. Both are indispensable to the growth and development and progress of science and people.
Science in African countries is not homogenous: it varies in character, form, focus, strengths and application. This heterogeneity makes any credible generalization intricate. Fundamentally, African science is a mixed set of research systems of varying size, human and physical resources, specializations and governing structures (Tijssen, 2007). And the potential for research in Africa is not evenly distributed among its countries (Gaillard, 1992). Strewn over the wide but disparate plant, animal and human landscapes, scientific research in Africa is quite illuminating and holds great potential for the world scientific community (Sooryamoorthy, 2010b).

This subsection of the chapter looks at the contacts Africa had in the realm of science and examines how these contacts later materialized into collaborative efforts, leading to the joint production of scientific knowledge. The research aimed at gathering and presenting evidence with regard to whether there were shared interests in collaborative alliances on the continent that would have facilitated future collaborative enterprises. The peculiarity of science in Africa does not isolate it from the rest of the world of science. Since the beginning of the 17th century, Western scientists and scholars have frequented the continent on scientific expeditions and explorations, amassing a wealth of new knowledge. These voyages were chiefly meant to study the tropical diseases that were widespread in the region. Constituting a team of entomologists, zoologists, a bacteriologist and a botanist, the Harvard Medical School dispatched its first expedition to Africa to investigate tropical diseases then prevalent in the region (Science, 1926). The expedition of the Prussian Academy of Sciences in Berlin made valuable contributions to the zoological knowledge of the continent (Plug, 2003). Apart from the investigations into the possibilities for fishing in the region, the work of this team later led to the publication of the five-volume Zoologische und Anthropologische Ergebnisse eine Forschungsreise in westlichen und zentralen Südafrika (1908–1928). Specimens of plants, rare species included, were collected by curious Western travellers to Africa. These were then shipped outside Africa, to Britain, France, Germany, Denmark and Sweden. The traits and properties of these specimens were eventually documented (Keay, 1976).

European countries—Britain, France, the Netherlands, Belgium and Portugal—that had colonies in Africa ran their research machinery in several locations on the continent. For instance, under the Colonial Development and Welfare Act, 1940, the British government promoted and financed research in its colonial territories (Smith, 1967). Britain and France promoted research in their own colonies, but they were