Forum Article

Introduction to John F.V. Phillips' Article

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John Frederick Vicars Phillips (1899-1987) was a pioneer ecologist in Africa, and the first to conduct a serious scientific examination of the phenomenon of fire on the continent. Born in the Eastern Cape, South Africa, he obtained a bursary to study at Edinburgh University, where he was awarded a degree in forestry and botany. On his return to South Africa, he initiated innovative research into the ecology of indigenous forests, and his outstanding work on forest succession in the Knysna region of the Western Cape, South Africa, led to the award of a Doctor of Science degree from Edinburgh University in 1927. He was also elected the youngest ever Fellow of the Royal Society, Edinburgh. In the years that followed, he maintained contact with the leading ecologists of his time—including Arthur Tansley and Frederick Clements—and brought southern African ideas into the mainstream of international ecological thinking. In addition, his influence across Africa became substantial. After serving as a research officer in the Department of Forestry in the Cape, he was appointed Director of the Department of Tsetse Fly Research in Tanganyika from 1927 to 1931. Later in his career in the 1950s and 1960s, he was invited to initiate a Faculty of Agriculture at the University of Ghana, and also became a senior advisor to the governments of Britain, Tanganyika, Ghana, Malawi, and Rhodesia, and to the World Bank, and the Food and Agricultural Organisation. In 1966, he worked with Ian McHarg at the University of Pennsylvania. Phillips travelled widely, lecturing and advising on fire ecology and ecological planning, but he also promoted these sciences in his own country. From 1931 to 1948, he was Professor of Botany at the University of the Witwatersrand, Johannesburg, and he created a strong and significant department. In the mid-1960s, then attached to the University of Natal, he led an important ecological planning initiative in that province.

As a fire ecologist, he was unafraid to voice opinions contrary to the accepted wisdom of the day. It was widely believed in southern Africa that burning grassland or scrub was detrimental and should be prevented at all costs. As late as 1924, the South African Journal of Science contained a number of papers by leading botanists that all condemned the practice of burning. A few years later, in 1930, John Phillips' paper, *Fire: Its influence on biotic communities and physical factors in South and East Africa* appeared in the same journal, urging environmental managers to consider carefully "all regional circumstances in the light of scientific experience, before we definitely decry the practice of firing." He based his wide-ranging points on personal observation and experimentation, he stressed the need for a holistic ecological view, and he encouraged scientists to take cognisance of the interdependence between plants and animals. He explained that his own experience of the presence of the great fauna of tropical Africa had brought the realization that fire was vital for the survival of biotic communities.

Phillips' engaging character, and immense mental and physical energy and drive, were an ongoing inspiration to his students and colleagues alike. At the height of his career, he was probably known to almost every field biologist in southern and eastern Africa. His pioneering and continuing work in the study and practice of fire ecology was formally recognised when the Eleventh

Annual Proceedings of the Tall Timbers Fire Ecology Conference was dedicated to him in 1971, the first time that an individual had been honoured in this manner. The dedication of the proceedings, which dealt with fire in Africa, reads "The eleventh Tall Timbers Fire Ecology Conference is dedicated to Prof. John Phillips, University of Natal, Pietermaritzburg, South Africa, for his leadership and inspiration in the development of the 'holistic' approach to fire ecology in Africa. Prof. Phillips was certainly a true pioneer in this outlook of the ecosystem, which he combined with the experimental method almost half a century ago."

Much later, Phillips was to reminisce about his career as follows: "We knew very little about fire ecology in 1929, when I drafted, on a mountain massif at the edge of the Massai Steppe, Tanganyika, the paper later published in the South African Journal of Science in 1930." In the seven decades that have followed that drafting, the role and use of fire has of course been significantly clarified, in no small part due to the influence of Phillips' work and ideas.

FIRE: ITS INFLUENCE ON BIOTIC COMMUNITIES AND PHYSICAL FACTORS IN SOUTH AND EAST AFRICA

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INTRODUCTION

So far reaching in its influences, biological as well as economic, is the firing of vegetation in Southern and Eastern Africa, that it is not surprising that the subject should have received, during recent years, much attention of a general nature. While it is true that scientific workers have endeavoured to inform the public of the manifold evils following in the wake of fire, it is equally true that but little scientific experimentation has been brought to bear upon the problems connected with the periodic fires that sweep through such vast areas of Africa. In the present paper it is desired to outline, on the basis of present knowledge, some of the outstanding influences of fire, to bring together some of the more interesting references in the literature, and to emphasize the necessity of comprehensive, intensive research in the more important plant-and-animal formations.

HISTORICAL OUTLINE

From a consideration of probable geological and climatic cycles experienced in South and East Africa, it seems that periodic fires have swept the Grass and Tree-and-Grass Savannas down the ages, and that in suitable seasons fires have ravaged Evergreen Scrub and Forest communities since prehistoric times. While it is doubtless true that aboriginal man in his desire to protect himself against wild animals and in his hunting activities, fired vegetation, it is also safe to assume that lightning in many instances was responsible for commencing many fires. My observations in East Africa support this view, as do those of forest officers in parts of South Africa, while Clements (1916: 57) states that very numerous, destructive fires occur in Montana and Idaho during dry thunderstorms.