CHAPTER 1

The origin and development of banana and plantain cultivation

N. S. Price

1.1 INTRODUCTION

Grown almost exclusively in the developing countries of the tropics, bananas and plantains are one of the world’s most important, yet poorly studied crops. Total world production is estimated at over 76 million metric tons (FAO, 1993) of which exports (essentially of Cavendish bananas) to the richer nations represent less than 11 million tons. The rest, over 85% of production, is made up of a wide range of ‘banana’ and ‘plantain’ varieties grown by peasant farmers or smallholders and their families. These are either for consumption by them and their dependants or traded locally. In such informal economies production figures can only be estimates. It is thought that ‘banana’ production is nearly 50 million tons, of which over 40% is in Asia, and ‘plantain’ production nearly 27 million tons, of which over 70% takes place in Africa. To a western consumer a ‘banana’ may only mean a supermarket-bought ‘Cavendish’ dessert banana. However, for millions of people in the world’s poorer regions bananas and plantains are a starchy staple of major (and in parts of Africa paramount) importance.

Consideration of the rise of wild species of the genus Musa from infrequent opportunistic jungle weeds (Simmonds, 1962) to the present status bananas and plantains occupy in world agriculture includes many disciplines. Genetics and plant geography are involved when considering early evolution. This includes ancient history and anthropology in the use of bananas in ‘proto-agriculture’ and the development of their domestication. Within the last two millennia the world-wide spread of bananas and plantains has had major social and demographic consequences for many parts of the world. The (historically) recent rise of the export trade has had a major influence over the economies of many nations, and thus the well-being, of millions of people.


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A knowledge of the origins and development of banana cultivation (in addition to its intrinsic interest) is also of direct relevance to contemporary problems, most obviously in directing the search (both geographic and genetic) for sources of germplasm for use in breeding programmes. It is hoped this general overview will be able to set the more specialized contributions that follow in a broader context and also stimulate in others the wonder these remarkable plants have provoked in those fortunate enough to have been able to study them.

1.2 BOTANICAL ORIGINS

The centre of greatest diversity of wild *Musa* species, and the presumed centre of origin of the group, is in Indochina and South East Asia and it is here that the earliest domestication is considered to have occurred (Simmonds, 1962). This book is concerned exclusively with bananas and plantains derived from the *acuminata* and *balbisiana* species of the Eumusa series of the genus *Musa* (Simmonds, 1962). These comprise the overwhelming majority of the presently cultivated varieties, and only passing reference to other types will be made. (No consideration will be given to the unusual use of *Ensete ventricosum* (Musaceae) in southern Ethiopia, in which the stems and corms are used as a starchy staple (Simmonds, 1958).) The wild *Musa* are considered light demanding and intolerant of competition, opportunistically exploiting breaks in the rainforest, such as on river margins. This has led anthropologists to suggest that the earliest uses of these plants may have been non-food, for example the use of fibres in nets by fisherman, the stems as floats and the leaves in constructing shelters (Sauer, 1952 (cited in Simmonds, 1962); and Champion, 1967). Champion (1967) considers that such prehistoric uses as suggested by Sauer of, in particular, *M. acuminata* and *M. balbisiana* might account for the present exceptionally wide geographic ranges of these two species. Additional to these non-food uses, various parts of the plant, including the male bud, are widely used as vegetables in many parts of Asia (Simmonds, 1962) and man’s early association with the plant need not have involved the fruit.

All *Musa* produce fruit that are to some degree consumed by animals, presumably as part of seed dispersal. In fact a Burmese name for bananas, ‘Nget-pyaw’, means ‘the birds told’ referring to a legend that men first ate the fruit after seeing birds doing so (Simmonds, 1966). In Polynesia various seedy fruited species of the Australimusa series of the genus are found and collected from the wild (Simmonds, 1966). Seedy Eumusa hybrids are still consumed in some parts of the world. In Assam, India, a *balbisiana* diploid variety ‘Bhimkol’ contains around 50 seeds per finger. These are removed by sieving and the pulp used as a baby food (Barthakur and Arnold, 1990). The genetic and cytological background to the development of the