
Introduction

The almost eight hundred species of *Ficus* found on Earth constitute ‘the most distinctive of the widespread genera of tropical plants’ (Janzen 1979: 13). Their evolutionary radiation started 75 million years ago, long before the dawn of humanity (Cruaud et al. 2012). The natural distribution of this genus spans five continents (Africa, Asia, South and Central America, Oceania/Australia and Europe). *Ficus* species are essentially distributed in the tropics and subtropics. The Mediterranean fig is an exception with one emblematic *Ficus* species, *Ficus carica* L., which well exemplifies the long-term human–*Ficus* coexistence that led to its domestication and dispersal beyond its original distribution. The travelling of humans with different species of *Ficus* propagules across the planet and the human contribution to their dissemination beyond their natural ranges also apply to many tropical species, forming one of the key modes of interaction between humanity and the genus *Ficus* (Figure 0.1).

For most people, the Mediterranean fig is known as the common fig or fig tree, while those found as ornamentals in our living rooms are generally described just as *Ficus*. To make sure that we share a common understanding: all *Ficus* species produce figs, some of which are more or less edible for humans; most are edible to other animals and attract a wide diversity of species.

Ficus species across the world have a common major characteristic: the unity of the structure of their flower and inflorescence and their fruit morphology. The *Ficus* inflorescence is a closed receptacle in the form of an urn (Galil and Eisikowitch 1968; Janzen 1979). Botanically speaking, the real fruits are those that stick between the teeth when we take a mouthful of fig. The opening of the urn at the ostiole (a small hole located at the top of the fig) occurs during the period of pollination when receptive figs emit an odour that attracts the specific insect pollinator of that *Ficus* species (Hossaert-McKey et al. 2010). This interaction between figs and fig wasps is a classic example of a coevolved mutualism. The destinies of both the *Ficus* and its pollinator are linked; each is essential to the other’s reproduc-



Figure 0.1. *Ficus macrophylla* Desf. ex Pers. (originally from Australia) in Palermo Botanical Garden (Italy). The awesome life form of such banyan types of fig tree encourages people throughout the tropics to assemble in their shade. Here, beyond the tree's natural range, it was obvious to this group of researchers that the ideal place to assemble for a group photo was within its imposing roots. 2016. © Yildiz Aumeeruddy-Thomas.

tion. Chapter 2 gives a detailed synthesis of what we know of the biology and ecology of *Ficus* and their pollinators.

The widespread role that *Ficus* species have played over millennia is described in Chapter 3 of this book, accompanying the evolution of humans themselves. This may explain the present-day intimate relationships that humans have with fig trees. They feature in many cultures as elements of human foundation myths, a transcultural symbolic relationship between humans and fig trees. Wilson and Wilson (2013), who reviewed some of the uses of *Ficus* species across the planet, suggested that there are convergences in uses of *Ficus* species across societies. We conduct in this book a cross-cultural comparison of a wide range of species belonging to a common taxon, the genus *Ficus*, across a diversity of societies presenting very different cultural profiles. This provides us with an 'experimental' situation for examining variations in and similarities between human societies' conceptions and uses of *Ficus* species. Our objective is to understand the social dimensions of the use of *Ficus* within historical contexts and show

how the biology and ecology of these plants influence these uses. Understanding how biological and ecological processes, and elements of culture (world views, social organization, practices and knowledge) interact for a given taxon helps us decipher more general processes through which Nature and Culture have coevolved. Most of the data are based on ethnobiological analyses of local knowledge of the ecology of *Ficus* species and related practices from different societies around the world. We seek to connect this with a scientific understanding of this taxon's biology and ecology.

We use a literature review and a set of case studies of highly culturally distinct or convergent ways that different societies interact with *Ficus* species. In this way we hope to understand better the extent to which humans may have influenced the ecology of *Ficus* species and conversely the roles of the latter in social, cultural, political, technical and material life across cultures.

Our interdisciplinary approach combines ethnobiology (Ellen 2006), as well as biology and ecology, and even chemistry. Ethnobiology analyses modes of interactions between human societies and nature. Indigenous and local communities across the planet are known to have developed understandings of biological traits and ecological dynamics upon which their practices are based. They are in turn embedded into sociocultural contexts. We shall focus on a set of case studies about how human societies nurture *Ficus* ecologies locally, within different sociocultural and ecological contexts. This in situ approach enables us to understand how the nature–culture nexus related to humans–*Ficus* ecologies has developed and persists in relation to practices, territories, world views and political contexts.

During the field activities that we conducted in Indonesia, Madagascar and Morocco, we worked with people from different villages and regions. These are listed in the Acknowledgements section. Their contributions are central to our comprehension of the human–*Ficus* interactions that were revealed to us during long periods of living in some of the areas, and the short repeated visits over several years in others. During these periods, we accompanied our informants to their gardens, to their rice fields, to areas of sacred forest, to markets – in fact, wherever they wished to bring us once we had explained fully the reasons for our interest in *Ficus*. In some cases, our initial aim was to understand the full functioning, for example in Indonesian Kerinci, of a sacred forest (*hutan sakti*). While looking at all types of interactions in such forests, we collected data on people's relationships with these trees alongside more general interviews on other aspects of interactions within these sites, and similarly with agroforestry gardens. In other places, such as in Antananarivo in Madagascar, we systematically

visited all the known sacred hills of Imerina, the area inhabited by the Merina. In these places, we had conversations with the caretakers, and other people inhabiting these places, and conducted interviews. In some cases, we attended rituals and interacted with the large number of people that were present: men, women, elders, ceremonial heads and even individuals known to be related through kinship to the kings of other Malagasy kingdoms, who in turn suggested that we might visit other people. We also spoke to children as often as possible and they frequently accompanied us in the field, showing us how to make bird lime or indicating what species we might find most delicious.

We collected most of our data through open-ended interviews, and compiled large corpora of ethnographic data on current discourses, poems, legends, songs and visual materials (photos and films). One common element shared by all the people we met was their considerable interest in the subject of *Ficus* and their capacity to speak of these trees often in the most unexpected ways, such as in relation to bird song and their knowledge concerning what birds would come and eat figs at a specific time of the day, or when children blew into a fig ostiole to show us how to get rid of the insects inside, or when other people explained that they experience dreams underneath specific individual *Ficus* trees. Indeed, we can confirm that all the data we collected were fully embedded into people's lives, imaginations, senses of curiosity and feelings and that the people concerned were perfectly happy that this should be better known by other people around the world. In conducting our work, we were also sometimes accompanied by ecologists who were collecting leaf or fruit samples, insects, odours or trying to understand how fig trees produce small forest patches through the feeding behaviours of birds and other animals that leave droppings full of seeds as they feed on the fruits. The ecologists listened to the stories that we were recording and vice versa. It was a mutually beneficial process. In this way we believe that we have achieved a fully integrated interdisciplinary account based on our common field activities.

We offer in Chapter 1 an overview of the interaction between humans and trees, in order to contextualize how *Ficus* fits into what is common for trees in general, and what are likely distinctive features of human-*Ficus* interactions. In Chapter 2, we enter the world of *Ficus* biology and ecology in detail based on standard natural sciences approaches and suggest linkages to uses by people. In Chapter 2 we elaborate upon specific biological and ecological traits of *Ficus* species recognized and used by humans and aim to identify how they interfere with (or otherwise impact on) human conceptions of nature and of themselves, and inversely how humans influence the ecology of *Ficus* trees. In Chapter 4 we illustrate

our ideas using three cases based on first-hand fieldwork. These provide detailed social, anthropological, historical and ecological data and background contextualization for: (1) the Mediterranean region, (2) Indonesia and (3) Madagascar. Our final chapter aims to draw some conclusions concerning the entangled biocultural relationships between *Ficus* species and humans. Overall, this book is an essay that explores nature–culture interfaces and mutualisms using a particular taxon, namely *Ficus*, the extent to which humans benefit from the genus and the extent to which these interactions also benefit the persistence of *Ficus* species.