Introduction

In this study we discuss the visible features of the adult leaves of eucalypts (and those of the neotenous species) as seen with reflected and transmitted light (Figure 1). We intend this work to be an aid in field identification and for confirmation of natural affinities between species and higher-level taxa on the basis of their comparative morphology. It is desirable that the illustrations, descriptions and findings in this book be complemented later by anatomical studies to resolve the internal structure and possible functional implications behind the images shown.

There are no comprehensive comparative studies of the internal structure and appearance of the leaves in the eucalypts. Descriptive Flora treatments have conventionally been confined to the size, shape and colour of the leaves, observations on the principle veins and the apparent 'density' of the oil glands. The venation and oil glands in the leaf become obscure in dried specimens, and this work has only been possible by the comprehensive observation and sampling of fresh leaves.

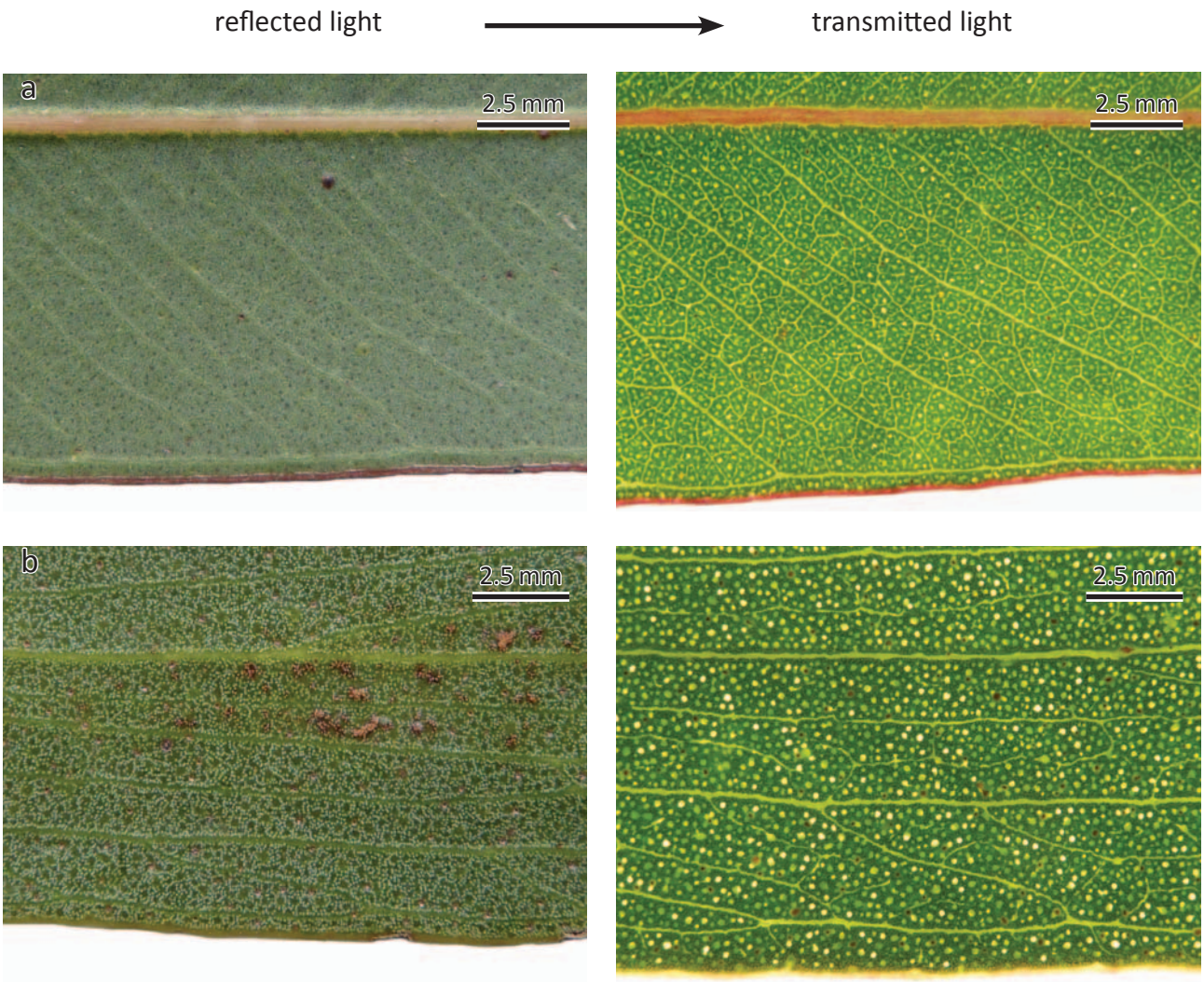

Figure 1. Part of a leaf of a) *C. citriodora* and b) *E. gregsoniana,* photographed with reflected light and with transmitted light. The secondary and tertiary venation and oil glands are only readily visible when viewed with transmitted light. As such, all other images in this book have been taken using mostly or entirely transmitted light with little or no reflected light.