Tremewan W. G. 2006. Ecology, Phenotypes and the Mendelian Genetics of Burnet Moths (*Zygaena* Fabricius, 1775). – Gem Publishing Company, Wallingford, U.K. – xvi + 390 pp, 194 figs (163 in colour). Size 235 × 156 mm. Hardcover (ISBN 0 906802 11 3). £ 79.00 (+ postage UK £ 6.00, Europe £ 10.00, outside Europe £ 12.00).

Many books on burnet moths (Zygaenidae: Zygaeninae: *Zygaena* Fabricius, 1775) have been written during the past few years. This group of Lepidoptera has been shown to represent a perfect model for a wide field of studies in entomology and zoology, especially with reference to morphology, biochemistry, defensive biology, mimicry patterns, pheromone studies, molecular biology, phylogeny, ecology, and zoogeography.

This book is the result of a lifetime's work by W. G. Tremewan, the world's 'senior specialist' of burnet moths. His impressive knowledge that has been accrued over a period of more than 50 years' fieldwork and rearing experiments, and studies of collections and literature on the genetics of burnet moths, is summarized and presented.

The work begins with a comprehensive introduction into the extraordinary geographical and individual variation of *Zygaena* species. The toxic properties of burnet moths and their relationship with predators are described and attempts to explain the reasons for such variation are summarized. Many of the genotypes responsible for the colour morphs (orange, yellow, and black) have been determined and we now know that they are recessive to the wild type red morph. It has also been discovered that in many cases they form part of a multiple allelomorphic series.

The first chapter of the book deals with chemical defence and predator/prey relationships, predation, wing patterns and associated terminology, warning coloration, mimicry and mimicry rings, and geographical and individual variation and the ecological significance of both. Chapter 2 explains the aims of the book and describes breeding techniques and the unique diapause strategy of burnet moth larvae, which is a challenge for every entomologist who has ever tried to rear *Zygaena* species from the egg stage. In chapter 3 we learn about the basic principles of Mendelian genetics in relation to burnet moths, karyotypes, autosomal and sex chromosomes, genes, alleles, gynandromorphism, somatic mosaics, and teratologies. Chapter 4 provides an overview of wing pattern and colour variation and discusses, in detail, dominance, recessiveness, multiple allelomorphs, and multifactorial inheritance. In chapter 5 the author presents short biographical accounts of scientists who have contributed to our knowledge of the genetics of burnet moths, the most important of whom are figured on black and white photographs. In chapter 6 the results of breeding experiments are given in detail, the species being listed in phylogenetic order. Each case is discussed in detail, often richly illustrated, and, where possible, conclusions are given. It is almost unbelievable how much time the author has put into his studies and the resulting documentation. At the end of this chapter a table summarizes all the results in an impressive overview that includes the genotypes for the different colour and pattern morphs. Chapter 7 deals with hybridisation in general and in burnet moths in particular. Not only hybrids between individuals but also hybridisation between parapatric populations of different species are discussed. It also includes a comprehensive review of the published literature on the subject.

Moreover, the author presents in detail the results of his own rearing experiments. A bibliography of more than 500 references, a glossary, and an index conclude the book.

The publication is dedicated to the memory of Paul Bovey (1905–1990), who studied the genetics of *Zygaena ephialtes* (Linnaeus, 1767), the most polymorphic of all burnet moths, and to Miriam Rothschild (1908–2005), who worked on chemical defence and mimicry of *Zygaena* species. Both of these workers inspired the author to continue through the years with his own breeding experiments and studies.

The book is a unique work. Comprehensive data on genetics are made available and should be of interest even to those who have hesitated to investigate this branch of biology. Moreover, it is an example of how the 'secrets' of nature can be elucidated by the discipline of slow and dedicated scientific work. The presentation of the book is of high quality, as are the printing and the attractive cover and binding.

For anyone who is interested in geographical and individual variation, genetics, biochemical defence, rearing and hybridisation, in burnet moths in particular, this book is an invaluable source of information.

G. M. Tarmann