

“Rather like Madonna, who famously sang of being a material girl living in a material world, Tristram Wyatt writes in this book of chemical beings living in a chemical world. Besides co-ordinating the workings of animal and plant bodies at every level, chemical signals - tastes and odours – are important in communication between animals, where they are known as pheromones. Their importance and ubiquity is often overlooked, but this fascinating book will do much to correct that.

Wyatt's book is an advance over previous monographs in that it is truly interdisciplinary, including as it does studies through the disciplines of chemistry, behaviour, neurobiology, endocrinology, ecology and evolution. Few scientists are expert in more than one or two of these subjects, and it is to bridge the gaps between these subjects that is one of the author's major aims. His short second chapter on discovering pheromones explains bioassays and some of the main modern chemical techniques, but cannot cover more than the basics of methodology. Mate selection, aggregation, territory, social organisation, recruitment and alarm pheromones are covered in the next six chapters using specific detailed examples, often supported by illustrations from primary publications. These are linked by Wyatt's own generalisations always with a chapter conclusion and pointers to further reading. The approach is that of an evolutionist committed to integrating ecology with physiology and behaviour.

The remaining five chapters are more diverse: chapter 9 examines the molecular basis of olfactory perception in insects and vertebrates, including the brain pathways involved. It goes on to detail many of the effects of pheromones on reproductive physiology and behaviour. Chapter 10 deals with the problem of tracking the source of an odour. 'Eavesdropping' is the next topic: the illicit use of odours by species for whom they were not intended. Again, the evolutionist theme emerges, as Wyatt explains not only how predators and parasites utilise odours for prey or host finding, but how their intended victims use the same methods to avoid exploitation. The book concludes with chapters on commercial uses of pheromones, and finally the controversy over whether humans respond to these otherwise universal signals. Although Wyatt says his reference list is not comprehensive, it occupies 50 pages and will easily lead the reader into the primary and review literature. A highly recommended source of inspiration and information for all interested in behaviour and ecology.

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