This is a very comprehensive work covering almost every aspect of smell and taste from the cognitive point of view. It arose from a symposium help in Lyon, France, in June 1999. The book is divided into six sections: A specific type of cognition, Knowledge and languages, Emotion, Memory, Neural bases and Individual variations. The multiple authors are leading experts in their field although there is an emphasis on those from France.

The first three sections, although readable and informative, contain little new information and in some cases lack depth—for example, the chapter on pheromones. There is an intriguing chapter by Hudson and Distal which suggests that a person’s familiarity with an odour may influence its perceived pleasantness and intensity inferring that individual and cultural factors alter perception of odour. Subsequently the book starts to become more interesting—at least for me as a neurologist—from the section on memory onward. In particular the chapter on odour memory in Alzheimer’s disease is of major importance. Unfortunately, the pivotal community based study of Graves et al. (1999) is not included. This has provided the best line of evidence that impairment of memory is a precursor of Alzheimer’s disease and clearly this casts a different aetiological light on this type of dementia.

There is a short but useful chapter by Zatorre on the neural correlates of odour judgements outlining the role of the orbitofrontal cortex for intensity and hedonic assessments. Likewise there is an excellent chapter by Edmund Rolls on the cortical representation of taste and smell emphasising the interaction of all sensory modalities with the orbitofrontal cortex and providing an anatomical basis for the concept of food flavour. Once more there is little new information here.

Subsequent chapters concentrate on the problem of odour appreciation in newborn and the degree to which these are hardwired in the brain. At the opposite extreme there is an intriguing section on age-related changes in chemosensory function that draws on evoked potential studies as well as psychophysical tests. It is suggested that threshold measurements decline more rapidly with age than does discrimination and identification, implying that aging starts in the periphery first.

Much of the research in olfaction and taste described here is in general an approach some 20 years behind that of vision and hearing. There is insufficient use of chemosensory evoked responses and functional imaging which now form the backbone of cognitive investigation. This book provides a useful summary of cognitive research and really highlights the need for all of us to become involved with more objective research methods. It will be found most useful for neuropsychologists with an interest in smell and taste but of less value for the practising clinical neurologist.