

short shrift. Chapters are devoted to the subject of virus spread between hosts by vectors, or water or airborne transmission, topics which bear strongly on potential environmental effects. But there is much more to the issues involved than can be covered in each of these short contributions.

In a section on virus tropisms, the genetic basis of the cell-organ selectivities exhibited by certain viruses is discussed succinctly, as is the role of cellular receptors in determining particular virus tropisms and the penetration processes used by viruses to invade cells. Similarly, the genetic elements involved in the control of virus replication and expression of particular viral phenotypes are well reviewed. The complicated matter of virus-host interactions is covered in four chapters dealing with virus persistence and variation, and host responses to virus infection, with particular reference to genetically altered viruses such as the attenuated virus vac-

cines. The final section of the book is devoted to accounts of virus vectors that are of value for the expression of foreign genes (vaccinia, bovine papillomavirus, adenoviruses, *Autographa californica* nuclear polyhedrosis virus). This is a topical subject, in that such vectors are being developed by the biotechnology industry for the production of foreign gene products. Again, however, there is little mention of their use (and impact) in the environment.

All in all, it is evident that the original meeting was a thought-provoking and worthwhile exercise. Unfortunately, the resulting book provides only sketchy outlines of selected areas of the subject matter, and I would question its value to either the specialist or the more general reader. □

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A manifold mind

John C. Marshall

The Citadel of the Senses and Other Essays. By Macdonald Critchley. *Raven: 1986. Pp.277. \$32.50.*

MACDONALD Critchley is one of our most senior and distinguished neurologists, and a man for whom "retirement" means an opportunity to work harder than ever. His current collection of essays, some reprinted, many previously unpublished, bears witness to an undimmed interest in all aspects of neurological disease and an acute awareness of the rich variety of humankind, its triumphs and its foibles. The volume is appropriately prefaced by a novelist's *bon mot*: "Somerset Maugham regarded old age as the time to undertake those tasks shirked in youth because they would have taken too long".

The title essay, "The Citadel of the Senses: The Nose as its Sentinel", restores to olfaction the high ground usually occupied by the visual and auditory systems. Some brief remarks on the comparative anatomy of the nose introduce a vignette on the role of smell in medical diagnosis; but lest such odours seem unduly fetid, we are also treated to extracts from "Vins et Vignes de France", "La Psychologie du Parfumeur", and the adventures of Flush amidst the redolent aromas of spring in Florence. The protean world of touch is equally well represented in a chapter on haptic perception; here Critchley ranges from the skills of the silk mercer, through the neuropsychology of braille reading, to disorders of tactile discrimination and localization consequent upon damage to the peripheral and central nervous system.

Disorders of the visual system likewise provoke a wealth of anecdote and differential diagnosis: in what terms should we describe and explain how some patients with adequate sight nonetheless fail to recognize objects (visual agnosia), or how yet other patients apparently cannot see two objects at the same time (simultanagnosia)? What are we to make of the auras in migraine or the bizarre visual hallucinations that may precede an attack? Was the terrifying abyss that Blaise Pascal purportedly saw plunging to his left a symptom of ophthalmic migraine? (Neurologists are almost as keen as psychoanalysts to diagnose the famous dead.)

Although most of the papers collected here are essays for the left hand, intended to stimulate thought rather than solve problems, one does occasionally long for a more extended analysis. For example: Critchley claims that "it is a vain pursuit to seek to isolate various subtypes of visual agnosia, e.g., for colours or for faces". Yet there are many well-documented case-reports, with extensive testing and more than adequate controls, that do seem to indicate the existence of high-level perceptual disorder in which an impairment of colour or face recognition is disproportionately severe. What *specifically*, one wants to know, does Critchley find inadequate about the investigation and interpretation of these cases? Similarly, in his discussion of claims that there are subtypes of specific developmental dyslexia, Critchley writes: "To medical men like myself such efforts are not impressive and seem premature and speculative". Those of us who have attempted to provide solid, empirical evidence for a typology of dyslexic impairment would welcome criticism more detailed than the blank assertion that "to make a rigid

parcellation within the clinical picture of developmental dyslexia is going too far".

Throughout the volume Critchley wears his prejudices and his enthusiasms on his sleeve. Particularly generous and appealing are his biographical sketches of esteemed neurologists: Hughlings Jackson, Newman Neild and Josef François Babinski. How refreshing it is to discover that the last of these was a person, not merely a reflex. I was especially happy to learn of Babinski's term for "confused, obscure,



From *The Citadel of the Senses*

Sole stimulation — the Babinski sign, reported in C.r. Séanc. Soc. Biol. in 1896. "Here at last", writes Critchley, "was a clinical shibboleth which would distinguish the organic from the hysteric, the genuine from the counterfeit".

or imprecise" writing — "chieurs d'encre" (ink-shits, as Critchley forthrightly puts it). The enthusiasms that Critchley recommends for study by the young neurologist include the physiology of laughter and smiling, the transcendental states that music can provoke, and the sensory skills of the blind; on occasion an enthusiasm and a prejudice will interact, as when Critchley advocates the study of aphasias in African, Asian and Amerindian languages, but tells the student to take no notice of "contrastive linguistics"!

One final foible: in this, as in most of his collections, Critchley refuses to give references, a habit that is decidedly unhelpful to those whose knowledge and memory cannot match Critchley's own. As it happens, I do have the "original" reference for "Anton's syndrome" (1899), a condition where a cortically-blind patient denies his blindness. But I'd appreciate chapter and verse for the claim that the circumstance "had been described with the utmost lucidity by Seneca centuries ago". □

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