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The Neuropathology of Dementia (second edition). Margaret Esiri, Virginia M.-Y. Lee, and John Q. Trojanowski (Editors). Cambridge: Cambridge University Press, 2004, 574 pages, $375.00 hardback.

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The Neuropathology of Dementia is an excellent comprehensive review of our current understanding of the pathology of dementing illnesses. This new edition is 30% larger than the first and has twice as many contributors. Much of the material has been reorganized, e.g., Pick's disease is now subsumed under the heading of Sporadic Tauopathies. The chapter on the definition of dementia has been rewritten and significantly improved. There are new chapters on molecular diagnosis, neuropathology of ageing, neuroimaging, and transgenic mouse models. This new edition will appeal to a larger audience but will remain an invaluable resource to the neuropathologist.

A definition and overview is provided by T.J. Grabowski and A.R. Damasio: "Dementia is an acquired, persistent impairment of intellectual faculties affecting several cognitive domains of sufficient severity to impair competence." The predominant classes of dementia are Alzheimer's disease, frontotemporal degeneration, dementia with Parkinsonism, vascular dementias, normal pressure hydrocephalus, Creutzfeldt–Jakob disease, and a host of others with identifiable features. The convergence zone framework of integration is described. The features of the major categories are described. Neuronal loss, senile amyloid plaques, and neurofibrillary tangles are separable elements in the wide affection of temporal and parietal cortices with early emphasis on the entorhinal and adjacent cortices that is typical of Alzheimer's disease. The role of inflammation seems to be underrepresented. The perimeter of amyloid plaques stain vigorously with antibodies to adhesion molecules (ICAM). The frontotemporal dementias have different clinical presentations and have less consistent pathological markers but they too focus on association cortices.

Chapter 2 deals well with anatomical landmarks, but the marks on illustrations were hard to find and match with the legends. Chapter 3 is a practical approach to pathological diagnosis followed by chapters on morphometric methodology, safety precautions, molecular and genetic diagnostic methods. The neuropathology of the ageing brain is presented in chapter 7. Chapter 8 on the neuroimaging of Alzheimer's

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disease is highly detailed. Chapter 9 is a superb presentation of clinicopathological assessment of Alzheimer's disease. The observation that pathology is most severe in the areas that still undergo synaptic remodeling late in life has powerful implications for design of preventive strategies. Chapter 10 details the relationship of Down's syndrome to Alzheimer's disease. The common evolution of Alzheimer's disease in middle life of Down's patients is well documented. Forty years ago we just thought their decline represented a form of early retirement from their chores. Chapter 11 integrates the previously diverse classes of those diseases now linked as tauopathies. The new information that the consumption of flying squirrels that have concentrated cycad toxins as the probable cause of the disorders that have affected Asian islanders, particularly in Guam, did not appear before publication. Chapter 12 examines the hereditary tauopathies and idiopathic frontotemporal degeneration. The evolution of the frontotemporal dementias to the forefront of dementia studies is well described. The tauopathies now envelop corticobasal degeneration and progressive supranuclear palsy. Chapter 13 deals with vascular dementias very well, but seems to understate the details of anoxic encephalopathy and delayed anoxic encephalopathy. It should be pointed out that until the advent of useful treatment for hypertension in the 1950s, dementia due to hypertensive microvascular disease was quite common. Chapter 14 is a detailed analysis of the familial and sporadic amyloid angiopathies associated with dementia. Chapter 15 describes the evolution of our thinking about the alpha synuclein inclusion diseases such as Parkinson's disease, multisystem atrophy, and dementia with Lewy bodies. Until the last two decades multisystem atrophy was usually classified as olivo-ponto-cerebellar degeneration and idiopathic orthostatic hypotension. Chapter 16 on Huntington's disease is superb. It does not note that Huntington was a general physician in Ohio who first fully described this entity in 1872.

Subsequent chapters are devoted to the human prion diseases, alcoholic dementias, and hydrocephalus with dementia, post-traumatic dementias, and dementias due to infection. Until the 1950s general paresis was the dementia of most concern. It was thought for some time that subdural hematomas were related to syphilis because of the high prevalence of subdural hematomas in patients with general paresis. Schizophrenia and its dementia is detailed in chapter 22. Chapter 23 is a marvelous compendium of miscellaneous dementias. I was pleased to see inclusion of central nervous system Buerger's disease which I regard as a proliferation of hypoxic endothelium in the face of a proximal stenosis. I applaud the inclusion of neuroacanthocytosis. Phenylketonuria can cause severe brain atrophy. Less than high intelligence is a common feature of Duchenne muscular dystrophy and myotonic dystrophy is often associated with adult onset dementia. Chapter 24 deals with transgenic mice and other models of neurodegenerative disease. Knowledge of the neurotransmitter systems that underlie these problems is increasingly understood but is enormously complex. The transgenic models will help us to understand these complexities at an increasing rate.

I congratulate the authors on the organization, scope, and accurate current detail of this remarkable volume. It is an exceptional work and belongs in every clinic and laboratory conducting research on dementia. The traditional handbooks of neurological disease are becoming scarce because of the pace of change in our understanding of these disorders. But the need for books of this type that are updated is still great. I cannot help but speculate that this great encyclopedia of pathology demands a clinical counterpart perhaps best achieved by expanding the

declining art of the autopsy in clinical practice. The autopsy remains the best tool to measure quality of care and the best source of tissue for prospective use in screening and diagnosis. Everyone dying of CNS disease would do a favor to their offspring by having an autopsy.