The first President of the Board was Alexander Brown (1892-96), the disinherited nephew of the coal barons, J. and A. Brown, a high-profile Protectionist appointed by a Protectionist Premier, who held this paid office while a MLC. He did not need the salary or attention and presumably held the job because he liked it and wanted to serve the Hunter region. Yet to allay charges of patronage some early positions were chosen by ballot and thereafter the President usually was chosen from the PWD engineers. (Some Novocastrians may find that the legendary engineer-soldier, "Monty" Corlette, is treated rather dismissively). Many years later there was another patronage appointment in the person of defeated ALP politician, Frank Finnan. Announced amid a storm of protest, he ended his long term (1953-64) popular with all sections of the Board and community.

A glossary would help as the comfortable modern reader has long since forgotten the difference between a cesspit, midden and dry-earth closet. This aspect of the Board's operations was even more protracted and controversial than delivering and rating water in a spreading urban environment. A sewerage scheme for the Lower Hunter was finally approved by Parliament in 1902 and completed in the early 1920s, meeting objections, still familiar, that an ocean, outfall would endanger Newcastle's cherished beaches.

In the 1980s. a Board slumbering under the weight of inbreeding and seniority became transformed by the entry of talented newcomers and rating by a "user-pays" component. These changes attracted national attention to the Board and to the management theories and strategy ("cultural revolution") of its President, Dr John Paterson (1982-84). In 1987 the Board was required to pay an annual dividend to the state government. Another Act corporatised the Board under a Managing Director and six members appointed by the Governor, none by the municipalities. Reduced water consumption made it possible to defer major works. A restructured organisation was now more attentive to economic pressures and consumer wishes.

Over a century the estimated population served by the Board has increased from 17,000 to 414,000 (App. I), while the staff has increased from 36 to 1,106 (App. E.). The latter has fallen from a peak of 1,562 in 1982 reflecting deliberate use of redundancy packages applied to the wages division.

By any standards the HDWB has become a major enterprise of national, regional, economic and administrative significance well worthy oı this thorough and readable study.

L.E. Fredman
Newcastle

Humphry Davy: Science & Power *by David Knight* (Blackwell, Oxford, 1992) pp.xiii + 218, $95.00, ISBN 0-631-16816-8

In the fourth of the Blackwell Science Biographies series under his own general editorship, Davidht turns the spotlight on the self-styled Newtochemistry, Humphry Davy (1778-1829)

Biography is a genre which is undergoing a revival among historians of science. For many years the charting of individual scientific lives ran counter to historians' growing interest in the development of the 'scientific community', scientific institutions and the wider social relations of science. The emphasis upon science as a collective, historically situated, enterprise was accompanied by the conviction that the individual scientific life, so often in the past depicted in celebratory, heroic and largely intellectualist terms, provided little pay-off for the historian. However, as numerous publications in the last few years attest (including monumental new biographies of Newton by Richard Westfall and of Darwin by Adrian Desmond and James R.Moore), these reservations appear to have been overcome. The newly vigorous biography industry more generally draws on a wide range of inspirations, including psycho-biography, gender issues and many post-modern themes relating to author and subject. These have had, as yet, little direct influence on scientific biography, though they are present in highly mediated form, for example, in Desmond and Moore's biography with its highly evocative and imaginative drawing together of Darwin's scientific work, his illnesses and his religious crises.

In Knight's approach to Davy post-modern themes are notably absent, and this is perhaps as well in a book pitched at the general reader and the student. But he is concerned to comprehend Davy within the various communities which his life intersected. And, unlike Sir Harold Hartley, whose *Humphry Davy* (1966) skated over the scientifically relatively unproductive final decade of Davy's life, Knight devotes four of his twelve chapters to that period and a chapter each to Davy's last books, *Salmonia* and *Consolations in Travel* which some contemporaries and most biographers tended to dismiss as the scientifically uninteresting rambling of a dying man.

This being said, the familiar Davy is here. We follow the promising youth from humble background into an apprenticeship to an apothecary- surgeon which was subsequently abandoned to work with Thomas Beddoes in the latter's Pneumatic Institution in Bristol. The friendships with Coleridge and Southey were formed at this time when the chemist and poet in Davy vied for supremacy and Davy's 'romantic' outlook was forged. Throughout the book Knight exposes us to liberal doses of Davy's verse to remind us of this facet of his subject's life and to throw light on others. Davy's careful chemical work on the oxides of nitrogen having gained him a reputation as a chemist, we read of his rapid rise at the Royal Institution as a popular lecturer to the fashionable scientific audiences of the metropolis and his work in agricultural chemistry and on tanning in the service of the landed interest. The central chapters deal with the major scientific achievements, notably the development of electrochemistry and the safety lamp, and with Davy's chemical philosophy. Knight provides here accessible technical background and explanations of Davy's experimental work. Davy's knighthood and marriage to Jane Apreece, a wealthy 'bluestocking', in 1812 is traditionally seen as a turning point in Davy's life. It saw him resign from the Royal Institution and from the secretaryship of the Royal Society to take up a new life as natural philosopher at large. We follow his subsequent continental travels (throughout which his portable chemical apparatus accompanied him), his developing relations with Michael Faraday (the dynamics of their almost filial but strained relationship is the subject of a separate chapter) and his story years as President of the Royal Society from 1820 to 1827 as he

tried to cope with the hopelessly divided institution bequeathed to him by Sir Joseph Banks.

Although all these phases and aspects of Davy's life are expertly, elegantly and insightfully handled, Knight's major achievement, it seems to me, is to provide a clear and convincing interpretation of the relations between Davy's chemical work, his philosophy of nature and his religious views. Davy was, as is well-known, uneasy with the atomic philosophy. His chemistry was ultimately a dynamical one in which forces and powers were the central reality. This, as Knight explains, stemmed in part from Davy's rejection of Priestleyan materialism. And this natural philosophy was congruent with his 'romantic temperament' (a problematic notion, but not analysable here), his view of his own genius, and his belief in the transport to higher planes of existence after death. It is in regard to this latter point that the concluding chapters of *Salmonia* and *Consolations in Travel* serve a very important function in the volume as a whole. It is a measure of Knight's skill that the reader acquires this insight into an essential unity of Davy's life without feeling any sense of being 'instructed' on it. We can be thankful that Knight ignored Sir Harold Hartley's advice back in 1967 not to "get too involved in philosophy" when writing about Davy.

A biographer inevitably, and at the very least, develops a relationship with the subject. Knight's relationship with Davy is a sympathetic one. He always seeks to understand, as would a friend, what many have taken as the less appealing features of Davy's character — his conceit, his love for rank, the charges of 'philistinism', the awkwardness of his conduct towards Faraday, his often curmudgeonly demeanour in his later years. Davy's rapid rise in science and in society inevitably brought sometimes less than sympathetic responses from his social superiors and from those seeking fame and power who felt that they would handle it differently. For the most part, Knight's identification with Davy provides useful correctives to the accounts of historians (including, in a small way, myself) who have sometimes seen Davy too much through the critical gaze of some of his contemporaries.

Although some of the pundits of the 'new biography' will undoubtedly find this account of Davy rather old-fashioned, Knight's well-known talent for accessible synthesis brings the man alive in a way useful both to those who would count Davy as an old, if still puzzling, friend and to those who seek to make his acquaintance for the first time.

David Philip Miller
University of New South Wales

The Origins of American Social Science *by Dorothy Ross* (Cambridge University Press, Cambridge, 1991), pp.xxii + 508, $75.00, ISBN 0-521-35092-1.

Despite its title, Ross's account of the first hundred years of the social sciences in the United States devotes most of its formidable length to the period 1870-1930. The book's central claim is that "American Social Science owes its distinctive character to its involvement with the national ideology of American exceptionalism, the idea that America occupies an exceptional place in history,