

one important 'invisible college' in New Zealand science. It embraced men like James Park, Thomas Kirk (see qMS 1869-1898 cited above and letters to the Hookers in Kew, qMS 1890-1898 and official correspondence as Chief Conservator of State Forests, 1885-1888, qMS 1960, typescripts from National Archives) and, later, Leonard Cockayne (represented in qMS 1909, MS 1971) and George Hogben (qMS 1861-1904), both as I see it, key figures in the reform of New Zealand science in the first decades of the twentieth century.²⁸

During Hector's reign the mood and political philosophy of the century changed but the central scientific establishment largely did not and, consequently, when the Liberals challenged the old values in the 1890s their utilitarian practical expediency forced out the unreformed theory and practice of a bygone era.²⁹ As one result Hector's empire was dispersed back to other government departments and science was obliged to reform itself internally—as some in the University of New Zealand were seeking to do in that institution in the face of considerable conservatism.³⁰

Facets of the decline and fall of old-world outmoded approaches in science and the newer attitudes may be gleaned from the Hutton, Kirk and other correspondence in many of the collections already cited including the Buller, Enys, Haast, and Mantell papers. The new ideas appear, too, in the correspondence and work of men like the Thomsons, G. M. and J. A., father and son (represented in Hill Papers MS 172, Haast Papers MS Papers 37 and Enys Papers MS 670). I think it can be shown that in many matters scientific, awareness ran ahead of political and community—urban and farming—awareness in assessing what the real needs were for New Zealand as she moved into the twentieth century with its new technical and scientific challenges. The triumph of scientific-technical 'reform' over 'conservatism' in the old 'gentleman amateur' tradition which had sustained science in the Company settlement days came slowly with the First World War and the Department of Scientific and Industrial Research. It was predicted, fought for and gained by those who were aware of irreversible trends overseas. New Zealand's leading scientists were not insular throughout this period. It is a pity that we do not yet have, apparently, the papers—in Turnbull at least—of the Cottons, Kirks, Thomsons and others to show us how far-seeing they indeed were.

IV. *Twentieth Century Directions*

Since science grew exponentially in the present century its records became in consequence more diffused. The question might well be asked how well or how much have specialists, government, DSIR and university departments set out to preserve their archives. The answer, alas, might be rather hair raising!