100 years of hormonology: a view from No. 1 Wimpole Street

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Hormone: from the classical Greek *ὁρμῶν* 'setting in motion'. The term was first used by Ernest Starling, physiologist at University College London, in his Croonian Lectures 'On the Chemical Correlation of the Functions of the Body' in 1905;¹ 'these chemical messengers, however, or "hormones" as we might call them . . .'. Apparently the word was suggested by Sir William Hardy of Gonville and Caius College, Cambridge, and his classical colleague W T Vesey.² Classical scholars are not much consulted nowadays in such matters.

Starling's own broad and simple definition of a hormone was 'a drug-like body of definite chemical composition: a chemical messenger which may apparently be formed by any kind of tissue . . . a gland which has lost its duct, or cells which at no time had a glandular structure, such as modified nervous tissue or germinal tissue'. This sweeping generalization, which would find favour today, was vigorously attacked by the physiological purists of the day who confined the concept to 'certain substances of physiological utility . . . from cells of a glandular type, set free into the blood stream'. The narrower definition considered only thyroxine and adrenaline to be worthy of a place in a textbook of endocrinology. The concept of internal secretions was of course much older, dating back to Claude Bernard in 1855 (although he used it in a different sense to describe the secretion of glucose from the liver into the bloodstream), and Edward Schaefer in 1895, who perceived that these internal secretions had other sources than the then recognized 'ductless glands'.

The *Oxford English Dictionary* now has a more complex definition: 'any of numerous organic compounds that are secreted into the body fluids of an animal, particularly the blood stream, by a specific group of cells, and regulate some specific physiological activity of other cells; also any synthetic compound having such an effect'. Hormonology might have been a better name for the specialty—endocrinology is difficult to explain at the dinner table, but everyone knows about hormones. There are celebrations this year for the centenary of Starling's innovative terminology.

The Section of Endocrinology of the Royal Society of Medicine was not constituted until 1945, and was the brainchild of Dr Raymond Greene, to provide a forum where the practical clinical application of the scientific discoveries of the previous fifty years could be presented and discussed.³ I can just remember an elderly Raymond Greene, in an elegant white linen suit, looking like a character from one of his brother Graham's novels, commenting knowledgeably on a case presentation of my own to the Section in the 1960s. Long before endocrinology was even a word the predecessor, the Royal Medico-Chirurgical Society, can take credit for publishing in its *Transactions* important clinical papers—for example, those on 'Sporadic cretinism with absence of the thyroid' by Thomas Curling (1850), and 'Myxoedema' by Sir William Gull (1873)—but unfortunately the editor of the day did not recognize the importance of Thomas Addisons' paper 'On the constitutional and local effects of disease of the supra-renal capsules', which was refused publication in 1851.

During the 1920s clinical endocrinology came under something of a cloud. In the Section of Therapeutics and Pharmacology Professor T Swale Vincent declared 'There is no subject upon which so much utter nonsense has been talked as upon internal secretion', with the agreement of Professor G Murray of desiccated sheep's thyroid fame. In 1928 a proposal to found an Endocrine Section was thwarted. Those were the days of 'West End-ocrinology', where the great and good of the time were easily tempted by promises of rejuvenation. One of those treated with monkey glands was W B Yeats, without noticeable benefit to the man or his poetry. In 1948 Raymond Greene wrote in the preface to his book *The Practice of Endocrinology*, 'the reputation of endocrinology . . . has suffered not only from the dubious products of a few commercial houses, but from the ignorance of the basic facts of the science displayed by a large proportion of practising physicians'. The rapid expansion of science-based clinical endocrinology owed much to the support of Greene and other members of the new Section of Endocrinology.

The Society for Endocrinology had also been founded in London, in 1946, one year later than the RSM Section. It continued publication of the *Journal of Endocrinology*, which had been established in 1939 with various eminent

anatomists, physiologists and zoologists on the board (including five Fellows of the Royal Society), and remained for a long time an academic rather than a clinical preserve. The first paper published 'On seasonal changes in the ovulation response of *Xenopus laevis* to methyl testosterone' set the tone. The equivalent organization in the USA, the Endocrine Society, took that name only in 1952 but it had been founded in 1917 as the Association for the Study of Internal Secretions; in its early days it likewise encountered professional suspicion.

I myself joined the Endocrine Section in the early 1960s, when endocrinology was still an exotic specialty and diabetes and thyroid disorders were the province of the general physician. In those days it was the only place to learn and discuss the finer points of clinical practice. At all-day symposia on Cushing's syndrome the bright young doctors from Hammersmith would confront the greater experience of the Middlesex Hospital; or on acromegaly the discussion might focus on the relative merits of radiotherapy and incomplete surgery. If we had listened to Russell Fraser and his registrar, Graham Joplin, we endocrinologists might have developed into interventional physicians with the technical skill to implant a radioactive seed into the pituitary (without present-day three-dimensional imaging). As it is, we continue to function largely as therapeutic brokers, although the action of most hormones can now be interfered with by designer chemicals. The actual cause of the disorder of corticotropin feed-back control that produces Cushing's disease still eludes us, but the geneticists and molecular biologists have taken over the debate. The discovery of the growth hormone binding protein and its receptor mechanism has led to an effective means of blocking growth hormone action, and acromegaly can be much better managed—even 'cured'. Endocrinology is broader than the pituitary: at meetings on metabolic bone disease and the parathyroids we learnt much from the disputes between the experts from the Bone and Tooth Society; on hirsutism and what has now become the polycystic ovarian syndrome from the endocrine departments at Guy's and St Thomas'; on growth disorders in children and the proper use of the very carefully controlled preparation of human pituitary growth hormone from J M Tanner and the Institute of Child Health. And, because of the interdisciplinary strength of the RSM, there were always participants from other specialties—surgical, radiological, gynaecological.

The RSM section was obviously London-based, but an enthusiastic young doctor from the provinces found the journey worthwhile—even on the overnight boat and rail

sleeper from Belfast via Larne/Stranraer. Oxford and Cambridge had a more complex physiological approach. Colleagues from Manchester, Birmingham, Sheffield, Leeds, and Newcastle came from time to time, and the Scottish endocrinologists occasionally challenged us with their practical therapeutic approach. The clinical meetings at the RSM were the centre of the specialty, while the scientific researches were reported at more academic meetings of the Society for Endocrinology, often with a veterinary or biochemical flavour.

The amalgamation in the 1980s of all the smaller endocrine groups into the larger annual meeting of the British Endocrine Societies under the enthusiastic leadership of G M Besser from St Bartholomew's Hospital was a turning point, and recognized the interdependence of the scientific and clinical aspects of endocrinology. The Society for endocrinology in the UK has more recently acknowledged the need for clinical medicine to figure more prominently in its affairs, and this has led, after a few years of consideration, to a restructured relationship with the Royal Society of Medicine. The RSM took some time to settle into its continuing clinical role, but the strength of London medicine has ensured the survival of Raymond Greene's concept. The renamed and broader based Section of Endocrinology and Diabetes will continue to build on the important interdisciplinary aspects of the specialty, notably by organizing joint meetings. The wider professional aspects of academic medical and scientific meetings and training courses, and research interaction, are now facilitated by the Society for Endocrinology, with its expanded clinical input. There is room for both organizations, and the presentation and discussion of hormonal disorders and problems, which is where it all started, will certainly continue for another hundred years. The days of clinical demonstrations when we brought our patients to No. 1 Wimpole Street to present to our colleagues in small individual cubicles may have succumbed to the Powerpoint and the video, but endocrinology is still fascinating in the individual case, with the challenge of identifying the chemical messenger which has 'set in motion, excited or aroused' the disease process. The classic hormones, in any language, still do the same for the endocrinologist.

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