

PROCEEDINGS
OF THE SECOND
INTERNATIONAL
CONGRESS OF
ENDOCRINOLOGY

LONDON, 1964

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SECOND INTERNATIONAL
CONGRESS OF
ENDOCRINOLOGY

LONDON, 17-22 AUGUST 1964

PART I

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INTERNATIONAL CONGRESS SERIES NO. 83
EXCERPTA MEDICA FOUNDATION
AMSTERDAM / NEW YORK / LONDON / MILAN / TOKYO / BUENOS AIRES

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Published June 1965

Editorial Secretary

K. SPANJAARD, Amsterdam

Production

PH. VUYSJE, Amsterdam

*

Printed in the Netherlands by Hooiberg. Epe

PROCEEDINGS OF THE
SECOND INTERNATIONAL CONGRESS OF ENDOCRINOLOGY

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ACKNOWLEDGEMENTS

The Local Organising Committee wish particularly to thank the following for financial support, without which it would not have been possible to hold the Congress.

*The United States National Institutes of Health,
Grant No. AM 08640-01
The Endocrine Society (U.S.A.)
The Royal Society
The Society for Endocrinology (G.B.)
The Wellcome Trust*

Support has also been given by:

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*Abbott Laboratories Ltd.
Boehringer Ingelheim Ltd.
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The British Council
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* Donations given specifically to help defray the cost of publishing the Proceedings.

INTRODUCTION

The Second International Congress of Endocrinology was intended to be experimental, both in programme planning and in membership.

First, it had the avowed aim of making the scientific programme represent the latest progress in hormone research. To ensure this standard, all papers were given by invitation of the Programme Committee or of the individual chairmen of symposia. The presentation of really new and exciting work was encouraged through the medium of stop press sessions, at which brief communications were freely and informally discussed. Naturally much of the latter can only be recorded briefly and the editor wishes to thank the chairmen of sessions who were responsible for this reporting.

Second, the limited membership was open only to those actively engaged in the subjects discussed. National endocrine societies of most countries cooperated gallantly in selecting participants both from within and beyond their own membership. The Local Organising Committee and the International Executive Interim Committee were unanimous in recommending this limitation of membership, thus making a virtue of necessity since the site for the Congress only accommodated some twelve hundred people.

It is hoped that these two volumes, which record the formal presentations of the congress, will provide valuable new information to those interested in the progress of endocrinology

SELWYN TAYLOR

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OPENING ADDRESS

GEORGE W. CORNER

Foreign Member, Royal Society of London
American Philosophical Society, Philadelphia

President of the Congress

When my old friend, Professor Amoroso, and his Committee invited me to be President of this Congress, I could not help recalling a conversation about endocrinology in which I took part, twenty-three years ago, in connection with a Pan-American Congress held at Montevideo in 1941. In that war-time period all travellers required the fullest credentials. I had to call at the Uruguayan Legation in Washington to justify the journey and secure a visa. Because I held a diplomatic passport the Minister himself asked me to his private office. It was a hot summer day. The worthy diplomat had shed his coat and was at his desk in his shirtsleeves, with his braces showing – an appearance suggesting the practical man of affairs in contrast with the courtly Castillian grace with which he received me.

After the usual exchange of polite greetings, the Minister asked the precise object of my visit to Montevideo. I told him that I was an official delegate of my government to the Congress of Endocrinology, and went on to emphasize its importance for good relations between the medical scientists of the two Americas and for the advance of world science. The Minister heard me with attention; he waited a moment after I ended my enthusiastic statement, then leaned toward me over his desk, and speaking in a confidential, man-to-man tone of voice said, "But tell me, Doctor, do you believe in Endocrinology?"

This staggering question could be answered only by a lecture or by a jest. Choosing the latter, I said, "Of course I believe in endocrinology. Is it not taking me to your beautiful country?" To the practical and patriotic envoy this defense of my credo was evidently sufficient. He initialed my passport without further inquiry.

If asked that same question here today, I should give even broader reasons for my confidence in our branch of science. Has it not brought me, once more, to England? Has it not given me the privilege of presiding over this distinguished assembly, and the honor of receiving the Dale Medal from the hands of Sir Henry Dale himself?

You will pardon me, ladies and gentlemen, if for a few moments I put off the formal duty of opening the Congress, while I tell you how much it means to me to be the Dale Medallist for 1964. Since the beginnings of my own professional career, Sir Henry has been for me one of the greatest heroes of science in our time. I can never forget, though he may not recall it, my first meeting him one day in the autumn of 1923, when I presented myself at his laboratory to seek his advice about the organization of research in the newly created medical school at Rochester, New York. Sir Henry's kindness to me that day, his wise counsel, his encouragement of the undertaking to which I had committed myself, remain vividly in my memory. Sir Henry was already at that time a distinguished leader of medical science – that is why I was sent to him; the forty years that have passed since that visit have brought him even greater fame and richer opportunities to serve science, his country, and the world in an age when high-minded scientific judgment has become all-essential.

This honor from the Society for Endocrinology must be for each successive Dale

Medallist a heart-warming experience; to receive the medal from Sir Henry himself redoubles its significance to him to whom it has been given today.

* *
*

But let us return to the matter in hand, the official opening of the Congress. At the beginning of a week sure to be prolific in new ideas, in the revision and amplification of old knowledge, and in the ever-increasing practical applications of our science, we may in all seriousness ask ourselves the question, Do we believe in Endocrinology? The Uruguayan Minister's question implied a suspicion that endocrinology was perhaps nothing more than a popular sort of quackery, or a pseudo-medical cult, or a sect of faith-healers. And in fact – we may as well confess it – the solid fabric of this science was in its earlier days fringed with a kind of quasi-science based on faith, or credulity, rather than controlled experiment and critical judgment. Indeed, some historians of science refer the very beginning of modern endocrinology to one particular outburst of unguarded enthusiasm on the part of a highly reputed man of science. The birthday of the theory of internal secretions, they say, was that day in June, 1889, when Charles-Eduard Brown-Séquard announced the discovery, as he claimed it to be, of an extract of the testis, efficacious against the mental and sexual deterioration of premature old age, which with pathetic self-delusion he had tested upon his own person.

Endocrinology has, in fact, a far longer pedigree than this, and earlier sires than Brown-Séquard. A true history of the subject would begin with the first primitive farmer who castrated a bull or a horse; its frontispiece might be Eustachius' first illustration of the adrenal glands; some of its earlier chapters would tell us, as Sir Henry has just done, of great clinical observers like Addison, Basedow, and Graves. Although we must, no doubt, credit Brown-Séquard for first stating the concept of internal secretion, his rash pronouncement, coming as it did from a savant of great previous achievement and high renown, had at first some unfortunate effects. It was promptly followed by a world-wide spate of extracts, powders, and elixirs made from the testes and ovaries of animals. As other organs – thyroid, adrenal, pancreas, pituitary gland – were in their turn seen to be presumptive sources of internal secretions, pharmacists did not delay in selling, nor physicians in administering, a further variety of animal products of uncertain composition and dubious efficacy. This stage of uncontrolled exploitation lasted for many years, while at the same time responsible workers strove for real understanding of the endocrine organs.

The question put to me by the Uruguayan Minister perhaps reflected some hint of all this, gained from his medical friends at Montevideo. As for my own country, I give you for what it is worth the rumor that about 1920 the American Association for the Study of Internal Secretions found it necessary to draft for its presidency the distinguished surgeon and physiologist Harvey Cushing, in order to limit the influence of certain members, one of whom was manufacturing a large variety of endocrine tablets of more than doubtful value.

It is good for our souls to recall such episodes, for well-meant but ill-founded enthusiasms may break out again. About 1935, for example, when I was studying the lactogenic action of the posterior pituitary, my experiments were delayed for lack of raw material. A physician of very slight experience had announced that a certain commercial pituitary extract would restore hair to bald heads. All the available fresh glands were suddenly diverted to the firm that manufactured this sensational but (fortunately for my work) short-lived miracle drug.

But these divagations, as I have said, were merely the tattered fringe of a solid fabric of growing knowledge. Though Brown-Séquard chose a wrong way to test his hypothesis, there was a true hormone of the testis, and the clue to it had been pointed out 41 years earlier by Arnold Berthold's transplantation experiments done on cockerels. The theory of internal secretion was thus to be proved not by premature attempts at glandular

OPENING ADDRESS

therapy, but by sound experimental research and by critical observation in the operating room and in the sickroom. Whatever went on at the fringe, the solid fabric of modern endocrinology was being woven by men like Dale and Cushing, by Ancel and Bouin, Ludwig Fraenkel, Kendall, Banting and Best, Bernardo Houssay, and a host of others whose names are known and honored by all of us today.

Under such leadership as theirs, the fundamental study of endocrine physiology has made its great achievements in the laboratory and the clinic, and the practice of endocrinology has left behind whatever taint of credulity and exploitation to which it was once exposed. The question I was asked in 1941 would not be asked today, for laymen and physicians alike understand that the results of endocrinological research as applied in the practice of medicine are subject to the same rigorous self-questioning as the basic research itself. We are not now and never were called upon to believe in endocrinology, but rather to carry on our work with the productive incredulity and critical analysis that is the essence of scientific inquiry.

* *
*

According to the official title of our Congress it is endocrinology, and endocrinology alone that we are to deal with here. But is endocrinology a unified, coherent, clearly delineated branch of medicine and biology, a scientific discipline in its own right? To this question, both the history of endocrinology and its present-day aspect answer No. Looking back upon the development of our knowledge, we see that each of the major internal secretions had to be identified in a different way and by different techniques. The ovarian hormones were approached from one side by the gynecologists, from the other by histologists and embryologists, whose principal tool was the microscope. Adrenaline was first got at by physiologists using chiefly the sphygmomanometer. These two lines of investigation were so different that in my country, for example, in the decades between 1910 and 1940, to hear the latest word on the ovarian hormones one met with the Anatomical Association; to keep up with the adrenal one attended the Physiological Society. The discovery of thyroxin rested upon the observations of physicians and surgeons on myxedematous and goitrous patients, and of zoologists working with tadpoles. The break-through to the hormones of the anterior pituitary was achieved partly by neurosurgeons and partly by experimental zoologists operating upon frogs and rats. When the time arrived for biochemists to get to work upon the respective hormones, some of these substances called for specialists on lipid chemistry, others for protein chemists, another for workers capable of dealing with such unfamiliar compounds as those among which thyroxin is to be classified.

The same diversity exists in the practical application of the hormones in treating disease. What is there, in diagnosis and treatment, that is common to the gynecologist who prescribes an estrogen or progesterone, and the internist combating a disorder of thyroid function? This Congress, indeed, is shortly to break up into groups, each of them respectively qualified to deal with a topic so different from the others that one of us who gets by mistake into the wrong room may scarcely understand what is being said there.

Endocrinology is therefore to be defined not as a distinct science but as an area in which many kinds of biological, chemical, and clinical knowledge are brought together to deal with a great variety of phenomena having in common that they are related to organs of an anatomically peculiar type, producing potent chemical substances typically acting upon other organs through the blood stream, or by diffusion through the tissues. Endocrinology has a further common theme: In complex ways, by no means fully understood, the activities of these several organs of internal secretions interlock with each other in the bodily economy. Thus, endocrinologists, although their individual knowledge may be centered upon one or another endocrine gland, must try to understand and utilize the special knowledge of colleagues who study different glands — other divisions of this somewhat ill-defined field called endocrinology.

There is, therefore, no such person as an endocrinologist pure and simple. A physician or a medical scientist calling himself an endocrinologist must be something more. If he works in the research laboratory he must either command the methods of histology and embryology, or be a good general physiologist, pharmacologist, or biochemist. If a practitioner of medicine he cannot limit his thinking and his therapy to endocrines alone — he must be a competent internist, surgeon, pediatrician, or obstetrician and gynecologist. Only against a broad background of general experience can he bring into focus his knowledge of that particular endocrine organ to which he has himself devoted special attention.

This necessary breadth of view, this wide range of experience, is surely characteristic of members of this Congress, and will be evident as we proceed with the varied and intensive discussions of the next five days. Our gathering is therefore a Congress of more than endocrinology; we might even be justified in calling it the Second International Congress of Endocrinology and All the Other Medical Arts and Sciences!

To answer once for all the question which has been the text of these introductory remarks, we do not believe in endocrinology as an isolated scientific discipline, nor as a mere purveyor of specific cures. We do believe that it is a field of research, diagnosis, and treatment to which the fullest energy and highest talents of the physician and the biologist may be, and must be, applied.

I now have the honor, ladies and gentlemen, to declare that the Second International Congress of Endocrinology is formally in session. May our deliberations be learned, wise, generous, and fruitful.

SYMPOSIA AND
LECTURES

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For detailed lists of authors and titles of their contributions, see the contents pages of the individual chapters

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