

Prefazione/Preface

FOR A HISTORY OF ANDROLOGY

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*Two issues of this Journal are devoted to the history of andrology and male sexuality, from Hippocratic medicine to contemporary ethical problems due to the increasing role of technology in human reproduction. Studies have been devoted to: the Hippocratic Corpus, to authors of the Roman Empire, to Byzantine medicine; the transmission of ancient texts through Arabic and other languages of the Middle East; the influence of Constantinus Africanus' translations from Arabic to Latin; early modern theories about semen, male sexuality, impotence. Recent developments of biochemistry and epistemology are analyzed to show how these and other topics have influenced sexual ideas and behaviours until the discovery - around 1840 - of the chemical nature of male sexual hormones. In more recent years, technologies and cellular and molecular biology have opened new perspectives in the fields of fertilization and male sexuality, giving way at the same time to new ethical, social and legal problems.*

Arnold A. Berthold is currently remembered by medical historians as the discoverer of the scientific proof of sexual hormones secretion, through transplantation in castrated animals of cock's testes - which prevented the atrophy of the comb as castration's consequence<sup>1</sup>. Working on these results, Charles E. Brown Séquard injected in himself testicular extract, obtaining - in his words - a rise of muscular potency and an improvement in sexual performance<sup>2</sup>. About forty years later, the lipophile character of sexual hormones was understood: McGee purified hormones from a bull's testicular extract, and Funk and Harrow from male urines<sup>3</sup>. The preparations thus obtained were able to correct the castrated condition (capon-comb test on castrated capon), giving the proof of a specific activity of male sex hormones<sup>4</sup>.

In the last months of 1939 the Committee for Chemistry of the Royal Swedish Academy assigned 1938 Nobel prize to Richard Kuhn (for his work on carotenoids and vitamins), to Leopold Ruzicka, a Croatian working in Switzerland (for his work on polymethylenes and higher terpenes), and to Adolph Friederich Johann Butenandt (for his work on sex hormones). The German government forced Kuhn and Butenandt to refuse the prize (which was given them *ad honorem* in 1949) and attention was drawn upon the political significance of the Swedish choice against Nazi Germany's war policy. But the prize to Ruzicka and Butenandt was in fact meant as an acknowledgment of the extraordinary development of sexual hormones' chemistry in the Thirties: while A. Doisy could insulate oestrone in its pure form<sup>5</sup>, Butenandt purified in a crystalline form the male sex hormone testosterone<sup>6</sup>, while Ruzicka, after having studied natural odoriferous compounds, discovered the organic "ringed molecules", then the molecular structure of sex hormones, i.e. testosterone, later on synthesized by his research group<sup>7</sup>.

These works do certainly represent the scientific foundations of contemporary andrology. But it is easy to understand that andrology and - more broadly - male sexuality are a far more complex issue, from the point of view of their historical evolution as from the point of view of medical and social ideas in different ages and places, and of clinical applications in the age of technological medicine - with obvious links to ethical, juridical and social issues.

We have tried to highlight some aspects of the latter assumption, gathering contributions that could point out to some relevant moments of a story that starts with classical antiquity - when sexually transmitted diseases were known, but interpreted as a part of clinical medicine: in fact, we do not have texts specifically devoted to male dysfunctions, while we do have treatises about foetuses and children (in the *Corpus Hippocraticum: Foet. Exsect., Nat. Puer., Oct. Septim.*) or women and pregnancy (*Genit. Mul., Nat. Mul., Oct., Sept., Steril.*). Males were thought to be superior to females by nature (Aristotle, *Pol.* 1254b), and the authors of medical literature were males. There are some treatises whose titles may be misinterpreted, as the *De natura hominis*,

which treats human nature in general; sterility was commonly considered to be caused by female dysfunctions - altered body constitution, irregular menstruations and so on - as a short reading of Littré's indexes can easily show. Male sexual diseases are described in classical antiquity because of sperm alteration or difficult emission (Galen, *De locis aff.*, VI.6, K VIII; Caelius Aurelianus, *Gynaecia*, II.64) in diseases such as gonorrhoea or priapism; but the general theories of the living body were of an humoralist kind, and the schema of humours and secretions could explain almost everything (Galen, *De semine*, K IV. 512-561).

Byzantine world, and the extraordinary middle-east (Arabic, Hebrew) civilization kept alive the heritage of the classical culture, that 'returned' in Western middle-age world, through Costantinus' translations. In the meantime, religious life and authority strongly determined cultural fashions and social behaviours - sexuality in the monastic life was based on a hierarchical relation between *psyche* and *soma*. Renaissance will embody sexuality as well as other aspects of bodily life in the new medical and epistemological canons: rationality, a saecularized image of nature, and the effort towards the introduction of mathematics in the life sciences, with the crafting of new instruments. This long-lasting tendency finally - in the last decades of XIX century and the first decades of the following one - discovers new causation laws and centers 'new' and experimental medicine in laboratories (analysis cabinets) more than in hospital wards, with biochemistry at the core of physiology. The same happens to andrology, with the characterization of male steroid hormones, so that this field - in the wake of the third millennium - needs a solution for the many problems posed by the technology of human reproduction medicine<sup>8</sup>, without losing the consciousness of the ethical, social, legal issues at stake. Male sexual life - since now underestimated in its difficulties, covered by the false glittering of a social 'dominating' condition - has its own weaknesses and crisis, well experienced, even if nobody has until now tried to write a scientific essay about "*le mal d'être homme*"<sup>9</sup>.

The contributions published in the two issues of *Medicina nei Secoli* offer samples of this complex reality, connecting religious

and moral with anthropological and social issues - in a broad and comprehensive examination of a field equally crossed by research, technology, practical medicine, everyday life. Sexuality and reproduction have always been a matter of debate: today they offer the possibility of a meditation upon the difficult relation between scientific and technological elephantiasis and the risks and responsibilities of a broader education, capable of leading innovation without losing sight of basic human values.

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Articoli/Articles

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SUMMARY

THE HISTORY OF MODERN ANDROLOGY

*The beginning of the history of modern Andrology as a clinical science can be located at the mid-century of 1900. The term itself of "Andrology" was first proposed in 1951. At that time, basic scientists coming from different cultural backgrounds - the main roots were urology, endocrinology and in some cases dermatology - "discovered" their common interest in the field of the male reproductive system, whose pathology and even physiology have been for long time ignored or misregarded, often considered a shame more than a clinical entity. Very soon, many other specialists joined the team; among these biologist, genetists, psychologist etc., under, for the first time in history, the common definition of "Andrologists". They organized themselves in National and International Societies whose members, at the moment, are more than 8,000; holding national and international Meeting Workshops and Conventions all round the world and editing Textbooks and Journals. On the educational ground, pre - and post graduated course are held in severale Countries, both for medical studens and doctors. Although a melting-pot of different cultural basis, today Andrology can be defined an unitary medical discipline dealing with the pathophysiology of the male reproductive system during all the life coure of the male subject, from development to maturity and senescence. Shorty, and according to the WHO definition, it deals with male reproductive health. Quite similar to what is Gynecology for the female subject. The late arrival of the andrological discipline on the stage of modern medicine gave it the advantage of utilizing all the modern achievements of basic and clinical science, from molecular biology to ultrastructure, to genetic etc., reaching levels of high quality.*

Key words: Societies - Education - Infertility - Erectile Dysfunction