

A brief historical survey of the roots and the development of modern urology

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Introduction

As we repeatedly pointed out the history of urology must be divided into two main periods. We might call the first one the period of “unconscious Urology”; the second the period of “conscious Urology”. The first starts since prehistoric times and lasts till the second half of the 17th century; the second starts from the second half of the 17th century, is still in progress and is destined for ever more brilliant future improvements, which we will be the authors of [1,2].

The Indo-European dialects

Glottology, genetics and paleo-ethnology proved that the heart of our civilisation began beating about nine/eight thousand years ago in a region to the south of the Black Sea approximately corresponding to Anatolia. The group of the so-called Indo-European peoples lived there very near each other and spoke dialects a more or less great part of which was common [3,4] and this common part contained also a really high number of fundamental terms concerning both the urogenital apparatus and some urological diseases [5].

The raise of agriculture

About 5.000 years B. C. the invention of agriculture caused a great migration of the Indo-European peoples eastwards and westwards. Eastwards they reached India, namely Deccan; westwards they gave origin to the Iberian, Gallic, German, British, Irish, Icelandic, Ugro-Finnic, Illyrian and Pre-Roman (Osco-Umbrian, Samnite, Latin, etc.) dialects and cultures [4].

The Greek colonies

From the XIV to the X century B. C. the Aeolian, Ionian, Arcadian and Dorian peoples spread to the East. But a new and wider colonisation spread from Greece between the VIII and the VI century B. C. and both Jonians and Dorians were the protagonists. Both Philosophy and Science and chiefly Medicine came into being just in the so-called “Magna Graecia” (first only consisting of Campania, Calabria, Basilicata and Puglia, then embracing Sicily too), mainly in Agrigento, and in the so-called Jonia (the western coast of Asia Minor) and chiefly in Miletus and Cnidos, between the second half of the VII and first half of the V century B. C.

The birth of the Hippocratic School in Kos

But soon after (second half of the V century B.C.) the star of Hippocrates and his school rose in Kos, illuminated the whole medical culture, became the datum point of it for more than two thousand years and, after a brief period of apparent decline between the XVII and the XIX century, is still speaking us out “loud and bold” and.

The cradle of art, literature, philosophy and science

Athens became the heart of Art and Literature, of Science and Philosophy during the second half of the V century B. C. and spread its rays all over the Mediterranean Countries. The miraculous star of the Greek culture seems to die out like radiant “nova” with the genius of Aristotle at the middle of the IV century B. C. But it not only burst out again, like a marvellous “Arabian phoenix”, with Alexander the Great, but also renewed itself in a planetary dimension, obviously “planetary” with reference to the known world before the “discovery of the New world” (1492), we shall deal with below.

Alexander the great

Alexander’s Eastern enterprise bridged again Greek and Indian culture and Science, and chiefly Medicine, and his ideal of a universal Empire (certainly suggested to him by his great Master Aristotle) forced Greek culture and science to break the provincial boundaries of the “polis”, the “city-state”, and gain a world-wide dimension – obviously also in this case with reference to the “known world” before 1492 – mainly in Alexandria. There Ctesibius and Hero made the first attempt at proposing a “quantitative” and therefore “mechanic” interpretation of the phenomena in the field of physics and technology, and Erophilus and Erasistratus tried to transfer this “quantitative” interpretation into the anatomo-physiological field, and to found and prove their mechanical interpretation on the ground of autopsy and even of human vivisection!

Rome and the Roman empire

But between the III and the I century B. C. Rome extended his domain over the whole Europe (Germany and Scotland excepted), the whole Northern Africa and inherited not only the Classical Greek and Hellenistic Art and Literature, but also and chiefly the Alexandrian medical knowledge.

Byzantium

The Western part of the Roman Empire collapsed in the VI century A. D., while the Eastern part survived for more than ten centuries, inherited, elaborated and resumed the medical knowledge both of the

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Classical and the Hellenistic Period and built the important, although not at all original Byzantine culture.

The Eastern Roman empire

But at the beginning of the VIII century, while the Eastern Roman Empire is still surviving although slowly coming to an end, and not so far from the cradle of our culture arose the miracle of the Arabian culture which inherited both the Classical and Hellenistic medical knowledge and spread it all over the Mediterranean world from the dazzling centres of Baghdad, Damascus, Cairo, Cordova, Toledo and Granada, thanks to the translations of a lot of Greek medical works, so that Greek and Hellenistic medicine reached again the Latin speaking Europe, in which medical knowledge had generally lowered to the level of empirical practice or of monastic medicine, that's to say nothing but empirical practice animated by Christian charity, only three centres excepted.

The first schools of medicine

Between the VII and the XI century three great medical Schools flourished in Europe: the School of Montpellier, influenced not by the Greek, but by the Arabian authors; the School of Ravenna, which flourished from the VII to the IX century, knew Greek and derived its knowledge directly from some of the original Greek works of Hippocrates and Galen; the School of Salerno, which inherited the medical theories and knowledge from Ravenna, through Montecassino and where the Greek tradition somehow survived although indirectly and more or less summarised when not even misinterpreted.

The Arabs

In the XI century the Arabian medicine joined with the Greek tradition in Salerno thanks to Constantine African. The rest of European culture regained slowly the great Greek, Hellenistic, Roman and Byzantine medicine first thanks to the Arabs, then – starting from the XIV century – thanks to the gradual recovery of the knowledge of Greek, and therefore the renewed possibility of reading the original works and translating them into Latin directly from Greek. But the medical culture in Europe, although it may seem fragmented into different schools, often arguing with each other, had nevertheless a particular unity till the XV century, due to the common and general use of Latin as a “lingua franca”, so that European medicine looks like a sort of Universal Republic and Salamanca, Paris, Lyon, Oxford, Cambridge, Fulda, Kassel, Sankt Gallen, Padua, Bologna, Pavia, Naples are the greatest and most active centres. The slow, gradual, but relentless making of the great Nations (France, England, Prussia, Bavaria, Portugal, Spain, The Netherlands, Sweden, Norway and Russia) between the XIII and the XV century broke this European unity and each great State developed Science and Medicine independently.

The “diaspora” of scientific and Medical culture and the first academies

This real “diaspora” of the scientific and medical culture lasted until the XVIII century, that's to say till the Age of Enlightenment, but since the XVII century the great Academies of Sciences started the slow recovery of the original medical unity. The two glorious Italian “Accademia dei Lincei” and “Accademia del Cimento” were the first respectively at the very beginning (1603) and at the half (1657) of the XVII century) but the backwards and reactionary Catholic culture, suspicious and fearful of any scientific innovation, made them as ephemeral as glorious: the first died in 1630, the second in 1666.

The foundation of the of the European National Academies

Nevertheless, in spite of the dull and violent scientific repression exerted by the Jesuit culture and its tyrannical instrument, Inquisition, the seeds of modern science had been sown: the Italian Academies were taken as a model by both the Royal Society (1662) and the Académie Royale des Sciences (1666), which could flourish (and are still flourishing!) thanks to the enlightened monarchs and their no less enlightened ministers and chiefly thanks to the freedom from the grip of the Saint Roman Church. And these two great Academies of Science were followed first by all the European States during the XVIII and the XIX, then by the Eastern and Southern great States like India, Japan, China, Egypt and South Africa during the XX century.

The “New World”

But meanwhile a new and upsetting event occurred, which gave a fundamental impulse to Medicine in general and to Urology in particular: the so-called “discovery of America” (1492) that in our opinion should be called “discovery of the geographical ignorance of the European presumptuous knowledge”.

The North America “Promised Land”

The “New World” (that was “new” only to our ignorance!) was at first considered as nothing but a boundless country to be exploited and as an intermediate station for the trades between Europe and the Far East World, more advantageous than the long and more dangerous circumnavigation of Africa. This situation lasted till the first two decades of the XVII century, but starting from 1620 (the voyage of the pilgrims of the *Mayflower*) and during the following century the New World had two different lots: South America went on being considered as a country to be exploited and the slow forming of apparently independent nations didn't change anything till at least the XX century, while North America became a sort of “Promised Land” on the one hand for those who yearned for freedom, pureness of mind and were full of missionary zeal; on the other hand for those who thought that gold and silver were the wealth of peoples.

The French and English colonies and the North America

Meanwhile France settled its commercial and political power in Canada and England demolished the French supremacy and conquered Canada although the French part of the Canadian people is still surviving and flourishing. This all apart, mainly the new products that reached Europe from the “New World” caused two fundamental revolutions: on the one hand the revolution of European agriculture, economy and nourishment (if only one considers the introduction of potato, tomato and Indian corn); on the other hand the extraordinary revolution of science in general (mainly Geography, Astronomy and Natural Science) and of Medicine and Urology in particular.

The new drugs and the “American Revolution”

To confine ourselves to only one example, the discovery of the therapeutic effects of China Cinchona, a medicine that cured without causing any “evacuation”, literally upset aetiology, pathology and therapy. But in 1776 another and not at all less fundamental revolution started from America: the English Colonies rebelled against England and founded the United States of America.

The European “Enlightenment” and the birth of American culture and science

The American Revolution was surely inspired by the ideals of the European Enlightenment, but the American scientists and physicians in general and the American Urologists in particular were soon able to elaborate the suggestions of the European science and knowledge in an original way from the second half of the XVIII to the second half of the XIX century and to become the real protagonists of world science, medicine and urology during the XX century.

Latin America

But South America too, although later, was able to give fundamental contributions to the European Urology, if only one remembers that Guyon and Albarran, that's to say the founders of modern Urology, were born in South America. The XX century opens with an ever-bolder march towards both Evil and Good: towards Evil with the First and the Second World War; towards Good with the gradual and relentless universalisation of Science and Medicine in general championed by the Urologists. The protagonists, besides the U. S. A. and Europe, are ever more countries like China, Japan, India and South Africa, so that we can say that a real New and Universal Republic of Science and Urology is coming to be, beyond and above the national boundaries.

The future “World Association of Urology”

The E. A. U can rightly be proud of having created the United European Urology long before and on more solid and sounder foundations than the still tottering political and economic United Europe. But it isn't enough: the ever closer relations that the E. A. U. is realising with the U. S. A., China, India, Japan and Africa since the First International Congress on the History, Knowledge and Quality of Life in Urology held in Fiuggi in 1992 and reinforced on the occasion of the

Second International Congress on the History of Urology held in Kos on May 2001, see us Urologists again in the van of realising the ideal of the World Unity, the Planetary Unity that has to be the supreme aim of our civilisation and our culture. Our wish and auspice are that we may create, beyond the National and the International Urological Societies and Associations, the World Urological Association. Time is ripe and the Third Millennium must not find us late!

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Sergio Musitelli: Expert of the History office of the E.A.U. I dedicate also this article to the memory of my adored son Giulio, who was killed on May, 14, 2012 by a criminal driver, who did not observe a STOP sign. A different version of this article was published in *de Historia Urologiae Europaeae*, 9, 2002, p. 51 ff.

Maria Antonella Bertozzi: Head of the Complex Operative Department of Andrology at the Azienda Ospedaliera Universitaria Pisana. Showing us the way for the future of Medicine in general and of Urology in particular

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