ORAL PRESENTATIONS
Richard Bright was born in Bristol in 1789. He studied medicine at Edinburgh and Guys Hospital. He developed a keen interest in Pathology, studying organs carefully at post-mortems and often using his artistic skills to record appearances. In 1811 he drew “a granular kidney”. He graduated in 1813.

He became interested in the condition known as “dropsy”- gross fluid retention, believing it was related to kidney malfunction. The patient whose granular kidneys he had sketched had died from dropsy. A Parisian doctor-Pierre Rayer-agreed with his views and coined the phrase “Maladie de Bright”.

In 1824 he became Physician and Lecturer at Guys. His teaching was criticised. He actually undressed patients to examine them; he used “the suspect method of percussion”; and used “that foolish toy-the stethoscope”! He remained fascinated by dropsy and published 23 cases, mostly with renal failure of whom 17 died. Autopsies showed “nephritis”. In 1832, at the College of Physicians, he described high blood urea levels and albuminuria in relation to dropsy. His clinical description of his disease, as he found it, in Guys Hospital Reports, 1836, is still widely quoted, verbatim, in medical texts.

In 1851 he found he had aortic stenosis but continued to see patients from all walks of life. Among them was Isambard Kingdom Brunel, the famed engineer, who had developed oedema. Bright diagnosed renal failure which gradually worsened. Bright attended him regularly but in 1859 (after Bright’s death) Brunel died from a stroke and renal failure.

Bright had died somewhat unexpectedly in December of the previous year. Details are very limited. The Lancet recorded “he contributed more than, perhaps, any other to form the medical opinion of his day”.

What prompted this “Reminder of Bright”?

Before my retirement I saw a 94 year old lady patient in clinic. She was a great, great niece of the famous nephrologist. She had mild renal impairment. Subsequently she showed me a book that she had written- “The Inner Circle. A view of war from the top”. This was an account of her work when based in the underground Cabinet War Rooms, where Churchill spent much time. She was in charge of the information centre which communicated with allied military leaders in the field. She organised written records of war events worldwide for commanders to review when in London. She also administered domestic matters when Churchill and others travelled for conferences with leaders such as Roosevelt and Stalin.

A truly remarkable lady from a remarkable family. She died aged 97; her renal function had not deteriorated.
THE HAEMOLYTIC - URAEMIC SYNDROME:  
A case occurred in Thessaloniki in 1918  
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Conrad Gasser and his colleagues from Bern in Switzerland usually receive credit for discovering the *haemolytic-uraemic syndrome* because of their paper published under that title in 1955. Two (at least) other observers, J. Bamforth and W. Hensley, had however previously reported similar, but now rarely acknowledged, cases. The present communication will review the clinical reports of the latter that appeared in 1923 and 1952 respectively, and will discuss some philosophical implications suggested by this situation.

Bamforth’s patient was a soldier admitted to a British Army Hospital in Thessaloniki in Greece in 1918 with fever and profound diarrhoea. He became anuric after eight days and died after ten days. An autopsy identified renal cortical necrosis with an intra-renal micro-vascular insult as the probable mechanism. Hensley’s patient was an 8-month old infant who was hospitalized in Sydney with severe diarrhoea, haemolytic anaemia, thrombocytopenia, and uraemia. He died after eight days: an autopsy showed acute necrosis both of his glomeruli and of his renal tubules.

Gasser *et alia* reported on five children who developed haemolytic anaemia, uraemia, poikilocytosis, and sometimes thrombocytopenia, with renal cortical necrosis. The evocative name that they proposed for the condition promptly attracted international attention. Investigations later identified Shiga toxin as a sometimes-causal infectious agent; whereas complement abnormalities, often genetically-based, predisposed to other cases. The importance of the Swiss report, therefore, was not that it provided the first documentation of the haemolytic-uraemic syndrome, but that it proposed a distinctive name for it. This became a symbolic index item that enlightened many people about it, and that stimulated others to explore its mechanisms and ramifications.

I suggest that this situation — in which the trumpet-call proposal of a distinctive name coalesces previous observations and insights into a recognisable concept to gain greater credit for the trumpeter than for the original observers — occurs quite often in the semiotics of science and medicine, but remains singularly under-recognised.

THE EMPEROR’S NEW CLOTHES IN NEPHROLOGY:  
PAST AND PRESENT  
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In, the philosophy of science (and medicine) a hypothesis should have verifiability being empirically verifiable thus meaningful. It should also be falsifiable, that is honestly rejected if it is contradicted by a basic observation. The question arises who will voice the contradiction. In the tale "The Emperor’s new clothes" (H.C. Andersen 1835) the emperor and courtiers were silent because they feared being revealed as stupid or incompetent. Scientists often do not
challenge data with which they might not agree, or conclusions that are perhaps overblown or overstated for these and other reasons. Nephrology offers us similar examples from the past and the present.

Past: Galen (129-216 AD) described Diabetes as a disease specific to the kidneys because of a weakness in their retentive faculties. A theory challenged only in the 19th century. Aristotle (384–322 BC) incorrectly observed the absence of the kidney in fish and birds and deduced that it was not essential for the existence of a living organism. This proved wrong in the last century. He also wrongly deduced from examination of dead cows, where each kidney was located on each side of the spinal column, that this was the case also for the living animal. A hypothesis rejected only last year.

Present: Highly costly treatments still persist based mainly only on experimental and observational studies but not robust randomized controlled trials: The use of phosphate binders for phosphate lowering in advanced kidney disease. The use of statins for cholesterol lowering in dialysis patients. Meanwhile simpler and cheaper treatments are not actively promoted.

In Anderson’s story the child who cried out “But he isn’t wearing anything at all” opened the eyes of the whole town. In the current scientific milieu, although the lack of evidence is testified, a person out crying the obvious risks to face harassment from the modern tailors (Journals, Sponsors, Academia) who produce the clothes of our kings.

CHLORIDE ANION AND ARTERIAL HYPERTENSION: A HISTORICAL REVIEW

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In 1929 Robert Berghoff and Angelo Geraci published the results of a primitive experiment upon fifty persons, seven of whom were hypertensive. They substituted sodium chloride in their diet by sodium bicarbonate and observed a considerable decrease in their blood pressure. It was the first experimental observation that chloride anion may be responsible for blood pressure elevation produced by increased salt consumption.

In 1939 Walter Kempner at Duke University in Durham, North Carolina, introduced the “rice diet” with a rigid restriction of sodium (0.15 gm/day) and chloride (0.2 gr/day) which proved efficacious in treating hypertension.

In 1971 Floyd Kregenow showed experimentally that duck’s erythrocytes, placed in a hypertonic environment, after an initial shrinkage, restore their volume to normal values by inwardly moving of potassium and chloride ions.

One year later in 1972 Arthur Guyton and colleagues introduced the conception of infinite blood volume regulation by the kidney as the etiology of essential hypertension based upon the “pressure natriuresis” phenomenon and turned the lights of investigation toward the sodium as the principal ion related to hypertension.

In 1978 Theodore Kotchen et al. showed experimentally that chloride anion inhibits plasma rennin activity in sodium deprived rats.

In 1981 Rainer Greger and Eberhard Schlatter discovered the sodium potassium 2 chloride co-transporter (NKCC2) in the thick ascending limb (TAL) of Henle’s loop of rabbit kidney.

In 1993 and 1994 Geraldo Gamba et al cloned and purified the thiazide sensitive sodium chloride co-transporter (NCC) in distal convoluted tubule (DCT) and bumetanide sensitive sodium...
potassium 2 chloride co-transporter (NKCC2) in the thick ascending limb of Henle’s loop (TAL).

In 1996 David Simon et al showed that mutations in the genes encoding NCC and NKCC2 are responsible for Gitelman and Bartter syndromes.

In 2001 Frederic Wilson et al described two mutations in genes encoding WNK1 and WNK4, as the cause of Gordon’s syndrome which mirrors the phenotype of Bartter and Gitelman syndromes.

In 2014 Alexander Piala et al showed experimentally that WNK1 acts as an intracellular chloride sensor and is capable to regulate its own phosphorylation or dephosphorylation, and hence activation or deactivation, according to intracellular chloride concentration.

Parallel to the above mentioned work, in 2011 and 2013, Dominique Eladari and his team showed, in intercalated cells of mice, the presence of thiazide sensitive sodium driven chloride bicarbonate exchanger (NDCBE). The exchanger operates in parallel with the sodium independent chloride/bicarbonate exchanger pendrin and the net result of the coupled function of NDCBE/pendrin is the absorption of sodium chloride with resultant increase of extracellular volume and blood pressure.

CONCLUSION

After almost one century of vigorous research efforts we know now that although sodium is the principal extracellular cation which determines the magnitude of extracellular volume and hence the magnitude of blood pressure its reabsorption from the kidney and movement to the extracellular space is principally depended upon chloride anion. After that may it is time to talk about “chloride sensitive” and not sodium sensitive hypertension.

HERBAL PRESCRIPTIONS FOR THE TREATMENT OF KIDNEY DISEASES IN THE BYZANTINE ERA

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INTRODUCTION

This article focuses on nephrology diseases and illnesses as well as on the treatment of herbal formulations that were used in the late Byzantine era and are recorded in medical texts. The medical Texts which have been investigated refer to the Byzantine period from the 4th to the 15th century. In this period Texts were written which contributed to the evolution of medical science to both the West and East. In particular the text which were referred excluding to Urine, were studied from doctors. Those books are separated in two categories: Books focused in the observation of the Urine (Uroscopy) with a diagnosis of the kidney diseases, and Books of the treatment of kidneys diseases.

MATERIALS AND METHODS

Our primary source material was the medical collections by Oribasius, Aetius, Alexandros of Tralleis, Paul of Aegina, Symeon Sith, Nikolaos Myrepsos and Ioannis Actuarios, who report nephrological diseases and herbs that face them.

RESULTS

These studies have confirmed the ongoing search and methodological approach to urine testing. Also, in herbal medicines, herbal combinations are recommended for the treatment of dysuria, strangury, lithiasis and nephropathy. The plants belong to various families of which the most frequent: Apiaceae, Lamiaceae, Asteraceae, Fabaceae and Rosaceae.
CONCLUSIONS
This research leads us to the conclusion that the content of this book gives us a detailed view of the urology and properties of the herbs that were able to effectively deal with kidney diseases and the level of knowledge that existed during the Byzantine era.

CYSTIC LITHIASIS TREATMENT IN "MEGA DYNAMERON"
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Nikolaos Myrepsos from Alexandria was a well-known doctor, botanologist and pharmacologist of late Byzantine period (13th century), who coded and summarized the knowledge in Pharmacy until his era. His book "Mega Dynameron" includes more than 2500 pharmaceutical recipes and has been the reference drug book in Europe for about three centuries after its publication. Our study aimed to focus on recipes for nephrolithiasis, especially cystic lithiasis.

For the purpose of this study we used the Latin translation of "Mega Dynameron" published by Leonhart Fuchs (1549, Basel), available at the Biblioteca Digital Dioscórides of Universidad Complutense of Madrid, as well as the Greek encoded text by Ilias Valiakos (2014).

Dynameron includes 24 sections, following the 24 letters of the Greek alphabet. Myrepsos refers to renal diseases in a substantial number of recipes in his work. Most of them are intended for use in non-renal pathologies as well, and only a part of them are specific for renal and cystic lithiasis. "Antidotarium" in section "alpha" includes eight recipes referring specifically in cystic stones dissolving. Two of them are exclusive to cystic lithiasis (ν' /LI and νβ'/LIII), while μα'/XLII and ρα'/CXCIII are used both for renal and cystic stones. The rest four (β'/II, λθ'/XL, ηη'/XC and τιδ'/CCCXX) are indicated for other diseases as well. Recipes include a rich variety of herbs, plants, vegetables and fruits, insects (cicada) and animal products (goat’s blood), with detailed preparation instructions. Ingredients are mixed with honey, sugar, water, wine or chamomile, and are administered in specific doses and duration of treatment. More recipes about renal inflammation, lithiasis and colics in Dynameron are found in sections for ointments, patches, enemas, cathartics and others, with a couple of specific cystic stones recipes referred in index pilularum ("περ Κοκκίων") and index lexopyretorum ("περ Δηκοπυρέτων").

Nikolaos Myrepsos with his reference drug book "Mega Dynameron" disseminated invaluable knowledge for lithiasis treatment throughout the centuries, highlighting the recognition of importance of kidney function and uropathies.
RESEARCH ON THE KIDNEY AND HAIR LOSS BASED ON ANCIENT CHINESE MEDICINE LITERATURE

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Huang Di Nei Jing (《黄帝内经》Inner Canon of the Yellow Emperor) embodies the distinctive view of human body in Chinese medicine system. Its important concepts include the interpretation of the life cycle and the theory of visceral manifestations. In Su Wen (《素问》Plain Questions), it pointed out that the kidney governs storage and stores the essence, and its bloom manifests in the hair. It also interpreted the close relationship between the production, growth, whitening and loss of the hair and the state of kidney qi. The records from Ling Shu (《灵枢》Miraculous Pivot) and Jin Gui Yao Lue (《金匮要略》Synopsis of Prescriptions of the Golden Chamber) also reflected view of doctors in early stage on etiology and pathogenesis of hair loss from the perspectives of kidney deficiency, seminal emission, and qi-blood deficiency.

Located on the surface of human body, hair refers to an important appendant organ of the skin. In Chinese medicine, it is believed that interior conditions will manifest in the exterior, and external changes of human body are caused by changes of internal organs, qi and blood. Hair loss not only affects patients’ appearance, but also refers to the morbid manifestation of latent existence of predisposing factors in the body and dysfunction of qi and blood, with complex pathogenic factors.

In Huang Di Nei Jing (《黄帝内经》Inner Canon of the Yellow Emperor), it records that over intake of food in sweet taste will lead to bone pain and hair loss and if kidney qi is sufficient, the hair and permanent teeth will grow. If kidney qi is debilitating, it will cause hair loss and withered teeth, pointing out that excessive sweet food will damage bones and hair, and that insufficient kidney essential qi and blood failing to nourish the body are the important causes of hair loss. Reviewing on the relevant literatures of Chinese medicine in the past dynasties, it shows that Chinese medicine is very rich in the contents of etiology, pathogenesis, and formulas of hair loss. There are also many methods for nourishing the hair, of important academic values.

THE REFRAMING OF THE NEPHROLOGY VIDEO LEGACY PROJECT 30 YEARS ON

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Thirty years ago, we both were attracted by the idea of recording video interviews of individuals who had played a key role in the founding and early expansion of Nephrology as a specialty, most of whom were alive. Sadly, a number of individuals in this category had already been lost, principally Homer Smith USA), Jean Hamburger (France), John Merrill (USA) and Nils Alwall (Sweden). Occasionally however we were lucky in such finds as a film recording of John Jacob Abel talking in 1929. The result of this endeavour was recordings of about 50 giants of Nephrology by 2007. A major feature was not to impose a standard format but allow subjects to talk in a manner and for as long they wanted. These recordings were made on VHS tapes, but
Oral Presentations

it became obvious that digitisation of the material was essential, and this also was undertaken as the 21st century began. Some of these recordings transferred to CD format were available in the early years of the century through the ISN who had helped sponsor the project, but in reorganisation of the ISN website they were deleted and vanished from view. Now they're available in an expanded series of recordings which continues to grow in collaboration with Pierre Ronco and Giorgina Piccoli of the ERA, Italian Society and Francophone Society and their colleagues at https://www.youtube.com/playlist?list=PLS1ZP4out6bM__j9_rxTgy4V_a0TNPFpu

We believe that today’s participants and trainees in Nephrology need to be reminded of the inconsistency of a rolling present through understanding of how present hypotheses, concepts and treatment recommendations came about. Despite a strong movement amongst professional historians to downgrade the role of “great men” in the progress of ideas, these ideas in sum came from an endless series of talented individuals. Hearing directly on video from this series of such men and women, almost all of whom have now passed away, not only gives a vivid idea of their characters but also an insight into how their minds worked. During the IAHHN meeting delegates will be free to watch all or parts of some 50 early interviews from the Video Legacy series.

DIMITRIS OREOPOULOS, MY FATHER
Oreopoulos Antigone

Dimitrios Oreopoulos is best known for his innovations and contributions to the field of peritoneal dialysis. As his daughter, however, I have a different perspective on my father’s greatest legacy, which I believe is love, faith, fearlessness and passion.

I have created a video that shares my experience of our father-daughter relationship, his role as a teacher and colleague to many around the world in the nephrology community, his belief in the necessity of compassion and connection during the delivery of medical care and his views on Christianity.

My father was my friend, mentor, and the greatest humanitarian I have ever known. My childhood is filled with good memories of foreign trainees at our home for Christmas and Thanksgiving dinners so they would not be alone for the holidays. I often witnessed my father give money to individuals in need, charities, and the Church. He maintained a corporate account that was used to help patients pay for medication or rent when they could not afford it.

My father taught me that words and ideas can change the world; he wrote letters to the Prime Minister, Steve Jobs of Apple, and Members of Canadian Parliament when he had a concern or a commendation, and was unafraid of failure or large problems that needed to be solved. He was able to create the first Greek School for children and the first Greek nursing home in Toronto, Canada, wrote a children’s book and founded a medical journal that promoted the restoration of humane medicine. Always modest about his impressive accomplishments, he never strived to impress others.

One of the qualities I admired most about my father was that he could have a meaningful conversation with anyone no matter the race, age, religion or cultural background. He always found something to connect with people on. He made others feel loved and respected through being genuinely interested in their story, without passing judgment. My father’s efforts in his own spiritual journey and his faith in the belief that there is always good to be found in any situation were also a part of his legacy that had a lasting impact on me.
Rufus of Ephesus and Aretaeus of Cappadocia (1st – 2nd century CE) can be considered as the first Greek “giants” of Nephrology since they are the first exponents of Hippocratic medicine who recognized the specific function of the kidney and described renal diseases. In the modern era, several Greek doctors contributed to the establishment and advance of Nephrology in Greece. I will refer only to those who are no longer alive. I will also refrain from mentioning the great contribution of Dimitris Oreopoulos since a special tribute to his legacy has been arranged to be paid in this meeting. Hippocrates Yatzides (1923-2013), a principal mentor to Oreopoulos and one of the founders of EDTA in 1964, is deemed as a pioneer of hemodialysis for the reason that, in 1965, he used activated uncoated carbon hemoperfusion to treat barbiturate poisoning. Yatzidis’s early attempts to establish a national Society of Nephrology, in 1966, were fruitless. Three years later, Sotiris Papastamatis (1912-1979), associate professor of Medicine in the University of Athens and his close friend Dimitrios Valtis (1917-1973), professor of Medicine in the University of Thessaloniki, collaborated in the foundation of the Hellenic Society of Nephrology (HSN). Other departed colleagues noteworthy for their contribution to the advance of the study of renal diseases and the introduction of chronic hemodialysis in our country are Panayotis Metaxas (1929-2007) (Valtis’s disciple, member of the 1st HSN Council, president of the 8th International Congress of Nephrology held in Athens in 1981), Antonis Billis (1932-2013) (Papastamatis’s disciple, vice-president of the 2nd HSN Council, president of the 3rd HSN Council and of the 1st National Congress of Nephrology), and Gregory Vosnides (1943-1996) (Billis’s disciple, secretary of the 32nd EDTA-ERA Congress held in Athens in 1995, co-organizer with Spyros Marketos of the 1st International Congress of the History of Nephrology held in Cos in 1996). Further to breaking new ground in the development of Nephrology in our country, these colleagues continue to serve as role models to younger Greek nephrologists. And this attribute should be viewed as one of their most important accomplishments.

For over 200 years from the early 1700s, medical education was a dominant activity of Scotland’s universities. Scotland’s graduates reached just about every corner of the world. They practised the scientific approach to improving medical care that they had learned there, and established hospitals and medical schools as they travelled. Nephrology came late to this, but made up for it. Dr Cullen wrote famously, but gloomily, in one of his consultations by correspondence in 1784, on the dropsy suffered by Samuel Johnson. Its cause was unknown, and management symptomatic.

Richard Bright, inventor of Nephrology, studied in Edinburgh 1808-10. His examination
in 1813 including scrutiny (in Latin) of his thesis on erysipelas, but his 1827 'Reports of Medical Cases' reverberated around the world. Suddenly everyone wanted to test for proteinuria.

Amongst those taking Bright’s work further were Robert Christison, professor of Medicine in Edinburgh, and Pierre Rayer (Paris), whose classic works followed in 1837 and 1839. Despite some striking insights, Christison’s work has been relatively neglected. His campaign to prevent the graduation of women may have contributed to that.

Soon after Bright’s publication, Thomas Latta demonstrated in Leith in 1832 that patients who were moribund from Asian cholera could be revived by infusing saline into a vein. This was a discovery of much more immediate importance than Bright’s, but was neglected for the next 50 years.

Thomas Graham meanwhile described the phenomenon of dialysis, and distinguished colloids and crystalloids, in work initially largely done in Glasgow and published 1830-61. The 1861 paper described its application to urea in urine, laying the ground for the first attempts at therapeutic dialysis.

Dialysis reached Scotland’s academic centres in 1959. The first kidney transplant in the UK was undertaken between identical twins in Edinburgh in 1960. A period of intense interest in immunology and immunopathology followed. The second use of Azathioprine in transplantation was in Edinburgh in 1962.

In 1969-70, the world’s worst dialysis-associated Hepatitis B was experienced in Edinburgh. A remarkable ensuing project created the recombinant vaccine Engerix B, marketed in 1986, the income from which was fed back into basic research.

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**THE URINARY DISEASES IN THE MOROCCAN TRADITIONAL PHARMACOPOEIA: ETHNOLOGY AND HISTORICAL EPISTEMOLOGY**

Bammi Jamal

This work, based mainly on ethnobotany, is a contribution to the knowledge of the Moroccan pharmacopoeia concerning the treatment of diseases of the urinary system.

My approach is both synchronic and diachronic, as it seeks to elucidate the historical anchoring of current traditional medical practices through a comparative study of the Moroccan traditional pharmacopoeia recipes of related to urinary diseases and of some Arabic medical texts: i.e. Razes’s "Treatise on stones in kidneys and bladder"; Avenzoar’s "Tayssir", Ibn Al-Jazzar’s “Viaticum” and Ibn Al-Baytar’s “comprehensive of medicinal and alimentary simples”.

I will try to show the persistence of historical medical knowledge in traditional medical practices, thereby questioning the relevance of the presumed epistemological break between traditional medical knowledge and scholarly discourse.

**Key-words:** Urinary Diseases, Ethnobotany, Moroccan Pharmacopoeia, Historical Medical Knowledge.
UROLITHIASIS AND HYPERTENSION: THE APPARENT AND THE HIDDEN IN ANCIENT GREEK AND THE ORIENTAL MEDICAL TRADITIONS

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Urolithiasis symptoms like renal colic, dysuria and hematuria were easily observed and associated with the urinary system, in any of the long-standing medical traditions of antiquity. On the contrary, a modern symptom like hypertension could not be readily identified with a specific pathology. Investigation and comparison between the Ancient Greek Medicine, Ayurveda, Chinese and Tibetan medical systems on the theoretical causes behind these diseases, their diagnosis and treatment were based on the classical texts and the long tradition of practice. For example for the Hippocratic physicians hypertension could be categorized as *plethora* or abundance of blood, while their Chinese colleagues would classify it as “wind in blood” and “blood stasis” syndromes. The suggested treatments covered the whole medical arsenal of antiquity, from surgical operations, like perineal lithotomy for cystolithiasis, mentioned both in Corpus Hippocraticum and Sushruta Samhita, to bloodletting and especially the use of leeches (hirudotherapy), a rational way to relieve blood abundance, or to the herbal remedies which played a crucial role in the treatment of both urolithiasis and hypertension, and are still used by a considerable number of patients in Greece, India and China. The careful examination of these data can direct us to the better understanding of medical thought in distant civilizations, focusing in their similarities and differences. Last, but not least, they can reveal a possible and plausible materia medica for the modern application.

PETRUS LEO: A HISTORY OF MEDICINE, ASTROLOGY AND MURDER.

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Petrus Leo (also known as Pierleone Leoni or Piero Leoni) was born in Spoleto, Italy, around 1445 and studied medicine in Rome. He was an eminent physician and during his life he was professor of medicine in Pisa and Padua. However, most of his fame was due to the fact that he was the personal doctor of Lorenzo de’ Medici (“the Magnificent”). He practiced medicine according to the school of Galenus, criticizing Avicenna’s unsystematic theories and improving his teaching applying the new systematic approach inspired by Ramon Llull. However, Leo was a man of his time and his interests covered also astrology and philosophy, being part of the neoplatonic circle along with Marsilius Ficinus and Giovanni Pico della Mirandola who were close friends of him. In 1478 he wrote a treatise entitled “De urinis” which was later published by a venetian editor in 1514 in appendix to Gilles de Corbeille’s “De urinis et pulsibus” which was widely diffused in academic environments. Petrus’ manuscript was nothing unknown but its main innovation resided in listing all the possible urine appearances in color and thickness, expanding the canonical medieval uroscopy wheel from 20 to 42 colors and applying the lullian “ars combinatoria” to combine all the different features to reach a final diagnosis. Moreover, he detailed a standard methodology for uroscopy. His rich and wealthy life tragically ended on April 9th, 1492,
a day after the Magnificent’s death. Piero de’ Medici accused Petrus for the death of his brother “the Magnificent” and Leo’s body was found in a well not far from the medicean country mansion. Later, history attributed Lorenzo’s death to an inferior limb gangrene due to gout but Petrus’ name was associated to the most beloved Florentine stateman passing for a long time due to its cabalistic interests and the rumors diffused by the Medici family.

**A JOURNEY THROUGH THE HISTORY OF DIALYSIS IN SUB-SAHARAN AFRICA**  
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Sub-Saharan Africa (SSA) is a heterogeneous region with 47 countries, almost one billion people, and a gross domestic product of 1.7 trillion in 2017. The development of dialysis in Africa reflects the local socio-political circumstances. Up to seventies, Africa was recovering from long years of colonization and political turmoil, so limited countries were able to establish dialysis centres.

**ERA BEFORE SEVENTIES:**
- South Africa was the first country in SSA which started dialysis in 1957, by a general practitioner in Krugersdorp hospital, to dialyse 2 patients with acute kidney injury (AKI).
- In Kenya, acute haemodialysis (HD) started in 1961 by Professor L.S. Otieno, followed by peritoneal dialysis (PD) two years later.
- In Nigeria, limited acute dialysis has been available in Lagos since 1965 and acute PD in Ibadan since 1967. Regular HD was firstly established at Lagos Teaching Hospital in 1981 by Professor T.A. Odutola.
- In Sudan, the first dialysis centre was a home dialysis unit, established in 1968 supervised by Mr. Osman Awadalla.

**ERA AFTER SEVENTIES:**
- In Côte d’Ivoire, the first acute PD was performed in 1974 in Abidjan by Professor Alain Bondurand to treat black fever patient with AKI.
- In Zimbabwe, Drs. John Forbes and Janet Seggie placed a dialysis machine in Harare Central Hospital in the early 1970s; yet the machine was occasionally used for the treatment of AKI until 1980.
• In Ethiopia, PD dialysis and less often HD were started in 1980 as reported by Dr. Berhanu Habte to treat AKI at Addis-Ababa University Hospital.
• In Tanzania, Dr. J. P. Miabaji reported that two dialysis machines were available at Dar-El-Salam University Hospital in the early 1980, to treat AKI or important patients with plans of transplantation abroad.
• In Ghana, Dr. T.C. Ankrah provided acute PD and sporadic HD for AKI in 1980.

Other SSA countries started to establish dialysis units afterwards. However, dialysis services are still sparse in most countries due to the high costs and shortage of skilled personnel.

HISTORY OF RENAL TRANSPLANTATION IN ARAB WORLD

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History of renal transplantation from 17 Arab countries will be highlighted.

In Egypt, Mansoura leaded transplant program by performing the first two transplants, 1976. Egyptian experience exceeded 19000 in 39 centers. Cairo University performed first unrelated donor in 1983 and deceased donor transplant in 1980. First two transplants in Algeria were in 1986, 1987, total transplants 220 live donors (LD) and 4 deceased donors (DD).

Sudan, first case was in 1972 and overall experience 1600. Iraq performed first case in 1985, the same year where Morocco experience started. They performed 56 transplants in 2015.


I hope that in near future Arab transplant should be established to supervise organ distribution, set up regional database, raising funds to less privileged centers and support research.
WHAT DID AL-RĀZĪ (RHAZES) QUOTE FROM PHILAGRIUS OF EPIRUS ON KIDNEY DISEASES IN KITĀB AL-HĀWĪ FĪ AL-ṬIBB (LIBER CONTINENS)?

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Kitāb al-Hāwī fī al-Ṭibb (Liber Continens) of Rhazes (865-925) is a significant work on account of its valuable quotations from the works of Greek, Indian and Arabic authors. These quotations make Rhazes’s work important in terms of history of medicine because it provides us with information about the works of the authors which have not survived until today. Philagrius of Epirus, flourished in Thessaloniki in the second half of the fourth century, is one of those writers in Rhazes’s work. The purpose of this study is to present the quotations from Philagrius related to kidney diseases in Liber Continens and to bring them to the literature in English. The 10th book of Kitāb al-Hāwī fī al-Ṭibb entitled as “fi amrād al-kulā was majārī al-bawl was ghayrihā/de dispositionibus renum et vesice et aliqualiter veretri tractans continet tractatus tres” is about the diseases of the kidneys, urinary tract and others. The quotations from Philagrius were found out in this book of Kitāb al-Hāwī’s both in Arabic and Latin texts (Liber Continens), and then these fragments were compared to each other, and translated into English. In Kitāb al-Hāwī fī al-Ṭibb /Liber Continens, the quotations from Philagrius are related to kidney pain and its symptoms and signs, kidney stones, and diabetes. Fragments from Philagrius recorded in Kitāb al-Hāwī fī al-Ṭibb /Liber Continens on diseases of the kidneys, are discussed and brought to the literature in English.

A STUDY ON CHAPTERS RELATED TO NEPHROLOGY IN QIṬA’ĀTU NEQĀVE FĪ TERCEMETI KELIMĀTI BOERHĀVE

BY SUBHĪ-ZĀDE ‘ABD AL-‘AZĪZ EFENDI IN THE 18TH CENTURY

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Chief-Physician Subhī-zāde ‘Abd al-‘Azīz Efendi (1735-1783) translated the famous Dutch Physician Hermann Boerhaave’s (1668-1738) aphorisms named as Aphorismi de cognoscendis et curandis morbis in usum doctrinae domesticae digesti into Turkish as Qīṭaʾātu neqāve fī tercemeti kelimāti Boerhāve (1769). It has been found important by the Turkish medical historians because this is one of the “first complete translations of European medicine” into Ottoman medicine. We aimed to determine and evaluate the topics related to nephrology in Qīṭaʾātu neqāve fī tercemeti kelimāti Boerhāve. In this study, manuscripts of this work registered in Süleymaniye Manuscripts Library, Esad Efendi Collection, nr. 2462 and Beyazıt State Library, Veliyüddin Efendi Collection, nr. 2484 were examined. First, the sections of the mentioned
work regarding nephrological diseases were determined, and then Turkish texts written in
Arabic letters were transliterated to the contemporary Turkish alphabet. Boerhaave’s
Aphorisms: Concerning the Knowledge and Cure of Diseases was used for comparison. The
subjects related to nephrology in the work are examined under the headings of “kidney pain”
and “urolithiasis”. The section of “kidney pain” or “nephritis” consists of 14 aphorisms (993-
1006), explaining the causes, signs and symptoms, and treatment of nephritis. “Urolithiasis”
section contains 26 aphorisms (1414-1439), mentioning the causes, signs and symptoms,
treatments and some interventional methods, such as lithotomy, of kidney and bladder stones.
We may conclude that Qıṭa‘atu neqāve fī tercemeti kelimāti Boerhāve explaining the approach
of European medicine to nephrological diseases has been transferred to the Ottoman medical
literature, with a little delay. In this book, Latin medical terms such as nephritis, pelvis, ureter,
and the surgical intervention called as lithotomy by Europeans are probably used for the first
time in the Ottoman medical literature.

SHA’BĀN SHIFĀ’Ī OF AYASH AND HIS SUGGESTIONS
ON NEPHROLOGICAL PROBLEMS IN CHILDREN
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The work named as Tadbīr al-Mawlūd (1701), written by Sha’bān Shifā’ī of Ayash
(d.1705), is considered as the first book written extensively on child health and diseases in the
Classical Period of Ottoman Medicine. In the present study, it has been aimed to determine and
evaluate the topics related to nephrological problems in children.

For the study, the copy of manuscript Tadbīr al-Mawlūd, from his own handwriting of
Sha’bān Shifā’ī of Ayash’s found in İstanbul Süleymaniye Manuscript Library, Mihrı ah
Sultan Collection, nr. 344 have been reviewed. Firstly, the nephrological sections of the docu-
ment were determined, and then these Turkish texts written in Arabic letters were transliter-
ated into the contemporary Turkish alphabet.

The subjects related to nephrology in the Tadbīr al-Mawlūd have been discussed under the
main heading of “Diseases of kidneys and bladder”, together with three subheadings; “Urinary
tract stones in children”, “Urinary retention in children” and “Bed-wetting”. The causes and
treatment options of kidney and bladder stones, urinary retention and voiding difficulties, and
finally the causes and treatment of enuresis in children have been discussed.

It has been noticed that Sha’bān Shifā’ī of Ayash benefited from the works of Ibn Sīna
and Ibn al-Nafis, valuable physicians in the Middle Ages. It is understood that the principles
of humoral paradigm, which is an accepted medical understanding of that period, was valid in
explaining the etiology of nephrological diseases and its treatment. These documents are im-
portant in terms of being the first written work about the approach to pediatric diseases and
urological problems in children in the Ottoman period.
A BOTANICAL SCIENTIST IN THE 13TH CENTURY AND HIS SUGGESTIONS ON URINARY TRACT PROBLEMS;

IBN AL-BAITAR

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Ibn Al-Baitar was born in Malaga, Andalusia in the last quarter of the 12th century. He took botanical lessons in Andalusia and worked on plants until 20 year-old. He traveled to north Africa to increase his knowledge and experience between 1220-1223, and came to Anatolia in 1223. Later, he traveled to the northern Mediterranean coast and Greece islands and moved to Alexandria. He became the chief botanist and pharmacist of the Ayyubid sultanate in Egypt and made a lot of researches in botanics in the Middle East, and educated many students in Cairo and Damascus.

He collected many drugs, vegetables, animal products, and firstly introduced many plants and drugs to the medical world. He was recognized as the greatest botanical scientist and pharmacist of his time.

‘Kitab Al-jami li-mufradat al-adwiya wa al-aghdhiya’ is Ibn al-Baitar’s best-known work, and accepted as the largest plant and drug book of the Middle Ages. It contains detailed description of several medicinal plants, foods, and drugs together with their therapeutic values. This book was used in Europe until the 19th century. In 1875, it has been published in Arabic language, and translated into Latin, German, and French languages.

Recently, it has been published in Turkish by the Department of Medical History and Ethics in Health Sciences University (2017), and its original copy is protected in Library of Hagia Sophia (written in 1573).

We searched the drogs effective on urinary tract (UT) in this book. Almost 175 drogs were effective on UT and 150 of them were herbals. In this study, we will summarise Ibn Al Baitar’s suggestions on UT problems.

MISCONCEPTIONS IN HYPERTENSION - PATHOGENESIS AND TREATMENT

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Our cells live in an extracellular salty environment, which is maintained stable by the functions of the circulatory system and the kidneys. The Egyptian physician Imhotep (3000 B.C.) observed that the pulse is the index of the heart. Chinese records (2600 B.C.) hold men-
tion of a hard pulse in individuals consuming large quantities of salt. The ancient physician Galen first proposed the existence of blood in human body and William Harvey in 17c AD presented convincing proof of the circulatory system. Blood pressure (BP) was first measured in a horse in 1733, when Reverent Stephen Hales inserted a glass tube into an artery. In 1828 Poiseuille devised the mercury manometer and in 1897 Riva Rocci designed the first clinically acceptable sphygmomanometer. Korotkoff heard the sounds made by the constriction of the brachial artery in 1905, a method that has been widely used until today. In the 1960s, the first ambulatory blood pressure recording devices were developed. These have since been improved, and allowed the recognition of masked and white-coat hypertension, the determination of patient as “dipper” or “non-dipper and the better assessment of the response to treatment.

Over the past century elegant experiments have proved that the kidney is the principle organ ultimately regulating blood pressure levels, and transplantation experiments showed that “hypertension travels along with the kidney”. In 1934 Goldblatt developed clamps for constriction of renal arteries in dogs and observed a temporary elevation of blood pressure, which returned to normal when the clamp was removed. In the 1950s Guyton became most famous for his experiments regarding renal-pressure natriuresis and long-term BP regulation by the kidney. In 1970’s Dr. Laragh demonstrated the central role of an overactive renin angiotensin system for causing most hypertension. Following discovery of molecular biology many genetic studies identified certain gene regions linked with BP control.

For centuries hypertension and apoplexy have been treated by leeching, phlebotomy and acupuncture. The discoveries that revolutionized modern therapy of BP have included: the use of the first thiazide diuretic (1958); the discovery of propranolol (1964) and nifedipine (1972); the development of captopril by Gushman and Ondetti (1975); the approval of losartan in 1995; and the approval of the direct renin antagonist aliskiren (2007). Single pill combinations of two or three drugs are generally recommended by current guidelines to improve compliance and reduce cost.

Over the past 50 years various misconceptions regarding the threshold of hypertension and the goal of treatment have been clarified by randomized trials. These misconceptions have included:

1) **Hypertension cannot be prevented.** Modifications in life style that have been proven capable to prevent or delay hypertension, included weight reduction by a combination of healthy eating and regular exercise, reduction of fat, sugar, and salt intake, moderate alcohol consumption and smoke cessation.

2) **The common variety of hypertension, the so called essential hypertension is a benign condition and should not be treated.** Since 1967 when the first randomized VA study was released it became obvious that antihypertensive treatment effectively reduce cardiovascular complications and death.

3) **There is no benefit in treating mild hypertension in younger individuals.** In 1985, MRC trial of treatment of mild hypertension in 17,354 men and women 35-64 years old, randomized to bendrofluzide or propranolol vs placebo showed reduction in stroke, but not in coronary events or mortality from all cause.

4) **There is no benefit in treating elderly patients with isolated systolic hypertension.** In 1991 the SHEP Program included 4736 patients >60 years with systolic BP > 160 mmHg, diastolic BP < 90 mmHg randomized to active treatment vs placebo. After an average follow-up of 4.5 years active treatment decreased the risk for stroke by 36%, for MI by 23%, for CVD by 22% and for deaths from all cause by 13%.

5) **In diabetic patients is more important to lower blood sugar than treating hypertension.** In 1998 UKPDS, a randomized study in DMT2 patients concluded that tight blood pressure
control offered very significant benefits in various categories much more so than tight blood sugar control. It reduced microvascular complications by 24%, deaths related to diabetes by 32% and strokes by 44%.

6) There is no benefit in treating very elderly patients. In 2008 HYVET, a randomized placebo control trial, in patients > 80 years with systolic blood pressure > 160 mmHg on indapamide with or without perindopril (n=1933) vs placebo (n=1912) showed a 30% reduction in stroke, 39% reduction in death from stroke and 21% reduction in death from any causes, 23% reduction in the rate of death from cardiovascular causes and 64% reduction in the rate of heart failure.

7) By lowering thresholds to define hypertension than previous guidelines, the prevalence of patients with hypertension is expected to significantly increase, but the clinical benefit will be insignificant. In 2018 Vaduganathan et al. found that patients with hypertension based on prior guidelines compared with those newly identified with hypertension based on the new guidelines had similar risk of the primary endpoint, and therefore, the lower thresholds can identify greater numbers of patients who will ultimately experience adverse cardiovascular events and deserve aggressive treatment.

8) The SGLT2 inhibitors that block the reabsorption of glucose and sodium in the proximal tubules of the kidney and enhance their urinary excretion may reduce arterial blood pressure and lower the blood glucose levels, but on the other hand could damage the kidney due to chronic glycosuria. Recent randomized trials and meta analysis showed favorable effects of SGLT2 inhibition in diabetic patients, such as restoration of tubuloglomerular feedback and reduction of the intraglomerular pressure and hyperfiltration, reduction of albuminuria and proteinuria and cardioprotection and renoprotection on top of RAS inhibition.

In conclusion, major breakthrough trials in hypertension over the twentieth century have helped to resolve many misconceptions and permitted a more successful treatment of hypertension.

VITAMINS DISCOVERY AND CHRONIC KIDNEY DISEASE - CASIMIR FUNK STORY
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Wide discrepancies exist in the use of vitamins in kidney disease, and evidence-based recommendations are sparse. Water-soluble vitamin levels may be inadequate in patients not receiving supplements and this may be associated with increased mortality, which deserves further attention to increase strength of evidence. Supplements should be administered cautiously as renal mechanisms to prevent hypervitaminosis are no longer functional. In dialyzed patients importance of supplementation vitamins rises many questions. Research on the vitamins that are related to major deficiency syndromes began when the germ theory of disease was dominant and dogma held that only four nutritional factors were essential. Clinicians soon recognized scurvy, beriberi, rickets, pellagra, and xerophthalmia as specific vitamin deficiencies, rather than diseases due to infections or toxins. Everything would not be possible without previous achievements. The discovery of the vitamins was a major scientific achievement in
our understanding of health and disease. One among other scientists who worked in this area was Casimir Funk, a biochemist born in Poland but trained in several European countries. He moved to London in 1910. In the following year, he reported that he had isolated the active factor, pyrimidine-related concentrate from rice polishings that was curative for polyneuritis in pigeons. He then went on to suggest that this material belonged to the chemical class of “amines”, therefore he coined the term “vitamine” for these “vital amines.” When it was realized a few years later that others in the class were not “amines,” but a word was still needed, it was shortened to “vitamin”. The vitamins Casimir discovered are now called B1 (thiamine), B2 (riboflavin), C (ascorbic acid) and D (cholecalciferol).

He died in 1967 in the USA.

HISTORY OF PAROXYSMAL NOCTURNAL HEMOGLOBINURIA: FROM THE ORIGINS TO THE FUTURE DIRECTION OF THE COMPLEMENT INHIBITION THERAPY

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Paroxysmal nocturnal hemoglobinuria (PNH) is a rare hematological disorder that affects about 1 to 5 cases per million individuals, characterized by hemolysis, peripheral blood cytopenias, bone marrow dysfunction, and thrombosis.

The origin of PNH is the mutation of the phosphatidylinositol glycan class A (PIG-A) gene. This condition leads to a deficiency of surface proteins that protect the cells against damage caused by the complement system.

The first case of PNH was probably described in 1793 by Dr Charles Stewart, in the medical commentaries “Account of a singular periodical discharge of blood from the urethra”. In the next decades several cases have been reported by the most eminent physicians and scientists of the time. Dressier, in 1854, published a report of an “Intermittent Albuminuria and Chromaturia”, describing urine contained brown amorphous pigments without blood corpuscles.

The first detailed account has been described only in 1866, when Sir William Gull reported a case of a young “anemic looking” tanner with several episodes of dark urine, calling this condition “intermittent hematinuria”. In 1882 Strübing identified paroxysmal nocturnal hemoglobinuria as a disease entity, indicating that these patients could have an intravascular hemolysis with a defect of red blood cells.

Hijmans van den Bergh in 1911 confirmed that the hemolytic process was due to a defective red cell and related to complement dysregulation. The same year, the Italian scientist Ettore Marchiafava scrupulously described the pathogenesis of the affection and several year later further elaborations has been performed by Ferdinando Micheli: thanks to their contributions this disease has been also named Marchiafava-Micheli Syndrome. In the 1925 Enneking coined the name “paroxysmal nocturnal hemoglobinuria”, which has since become the universally approved definition. In 1938 Thomas Hale Ham and John Vivian Dacie found more evidence about the connection between the lysis of blood cells and the complement activation.

Despite the increased knowledge of this syndrome, therapies for PNH were still only exper-
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In clinical and symptomatic, with the use of antimicrobial agents, corticosteroids and blood transfusions.

The natural history of PNH changed drastically only in the 2007 with the introduction of Eculizumab complement blockade agent. It is a monoclonal antibody complement inhibition, actually the only licensed therapy for PNH. The development of second generation of terminal complement inhibitors, with the potential use of their progenitor, the Ravulizumab, represents a promising instrument for the future approaches against PNH.

**ERYTHROPOIETIN, FIRST INTUITION OF RENAL SECRETION**

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The paper aims to highlight an underestimated intuition of Giustiniano Nicolucci on a possible respiratory function of the kidneys, which anticipates of more than hundred years the actual extraction of the erythropoietin molecule from the urine of a patient with aplastic anemia made by Takaji Miyake in 1977.

In 1846 a young Nicolucci published in the Neapolitan periodical Filiatre Sebezio an article titled «Sull’Intima struttura dei reni con alcune considerazioni sulla loro funzioni e malattie». He assumes that the aforementioned respiratory function of the kidneys can be accomplished through the formation and multiplication of red blood cells, as recently observed in the liver of a human embryo by Koelliker.

The paper compares Nicolucci’s intuition with contemporary knowledges, particularly with the observations by Jacobson (1821) on the renal portal system in fishes, birds and reptiles, and the abovementioned research by Koelliker. Nicolucci had not found in the human kidney the anatomical formation of a so-called “portal vein”, existing in fishes, birds and reptiles.

Because of this reason, he stated that in mammals the respiratory function should also have occurred through humoral action, which could not be limited to the multiplication and growth of red blood cells, but it should also have affected the formation of new vessels.

Only about 50 years after this Nicolucci hypothesis, it was noticed that the bone marrow was capable of producing a greater quantity of red blood cells. The existence of a hormone able to regulate the production of erythrocytes by the bone marrow was hypothesized in 1906 by Paul Carnot and his assistant Camille Defflandre. The substance was called haemopoietin.

In the forties of the twentieth century, Bonsdorff and Jalavisto gave this substance the name of erythropoietin. A few years later, Kurt Reismann showed that the kidney was the main production site of this substance, but only in 1977 was Takaji Miyake able to extract the molecule from the urine of a patient.
Wilson’s disease, or hepatolenticular degeneration, is a rare, genetic disorder of copper metabolism. The disease leads to the accumulation of copper into the brain, the liver, the eyes, and the kidney. The dominant triad of the syndrome is nodular liver cirrhosis, Kayser-Fleischer ring in the corneas, lesions of the cortex and basal ganglia. In addition, a defect in proximal tubule reabsorption has been noted. The syndrome involving the basal ganglia degeneration and the liver damage has been named after Samuel Alexander Kinnier Wilson (1878-1937). The syndrome was initially a pure brain disease described by Frerichs in 1861, in a 9-year old boy with invasive neurological symptoms and cirrhosis at autopsy. In 1883 Carl Westphal in Germany described two cases with neurological aspects similar to the "multiple sclerosis", but without white matter degeneration at autopsy: he named the disease as "pseudosclerosis", without noticing the liver involvement. Adolph Strümpellii in Germany in 1898 described other cases of Westphal’s pseudosclerosis, and in one case also the presence of liver cirrhosis. These and other reports led finally Wilson in the UK to propose the existence of the new clinical entity with degeneration of the brain lenticular nucleus and of the liver in 1912. Only later the "pseudosclerosis" and "Wilson’s disease" were found to be the same disease. In 1913 Rumpel introduced the study of copper in the liver in a case of pseudosclerosis, which was confirmed by Malory in 1925; copper accumulation in the kidney was described by Wintrobe in 1954. The renal dysfunction included the discovery of aminoaciduria, glycosuria, increased urate excretion reduced renal plasma flow (RPF) and glomerular filtration rate (GFR), and specific histological lesions. Stein et al and Bickel et al characterized aminoaciduria and found a loss of glycine, histidine, threonine, cysteine, serine, alanine, glutamine, tyrosine, lysine, glutamic acid, leucine, phenylalanine. Their findings definitely excluded that Wildon’s syndrome was an inborn error of metabolism. A complete physiological study of the kidney was then presented in 1957 by Bearn and Gutman, who confirmed the reduced RPF and reduced GFR, and reduced secretory and reabsorptive tubular function. The ocular findings in Wilson’s disease have been identified in 1902 by Bernhard Kayser and Bruno Fleischer in Germany who first described the typical ring in the cornea that still brings their names. In conclusion, the history of renal and eye involvement in Wilson’s disease appears as another case of organ blindness that is the attention of predominant symptom leads to neglecting involvement of other organs in multisystemic diseases. The sequence of discoveries and hypotheses reflects the technical advancement of each specific historical period.
In the ancient times urine was considered an important element not only for religious tradition but also for diagnostic procedures. Pthagoras and Hippocrates were the first to show the variation of urine color in gonorrhea and tuberculosis. Over time several researchers reported on how urine variation may help diagnosis different diseases. Enrico Cauchi, member of the Medical Council of Malta, in 1933 collected all comprehensively organized info in his book “Fisiologia e Patologia dell’ urina” edited by A. Wasserman, Milano, Italy. Enrico Cauchi following the suggestions of “Urological Curves” by Augusto Murri reported all the variable evidences at that time about urine color variation. Moritz and Weisz reported gold yellow and canary yellow color of urine were typical of tuberculosis whereas Comas and Martinez observed urine precipitate of blue and green color. Greenish and orange yellow or intense green urine were reported in abdominal tiphus by Russo and Wiener whereas Petzetakis and De Silvestri reported gold yellow and brown urine color. Cammidge showed urine containing needles like cristal in golden yellow color that was dissolved with a 33 % sulfuric acid solution in pancreas diseases. Brown color urine of barium sulfate precipitate and light yellow brownish color in malignant tumor were reported by Davis. Ehrlich reported urine variation color from pink to red in heart diseases and Bruno observed blue and ruby red urine color in appendicitis. Aradas reported green color of urine in flu and Jefinoso observed grey and black color of urine in worms disease. Roch observed violet cloud in urine during liver diseases. Russo reported light green color of urine in smallpox. Becker evidenced urine color variations in kidney diseases. The previously knowledges were considered before 1931 by various medical doctors who used the urine color examination in their daily clinical activity.

American Civil War changed many aspects of life in America including understanding of the diseases. This presentation will critically examine the definition, understanding, and management of kidney diseases during the period of the War (1861-1865). Data are extracted from “Medical and Surgical History of the War of Rebellion” (MSHWR) published between 1870-1888. These treatise represents one of the most extensive data collection efforts in the history of wartime medicine. MSHWR contains approximately 3000 pages, comprise of medical (vol I, part I-III) and surgical (vol II, part I-III) aspects of the Civil War. Part II of the medical volume provides statistics of the medical reports, detailed case studies and discussion of symptoms of diseases and therapy. Interesting data on Bright’s disease are presented. This disease was di-
agnosed during the 5 years of the War in 1403 White soldiers with 114 deaths. Average strengths of the White troops per year was 437, 237 soldiers giving the incidence of Bright’s disease 0.07% per year. Between Colored troops, Bright’s disease was diagnosed in 404 soldiers with 68 deaths. Average strengths of the Colored troops per year were 60,854 soldiers giving incidence of the disease 0.22% per year. These data are suggesting three times higher incidence of Bright’s disease in Color troops than in White troops. There was no difference in incidence of diabetes between White or Colored troops. Thirteen cases of kidney diseases are presented in MSHWR and discussed in details. No kidney biopsy findings were reported.

Whole chapter (12 pages) in part II, vol. II is devoted to wounds of the kidney and suprarenal capsules. Many basic lithographs of injured kidneys accompany the text.

Data on other diagnosis pertinent to kidney and urinary organs are also presented and discussed. Many cases of acute kidney dysfunction were observed in soldiers with typhoid fever. The understanding of the kidney diseases presented by MSHWR where in line with good academic knowledge of the 1860thies. In many aspects, such as data collection and statistical presentation MSHWR brought innovation and progress in the field of nephrology.

THE ROLE OF THE MICROSCOPE IN RENAL DISEASE
AS DESCRIBED BY GIULIO BIZZOZERO:
HANDBOOK OF CLINICAL MICROSCOPY – 1879

Giulio Bizzozero (20 March 1846 - 8 April 1901) was an eminent italian pathologist, who first described the platelets as the third morphological element of the blood and identified their role in the coagulation. Among his original discoveries there are the hematopoietic function of the bone marrow, the studies on the phagocytosis, the histological structure of the epidermis, and many others important findings. Since the beginning he has been extremely productive and for his valuable research works, at the age of 26, Giulio Bizzozero was appointend full Professor of General Pathology at the University of Turin, Italy. Here he emphatized the use of microscopy against the outdated vision of old academics and promulgated the experimental methods, in competition with the vitalistic philosophy of the time. Bizzozero’s revolutionary vision of medicine had the purpose to permit every scientist to reach new discoveries in their field, previously the privilege of elite, being a model of a doctor as a humanist.

The advancement of his studies and the development of the art of microscopy led to the publishing of his masterpiece in 1879 “Manuale di Microscopia Clinica “(Handbook of Clinical Microscopy). Here he underlined how the microscopic examination of the urine gave to the physicians of the time indicative criteria of alteration of the kidney, often essential for diagnosis. The author operated a detailed analysis of the methods of time, laying the foundations for modern microscopy. During his career, he was also elected president of many medical societies and member of several public health commissions.

The contribution of this esteemed scientist has been significant in both the growing of knowledge’s in scientific community and in promoting public understanding of the benefits of medicine.
Galen of Pergamon (130-210 A.D.) correctly summed up the knowledge on the anatomy and physiology of the urinary tract from the Hippocratic physicians (fifth-fourth century B.C.) until his time, reviewing the clinical symptoms and nephrology and urology conditions and treatment. Caius Cornelius Celsus (25 B.C.-50 A.D.), in his work “On Medicine”, described a large number of surgical operations performed in Western medicine for the first time. Surgical management of urinary obstruction and bladder stone lithotomy is amongst them, featured as the last attempt when medical treatments failed. The existence of instruments specifically devised for the procedure, such as special knives, hooks and hollow S-shaped catheters, adapted to men’s urethra, is documented since Erasistratus (304-250 B.C.). Celsus advises an ear scoop to remove stones. A long thin solid tube of copper alloy, ending in a small scoop, was found in a rectangular salting basin (saltery 22) from the fish salting factory of Tróia, a Roman archaeological site in the Peninsula of Setóbal, near Lisbon. This paper presents the finding in its archaeological context and discusses its similarity with the published catheters of Roman time.

KEYWORDS
Roman surgical instruments; bladder stones; History of Nephrology; History of Urology

Short CV
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