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Abstract

This paper summarizes life and works of Avvocato Gerardo Marotta (1927-2017), Founder and President of the Italian Institute for Philosophical Studies from 1975 until his death. He obtained cum laude the Degree in Law discussing a thesis on “The Concept of State in Classical German Philosophy and Hegelian Left”. He was a follower of the Italian Institute for Historical Studies founded by the Philosopher Benedetto Croce. He was a fellow of the Gramsci Group of Naples and a founder of the Association New Culture. He and his young colleagues were very appreciated by the leaders of the Communist Party, however they could not be regimented and were expelled in 1954. Later Marotta was for 20 years a successful lawyer with great expertise in Administrative Law. Finally, he created the Italian Institute of Philosophical Studies and drove it to international appreciation. The list of Marotta's Honors is impressive. He collected more than 300,000 books and journals devoted to Philosophy and History which will finally be utilized in a specific library funded by the Campania Region. He is known as the last Jacobin (as per his own definition), has been defined *L’Homme des Lumières* by Jacques Derrida. He supported Nephrology for a series of programs of vast culture, such as: i. the birth of the International Association for the History of Nephrology (1993), ii. the Appeal for Clinical Research (1997), iii. Survival is Not Enough (2007 to present) and iiii. the International Conference on the Human Capital of Age (2016).

Key words: Gerardo Marotta, Italian Institute for Philosophical Studies, History of Nephrology, Appeal for Clinical Research, Survival is Not Enough, The Human Capital of Age

Introduction

On January 25 2017 Avvocato Gerardo Marotta (Figure 1), Gold Medal for the Meritorious of Culture, died in Naples at the age of almost 90 years. He was the Founder and President of the Italian Institute for Philosophical Studies, an institution which cares for Philosophy in Europe and beyond and is Gold Medal of the European Parliament.
We honor him for founding the Italian Institute for Philosophical Studies and for the many achievements which will be presented below, as well as for his interest and support to various nephrological initiatives, namely: i. the birth of the International Association for the History of Nephrology (1993), ii. the Appeal for Clinical Research (1997), iii. Survival is not Enough (2007 to present) and iii. the International Conference on the Human Capital of Age (2016).

Gerardo Marotta: his life

Gerardo Marotta, the last descendant of the Dukes of Sicily, was born in Naples on April 26, 1927. He studied Law at the University Federico II and obtained the Laurea cum laude with a thesis on the "Concept of State in Classical German Philosophy and the Hegelian Left".

He nurtured his interests in law and philosophy, as well as in history, literature and all the arts. He was among the young scientists who were fostered at the Italian Institute for Historical Studies founded by Benedetto Croce at the Study Group Antonio Gramsci. He was the founder and the soul of the Association New Culture, which in the years 1946-1953 organized conferences and seminars to give cultural grounds to the rebirth of Italy following the catastrophe of World War II. To those events many illustrious personalities (artists, literates, philosophers, scientists and jurists) gave their support and voice. Among them were Antonio Banfi, Ranuccio Bianchi Bandinelli, Roberto Pane, Natalino Sapegno, Vasco Pratolini, Domenico Rea, Luigi Incoronato, Vittorio Viviani, Nicolas Guillon, Dario Puccini and other poets and writers. In those days Marotta promoted exhibitions of painters and sculptors, including a great show of Renato Guttuso and one of Augusto Perez and a series of conferences on Music and Arts started with a conference of Massimo Mila on "Music and arts" at the Conservatory of Naples.

He married in 1960 Emilia Mancuso, a talented bright lady, very learned in modern art. She was the sister of Sara Mancuso Caccioppoli, the wife of the great mathematician Renato Caccioppoli (1904-1959), the nephew of Maria Bakunin, (1873-1960) the daughter of Mikhail Bakunin. So, two extraordinary citizens of Naples had many reasons to meet and to discuss. Emilia and Gerardo had three children: Valeria, Massimiliano and Barbara who survive them. Massimiliano revived the Società di Studi Politici founded by Benedetto Croce, and he still directs it. Emilia Mancuso Marotta died in 2006. After the death of Gerardo Marotta, Massimiliano was elected President of the Italian Institute for Philosophical Studies.

At the beginning of the Fifties, Gerardo Marotta was instrumental in organizing the Seminar for Juristic Studies (started by Vezio Crisafulli), the Seminar for Biological Studies (established by Giuseppe Montalenti), the Seminar for Architecture created by Luigi Piccinato), the Seminar for Historical Studies Antonio Gramsci directed by Guido Piegari, Nino Cortese, Domenico De Marco and Giuseppe Palomba. There were also seminars on the Neapolitan Revolution in 1799, the Italian Resurgence and The Southern Question, the Years of Giolitti and on various problems of history and historiography.

The activity of the Gramsci Group and of the Association New Culture was very much appreciated by some of the leading people of the Italian Communist Party. However the young intellectuals were difficult to regiment. The conflict was inevitable and in 1954 the group was expelled from the party. There are responsibilities for this, the main characters have great names. Books have been written on that event.

At this point Marotta devoted himself to the profession. He organized a law firm of lawyers experts in administrative law with many talents for "eminent domain". They were successful. The office was busy of clients. They made money, which Marotta utilized to start and grow his library of more than 300,000 books on philosophy, and history, including journals of philosophy.

On May 27 1975 at the National Academy of Lincei (Lynx Academy) in Rome, Gerardo Marotta, Enrico Cerulli (President of the National Academy of Lincei), Elena Croce, Pietro Piovani and Giovanni Pugliese Carratelli founded the Italian Institute for Philosophical Studies (IIFS, its Italian abbreviation). In the constitution Gerardo Marotta was nominated the Life-President.

Gerardo Marotta in starting the Italian Institute for Philosophical Studies made reference to his experience in the Association New Culture. He gave all personal resources to the new institution and in a few years turned it into a prestigious international Center for Research.


Strong links of scientific collaboration were established with the Universities of Padua, Turin, Genoa, Urbino, the National Academy of Lincei, The National Institute for Renaissance, the Academy of Science in Turin, and at international level with the Ecole Pratique des Hautes Etudes in Paris, the Warburg Institute of London, the CERN in Geneva, the Universities of Hamburg, Tübingen, Sorbonne in Paris, Berlin, Vienna, Valladolid, with the Landau Institute in Moscow, and many other foreign institutions. This conferred prestige to the Italian Institute for Philosophical Studies, which received international recognition on June 22 1993 during the Sénat of the European Parliament. There a delegation of IIFS, composed of philosophers and scientists from every part of the world, presented The Appeal for Philosophy and the Appeal for Humanistic Research. They were co-signed by Hans-George Gadamer (1900-2002), Ilya Prigogine (1917-2003), Paul Ricoeur (1913-2005), and Paul Oskar Kristeller (1905-1999). The appeals were adopted by the European Parliament. In that occasion after the speech of President Egon Klepsch, Prof. Antonio la Pergola, Emeritus President of the Italian Constitutional Court, gave a talk to illustrate the activity of the Institute from which we quote:

"The double appeal of the Italian Institute for Philosophical Studies is linked to the roots of the common European Conscience. Our Parliament is asked to meet the needs of the civil society. This is an authoritative message from the world of culture. We cannot neglect it. The Italian Institute for Philosophical Studies understands the reasons why the new generation, the future directing class needs to be educated to a creative thinking, to philosophy, to capacity of judgment. Thus we take the responsibility to promote a rebirth of Humanism which might bring new life in every branch of science and to drive growth. Man turns into imago Dei (God's image), to the sense of universe, when he discovers the perennial value of his liberty and dignity, of his right to govern life and to impress, as in the happy days of our history, the mark of his work on history. The Italian Institute for Philosophical Studies has given the first impulse to the mobilization of men of culture to revisit Humanism. It is a program of broad breathing. Its realization will occur through school, and is under the care of the public opinion, to the value deserved by great proposal which needs to grow even here in Strasbourg and in the other European Institutions. The appeals add to the notion of Europe which starts to unify in areas different from market and economy. The Italian Institute for Philosophical Studies re-fired in the city a focal of the interest to the spreading of the thought, to reflection on topics which are central and cannot be escaped. This activity receives support and admiration of all countries, it is at the service of a Weltanschauung which is also wisdom of politics... For this, as President of the Commission for Culture, I express appreciation for the initiative of the Neapolitan Institute. Its Appeal traces a main route based on a more mature Europeism".
Gerardo Marotta: Honors

- Dr Honoris Causa in Philosophy at the University of Bielefeld, Germany (February 8, 1988).
- Dr Honoris Causa in Philosophy at the Erasmus University in Rotterdam, The Netherlands (November 8, 1988).
- Dr Honoris Causa in Education at the University of Urbino, Italy (November 1988).
- Prize of Illustrious Neapolitans from the Prix Naples Foundation (December 3, 1994).
- Silver Bowl of Friendship from the Cultural Centre St. Vincent "for his role in promoting in Southern Italy the broadest cultural initiative of the Country: that consists in the creation in Italy and in the Whole South of the summer schools and the Courses for Advanced Training" (December 3, 1994).
- The Italian Institute for Philosophical Studies was awarded the Prix International pour la paix Jacques Muhlthehaler for the activity in favor of peace between individuals and people, at the University of Rome, Italy (May 18, 1995).
- Dr Honoris Causa in Philosophy at the University of Paris III Sorbonne Nouvelle (June 24, 1996).
- Dr Honoris Causa in Architecture at the Seconda Università degli Studi di Napoli (July 10, 1997).
- Prize Artigiani della Pace (Turin, June 10, 1997).
- Premio Capo Circeo from Vereinigung für Deutsch-Italienische Freundschaft (Capo Circeo, December 11, 1997).
- Prix Mecenate dell'Associazione Amici della Scala di Milano “for the foundation of the Italian Institute for Philosophical Studies, School for Higher Studies in Naples, for his work and the resources granted in envisaging and directing its national and international work for Research, Teaching, Exhibitions and Publications and for his generous activity in promoting and producing culture, since his young age" (October 23, 1999).
- International Prix "Naples Inclusive City" from the International Association of Catholic Apostolate, for “his noble tireless activity guided by exemplary wisdom in support of the culture which belongs to the historic patrimony of the City of Naples" (December 20, 1999).
- Medal Peter the Great from The Russian Academy of Natural Sciences (February 23, 2000).
- Prix "Universum" for exceptional merits in the field of philosophy (October 15, 2000).
- Dr Honoris Causa in Philosophy at the University of Pavia (October 25, 2000).
- Dr Honoris Causa in Philosophy at the University of Bucarest (October 26, 2000).
- Prix Gold Lemon (March 2001).
- Chevalier de la Légion d’Honneur of French Republic (June 2003).
- Honorary Member of the Institute for Philosophy of the Russian Academy of Sciences (Moscow, September 2010).

A message of Hans-George Gadamer and others

The messages of the greater philosopher of today, Hans George Gadamer (Figure 2), accompany the activity of the Institute throughout the world, and the great messages to the European Parliament of our delegation in the years 1991 and in 1993, attest the prestige of the Institution on which Gadamer expressed his opinion:

“I am happy to affirm the great Heredity of this city is now in good hands. It is a merit of the Italian Institute to have started this initiative. In fact, the restart of philosophy promoted by the Italian Institute for Philosophical Studies is known worldwide. It will honor the great Neapolitan tradition if it will be capable to keep living the heredity and the great European Thought and to build upon these premises new forms of thought and life. This allows us to think that Europe will be capable to survive the menace of our times. I do hope that the Institute will represent a model for Europe in order to avoid the bureaucratization of the Studies. Without initiatives of this kind, culture is lost since the bureaucratization of the studies, which is the fellow companion of the industry of our times, turns culture into stones and works against creativity as well as against human relationships”.

The scientists of the Massachusetts Institute of Technology have declared that the "Italian Institute for Philosophical studies is a unique institution not only for its service to culture but also for keeping high the flag of philosophy in a world obsessed by materialism and trivial interests. The initiative of the Italian Institute has taken for philosophy contributes to the survival to what is dear to us of the world of thought and culture. We share the willingness of the Italian Institute for Philosophical Studies to create a new cadre of investigators capable to take on their shoulders the cultural heritage of the great European philosophical tradition which is nowadays under pressure from many sites”.

S.B. Smith, Professor at The Warburg Institute in London, in a paper discussed the international role of the Institute and included it among the most important centers of the present cultural Europe along with the Warburg Institute and the Institut pour la Recherche et l'Histoire des Textes of Paris. Paul Oskar Kristeller underlined the importance of the Italian Institute for Philosophical Studies for the world culture and remarked that the School for Higher Studies in Naples founded by Avvocato Gerardo Marotta has, with its peculiar characteristics, a place for itself in the tendency in Europe and USA to organize centers for research devoted not only to natural sciences and mathematics, but also to philosophical, historical and philological sciences, as it happened with the Institute for Advanced Studies of Princeton, the Mellon Foundation, the Scuola Normale Superiore of Pisa. He felicitated the Italian Institute for Philosophical Studies for the capability to emerge as a significant institution for the world contemporary culture, for its huge number of fellows and for focusing its activity on fields neglected by other universities and institutions. In fact, it covers history of philosophy and the history of ideas from the antiquity to present.

Paul Dibon on the Institute

Paul Dibon (1915-1995) of the École Pratique des Hautes Études in Paris commented: “In the course of my long academic career I had the honor and the privilege to teach for many years in many countries and to cumulate a series of different and fertile experiences. I can affirm that the meetings I had on the history of ideas in the 17th century at the School for Higher Studies in April will remain as an original, promising experience. It confirms the confidence already expressed on the future of this Neapolitan Institution, at the time of the Opening Ceremony in the Hall Giovambattista Vico, in May 1980 [… ] in the course of the sessions at the Higher School another comparison was possible. It concerned the fellows who originating in various fields were attracted by common intellectual interests. I have had personal talks with some of them, who, coming from northern regions, discovered in Naples a specificity of its
Theodore F. Geraets, Dean of the Faculty of Literature and Philosophy at the University of Ottawa, has written in the issue no. 4 (1981) of the Annali della Pubblica Istruzione, “the importance of the initiative started in Naples by Avvocato Marotta is inimitable and with difficulty could be understood in its entirety”. Henri Gouhier, Academician of France, in 1986 dedicated to Avvocato Gerardo Marotta the book on Blaise Pascal, Karl Heinz Ilting (1925-1984) dedicated to Marotta the edition of the Unpublished Berlinese Works of Hegel on Philosophy of Religion by writing “To Gerardo Marotta and to the Hegelians of Naples”. Vittorio Hösle dedicated to Gerardo Marotta his volume Verità e storia.

The Institute now is the centre of a dense network with the most important centers of research like the Warburg Institute in London and the École Pratique des Hautes Études, the Hegel Archive in Bochum, and many European and American Universities. The seminars of the Institute, many of them are organized abroad, attract researchers from Italy and from abroad.

The international recognition stimulates the efforts of the Institute to renovate modern culture and the rebirth of civil life in Naples and in Southern Italy.

A word of Reinhart Koselleck

“What characterizes the Italian Institute for Philosophical Studies founded by Gerardo Marotta is not only the reference to a tradition which from Vico to Croce is linked to the genius loci, but its capacity to irradiate its impulses in all fields of knowledge and towards the other countries of the world. I do not know of any other scientific institution capable to impress a so deep mark in the culture of the whole Europe as it happened with the Italian Institute for Philosophical Studies”. With these words, on February 6, 1988 Reinhart Koselleck (1923-2006) gave the reasons of the Laurea Honoris Causa the University of Bielefeld conferred to Gerardo Marotta to consecrate the European and International meaning of the Institute he has founded, directed and animated.

Laurea Honoris Causa at the Erasmus University in Rotterdam and at the University of Bielefeld

In the same year another Laurea honoris Causa in Philosophy was conferred to Gerardo Marotta at the Erasmus University in Rotterdam in a solemn ceremony with motivations identical to those of the illustrious German historian:

“In the person of Gerardo Marotta, the Universities of Bielefeld and Rotterdam have honored a scientific institution and a center of high culture which emerged and attracted the interest of the world for its intense and prestigious activity, his personal work, his passion for the Institute that he envisaged, and realized with personal energy and resources”.

In the Laudatio we read:

“Avvocato Gerardo Marotta – as motivated by Hans George Gadamer – is a meritorious and noteworthy personality I know. I am unable to indicate another professional of the law of the same value in his efforts towards a true culture and for philosophy. He has devoted to it great personal efforts and with a marvelous energy has created the Italian Institute for Philosophical Studies which is worthy of the great name of Benedetto Croce […] I, myself, for more than 10 years have taken part to these efforts and I can say that I have not found in any other part of the world a group of participants informed and active like that I meet at the Institute in Naples”. “Avvocato Gerardo Marotta is the soul although a very confident man. It is evident that he is driven by the love for the country and for the public good. And I have had the possibility to appreciate that this attitude is shared by many intellectuals and young people. The antique tradition which goes back to Vico survives […]. Without any doubt Gerardo Marotta is a great promoter of philosophical and scientific studies”.

The recognition for the Institute was not only international but also national. In 1988 Gerardo Marotta received the gold medal from the President of the Italian Republic for his cultural merits.

In 1988, the President of the Council of Ministers conferred the Prize for Culture to the Italian Institute for Philosophical Studies.

The Silver Cup of Friendship from the Cultural Centre Saint Vincent

On December 3, 1994 the Cultural Centre Saint Vincent conferred to Avvocato Gerardo Marotta the Silver Cup of Friendship with the following motivation:

“In agreement with the Autonomous Region of Valle d’Aosta and the National Order of Journalists, in occasion of the Information Day which took place at Saint Vincent on December 3-4 1994, has conferred to Avvocato Gerardo Marotta, President of the Italian Institute for Philosophical Studies of Naples, the Golden Cup of Friendship for the organization in Southern Italy the broadest and most relevant cultural initiative promoted in Italy in recent years. Tens of seminars have been organized in small towns once centers of attraction for philosophy to which have given their contribution authoritative scientists. The goal was to wake the cultural and historical memory of a thought that gave to Southern Italy a peculiar identity, a memory which can represent a powerful lever for its civil rebirth. Of this relaunch, Avvocato Gerardo Marotta is the most qualified and passionate protagonist”.

The Capo Circeo Prize

On December 13 1997 the Vereinigung für Deutsche-Italienisch Freundschaft conferred to Avvocato Gerardo Marotta the Prize Capo Circeo with the following motivation:

“The undersigned mayors of Southern Municipalities in association with those of Abruzzo, Naples, Bergamo declare solidarity to the Italian Institute for Philosophical Studies: “His great polyhedral personality, enriched by a charge of civil passion, which early in his life let him participate in many social and political battles, has now reached a universal meaning, having used all his energy and economical resources to the foundation and development of the Italian Institute for Philosophical Studies, which has now reached levels of world excellence. We cannot forget his efforts to publish the Hegelian texts in their original form, as world premiere, and his priority as patron in helping so many teachers and fellows who with passion were with him. The activities of the Italian Institute for Philosophical Studies have represented the industrial flywheel for new publishing houses from Naples to Milan, thus contributing to the diffusion of science and culture. Together with Gerardo Marotta the Prize Capo Circeo was also attributed to the Philosopher Hans George Gadamer, the German Minister for Interior Affairs M. Kanther, the State Secretary for economy of the Government of Bavaria H.G. Spitzner, the State Minister for Foreign Affairs W. Hoyer, and the Germanist Carlo Volpi”.

In previous editions the Prize Capo Circeo was granted to The Chancellor Helmut Kohl, to the Politologist Sir Ralf Dahrendorf, Ernst Jünger, Augusto Del
Gerardo Marotta created the "Assise della Città di Napoli e del Mezzogiorno d'Italia". It was a public assembly which met every Saturday morning.

At the beginning of the nineties of last century Antonio Iannello, Secretary of Italia Nostra, Alda Croce, President of the Library Benedetto Croce, and the German Archeologist Bernard Andreae.

### Honorary Citizenships 1993-1996

Many municipalities in Southern Italy – among which are Agropoli, Bomba, Brienza, Castelnuovo Cilento, Cesa, Diamante, Gioi Cilento, Melfi, San Sebastiano al Vesuvio, Somma Vesuviana, Vatolla-Perdifumo, have bestowed to Gerardo Marotta the Honorary Citizenship for his cultural and civil effort which inspired him to give birth to hundreds of courses of Higher Formation, meetings, historical and didactic exhibitions, in every place in Southern Italy to wake up the historical memory and the hctic-civil conscience.

Two hundred Mayors and Municipalities in Southern Italy addressed the President of the Italian Republic on occasion of the first centenary of the death of Silvio Spaventa (1893) an appeal where we can also read:

"The undersigned Mayors of the Municipalities of Southern Italy, in association with those of Abruzzo, Naples and Bergamo declare their solidarity to the Italian Institute for Philosophical Studies in order to continue the work to keep alive the historical memory in Southern Italy and to reaffirm that the unity of the Italian People and the unity of the State are indispensible for the building of the United States of Europe, since the European conscience of the state must deepen the roots in the conscience of the state of each country (…). Mr. President of the Republic, we are proud that the appeal for Philosophy and humanistic research of the Italian Institute for Philosophical Studies departed from Naples to the European Parliament and to the United Nation Organization, and that Naples and Southern Italy have received full recognition from the highest international institutions".

On June 22 1993 in the European Parliament a delegation of the Scientific Committee of the Italian Institute for Philosophical Studies was received by the President of European Parliament Hon. Professor Egon Alfred Klepsch and by the President of the Cultural Commission of the European Parliament.

### Historical and Didactic Exhibitions in the municipalities of Southern Italy in the years 1982-1997

In the document of the Mayors of Southern Italy we read:

"It is an indisputable merit of the Italian Institute for Philosophical Studies to have rejuvenated with new and appropriate studies, with tens and tens of historical and didactic exhibitions, through seminars and meetings on the "Neapolitan Republic of 1799", Gaetano Filangieri, the state according to reason, Francesco De Sanctis, documents for an intellectual biography, The Hegelians of Naples, The Building of the United States, Silvio Spaventa politician and statist of the unified Italy. This occurred with the support of the patriotism of reason, and the awareness that in Southern Italy exist great values and enlightening traditions of the National Resurgence and of the United States".


Many Italian and European cities hosted historical and didactic exhibitions on philosophical traditions of Southern Italy: Turin, Bergamo, Rome, Venice, Paris, Lille, Kassel, Trier, Bielefeld, Geneva and Strasbourg.

In 1997 The Italian Institute for Philosophical Studies awarded 1250 scholarships, organized 1350 seminars, conferred 442 research scholarships, and published 135 books.

### Schools and Institutions for Higher Learning of the Italian Institute for Philosophical Studies in Italy and abroad

1. Schools for Higher Learning in 543 municipalities of Southern Italy where the Institute organized thousands of seminars and contributed to the institution and development of 237 libraries;
2. The International Institute of Higher Scientific Studies founded in 1980 at Palazzo Serra di Cassano that organized congresses at CERN in Geneva and throughout Europe and in its permanent headquarters in Vietri sul Mare;
3. Schools for Higher Learning in Biology and Cybernetics directed by Cloe Teddei Ferretti with the participation of many scientists and the publication of a volume with preface of the Nobel Prize Ilya Prigogine. The book contained many favorable opinions of scientists belonging to the international community as it is evident in the monograph Le Scuole Internazionali di Biofisica e Biocibernetica dell'Istituto Italiano per gli Studi Filosofici/The International Schools for Biophysics and Biocybernetics of the Italian Institute for Philosophical Studies;
4. The Annual Schools for Higher Learning in collaboration with the Warburg Institute in London supported by the Italian Institute for Philosophical Studies with annual scholarships for meritorious students and investigators;
5. The School of Heidelberg founded in the year 2000, launched by Hans-George Gadamer, and organized directly by the Italian Institute for Philosophical Studies. This school represents Italian culture and is indispensable for cultural collaboration between different countries;
6. Schools for Higher Learning with the Program Diffity School in the Municipality of Santo Stefano del Sole. Subsequently the Institute founded, in collaboration with the same Municipality, the International Foundation Tullio Levi-Civita. Professor Alexandre Vinogradov, a Member of the Academy of Science in Moscow and Professor at the University of Salerno, was nominated Director. The International Institute Tullio Levi-Civita hosts investigators from all over the world. Its academic year is celebrated annually in Naples at Palazzo Serra di Cassano. The courses take place in various locations in Southern Italy with the participation of professors and investigators from various continents.

### The Assize of the City of Naples and Southern Italy

At the beginning of the nineties of last century Antonio Iannello, Secretary of Italia Nostra, Alda Croce, President of the Library Benedetto Croce, and Gerardo Marotta, created the "Assise della Città di Napoli e del Mezzogiorno d'Italia". It was a public assembly which met every Saturday morning and...
The Appeal for Clinical Research

Lumières

Ellen Bulger, Curtis Meinert, Ruth Faden, Lewis Wolpert, Dietrich von Engelhardt, G...

The Appeal was signed by Gerardo Marotta, Lawrence K Altmann, E. H. Ahrens, Donald Seldin, Garabed Eknoyan, Natale G De Santo, Anita Aperia, Ruth

We appeal to all concerned and responsible public, private and governmental authorities to lend their support to this initiative”.

If both modes of research—molecular and clinical—are to prosper in the future, as they must, the patient-oriented research must receive stronger

in order to translate the advances in molecular biology into the practical and functional terms applicable to the whole human physiology and metabolism to

Health care has improved markedly over the past five decades, in large measure because of advances made in patient-directed clinical research. The study

of the whole human being which has proceeded extremely fruitfully heretofore, is now threatened by its own success by the advent of technological

developments from studies in molecular biology. The profound shift over the past decades from patient-oriented clinical research to research at the

cellular and molecular level has not only created new ethic and religious dilemmas, but just as importantly has caused a shift of financial support to the

more expedient studies at cellular level. As a result, the study of the whole human being is languishing at a time that this kind of research is absolutely

essential in furthering human health and transferring laboratory strategy to the clinical arena.

While the new technologies can be relied upon to provide basic solutions, patient-oriented clinical research is essential – now more than in the past – in

order to attain a better understanding of human biology, to improve the cure of human illnesses, and to deliver a better health to all mankind. It is fair to say that

shoulder the burden of supporting this kind of research because only through such research can we hope to deliver a better health to all mankind.

We appeal to all concerned and responsible public, private and governmental authorities to lend their support to this initiative”.

The Appeal was signed by Gerardo Marotta, Lawrence K Altmann, E. H. Ahrens, Donald Seldin, Garabed Eknoyan, Natale G De Santo, Anita Aperia, Ruth

Ellen Bulger, Curtis Meinert, Ruth Faden, Lewis Wolpert, Dietrich von Engelhardt, Günther Stock, Mario Condorelli, Klaus Hierholzer, Miroslav Mydlik,
The battle for organ donation

Some presentations

Survival Is Not Enough is the annual international event of the Italian Institute for Philosophical Studies and the Second University of Naples. It started in 2007 in Naples, following a suggestion of Rosa Maria De Santo to Professor Antonio Gargano, General Secretary of the Italian Institute for Philosophical Studies (IIFS). The event was approved in January 2007 at the Meeting of the Scientific Committee of the Institute and has been organized annually from 2007 to present around the “World Kidney Day”. The aim is to discuss the needs of patients with chronic kidney disease (8, 9) and the possibility to ameliorate the quality of a machine-dependent life. The events are held in different sites with an identical format. Renal patients and their associations, philosophers, economists, nephrologists, renal transplant surgeons, expert in bioethics, and health care managers, teachers and principals of primary and secondary schools, university students are invited to discuss the possibility to grant the best cures and care to patients treated with dialysis, a technique that provides a “Life with many losses and various dependencies”. Losses include even the possibility of selecting foods and beverages, playing sports, undertaking a demanding job, having a refreshing sleep, properly expressing one's own feelings, fulfilling the responsibilities toward the family, having an orgasm and menstruations. Dependencies are linked to the place one lives, physicians, dialysis staff, dialysis machines, dialysis shift, and dialysis calendar (10). Marotta maximally supported this event which according to him “linked philosophy with real life and confronts with the sufferer and the state organizations supporting good health in chronic disease”. He was there for the opening ceremony of that event which was co-chaired by Natale G De Santo, Giuseppe Remuzzi, Guido Bellingheri.

Survival Is Not Enough has the ultimate aim to promote prevention and organ donation as the most reasonable and economically sound action for such global disaster. The presence of philosophers, as third parties, aims to give tutorial help to the needs of the sufferers who are no longer under the patronage of physicians who are now told by managers what, how much, and for how long they can prescribe to patients. Since 2008, Survival Is Not Enough has been extended also to the University of Foggia and later to the University of Bari by Loreto Gesualdo, to the University of Messina by Guido Bellingheri and Vincenzo Savica (11), to Athens by Athanasios A. Diamandopoulos, to the University of Gaziantep by Ayse Balat, to the Pavol Jozef Šafárik University in Košice by Miroslav Mydlík and Katka Derzsiova.

From 2009 onward the event has been organized in many cities on the shores of the Mediterranean Sea including Naples, Bari, Benevento, Brindisi, Caserta, Catania, Palermo, Rende, Rome, Salerno, Trieste, Athens, Gaziantep, Patra, Koper, Tunis, Sfax, as well as in Central-Eastern Europe (Gdansk, Košice, Bucharest, Varna), and in Turkey at the University of Gaziantep and Istanbul, under the leadership of Ayse Balat. Leading nephrologists and managers with international reputation, as well as teachers, principals and primary, secondary schools and university students have participated in such events (12).

Outcomes

Various quests have arisen for (i), a new cadre of managers capable of keeping health accounts in balance without cutting expenditure but by reducing waste of resources; (ii), the promotion of prevention as the only measure capable of reducing costs in the long run; (iii), the promotion of clinical research by turning biomedical discoveries into treatments and cures; (iv), the need of a 4P Medicine (predictive, personalized, preventive and participatory), as suggested by Leroy Hood, the founder of the Institute for System Biology in Seattle, WA; (v), the promotion of organ donation, being kidney transplantation the safest, cheapest procedure, and associated with the longest survival and best quality of life of the patients; (vi), the awareness of the risks connected with the emerging of the Medico-industrial Complex as discussed by Arnold S. Relman in New England Journal of Medicine 1980; (vii), health systems based on patient's needs. Aiming “to do different things and to do things differently, by putting the patient in the centre of the system and by wearing patient's shoes”, as stressed by Fiona Godlee in the British Medical Journal in 2009.

Publications

Papers related to Survival Is Not Enough have been published in the Journal of Nephrology (9), Giornale Italiano di Nefrologia (11, 13), Seminars in Nephrology (10), the American Journal of Kidney Disease (14), the Journal of Renal Nutrition (15), and the Italian Journal of Public Health (16). Likewise, they have also appeared as selected annual proceedings (12 – 14) in the series “I testimoni del tempo/ witnesses of the times”, a philosophical series published in Naples by Metis and the Italian Institute for Philosophical Studies. It was founded and directed by the late Aniello Montano (1941-2015), Professor of Moral Philosophy at the University of Salerno, who published elegant monographs of appealing printing, size and binding.

Some presentations

Invited presentations were discussed at the 2nd Meeting of the International Federation of Kidney Foundation in Curitiba (Brazil) in 2007, the Celebration of the 50th Birthday of the Medical Faculty of the Šafárik University in Košice (Slovakia) in May 2009, the 2011 Nagoya Congress of the Society for Uremic Toxins, the 2012 Congress of the Tunisian Society of Nephrology in Sfax, the 2012 Congress of the Algerian Society of Nephrology in Algiers, at the 2015 Congress for Hippocratic Medicine in Athens, the 2016 Congress of the Hellenic College of Nephrology, in Portaria, and at the 2016 Congress of the Mediterranean Society of Nephrology in Cappadocia (Turkey).

The battle for organ donation

Following the advice of Professor Francesco Paolo Casavola, President Emeritus of the Constitutional Court and President of the National Committee of Bioethics in Italy, and of Gerardo Marotta, Survival Is Not Enough focused on finding a rational approach to prevent the opposition to organ donation after death, as well as on developing familial decisions in order to register in donors’ list while alive. A family decision might help in respecting the will to donate if and when death might supervene. We do now think that young people registering for organ donation should discuss the decision with the family, so that if donation becomes a possibility, everyone knows what to do. Thus, students are asked to campaign in their family for modernity and make the will for organ donation a family decision, since no one lives alone, and at the end the body of the deceased, after organ removal, is given back to the family. Since transplantation represents modernity, we suggest that its related laws should be reviewed frequently in order to benefit from all the
The Human Capital of Age

On September 15-16 2016 took place in Naples an International Conference promoted by The University of Naples Federico II, The Second University of Naples, The Italian Institute for Philosophical Studies and Organized by ARFACId. This was the last international Event to which Gerardo Marotta participated. Marotta did not have the time to see the proceedings Il Capitale Umano dell'età: La saggezza della vita (The human capital of age: the wisdom of life) with a preface of Professor Giuseppe Galasso (25) and The Human Capital of Age (2, 27). However he was pleased to learn about its main outcome represented by the founding of the European Association for Professors Emeriti.

Final comments on Gerardo Marotta: the Man and his Action

Nuccio Ordine, Professor of Italian Literature at the University of Calabria at Rende, Italy, on the death of Gerardo Marotta, wrote a significant comment on the Man and on his Action (28).

"Europe of Culture lost its fiercest "Avvocato"[Lawyer]. Gerardo Marotta, fighting with all of his strength for more than fifty years, protected teaching, scientific research and any form of culture capable of educating the younger generation in human solidarity and love for the common good. For decades in the amphitheatres of the Sorbonne, or in the halls of the École des Hautes Études en Sciences Sociales in Paris, at the Warburg Library in London, in the corridors of the Institute for Advanced Studies at Princeton, at Die Freie Universität in Berlin and in the various offices of Italian Cultural Institutes, it was enough to mention "the Avvocato" to think immediately about the Italian Institute for Philosophical Studies and of Gerardo Marotta its president". “The Institute, from the very "beginning", was structured as an “active” school open to the "new alliance" between natural and human sciences” (28).

Giuseppe Galasso, Emeritus Professor of Contemporary History at the University Federico II in Naples, and Member of the Academy of Lincei in Rome, on the death of Gerardo Marotta wrote about “The Constructive Utopia of Marotta” (29). “There were utopia and dreams in his personality. They preceded that in the thought and in the action of Gerardo Marotta, who died last Tuesday at the age of 89 years, impressions and appearances induced to believe in it, but there was no utopia, there were no dreams as a way to escape from reality, or impotence to cope with it. It was just the contrary. There were strong and concrete pushes to work constructively in the reality using acute judgment and practical wisdom. His dream, his utopia, were in seeing the Republic of Plato realized and triumphant on the dregs of Romulus, just to use the words of Gianbattista Vico (1668-1744), much loved by Marotta, as all the other great exponents of the Neapolitan Thought from Giordano Bruno (1548-1600) to Tommaso Campanella (1568-1639) and to Benedetto Croce (1866-1952). Marotta saw that the Republic was exemplified in the short season of 1799. For him, the subsequent ferocious Bourbon repressions decapitated the great exponents of the Neapolitan Thought from Giordano Bruno (1548-1600) to Tommaso Campanella (1568-1639) and to Benedetto Croce (1866-1952). Marotta’s vision was shaped by the real decadence post-1806, characterized by the death of Gerardo Marotta wrote about “The Constructive Utopia of Marotta” (29). “There were utopia and dreams in his personality. They preceded that in the thought and in the action of Gerardo Marotta, who died last Tuesday at the age of 89 years, impressions and appearances induced to believe in it, but there was no utopia, there were no dreams as a way to escape from reality, or impotence to cope with it. It was just the contrary. There were strong and concrete pushes to work constructively in the reality using acute judgment and practical wisdom. His dream, his utopia, were in seeing the Republic of Plato realized and triumphant on the dregs of Romulus, just to use the words of Gianbattista Vico (1668-1744), much loved by Marotta, as all the other great exponents of the Neapolitan Thought from Giordano Bruno (1548-1600) to Tommaso Campanella (1568-1639) and to Benedetto Croce (1866-1952). Marotta saw that the Republic was exemplified in the short season of 1799. For him, the subsequent ferocious Bourbon repressions decapitated the great exponents of the Neapolitan Thought from Giordano Bruno (1548-1600) to Tommaso Campanella (1568-1639) and to Benedetto Croce (1866-1952).

ACKNOWLEDGEMENTS

Heartfelt thanks are due to Emanuela Appetiti, CEO of the Institute for the Preservation of Medical Tradition, Washington DC, USA, for accurate revision and editing of this manuscript.

We thank Malcolm E. Phillips, Retired Nephrologist and Medical Director of Charing Cross and Hammersmith Hospitals Trust London, United Kingdom, for many relevant suggestions.

References

Aphorisms related to nephrological subjects in *Rhazes' Kitāb al-Murshid aw al-Fuṣūl* (The Guide Book or The Book of Aphorisms)

**Abstract**

We present the aphorisms related to nephrology in *The Guide Book or The Book of Aphorisms* (*Kībāb al-Murshid aw al-Fuṣūl*) by Rhazes (865-925 AD), based on the edited version of the book by the noted historian of Islamic Medicine A. Z. Iskandar published in 1961. We briefly discuss the aphorisms related to nephrology presented in the *Guide Book* under the titles of “diuresis”, “the urine”, “discharge of excretions of the kidneys”, “discharge of excretions of the bladder”. The aphorisms contain basic and general physiological and pathological information on diuresis and urine based on traditional humoral principles. They do not address any specific diseases.

**Keywords:** Rhazes, Medieval medicine, The Guide Book, The Book of Aphorisms, History of Nephrology
Introduction
Abū Bakr Muḥammad ibn Zakariyyā al-Rāzī (865–925 AD), also known as Rhazes in the Western world, was an eminent physician and philosopher during the golden age of the Islamic world in medieval times. He compiled over 200 works on various chemical, philosophical, ethical subjects, with over half of them on medicine (1). The founding father of the history of science, George Sarton (1884–1956), says that “Rhazes was the greatest physician of Islam and the Middle Ages” (2). His originality, clinical acumen and observational aptitudes are best known for his most celebrated works, the Liber Continens (Kitāb al-Ḥawāl fī al-Tibb), Liber ad Almansorem (Kitāb al-Maḥṣūrī fī al-Tibb), and De Variolitis et Morbilis (Kitāb al-Jadārī wa al-Ḥasba) (2). Less well known is his Kitāb al-Murshid aw al-Fuṣūl (3), which means The Guide Book or The Book of Aphorisms (4). Written late in his career this is a relatively short general treatise based on his earlier observations and meant as an introduction of basic principles for students of medicine (4). Although Salomon Negri (1665–1727), a teacher of Oriental Languages in Early Modern Europe, mentions this book as Liber directionis et vocatur Liber sectionum in his Latin translation of Ibn Abī Usaybī’a’s ‘UYūn al-Anbā’ fī Ṭabaqāt al-Ālībā (5), actually The Guide Book was never translated into Latin (4). Although it appears to have continued to be used in learning medicine as mentioned by Maimonides (1135-1204) as one of the books he read for his medical education after settling in Fustat in Egypt following his exile from Cordoba in 1148 (6).

In brief, in the prologue of The Guide Book, Rhazes criticizes Hippocrates’ Aphorisms and states that he wrote this book as a gateway to the art of medicine and to show a way to learners: Abū Bakr Muḥammad ibn Zakariyyā al-Rāzī, God bless his glorious soul, said [the following]: What made me angry is the confusion and lack of order, the obscurity and remissness of the whole or most of the comprehensive art of Hippocrates’ Aphorisms, and his advice on the easiness to memorize aphorisms and attach them to people motivated me to present the comprehensive art of medicine and its phrases through aphorism. I managed to do that by explaining, representing, and leaving out overstatements and details that lead into obscurity. Where contradiction exists, it necessitates investigation and further scrutiny to this gateway to the art and a way for learners. God guides to the right (3, p 17).

Materials and Methods
The edited version of Rhazes' The Guide Book or The Book of Aphorism by the noted historian of Islamic Medicine, Dr. Albert Zakī Iskandar was studied (3). The edited text was arranged by Iskandar using the copies of Kitāb al-Murshid aw al-Fuṣūl in the Istanbul Süleymaniye Manuscript Library, Ayāsfiyya, Nr. 3724, and in Dār al-Kutub al-Miṣrīyya, Tibb Tal’at, Nr. 594 (3). This is a relatively short book of 377 aphorisms. Table 1 shows the sections of this book (3). Aphorisms related to nephrological subjects in The Guide Book by Rhazes are translated from Arabic into English and briefly discussed in this study.

Results
As shown in Table 1, the first title of aphorisms related to nephrological subjects regards diuresis. The first aphorism under diuresis states that diuresis is one of the strongest bodily discharges necessary to protect health:

**Aphorisms on diuresis**

#149 Diuresis is one of the strongest discharges that are needed in many conditions; the ancients preserved health through diuresis (3, p 55).

The second aphorism mentions the benefits of diuresis and lists diseases for which diuresis is beneficial:

#150 Diuresis expels excretions of the second and third digestion; it is beneficial for aches of the joints and back. It desiccates the body, and he [the patient] is cleared from dropsy and many humid diseases. However, violence in and permanence of can result in demise of the patient due to emaciation and fatal collapse and can cause ulcers in the urinary bladder and the penis. It provokes thirst: those affected by this illness always drink water and have white watery urine (3, p 55).

The third aphorism lists diuretic drugs:

#151 Diuretic drugs: Seed of Celery and aniseed, ..., and seeds of watermelons/melons and the flesh of watermelons/melons. Furthermore, many aromatic spices, seasonings, and oxymels have a moderate diuretic effect. However, cantharides, musk, stavesacre, and māḥūzahraj [herbals that poison fish] are bad; these should not be used, except in case of need and provide improvement, if harm has not taken place (3, p 55).

The second heading of aphorisms is related to urine. The first aphorism under this heading states that urine reflects the condition of blood:

**Aphorisms on urine**

#192 Urine reflects the condition of blood; therefore, it is separated on what we will mention, if God will (3, p 68).

The second aphorism explains the formation of urine:

#193 When water and food arrive at the stomach, it [the stomach] comprises them and grinds them, until it becomes something like thick water of barley, which physicians call chyle. Then, the chyle is passed to the duodenum and jejunum. Blood vessels, called “the lacteals”, grow from inside the liver to the bottom of the stomach and to the intestines. They absorb the chyle like the absorption of substances from the earth by tree roots, until the chyle is placed in the blood vessels, located in the flesh of the liver, where it changes into blood. While cooking and transforming [of the chyle], foam, which is yellow bile, and dreg, which is black bile, are generated in it [the liver] just as it is generated in other juices that are cooked. Then, the gall bladder attracts this foam, while the spleen attracts the dreg and the kidneys attract the residual thin water, which is in them. Thereafter, the blood is purified and is good for the flesh covering the body. Hence, the urine reflects the condition of blood, which is short in cooking amount or excessive (3, p 69).
The third aphorism states that urine, which reflects the condition of blood, also indicates the condition of the kidney, bladder, and urinary tract. The color and consistency of urine indicate the cooking amount of blood:

**#194** Urine, which indicates the condition of blood, can reflect many conditions of the kidney and urinary bladder because it is the place where the urine passes and because urine is only separated from blood after being cooked with it. Urine indicates the cooking amount of blood with its color and consistency. Thus, if the amount of cooking was less, it [the urine] will be thin and white, if it [the amount of cooking] was excessive, it [the urine] will be thick and red, and if it [the amount of cooking] was moderate, it [the urine] will be yellow and moderate in thinness and thickness. If the heat in the liver is exceeded highly, it [the urine] will be black and intensely thick, similar to how it exists in fatal acute diseases (3, pp 69-70).

The fourth aphorism addresses uroscopy. Urine should be left to rest a while before the sediment is examined:

**#195** Likewise, whatever turbidity and thickness in water and other fluids descend and settle, when it has sat for a while, also conditions the urine. Therefore, anyone who wants to examine urine should leave it to rest for hours and then inspect it (3, p 70).

The fifth aphorism asserts that urine should be obtained after the person has slept for a long time and before drinking:

**#196** Urine should be collected after the patient awakes from a very long sleep and before he drinks something. This is because if it is taken after he drinks something, the condition of urine will be corrupted (3, p 70).

The sixth aphorism explains the conditions in which urine darkens:

**#197** Urine becomes darker, unless the person eats and drinks. Therefore, errors in the coloring of the urine should be considered. For example, when urine collection is delayed from the morning to noon, the patient has not yet eaten or drunk anything; hence, urine becomes strongly colored compared to the one collected in the morning. It should not be decided on predominance of heat that accounts for the amount of that dye, since nothing of it had been dyed for that period of dietary abstinence, urine becomes darker, unless the person drinks. It is only indicative of the amount of cooking in the liver, which exists shortly after the completion of digestion and not after a long period (3, pp 70-71).

The seventh aphorism clarifies how the vessel, the matula, should be and for how long urine should be left for before the inspection of the urine sediment:

**#198** One interested in examining the condition of sediments should collect urine in a big white and round vessel and leave it for three to ten hours to stand for whatever should settle in it (3, p 71).

The eighth aphorism asserts that frequent urination is no indication of the condition of cooking:

**#199** Urine that comes out quickly and successively like in illness called “passing urine by driblets [dysuria]” is not a matter of the cooking; therefore, such kind of water does not dry in the liver when the cooking is completed, but comes out quickly. Thus, we find someone with “diabetes” urinating this kind of water because he passes water shortly after drinking (3, pp 71).

The ninth aphorism mentions that things (gravel?) in the urine of people having difficulty in passing their urine are only generated in the kidney, bladder, and urinary tract:

**#200** We find exquisite things in the urine of those who have difficulty in passing urine and passing urine in driblets, which were generated only in the kidney, urinary bladder, and urinary tract and not in the liver when it is cooked (3, p 71).

The tenth aphorism reports that sediments settle at the bottom of the vessel when the cooking has been complete. Sediments that float or remain suspended in the urine reflect the condition of the cooking:

**#201** When the ripeness is complete, sediments settle at the bottom of vessel, and when it [the ripeness] was intermediate, they were [the sediments were] suspended, and when it [the ripeness] was at the beginning, they [the sediments] floated (3, p 71).

The eleventh aphorism clarifies that bright white sediments are the best indicators of a complete cooking:

**#202** The bright white sediment is praiseworthy and indicative of complete ripeness because cooking power is complete; the white suspended sediment is about half of the ripeness; the white cloud is of beginning matter being excreted in the urine, because torrential sediment only suspends and floats and that of a complete cooking does not exist in it (3, pp 71-72).

The twelfth aphorism states that all sediments that are not white are bad, but that the black ones are the worst:

**#203** All sediments different from the white colored ones are bad; therefore, they indicate an excess cooking, but black ones are the worst. Thus, things that are cooked do not turn black, but they do when burned by strong heat (3, p 72).

The thirteenth aphorism explains conditions of black sediments:

**#204** The matter of black sediments can be in contrast to that of white ones; therefore, the sediment is evil, while the floating sediment is less evil, and the suspended one is evil in the middle because the sediment indicates the completeness of cooking by ripening or combustion; the suspended sediment indicates that the ripening is in the middle, and the cloud indicates that it is at the beginning (3, p 72).
The 14th aphorism mentions that sand, stone, fleshy strands, hair, plates and bran present in urine do not indicate the condition of blood:

#205 Sand, stone, strands of flesh, hair, plates, and bran exist in urine. None of these sediments indicate a pre-existing condition in the blood because they only occur in urine after its separation from the liver (3, p 72).

The 15th aphorism provides Tabence books on urine, in case it is required:

#206 If you understood the essence that I explained, comprehending partial matters was easy and does not necessitate looking at [other] sources. There is a special book on urine. In this [book], we guided [the reader] to what we collected in al-Jami’ al-Kabīr, and there is no agreement, [one should refer] to Kitāb al-Magānis [Book of Magnus], and Kitāb al-Iṣṭafān [Book of Stephan], Kitāb al-Arṣīlūs [Book of Archelaus] and what the “excellent” Galen mentioned in Kitāb al-Buḥrān. The best is to continue investigating; there is no single book but it is acquaintance with these books that it is learned from what is inside. This is not only true for this section but also true for other sections (3, pp 72-73).

There are two aphorisms regarding discharges of excretions of the kidney and bladder:

**Discharge of excretions of the kidney**

#302 Excretions of the kidney are discharged with diuretics. Their temperaments are altered by mixing them with warming or cooling drugs, or by bandaging the lumbar region while the patient lies down on where he is warmed by them, or by what is administered as clyster (3, pp 98-99).  

#303 Excretions of the bladder are discharged with diuretics. If the temperament is altered and ulcers develop they are healed up by mixing drugs that cure wounds— different from diuretic drugs— which are used to coat the pubic area that is then bandaged with it, and they are injected into the urethra (3, p 99).

An aphorism under the title of bad signs informs that bad urine is bad in all diseases:

**Bad signs**

#351 Badness of urine is bad in all diseases. Its goodness in all diseases is not an indication of recovery from that disease but an indication of fevers and diseases of the liver and urinary tract (p 115).

**Discussion and Conclusion**

Rhazes systematically arranged the aphorisms related to nephrological subjects in The Guide Book or The Book of Aphorisms. He informed the reader of the importance and benefits of diuresis and diuretic drugs in the first group of aphorisms. He explains how urine is formed and what the consistency and color of the urine indicates. Furthermore, he emphasizes how urine should be examined and how the color and consistency of urine, its sediments, and other contents have to be interpreted in the second group of aphorisms.

The basic and general physiological and pathological information on urine and diuresis is based on humoral paradigm. He does not refer to any specific disease subjects. When chapter 19 “On urine and kinds of sediment and colors and consistency of urine” in Liber Continens was examined (7), it became evident that the information provided on urine in The Guide Books is an abbreviated introduction to medicine presented in his Liber Continens.

One of the basic sources for the section on urine in Liber Continens is Galen’s Kitāb al-Buḥrān (Book of Magnus/De Crisibus) (7) that also mentioned as a reference by Rhazes in his aphorism. The Book of Magnus, the Book of Stephan, and the Book of Archelaus are also part of his sources in Liber Continens (7). In addition, Rhazes cites many other authors and their books in Liber Continens, including Hippocrates, Galen, Rufus of Ephesus, Stephanus of Athens, Magnus of Emma, Aaron of Alexandria, Paul of Aegina, Masili al-Dimashqi, Ayyūb al-Ruhāwī al-Abrash, ‘Aṣīr al-Tabarî, Ibn Sarābiyūn, Hunayn, al-Yahūdī, and Phythagoras al-Iskandarānī (7).

The fourth discourse titled “On the nature of the science of medicine and grades of physicians” of Four Discourses (Chahār Maqāla) by Niẓāmī-i-’Arūḍī-i-Samarqandi contains a list of the syllabuses on medical education in the Islamic world of the 12th century reveals that Kitāb al-Murshid aw al-Fuṣūl by Rhazes was considered as one of the reference books alongside with Hippocrates’ Aphorisms (Fuṣūl), Hunayn b. Ishʿāq’s Questions (Masā’il), and Nīlī’s Commentary (8).

**Acknowledgement**

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**References**

In 1935-6 he spent a year in Pécs in Hungary working at pharmacology. Around this point he made a momentous decision to start clinical work. What led capillary fluid exchange were an important influence on Nils' thinking, and led him eventually into ultrafiltration and then dialysis.

In his physiological studies he worked for Professor Torsten Thunberg on intermediary metabolism. Then in 1932 he changed to pharmacology headed by Gunnar Ahlgren again on intermediary metabolism, studying dinitrophenols and thyroxine, showing that they acted similarly and synergistically. He attained the highest marks in almost all subjects. To begin with, he studied classics – Latin and Greek – and only later decided to read medicine during his years age, but only with continued financial help from an uncle, who remains a shadowy figure. Nils was a brilliant student in his undergraduate career, but there were too many Anderssons. His politics were radical and he was "there were too many Anderssons", but perhaps also as a break from his background and childhood as a "pusher", a tough customer who would fight for what he wanted (Figure 1). His politics were radical and he was concerned about the physician's role in society. He believed strongly in education as a motor for change and better health, and gave public lectures regularly in Southern Sweden for more than 20 years.

Three years later in 1929 he moved from physiology to pharmacology, and graduated MD in 1932. He played an active part in student organizations, social and intellectual. He became close to the historian Lauritz Weibull and spent much time in the latter's house. Despite his quiet exterior, Westling describes him as an “original man”; but despite this he achieved international fame in Europe, although was never well known in the United States. His Festschrift in 1985 in Nephron amply demonstrated his status. His "rival" Pim Kolff (1911-2009) was in contrast slightly younger, outlived Nils by 20 years, and was a fine communicator and great extrovert. Nils was a physiologist and pharmacologist until 36 years old, only then becoming a clinician. Strangely Nils had performed the first haemodialysis at my alma mater, Guy's Hospital London, in 1948 on a visit, 15 years before we established a renal unit there. Characteristically, he never told me about this event, and I only discovered the story after his death.

I first met Nils in 1964 at the founding of the EDTA (sic) in Amsterdam. I was 29, he was 60. Later I worked with him, now retired from clinical work, on committees over the next couple of decades. During this time he assumed Presidency of both the EDTA and the ISN; he was one of the major founders of Nephrology, as well as a pioneer of and major contributor to electrolyte balance, haemodialysis, ultrafiltration and related techniques. He had introduced renal biopsy in 1944, but remained silent on this subject until after Claus Brun published his work 8 years later. Nils studied arteriovenous shunts for repeated dialysis during the 1940s, but was blocked by the red rubber and glass tubing – all that was then available. I was immediately impressed by the quiet modesty of this most original man; but despite this he achieved international fame in Europe, although was never well known in the United States. His Festschrift in 1985 in Nephron amply demonstrated his status. His "rival" Pim Kolff (1911-2009) was in contrast slightly younger, outlived Nils by 20 years, and was a fine communicator and great extrovert. Nils was a physiologist and pharmacologist until 36 years old, only then becoming a clinician. Strangely Nils had performed the first haemodialysis at my alma mater, Guy's Hospital London, in 1948 on a visit, 15 years before we established a renal unit there. Characteristically, he never told me about this event, and I only discovered the story after his death.

Keywords: Nils Alwall, History of haemodialysis, history of nephrology

Abstract

I first met Nils in 1964 at the founding of the EDTA (sic) in Amsterdam. I was 29, he was 60. Later I worked with him, now retired from clinical work, on committees over the next couple of decades. During this time he assumed Presidency of both the EDTA and the ISN; he was one of the major founders of Nephrology, as well as a pioneer of and major contributor to electrolyte balance, haemodialysis, ultrafiltration and related techniques. He had introduced renal biopsy in 1944, but remained silent on this subject until after Claus Brun published his work 8 years later. Nils studied arteriovenous shunts for repeated dialysis during the 1940s, but was blocked by the red rubber and glass tubing – all that was then available. I was immediately impressed by the quiet modesty of this most original man; but despite this he achieved international fame in Europe, although was never well known in the United States. His Festschrift in 1985 in Nephron amply demonstrated his status. His "rival" Pim Kolff (1911-2009) was in contrast slightly younger, outlived Nils by 20 years, and was a fine communicator and great extrovert. Nils was a physiologist and pharmacologist until 36 years old, only then becoming a clinician. Strangely Nils had performed the first haemodialysis at my alma mater, Guy's Hospital London, in 1948 on a visit, 15 years before we established a renal unit there. Characteristically, he never told me about this event, and I only discovered the story after his death.

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Introduction

I am grateful to Dr Håkon Westling (1, 2) for some of the following details of Nils' early life, about which he never spoke, at least with me. Nils Andersson was born into a rather poor farming family in 1904, in an undeveloped area of Kristianstad in NE Skåne in the far SW of Sweden. His elder brother took over the family farm, but Nils – who was early on a bright scholar – matriculated and was able to go to university in nearby Lund in 1923 when only 17 years age, but only with continued financial help from an uncle, who remains a shadowy figure. Nils was a brilliant student in his undergraduate career, attaining the highest marks in almost all subjects. To begin with, he studied classics – Latin and Greek – and only later decided to read medicine during his first year in Lund, becoming an unpaid physiology research assistant in 1926. This had the advantage of providing him with somewhere to live, as well as a small laboratory and office.

Three years later in 1929 he moved from physiology to pharmacology, and graduated MD in 1932. He played an active part in student organizations, social and intellectual. He became close to the historian Lauritz Weibull and spent much time in the latter's house. Despite his quiet exterior, Westling describes the young Alwall (he changed his name from Andersson in 1927, because "there were too many Anderssons", but perhaps also as a break from his background and childhood) as a "pusher", a tough customer who would fight for what he wanted (Figure 1). His politics were radical and he was concerned about the physician's role in society. He believed strongly in education as a motor for change and better health, and gave public lectures regularly in Southern Sweden for more than 20 years.

Early research

In his physiological studies he worked for Professor Torsten Thunberg on intermediary metabolism. Then in 1932 he changed to pharmacology headed by Gunnar Ahlgren again on intermediary metabolism, studying dinitrophenols and thyroxine, showing that they acted similarly and synergistically. He publicly defended his PhD thesis in 1935, in the manner of the time. Sitting in the room that September afternoon was Nobel Prize-winner August Krogh, a friend of Thunberg's whose work Nils much admired, who was to receive an honorary degree during the same session. Krogh's work and thinking on capillary fluid exchange were an important influence on Nils' thinking, and led him eventually into ultrafiltration and then dialysis.

In 1935-6 he spent a year in Pécs in Hungary working at pharmacology. Around this point he made a momentous decision to start clinical work. What led...
permanent cannulation, because of local infection and the difficulty of avoiding blood-clotting…"

Finally allowed to perform our first treatment in a moribund patient….As an associate professor I depended on the permission of the director of our

The wider world

For the first time Nils was able to obtain grants for his work, but even more important was collaboration with two commercial companies to build his

Problems with access led him to research the idea of an arteriovenous shunt, which he wrote about in 1948-9 (8). Even though these rubber and glass

...the patient bled, went into shock and became anuric, despite a renal decapsulation (a technique in favour at that time) and died. Alwall published

These results (7) (to us now expected) persistent mortality of around 50-60% even in "reversible"forms of acute renal insufficiency which emerged led to a term in Sweden
to this change of direction we do not know, but he started work with Sven Ingar in the Medical clinic in Lund. Meanwhile the second world war soon swept
through Europe, and although Sweden remained neutral, he did military service as a doctor, being sent to Germany to study the effects of the wide use of amphetamines and other stimulants in Hitler's forces – a subject which has re-surfaced recently**.

About this time, in 1941, he began to study fluid exchange, and to forward this work, designed an ultrafiltration apparatus for use in rabbits (Figure 2). A

Alwall introduces needle aspiration renal biopsy

Before we consider his work in dialysis in greater detail, we must mention also his work on renal biopsy in 1944, still during WW2. By this time needle liver biopsy was well-established, and some practitioners had already obtained samples of kidney by accident. But Alwall was the first to set out deliberately to study renal tissue. He performed renal biopsies on 12 patients without incident and success in obtaining useful tissue in 10; two patients showed

...the present writer later abandoned the use of arteriovenous shunt or any other form of permanent cannulation, because of local infection and the difficulty of avoiding blood-clotting..."

For the first time Nils was able to obtain grants for his work, but even more important was collaboration with two commercial companies to build his
dialyser – the Trelleborgs vulcanite company, and the Avesta steel works. He built machines using both materials (Figure 6), but by 1950 was working entirely in steel, which had the big disadvantage that the large apparatus with its double layer of metal was very heavy and difficult to lift. The detailed evolution of his machine is summarised by Carl Kjellstrand and his colleagues (12).

The arteriovenous shunt and developments in dialysis machinery

Problems with access led him to research the idea of an arteriovenous shunt, which he wrote about in 1948-9 (8). Even though these rubber and glass shunts (Figure 5) failed eventually in both rabbits and humans, a number allowed repeated dialysis (9), and it is often forgotten that by the 1950s he was able to dialyse a number of patients for 6 months or more. In 1963 (10) he wrote “these procedures – arteriovenous shunt and filling of closed tubings with heparin... were also used in the treatments of patients … the present writer later abandoned the use of arteriovenous shunt or any other form of permanent cannulation, because of local infection and the difficulty of avoiding blood-clotting...”

**This was a bleak time for him. His work, although intellectually satisfying, published and clinically useful, was however not generally accepted, he had little

Knowledge of his work, the general opinion from 1945-50 was that dialysis added nothing to conservative treatment with fluid restriction and anti-

The kidney

A

The wider world
During the 1940s and 1950s Alwall collaborated mostly with surgeons who were more receptive to the idea of an artificial "kidney"than their physician colleagues. During 1947-9, 35 patients were dialysed 56 times in Lund, but elsewhere both in the USA and the UK, so-called "conservative"treatment for acute renal injury, including volume restriction and high energy diets to decrease catabolism, became more popular. This could tide patients over in relatively non-catabolic situations which included the majority of acute renal injury in that period, as a result of abortion, mismatched transfusions and haemoglobinuria, mercury poisoning and sulphamid favourable crystalluria in younger, previously-fit patients (6). Opinion swung against haemodialysis for a decade; in addition many surgeons and urologists used peritoneal dialysis, which had developed in parallel. For example, no haemodialysis at all was done in the United Kingdom from 1949 to 1957.

But Alwall never gave up and went on treating the rapidly increasing number of patients referred to Lund, still the only unit doing dialysis in Sweden. He worked hard to ensure that this situation did not persist, but beginning with a second unit in the North of the country in 1958, within a few years there were 17 dialysis units in the country of 7.5 million inhabitants. The struggles that he endured and overcame during the 1950s are detailed in his own account (13), and in the biography by Carl Kjellstrand and colleagues (12). By the end of the decade he had a bigger unit to head, recognition of the specialty, more staff and a personal chair – but after what a huge struggle! It took an Act of the Swedish national parliament to achieve the final steps.

By the end of the 1950s an amazing 1000 patients had been dialysed in Lund, mostly for acute renal failure, but some also knowingly or with undiscovered chronic renal insufficiency, and Alwall thought it time to summarise his experience. His book of 1963 Therapeutic and diagnostic problems in severe renal failure, (10) although little known or read today, is one of the landmark publications in Nephrology. An amazing amount of data are presented, most in the form of graphs of data from individual patients, each drawn by Alwall himself and autographed. It is meticulous, but difficult to read and extract broad data from. It does however contain for the historian of dialysis an amazing bibliography of over 95% of all papers published until then on the subject of the artificial kidney – nearly 1400.

Medical advances in the field of acute dialysis and failure were dialysis in the many in the 1950s, but two require mention: in 1955 Nils described contrast-induced acute renal failure (14), and began in the early 1950s to explore the role of dialysis in the treatment of patients with overdoses of various medicines, beginning with barbiturates (15).

Long-term dialysis and its consequences

As is well known, in 1960 Scribner had his colleague Wayne Quinton make an arteriovenous shunt from the new electrical insulator material PTFE (Teflon©). Quinton rapidly added silicone rubber to the design, and by two important meetings later in the year (the ASAIO and the first meeting of the ISN), three patients had been using these shunts for regular dialysis for a numbers of months. In Evian at the ISN meeting, just 12 people formed the audience for Scribner's epic paper; one of them was Nils Alwall, to whom Scribner gave some material to make a shunt.

At the end of his 1963 book (10), Alwall presented depressing data on his early attempts to use the arteriovenous shunt to treat end-stage renal failure. All 10 patients had died quite early after starting long-term dialysis. This surprise was part of an experience noted worldwide, and many wondered what "magic"Scribner and his colleagues concealed. Nils thus quietly went off to Seattle to work for some months himself there, to learn on site how to do long-term dialysis – and found that meticulous attention to detail, the use of pumpless dialysis with long sessions (6-8h) and meticulous control of weight, salt and water intake and blood pressure were the main components of the "magic"(6). He returned and re-started a now successful programme of long-term dialysis in Lund in 1964.

Only at this point when he had done so much, did I meet Nils Alwall. It was at the founding meeting of the EDTA (or ERA as it later became) – in Amsterdam, in 1964. Nils was 58, and I half his age, having worked in what became Nephrology for only three years. By chance, I have a photograph of our meeting (Figure 8), when pictures of the audience were taken during a session by Willem Drukker, one of three founders of the Association. I was in awe of this quiet, modest man who had done so much. From then, however I met him regularly through the Councils of the ISN and the EDTA-ERA during the following fifteen years, when his political achievements gradually took over from his innovation in dialysis.

Sweden, Europe and the world

With long-term dialysis looming as a treatment for a large number of individuals in irreversible renal failure, in all developed countries, a heated debate ensued as to what to do. Alwall played a central role in this debate not only in Sweden, but world-wide. In 1965 as he had drawn the attention of the government to the problem repeatedly, he was asked to prepare a report, which was finally accepted but only after a long struggle: 7 dialysis units in the regions of Sweden each serving a million inhabitants, were planned and executed with expansion of transplant facilities in parallel. At that time the huge size of the problem was not apparent: even Scribner pictured just a few thousands per year in the whole USA entering end-stage renal failure. And everyone forgot the patients would accumulate with successful long-term outcomes, unless transplantation could meet demand –which it still fails to do. But Alwall had done his homework better – and proposed that eventually 70 people per million per year would need treatment in Sweden, a figure close to the actual Swedish data today. Many other countries, especially the United States, showed a much greater proportion of the population requiring treatment, for reasons that remain under discussion. Had governments with central health systems realised that this 0.1% of the population with renal failure would consume more than 1% of the total health budget, their response in Sweden and the UK might have been very different. In the UK, a similar plan had been suggested by another giant of early Nephrology, Hugh de Wardener, and accepted for 35 units, but after a promising start ran aground 5 years later when costs became apparent and hepatitis ravaged the nascent hospitals.
His experience of organization and leadership in Sweden made Nils an obvious candidate for the Presidency of the ISN, on whose council he had served since it was formed in 1960, and from 1975 to 1978 he served in this high office. During this time a new constitution was designed and accepted, the finances put on a more secure footing, and a Society organization set up. He had been also President of the European Dialysis and Transplant Association in 1971 – an annual rotation with the meeting, which was held in Stockholm that year, but he served as president the following year.

**New dialysers**

Having forged his work-horse machine for dialysis in acute renal failure, Nils in the 1960s turned his attention to regular long-term dialysis. A disposable dialyzer for placement in a machine was already in use in many units for acute dialysis (the Kolff-Watschinger twin coil), and this suggested that disposable rather than re-buildable dialysers for regular long-term dialysis would be needed. After a short flirtation with coil models, he designed a flat-plate dialyser mimicking the Kiil mode, together with Holger Crafoord of Tetrapak, who founded Gambro AB as a company to manufacture this dialysis machinery. This disposable dialyser (Figure 9) came out in 1967; it was heavy with a metal clamping frame, but did the job. By 1970 it had been completely redesigned in plastic as the Gambro Lundia dialyser (Figure 9) and its successors, and were widely-used for long-term dialysis, until capillary hollow-fibre dialysers took over in the 1990s. Gambro became one of the largest manufacturers of dialysis machinery in the world.

In 1971 at the age of 65 Nils retired as university rules required, but remained active. He worked hard as President of the ISN from 1975 to 1978, and as at that time the President did much of the work of later delegated to the Secretary General, this occupied much of his attention. At that time there was no permanent office with only a couple of paid staff in the Treasurer's office, and things were run on a very cheap basis with the President and Secretary General (John Moorhead) again doing most of the work themselves (16).

During this decade also he became interested in the problem of urinary tract infections, especially in women, and he published a number of papers on the epidemiology, diagnosis and management of this problem. In the 1980s he published a series of papers in *Dialysis and Transplantation* giving a detailed history of his work concentrating on events in Sweden, and later Europe and the world (13).

In 1985, the journal *Nephron* devoted a number to a valediction of Nils Alwall. The dedication was written by his pupil Carl Kjellstrand (14), who had worked with Nils in Lund in the early 1960s, and was a co-author of part of his giant book of 1963 (10). The same year he was invited to lecture by the International Society for Artificial Organs, and the text of this talk summarising the development and impact of the artificial kidney was published in its journal in 1986 (11) - posthumously, Nils had died, aged 81, earlier in that year. He had left behind him an enormous legacy, which Carl described more fully in his biography of Nils in the book he edited in 2012 (12).

Numbers of people have commented how Nils' legacy has to some extent been forgotten – or never appreciated, notably Kjellstrand (12, 17), Klinkmann (18), Shaldon (19) – and the present author (6). One problem from the beginning was that Alwall remained one step behind Kolff in the design, production and use of his clinical artificial kidney (dialyzer). Also, he never promoted the treatment as vigorously as Kolff. The two were opposite poles: Kolff visibly energetic, outgoing, travelling, talking, making and giving his machines on a scale Alwall could never match. Most important of all, Kolff was invited by Isidore Snapper, also Dutch, to go to New York shortly after WW2. His talks were heard by the pioneering Boston group, and his kidney updated and modernized by them as the Kolff-Brigham dialyzer, and then employed in the battle casualties in the Korean war which gave enormous publicity and momentum to the treatment, and swung opinion against conservative treatment in traumatised and postoperative patients (6). Finally Kolff took Irene Page's invitation to immigrate to Cleveland, Ohio, and he never returned to Europe.

In contrast, Alwall had little or no profile in the United States, and still has not today. The great majority of his papers were published in Scandinavian journals little read in the Anglo-Saxon speaking world – or in France, where Nephrology was blossoming in Toulouse, Lyons and Paris in the 1950s. I can find no mention of any visit to the United States in the 1950s or even the 1960s, although he travelled extensively within Europe and went to Egypt in 1956. Only in 1978, because of the ISN, did he go to North America, to Montreal. Until then, no-one invited him with expenses, and he writes he lacked the means to travel to for example, to the annual ASAIO conferences in the 1950s and 1960s. He did have visitors to Lund from the USA however – including Stefan Rosenak in 1952 (another forgotten pioneer (6)) and Scriber in 1958 whilst the latter was working in London. Scriber visited again in 1960. Finally, his disposable dialyser came a decade after Bruno Watschinger and Kolff’s massively popular twin coil, manufactured commercially by Baxter’s. As an example, in the United Kingdom only the Newcastle Unit led by David Kerr used Alwall's machine, then quietly abandoned it for static coil dialysis. At root was Alwall's quiet, meticulous careful and modest personality. In short, he did not "sell"himself. The steely determination remained hidden.

I will finish on a personal note. In 1948, Nils was asked by a Dr Adler to come to London to dialyse a patient in my own hospital, Guy's Hospital. The patient had polycystic kidneys and dialysis relieved much of his symptoms. An account of this episode was published (20), but it was 14 years before we at Guy's took up dialysis for acute renal failure. I was still at school when this early dialysis occurred and characteristically, Nils never told me about it, and I discovered the story only some years after his death in 1986, when doing research for my book on the history of dialysis (6).

*Footnote : Here I am quoting Dr Westling – Alwall himself wrote in 1980* from the beginning of World War II until 1949 I had no opportunity to go abroad*. Perhaps he wished to conceal this episode.

**References**

the sea level. Not good in hot summer.