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1. "FIZIOLOGIA – PHYSIOLOGY" AFTER 15 YEARS OF NEW SERIES

Francisc Schneider, Ioana-Raluca Siska

The journal was first published in 1954 and for 19 years represented one of the major journals in the field of medical fundamental research. It was initiated by a group of outstanding Romanian physiologists in order to publish original research articles in every aspect of physiology and related fields. Among the first editors of the journal were prominent members of the Romanian Academy, Daniel Danielopolu, Grigore Benetato, and Petru Groza, who managed to cover all major research areas of the Romanian physiology.

The first number of the journal had a prestigious editorial board – Daniel Danielopolu, Gh. Arsenescu, Gr. Benetato, I. Haulica, I. Nitescu, I. Nitulescu, V. Rascanu, M. Saragea, M. Mozes, St. Szabo, P. Groza, as well as Professor Marin Popescu from Timisoara. The first issue included several original articles, such as "Non-specific pharmacodynamic studies" by Daniel Danielopolu. In one of its issues, Professor Ioan Baciu also published his studies regarding erythropoietin and chronobiology. The last number of the journal issued in 1973 (volume XIX, no.6), had among its editors distinguished professors, as Petru Groza, Gheorghe Arsenescu, Ioan Baciu, Ion Cotaescu and Fl. Ulmeanu and included original papers published by Ana Aslan, as well as by a well-known team of cardiologists leaded by Professor Stefan Gavrilescu from the Institute of Medicine in Timisoara.

Timisoara gathered the circuit of physiological sciences only in the last four and a half decades, beginning with the initiation of the Institute of Medicine and the publishing of the studies performed Ilie Georgescu, Marin Popescu, Ion Cotaescu, Mihai Vanghelovici, Maria Mihailescu, Nicolae Dragomir and Zeno Simon. The Physiology Department of the Victor Babes University of Medicine

and Pharmacy Timisoara became recognized especially for the fundamental and clinical researches regarding the exercise physiology, bronchomotricity and oxidative stress physiology, and also for organizing six successful national conferences. The first years of the new millennium added to the above mentioned themes a new challenging one – stem cell physiology and its potential applications.
In 1991, in view of the rapid developments in physiology research and the need for national and international scientific communication, the Physiology Department of the University of Medicine and Pharmacy Timisoara restarted the editing of Fiziologia in English, with a new title "Fiziologia – Physiology". Its initiators – Professor Francisc Schneider, chief-editor, and Professor Ana Petroiu and Dr. Aurelian Vlad as co-chief editors, tried to continue the Romanian tradition in the field of normal and pathological physiology. Its rebirth was stormy, and the conditions which led up to its start continued for a number of years to assist its survival. An important contribution to the continuous publication was ensured by several sponsors such as Soros Foundation, Mr. Nicolae Marcu from Spumotim SA Timisoara and Mr. Mircea Roman from Sanevit SA Arad. In the last years, the journal was also supported by Professor Adriana Muresan and the Physiology Department in Cluj, and last, but not least, by Professor Sabau from Targu-Mures University of Medicine and Pharmacy, the president of the Romanian Society of Physiological Sciences.
The journal received and published original research papers in all areas of physiology illustrating new physiological principles or mechanisms, as well as papers on work at the molecular level, at the level of the cell membrane, single cells, tissues or organs and systems physiology, with emphasis on both human and mammalian physiology. The journal reflected most of the experimental and clinical research performed in our country.
In the last two decades, Romanian physiologists became involved in several modern research fields. Physiologists from Iuliu Hatieganu University of Medicine and Pharmacy Cluj-Napoca, leaded by Professor Adriana Muresan developed a strong centre for the study of oxidative stress. In Craiova, Professor Valeriu Nestianu was the initiator of neurophysiology, creating a real school in this field. In Iasi, Professor Ion Haulica, member of the Romanian Academy, one of the pioneers of renin-angiotensin system researches in both Romania and Europe initiated a wide research programme in this area. Another prominent physiologist in Iasi was the initiator of synaptology – Professor V. Branisteanu.
Last, but not least, in the last 15 years, "Fiziologia-Physiology" became an image of progress in Romanian physiology. Resurrected after a pause of 18 years, the journal aims to present the most valuable fundamental studies performed by Romanian scientists. The wide scientific span of the journal rests on physiology as its keystone. However, the boundaries of physiology have enlarged as demarcations between concepts and techniques in the physiological, pharmacological, and biochemical sciences became increasingly blurred. Moreover, theoretical articles on research at any level of biological organization ranging from molecules to humans fall within the broad scope of the journal. Papers dealing with topics in other basic sciences that impinge on physiology are also welcome.
We hope that every paper issued in Fiziologia – Physiology will make not only a solid contribution to knowledge but will maintain the standard of form and style desired, with succinctness, perfect lucidity and minimum of speculative discussion. The Editors try to remember that it is the labor of authors, not of editors that sell the journal, and hope that authors still feel that their offerings are welcomed and treated with sympathy.

2. FIZIOLOGIA-PHYSIOLOGY - after 15 years

Professor Marius Sabau, President of the Romanian Society of Physiological Sciences

FIZIOLOGIA-PHYSIOLOGY, the official journal of the Romanian Society of Physiological Sciences, is now 15 years old. Resuming the activity of the former Journal of Normal and Pathologic Physiology interrupted in 1973, the new Physiology "remains open to a broad national and international collaboration....reflecting both basic research and applied physiology" as stated in 1991 the first editorial.
Since that time the quality of the journal improved continuously in all respects and was recognized by the National Council for Scientific Research which placed it among the other important Romanian medical scientific publications.

The use of English language and the exchanges with other journals offered more accessible information concerning the activity of Romanian physiologists.
The 48 issues that appeared until now covered a wide area of research in which today's physiologists, especially the young ones, were involved.
The publication of the summaries of the papers presented at scientific meetings or of the themes of such events, the book reviews contributed to a better information of those interested in scientific or editorial news.
The words of the senior Romanian physiologist professor Ion Haulică written at the 10th anniversary of the journal are still valid "Maintaining this course, the journal will continue to prestigiously represent the physiological sciences in out country, both at the national level and abroad".
Depends only on us to demonstrate that what we publish in our journal represents really the preoccupations of Romanian physiologists and these are oriented towards the most important domains of the today's science.
I am convinced that after 15 years, the efforts made by the editorial board headed by Professor Francisc Schneider, the eminent chief-editor, begin to bear fruits and for that I wish them success.

3. A HAPPY ANIVERSARY: "FIZIOLOGIA - PHYSIOLOGY" AT FIFTEEN YEARS OF EXISTENCE

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When a scientist is starting a new journal in the last decade of the last Millennium, someone may wander if will survive the turn of the Millennium and, if the answer is positive, whether it will be successful. Such questions are warranted taking into account the great number of scientific journals already published, particularly in the field of biomedical sciences.
Our distinguished colleague Francisc Schneider was undoubtedly a very courageous man when he started "Fiziologia - Physiology" fifteen years ago. There were already many journals of physiology, however not so many published in the Central and South Eastern Europe. Therefore Professor Schneider was entitled to start a new journal in this field. On the other hand, Francisc Schneider was himself involved in active research in physiology, as well as in teaching and organization of research. He has reorganized teaching and research in normal and pathological physiology at the "Victor Babeş" University of Medicine and Pharmacy in Timişoara. Using funding from grants Francisc Schneider has refurbished and fully equipped the Department of Physiology in Timişoara and has selected and trained many young very gifted medical students, to become later Professors in Timişoara or elsewhere in the world.
After a few years, when he moved to the "Vasile Goldiş" Western University Arad, also taking the burden of the responsibility of leading the scientific research of the university as Vice-Rector with scientific affairs, Francisc Schneider brought with him the same high standard of expertise, doubled by his determination to raise at high levels the teaching and research, not only in physiology and pathophysiology, but in all basic medical sciences at this university. It was very fortunate that Professor Aurel Ardelean was a very distinguished Rector and was teaching cell and molecular biology to medical students. Together with other distinguished colleagues, Professors Ardelean and Schneider formed a team determined to bring this new university to international standards in both teaching and research.
In parallel with all these duties Francisc Schneider found the time to start this new journal 15 years ago and to act as Editor-in-Chief for so many years. Under his editorial leadership the new journal grew quite well, became an important one in Romania and in this part of Europe. In the journal were published many interesting papers, both reviews and original research papers. I am convinced that soon the international recognition of "Fiziologia - Physiology" will be accomplished at higher levels.
I was very honored when I was invited to be a member of the Editorial Board of "Fiziologia - Physiology" and found it a privilege, since it enabled me to see many of the valuable contributions to the journal. Fifteen years of publication of any journal is a significant period of time to evaluate its efficacy. I believe "Fiziologia - Physiology" has proved its great usefulness and reached a stage of maturity.

The 15th anniversary of the journal coincides with the 20th anniversary of the discovery in Romania of the first water channel protein in the red blood cell membrane by our group in Cluj-Napoca, Romania. Francisc Schneider was one of the distinguished scientists who supported from the first moment our struggle for recognition of our priority after the 2003 Nobel Prize in Chemistry was awarded "for the discovery of water channels". A full story can be found at www.ad-astra.ro/benga and a summary is presented in this issue by Francisc Schneider.
On the occasion of the 15th anniversary of this journal I wish to Prof. Francisc Schneider good health, and to "Fiziologia - Physiology" the traditional "Many Happy Returns", so that we have the pleasure to see it published a lot of years from now on, and to continue to enrich the scientific literature with interesting papers in one of the most dynamic fields of biomedical sciences.

4. *BRIEF REVIEW:* BEHAVIORAL NOCICEPTIVE TESTING IN MONONEUROPATHIES

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ABSTRACT
The neuropathic pain syndrome can not be adequately treated with the currently available analgesics, leading to a loss of life quality for the affected patients. New drugs are proposed continuously and need to be validated in animal models for neuropathic pain before entering clinical studies. Several models for neuropathic pain were developed based on various lesions of the sciatic nerve. Neuropathic pain symptoms such as mechanical allodynia as well as thermal hyperalgesia and allodynia can be observed in the established models. The main symptom of the neuropathic pain syndrome, spontaneous pain, is still poorly assessed by existing tests and therefore new tests are needed. The specific behavioral tests used to quantify these symptoms are reviewed.

Key words: neuropathic pain, behavioral nociceptive tests

5. MINI-REVIEW: DENDRITIC CELLS. THERAPEUTIC IMPLICATIONS

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ABSTRACT
Dendritic cells (DCs) are considered the most powerful antigen presenting cells (APC), having a pivotal role both in the initiation of the primary immune response, and in the augmentation of the secondary immune response. DCs differ from other APC, as B cells, monocytes or macrophages by their unique capacity to stimulate naive T cells *in vivo* and *in vitro* and to induce the immune response polarization towards a Th_1 or Th_2 profile. These two types of T lymphocytes response differ on the basis of cytokines production, and also by the functional effects exerted by Th_1 and Th_2 cells after their contact with the antigen. There is evidence to suggest that tumor antigen delivery to the lymphocytes by dendritic cells can stimulate strong cellular immune responses against tumors.

Key words: dendritic cell, APC, cancer therapy, allergy

6. THE EFFECTS OF TRAZODONE SUBACUTE ADMINISTRATION ON ANALGESY TESTS IN RATS

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ABSTRACT

Trazodone is in atypical antidepressant which acts by complexing mechanisms involved in the modulation of pain phenomenon. The aim of this study is to investigate the possible role of trazodone in the transmission and perception of pain, by studying its subacute administration on analgesic tests on laboratory animals**.** The sample was represented by 50 white male rats divided in five groups. The animals were injected with 2 different doses of trazodone (1 mg/kg, 5 mg/kg), and the association naloxone-trazodone, and trazodone- ciproheptadine. The analgesia was evaluated by the hot-plate test and the paw compression using an Ugo Basile analgesy-meter. The results show a clear dose dependent analgesic effect of trazodone. This analgesic effect of trazodone was diminuated by naloxone association and also by ciproheptadine administration, suggesting an intervention of opioid and serotoninergic mechanisms.

Key words: analgesy, antidepressants, trazodone

7. ROLE OF OXYGEN REACTIVE SPECIES IN VULGAR PSORIASIS

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ABSTRACT

Although psoriasis is one of the most common dermatoses, the etiopathogenetic mechanisms involved in this disease have not been yet fully elucidated. The investigations carried out during the last years had confirmed the role of oxygen reactive species as signal molecules in the activation of T lymphocytes and in keratinocyte proliferation.

The aim of the present study was to demonstrate the involvement of the redox imbalance in the occurrence of the disease and especially of its severe forms.

Key words: psoriasis, antioxidants, lipid peroxides, catalase, and hydrogen donor capacity

8. INFLUENCE OF EXPOSURE TO CONTINUE DARK AND CONTINUE LIGHT ON CERTAIN OXIDATIVE STRESS PARAMETERS IN THE BRAIN

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ABSTRACT

The studies carried out during the last years on the mechanisms involved in brain aging and in the pathogenesis of neurodegenerative diseases discuss more and more on the neuronal effect of the free radicals. Melatonin, the secretion product of the pineal gland, is an excellent endogenous antioxidant playing a protecting role against oxidative stress in the nerve tissue. Starting from these data, the study aims at investigating the extent to which functional pinealectomy influences the oxidative stress parameters in the brain and serum of Wistar rats. The animals were divided into three groups: group 1(n=14)(controls) kept artificially for 3 months, 12 h at dark, 12 h at light; group 2 (n=14) kept for 3 months at continual light, and group 3 (n=10) kept for 3 months at continual dark. The experiments were performed in the months March-May. Lipid peroxides (LP) and carbonylated proteins (CP) were determined as indicators of oxidative stress and for the estimation of the antioxidant states the total SH groupings were assayed. The results obtained demonstrate that the exposure to light induces the oxidative stress, this effect being especially detected in the serum (serum LP 2.41±0.24 nmoles/ml as against 1.90±0.76 nmoles/ml $p<0.001$; brain LP 2.36±0.26 nmoles/mg protein as against 2.26±0.28 nmoles/mg protein, $p>0.05$. Continuous dark intensifies the formation of lipid peroxides, these increasing especially in the serum (serum LP 2.64±0.61 nmoles/ml as against 1.90±0.76 nmoles/ml and brain LP 2.46±0.40 nmoles/mg protein as against 2.26±0.28 nmoles/mg protein $p>0.05$) possibly due to the reduction of the serum concentration of total SH groupings (0.16±0.05 μmoles/ml as against 0.21±0.03 μmoles/ml, $p<0.01$). The level of total SH groupings in the brain is significantly increased in the conditions of keeping at dark (36 ±9, 14 nmoles/mg P as against 16±4, 90 nmoles/mg P, $p<0.001$), suggesting that the increased melatonin secretion acts in conjunction with the protecting effect of glutathione and counteracts the formation of the free radicals in the brain.

Keywords: melatonin, light, dark, lipid peroxides, carbonylated proteins, total SH groupings

9. TWENTY YEARS SINCE THE DISCOVERY OF THE FIRST WATER CHANNEL PROTEIN BY GHEORGHE BENGA'S GROUP IN ROMANIA

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In 1986, after a decade of systematic studies on water channels in human red blood cells (RBC) performed at "Iuliu Hatieganu" University of Medicine and Pharmacy in Cluj-Napoca, Romania, Gheorghe Benga and coworkers discovered the first water channel protein in the human RBC membrane (8). The presence and location of this water channel protein was detected among polypeptides migrating in the region of 35-60 kDa on the electrophoretogram of RBC membranes, labeled with ^{203}Hg-*p*-chloromercuribenzene sulfonate (PCMBS) under conditions for the specific inhibition of water diffusion. In the landmark publication (8) Benga also indicated the way to further studies, by purification and reconstitution in lipid vesicles (liposomes). This work was extended (7) and reviewed by Benga in several articles (3-6) including a chapter in a book published in the USA (2).

In 1988, Peter Agre and coworkers, while working on the rhesus blood group antigen at Johns Hopkins University in Baltimore, USA, serendipitously isolated a new 28 kDa membrane protein from human red blood cells, called CHIP28 ("channel forming integral membrane protein of 28 kDa); in addition to the 28 kDa component, this protein had a 35-60 kDa glycosylated component, the one discovered in 1986 by Benga's group. Agre and coworkers suggested that "this new protein may play a role in linkage of the membrane skeleton to the lipid bilayer" (15,21). Only in 1992, Agre's group suggested that "it is likely that CHIP28 is a functional unit of membrane water channels" (19). In this report, they cited a paper of Benga and coworkers from 1983 (9), without mentioning their landmark 1986 studies (8,7) or any of the reviews (3-6). In 1993 CHIP28 was renamed aquaporin 1 (the first water channel protein).

In October 2003, Peter Agre was awarded the Nobel Prize in Chemistry "for the discovery of water channels". An invited review of the history of the discovery of water channels proteins was published by Benga in September 2003, one month before the Nobel Prize for Chemistry was awarded (10). The seminal contributions from 1986 of the Benga's group, also mentioned in this review, were

completely overlooked by the Nobel Prize Committee. No mention of the results of Benga and coworkers appeared in the historical description of the discovery of aquaporins that joined the prize announcement.
It is obvious and overwhelmingly documented from the facts presented above that the first water channel protein (aquaporin 1) was first discovered by the Romanian scientist Gheorghe Benga and his group (8), who detected the glycosylated form of the protein (subsequently worked on by Agre's group), which they correctly identified as playing the key role in water transport across RBC membrane.
As discussed by Benga (10) the landmark papers of his group in 1986 (8,7) can be compared with the first detection of a child "in utero" by ultrasonography, or with the discovery of The New World of America; the first man who has "seen" a part of The New Land was Columbus; later, others, including Amerigo Vespucci (from whom the name derived), have better "seen" larger parts and the complexity of the Americas!
After the announcement of the 2003 Nobel Prize in Chemistry was released by Nobel Foundation Gheorghe Benga received a multitude of spontaneous messages (phone calls, E-mailed messages and faxed letters) from all over the world. The scientists who sent messages to Gheorghe Benga considered that in fact he and his group have first discovered the first water channel protein in the red blood cell membranes (the protein later called aquaporin1). As a result Gheorghe Benga wrote a PETITION for the recognition of his priority, PETITION that is reproduced in this issue. The above mentioned claim and the PETITION was presented by Gheorghe Benga on October 18th at the 6th International Symposium of Molecular Medicine (Hersonissos, Crete, Greece) and immediately dozens of scientists from a lot of countries have signed in support of his PETITION.
The priority of Gheorghe Benga's group in the discovery of the first water channel protein has been mentioned in comments on the 2003 Nobel Prize in Chemistry (11-14, 16-18, 20, 22, 23,). Although in his Nobel Lecture (1) Agre mentioned twice Benga among "pioneers in water transport field", Benga's publications were not listed among the references.
Benga's claim is presented on the web site of the Ad Astra Association (www.ad-astra.ro/benga) where a full story can be seen. The recognition of Gheorghe Benga as a discoverer of the first water channel protein from the human RBC membrane is growing. Thousands of science-related professionals from hundreds of academic and research units, as well as participants in several international scientific events, have signed as supporters of the priority of Benga's group in the discovery of the first water channel, as can be seen at **www.ad-astra.ro/benga/support.**
The above mentioned facts were also presented by Gheorghe Benga in 2003-2005 in invited lectures at over 30 international scientific events and in dozens of seminars at many European, American and Japanese universities, as well as at some World conferences (24, 25), steering favorable reactions.

10. PETITION FOR THE RECOGNITION OF GHEORGHE BENGA, AS A DISCOVERER OF THE FIRST WATER CHANNEL PROTEIN IN THE HUMAN RED BLOOD CELL MEMBRANE, SEVERAL YEARS BEFORE PETER AGRE (2003 NOBEL PRIZE FOR CHEMISTRY)

TO THE NOBEL COMMITTEE & ROYAL SWEDISH ACADEMY OF SCIENCES STOCKHOLM, SWEDEN	TO THE SCIENTIFIC & ACADEMIC COMMUNITY AND MASS-MEDIA WORLDWIDE	TO ALL AUTHORITIES IN ROMANIA

In 1986, Benga and coworkers (1) clearly demonstrated for the first time the presence and location of a water channel protein in the human red blood cell (RBC) membrane among polypeptides migrating in the region of 35-60 kDa on the electrophoretogram of RBC membranes, labeled with ^{203}Hg-*p*-chloromercuribenzene sulfonate (PCMBS) under conditions for the specific inhibition of water diffusion. I suggested that a minor membrane component that binds PCMBS is involved in water transport and also indicated the way in which the specific protein could be further characterized: by purification and reconstitution in liposomes. In the same year the labeling experiments were

confirmed and extended (2) and in the following 2-3 years I described the novelty of our work in several reviews (3-8).

In 1988, Agre and coworkers purified a new protein from the RBC membrane (9), nick-named CHIP28 (channel-forming integral membrane protein of 28 kDa) (10). However, in addition to the 28 kDa component, the protein had a 35-60 kDa glycosylated component, i.e, the one we detected as the binding site of PCMBS under conditions for the inhibition of water transport across the RBC membrane (1,2). They suggested that CHIP28 may play a role in the linkage of the membrane skeleton to the lipid bilayer (9).

In 1990, Parker first suggested in personal discussion to Agre that the novel protein might be the water channel, and in 1992 1Agre and coworkers (11), based on Windager's suggestion to use oocyte expression as a mechanism to study water transporters, found that oocytes from *Xenopus laevis* microinjected with in vitro-transcribed CHIP28 RNA exhibited increased osmotic water permeability. The water permeability was inhibited by mercuric chloride, therefore, it was suggested that CHIP28 is a functional unit of membrane water channels. By reconstitution in liposomes it was shown that CHIP28 is a water channel itself rather than a water channel regulator. In 1993 CHIP28 was renamed aquaporin 1.

It is obvious and overwhelmingly documented from the facts presented above that the first water channel protein (aquaporin 1) was first discovered in 1986 by Benga et al. (1,2). He described one of its essential components (a molecular weight of 35-60 kDa for the glycosylated component) and the way to distinguish it from other proteins (reconstitution in liposomes and measurement of water permeability). Aquaporin 1 was first purified in 1988 and its water transport property was identified in 1992 by Agre and coworkers (9, 11). It is also obvious that what we identified by labeling experiments is the same protein that Agre and coworkers later purified, since they mentioned (11) that "the characteristics of CHIP28 are consistent with other known features of water channels, e.g. CHIP28 proteins in intact RBCs are impervious to proteolytic digestion (9, 10), as are water channels (12)".

As Agre and coworkers cited our 1983 paper (12) it is very surprising that they never cited our landmark 1986 papers (1,2); in contrast they referred only to work by other American scientists who pointed to a non-specific "pore" that allowed for permeation of anions, cations, nonelectrolytes and water (13). In contrast, we strongly argued all the time that there were indeed water channels in the RBC membrane and indicated the way in which specific water channel proteins could be further characterized by purification and reconstitution in liposomes.

I continued to be very active in the field, by achieving the purification of aquaporin 1 and developing a new procedure for its quantification by densitometry of silver stained gel (14). Over the last decade, we have characterized the water permeability of RBCs from over 30 species (reviewed in ref. 15, 16); we reported a positive correlation between the water permeability values of RBCs from maternal venous blood and fetal RBCs isolated from cord blood taken at delivery. This points to a genetic basis for the determination of RBC water permeability (17).

Our landmark papers in 1986 can be compared with the first detection of a child "in utero" by ultrasonography, since we discovered one of the essential components of the "aquaporin child" (a molecular weight of 35-60 kDa for the glycosylated component); we have also indicated the way to recognize him after birth (among other children of his group!): placing the isolated children in a certain environment and asking them to perform the same task (one should read: reconstitution studies in liposomes and measurement of water permeability), like aligning athletes for a running test. This was the only certain way to know that the child is really the fastest runner and not just one that is helping (by various means) another child to be the fastest runner. A "new child" was observed in 1988 by Agre and coworkers; however only in 1992 the child we first detected was recognized as having the predicted qualities.

Looking in retrospect, asking the crucial question, when was the first water channel protein, aquaporin 1, discovered, a fair and clear cut answer would be: the first water channel protein, now called aquaporin 1, was identified or "seen" in situ in the human RBC membrane by Benga and coworkers in 1986, It was again "seen" when it was by chance purified by Agre and coworkers in 1988 and was again identified when its main feature, the water transport property, was found by Agre and coworkers in 1992.

If a comparison with the discovery of The New World of America is made, the first man who has "seen" a part, very small indeed, of The New Land was Columbus; later, others, including Amerigo Vespucci (from whom the name derived), have better "seen" a larger part of the new Continent and in the subsequent years many explorers discovered the complexity of the Americas!
I presented the complete history of the discovery of water channel proteins in an invited review (18) that was published one month before the Nobel Prize for Chemistry was awarded to Peter Agre for "the discovery of water channel proteins". It appears that our seminal contribution in 1986 was grossly overlooked by Peter Agre and also by the Nobel Committee. It is another example of mistakes in awarding Nobel Prizes, when a scientist who made the very first landmark contribution to a discovery is left aside. This is my case in regard with the discovery of the first water channel protein in the human RBC membrane.
For any scientist in the world dedicated to the truth and justice there is only one conclusion: Dr Benga's initial discovery must be properly credited by the Nobel Prize Committee.
The daily newspaper "Adevarul de Cluj" (19), this should be emphasized, has mentioned and put together for the first time the two names Benga and Agre and the possibility of awarding to both scientists the Nobel Prize for the discovery of aquaporin 1.

11. CD31 EXPRESSION SIGNIFICANCE IN HODGKIN'S DISEASE AGRESSIVITY

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ABSTRACT
In most cases malignant tumor aggressivity is followed by angiogenesis estimation which has an active role in tumoral mass spread and growth, because most vascularized tumors are the most aggressive.
Between January 2000-June 2004, 63 cases of classical Hodgkin's disease hospitalized in Hematology Department of City Hospital Timisoara were studied. CD31expression estimation was performed by immunohistochemical qualitative appreciation.
The monoclonal antibody was clone JC70A and the visualization system was LSAB-Peroxidase/DAB.
In our study, the rich vascularized CD31 positive cases were in stage IV and presented tumoral cells in their lumen, confirming the hematological dissemination pathway described in the literature. In a relative high number of cases, the existence of vessels without walls is observed only in mixed cellularity and lymphocyte depletion lymphomas, indicating a high tumor aggressivity.

Key words: classical Hodgkin's lymphoma, CD31, tumor aggressivity

12. MAGNESIUM – BETWEEN NORMAL INVOLVEMENT AND THERAPEUTIC USES

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Between the 3rd and the 5th of November 2005, Bucharest was the host of the "***5th National Congress of Magnesium***", its main theme being *Magnesium in therapeutics - modern concepts*.
The Symposium was organized by the Romanian Society for the Study of Magnesium and took place in the main building of Romanian Academy Library. It revealed the strong connection between

fundamental and applicative Romanian research and its alignment to the international trends and preoccupations in the related fields.

Symposium's programme consisted of four oral communication sessions and the course "Magnesium 2005", where **Professor Corneliu Zeana, Dr. Paul Porr, Professor I. Gutiu, Professor Mihai Nechifor, Dr. Manole Cojocaru** have presented interesting lectures. The meeting also included a mini-symposium organised by the firm Sanofi-Aventis, where **Dr. C. Chira** presented the communication: "MagneB_6 – the Synergism between Magnesium and B_6 Vitamin".

The "5th National Congress of Magnesium" was organized by the Romanian Society for the Study of Magnesium 6 years after the initiation of the Society, marking the ascending trend of its activity (president: **Paul Porr**). The same Society managed to organize the VIIIth European Magnesium Congress at Cluj-Napoca in 2004, as well as a large palette of events with international participation, including the "Magnesium Symposium" organized in Iasi in 2002.

The Romanian Society for the Study of Magnesium is quite young, but in Romania magnesium research has a tradition of more than four decades, its major centers being Cluj, Iaşi and Bucharest. Most of the papers presented at the Symposium came from these three universitary centers.

The national course "Magnesium 2005" approached largely theoretical and practical interest themes. **Professor I. Gutiu** presented a lecture entitled "Magnesium, menopause and coronary heart disease", revealing the links between the impairment of magnesium metabolism after menopause and the cardiovascular risk factors and coronary disease. **Dr. Manole Cojocaru** has revealed the interrelations between magnesium and some hormones, and Professor **Corneliu Zeană** has thoroughly presented the relationship between magnesium deficiency and mitral valve prolapse, as well as the relationship between magnesium and cardiac arrhythmias. **Professor Mihai Nechifor** spoke about the implications of magnesium in reproduction, detailing magnesium implications in reproduction in case of both sexes. Our experimental data revealed that magnesium reduces benign testosterone-induced prostate hypertrophy in animals and suggest that magnesium supplementation may be beneficial in preventing or reducing benign prostate hypertrophy.

Dr. **Paul Porr** presented the relation between magnesium deficiency and digestive apparatus pathology.

Other aspects discussed during the meeting were the possibility of existence of some correlations between plasmatic and tissue concentration of magnesium and juvenile hypertension (**Dr. A. Balla**, Odorheiul Secuiesc) and the possible connections between hypovitaminosis D and magnesium level in elderly population (the last paper was presented by **Dr. Otilia Voroniuc** in Iasi and was performed in cooperation with Toronto University.)

Regarding the correlation between the tissue and plasmatic concentrations of magnesium and adult essential arterial hypertension, the latest published meta-analysis revealed its lack of existence (23 trials agree that there is no correlation and only 3-4 sustain that low cellular or plasmatic magnesium levels is associated with adult hypertension pathology). The trials about juvenile arterial hypertension are fewer and the conclusions are not clear. This is an aria in which some extensive studies can be performed relatively easy in Romanian pediatric hospitals.

Dr. Nicolae Ilinca (Bucharest) tackled the problem of some possible correlations between intracellular magnesium levels and atopic dermatitis and **Dr. Sorina Scipor** (Bucharest) showed data regarding the existence of the correlation between magnesium concentrations and alopecia.

Both absolute concentration and the ratio between magnesium and other cations were changed in neoplasms (original papers communicated by **Dr. Marilena Cristea** – Bucharest, and **Dr. Irina Gradinaru** and other contribuitors in Iasi.

The Mg^{2+}/Ca^{2+} salivary ratio in patients with malignant tumors of the oral cavity was significantly higher than in normal subjects and patients with benign tumors of the oro-facial aria.

Other original papers stated the importance of magnesium level assessment in cardiovascular pathology (**Dr. Isabela Silosi** and **Dr. Manole Cojocaru**), the correlation between magnesium levels during pregnancy and the new born health (**Dr. Victoria Papadopol –** Iasi), the correlation between magnesium level, dental health and the atherogenic risk factors. (**Professor I.A. Gutiu,** Bucuresti).

Unquestionably, the current state of knowledge regarding magnesium implications in the pathogeny of some diseases improves continuously, enlarging the area of magnesium therapeutical indications. More data strongly emphasize that in living organisms there are numerous interrelations between

cations and that cations behave like a system. Cations actions cannot be accurately understood unless regarding these as a whole.

Professor Corneliu Zeana, the president of the symposium, had a prominent role in the organization of the symposium, providing an adequate scientific programme and optimal conditions for symposium proceedings. In Romania, the magnesium research registered an indisputably improve after the establishment of the SRCM and these results succeeded to make the Romanian research in this field also renowned outside the borders of our country. We hope that both healthy and sick people will benefit from the scientific efforts made in this scientific area.

Recently the research about magnesium diversified and this cation (together with calcium) remains one of the most studied non-proteic substance in the living world. The intracellular magnesium dosing became more and more precise. The holistic view over the cation's role in the living world and particularly in the human body, as well as the understanding of cellular compartimentation as being essential to life, open new perspectives for magnesium research and broadens magnesium therapeutical indications.