ONE HUNDRED YEARS SINCE THE BIRTH OF ACADEMICIAN DIMITAR ARSOV, FOUNDER AND NESTOR OF THE MODERN INTERNAL MEDICINE IN THE REPUBLIC OF MACEDONIA

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Abstract

Dimitar Arsov was born in Kriva Palanka on September 28, 1908 and died on July 2, 1974 in Skopje; he had finished elementary education in Kriva Palanka, high school (1922–1926) in Kumanovo, Macedonia and College of Medicine (1926–1932), Ph. D. University of Paris, Sorbone, France, 1936. He returned to Macedonia in 1937. In 1947 he was elected and Assistant Professor and in 1950 a Docent at the Faculty of Medicine in Skopje. He was appointed Director of the Clinic of Medicine and Head of the Chair of Internal Medicine, who served at those positions in the period 1952–74. In 1958 he was elected Professor of Internal Medicine. The first habilitation of the Medical Faculty in Skopje was defended by D. Arsov in 1954, titled: ”The Effects of the Intravenous Epinephrine on the Hypersplenism of Malaria and Cala-Azar”. On August 18, 1967, D. Arsov was elected Full Member and also the first member in the field of medicine of the Macedonian Academy of Sciences and Arts. The excellent experience in the work with the patients, precise observation of the symptoms and syndromes of the diseases in each patient, knowing the most advanced therapy at that time enabled D. Arsov to make conclusion for possibility of new therapy and gave him the material for writing scientific papers. In the first half of the 50s, during his regular work, Arsov discovers a new, internationally recognized therapy for rheumatism. Patients of both Cala-Azar and inflammatory rheumatism were treated with small doses of adrenaline therapy and they felt drastic decrease in rheumatism inflammation within one week. This therapy was used a couple of years in several countries around the world. He participated in the undergraduate and graduate studies. He contributed to the development of 2,240 graduated doctors and under his management over 300 doctors specialized in internal medicine and became specialists internists. Under his management, numerous habitations and dissertations in internal medicine were finished. He contributed also to the development of 25 assistants, 5 docents, 5 full-time professors in internal medicine at the Medical Faculty in Skopje. He has published more than 200 papers from different areas of internal medicine, of which 36 are on the PubMed. He has published 5 books on internal medicine for students and doctors. He was a President and member of several Macedonian medical associations, as well as of medical associations of former Yugoslavia. He was awarded with the highest awards of former Yugoslavia and Macedonia. He was also awarded with international awards, such as: Doctor Honoris Causa by the University in Besancon and Honor and Medal from the City Assembly of Besancon (France). During his management of the Internal clinic the University Internal clinic developed eight different sub-specialist departments: Cardiology, Pneumology, Rheumatology, Nephrology, Hematology, Gastroenterology and Endocrinology with metabolism and Clinical biochemical laboratory. The fast development of subspecialties has led to development of separate clinics for each subspeciality in 1975, so only the Chair of Internal Medicine remained as a connection between the subspecialities for education and scientific research. He was a prolific scientist who after World War II wrote the first scientific and specialist papers and books in the field of internal medicine in Macedonia. He created a school of internal medicine. The scientific and uncompromised attitude towards the expert truth are weaved in the unforgettable face of the Academician Prof. D-r. Dimitar Arsov, scientist, teacher, and doctor. With his vast work in healing the sick and preventing the diseases in the Republic of Macedonia, he became the cornerstone of modern medicine in the Republic of Macedonia. Thus, he truly deserves to be the doyen of internal medicine, one of the leading, most important persons in medicine of the 20th century in our country. Today, his honorary name appears on: Clinic of Rheumatology at the Medical Faculty in Skopje, Medical Center in Kriva Palanka, Scientific Club of the student organization of the Medical Faculty in Skopje.

Key words: Internal medicine, founder, scientist, rheumatism, Republic of Macedonia.
Introduction

Macedonia was under the rule of the Ottoman Empire for more than five centuries, until 1912. Enslaved and oppressed, with cultural regression, the Macedonian population was exposed to all possible acute and chronic infectious diseases, such as cholera, smallpox, exanthematous and abdominal typhus, diphtheria, tuberculosis, malaria, etc. There was only a small number of educated medical personnel.

Exceptionally, there were physicians in the large cities who had graduated from universities in Istanbul, Athens or from western European universities. The physicians had to meet, first of all, the health-related needs of the military garrison troops and then to help the civilians. Various charlatans, quacks and herbalists practised their non-expert work for treatment of the diseases of the population. The Ottoman Empire left only two hospitals for civilians, one in Skopje and one in Bitola [1, 2].

The population of Macedonia in the first half of the twentieth century experienced several tragic wars that regressed Macedonia even further in the economic, cultural and health areas. After a short period following the Ilinden uprising in 1903, which was cruelly crushed by the Ottomans, there was the First Balkan War in 1912 when Macedonia was divided into three parts among Bulgaria, Greece and Serbia. That was a great tragedy for the Macedonian people. The following year of 1913 saw the Second Balkan War and in the period 1914–1918 there was the First World War. Bearing in mind that the health protection of the population of Macedonia was not developed during the Ottoman rule of Macedonia, these frequent wars in the first half of the twentieth century worsened the health situation in Macedonia even more.

The health-related situation did not improve remarkably between the First and Second World Wars. The liberation of Macedonia from centuries-long slavery happened in November 1944, revealing the difficult economic, cultural and health situations: a devastated and ruined country, a poor, hungry and exhausted population, a culture in regression, poor economic conditions and under-developed healthcare services, neglected pathology, numerous endemic spots and high morbidity and mortality of the population, especially of the newborn, infants and small children [1, 3].

Malaria in Macedonia caused a real tragedy, with more than 300,000 infected. The huge swamps were an unflagging source for malaria parasites and victims among the exhausted population. Tuberculosis was also a very severe and widespread disease, a disease of the poor, along with many other infectious diseases [1–4].

Dimitar Arsov was born in this turbulent period in 1908 in Kriva Palanka; he graduated from the Medical Faculty at the University of Paris, Sorbonne, and after his return to Macedonia he devoted his professional life to the development of health care protection in Macedonia, as a clinician, educator and scientist.

After the liberation, the newly-formed government, with official authorities but an insufficient number of health personnel, entered the battle for the improvement of the excessively aggravated health status of the population, with poor resources, but with great enthusiasm. Some data are presented in Table 1.

Table 1

<table>
<thead>
<tr>
<th>Some indicators of the health status of the population and the network of health institutions and health workers in Macedonia in 1947 [1–3, 5–7]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population and health status indicators:</td>
</tr>
<tr>
<td>Total population (1948 Census): 1,152,986;</td>
</tr>
<tr>
<td>Life expectancy at birth (1948): males 45.9; females 48.2</td>
</tr>
<tr>
<td>Birth rate: 35 per 1,000 population;</td>
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<tr>
<td>Mortality rate: 13.7 per 1,000 population;</td>
</tr>
<tr>
<td>Population growth rate: 21.3 per 1,000 population;</td>
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<tr>
<td>Infant mortality rate (1949): 136.1 per 1000 live births;</td>
</tr>
<tr>
<td>300,000 infected with malaria each year;</td>
</tr>
<tr>
<td>30,000 diseased with active tuberculosis;</td>
</tr>
<tr>
<td>High morbidity from typhus and paratyphus, cholera and other</td>
</tr>
<tr>
<td>acute communicable diseases in children;</td>
</tr>
<tr>
<td>High morbidity from diphtheria, pertussis and other</td>
</tr>
<tr>
<td>endemic diseases.</td>
</tr>
<tr>
<td>High morbidity/mortality from anthrax, tetanus, rabies;</td>
</tr>
<tr>
<td>High morbidity from skin and sexually transmissible</td>
</tr>
<tr>
<td>diseases.</td>
</tr>
<tr>
<td>High morbidity from goiter, nephropathy and other</td>
</tr>
<tr>
<td>endemic diseases.</td>
</tr>
<tr>
<td>Health services indicators:</td>
</tr>
<tr>
<td>Doctors: 120/Doctors per 100,000 population: 10;</td>
</tr>
<tr>
<td>Pharmacists: 96/Pharmacists per 100,000 population: 8;</td>
</tr>
<tr>
<td>Nurses: 120/Nurses per 100,000 population: 10;</td>
</tr>
<tr>
<td>Dispensaries: 3 (2 for children, one for TBC);</td>
</tr>
<tr>
<td>Outpatient clinics: 56 (50 GPs and specialists, 6 for</td>
</tr>
<tr>
<td>school-children);</td>
</tr>
<tr>
<td>Stomatological surgeries: 7;</td>
</tr>
<tr>
<td>Antimalarial stations: 18;</td>
</tr>
<tr>
<td>Hospitals: 9;</td>
</tr>
<tr>
<td>Hospital beds: 868/Hospital beds per 1,000 population: 0.72</td>
</tr>
<tr>
<td>Public health institutes: 1.</td>
</tr>
</tbody>
</table>

Under such conditions, in 1945, the gigantic battle against poverty, diseases, centuries-long regression, and for the affirmation of a national identity and autonomy began. The Macedonian alphabet and orthography had to be introduced, while at the same time a University had to be established. An army of unemployed people had to be employed,
but sources for their financing had to be found. In addition, capital economic buildings had to be built, along with schools, hospitals and other institutions of the communal and sanitary infrastructure necessary for the normal functioning of a country and the quality of life of its people [1, 3].

It was especially important to create a network of health organizations working for primary and secondary health care (outpatient clinics, polyclinics, dispensaries, hospitals), as well as institutions for specialized and super-specialized health care (clinics, institutes, health centres, etc.). However, above all, medical professionals, qualified and educated medical staff were needed, and Macedonia lacked them badly at that time [1, 3].

All in all, these shortcomings and problems had to be overcome, centuries had to be bridged, and the People's Republic (PR) of Macedonia had to become not only de jure, but de facto an equal member of the fraternal community of the Federal People’s Republic (FPR) of Yugoslavia.

Dimitar Arsov participated in all these actions for the improvement of the health care in Macedonia.

**Aim of the study, materials and method**

The aim of the study is to present the life of Academician Dimitar Arsov, based on archive materials, data obtained from his family and the personal contact of the author with Acad. Dimitar Arsov. The author of the paper is aware that it is not possible to include all the data in this relatively limited paper, and therefore there is considerably more to be presented about this great personality of our medicine.

Acad. Prof. D-r Dimitar Arsov was born in Kriva Palanka on September 28, 1908 and died too early; on July 2, 1974 in Skopje; leaving unerasable marks in the history of our medicine. He was one of the most distinguished people as a founder and Nestor of modern internal medicine in the Republic of Macedonia.

**Childhood family**

Academician Arsov came from a noble and education-oriented family. His father Todor (a trader) and his mother Slavka raised three sons: Dimitar, Boris and Strahil.

**Dimitar, Boris, and Strahil as students**

The parents did everything they could to send their sons abroad and provide an excellent education for all of them. The gifted and diligent Dimitar Arsov finished his medical studies in Paris, France. Boris Arsov earned two degrees: law studies and philosophy at the University of Montpelier, France and defended his PhD at the University of Paris, Sorbonne. Strahil Arsov gained a degree in law studies in Vienna, Austria.

**Education and career abroad**

Dimitar Arsov started his medical studies in 1926 and finished in 1932 at the distinguished University of Paris. The Paris medical school was among the leading ones in the world at that time. It was pedagogically and clinically oriented and known for teaching its undergraduate and postgraduate students to devote themselves to the patients. They were trained to ask the patient about their symptoms, to conduct anamneses, and personally examine the patient by using their own senses, knowledge and skills. Based on the findings, the doctor was to think and proceed further. After the anamnesis and physical examination, the doctors were trained to follow up with other biochemical and other instrumental analyses. Clinical examination of the patients was followed by continuous tracking of the patients’ illness and its treatment. The school focused on developing the skills for estimating the results of examinations, the ability to form a doctor’s opinion and for further research.

**About the University of Paris (Sorbonne)**

The University of Paris (Sorbonne) was founded by Robert de Sorbon in 1257. It is situated on the left bank of the River Seine. At the time, the colleges of Sorbonne had a strong reputation and the lectures were delivered in Latin.
Doctorate after defending his dissertation "Le pneumothorax spontane au cours de la fievre typhoide" in 1936
During the 19th century, the Sorbonne offered courses in various disciplines: law, philosophy, medicine, pharmacy, literature, and theology.

In 1968, after the student riots, the University of Sorbonne was divided into 13 Universities (Paris I – Paris XIII). In 1991 four more universities were founded in the suburbs of Paris, making a total of 17 Universities.

In 1936 Dimitar Arsov earned his diploma as Doctor of Medicine from the Sorbonne, after defending his thesis entitled "Le pneumothorax spontane au cours de la fievre typhoide" – "Spontaneous pneumothorax during typhoid fever".

From 1932 to 1937, Dimitar Arsov worked as an external assistant at the clinics of the University of Paris with famous professors at that time: Vaquez, Bernard, Donzelt, Hillemand, Allbot and other. He received the external assistantship by going through a very strict and competitive selection process. The foreigners who received the position of external assistantship at that time in Paris can be counted on the fingers.

His Career in Macedonia
The ten years passed studying under renowned professors of medicine in Paris as well as the defence of his dissertation helped Dimitar Arsov to gain an exceptional education in internal medicine. He returned to Macedonia in 1937. The healthcare situation in Macedonia during that period was harsh. There were epidemics of infectious diseases such as malaria, typhus and other intestinal diseases. The number of doctors, ambulances and hospitals was minimal. From 1939 to 1941 he worked as a part-time doctor at the Internal Department in the Railway and Army hospital in Skopje.

In 1941, he started a family with Ms. Radmila Popović with whom he had five children (4 sons and 1 daughter).
The Family of Dimitar Arsov, 1955

Dimitar Arsov as a doctor at the Internal Department, 1941, front row, first on right
From 1941 to 1944 he worked as a doctor at the Internal Department and as a Head of the Thoracic Department at the State Hospital in Skopje.

From 1944 to 1947 he worked as head of the Internal Department at the Zemtska (County) Hospital in Skopje.

Establishing the Faculty of Medicine in Skopje

The real activities for establishing a Medical Faculty in Skopje began in 1946 when the Ministry of Public Health of the Government of the PR Macedonia (by virtue of Act no. 4745 of August 30, 1946) addressed the Committee of Public Health of the Government of FPR Yugoslavia with a request to undertake action for the foundation of a Medical Faculty in Skopje [7, 11].

All the formal legal, professional and organizational preparations for establishing the Faculty of Medicine (FM) in Skopje were completed in a period of about six months, from Sept 1946 to March 1947, and the way was clear for the final opening of the Faculty.

The Ministry of Public Health and the Ministry of Education of the Government of PR Macedonia accepted all the recommendations from the Commission of Registrars at the end of February 1947 and all the necessary procedures for establishing the Skopje FM were accomplished. The Government of PR Macedonia, on March 6, 1947, issued a Decree for the foundation of the Skopje FM and for appointing the first core group of 19 teachers/professors, of whom eight were from the PR Macedonia (Sterjo Bozdov, Boris Spirov, Gligor Muratovski, Leon Melkonijan, Panče Karagjoxo, Haralampie Mančev, Petar Zdравev, and Boris Vitanov), [2, 9]. Prof. D-r Sterjo Bozdov, who chaired the first meeting of the Teachers’ Council of the FM-Skopje, held on 17th March 1947 was appointed to be the Acting Dean of the Faculty [1, 2, 9].

This first meeting was important as the beginning of the real existence and activities of the Skopje FM and because of the conclusions adopted, relating to the teaching process and necessary premises. The departments of the General County (Zemtska) Hospital in Skopje were transformed into the first nine clinics (for surgery, internal medicine, paediatrics, gynaecology and obstetrics, psychiatry, infectology, dermatovenerology, ophthalmology, and for ear, nose and throat diseases) and the Tuberculosis Clinic/Institute, all together sharing 640 hospital beds.

In 1947 he was elected as Assistant, and in 1950 as a Docent (Assistant Professor) at Faculty of Medicine in Skopje.

The first habilitation of the Medical Faculty in Skopje was defended in 1954 by D-r. Dimitar Arsov, titled "The Effects of the Intravenous Epi-nephrine on the Hypersplenism of Malaria and Cala-Aazar"

The Internal Medicine Clinic, with about 110 hospital beds, was one of the first nine clinics established at the Skopje FM in March 1947. The first Director and founder of the Clinic of Internal Medicine was Professor D-r. Aleksandar Ignjatovski [9], who came from Belgrade in 1948. Prof. Ignjatovski led the Clinic of Internal Medicine in Skopje till his retirement in 1952. Then, Assistant Professor D-r. Dimitar Arsov was appointed Director of the Clinic and Holder (Head) of the Chair of Internal Medicine, and served in these positions in the period 1952–74.

The Infectious Diseases Clinic was somehow integrated within the Internal Medicine Clinic and the first lecture on infectious diseases was delivered by Prof. Ignjatovski. Prof. Gligor Muratovski was appointed Acting Head of the Infectious Diseases Department, while the first doctors engaged to work on infectious diseases were D-r. Risto Trifunov-Brezjanin and D-r. Dimitar Arsov, both of them being directors of the Clinic in the 1950s.

In 1954 he was elected as a Associate Professor and in 1958 as a full-time professor at the Internal Medicine Department of the Medical Faculty in Skopje.
1st Generation Senior Students at the Medical Faculty (1947–1953). Doc. Dimitar Arsov, second row from top, fifth from left.
One hundred years since the birth of Academician Dimitar Arsov...

Dimitar Arsov, with colleagues and students
Clinical Work and Research

His excellent experience in the work with patients, precise observation of the symptoms and syndromes of the diseases in each patient, and knowledge of the most advanced therapy at that time enabled D. Arsov to draw conclusion for the possibility of new therapies and gave him the material for writing scientific papers.

Discovered new therapy for rheumatism

In the first half of the 50s, during his regular work, Arsov discovers a new, internationally recognized therapy for rheumatism:

– Discovered while curing patients of Cala-Aazar

– Patients with both Cala-Aazar and inflammatory rheumatism that were treated with small doses of adrenaline therapy felt a drastic decrease in rheumatism inflammation within one week.

This therapy was used a couple of years in several countries around the world.

This discovery was published in Bruxelles Medical Hebdomadaire in 1954 and announced in numerous Macedonian, Yugoslavian and foreign newspapers.
D. Arsov received numerous local and international recognitions for the discovery.

Acad. Dimitar Arsov has published more than 200 scientific and expert papers, communications, and discussions in Macedonian, Yugoslav and foreign journals, at symposiums and conferences. The scientific publications were a result of his pathology research in Macedonia, where he focused on understanding all the aspects of internal medicine. In all his research activities, he focused on social diseases; the clinic for freckled typhus in Macedonia, malaria and the consequences of the massive illness from malaria in the years before the war and in the first years after the war, all the way through the elimination of this endemic disease in Macedonia: (i) cala-azar in adults – a disease in a period when it was considered that we get it as a parasitosis during childhood, (ii) hepatitis in its first manifestations in Macedonia as an epidemic disease, (iii) researches about diabetes in Macedonia, (iv) the problems of high blood pressure and cardiovascular diseases, (v) on the problem of urolitiasis in Macedonia- which was delivered as the opening speech at one of the first Macedonian medical conferences, (vi) on the problem of malnutrition, the opening speech at one of the academic gatherings of doctors in Macedonia, (vii) on the illnesses of the esophagus and intestines in our pathology, (viii) on the modern treatment and diagnosis of blood diseases. An original contribution is his study of the intravenous application of adrenaline in the treatment of rheumatic fever and rheumatic endocarditis (as we have mentioned previously). He contributed to the study of the epidemiology of miocardiac infarction and problems in the diagnosis and treatment of hypertireosis. During the last years of his life, he paid specific attention to rheumatic illnesses, introducing new diagnostic methods and modern therapy.

As the director of the Internal Clinic Academician Arsov masterfully led the morning conferences during which, after finishing the follow-ups and treatments, we referred patients. He complemented, critiqued, supported or changed our diagnoses and treatments with an exceptional expertise as well as humor and humanity. For these visits and morning conferences each one of us prepared thoroughly, wanting to attend and be prepared for them. They were the best school for all of us. He taught us, the younger generations, how to ask the patients questions, how to understand the patients’ pains and problems and how to establish trust between the doctor and the patient. He always had the time to show us how to conduct a physical examination of the patient and was ready to ask each patient questions, to palpate, percute and ausculte. Afterwards, he would call us to palpate what he had felt so that we could learn that finding and never forget it.

His patient visits throughout the departments were an event for all of the younger doctors as well as older employees of the clinic.

We were learning during each visit as he asked us why we asked specific follow-ups, asking us to explain and each time he would tell us that we must not harm the patient with the follow-ups.

With his encyclopedic knowledge, he continually taught us new things, was interested in every new follow-up and gave us suggestions about where something new could be seen, read or learned. He became an excellent clinician as well as a researcher whose eyes could spot changes in patients that had not been seen before.

Prof. D-r Dimitar Arsov lived in a time when internal medicine was being transformed into a multidisciplinary occupation in which very few professionals could achieve deep and wide knowledge and gain unique experiences in all its branches. He achieved much as he was exceptionally diligent, humanitarian towards the patients, ready to help them any time and any place. In addition, he was also very curious to learn about the novelties in medicine.

In his exceptionally productive dealings, Acad. D. Arsov was able to unite the qualities of a highly qualified healthcare worker, doctor, specialist, internist, teacher, and scientist. He is the creator of the modern internal medicine in our country. As an exceptional teacher, professor in internal medicine at the Medical Faculty, he participated in both under-graduate and graduate studies. He contributed to the development of 2,240 graduated doctors and under his management over 300 doctors specialized in internal medicine and became specialists internists. They are the specialists internists who are present in Medical Centers in the Republic of Macedonia and other former Yugoslav Countries. Under his management, numerous habilitations and dissertations in internal medicine were completed. He also contributed to the development of 25 assistants, 5 docents, and 5 full-time professors in internal medicine at the Medical Faculty in Skopje.

Using his own experience and the experience of his colleagues, actively following the movements in modern medicine and accepting the differentiation of internal medicine, Acad. Dimitar Arsov became one of those rare clinicians who with skills
and knowledge brought modern, scientific and critical evolution into his work. During his management of the Internal clinic the University Internal clinic developed eight different sub-specialist departments: Cardiology, Pneumology, Rheumatology, Nephrology, Hematology, Gastroenterology and Endocrinology with metabolism and Clinical biochemical laboratory. Acad. Arsov supported the development of the sub-specialist departments of the internal clinic. However, he insisted that they be integrally connected with the one and only institution – the Internal Clinic. But, the opposite position to form separate sub-specialist organizational units, prevailed and by the end of 1974 they grew into subspecialist clinics of internal medicine.

The fast development of subspecialties has led to development of separate clinics for each subspecialty in 1975, so only the Chair of Internal Medicine remained as a connection between the subspecialties for education and scientific research.

**Publishing activity**

**Books**

Dimitar Arsov is the author of several textbooks which are the first in the field of medicine in the Republic of Macedonia. In these textbooks, he introduced numerous expert phrases that have become a part of the Macedonian expert terminology. Today, these phrases characterize the basic propaedeutic terms in internal medicine.

- Elementary Internal Medicine, Skopje University, 1964
- Internal Diseases, a Textbook for High Schools, Skopje University 1972, 1979
- Review of Infectious Diseases, Skopje University, 1960
- Review of Internal Diseases, Skopje University, 1963
Internal Diseases

Editorial work

He was the editor and a member of the publishing board of several journals: Macedonian Medical Review; Acta Medica Iugoslavica, Bulletin Scientifique; member of the publishing board of the publication Prilozi of the Macedonian Academy of Sciences and Arts, Department for Natural and Mathematical Sciences. Through the daily newspapers he published numerous articles about the current issues in medicine.

He was very active in establishing the Macedonian Medical Association and in its work, as well as that of the Macedonian Medical Review [14].

His papers can also be found on the internet (Pub Med), which shows the great achievement of our medicine and personalities at that time

Some of the papers on the Pub Med

1. [Knee in ankylosing spondylitis].
   ARSOV D, GUCEVA B.
   No abstract available.
   PMID: 4465247
   [PubMed – indexed for MEDLINE]

2. [Perclusone in the treatment of rheumatism].
   ARSOV D, GUCEVA B.
   No abstract available.
   PMID: 4282729
   [PubMed – indexed for MEDLINE]
3. **Complications during the course of treatment with gold salts.**
ARSOV D, GUCEVA B.
No abstract available.
PMID: 5042654
[PubMed – indexed for MEDLINE]

4. **Acetylcholine test in the diagnosis of bronchial asthma.**
ARSOV D, KOTEVSKI LJ, SIVENSKI G.
No abstract available.
PMID: 4663197
[PubMed – indexed for MEDLINE]

5. **Results obtained with gold salts in prolonged treatment in rheumatoid polyarthritis.**
ARSOV D, GOUTCHEVA B.
No abstract available.
PMID: 4995857
[PubMed – indexed for MEDLINE]

6. **Chronic gastritis (c.g.) in the pathology of our population.**
DAVCEV P, ARSOV D, VANOVSKI B, STAVRIĆ D, BIDIKOV V.
No abstract available.
PMID: 5173578
[PubMed – indexed for MEDLINE]

7. **Immunoelectrophoretic changes in rheumatic diseases.**
ARSOV D, GUCEVA B, HRISOHO R, CAPAROSKI L.
No abstract available.
PMID: 5134157
[PubMed – indexed for MEDLINE]

8. **Verapamil for regulation of cardiac rhythm disorders. Experience with our own patients.**
ARSOV D, SERAFIMOVA E.
German. No abstract available.
PMID: 4098330
[PubMed – indexed for MEDLINE]

9. **Chronic gastritis in our bioptic material.**
DAVCEV P, ARSOV D, VANOVSKI B, STAVRIĆ G, BIDIKOV V.
No abstract available.
PMID: 5203563
[PubMed – indexed for MEDLINE]

10. **A little-known disease: ainhum. Its association with rheumatoid polyarthritis. Apropos of 2 cases.**
ARSOV D, KRIVINE JM, KAHN MF.
No abstract available.
PMID: 5532596
[PubMed – indexed for MEDLINE]

11. **Immunosuppressive therapy in rheumatology.**
ARSOV D, GUCEVA B.
No abstract available.
PMID: 5205529
[PubMed – indexed for MEDLINE]

12. **Treatment of rheumatoid arthritis with gold salts in a prolonged cure.**
ARSOV D, GUCEVA B.
No abstract available.
PMID: 5199493
[PubMed – indexed for MEDLINE]

13. **Changes in the gastric mucosa by peroral antirheumatic drugs.**
ARSOV D, DAVCEV P, VANOVSKI B, PLASEVSK A, STAVRIĆ G, GUCEVA B.
No abstract available.
PMID: 5311311
[PubMed – indexed for MEDLINE]

14. **Some forms of non-viral chronic changes in hepatic parenchyma.**
ARSOV D, DAVCEV P, VANOVSKI B.
No abstract available.
PMID: 5200337
[PubMed – indexed for MEDLINE]

15. **Survey of cases treated for ankylopoetic spondylarthritis in a clinic for internal medicine in the course of 10 years.**
ARSOV D, HRISOHO D, GUCEVA B.
No abstract available.
PMID: 5192713
[PubMed – indexed for MEDLINE]

16. **Renese in the treatment of the edematous syndrome.**
ARSOV D, HRISOHO D, GUCEVA B, POPOVSKI B.
No abstract available.
PMID: 5993231
[PubMed – indexed for MEDLINE]
17. [Electrocardiographic observation in the patients with thyroid hyperfunction].
STOICEVSKI T, KOTEVSKI L, ARSOV D, GORGIEVSKI G.
No abstract available.
PMID: 5993209
[PubMed – indexed for MEDLINE]

18. [Thyreotoxic heart].
STOICEVSKI T, KOTEVSKI L, ARSOV D, GORGIEVSKI G.
No abstract available.
PMID: 4171427
[PubMed – indexed for MEDLINE]

19. [Hyperplasia of Brunner’s gland].
Arsov D, Davcev P, Vanovski B, Grunevski M, Lebedik V.
Lijec Vjesn. 1965 Feb; 87(2):159–64. Serbian.
No abstract available.
PMID: 5854194
[PubMed – indexed for MEDLINE]

20. [Sedative effect on the pain of degenerative rheumatism of the mineral waters of the spa of debarski banji].
ARSOV D.
No abstract available.
PMID: 14270795
[PubMed – indexed for MEDLINE]

21. [Our experience with the ortholidin method in occult hemorrhage without preliminary diet].
ARSOV D, DAVCEV P, VANOVSKI B.
PMID: 14304959
[PubMed – indexed for MEDLINE]

22. [Our experiences with pregnancy in kidney diseases].
ARSOV D, HRISOHO D, KJURCIEV K.
No abstract available.
PMID: 5891118
[PubMed – indexed for MEDLINE]

23. [Primary carcinoma of the liver in patients of the skopje internal clinic during the past 5 years].
ARSOV D, DAVCEV P, MACALI M.
PMID: 14148173
[PubMed – indexed for MEDLINE]

24. [Iron metabolism in banti's syndrome].
ARSOV D, NEDELKOVSKI I, STOICEVSKI T.
Undetermined Language. No abstract available.
PMID: 14147882
[PubMed – indexed for MEDLINE]

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[PubMed – indexed for MEDLINE]

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PMID: 13862622
[PubMed – OLDMEDLINE]

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PMID: 14438501
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PMID: 13603064
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ARSOV D.
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ARSOV D.
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[PubMed – indexed for MEDLINE]

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ARSOV D.
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PMID: 13199416
[PubMed – indexed for MEDLINE]

36. [Intravenous hydrochloric acid in treatment of chronic asystole].
ARSOV D.
Undetermined Language. No abstract available.
PMID: 13019240
[PubMed – indexed for MEDLINE]

The paper under No. 36 is the first and the oldest paper by Acad. D. Arsov from 1952.

D. Arsov and other of our distinguished teachers published their own clinical and basic research experience, apart from in other journals, mainly in the Annual Review of the Medical Faculty in Skopje (God Zb Med Fak Skopje). They were successful in placing the Review on the Med Line Database (PubMed). This was a great success for our predecessors in the affirmation of the medical science of Macedonia. Unfortunately, today, the Annual Review of the Medical Faculty in Skopje is no longer published, and the Medical Faculty in Skopje does not have a journal that is placed on the internet Pub Med.

Acad. Arsov had a wide interest in all the subspecialties of internal medicine and he tried to make his contribution to each specialty, as we can see from the following papers. Some of his papers on different subjects are listed below.
One hundred years since the birth of Academician Dimitar Arsov...

Prilozi, MANU, Department for Natural and Mathematical Sciences, 1 2, 43–49, 1969

Prilozi, MANU, Department for Natural and Mathematical Sciences, 1 2, 35–42, 1969
ПРИСТАП ВО ДИЈАГНОСТИКАТА НА ЕДНОСТРАНИОТ РЕНОВАСКУЛЕРАН ХИПЕРТЕНЗИВЕН СИНАРДРОМ

Димитар АРСОВ, Димитар ХРИСОХО, Момир ПОЛЕНАКОВИК

Употребенит термин, едностран реноваскуеларен хипертензиевен синдром (ЕРВХС), разбјрливено е дена не означува некоја посебна нозо-лошка единица. Исто ни се ја наметнува, како потреба, во тек на диференцијални дпазоноста на компаниите со диастрољен хипертензиевен синдром, по согледувањето на неопходноста од посебен и програмирани начин на испитување на овие болни (1).

Терминот ЕРВХС го користиме за оние болни при кои животот хипертензиевен синдром е последица на промени во бубренските крвни садови, независно од тоа дали оние се надвор или во самиот бубрег. Притоа, истите треба секогаш да се поврзани само со еден од бубрезите.

Издувојувањето на овие болни е условено со извесна посебности на клиничкиот пристап и можноста за нивно радикално лекување.

Клиничкиот пристап што ќе го изложиме за откривање на болни со ЕРВХС, не треба да се изведува со тактите кои се специфични за т.н. реноваскуеларна хипертензија и еднострана бубренска хипертензија (2, 3, 4, 5).

Македонска медицинска ревија, XXVI (1-2): 3–14, 1971

Лекување на болни со акутна бубренска инсуфицијенција со посебен осврт на нашите искуства со хемодијализа

Д. Ареов, Д. Хрисох, Б. Гучев, С. Гучев, М. Поленаков

Хемодијализа во фаза на акурния престанувач не-заменлив тераписки процесор е биодијелски овозможува болниот да се осовободи од хемодинамичките илнечки урежи и го регулира водно-електролитниот баланс и ацидозата. Хемодијализата е применета 1 до 5 пати при 17 болни и резултатите се следни: при 50% дијализирани болни настануваа инсуфициенција, при 30% олигурија како премиум на полнотермина фаза. Долги се јавувале доц-не кое фази на акурния трае повеќе дека зароди што настануваат инсуфициенција премиуми пролени. Од друга страна, крвномагистралниот абортис посебно е изведувани релативно по настануваа оштетуваа отеки и покрај настануваа инсуфициенција во 50% случаи.

Средениот
Participation at local and international congresses and conventions

Acad. Arsov presented his works in many national and international congresses, symposiums, conferences and conventions as in: France, Belgium, USSR, Hungary, USA, Great Britain, Greece, Bulgaria etc. His first participation was as early as in 1951 in Brussels. Later he was president of the IV Congress of Yugoslav Internists with International Participation in Ohrid 1973, and also a member of the editorial board at many other Congresses.

Academician Arsov kept in continuous contact with the most renowned medical experts and institutions in Europe, especially in France. He visited many academic gatherings and conferences around the world and gave numerous presentations. He was founder of the Internal Section of the Macedonian Medical Association and its long-term President of the Rheumatology and Endocrinology Sections as well as President of the Commission for Diabetics in the Macedonian Red Cross. He was also President of Yugoslav Association of Internal Medicine and a member of many other inter-academicals association as well as the Association des Medicines de Langue Francaise.

Academician Arsov attended what were known "Refresher Seminars" in different hospitals (Medical Faculties) in Paris, remembering his youth and his colleagues, but at the same time meeting new colleagues who came from different medical branches, and bringing them or their experiences to Skopje.

Academician Arsov encouraged his colleagues, especially the younger ones, to specialize abroad.
Herceg Novi, Igalo 1970

IV Congress of Yugoslav Internists with International Participation
Memberships

Acad. Arsov was president or member of many Macedonian, Yugoslavian, European and world Societies and Associations.

- **President:**
  - Yugoslav Internists Association; Internist Section of the Macedonian Medical Society; Rheumatologic Section of the Macedonian Medical Society; Endocrinological Section of the Macedonian Medical Society.

- **Member:**
  - Macedonian Medical Association; Yugoslav Internists Association; Yugoslav Rheumatologists Association; Yugoslav Endocrinology and Diabetes Association; Yugoslav Cardiology Association; World Cardiology Association; European Internists Association; Inter-academic Committee for Food of the Yugoslav Academy of Sciences; Inter-academic Committee of the Yugoslav Academy of Sciences on Oversensitivity of the Organism; Inter-academic Committee of the Yugoslav Academy of Sciences on Endemic Nephropathy; Inter-academic Committee of the Yugoslav Academy of Sciences for the Protection of the Natural Human Environment.

Full time member of the Macedonian Academy of Sciences and Arts (MANU/MASA)

On August 18, 1967, Dimitar Arsov was elected as a full-time regular member and founder of the Macedonian Academy of Sciences and Arts. He was one of the Academy’s first members and the only one in the field of medical sciences at the time. His election was a result of 159 scientific works published in his own country and abroad, of which 15 were published in French, as well as 5 textbooks published for students of medicine, stomatology and at the Medical High School. He was active in his field of interest in the Academy until the end of his life.
Honors Received
Throughout his career, Acad. Arsov received numerous awards: plaques from the Hematological society of the world in Paris, the city of Skopje, honorary decoration with silver flag golden star etc. In addition, in 1961 he was promoted as a Doctor honoris causa by the University in Besancon and City Assembly of Besancon (France).
Honorary Medals for Work II tier, 1959; Doctor honoris causa, University of Besancon (France), 1961; Honor from the City Assembly of Besancon (France), 1961; Medal from the City Assembly of Besancon; City of Skopje Medal, 1964; Honorary medal for special achievements for the city – of Skopje and November 13th Award, 1966; Honorary medal of merit with gold star, 1969.

Doctor Honoris Causa, University of Besancon (France), 1961


He was a prolific scientist who after World War II wrote the first scientific and specialist papers and books in the field of internal medicine in Macedonia.

He created a school of internal medicine. A scientific and uncompromising attitude towards the expert truth are woven in the unforgettable face of Academician Prof. D-r. Dimitar Arsov, scientist, teacher, and doctor.

With his vast work in healing the sick and preventing diseases in the Republic of Macedonia, he became the cornerstone of modern medicine in the Republic of Macedonia. Thus, he truly deserves to be the doyen of internal medicine, one of the leading, most important personalities in 20th century medicine in our country.

Today, his honored name appears in: the Rheumatology Clinic at the Medical Faculty in Skopje, the Medical Center in Kriva Palanka and the Scientific Club of the student organization of the Medical Faculty in Skopje.

Teacher, thank you for everything you did for us!

Acknowledgement
The author would like to express appreciation to the family of Acad. D. Arsov for consultations and the materials provided in the preparation of this paper.

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Резиме

СТО ГОДИНИ ОД РАЃАЊЕТО НА АКАДЕМИК ДИМИТАР АРСОВ, ОСНОВАЧ И НЕСТОР НА СОВРЕМЕНАТА ИНТЕРНА МЕДИЦИНА ВО РЕПУБЛИКА МАКЕДОНІЈА

Поленаковик М.

Македонска академија на науките и уметностите, Скопје, Р. Македонија

Димитар Арсов е роден во Крива Паланка, на 28 септември 1908 година, а починал на 2 јули 1974 во Скопје. Основно образование завршил во Крива Паланка, гимназија (1922–1926) во Куманово, Македонија, и Колеџ за медицина (1926–1932), и д-р на науки на Универзитетот во Париз, Сорбона, Франција во 1936 година. Во Македонија се вратил во 1937 година. Во 1947 година бил избран за асистент, а во 1950 за доцент на Медицинскиот факултет во Скопје. Бил назначен за директор на Клиниката за медицина и шеф на Катедрата за интерна медицина – на тие позиции бил во периодот од 1952–1974. Во 1958 година бил избран за професор по интерна медицина. Првата хабилитација на Медицинскиот факултет во Скопје ја има обртането Д. Арсов во 1954 година, под надслов: „Ефектите од интравенозни епи- нефрини на хипертензитет на лапац и кала-азар“. На 18 август 1967 Д. Арсов е избран за редовен член, а исто така и за прв член во областа на медицината на Македонската академија на науките и уметностите. Одлично искуство во работата со пациентите, претцето набљудување на симптомите и синдромните на болестите кај секој пациент, познавањето на најсовремената терапија во тоа време му овозможи на Д. Арсов да донесе заклучок за можносцата за нова терапија и му даде материјал за пишување научни трудови. Во првата половина на 50-тите години, за време на неговата редовна работа, Арсов открива нова, меѓународно призната терапија за ревматизам. Пациентите со кала-азар и со ревматско воспаление биле третирани со малци дози на адреданилска терапија и тие почувствуваат драстично намалување на ревматското воспаление во рок од една недела. Оваа терапија била искористена неколку години подоцна во неколку земји низ целот свет. Тој учествувал во додипломските и постдипломските студии. Тој придонесе за развој на 2.240 дипломирани лекари и под негово раководство над 300 лекари специјализирале во интерната медицина и станале специјалисти-интернисти. Под негово раководство се заврсени, бројни хабилитации и дисертации во интерната медицина. Тој исто така, придонел за развој на 25 асистенти, 5 доценти и 5 редовни професори во интерната медицина при Медицинскиот факултет во Скопје. Објавил повеќе од 200 трудови од различни области на интерната медицина, од кои 36 се на Паб Мед. Исто така, има објавено 5 книги за интерна медицина за студенти и за лекари. Тој бил претседател и член на неколку медицински македонски здруженија, како и на медицински здруженија на поранешна Југославија. Тој бил награден со највисоките награди на
поранешна Југославија и Македонија. Тој исто така бил награден и со меѓународни награди, како што се: Doctor Honoris Causa на Универзитетот во Беаансон и Почест и Медал од Градското собрание на Беаансон (Франција). За време на неговото раководење со Клиниката за интерни болести, при Универзитетската клиника за интерни болести се развиле осум различни супспецијалистички одделни: кардиологија, пневматологија, ревматологија, нефрологија, хематологија, гастроентерологија и ендокринологија со метаболизам и клиничка биохемиска лабораторија. Бразот развој на супспецијалностите доведе до развој на одделни клиники за секоја супспецијалност во 1975 година, па само Катедрата за интерна медицина остана како врска помеѓу супспецијалностите за образование и научно истражување. Тој беше плоден научник кој по Втората светска војна ги напишал првите научни и стручни трудови и книги од областа на интерната медицина во Македонија. Тој создаде училиште по интерна медицина. Научниот и бескомпромисниот однос кон стручната вистина се вткаени во незаборавното лице на академик проф. д-р Димитар Арсов, научник, учител и лекар. Со својата голема работа во исцелување на болните и спречување на болести во Република Македонија, тој стана камен-темелник на модерната медицина во Република Македонија. Така, тој навистина заслужува да биде доаден на интерната медицина, еден од водечките, најважните личности во медицината на 20. век во нашата земја. Денес, неговото име го носат: Клиниката за ревматологија при Медицинскиот факултет во Скопје, Медицинскиот центар во Крива Паланка и Научниот клуб на студентската организација на Медицинскиот факултет во Скопје.

Ключни зборови: интерна медицина, основач, научник, ревматизам, Република Македонија.