# DUMITRU BAGDASAR AND THE AMERICAN NEUROSURGERY

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The authors provide an extensive description of the development of Romanian neurosurgery and the full influence of the American school of neurosurgery. As promoter and founder of this branch of surgery, Prof. Dr. Bagdasar had the privilege of an exceptional education in Boston, under the direct supervision of the outstanding neurosurgeon Harvey W. Cushing (1869–1939) for two years, 1927–1929, in the "Peter Bent Brigham Hospital" in Boston, as beneficiary of a Fulbright scholarship, aimed at improving his knowledge of this new medical specialty. Prof. Dr. N. Paulescu provided the recommendation for the Fulbright scholarship. The neurosurgical knowledge acquired by Prof. D. Bagdasar paved the way for the future development of the entire neurosurgery branch in Bucharest and later across the country. Therefore, we argue that American neurosurgery contributed directly to the development of this branch in Romania.

Key words: Romanian neurosurgery, H. Cushing, D. Bagdasar, N. Paulescu.

### INTRODUCTION

Romanian neurosurgery established itself as a cohesive specialty quite late, and emerged as an independent discipline only in 1935. The authorities had difficulties in understanding the need to develop this branch of surgery, and many opposed the efforts made by Dr. Alexandru Moruzzi (1900-1957) and Dumitru Bagdasar (1893–1946). Educated abroad and then returned to their country, these surgeons specialised in the surgery of the nervous system were initially assigned positions in peripheral hospitals, and it was only later that they were allowed to practice in two centres where they strived to create and strengthen specialised services<sup>1</sup>. The two neurosurgery services founded in Iasi in 1933 – by dr. Moruzzi – within the "Socola" Hospital and in Bucharest in 1935 – by dr. Bagdasar - within the Central Hospital for Mental Diseases, ushered the Romanian neurosurgery into a modern era<sup>2</sup>. In the modest ten bed hospital wing,

dr. Bagdasar built a department that, for a long time, served as the only neurosurgical service in south-eastern Europe <sup>3,4</sup>.

Dumitru Bagdasar, the creator of neurosurgery in Romania, contributed significantly to the development of this specialty, both in terms of organisation and administration, as well as educational or scientific. Scholarly neurologist, clinician, neuropathologist and gifted operator, he has held the academic ranks of reader (1937-1945) and professor of neurosurgical clinic (1945-1946) in the Faculty of Medicine in Bucharest<sup>5</sup>. His experience was transposed in numerous papers and published studies or monographs on cordotomy (1934), orbital and orbital-cranial osteomas (1939), medullary (1939), cerebellar cerebral (1948 – published (1943),humously) tumour pathology, cerebral tuberculoma (1940), radiculomedullary compressions (1939), consecutive tetraplegia of a tumour located in the upper cervical spine (1940), a new method of neurosurgical treatment of oxycephaly (1941), Simmonds' disease (1943) or Lindau disease  $(1944)^{5,6}$ .

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One of his colleagues recalled the work conditions that the Romanian government provided for him upon his return from the US, where he had specialised in brain surgery under the guidance of the medical genius of that time, dr. Harvey Cushing (1869–1939): "Surgery was performed on an improvised wooden table, using a household vacuum adapted for intervention and instruments that had been largely bought with his own money, or built based on Bagdasar's instructions, who was thus following the example set by Cushing, but was lacking any similar resources".

# CUSHING AND AMERICAN NEUROSURGERY

In the first decades of the 20th century, many Romanian physicians had the privilege to become acquainted with the American medical school and to train under the guidance of the most important scientists of that time. We will only cite here the names of some Romanian academics who left for posterity notes about their experiences on the American continent: Vintilă Ciocâlteu (1890– 1947)<sup>8</sup>, Grigore T. Popa (1892–1948)<sup>9</sup>, Emil  $(1896-1976)^{10}$ . Following recommendation of prof. Nicolae Paulescu (1869-1931), dr. Dumitru Bagdasar arrived in the US, where he was a volunteer assistant in the service of prof. H. Cushing from 1927 to 1929, working at least ten hours per day in the hospital, following the cases of neurosurgery in the clinic<sup>11</sup>, preparing the patients' charts, making notes about the procedures in which he had assisted, studying the pathologic anatomy of cerebral tumours and the multiplication process of tumour cells grown in artificial mediums<sup>12</sup>; he also published two papers: "Le traitement chirurgical des gommes cérébrales"13 and "Intracranial chordroblastoma" 14.

Cushing was the most prominent medical figure at that time. He was receiving patients from the United States, Canada, the countries of South America, as well as from Europe. Michael Bliss, one of his biographers, wrote that he was respected by everyone, but loved by few<sup>15</sup>. For Dumitru Bagdasar, meeting this complicated individual was a life-changing event; coming from a small country, where "neurosurgery" was non-existent as a specialty, the Romanian doctor came into direct contact with the person who had placed this specialty on its well-deserved place, due to his approach, techniques, and surgical thought, imprinted with his personal mark.

On 16 November 1927, Harvey Cushing wrote from Boston to prof. Grigore Marinescu (1863-1938): "We have here at the moment a young Romanian, doctor Bagdasar, who has made a very good impression on all of us due to his modesty and hard work. I am confident that he will know how to make good use of his stay here".16. Sometime after the Romanian doctor had returned to his country, the American professor wrote about him: "Doctor Bagdasar worked very closely with me and I've come to feel the highest esteem for his work, skill, and personality. (...) Despite having spent only a little time in my clinic, he published several papers and I have all the reasons to believe that he has the capacity to build a reputation for himself and for neurosurgery in his country" <sup>17</sup>.

With every opportunity provided to him, either in writing, during public conferences or radio interviews, Dumitru Bagdasar highlighted the impact that prof. Cushing had had on his professional life and underlined the role and position played by this overpowering personality, as he often characterised him when recalling his mentor, in American neurosurgery.

Shortly after writing a paper about neurosurgery in America<sup>18</sup>, dr. Bagdasar received a letter sent from Bucharest on 13 February 1932 by the histologist Ion T. Niculescu (1895-1957), in which the latter, assuming the role of messenger on behalf of the Association of Docents in Bucharest, invited dr. Bagdasar to make a presentation about the surgery of the nervous system, suggesting two titles: "The surgery of the nervous system in the United States" or "An overview of nervous surgery". Dr. Niculescu went on by adding: "Should you find it appropriate, it might be good to include in your conference a presentation of the remarkable personality that is master Cushing". Bagdasar enthusiastically wrote to prof. Cushing: "A few days ago, I was invited by the Faculty of Medicine in Bucharest to hold a conference on neurosurgery and its creators. (...) I would be grateful if you would send me some papers for this purpose. Any personal articles that you would have the kindness to send me shall be returned promptly after I have read them. I would also wish to have the annual reports on the last three years of your services, as well as any other papers that you might have published after my departure from the Unites States"19.

After the First World War, more European physicians started to attend Cushing's practice, because it included a centre providing initiation in

neurosurgery. In his article entitled "Neurosurgery in the United States" dr. Bagdasar wrote that the impetus provided by Harvey Cushing to the surgery of the nervous system and the school that he founded in "Peter Bent Brigham Hospital" in Boston had made it possible for the United States to have the most renowned specialists in the world<sup>18</sup>. As Bagdasar noted in the conference held in Coltea Hospital in Bucharest on the evening of 15 April 1932, the school created by Cushing "serves today as standard for all neurosurgery services across the globe", and French neurosurgery was essentially "merely a reflection of American neurosurgery, because both De Martel and Vincent adhere closely to the norms set by Cushing"20. In addition to new American doctors, Harvey Cushing was taking annually two or three foreign assistants, alongside several volunteers. Heads of clinics, such as Anton Eiselsberg (1860–1939), were sending their associates to Boston; the Frenchmen Thierry De Martel (1876-1940) and Clovis Vincent (1879-1947) had also attended faithfully the American school of neurosurgery.

The Romanian surgeon observed the tendency towards supra-specialisation in the American hospitals, and the surgeons' focus on diverse pathologies: in Boston, Cushing and his associates – cerebral and medullary tumours, in Philadelphia, Charles H. Frazier (1870–1936) – surgery of trigeminal neuralgia, in the Mayo clinic, Alfred W. Adson (1887–1951) – surgery of the sympathetic system.

Among the defining characteristics of the American neurosurgeons were their careful pace and their gentleness in approaching the nervous tissue. Dr. Bagdasar claimed that Harvey Cushing had established a sanction for surgeons that were taking pride in their speed. General surgeons would lose the patients they operated on for cerebral tumours because of the shock caused by haste and rough handling of nervous centres. Neurosurgical interventions in the Unites States lasted on average four to five hours, and sometimes lasted in excess of seven hours. "By applying the principles of the American school, specifically operating slowly, without causing trauma, so far I have personally avoided shock being sustained by 45 patients on whose brain I operated (flaps, cerebellar explorations, decompression, ventriculographies) without having any case of death as a result of shock", said dr. Bagdasar, senior physician at the

Hospital for Mental and Nervous Diseases in Cernăuți<sup>18</sup>.

Many centres in the USA were using local anaesthesia with 1-2% novocaine for neurosurgical interventions, with the exception of transsphenoidal approach for tumours of the hypophysis. For children or nervous patients, general anaesthesia with ether was used, either by inhalation or enema. The Romanian author noted that, recently, Walter E. Dandy (1886-1946) from John Hopkins University School of Medicine and Hospital in Baltimore had replaced ether with avertin, which was administered by enema - 80-95 mg/1 kg of body weight for overweight patients, and 50-60 mg for the slimmer ones. For one year, no case of accident, postoperative pneumonia or death was recorded in relation to the 250 neurosurgical operations performed with avertin; the operation is made easier by this type of anaesthesia, brain oedemas no longer develop, and exploration becomes easier, without lesions at the level of the Rolandic fissures, with hemiplegia and subsequent convulsions <sup>21</sup>.

With regard to the nurses in the hospital where he spent the formative years of his activity, dr. Bagdasar wrote that they were adequately trained and conscientious; the same could be said about the janitors, who maintained exemplary cleanliness and an exceptionally pleasant air in the wards. The patient was the centre of attention and services were provided promptly.

In the operating rooms, surgeons were helped by three or four assistants and two nurses, each with clearly defined roles. The electric trepan and vacuum were used. A nurse maintained continuous irrigation by using 37° Ringer solution and prepared the pads, which had to be first soaked in a warm solution, so that they would not touch the brain when dry. Another nurse monitored the pulse and blood pressure at short intervals and would warn the surgeon about any pathological Decompression was performed in order to alleviate headache and avoid optic atrophy secondary to papillary oedema, one of the consequences of brain tumour. Bone haemorrhage was stopped by applying wax, while venous haemorrhages in the dura- and pia mater were stopped by using fragments of muscle collected from the patient's calf. Preventive haemostasis was performed by using silver clips in the vessels of pia mater, prior to the incision of the cortex, if ablating a deeplylocated tumour. The blood type was determined, and donors were prepared, in case they were

needed; the X-ray records and the patient's chart, with all the samples, were brought to the operating room to be reviewed by the doctors performing the intervention. All clinical notes were typed by two typists employed specifically for this purpose. An extremely important aspect was the presence of many people employed to take photographs, microphotographs, and prepare drawings (sketches were drawn during the operation). The activity carried out in prof. Cushing's clinic started at 8 in the morning and finished around 6 in the evening, with a half an hour break during which a free meal was offered to the entire staff, including foreign doctors; surgical interventions were scheduled for 10 in the morning <sup>18</sup>.

#### CEREBRAL TUMOURS

Introduced by Dandy in 1917, ventriculography is a procedure that "allows in many cases to determine the location of the tumour, when it is near the ventricles and thus changes their shape or moves them in one direction or other. Ventriculography is, in such cases, the operation that precedes the surgical intervention"<sup>22</sup>. Because of the conflict between Cushing and Dandy, Cushing ignored Dandy's research on hydrocephaly and tumours of the pontocerebellar angle, and did not employ in his practice ventriculography, a revolutionary method of diagnosis in the cerebral tumour pathology <sup>23</sup>.

Dr. Bagdasar noted two different behaviours one radical, the other conservative. With a view to avoiding relapses, Dandy was removing the tumour with a layer of the healthy surrounding tissue, considering that if the patient survives the intervention, they would be cured for the rest of their life. Cushing's approach was to remove as much as possible of the tumour, aiming to extend the patient's life as much as possible. This standpoint was "wiser and more humane" in the opinion neurosurgeon <sup>20</sup>. of the Romanian H. Cushing simplified the ablation of tumours by introducing in 1926 the high frequency or endothermal ablation, a procedure which he continued to perfect over time. Some viewed this method with scepticism, but the neurosurgeon Charles A. Elsberg (1872–1948) and the neurologist Bernard Sachs (1858–1944) published articles praising it <sup>24</sup>.

Bagdasar emphasised the fact that the American school was placing particular focus on the early diagnosis of cerebral tumours; the anatomicalpathological diagnosis was completed, and then a preoperative prognosis determined. Thus, for a child patient "with cerebellar phenomena and a fast-progressing tumour, a diagnosis of medullo-blastoma can be made. In case of an elderly person with a diagnosis of fast-progressing brain tumour in one hemisphere, it is possible to put the diagnosis of multiform spongioblastoma. However, the criteria are not certain and errors are frequent. It may be interesting to tell you that, when the tumour is not found, Cushing sacrifices a part of the cerebral lobe or the cerebellum in order to allow clearance for pressure" 20.

Röentgenotherapy proved to be really useful in the activity of neurosurgeons; it provided positive outcome in cases when tumours could not be found and only decompression was performed, in cases of malignant gliomas, but also in numerous cases of benign gliomas that could potentially undergo a malignant transformation after the operation. Dr. Bagdasar cited a study published in 1928 about the role of röentgenotherapy in gliomas <sup>25</sup>.

In prof. Cushing's centre, 456 tumours were irradiated between 1920 and 1928, and 222 of those tumours were gliomas. Bailey, Sosman and van Dessel, the authors of the research mentioned by Bagdasar, limited their observations to 62 cases, the only ones that could be treated completely and followed up for a sufficiently long period of time in order to allow drawing well-founded scientific conclusions. Röentgenotherapy had to be applied only after attempting to remove the tumour or after decompression, when the tumour had not been located. This method did not cure gliomas, but inhibited the development of those with fast progression<sup>25</sup>.

Dumitru Bagdasar informed the Romanian readers that he had witnessed a communication made by Harvey Cushing at the International Congress of Neurology in Bern (31 August–4 September 1931), in which the American neurosurgeon had presented a review of the 2000 brain tumours that he had operated on and analysed them from an anatomical pathology perspective <sup>24</sup>.

# MEDULLARY TUMOURS

The surgery of medullary tumours, less frequent than the cerebral ones and not as feared by surgeons, had witnessed significant progress in the USA. The most important authority in this field was the New York neurosurgeon Charles A. Elsberg (1871–1948). His words are often quoted as a

motto: "The results of the operative treatment of tumours of the spinal cord and membranes are as brilliant as any obtained in the entire realm of surgical therapy"<sup>26</sup>.

Dr. Bagdasar wrote that dr. Elsberg presented in 1932 in Madrid, during a specialised congress, statistics for 208 operated medullary tumours, with a mortality of 6.9% for the extra-medullary ones and 1.7% for the extra-meningeal; however, in 63% of cases the patients were declared completely cured or significantly improved<sup>26</sup>.

The neurosurgical school in New York was also interested in arachnoiditis, which were clinically similar to tumours or, sometimes, multiple sclerosis.

### CRANIAL TRAUMA

In the United States, cranial traumas were often the result of car accidents. In order to counteract the shock, American neurosurgeons were administering dextrose and sodium chloride injections, repeated until the pulse would go below 120 and the blood pressure would normalise. The general examination and the examination of the nervous system, followed by lumbar puncture, were the determining factors in deciding whether surgical intervention or medical treatment was appropriate.

The neurologist Temple Fay (1895–1963) published in 1930 an article<sup>27</sup>, later analysed by dr. Bagdasar, in which he showed, by using encephalogram in 112 patients mostly with cranial-cerebral trauma, that "post-traumatic neurosis is not a functional disorder, namely a 'sine materia' disorder, as previously thought, but it is conditioned by the atrophy of the brain in the frontal-parietal region, which is ischemic in nature and very visible on the encephalographic plates. Healing without sequelae depends on the treatment administered to the patient during the first 72 hours after the accident".

An emergency surgery was decided in case of comminuted fracture of the cranial bones, with depressure, accompanied by focal symptoms and haemorrhage of middle meningeal artery. If blood was found in the cerebrospinal fluid, no surgery was performed, as long as the neurological symptoms were not progressing, because subarachnoid haemorrhage could not be stopped by surgical means. The intervention, in such circumstances, could potentially aggravate the patient's condition; lumbar puncture provided sufficient drainage and was therefore the only reasonable treatment for subarachnoid haemorrhage. In case no blood was

detected in the CSF and there was no danger of shock, the patient was subject to a dehydration treatment by reducing fluids and stimulating eliminations by administering enemas with magnesium sulphate. Thus, the increase of intracranial pressure was avoided and, consequently, the occurrence of brain oedema, the main cause of which was the inhibition of resorption of the cerebrospinal fluid caused by the trauma <sup>18</sup>.

### SURGERY OF PAIN SYNDROMES

Dr. Bagdasar's contact with the American neurosurgery, direct as well as mediated through reading, provided him with the opportunity to become well acquainted with this young medical specialty. Preoccupied with the issue of pain, the Romanian doctor was looking towards the North American continent trying to observe the dynamics of progress in this field. He noticed two interventions that had reached such a high level of technical development that they were performed as routine operations, with impressive results: retrogasserian neurotomy for trigeminal neuralgia and cordotomy for pain syndromes of the trunk and limbs.

He mentioned dr. Charles Frazier (1870–1936) who had published a paper in JAMA, on 21 March 1931, in which he had presented his results: of 1317 cases of trigeminal neuralgia that he had examined, he had performed neurotomy on 654 patients, with a mortality rate of 0.26%, despite the fact that the age of patients was fairly advanced and they were likely to suffer postoperative complications. "Anyone who has ever performed retrogasserian neurotomy or has assisted at least once in such an operation – I'm talking about correctly performed operations, not failed attempts – realises how laborious this intervention on the trigeminal root is, being so close to its emergence point", dr. Bagdasar noted<sup>18</sup>.

The father of Romanian neurosurgery published several studies discussing the surgery of pain syndromes <sup>28, 29</sup> and talked on several occasions about pain and how to deal with it as a neurosurgeon<sup>30–32</sup>.

### OTHER NEUROSURGICAL INTERVENTIONS

Dr. Bagdasar noted that dr. Dandy, starting from the assumption established by Jean-Martin Charcot (1825–1893) which maintained that flare-ups of Ménière vertigo stop when the patient loses hearing on the side of the lesion, thought about anticipating

the final outcome of this slow and uncomfortable evolution by sectioning the auditory nerve. Dandy approached the nerve through a breach in the occipital region, behind the mastoid apophysis, and sectioned it. He had exceptional results with a group of nine patients suffering from Ménière vertigo and operated in this manner; these patients completely lost their hearing on one side, but the seizures had stopped<sup>19</sup>.

Deducing the importance of the choroid plexuses in understanding the functioning of the brain, dr. Bagdasar analysed the results obtained by dr. A. Gordon in the therapy of epilepsy (Gordon had published a study in 1928<sup>33</sup>). By performing a simple puncture in one of the lateral ventricles and extracting a small quantity of CSF, he had cured two cases of epilepsy. After the operation, in one case, the healing came shortly afterwards, while in the other case the patient experienced two more seizures, which were not later repeated (the patient was monitored for four years, during which the case was not treated as an example of healing). D. Bagdasar mentioned that encephalography and ventriculography used for therapeutic purposes had been successful in post-traumatic epilepsy, as well as essential epilepsy; cases with frequent seizures and worsening of the epileptic conditions, in which medication had proven ineffective, benefited from the best outcomes<sup>19</sup>.

W. James Gardner (1898–1987), well-known for his contributions in treating hemifacial spasm and trigeminal neuralgia, attributed the positive effects of encephalography to the suppression of local accumulations of CSF and ruptures of pial adhesions, due to the pressure of the added air. The neurosurgeon Garnder was particularly interested in posttraumatic epilepsy and expressed optimism with regard to the results obtained, a fact also mentioned by dr. Bagdasar <sup>19</sup>.

Following the world's first neurosurgery professor, Ludvig Puusepp (1875–1942), who had performed surgery on syringomyelia, by opening the cystic cavity of the glial process in the spinal cord and allowing the fluid to drain, Bagdasar said that Charles Frazier proposed another technique, based on the works he had studied, that consisted in maintaining a constant drainage of the cavity, leaving inside it a small band of gutta-percha <sup>19</sup>. He had obtained remarkable results on an operated patient – immediate disappearance of incontinence, recovery of superficial sensitivity in certain areas, elimination of spasticity, and improved morale. In

1932, there were 12 cases recorded worldwide of neurosurgical interventions for syringomyelia.

Dr. Bagdasar noted other aspects related to neurosurgical interventions in the US: decompression in oxycephaly, ablation of the choroid plexuses in hydrocephaly; the contributions of Walter Dandy and Albert T. Steegmann in the therapy of chronic cerebral abscesses and interventions on peripheral or sympathetic nerves <sup>19</sup>.

#### AMERICANS ABOUT BAGDASAR

Dr. Bagdasar, after just over a year and a half of intensive activity in the service of Prof. Cushing, became ill (a pulmonary disorder) and was forced to withdraw of a while in a sanatorium. His American colleagues were constantly sending him letters and books and expressing concern about his health. In an annual report about the activity of his clinic, Harvey Cushing had written: "Unfortunately, Dr. Dimitri Bagdasar from Bucharest was forced by his disease to temporarily suspend his stay with us. We miss him not only for professional reasons, but also for the depth of his knowledge in neurological subjects and for his exceptional work capacity"<sup>34</sup>. He later received a letter in which Cushing expressed his regret for the fact that he had not been included, because of his health issues, in the Festschrift volume dedicated to him by his colleagues and other personalities of the medical world 35.

The correspondence received by Dumitru and his wife, dr. Florica Bagdasar (1901–1978), the founder of the Romanian school of mental hygiene and child neuropsychiatry, as well as the correspondence held between different personalities of the American medical field with important Romanian doctors, prove that dr. Bagdasar was highly appreciated by the American neurosurgeons. The Bagdasar spouses were often invited to the homes of prof. Cushing and dr. Bailey (1892–1973), the one who had introduced the Romanian to the secrets of the neurosurgery centre in Boston.

The neurophysiologist John. F. Fulton (1899–1960), in his correspondence with doctor I.T. Niculescu, was constantly mentioning Bagdasar and asking the Romanian physician to send him his regards. On 27 October 1947 he wrote from New Haven: "The news you gave us about Bagdasar is truly tragic. We received a brief announcement about his passing, but not other details. He was such a pleasant person and we will all miss him. I remember him very well from the first International

Congress in Bern, and how happy he was about the presence of doctor Cushing and his many friends from Brigham"<sup>36</sup>. Walter J. Freeman (1885–1972), one of the promoters of neurosurgery, wrote to Ion T. Niculescu, on 7 June 1947: "I wonder whether dr. Bagdasar continued his operations on the frontal lobes and whether something new has been found. Can you provide any information?". He did not know that Bagdasar had died <sup>36</sup>.

Dumitru Bagdasar was frequently receiving excerpts from books and monographs from Prof. Cushing and his colleagues; he often cited his name in papers about American doctors, and often requested permission to reproduce images from his practice in medical treaties <sup>37</sup>. The American doctors with whom he had worked directly during his time in the centre of Peter Bent Brigham Hospital were more than willing to send him materials, books or instruments, whenever he requested them.

Dr. Bagdasar always praised his master, and when the latter left the physical world, he sent to Iasi, to the journal Însemnări ieșene (Notes from Iasi), coordinated by prof. Grigore T. Popa, a text in memoriam Harvey Cushing. The text of the obituary clearly shows the affection of the student for his master; he mentions "his unsurpassed technical ability", the way "the operator becomes the operation itself", the manner in which the professor and his team worked for many hours "through morally exhausting tension in order to save a human life". He believed Cushing to be "an enthusiastic visionary who opened up new avenues for less daring minds and hands" and he thought that, in approaching the study of internal secretion of the hypophysis, Cushing "had held in his hands the key to endocrinology". The author noted some of the lesser known things about the American neurosurgeon: "his affinity with literature, his abilities as a biographer and his passion for the history of medicine". He finished the text maintaining about the person who had inspired his love for neurosurgery that "his religion was the religion of kindness and tolerance"38.

### A TRIDIMENSIONAL APPROACH

Throughout the years when he worked in Prof. Cushing's clinic, dr. Dumitru Bagdasar "has adopted a tridimensional approach to neurosurgery, clinical, surgical and anatomic pathological, which would leave a profound imprint on all of his future activities", in the words of Prof. Constantin Arseni<sup>3,5</sup>, Bagdasar's collaborator and disciple.

With Dumitru Bagdasar, "modern neurosurgery emerged in Romania, and Romanian science owes him a great deal<sup>39</sup>.

He has transplanted to our country a difficult medical specialization of great practical utility. He has brought over all of the scientific and technical advances implemented by the great Harvey Cushing in the field of neurosurgery, he has published on all of the new scientific advances in this field, always wise and committed, and he has brought important personal contributions, while constantly showing respect for the suffering person, whom he has helped with love, gentleness, and humanity. He has always been a tactful and understanding master to his students" <sup>39</sup>.

The surgeon Iacob Iacobovici (1879–1959), who has provided the young dr. Bagdasar the opportunity to operate, at the beginning of his career, has spoken about him on 21 November 1934: "Whomever has practiced in the field of neurosurgery would recognise in dr. Bagdasar a full knowledge of this special branch of surgery, as well as impeccable technique and the kind of skill in operating one rarely encounters. The results of his interventions easily compare to those of his former master Cushing". Upon reading these comments, dr. Bagdasar noted, modestly: "I am in fact embarrassed to be compared to my former master Cushing".

### AMBASSADOR TO THE UNITED STATES

He has been offered an appointment as the Romanian ambassador to the US but, because of cancer, Bagdasar did not have the opportunity to represent his country as a diplomat. We might assume that attending a school of neurosurgery as great as the American one had strengthened his moral core and inspired the founder of the Romanian school of surgery to set his mission statement: "Not science for the sake of science, but science in the service of the suffering man" <sup>41</sup>. His empathy with the suffering poor was a constant throughout his life and his political leaning toward the left is well known.

Dumitru Bagdasar became Minister of Health under one of the communist governments. As he died on 15 July 1946, his life "would not give him the opportunity to discover the unfolding of the communist reality, completely different from what he had imagined, or to witness the failure of the Marxist-Leninist ideology. He would have probably 'paid' soon for the acts recorded in his 'file' as a

fervent activist, specifically: that he had trained to be a neurosurgeon in the 'capitalist hell' (the US), that he had voiced his admiration for the high level of competence in medicine practised there, in particular in professor Cushing's clinic, that he had maintained 'relations with foreigners', as evidenced by his extensive correspondence with prominent figures of that time" <sup>42</sup>.

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