



Professor Jan Wojciech Guzek, MD, Ph.D.

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A memoir on the 80th anniversary of his birth and the first anniversary of his death

Professor Jan Wojciech Guzek was born in Lublin on March 28, 1924; his parents were teachers and the family had a rich tradition of involvement in the fight for Poland's independence. He spent his childhood years in Lublin and during the Nazi occupation, he participated in clandestine classes, thus completing his upper grammar school and secondary classical education and passing a major part of his clandestine graduation examinations. During the war, in the years 1941–1943, he worked as a bank clerk in the Central Farmer Cooperative Fund in Lublin. In view of the increasingly frequent arrests of young people involved in the resistance movement, in July 1943, he left Lublin and resided in Odrzykoń near Krosno, the home village of his father. After World War II, in the academic year of 1944/1945, he attended the N. Copernicus Classical Secondary School in Krosno, where he passed his graduation examinations on July 5, 1945.

In 1945, Jan W. Guzek commenced his freshman year at the Faculty of Medicine, Jagiellonian University of Cracow. At the beginning of his fourth year of studies, he approached Professor Bronisław Giędosz, Chair and Director of Department of General and Experimental Pathology, the Jagiellonian University (later, since 1950, of the Cracow Medical University), with a request to be accepted as a volunteer. Thus, being still a student, on September 1, 1949, he entered the research path, receiving his nomination to the post of a junior assistant in the Department. Having obtained his diploma of a physician in 1951, Dr Jan W. Guzek continued his employment there, where – as he wrote in his memoirs –

he had learned the rudiments of research, especially the skills necessary while writing reports; he had also acquired the habit of exercising discipline while reviewing research papers submitted for his evaluation by his coworkers years later. In addition, working as a volunteer at the First Department of Internal Medicine, Medical University of Cracow, in 1958, he was board-certified in internal diseases (1st degree of specialization).

Initially, at the beginning of his career as a research worker, the interests of Professor Jan W. Guzek focused on the effect of environmental factors (low and high ambient temperature, hypovitaminosis, etc.) on the human body. Yet, even at that time, the most significant field of his research activities was neuroendocrinology. In 1954, he approached his superior with a request for a permission to commence studies on the effect of the absence of light on the organism. Professor Giędosz accepted the idea with considerable reserve, but the investigation culminated with very interesting results, which were published as a series of experimental papers in the years 1956–1960. The series of 11 reports on the functional changes in the endocrine system and the autonomous nervous system in animals kept in darkness constituted the basis for his doctoral dissertation (his supervisor was Professor Tadeusz Pawlikowski, MD, Ph.D.). The best known achievements of the “Cracow period” in the scientific life of Professor Guzek was his discovery of the ability to undergo division exhibited by the ganglion cells of the adrenal medulla and autonomic peripheral ganglia (superior cervical and celiac ganglia) in animals kept in darkness over prolonged time. A considerable increase of the number of ganglion cells combined with an increased volume of their nuclei observed under such experimental conditions indicated a possibility of cellular division (at present, the accepted view is that these cells may, indeed, divide, but at that time only a few researchers shared this opinion).

Since 1960, Jan W. Guzek decided to cast his lot with the city of Łódź, where on September 1, 1960, he commenced working at the Department of Physiology, Medical University. The degree of Doctor of Medical Sciences was conferred to him in 1962 and he became Assistant Professor in 1968. Working as Assistant Professor in the Department of Physiology, Institute of Physiology and Biochemistry, Medical University of Łódź, he was at the same time a Vice-director of the Institute; he also was a physician on the staff of the First Department of Internal Medicine of the Łódź Medical University.

At the time, Professor Guzek made numerous trips to European university centers; these were either short visits of several days, or extensive training or fellowship visits. In the years 1962–1963, while staying at the Laboratoire de Morphologie Animale Université Libre in Brussels, Belgium, under Professor Jean Brachet, he conducted experiments on the effect of ACTH and glucocorticosteroids on the regeneration of rat liver. The results of these studies have shown that ACTH and cortisone decreased deoxyribonucleic acid synthesis (i.e. they had an antimetabolic effect) in the regenerating rat liver. At the time, this was a pioneering observation, which was widely acclaimed in the research community worldwide, what was illustrated by the fact that the results were published in the “Nature”, a prestigious periodical, in 1964.

In the years 1963–1974, Professor Jan W. Guzek continued his experimental studies in the field of neuroendocrinology. Among the most significant achievements of this period we should mention the demonstration – jointly with Professor Władysław Traczyk – of vasopressin presence in the diencephalon and mesencephalon, i.e. outside the hypothalamus and the pituitary gland. The investigations, carried out both at the Department of Physiology of the Medical University of Łódź and during his fellowship visit to the Department of Physiology, Copenhagen University, in 1972, aimed at determining the synthesis degree and the transfer rate of the newly synthesized neurohormones and their carriers in the infundibular axons, as well as the dependency of this process on osmoreceptor excitation. The synthesis degree and transport rate of neurohormones and their carriers were determined by assessing the incorporation of radioactive precursors (³⁵S-cystine and ³⁵S-cysteine) in the hypothalamus and the pituitary gland. Professor Guzek demonstrated that the transport rate of neurohormones from the hypothalamus to the posterior pituitary was accelerated in dehydrated animals only at the beginning of dehydration process, to decelerate subsequently even below values observed under normal conditions. The researcher was also involved in studies on the effect of changes in monoaminergic and cholinergic transmission on the synthesis, transport and release of vasopressin and oxytocin.

On October 1, 1974, the then Assistant Professor Jan W. Guzek was appointed Director of the Department of Pathophysiology, Institute of Pathology (since 1992, Chair and Department of Pathophysiology), Medical University of Łódź. The title of Associate Professor was conferred upon him in 1979, and Full Professor in 1989. Professor Jan W. Guzek headed the Chair and Department of Pathophysiology till September 30, 1994, when he retired, but he continued his didactic and research activities there till the last days of his life.

Jointly with his coworkers from the Department of Pathophysiology, Professor Jan W. Guzek continued his investigations on the effect of monoaminergic and/or cholinergic transmission on the release of vasopressin and oxytocin. He also devoted much time and attention to the association between the function of the posterior pituitary and the neuropeptides present in the brain, i.e. insulin, cholecystokinin, atriopeptin, endothelin, thyroliberin, luliberin, as well as compounds belonging to the prostaglandin group. He also supervised investigations of the neurohypophysial function under stress conditions. At the end of the seventies, Professor Guzek returned again to problems he had investigated in the initial period of his career as a researcher, i.e. to the studies on the association between the light/darkness rhythm and the endocrine function. The published in 1980 results of studies on the role of the pineal gland in the regulation of the posterior pituitary function were among the very first communications on the subject that appeared in the literature worldwide. Investigations carried out over subsequent several years led to the determination of the role of melatonin, a pineal gland hormone, in the release of vasopressin and oxytocin under both physiological and pathological conditions; at the time, these studies were of a high priority.

The scientific achievements of Professor Jan W. Guzek, frequently presented at various national and international congresses and symposia, are highly diversified; he authored more than 320 publications, including: 123 original papers and 24 review articles, as well as numerous abstracts of communications presented at various types of meetings, historical papers, polemical articles, two translated textbooks (he translated "The stress of life" by Hans Selye), chapters published in various textbooks, as well as reviews, either published or pertaining to manuscripts submitted for publication to editorial boards of Polish and foreign periodicals.

Professor Jan W. Guzek maintained close contacts with numerous universities in Belgium, France, Germany, Great Britain, Czechoslovakia, Bulgaria and Japan, either probing into the methodology of pathophysiology teaching, delivering lectures to students or presenting reports at meetings of various scientific societies. In addition, he was an organizer and/or co-organizer of numerous symposia, conferences or congresses held in Poland and abroad, in which he participated not only as an invited lecturer, but also often as a moderator of various sessions. The initiated by Professor Jan W. Guzek and continued to this very day collaboration with the Institute of Neurophysiology, Otto von Guericke University, Magdeburg, Germany, headed by Professor Helmut Schwarzberg, as well as with the Department of Physiology, University College London (directed by Professor Mary Forsling) culminated in tangible results owing to several fellowships granted to faculty members of the Department of Pathophysiology in the above-mentioned centers, as well as thanks to Professor Forsling, Professor Schwarzberg and their coworkers visiting the Łódź Department of Pathophysiology.

The highly active role Professor Guzek played in the research community is witnessed by his membership in numerous scientific societies, both Polish (he was a member of the Polish Society of Endocrinology since 1956, Polish Physiological Society since 1957, Polish Society of Histochemists and Cytochemists since 1964, as well as a founding member of the Polish Society of Neuroendocrinology established in 2000), and foreign. In 1975, he was elected a member of the International Society of Neuroendocrinology, and in 1987, a member of the International Brain Research Organization. In addition, he was a member of such European and world associations, as the International Society for Pathophysiology (a founding member, 1991), Federation of the European Physiological Societies, European Pineal Society, European Neuroendocrine Association, as well as the International Neuroendocrine Federation.

The variety of functions fulfilled by Professor Jan W. Guzek in Polish and international scientific societies is outstanding. As the member of the Polish Physiological Society (PPS), he was a secretary and then Chairman of the Łódź chapter of the Society (1972–1981), and in the years 1984–1990, he was

a Board Chairman of the PPS. He was also a founding member of the Pathophysiology Section of PPS, established in 1976, and in the period from 1993 to 1996, he chaired the Section; in the years 1977–1985, he was the chairman of the Commission of Education, Pathophysiology Section, PPS. Acting as the Chairman of latter, he co-authored the syllabus for teaching pathophysiology at medical faculties of medical schools. He chaired the organization committee (1981) or was a co-organizer of numerous scientific and teaching conferences in pathophysiology. Among Polish pathophysiologicalists and physiologists, Professor Guzek was a commonly recognized authority as a research worker, academician and as a human being. In 1996, the General Assembly of PPS conferred the title of an honorary member upon Professor Guzek and awarded him with the Napoleon Cybulski Honorary Medal.

Professor Guzek did not content himself with acting on behalf of the Polish scientific community, but was also very active on the international forum. As the Chairman of Board of PPS, he participated in organizing work leading to the establishment of the Federation of European Physiological Societies (FEPS) and subsequently, starting in 1997, he was a member of the Federation Council, where he represented PPS. In 1985, he was invited to take part in activities leading to the establishment of the International Society of Pathophysiology (ISP), founded in 1991. He was a member of the Organization Committee of the Founding Congress held in Moscow in 1991 and the Second International Congress of Pathophysiology in Kyoto in 1994. He was also a Board member (1991–1998) and the ISP Council member for two consecutive terms, as well as the initiator, organizer and the first chairman (1991–1998) of the Society's Commission of Education. After the initial two terms, he accepted the role as a co-chairman of the Commission and fulfilled this function for another term.

Professor Guzek actively participated in the works of numerous national collegiate bodies. He was a member of the Scientific Council, an advisory institution to the Minister of Health and Social Welfare, since 1984, he was continuously a member of the Committee of Physiological Sciences of the Polish Academy of Sciences; within the above Committee he also sat at the Endocrinology Commission and Nomenclature Commission. In addition, he was a member of the National Committee for International Union of Physiological Sciences, Committee of Clinical Pathophysiology and Committee of Cellular Pathophysiology, both at the Polish Academy of Sciences, as well as a founding member and chairman of the Audit Commission of the Association of Medical Book Authors. In the years 1978–1990, he was a member and the chairman of the Editorial Board of the *Acta Physiologica Polonica*; since 1992, he was also a member of the Editorial Council of the „*Patologia Polska*” (then, the Polish Pathology, presently, the Polish Journal of Pathology), and since 1991, a section editor and a member of the Editorial Council of the *Journal of Physiology and Pharmacology*.

Professor Jan W. Guzek was also active in numerous bodies operating within the Medical University of Łódź, where he exercised numerous functions. Among others, he was Vice Dean in charge of education at the Faculty of Medicine, for many years acted as a representative of the Medical Faculty in the University Senate, was a member of the Council of the Institute of Endocrinology (starting in 1988 till his death in 2003, he was the chairman of the Council), as well as a member of the Councils of the Institute of Physiology and Biochemistry, Institute of Pathology and Institute of Biology/Morphology. For many years, Professor Guzek was the University's disciplinary officer for academic teachers, as well as a member of numerous commissions and teams operating within the Medical University of Łódź.

His contribution to the activities of the scientific community of Łódź was also immense. Here, a special emphasis should be placed on his long-term (since 1976) active membership in the Łódź Scientific Society, where he fulfilled numerous functions. In the years 1991–1997, Professor Guzek was the chairman of the 4th Department of Medical Sciences, and since 1996 till his death, he was the Vice-president of the Society. In recognition of his extraordinary activities, both in the field of research and education and also focused on community issues, the Łódź Scientific Society conferred on Professor Jan W. Guzek the title of an honorary member in 2001.

Professor Jan W. Guzek received numerous awards from the Rector of the Medical University of Łódź and from the Minister of Health and Social Welfare. In recognition of his merits in research and education fields, he was additionally awarded the Knight's Cross of the Polonia Restituta Order (1980), he was honored by the title of a meritorious academic teacher (1973), received a honorary award „For

meritorious services to the Medical University of Łódź” (1995), as well as the Medal commemorating the 50th Anniversary of the Łódź Faculties of Medicine (1995). His activities on the international forum were recognized in 1994, when he was bestowed the Honorary Medal of the Faculty of Medicine, Carolus University in Prague; he was also elected a honorary member of the Czech J. E. Purkinje Medical Society (1994) and the Bulgarian Society of Clinical and Experimental Pathophysiology (1997). He was a corresponding member of the German Society of Pathological and Clinical Physiology (1987).

Professor Jan W. Guzek acted as a supervisor of 10 doctoral candidates assisting them preparing their dissertations (he always insisted on personally delivering the old Latin formula to his doctoral candidates), he supervised four dissertations prepared by medical doctors seeking the degree of assistant professors, as well as one Honoris Causa doctorate; was a reviewer of numerous dissertations written by doctoral, associate professor and professor candidates.

The merits of Professor Guzek in the field of undergraduate teaching of medicine brought him the well-deserved recognition of the academic world. In the years 1962–1969, he was a supervisor and a mentor to the Student Scientific Society at the Department of Physiology, while in the period from 1969 to 1979, he was the curator of the Student Scientific Society at the Medical University of Łódź. His activities in this field were highly valued, what found its reflection in honorary membership in the Student Scientific Society in 1980 and 1990. Between 1949 and 1974, he conducted classes and seminars, as well as lectured in general pathology and physiology for students of Medical Faculties in Cracow and in Łódź, while in the period 1974–1994, he delivered lectures in pathophysiology for students of all the Faculties of the Łódź Medical University. Of particular value was the fact that for more than ten years, his lectures in pathophysiology for students of the Faculty of Medicine were delivered in a 60-hour annual course instead of 30-hours dictated by the syllabus. Teaching was his passion and vocation; already when retired, since 1994, he worked part time as a full professor or as a voluntary, continuing lecturing in pathophysiology to the students of his university school. His lectures, highly valued by his students, were always thoroughly prepared; the material was ordered in a systematic way and presented in a form that greatly facilitated the understanding of even most complex problems. Professor Guzek’s statements were characterized by extraordinary precision and utmost care for the purity of the Polish language. He was an erudite and he had an excellent memory. He was strict and demanding with respect to others (especially his students and coworkers), but most of all he was strict and demanding of himself. To his students, he not only conveyed the canons of knowledge in pathophysiology, but he also taught them an appropriate approach to a human being in his illness. As the chairman of the Commission of Education, Pathophysiology Section, PPS, he coauthored the syllabus for teaching pathophysiology to medical faculty students, was the editor and coauthor of several course books, as well as the author of almost 20 chapters in handbooks on pathophysiology written specially for medical students. In 2002, the first edition of the handbook of pathophysiology for students of medicine authored by Professor Jan W. Guzek and entitled “An outline of human pathophysiology” was published. The handbook, the crowning of his educational endeavors, was dedicated by Professor Guzek to all his students encountered in the years 1949–2002; according to the author, its role was „...to serve a student of medicine and associated disciplines as an introduction to problems of pathological physiology...”.

Professor Jan W. Guzek was characterized by great integrity, a great sense of responsibility and diligence in all his activities. His knowledge, both of medicine and of general subjects, was vast and versatile and he was happy to use every opportunity to share it. To anyone who knew Professor Guzek, and especially to his students and disciples, he was a world-size moral and research authority. In his life, his work – his research, didactics and community-related activities – always occupied the top priority position, but for us he was above all a man of a great heart, extremely kind to his friends, coworkers and students. This is why we shall remember Professor Guzek for many years to come. He died on March 8, 2003.

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