

## BIOGRAPHY ΒΙΟΓΡΑΦΙΑ

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### Professor Andrzej Biernacki Precursor of Nephrology in Poland

It was in the mid-20th century that nephrology started to emerge as an independent specialty and Professor Witold Orłowski is regarded as its father. His remarkable successor was Professor Andrzej Biernacki (1903–1963). Born in Lublin, Andrzej Biernacki graduated from the Medical Department of Warsaw University. During university times, he worked at the National Hygiene Institute headed by Ludwik Hirszfeld and trained at the Pasteur Institute in Paris. Then he went to a Polish colony in Brazil to study the health conditions there. On returning from Brazil, he accepted a post in the 2nd Department of Internal Medicine in Warsaw, headed by Witold Orłowski. In the 1930s, he did an internship in Vienna in Professor Wilhem Neuman's clinic and at the Forlanini Institute in Rome, and later in Davos and Paris. Staying in Italy and Germany, he could sense the atmosphere of the war lurking behind the corner. Back in Poland, he continued his work at Orłowski's clinic. During WWII, he fought in the resistance and worked in the Second Department of Internal Medicine at the University's Secret Medical Department. After the war, he organised the 1st Department of Internal Medicine. As a WHO scholarship holder, he trained in the USA in 1947. Already a professor, in 1958 as the chairman of the Nephrology Development Committee at the Ministry of Health, whose members were also Prof Jan Roguski and Prof Tadeusz Orłowski, he brought 2 Alwall's artificial kidneys to Poland. At his clinic in 1959, the team headed by Tadeusz Orłowski performed the first dialysis session in Warsaw. Biernacki's portfolio includes 75 own works and over 400 conceived under his supervision. The issues investigated concerned lung diseases, including pulmonary tuberculosis, and cardiology. However, his work on nephrology deserves special attention. It deals with key problems of division of hypertension, its malignant phase with changes in the kidneys and pharmacological and balneological treatment. He also describes the case of paroxysmal haemoglobinuria, genitourinary tuberculosis. Additionally, his work concerns the symptoms of uraemia in kidney amyloidosis, the problem of the circadian rhythm of urine production depending on the circulatory capacity and later also the possibility of haemodialysis treatment, including the treatment of mercury poisoning. Nephrology-related topics raised by A. Biernacki were continued by his co-workers and students. Andrzej Biernacki had numerous non-medical interests. He was an expert on music and husband to Grażyna Bacewicz, the outstanding Polish composer and violinist.

#### 1. INTRODUCTION

Around the mid-twentieth century, a new, independent medical specialty, denoted as nephrology, started to emerge from the more general science of internal medicine, in both the USA and Europe. The late 1940s and early 1950s saw the creation of Europe's first clinics of this new discipline in the Swedish town of Lund and in the French capital Paris.

They were established and headed by the legendary Nils Alwall and Jean Hamburger respectively. In Poland, despite numerous earlier references to urinary tract diseases in medical publications, these are Professor Witold Orłowski, the distinguished internist, and his successors, Profs. Andrzej Biernacki and Tadeusz Orłowski who, by general consent are regarded as the fathers of Polish nephrology. Witold Orłowski and his son Tadeusz have already been given nu-

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Καθηγητής Andrzej Biernacki –  
Πρόδρομος της Νεφρολογίας  
στην Πολωνία

*Περίληψη στο τέλος του άρθρου*

#### Key words

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History of dialysis in Poland  
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merous accounts in international medical journals making them well-recognised figures for all those interested in the history of nephrology. This paper, then, shall set to present the life and work of Witold Orłowski's direct successor at the Clinic of Internal Medicine in Warsaw, Prof. Andrzej Biernacki, who in post-war Poland played a remarkable role in the development of the discipline that later was to become known as nephrology. In turn, his work was continued by the famous Tadeusz Orłowski, Alfred Siciński and others.

## 2. LIFE

Born in the Polish town of Lublin on 14 March 1903, Andrzej Biernacki was the son of the renowned Polish doctor and community activist Mieczysław Biernacki and his wife Zofia Anna Weysflog (fig. 1). After the young Biernacki's graduation from Lublin Vetter secondary school, the family moved to Warsaw in 1921. Seven years on, in 1928, Biernacki graduated from the Medical Department at the University of Warsaw, obtaining the title of *doctor medicinae universae*. Still a student, A. Biernacki was engaged in voluntary work (1924–1925) in one of the departments at Infant Jesus Hospital ran by Władysław Janowski and then worked at the National Institute of Hygiene in the Department of Experimental Medicine (1925–1927) headed by Prof Ludwik Hirszfeld, the famous Polish serologist and immunologist. At the same time, he served as a demonstrator in the Faculty of Pharmacy at the university. It was in 1925 when the National Institute of Hygiene decided to send the promising student to Luis Pasteur Institute



**Figure 1.** Professor Andrzej Biernacki (courtesy of Dr. Zbigniew Fałda).

in Paris to learn the *Neisseria meningitides* serum titration method. There, over the summer months, he worked at the departments headed by Professors Jan Danysz and Dujarrío de la Riviere.<sup>1,2</sup> Back in Poland, after graduating in 1928, Biernacki started working at St. John's Hospital in Lublin, yet a few months later, in September 1929, he went to Brazil to work as a doctor for the Polish colony "White Eagle" in the state of Espírito Santo (fig. 2). He stayed there until December 1930 and in January 1931, he accepted a post at Instituto Oswaldo Cruz in Rio de Janeiro, funded by this well-known epidemiologist.<sup>3</sup> During his stay there, which lasted until May 1931, he developed the material collected in the colony. The results were later published right before the outbreak of the Second World War in the Polish journal *Medycyna (Medicine)*. Biernacki left Brazil and on 1 November 1931, he became a voluntary assistant in the 2nd Clinic of Internal Medicine at the University of Warsaw, headed by Witold Orłowski. Having been granted a one-year Potocki scholarship in 1935, Biernacki made his way to Vienna and Rome. In the Austrian capital, he



**Figure 2.** Andrzej Biernacki in the colony in Brazil (courtesy of Joanna Sendłak).

worked at the clinic headed by Prof. Wilhelm Neuman's, the outstanding Austrian internist specialising in TB treatment and then trained in an X-ray department headed by Prof. Felix Fleischner, the Austrian radiologist later working in the USA. After short training stays in Paris, Berlin and Szczecin, Biernacki arrived at Carlo Forlanini Institute in Rome, one of the world's greatest centres of TB treatment and research. Opened in 1934, the Institute was initially named after Benito Mussolini; it was later renamed into Carlo Forlanini – the discoverer of a new TB treatment method with pneumothorax. It comprised a few departments: the hospital, sanatorium and research centre and the clinics of internal medicine, surgery, orthopaedics, obstetrics, paediatrics and laryngology.<sup>4</sup>

The training having finished, Biernacki returned to Poland to continue work at the 2nd Clinic of Internal Medicine as the Head of the TB Outpatient Clinic and the TB Department.<sup>5</sup> After the outbreak of WWII, during the September campaign, he worked as Head of the Infectious Diseases and Internal Medicine Department in Złoczów. Then, after a short stay in Lviv, he went back to Warsaw to be taken on as a Senior Assistant, and since 1943 as an Assistant Professor in the Clinic. During the Nazi German occupation, he was involved in the system of underground education and was a soldier of the underground Home Army. He was also a member of the Board of the Health Section of the Warsaw Social Self-Help Committee. On the eve of the Warsaw Uprising, he obtained a habilitation (*the circulatory system in pulmonary tuberculosis*). During the uprising, he worked in the hospital in Lviv st. and after the fall of the uprising he stayed in a camp in Pruszków. Subsequently, he worked in Grodzisk Mazowiecki in an evacuated Clinic.

After the war, Andrzej Biernacki organised and then managed the Department of Internal Medicine at Infant Jesus Hospital. In 1948, he transformed the Department into the 1st Clinic of Internal Medicine at the Medical Academy in Warsaw.<sup>6,7</sup> In 1947, he became *Professor Extraordinarius* and in 1956 a full professor. In October 1947, with a WHO scholarship in his hand, he made his way to the USA, where for the next 4 months he worked in New York, Boston, Baltimore and Chicago. He was a Correspondent Member of the Polish Academy of Arts and Sciences and of the Polish Academy of Sciences, Chairman of the 1st Committee of Clinical Sciences of the Polish Academy of Sciences, the Poznań Society of Friends of Science, the Polish Society of Internal Medicine, the International Society of Internal Medicine and the International Society of Haematology (fig. 3).

In recognition of his remarkable scientific and organisational achievements, Andrzej Biernacki received many



**Figure 3.** First left: Prof. Andrzej Biernacki, prof. Walenty Hartwig (courtesy of Dr. Zbigniew Fałda).

awards of national, ministerial and university character. Notably, apart from medicine, Biernacki was interested in a wide range of subjects and fields of human activity. He was a classical music connoisseur and himself a talented pianist. He was very knowledgeable about literature and art and a keen skier and mountain hiker. He was married to the renowned Polish composer and violinist, Grażyna Baczewska with whom had a daughter, Alina.<sup>8</sup> Professor Andrzej Biernacki died on 30 July 1963.

### 3. WORK

The fruit of Professor Andrzej Biernacki's scientific activity is 75 own works and over 400 prepared under his supervision. Among his own works, 28 publications in the field of lung diseases and tuberculosis deserve special recognition as they present the importance of this issue in a variety of aspects. He also published on cardiovascular disease, haematology and angiology. He also dealt with and published on issues of organisation of scientific institutions. He presented, among others, a plan of the 6th Faculty of Medicine of the Academy of Sciences regarding the creation of the Institute of Experimental and Clinical Medicine of the Academy.<sup>9-13</sup> He also proposed a plan of scientific research in the fields crucial for the country's

economy. These included virology, struggle with circulatory system and oncological diseases and research on new medicines. His first publication, titled *On Scleroma* was published in *Warszawskie Czasopismo Lekarskie* (Warsaw Doctors' Journal) in 1927.<sup>14</sup> What is especially striking is a substantial number of publications on the newly-emerging discipline – Nephrology – which deserve a brief discussion.

Back in 1936, *Medicine* published Biernacki's paper on a rare case of paroxysmal haemoglobinuria. Only approximately 200 cases of this illness had been described before 1921. In 1945, in *Przegląd Lekarski* (Doctors' Review) he published his work titled *A case of tuberculosis of the kidneys, epididymis and prostate, ending in uraemia, treated as...* in which he emphasises frequent errors in the diagnosis of tuberculosis of the genitourinary system, which consist mainly in considering chronic pyuria and haematuria as a cause of inflammatory infections, ignoring the possibility of tuberculosis (fig. 4).<sup>15</sup> In *Doctors' Review*, he published the paper *On the form of nitrogenous kidney amyloidosis*. There, he states that uraemia in the course of renal amyloidosis may arise as a result of amyloid changes in the glomeruli (they destroy the glomeruli and reduce the amount of

active parenchyma), amyloid lesions in the vessels and retrograde lesions in the renal tubules. Those days it was tuberculosis that was the most common cause of amyloidosis.<sup>16</sup> In 1954, the journal *Polish Doctors' Weekly* published Biernacki's paper *Diuresis during sleep and after waking up in cases of circulatory efficiency and inefficiency*. The work indicates that in normal circumstances the amount of urine passed during the day exceeds that which is passed during the night, the cause of which might nest in the circadian rhythm and changes in neuro-humoral mechanisms. This same subject was also investigated in Poland by Mieczysław Fejgin and Tadeusz Orłowski.<sup>17</sup> In 1953 and 1956, *The Polish Archive of Internal Medicine* published two papers: *Clinical division of hypertensive disease* and *On the so called malignant hypertension*. In the first, Biernacki proposes the most important classifications of hypertension on the basis of Soviet Russian research (Łang, Zelenin, Miasnikow).<sup>18</sup> He also presents the Project of the Committee for the Unification of Cardiological Terminology, which is based on the following periods: initial period, period of unstable hypertension, fixed and end hypertension. In the latter work, he discusses the malignant stage of hypertension or

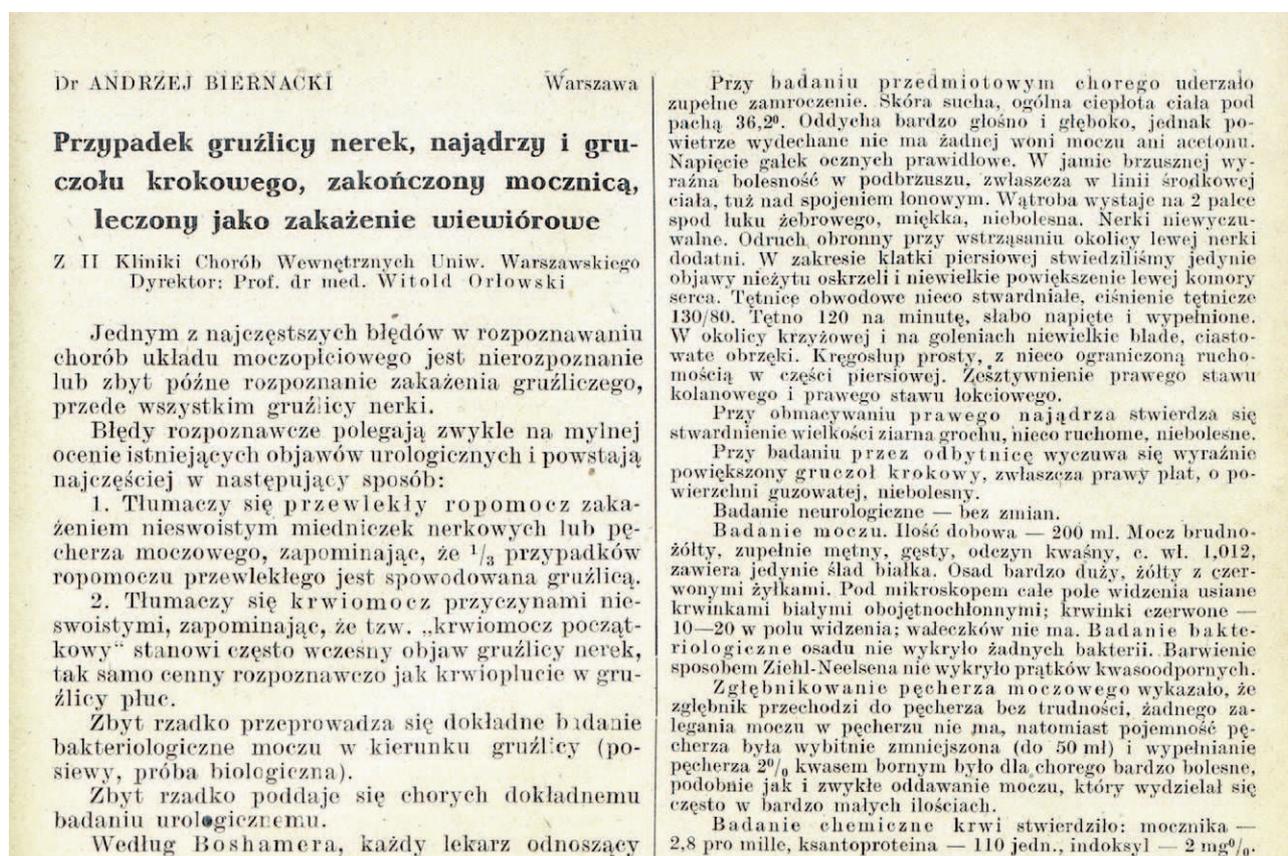


Figure 4. Title page of *A case of tuberculosis of the kidneys, epididymis and prostate, ending in uraemia, treated as...*

hypertensive emergency characterised by acute impairment of several organs, including the kidneys, fundus or systems like the central nervous or circulatory ones. Citing the work performed in the clinic headed by Prof. Jakub Penson in Gdańsk, Biernacki<sup>19</sup> states that malignant hypertension accounts for about 5.5% of hypertension cases. In his paper *Treatment of hypertensive disease* published in *Polish Doctors' Weekly* in 1961, he emphasises that the prerequisite for rational treatment is proper diagnosis.<sup>20</sup> He believes that a significant number of cases of hypertension are of renal origin, mainly in the course of pyelonephritis. As for the treatment methods, he suggests the use of balneotherapy, pharmacological and surgical treatment. At the same time, however, he states that hypertension in old age often does not require any treatment. It is worth adding here that in the 1950s Biernacki organised a Scientific and Research Centre in Ciechocinek spa to deal with hypertension spa treatment, including balneotherapy.

Already as the Chairman of the Commission for the Development of Dialysis Treatment at the Ministry of Health, he published in the *Polish Archives of Internal Medicine* in 1960 a review work entitled *Artificial kidney*, in which he presented the history of the creation of the haemodialysis apparatus, principles of dialysis and presented a brief history of treatment in Poland, emphasising the fact that the first haemodialysis session in Poland was performed in 1958 by the team led by Professor Kazimierz Bączyk, and then in early 1959 in Warsaw in Prof. Tadeusz Orłowski's clinic (fig.

5).<sup>21</sup> In his article *Acute mercury poisoning. Treatment with extracorporeal dialysis* published in 1963 also in the *Polish Archives of Internal Medicine*, of which he was editor-in-chief, he described 22 cases of mercury poisoning with acute renal failure in 1959–1960 in Poland.<sup>22</sup>

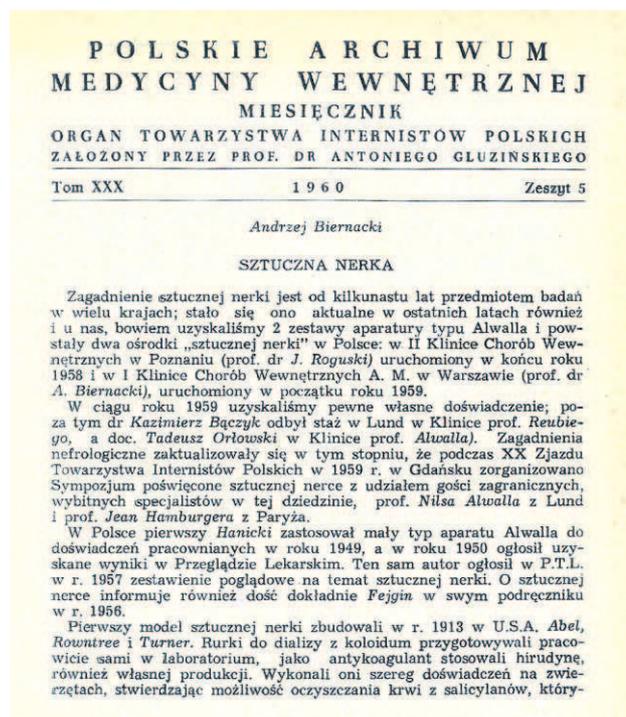


Figure 5. Title page of *Artificial kidney*.

## ΠΕΡΙΛΗΨΗ

### Καθηγητής Andrzej Biernacki – Πρόδρομος της Νεφρολογίας στην Πολωνία

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Ήταν στα μέσα του 20ού αιώνα όταν η νεφρολογία άρχισε να αναδύεται ως ανεξάρτητη ειδικότητα και ο καθηγητής Witold Orłowski θεωρείται πατέρας της. Ο αξιοσημείωτος διάδοχός του ήταν ο Καθηγητής Andrzej Biernacki (1903–1963). Γεννημένος στο Λούμπλιν, ο Andrzej Biernacki αποφοίτησε από το Ιατρικό Τμήμα του Πανεπιστημίου της Βαρσοβίας. Κατά τη διάρκεια των πανεπιστημιακών χρόνων, εργάστηκε στο Εθνικό Ινστιτούτο Υγιεινής με επικεφαλής τον Ludwik Hirszfeld και εκπαιδεύτηκε στο Ινστιτούτο Pasteur στο Παρίσι. Στη συνέχεια πήγε σε μια πολωνική αποικία στη Βραζιλία για να μελετήσει τις συνθήκες υγιεινής εκεί. Επιστρέφοντας από τη Βραζιλία, αποδέχθηκε θέση στο 2ο Τμήμα Παθολογίας στη Βαρσοβία, με επικεφαλής τον Witold Orłowski. Στη δεκαετία του 1930 έκανε πρακτική άσκηση στη Βιέννη στην κλινική του Καθηγητή Wilhem Neuman και στο Ινστιτούτο Forlanini στη Ρώμη, και αργότερα στο Νταβός και στο Παρίσι. Διαμένοντας στην Ιταλία και τη Γερμανία, μπορούσε να αισθανθεί την ατμόσφαιρα του πολέμου να παραμονεύει στη γωνία. Πίσω στην Πολωνία, συνέχισε την εργασία του στην κλινική του Orłowski. Κατά τη διάρκεια του Β' Π.Π., πολέμησε στην αντίσταση και εργάστηκε στο 2ο Τμήμα Παθολογίας στο Μυστικό Ιατρικό Τμήμα του Πανεπιστημίου. Μετά τον πόλεμο, οργάνωσε το 1ο Τμήμα Παθολογίας. Ως κάτοχος υποτροφιών του ΠΟΥ, εκ-

παιδεύτηκε στις ΗΠΑ το 1947. Ήδη καθηγητής, το 1958 ως πρόεδρος της Επιτροπής Νεφρολογικής Ανάπτυξης στο Υπουργείο Υγείας, των οποίων τα μέλη ήταν επίσης ο Καθηγητής Jan Roguski και ο Καθηγητής Tadeusz Orłowski, έφερε δύο τεχνητούς νεφρούς του Alwall στην Πολωνία. Στην κλινική του το 1959, η ομάδα με επικεφαλής τον Tadeusz Orłowski πραγματοποίησε την πρώτη συνεδρία αιμοκάθαρσης στη Βαρσοβία. Το χαρτοφυλάκιο του Biernacki περιλαμβάνει 75 δικά του έργα και πάνω από 400 που καταρτίστηκαν υπό την εποπτεία του. Τα θέματα που εξετάστηκαν αφορούσαν παθήσεις των πνευμόνων, συμπεριλαμβανομένης της πνευμονικής φυματίωσης, και της καρδιολογίας. Ωστόσο, το έργο του για τη νεφρολογία αξίζει ιδιαίτερη προσοχή. Ασχολείται με βασικά προβλήματα διαίρεσης της υπέρτασης, της κακοήθους φάσης της με μεταβολές στα νεφρά και φαρμακολογικής και υδροθεραπευτικής αντιμετώπισης. Περιγράφει, επίσης, την περίπτωση της παροξυσμικής αιμοσφαιρινουρίας, της φυματίωσης του ουροποιογεννητικού. Επιπρόσθετα, η εργασία του αφορά τα συμπτώματα της ουραιμίας στην αμυλοείδωση των νεφρών, το πρόβλημα του κirkάδιου ρυθμού της παραγωγής ούρων ανάλογα με την κυκλοφορική ικανότητα και αργότερα επίσης τη δυνατότητα της θεραπείας αιμοδιάλυσης, συμπεριλαμβανομένης της θεραπείας της δηλητηρίασης από υδράργυρο. Τα ζητήματα που σχετίζονται με τη νεφρολογία, τα οποία θίγει ο A. Biernacki, συνεχίστηκαν από τους συναδέλφους και τους μαθητές του. Ο Andrzej Biernacki είχε πολλά μη ιατρικά ενδιαφέροντα. Ήταν ειδικός στη μουσική και σύζυγος της Grażyna Bacewicz, εξαιρετική Πολωνή συνθέτης και βιολίστρια.

**Λέξεις ευρητηρίου:** Andrzej Biernacki, Ιστορία της αιμοδιάλυσης στην Πολωνία, Ιστορία της Νεφρολογίας στην Πολωνία

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