

Nobel Prize nominees and the rise of urology in Europe around 1900

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Abstract

Purpose Recent historical research has reconstructed the roads leading to the Nobel Prize for the trained urologists Werner Forssmann (1904–1979) in 1956 and Charles Huggins (1901–1997) in 1966. However, the story of urology and the Nobel Prize does not start and end with the laureates. Taking James Israel (1848–1926), Félix Guyon (1831–1920), and Peter J Freyer (1852–1921) as examples, this paper shows that pioneers in urology were in fact runners-up for the award much earlier.

Methods The study is based on an analysis of original files in the Nobel Prize archive in Stockholm, scientific publications of the early twentieth century, and secondary literature.

Result and conclusion We argue that Israel's, Guyon's, and Freyer's candidacies reflect not only scientific trends and controversies in urology at the turn of twentieth century, but that the development of the specialty itself was reflected in nominations of physicians working on problems of the genito-urinary system.

Keywords History of medicine · Nobel Prize for physiology or medicine · Urology · Surgery · Medical specialization · James Israel · Félix Guyon · Peter J Freyer

Introduction

Be it for the prize money (corresponding to about 1.000.000 \$ today) or the international acclaim in medicine, the Nobel Prize for physiology or medicine was perceived as a coveted trophy right from its very beginning in 1901. During the early years of the prize, leading medical journals spoke of it as “the ideal method of encouraging the best scientific research” [1]. At the same time, the specialty of urology experienced a remarkable institutionalization in Europe, primarily in Austria, France, Germany, and Great Britain. Therefore, it is not surprising that well-known urologists were nominated for the award during the first two decades of the twentieth century. In this paper, we will combine original files from the Nobel Prize archive in Sweden with scientific publications of the early twentieth century and secondary literature to link this dynamic phase in the history of urology to the Nobel Prize nominations for James Israel (1848–1926), Félix Guyon (1831–1920), and Peter J Freyer (1852–1921). In the end, none of them reached the prime international scientific crown for a discovery that had “conferred the greatest benefit to mankind,” as Alfred Nobel (1833–1896) had stipulated in his will of 1895, but the nominations reflect scientific trends and controversies in urology in the early twentieth century. We suggest that the candidacies mirror not only how particular research was viewed in a real-time perspective, but that they also point to the efforts of making urology a medical specialty in its own right around 1900. In order to better understand the nominations, we need to briefly highlight some factors leading to the rapid professionalization of urologists more than 100 years ago.

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The institutionalization of urology in Europe

We can trace at least four major hubs in Europe that played significant roles for urological research in the nineteenth century: Paris, London, Vienna, and Berlin [2]. For example, Jean Civiale (1792–1867) founded the first urology service in the world at Hôpital Necker in Paris. He introduced the lithotrite in 1818/1823 (first patient operation on January 24, 1824) [3], probably the first known minimal invasive operative procedure to crush stones in the urinary bladder [4]. Sir Henry Thompson (1820–1904) took this technique to Great Britain, where St. Peter's Hospital for Stones was founded in 1860. It came to attract physicians from around the globe [5]. Furthermore, Berlin and Vienna were important nodes in the German-speaking world with protagonists like Max Nitze (1848–1906), Leopold Casper (1859–1959), Robert Ultzmann (1842–1889), and Leopold von Dittel (1815–1898) [6]. During this era, the subject of urology was in most cases integrated as a branch of surgery. However, newly founded scientific associations to promote the field of urology as an own discipline received more and more attention. Next to national initiatives such as the Association Française d'Urologie in 1896 and the Deutsche Gesellschaft für Urologie (DGU) in 1906, the Société Internationale d'Urologie (at that time called AUI, nowadays SIU) was announced during the first meeting of the DGU in Vienna in 1907 [7]. Similarly, scientific journals started to crop up to further foster the communication between urologists. In France, for instance, the “Annales des maladies des organes génito-urinaires” were first published in 1883. In Germany, the “Monatsberichte über die Gesamtleistungen auf dem Gebiete der Krankheiten des Harn- und Sexual-Apparates” (1896) and the “Internationales Centralblatt für die Physiologie und Pathologie der Harn- und Sexualorgane” (1889) merged to the “Zeitschrift für Urologie” (German Journal of Urology) in 1907 [8]. It should take another two decades before the “British Journal of Urology” was founded (1929). In the light of this development, it is noteworthy that pioneers from Germany, France, and Great Britain were nominated for the most prestigious benchmark of excellence worldwide: the Nobel Prize.

Nobel Prize runners-up

In the following, we will give short biographical sketches of our three protagonists and take a closer look at their nominations.

James Israel (1848–1926)

James Adolf Israel was born in Berlin where he also studied medicine. His chances of a university career in surgery were limited due to his Jewish heritage, given the latent

antisemitism in the German *Empire* at the time [9]. In 1872, Israel was appointed to the Berlin Jewish Hospital, where in 1880 he became chief of surgery. In this capacity, he was successor to Bernhard von Langenbeck (1817–1886). Israel was one of the early supporters of Lister's antiseptics in Germany. His clinical research was mainly in the field of renal surgery, leading to a number of book publications (also in French) [10–14], first and foremost the monograph “Chirurgische Klinik der Nierenkrankheiten” [15]. His contemporaries underlined Israel's methods of clinical examination in terms of careful palpation and percussion of the kidneys [16].

The first Nobel Prize for physiology or medicine was awarded to Emil von Behring (1854–1917) in 1901 [17]. One year later, the Swiss internist and pediatrician Oscar Wyss (1840–1918) put forward James Israel and the surgeon Rudolf Ulrich Krönlein (1847–1910) as Nobel Prize candidates [Nobel archive, yearbook 1902]. He argued that renal surgery had more or less reached perfection, not least because of the contributions of Israel and Krönlein, although Wyss also stressed the influential earlier works by the deceased surgeon Gustav Simon (1824–1876). However, neither Israel nor Krönlein did end up on the shortlist of the Nobel committee. One reason that the nomination did not convince the Nobel Prize jury might have been that the nominator did not focus on one central innovation, but rather on gradual improvements. In spite of the negative outcome, Israel still is a renowned character in the early history of urology [18], not least because of his commitment as editor of one of the first truly international journals in urology from 1907 onward, the “Folia Urologica” [19] and as one of the founding fathers of the International Society for Urology (AIU/SIU).

Félix Guyon (1831–1920)

Félix Guyon was born the son of a navy surgeon on the island Bourbon (today: Réunion), east of Madagascar, in 1831. After his family moved to France, he studied medicine in Nantes and Paris where he received his M.D. in 1858. Only 5 years later, he became professor of surgery (professeur agrégé) in Paris and, after the death of Jean Civiale in 1867, chief of urology at Hôpital Necker. After another 10 years of practice, Guyon became chair (professeur titulaire de la chaire) of external pathology and in 1890 of a newly founded chair of urology (chaire clinique des voies urinaires) in Paris. While he practiced surgery broadly, Guyon was especially interested in genito-urinary surgery. He became famous for his successes in urethrotomy and transurethral lithotripsy, where lethality among his patients was around 2%, lower than usual at the time. This was due to his early adoption of aseptic and antiseptic practices [20]. Later he devoted himself to research into the

physiology and pathology of the urinary bladder. Guyon's name is still connected with a special syringe for cleansing the bladder, whereas his elaborated research on cystitis and urethritis seems to get less attention today [21].

Not only was Guyon highly respected in France, where he became president of the Société de Chirurgie in 1878, of the Académie de Médecine in 1896, and of the Académie des Sciences in 1913, he was also a founding president of both the Association Française d'Urologie in 1896 and the Association Internationale d'Urologie in 1907 [22]. Under his leadership, Hôpital Necker became one of the centers of urology in Europe and attracted many disciples, including Joaquín Albarrán (1860–1912), who succeeded his teacher as chief in 1906. We could not find any documents in the Nobel archive suggesting that Albarrán ever was nominated for the Nobel Prize, as has been stated elsewhere [23].

In 1911, already 5 years into his retirement, Guyon received his only nomination for the Nobel Prize in Physiology or Medicine from Maurice Jeannel (1850–1918), dean of the medical faculty of the University of Toulouse. In his short nomination letter, Jeannel recommends Guyon for his “work on the physiology, pathology, and surgery of the urinary organs” (Nobel archive, yearbook 1911). This formulation is remarkably similar to the prize motivation for the surgeon Emil Theodor Kocher (1841–1917) in 1909 “for his work on the physiology, pathology, and surgery of the thyroid gland.” Regarding Guyon's central role in the newly founded Association Internationale d'Urologie and the impeccable reputation of Hôpital Necker as a center of European urology, it is almost surprising that he did not receive further nominations from France or abroad.

Peter J Freyer (1852–1921)

Peter J Freyer, born in Galway (Ireland), received his M.D. at the age of 22. After having spent several years as a medical officer in the Indian Medical service, primarily in the North-West Provinces of India, Freyer returned to London in 1896 and soon became staff member at St Peter's Hospital [24]. Freyer gained international recognition after he had popularized suprapubic prostatectomy into general use around 1900 [25, 26].

By then, he had already reached a wide audience due to his publications on cystolitholapaxy [27]. Ronald Ross (1857–1932), Nobel Prize laureate in 1902, nominated Freyer in 1913:

“I beg to recommend for the Nobel Medical Prize the name of Peter Johnston Freyer M.D., M.Ch., the distinguished surgeon who discovered a perfected operation for the enucleation of the prostate gland and operation which has been the cause of immense relief to thousands of persons, principally old men,

who have suffered from enlargement of that gland. [...] All medical men and surgeons have a very high opinion of Freyer's labour [...]. The work is of great merit for the following reasons:

1. The ingenious conception and elaboration of the operation.
2. The courage and persistence with which it was advocated and used by Freyer in spite of long opposition.
3. The great relief which it has bestowed on many old persons.

I know of no operations which has been recently invented of which has proved to be of such great benefit to humanity.

I am, Sirs, Yours faithfully, Ronald Ross” [Nobel archive, nomination of P.J. Freyer by R. Ross, yearbook 1913]

Ross' phrase regarding the “long opposition” referred to the fact that Freyer's work was colored by scientific priority disputes (even brought up in obituaries in the *Lancet* and in the *BMJ*) [28, 29]. Historians of urology argue that the operation Freyer claimed to have invented had earlier been performed by the surgeons Arthur Fergusson McGill (1846–1890) and Arthur Mayo-Robson (1853–1933) in Leeds, or Eugene Fuller (1849–1926) in New York [30]. The Nobel Committee did not select Freyer as one of the most promising candidates in 1913, and he was never put forward as nominee again. Nevertheless, his research brought him several awards and honors such as the Arnott Memorial Medal (1904) and the honor of Knight Commander of Bath (1917) [31]. In 1921, Freyer was elected first president of the Section of Urology at the Royal Society of Medicine. Freyer has remained well-known, not least because of the Sir Peter Freyer Memorial Lecture held annually at the National University of Ireland (Galway) since 1976. Moreover, the Freyer eponym for the prostate operation is still widely used [32].

Discussion

Recent historical research has reconstructed the roads leading to the Nobel Prize for the trained urologists Werner Forssmann (1904–1979) in 1956 and Charles Huggins (1901–1997) in 1966, focussing on the roles of credit, priority, and networking in urology and medicine [33, 34]. However, the story of urology and the Nobel Prize does not start and end with the laureates. The nominations of James Israel, Félix Guyon, and Peter J Freyer shed light on the rise of urology in Europe around 1900. At the same time, the foundation of *Folia Urologica* in 1907 as a European journal with subtitles in German, English, and French

points to the consolidation of a network of the developing specialty at the turn of the twentieth century. While none of our three protagonists benefitted personally from his nomination—at least not in the sense of receiving the Nobel Prize—their nominations are indicators of a flourishing of the newly developing specialty concerned with diseases of the uro-genital system at the time.

What can urologists today learn from their predecessors of one century ago? All three nominees had expansive international networks. Israel and Guyon were members of international medical societies and editors of international journals. While our three protagonists only received one nomination each, their international networks might have led to further nominations from abroad.

Reviewing the last hundred years of Nobel Prize history, the number of clinicians receiving the award has declined significantly. However, since the files in the Nobel Prize archive are made available to historical research only after a time lag of fifty years, it remains an open question whether this trend is also reflected in the nominations of contemporary urologists during recent years. At the same time, the trends of Nobel Prizes in physiology or medicine in the third millennium have been marked by discoveries in cell biology, gene therapy, and biochemistry. Any urologists whose research of the last decades fits this description might find him- or herself a nominee or even a laureate in the future.

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Compliance with ethical standards

Conflict of interest The authors have no relevant conflicts of interest to declare.

References

- Anon (1903) The Nobel Prizes. *Boston Med Surg J* 149(20):554–555
- Weisz G (2006) Divide and conquer. A comparative history of medical specialization. Oxford University Press, New York, pp 3–25
- Civiale J (1828) Nachträgliche Bemerkungen zur der Lithotritie. Enselinsche Buchhandlung, Berlin
- Moran M (2014) Urolithiasis a comprehensive history. Springer, New York, pp 216–218
- Guthrie D (1957) The history of St. Peter's Hospital of stone, London. *Proc R Soc Med* 50:161–164
- Lesky E (1977) The Vienna medical school of the 19th century. Boehlau, Wien
- Jardin A, Moll F (2011) A short history of the SIU with some emphasis on the early years of the AUI and the initial meetings 1907–1914. In: Schultheiss D, Zykan M (eds) *Urology meets Berlin. Urology a century ago*. Grasl, Bad Vöslau, pp 20–41
- Moll F (2010) European journals of urology. In: Mattelaer J, Schultheiss D (eds) *Europe the cradle of urology*. History Office of the EAU, Arnhem, pp 396–397
- Pawliczek A (2011) Akademischer Alltag zwischen Ausgrenzung und Erfolg. Jüdische Dozenten an der Berliner Universität 1871–1933. Steiner, Stuttgart
- Israel J, Albarran J (1900) *Chirurgie du rein & de l'uretère*. Société d'éditions scientifiques, Paris (dt. Israel, J. (1894) *Erfahrungen über Nierenchirurgie*). Hirschwald, Berlin
- Israel J (1897) Über einen Fall von Frühextirpation einer carcinösen Niere. *DMW* 13:421–422
- Israel J (1888) Über Nephrolithotomie bei Anurie durch Nierensteineinklemmung, zugleich ein Beitrag zur Frage der reflectorischen Anurie. *DMW* 14:18
- Israel J (1907) Die Endresultate meiner Nephrektomien wegen Tuberkulose, nebst einigen diagnostischen Bemerkungen. *Folia urologica* 1:4–15
- Israel J (1877) Bericht über die chirurgische Abteilung des Jüdischen Krankenhauses zu Berlin vom 2. 1. 1873 bis 1. 10. 1875. *Langenb Arch Klin Chir* 20:1–50
- Israel J (1901) *Chirurgische Klinik der Nierenkrankheiten*. Hirschwald, Berlin
- Israel J (1889) Über Palpation gesunder und kranker Nieren. *Berl Klin Wochenschr* 26:125–128, **156–159**
- Hansson N, Enke U (2015) Emil von Behring: erster Nobelpreisträger für Medizin: die Bekämpfung der Diphtherie. *DMW* 140(25):1898–1902
- Schultze-Seemann F (1974) James Israel Neue Deutsche Biographie (NDB), vol 10. Duncker & Humblot, Berlin, p 200
- Moll F (2015) *Folia Urologica* the first real European and international urological journal. In: Felderhof E, Mattelaer J, Moll F, Schultheiss D, Van Kerrebroeck P (eds) *30 Milestones in Urology, 1st edn*. European association of urology, Dividsfonds Uitgeverij, Flanders, pp 210–215
- Mattelaer J (2002) Jean Casimir Félix Guyon (1831–1920) Erster Lehrstuhlinhaber für Urologie. In: Schultheiss D, Rathert P, Jonas U (eds) *Wegbereiter der Urologie: 10 Biographien*. Springer, Heidelberg, pp 35–46
- Jardin A (1991) Felix Guyon. *Prog Urol* 1:158–164
- Jardin A (1991) Félix Guyon. *Progrès en urologie* 1:158–163
- Casey RG, Thornhill J (2006) Joaquin Maria Albarran Y Dominguez: microbiologist, histologist, and urologist—a lifetime from orphan in Cuba to Nobel nominee. *Int J Urol* 13:1159–1161
- Williams DI (1998) Peter Freyer—the man and his place in the history of urology. *J Pelvic Surg* 4:3–7
- Freyer PJ (1900) A new method of performing prostatectomy. *Lancet* 1:774–775
- Freyer PJ (1901) A clinical lecture on total extirpation of the prostate for radical cure of enlargement of that organ: with four successful cases. *Br Med J* 1901(2):125
- Freyer PJ (1887) A recent series of one hundred cases of operation for stone in the bladder without a death. *Br Med J* 2(1408):1373–1377
- V.C. (1921) Sir Peter Freyer, K.C.B., M.D., M.CH.R.U.I (Obituary). *Lancet* 24:677–678
- Anon (1921) Sir Peter Freyer, K.C.B., M.A., M.D., M.CH. (Obituary). *Br Med J* 17:464–465
- Williams DI (1999) The development of urology as a speciality in Britain. *BJU Int* 84:587–594

31. Görgen A (2010) Sir Peter Freyer—Strittiger Pionier der Britischen Urologie. *Akt Urol* 41:225–227
32. Moll F, Schultheiss D, Moll F (2000) Verzeichnis von Eigennamen in der Urologie. In: Schultheiss D, Rathert P, Jonas U (eds) *Streiflichter aus der Geschichte der Urologie*. Springer, Berlin Heidelberg New York, pp 226–235
33. Hansson N, Packy LM, Halling T, Groß D, Fangerau H (2015) Vom Nobody zum Nobelpreisträger? Der Fall Werner Forßmann. *Urologe A* 54:412–420
34. Hansson N, Moll F, Schultheiss D, Krischel M (2016) Remembering Charles B Huggins' Nobel Prize for Hormonal treatment of prostatic cancer at its 50th Anniversary. *Eur Urol* 69(6):971–972