ISSN 1333-6347 (Print)
ISSN 2975-7452 (Online)

Pregledni rad
Review paper

Nobelovac Vladimir Prelog kao stipendist Hrvatskoga kulturnoga društva Napredak

Nobel Prize winner Vladimir Prelog as a scholarship recipient of Croatian Cultural Society Napredak

Nenad Raos*

HR-10000 Zagreb, Hrvatska / Croatia; e-mail: raos@imi.hr

Primljeno / *Received*: 2023-06-20; Prihvaćeno / *Accepted:* 2025-03-10
Rukopis je predan na hrvatskom / *Manuscript submitted in Croatian*

SAŽETAK

Treći hrvatski dobitnik Nobelove nagrade (1975., za kemiju) Vladimir Prelog (1906. – 1998.), bio je kao i drugi dobitnik Ivo Andrić (1961., za književnost), stipendist Hrvatskog kulturnog društva Napredak, osnovanog 1905. godine. U radu se izlaže povijest HKD Napredak te životopis Vladimira Preloga s naglaskom na djetinjstvo u Sarajevu i studij kemije u Pragu. Pokazuje se da je Napretkova stipendija bila važan, no ne i ključan činitelj u Prelogovoj karijeri, jer je Prelog umnogome ovisio o financijskoj potpori svoga oca Milana Preloga (1879. – 1931.), profesora opće povijesti na zagrebačkom Filozofskom fakultetu.

KLJUČNE RIJEČI: **Vladimir Prelog,** HKD Napredak, Ivo Andrić, Leopold Ružička, Milan Prelog, povijest kemije

SUMMARY

The third Croatian Nobel Prize laureate (1975, for Chemistry), Vladimir Prelog (1906–1998), was – much like the second laureate Ivo Andrić (1961, for Literature) – a scholar of the Hrvatsko Kulturno Društvo *Napredak* (HKD *Napredak*/Croatian Cultural Society "Progress"), founded in 1905. This paper presents the history of HKD *Napredak* and the biography of Vladimir Prelog, with an emphasis on his childhood in Sarajevo and his studies of chemistry in Prague. It demonstrates that the *Napredak* scholarship was an important, but not a crucial factor in Prelog's career, as Prelog largely depended on the financial support of his father, Milan Prelog (1879–1931), a professor of general history at the Faculty of Humanities and Social Sciences in Zagreb.

KEYWORDS: **Vladimir Prelog**, history of chemistry, HKD Napredak, Ivo Andrić, Milan Prelog, Leopold Ružička

* Adresa autora za dopisivanje / *Author's correspondence address*:
E-pošta / *E-mail*: raos@imi.hr

Ovaj je rad predan na prvu objavu časopisu Prirodoslovlje pod licencijom CC-BY 4.0.
This work has been granted to the journal Prirodoslovlje under the CC-BY 4.0 license.

UVOD

Iako su Hrvatska i Bosna i Hercegovina susjedne države, koje su usto više od stoljeća – od austrijske okupacije Bosne i Hercegovine 1878. do uspostave Republike Hrvatske 1991. godine – bile dio istih državnih zajednica, ne može se mnogo reći o utjecaju hrvatske na bosansko-hercegovačku kemiju i obratno. Iako je mnogo kemičara iz Bosne i Hercegovine našlo posao u Hrvatskoj – od kojih treba izdvojiti profesora Huseina Džanića (1933. – 1994.) [1,2] i hrvatskog akademika Vitomira Šunjića (r. 1939.) [3] – ipak se ne može govoriti o školama kemije bilo u jednoj bilo u drugoj državi koje bi utjecale jedne na drugu.

Razlog tome je što je kemija kao znanost bila nerazvijena u obje zemlje – kemija se u Hrvatskoj počinje učiti u realkama 1853., a na fakultetu 1876. Stoga su se kemičari iz Hrvatske kao i kemičari iz Bosne i Hercegovine školovali, usavršavali ili postizali svoje najbolje rezultate u drugim zemljama Europe i Amerike.

Iznimka je hrvatski kemičar Mladen Deželić (1900. – 1989.), prvi šef Katedre za hemiju i prvi profesor organske kemije na novoosnovanom Filozofskom fakultetu u Sarajevu (1950.), koji je od godine 1948. radio na Institutu za hemiju sarajevskoga Medicinskoga fakulteta [4,5]. Usto je bio osnivač i prvi urednik časopisa *Glasnik hemičara i tehnologa Bosne i Hercegovine* (Sarajevo), koji izlazi od 1952. [6]. Razlog Deželićeva djelovanja u Bosni i Hercegovini nije bio prvenstveno znanstveni nego politički. Deželić je naime

INTRODUCTION

Although Croatia and Bosnia and Herzegovina are neighboring countries that were part of the same state unions for over a century – from the Austrian occupation of Bosnia and Herzegovina in 1878 to the establishment of the Republic of Croatia in 1991 – not much can be said about the mutual influence of Croatian and Bosnian-Herzegovinian chemistry. Although many chemists from Bosnia and Herzegovina found employment in Croatia – notably Professor Husein Džanić (1933–1994) [1,2] and the Croatian academician Vitomir Šunjić (b. 1939) [3] – one still cannot speak of established schools of chemistry in either country, nor the schools of chemistry that influenced each other.

The reason for this lies in the fact that chemistry as a science was underdeveloped in both countries; chemistry instruction began in secondary technical schools (*realke*) in Croatia in 1853, and at the university level in 1876. Consequently, chemists from both Croatia and Bosnia and Herzegovina completed their education, specialized, or achieved their best results either in other European countries or in America.

An exception is the Croatian chemist Mladen Deželić (1900–1989), the first head of the Department of Chemistry and the first professor of organic chemistry at the newly founded Faculty of Philosophy in Sarajevo (1950), who had been working at the Institute of Chemistry of the Sarajevo Faculty of Medicine since 1948. [4,5]. Additionally, he was the founder and first editor of the journal *Glasnik hemičara i tehnologa Bosne i Hercegovine* (Sarajevo), published since 1952. [6]. The primary reason for Deželić's work in Bosnia and Herzegovina was political rather than scientific. Due to political reasons Deželić

zbog političkih razloga 1945. izgubio posao na zagrebačkom Farmaceutskom fakultetu, pa u Hrvatskoj više nije mogao naći posao koji bi odgovarao njegovom znanstveno-nastavnom zvanju. Slična je sudbina zadesila nakon Drugoga svjetskoga rata i druge politički nepoćudne hrvatske znanstvenike [7].

HRVATSKO KULTURNO DRUŠTVO NAPREDAK

Hrvatsko kulturno društvo Napredak osnovano je u Sarajevu 1905. godine, no njegovo osnivanje nije išlo glatko kako bi se moglo zaključiti iz ove lakonske konstatacije. U početku su naime postojala dva društva:

1. jedno u Mostaru (*Hrvatsko potporno društvo za potrebne đake srednjih i visokih škola u Bosni i Hercegovini*), osnovano 14. rujna 1902. godine,

2. a drugo u Sarajevu (*Hrvatsko društvo za namještanje djece u zanate i trgovinu*), osnovano 11. studenoga iste, 1902. godine [8-10].

Sarajevsko Društvo, osnovano na poticaj nekolicine domoljuba u Zagrebu, registrirano je tek 10. rujna 1904. godine da bi sljedeće, 1905. godine promijenilo ime u *„Hrvatsko društvo ‚Napredak' za potpomaganje naučnika i đaka Hrvata katolika za Bosnu i Hercegovinu"*. Do ujedinjavanja tih dvaju društava, sarajevskoga i mostarskoga, došlo je 9. lipnja 1907. godine, pa nastaje novo društvo sa sjedištem u Sarajevu *(‚Napredak' društvo za potpomaganje naučnika i đaka Hrvata – katolika za Bosnu i Hercegovinu*).

lost his job at the Faculty of Pharmacy in Zagreb in 1945, and could no longer find employment in Croatia that matched his scientific and teaching rank. A similar fate befell other politically undesirable Croatian scientists after World War II [7].

CROATIAN CULTURAL SOCIETY NAPREDAK

The Croatian Cultural Society *Napredak* was founded in Sarajevo in 1905, though its establishment was not as smooth as this brief statement might suggest. Initially, two separate societies existed:

1. One in Mostar (*Hrvatsko potporno društvo za potrebne đake srednjih i visokih škola u Bosni i Hercegovini* – Croatian Support Society for Needy Students of Secondary and Higher Schools in Bosnia and Herzegovina), founded on September 14, 1902, and the

2. Second one in Sarajevo (*Hrvatsko društvo za namještanje djece u zanate i trgovinu* – Croatian Society for Placing Children into Trades and Commerce), founded on November 11, 1902. [8-10].

The Sarajevo society, established at the initiative of several patriots in Zagreb, was registered only on September 10, 1904, and it changed its name the following year (1905) to *„Hrvatsko društvo ‚Napredak' za potpomaganje naučnika i đaka Hrvata katolika za Bosnu i Hercegovinu."* The merger of the Sarajevo and Mostar societies took place on June 9, 1907, creating a unified society headquartered in Sarajevo.

The primary purpose of the society was to support the education of Croatian students of lesser financial means. In a broader sense, *Napredak* aimed to connect Croats from Bos-

Prvenstvena namjena društva bila je očita, potpomaganje školovanja učenika i studenata slabijega imovinskoga stanja, no u širem smislu Napredak je težio povezivanju Hrvata iz Bosne i Hercegovine s Hrvatima u banskoj Hrvatskoj, a time i razvoju nove austrougarske provincije (Bosna i Hercegovina su formalno priključene Austro-Ugarskoj Monarhiji 1908. godine). U prilog tome govori činjenica da je već prve godine rada (1902.) mostarsko društvo imenovalo svoje povjerenike u Zagrebu i u Brodu na Savi te da su prvi dobrotvori društva bili đakovački biskup Josip Juraj Strossmayer i grof Robert Normann Ehrenfeldski iz Valpova. Društvo je u okviru svoje djelatnosti potpomoglo odškolovati oko 20 000 učenika i studenata, među kojima su bila i dva buduća nobelovca, Ivo Andrić i Vladimir Prelog. Po njima se od 1996. Društvo zove fond za stipendiranje (Fond „Ivo Andrić – Vladimir Prelog“) [11].

Uz potpomaganje stipendijama HKD Napredak je osnivalo đačke domove (konvikte): muške konvikte Lurd (1907.) i Kralj Tomislav (1920.) u Sarajevu, dva ženska (Zora Zrinska i Katarina Zrinska) i jedan muški konvikt (Kralj Petar Svačić) u Mostaru (1920./1921.) te konvikte u Tuzli (1938.) i Banjaluci (1934.). Planiran je konvikt i u Zagrebu, no namjera nije ostvarena zbog ratnih prilika, dok je konvikt u Osijeku otvoren tek 1941. godine [10]. Društvo je usto redovito izdavalo *Hrvatski narodni kalendar Napredak* (slika 1) te sporadično knjige i druge publikacije. Napredak je od 1928. godine imao i svoju knjižnicu u Sarajevu, s 26 255

nia and Herzegovina with Croats in civil Croatia (*Banska Hrvatska*), thereby contributing to the development of the new Austro-Hungarian province. Throughout its operations the society helped educate about 20 000 students, including two future Nobel laureates: Ivo Andrić and Vladimir Prelog. In their honor, the society's scholarship fund has been named, since 1996, the „Ivo Andrić – Vladimir Prelog“ Fund [11].



Slika 1. **Naslovnica prvoga *Hrvatskoga narodnoga kalendara* HKD Napredak**

Figure 1. ***Cover of the first* Croatian National Calendar *published by HKD Napredak***

With the support of scholarships, HKD Napredak founded student dormitories (boarding schools): the male boarding schools Lurd (1907) and Kralj Tomislav (1920) in Sarajevo, two female boarding schools (Zora Zrinska and Katarina Zrinska) and one male boarding school

knjiga (prema popisu iz 1943.) te je sudjelovao u humanitarnim i prosvjetiteljskim misijama. Krajem Prvoga svjetskoga rata Društvo je povelo akciju zbrinjavanja 12 000 siročadi iz Bosne i Hercegovine, Istre i Dalmacije u sjeverne hrvatske krajeve [8], a u suradnji sa Seljačkom slogom, kulturno-prosvjetnom organizacijom Hrvatske seljačke stranke, provelo je 1937. – 1941. akciju opismenjavanja u kojoj je čitati i pisati naučilo 300 000 odraslih ljudi, od toga 100 000 u Bosni i Hercegovini [13].

Budući da je Društvo bilo usko vezano uz katoličku crkvu i hrvatski narod,[1] jasno je da takva „klerikalna" i nacionalistička orijentacija nije bila po volji vlastima u prvoj, a posebice ne u drugoj Jugoslaviji [8]. Društvo se moralo po osnivanju Kraljevine SHS ponovno registrirati, a potom tražiti odobrenja za djelovanje u drugim dijelovima nove države.

Nakon Drugoga svjetskoga rata Društvo je obnovljeno na Glavnoj skupštini 28. i 29. listopada 1945. godine, no njegova je djelatnost bila usmjerena opismenjavanju, dok je osnovna djelatnost, pomaganje đacima i studentima praktički napuštena. To je međutim bio samo način da se Društvo oslabi kako bi 1. travnja 1949. bilo ukinuto, pod prozirnim izgovorom da ne-

(Kralj Petar Svačić) in Mostar (1920/1921), and boarding schools in Tuzla (1938) and Banja Luka (1934). A boarding school was also planned in Zagreb, but the intention was not realized due to wartime circumstances, while the boarding school in Osijek was opened only in 1941 [10]. The Society also regularly published the *Croatian National Calendar Napredak* (Figure 1) and it sporadically published books and other publications. Since 1928, Napredak has had its own library in Sarajevo, with 26 255 books (according to the 1943 census) and it participated in humanitarian and educational missions. At the end of World War I, the Society led a campaign to care for 12 000 orphans from Bosnia and Herzegovina, Istria and Dalmatia in northern Croatian regions [8], and in cooperation with *Seljačka sloga*, the cultural and educational organization of the Hrvatska seljačka stranka (Croatian Peasant Party), it carried out a literacy campaign from 1937 to 1941 in which 300 000 adults learned to read and write, 100 000 of them in Bosnia and Herzegovina [13].

Since the Society was closely related to the Catholic Church and the Croatian people[1], it is clear that such a „clerical" and nationalist orientation was not to the liking of the authorities in the first, and especially not in the second Yugoslavia [8]. After the establishment of the Kingdom of Serbs, Croats and Slovenes, the company

[1] Utjecaj katoličke crkve vidi se i po tome što je prvi predsjednik mostarskoga društva bio profesor bogoslovije fra Radoslav Glavaš, a pokrovitelj biskup Paškal Buconjić. Inicijativu za pokretanje sarajevskog društva dao je pjesnik dr. Ivan Šarić, koji je poslije postao nadbiskup (druga dva inicijatora bili su dr. Tugomir Alaupović i Anto Palandžić). Konvikte su obično vodile časne sestre.

[1] The influence of the Catholic Church is also evident in the fact that the first president of the Mostar society was the seminary professor, Fra Radoslav Glavaš, and the patron was Bishop Paškal Buconjić. The initiative to start the Sarajevo society was given by the poet Dr. Ivan Šarić, who later became an archbishop (the other two initiators were Dr. Tugomir Alaupović and Anto Palandžić). The boarding schools were usually run by nuns.

ma kvoruma koji bi upravi dao legimitet. Stoga je trebalo čekati preko 40 godina da bi se – na Obnoviteljskoj skupštini, održanoj 29. rujna 1990. u Sarajevu – HKD Napredak vratio svojoj staroj djelatnosti usmjerenoj na „kulturno i prosvjetno djelovanje, ekonomsko jačanje i socijalno podizanje hrvatskog naroda" [8]. Obnovljeno Društvo naročito potiče izdavačku djelatnost, pa izdaje *„Hrvatski narodni godišnjak – Napredak"* (od 1991.), a od 1992. izdaje u Tuzli mjesečno glasilo *Hrvatski glasnik*, te 1994. listove *Stećak* (Sarajevo) i *Bobovac* (Vareš). Štoviše, HKD Napredak osniva i radiopostaje, Vrhbosna (1993.) i Bobovac (1999.). Usto njezine podružnice organiziraju predavanja, izložbe, koncerte i druge prosvjetno-kulturne manifestacije [13,14].

VLADIMIR PRELOG

O djetinjstvu i uopće o privatnom životu Vladimira Preloga (slika 2, tablica 1), budućeg dobitnika Nobelove nagrade, zna se malo unatoč obilne literature o njemu. O Prelogu je naime napisano više od 289 prikaza u časopisima, novinama i revijama, koliko ih je sakupljeno u knjizi izdanoj u povodu stote obljetnice njegova rođenja [15]. O njemu je tiskana monografija [16] te katalozi za dvije izložbe [17,18], a napisao je i autobiografiju [19], koja je prevedena na hrvatski jezik [20]. Iz te se knjige može međutim vrlo malo saznati o prvim godinama života budućega nobelovca. Djetinjstvo mu nije bilo sretno. Razlog tome bile su nesretne prilike u Sarajevu početkom 20. stoljeća, ali i još nesretnije prilike u njegovoj obitelji.

had to re-register, and then seek approval to operate in other parts of the new state.

After World War II the Society was re-established at the General Assembly on 28 and 29 October 1945, but its activities were focused on literacy, while its core activity, helping pupils and students, was practically abandoned. This, however, was only a way to weaken the Society so that it could be abolished on 1 April 1949, under the transparent pretext that there was no quorum to give legitimacy to the management. Therefore, it took over 40 years for the HKD *Napredak* to return to its old activities, and focus again on „cultural and educational activities, economic strengthening, and social upliftment of the Croatian people"[8], as stated at the Renewal Assembly held on 29 September 1990 in Sarajevo. The renewed Society particularly encouraged publishing activities, publishing the „Croatian National Yearbook – Napredak" (since 1991), and from 1992 publishing the monthly newspaper *Hrvatski glasnik* in Tuzla, and in 1994 the newspapers *Stećak* in Sarajevo and *Bobovac* in Vareš. In addition, its branches have organized lectures, exhibitions, concerts, and other educational and cultural events [13,14].

VLADIMIR PRELOG

Little is known about the childhood and private life of Vladimir Prelog (Figure 2, Table 1), the future Nobel Prize winner, despite the abundant, available literature about him. More than 289 articles have been written about Prelog in magazines, newspapers and reviews, all of which have been collected in a book published on the occasion of the centenary of his birth [15]. A monograph [16] and catalogues for two exhibitions [17,18] have been published about him, and he also wrote an autobiography [19],



Slika 2. **Vladimir, majka Mara i otac Milan**
Figure 2. ***Vladimir, his mother Mara, and his father Milan***

„Proveo sam svoje prve godine u Sarajevu, a poslije još nekoliko godina, ali se nikad nisam igrao s muslimanskim djetetom, nikad se nisam igrao s pravoslavnim (srpskim) djetetom, čak se nisam igrao s hrvatskom djecom iz izvorno bosanskih obitelji", kaže Vladimir Prelog u intervjuu [21], koji od svih izvora najviše otkriva privatnu stranu njegova života.[2] Svoju majku Mariju Cettolo (1887. – 1979.), iz obitelji talijanskih graditelja koji su se nastanili u Petrinji, jedva da spominje. Njegov otac, Milan Prelog (1879. – 1931.), tada učitelj u tom gradu, zaljubio se u svoju učenicu, koja ga – kako kaže Prelog – nikad nije voljela no ipak se za njega udala, što je brak koji je kasnije doživio neuspjeh. Roditelji su se razveli 1915. godine kada je Vladimir imao devet godina. Nakon razvoda, preselio se u Zagreb s ocem Milanom Prelogom. Tada je živio u Učiteljskom domu na tadašnjem Sveučilišnom trgu (danas: Trg Republike Hrvatske) [22], gdje se tada nalazio i danas se nalazi Hrvatski školski muzej. Skrbila se za njega majka njegova oca i njegova neudana sestra Olga (1877–1957), koja je također bila učiteljica ([23]; [20], str. 18). Majku nije vidio 17 godina, a kada su se konačno sreli,

[2] Tadašnje prilike u Bosni vide se i u priči *Deca* Ive Andrića: bio je običaj da za vjerskih praznika kršćanska djeca ulaze u židovske četvrti da bi tukla male Židove.

which has been translated into Croatian [20]. Very little, however, can be learned from this book about the early years of the future Nobel Prize winner. His childhood was not happy, largely due to unfortunate circumstances in early 20th-century Sarajevo, as well as instability within his own family. „I spent my first years in Sarajevo, and a few more years afterwards, but I never played with a Muslim child; I never played with an Orthodox (Serbian) child; I never even played with Croatian children from originally Bosnian families," said Vladimir Prelog in an interview [21], which of all the sources reveals the most about the private side of his life.[2] He barely mentions his mother, Maria Cettolo (1887–1979), from a family of Italian builders who settled in Petrinja. His father, Milan Prelog (1879–1931), then a teacher in that town, fell in love with his student, who – as Prelog says – never loved him but married him anyway because his father was a rare groom who wanted to take a girl without a dowry. His parents' marriage, built on poor foundations, collapsed in 1915 when Vladimir was nine years old. Following the divorce, he moved to Zagreb with his father, Milan Prelog. He then lived in the Teachers' Home on the then University Square (today: Republic of Croatia Square) [22], where the Croatian School Museum was located then and is still located now. He was cared for by his father's mother and his unmarried sister Olga (1877–1957), who was also a teacher ([23]; [20], p. 18). He had not seen his mother for 17 years, and when they finally met,

[2] The conditions in Bosnia at that time are also seen in the story *Children* (Deca) by Ivo Andrić: it was customary for Christian children to enter Jewish neighborhoods during religious holidays to beat up little Jews.

la jer je njegov otac bio rijedak ženik koji je htio uzeti djevojku bez miraza. Na lošim temeljima sklopljen brak bio je predodređen za propast, pa se 1915. godine raspao, u vrijeme kada je Milanov sin imao devet godina. Nakon toga se s ocem seli u Zagreb, gdje živi u Učiteljskom domu na ondašnjem Sveučilišnom trgu (danas: Trg Republike Hrvatske) [22], gdje se onda

neither he nor she showed any desire to become closer [21].

Milan Prelog, Vladimir's father, was born in Zagreb as a son of a teacher of rural origin from Gračenica in Moslavina. Throughout his life he was left to himself, leading „the life of a hard-working intellectual with all the burdens of sorrow that our anxious social environment gives him in the fight for survival"[24]. In 1900,

Tablica 1. **Vladimir Prelog – životopis**

Table 1. ***Vladimir Prelog – chronological biography***

Nadnevak ***Date/Year***	**Događaj** ***Event***
23. 7. 1906.	Rođen u Sarajevu *Born in Sarajevo*
1915.	Seli se u Zagreb nakon rastave roditelja *Moves to Zagreb following his parents' divorce*
1918.	Seli se s ocem u Osijek. Otac mu postaje ravnatelj tamošnje gimnazije *Moves to Osijek with his father, who becomes the headmaster of the local high school (gymnasium)*
1918. – 1921.	Pohađa gimnaziju u Osijeku *Attends high school (gymnasium) in Osijek*
1921.	Vraća se s ocem u Zagreb *Returns to Zagreb with his father*
1924. – 1928.	Studira kemiju u Pragu, Čehoslovačka *Studies chemistry in Prague, Czechoslovakia*
27. 6. 1929.	Obranio doktorat kod profesora Emila Votočeka *Defends his doctorate under Professor Emil Votoček*
1929. – 1935.	Radi kao voditelj laboratorija za proizvodnju finih kemikalija u Pragu, u vlasništvu Gotharda J. Držize *Works as the laboratory manager for fine chemical production in Prague, owned by Gothard J. Držiza*
1932.	Služi Mornaricu Kraljevine Jugoslavije u činu podnarednika *Serves in the Navy of the Kingdom of Yugoslavia with the rank of corporal*
31. 10. 1933.	Ženi se Kamilom Vitek, bankovnom činovnicom *Marries Kamila Vitek, a bank clerk*
1935. – 1941.	Docent na Kemijskom odjelu Tehničkog fakulteta u Zagrebu *Works as a docent at the Chemistry Department of the Technical Faculty in Zagreb*

1935.	Počinje surađivati s farmaceutskom tvrkom Kaštel d. d. u Zagrebu *Begins collaboration with the pharmaceutical company Kaštel d.d. in Zagreb*
1937.	Provodi nekoliko mjeseci u laboratoriju Leopolda Ružičke *Spends several months in Leopold Ružička's laboratory*
1940.	Postaje izvanredni profesor na Tehničkom fakultetu u Zagrebu *Becomes an associate professor at the Technical Faculty in Zagreb*
1941.	Emigrira u Švicarsku, nalazi zaposlenje u ETH (Zürich) kod profesora Leopolda Ružičke *Emigrates to Switzerland; finds employment at ETH Zürich under Professor Leopold Ružička*
1945.	Postaje naslovni profesor na ETH *Becomes a titular professor at ETH*
1947.	Postaje izvanredni profesor na ETH *Becomes an associate professor at ETH*
1949.	Rodio mu se sin Jan *His son, Jan, is born*
1950.	Izabran u zvanje redovitoga profesora; putuje u SAD, gdje je održao 25 predavanja na američkim sveučilištima *Elected full professor; travels to the USA, delivers 25 lectures at American universities*
1951.	Drugo putovanje u SAD. Predaje na Kolumbijskom sveučilištu. *Second trip to the USA; lectures at Columbia University*
1957.	Postaje voditeljem Laboratorija za organsku kemiju ETH *Appointed head of the Laboratory for Organic Chemistry at ETH*
1959.	Postaje švicarskim državljanom *Becomes a Swiss citizen*
1972.	Izabran za predsjednika Švicarskoga kemijskoga društva *Elected President of the Swiss Chemical Society*
1972.	Izabran za dopisnoga člana Akademije nauka i umjetnosti Bosne i Hercegovine *Elected corresponding member of the Academy of Sciences and Arts of Bosnia and Herzegovina*
1975.	Dobiva Nobelovu nagradu iz kemije, zajedno sa Sir Johnom W. Cornforthom *Awarded the Nobel Prize in Chemistry, jointly with Sir John W. Cornforth*
1976.	Umirovljen je *Retires*
1986.	Izabran za počasnoga člana Hrvatske akademije znanosti i umjetnosti *Elected honorary member of the Croatian Academy of Sciences and Arts (HAZU)*
7. 1. 1998.	Umire u Zürichu *Dies in Zürich*
27. 9. 2001.	Prelogova urna prenesena u Zagreb te pokopana u grobnici HAZU na Mirogoju *Prelog's urn is transferred to Zagreb and buried in the HAZU tomb at the Mirogoj cemetery*

nalazio, a i sada se nalazi Hrvatski školski muzej. O njemu su se brinule očeva majka i neudata sestra Olga (1877. – 1957.), koja je bila učiteljica ([23]; [20], str. 18). Majku nije vidio punih 17 godina, a kad su se konačno sreli, ni s njegove ni s njezine strane nije bilo želje da se bliže poveže [21].

Milan Prelog, Vladimirov otac, rođen je u Zagrebu kao sin učitelja seoskoga podrijetla iz moslavačke Gračenice. Kroz život je bio prepušten samome sebi, vodeći „život mukotrpna pregaoca intelektualca sa svim utezima čemera štono ga daje tjeskobna naša društvena sredina u borbi za opstanak“ [24]. Godine 1900. je završio studij povijesti u Pragu, a 1901. promoviran je u doktora filozofije u dobi od samo 22 godine. Potom nalazi posao u Petrinji, zatim u Banjaluci (1902.), da bi se u rujnu 1903. preselio u Sarajevo, dobivši mjesto profesora na Prvoj gimnaziji. Tu mu se 23. srpnja 1906. rodio prvi sin, budući nobelovac Vladimir (slika 3).[3]

Nakon službovanja u Zagrebu, Prelogov otac dobiva 1918. godine mjesto ravnatelja ženske gimnazije u Osijeku. U tom se gradu kod Vladimira razvija ljubav prema kemiji zahvaljujući prije svega entuzijastičnom profesoru kemije Ivanu Kuriji (1880. – o. 1950.): „Pomagao sam mu opremiti

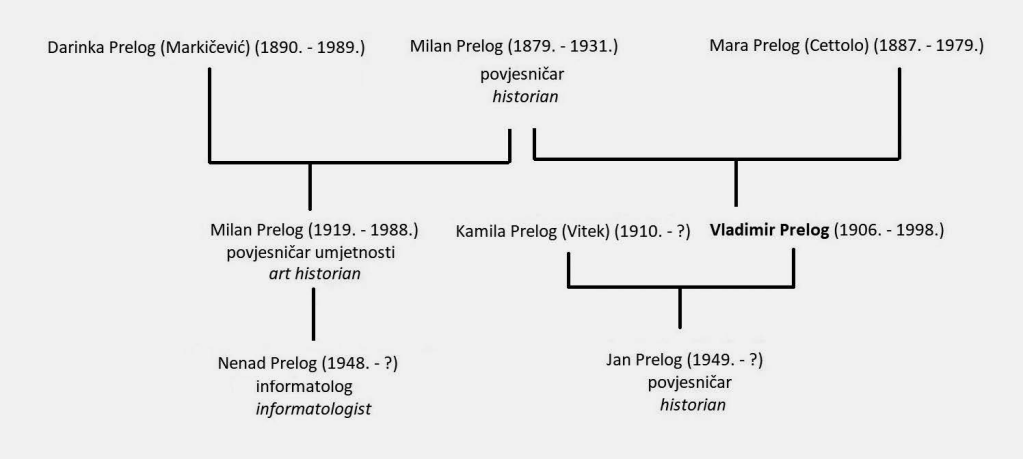
[3] Milan Prelog je završio karijeru postavši sveučilišnim profesorom na zagrebačkom Filozofskom fakultetu, nakon umirovljenja Vjekoslava Klaića (1922.). Predavao je opću povijest. Nakon umirovljenja (1926.) nalazi posao na Filozofskom fakultetu u Skopju (1927. – 1931.), gdje predaje opću povijest srednjega vijeka te dvije godine obnaša dužnost dekana.

he completed his studies of history in Prague, and in 1901 he was promoted to doctor of philosophy at the age of only 22. He then found work in Petrinja, then in Banja Luka (1902), and in September 1903 he moved to Sarajevo, where he was given a teaching position at the First Gymnasium. There, on 23 July 1906, his first son, the future Nobel laureate Vladimir, was born (Figure 3).[3]

In 1918, Prelog's father was appointed headmaster of the girls' high school in Osijek. It was in this city that Vladimir's love for chemistry blossomed, thanks to an enthusiastic chemistry teacher, Ivan Kurija (1880–c. 1950): „I helped him equip his laboratory with very simple equipment, and during that time I learned a lot from him (such as glass blowing) that was very useful to me later. As a fifteen-year-old student, I wrote my first paper under his supervision, which was published in the reputable journal *Chemicher Zeitung* “ MM; ([20], p. 19). But he modestly adds: „The publication of that paper shows the low level of chemical scientific literature of the time“, because it contained only a description of a simple titration experiment [25].

When he returned to Zagreb with his father in 1921 – where he graduated from the Third Real Gymnasium in 1924 ([18], p. 55) – he wished to study chemistry, despite his father's opposition, as the latter wanted his son to choose a more practical profession. Eventually, his father

[3] Milan Prelog ended his career by becoming a university professor at the Faculty of Philosophy in Zagreb, after the retirement of Vjekoslav Klaić (1922). He taught general history. After his retirement (1926), he found a job at the Faculty of Philosophy in Skopje (1927–1931), where he taught general history of the Middle Ages and served as dean for two years.



Slika 3. **Porodično stablo obitelji Prelog**
Figure 3. ***Prelog family tree***

laboratorij vrlo jednostavnim sredstvima i za to sam vrijeme od njega naučio mnogo toga (kao što je puhanje stakla) što mi je poslije mnogo koristilo. Kao petnaestogodišnji učenik pod njegovim sam nadzorom napisao svoj prvi rad, koji je objavljen u uglednom časopisu *Chemicher Zeitung*" MM; ([20], str. 19). Ali skromno dodaje: „Objavljivanje toga rada pokazuje nisku razinu tadašnje kemijske znanstvene literature", jer je sadržavao samo opis jednostavnoga titracijskog pokusa [25].

Kada se 1921. godine vratio s ocem u Zagreb, gdje je 1924. maturirao na Trećoj realnoj gimnaziji ([18], str. 55), poželio je studirati kemiju, unatoč očevu protivljenju koji je htio da mu sin odabere praktičnije zvanje. Na kraju je otac ipak popustio, pa je „odlučeno da ću studirati kemiju u Češkoj tehničkoj visokoj školi u Pragu, jer u Jugoslaviji nije postojao odgovarajući studij kemijskog inženjerstva", a i zato što mu je otac završio studije upravo u tom

relented, and „it was decided that I would study chemistry at the Czech Technical University in Prague, because there was no suitable chemical engineering program in Yugoslavia," and also because his father had completed his own studies in that very city ([20], p. 20). To that statement, the editor of the Croatian edition of Prelog's autobiography added that at that time it was already possible to study chemical engineering in Zagreb (at the Royal Technical College, founded in 1919) but he suggested that one pays attention to the term „appropriate study."

In Prague, Prelog studied under Professor Emil Votoček (1872–1950), a top organic chemist, but not so well-known a composer, lexicographer, and linguist (Figure 4) [25,26]. Votoček was a man of exceptional work energy but also of a stormy, unbridled temperament, which was more or less managed to be calmed by Rudolf Lukeš (1897–1960), his closest associate and Prelog's immediate supervisor. Votoček's temper was felt by Prelog in the worst possible way when his flask accidentally broke and a very expensive chemical ended

gradu ([20], str. 20). Na tu konstataciju urednik hrvatskoga izdanja Prelogove autobiografije dodaje da se u to doba već pet godina – od 1919. godine – moglo studirati kemijsko inženjerstvo (na Kraljevskoj tehničkoj visokoj školi). Ali, valja obratiti pozornost na izraz „*odgovarajući* studij".

Prelog je u Pragu studirao kod profesora Emila Votočeka (1872. – 1950.), vrhunskoga organskoga kemičara, ali ne i toliko poznatoga skladatelja, leksikografa i lingvista (slika 4) [25,26]. Votoček je bio čovjek izuzetne radne energije ali i burnoga, neobuzdanoga temperamenta, koji je koliko-toliko uspijevao stišavati Rudolf Lukeš (1897. – 1960.), njegov najbliži suradnik i neposredni Prelogov voditelj. Votočekovu je narav na najgori mogući način osjetio Prelog kada mu je slučajno pukla tikvica i vrlo skupa kemikalija završila u vodenoj kupelji. To bi bio kraj njegovih studija da ga Lukeš nije spasio ponudivši jednostavno rješenje kako da skupu kemikaliju izdvoji iz vode u kojoj se zbog nepažnje mladoga kemičara otopila [28]. Drugi njegov suradnik prošao je mnogo gore. Votoček ga je otpustio i javno osramotio jer je navodno krivotvorio rezultat pokusa sinteze glutaminske kiseline – jer je dobio njezin prirodni (*L*) enantiomer, a ne racemat, smjesu oba, *L* i *D* enantiomera. U obranu nesretnoga doktoranda Prelog je rekao – ne mora biti da je on u uzorak namjerno dodao *L*-glutaminsku kiselinu. Ona je mogla nastati u reakciji, što se tada nije znalo ([20], str. 94–96). Jasno je: susretljiviji bi voditelj povjerovao svome suradniku te bi ga neočekivani rezultat možda doveo do važnoga otkrića.



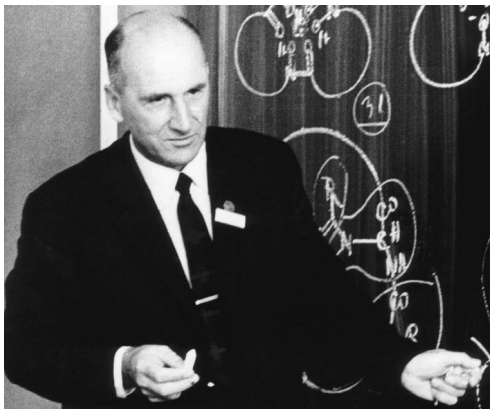
Slika 4. **Emil Votoček (1872. – 1950.), mentor Vladimira Preloga u Pragu**

Figure 4. ***Emil Votoček (1872–1950), Vladimir Prelog's mentor in Prague***

up in a water bath. That would have been the end of Prelog's studies if Lukeš had not saved him by offering a simple solution to extract the expensive chemical from the water in which it had been dissolved due to the young chemist's carelessness [28]. His other collaborator fared much worse. Votoček fired him and publicly shamed him for allegedly falsifying the results of an experiment to synthesize glutamic acid – because he obtained its natural (*L*) enantiomer, and not the racemate, a mixture of both, *L* and *D* enantiomers. In defense of the unfortunate doctoral student, Prelog said – it is not necessary that he intentionally added *L*-glutamic acid to the sample. It could have arisen in a reaction, which was not known at the time ([20], pp. 94–96). It is clear: a more accommodating leader would have believed his collaborator, and the unexpected result might have led him to an important discovery.

U lipnju 1929. Prelog je obranio doktorsku disertaciju, ali, valjalo se poslije studija zaposliti. To nije bilo nimalo jednostavno jer je u Češkoj i Jugoslaviji vladala nezaposlenost, izazvana privrednom krizom. Srećom, zbližio se s Lukešovim školskim kolegom Gothardom J. Dřizom (1895. – 1952.), mladim poduzetnikom koji je želio osnovati laboratorij za proizvodnju teško dostupnih kemikalija. Ta mu se želja ostvarila, pa je u njegovom laboratoriju Prelog našao posao odmah poslije obrane doktorata. Želja da se vrati u domovinu neočekivano mu se ispunila kada mu je Ivan Marek (1863. – 1936.), profesor organske kemije na Tehničkom fakultetu, 1931. godine ponudio mjesto profesora nakon njegova odlaska u mirovinu 1933. (slika 5). Prelog se vraća 1935. u Zagreb, ali ne na mjesto profesora nego docenta, „nastavnika sa svim dužnostima profesora, a s plaćom asistenta“ ([20], str. 25). To ga nije obeshrabrilo jer je mala farmaceutska tvrtka Kaštel d. d. (kasnije PLIVA) otvarala istraživački laboratorij u kojem se mogao posvetiti istraživanju.

Iako je u Zagrebu radio manje od sedam godina (1935. – 1941.), Prelog je postigao dva velika uspjeha: organizirao je proizvodnju sulfanilamida (Streptazol) te izveo prvu sintezu adamantana [28]. Ali, tražio je nešto više. Iskoristivši poziv za predavanje u Njemačkoj, u prosincu 1941. emigrira u neutralnu Švicarsku i tamo nalazi posao u Laboratoriju za organsku kemiju Savezne tehničke visoke škole (ETH) u Zürichu, koju vodi Leopold Ružička (1887. – 1976.), prvi Hrvat koji je,



Slika 5. **Vladimir Prelog kao profesor**
Figure 5. ***Vladimir Prelog as professor***

In June 1929 Prelog defended his doctoral dissertation, but after his studies he had to find a job. This was not easy at all, as unemployment prevailed in the Czech Republic and Yugoslavia, caused by the economic crisis. Fortunately, he became close to Lukeš's schoolmate Gothard J. Dřiz (1895–1952), a young entrepreneur who wanted to establish a laboratory for the production of hard-to-find chemicals. His wish came true, and Prelog found a job in his laboratory immediately after defending his doctorate thesis. His wish to return to his homeland was unexpectedly fulfilled when Ivan Marek (1863–1936), professor of organic chemistry at the Faculty of Technology, offered him a professorship in 1931 after his retirement in 1933 (Figure 5). Prelog returned to Zagreb in 1935, but not as a professor but as an assistant professor, „a teacher with all the duties of a professor, but with the salary of an assistant“([20], p. 25). This did not discourage him, as the small pharmaceutical company Kaštel d.d. (later PLIVA) was opening a research laboratory where he could devote himself to research.

1939. godine, dobio Nobelovu nagradu [29]. Tamo se bavi određivanjem strukture i sintezom prirodnih spojeva (hormona, alkaloida, steroida, mikrobnih metabolita i antibiotika), za koje se zanimala farmaceutska industrija. Istraživanje takvih spojeva vodi ga do problema asimetrične sinteze, sinteze spojeva s jednim ili više „asimetrijskih centara" (središta kiralnosti), pa 1975. dobiva Nobelovu nagradu „za svoje istraživanje stereokemije organskih molekula i reakcija" [31,32]. Najpoznatije njegovo postignuće je nova stereokemijska terminologija (CIP, Cahn–Ingold–Prelog), koja se temelji na pravilima za određivanje apsolutne konfiguracije stereogenih središta (*S*, *R*) ([33]; [20], str. 77–80).

Unatoč tome što je praktički svu svoju znanstvenu karijeru ostvario u Švicarskoj, ostao je vezan za domovinu Hrvatsku. To se vidi između ostalog i po „Prelogovoj školi" koju sačinjavaju hrvatski kemičari koji su se stručno usavršavali u njegovom laboratoriju ([34]; [16], str. 59–61). Ipak, nije se ustručavao upućivati i kritike na stanje kemijske znanosti i nastave kemije u Hrvatskoj [35], nalazeći najveću zamjerku u tome što se na hrvatskim fakultetima kemija uči „deskriptivno", umjesto kroz laboratorijsku praksu, kroz praktikume ([35], str. 159–162). Tu primjedbu treba uzeti s oprezom jer se tehnike istraživanja kemije mijenjaju, pa se kemičar sve više oslanja na instrumente i računala, a sve manje na klasičan rad u laboratoriju [36-38], što na neizravan način priznaje i Prelog ([39,40]; [20], str. 56).

Although he worked in Zagreb for less than seven years (1935–1941), Prelog achieved two great successes: he organized the production of sulfanilamide (*Streptazol*) and carried out the first synthesis of adamantane [28]. He was, however, looking for something more. Taking advantage of an invitation to lecture in Germany, in December 1941, he emigrated to neutral Switzerland and found a job there in the Laboratory of Organic Chemistry of the Federal Institute of Technology (ETH) in Zurich, headed by Leopold Ružička (1887–1976), the first Croat to win the Nobel Prize in 1939 [29]. There, he dealt with the determination of the structure and synthesis of natural compounds (hormones, alkaloids, steroids, microbial metabolites and antibiotics), in which the pharmaceutical industry was interested. The research of such compounds leads him to the problem of asymmetric synthesis, the synthesis of compounds with one or more „asymmetric centers" (centers of chirality), and in 1975 he received the Nobel Prize „for his research on the stereochemistry of organic molecules and reactions" [31,32]. His best-known achievement is the new stereochemical terminology (CIP, Cahn–Ingold–Prelog), which is based on rules for determining the absolute configuration of stereogenic centers (*S*, *R*) ([33]; [20], pp. 77–80).

Despite having spent practically his entire scientific career in Switzerland, he remained attached to his homeland, Croatia. This is evident, among other things, in the „Prelog School", which is made up of Croatian chemists who received professional training in his laboratory ([34]; [16], pp. 59–61). However, he did not hesitate to criticize the state of chemical science and chemistry teaching in Croatia [35], finding his greatest complaint in the fact that chemistry is taught „descriptively" at Croatian faculties, instead of through laborato-

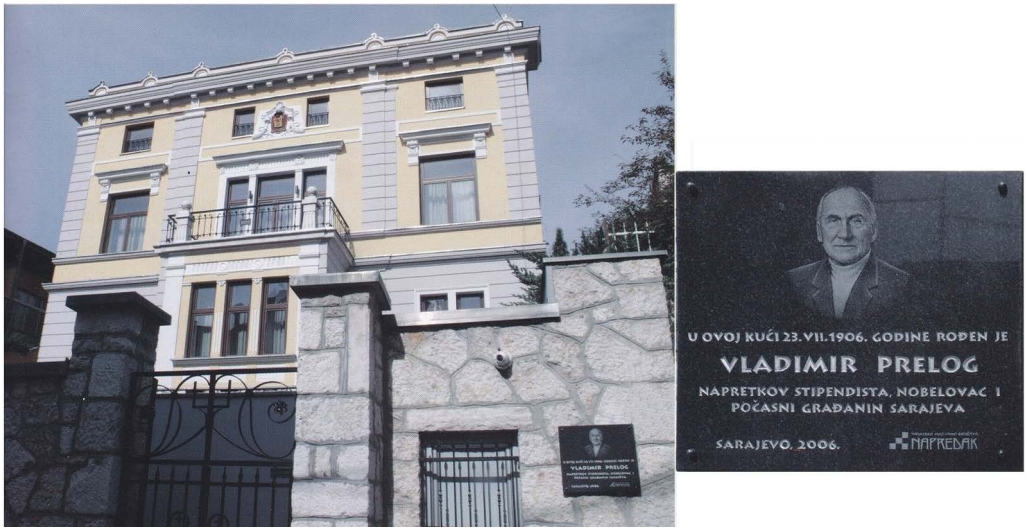
VLADIMIR PRELOG I STIPENDIJA HKD NAPREDAK

Unatoč tome što je opće poznato da su budući hrvatski nobelovci Ivo Andrić (1892. – 1975.), dobitnik Nobelove nagrade za književnost 1961., i Vladimir Prelog, nagrađen Nobelovom nagradom za kemiju 1975. godine, bili na studiju Napretkovi stipendisti (slika 6), izravni dokazi za to postoje samo u slučaju Ive Andrića [41]. Dok je Andrić o svojoj stipendiji ostavio obilan trag u pismima, jer je znao da o njoj ovisi hoće li ili ne će studirati, te se iz arhivske građe jasno vidi da je Ivi Andriću iz Travnika dodijeljena za školsku godinu 1912./1913., stipendija za studij na Filozofskom fakultetu u izno-

ry practice, through practicums ([35], pp. 159–162). This observation should be treated with caution, as chemical research techniques are evolving; chemists increasingly rely on instruments and computers rather than traditional laboratory work [36-38] – a shift indirectly acknowledged by Prelog as well ([39,40]; [20], p. 56).

VLADIMIR PRELOG AND THE HKD NAPREDAK SCHOLARSHIP

Despite the fact that it is generally known that future Croatian Nobel laureates Ivo Andrić (1892–1975), winner of the Nobel Prize in Literature in 1961, and Vladimir Prelog, winner of the Nobel Prize in Chemistry in 1975, were Napredak scholarship holders during their studies (Figure 6), direct evidence for this exists only in the case of Ivo



Slika 6. **Spomen-ploča na Prelogovoj rodnoj kući u Sarajevu, Čemerlina ul. 11: *„U ovoj kući je rođen Vladimir Prelog, Napretkov stipendist, dobitnik Nobelove nagrade i počasni građanin Sarajeva. Sarajevo 23/7/2006“***

Figure 6. ***Memorial plaque on Prelog's birth house in Sarajevo, 11 Čemerlina Street:* „Vladimir Prelog was born in this house – a Napredak scholarship recipient, Nobel Prize laureate, and honorary citizen of Sarajevo. Sarajevo, July 23, 2006"**

su 600 000 kruna ([10], str. 510), što kod Preloga nije bio slučaj. *Napretkovi godišnjaci* su naime nakon 1922. godine prestali objavljivati imena stipendista ([10], str. 784), a arhivski su dokumenti izgubljeni upravo za 1924. godinu, pa stoga u Arhivu Napretka [10] nema podataka o Vladimiru Prelogu. Još gore, nigdje u opsežnoj autobiografiji [19,20] Prelog ne spominje da mu je Napredak omogućio studij kemije u Pragu. Takva se konstatacija ne nalazi ni u zbirci 289 članaka o Vladimiru Prelogu [15]. Prilika da se o njegovoj stipendiji više sazna pružila se u povodu osnivanja Fonda „Ivo Andrić – Vladimir Prelog" na prijedlog Berislava Topića, dopredsjednika Napretkove glavne podružnice iz Zagreba [42,43]. Kako je za to trebalo dobiti formalni Prelogov pristanak, tadašnji mu je predsjednik HKD Napredak Franjo Topić, uputio pismo (koje je sastavio Berislav Topić) u kojem je stajalo obrazloženje da je Prelog bio „nekadašnji stipendist" Društva. Prelog je pristao, napominjući međutim da „ne znam koliko sam ja pogodna osoba za takvo mjesto jer sam prije ratnih zbivanja na poziv nobelovca Ružičke otišao u Švicarsku raditi u njegov laboratorij" [44]. To je nažalost jedina izravna potvrda da je Vladimir Prelog doista bio Napretkov stipendist.[4]

O iznosu Prelogove stipendije može se samo nagađati. Andrić je primjerice za prvi semestar primao (očito mjesečAndrić [41]. While Andrić left abundant traces of his scholarship in his letters, because he knew that whether or not he would study depended on it, it is clear from the archival materials that Ivo Andrić from Travnik was awarded a scholarship for studies at the Faculty of Philosophy in the amount of 600,00 kronor for the academic year 1912/1913 ([10], p. 510), there is no such evidence for Prelog. Namely, after 1922, the *Napredak yearbooks* stopped publishing the names of scholarship holders ([10], p. 784), and the archival documents were lost for 1924, and therefore there is no information about Vladimir Prelog in the Napredak Archives [10]. Worse still, nowhere in Prelog's extensive autobiography [19,20] does he mention that Napredak enabled him to study chemistry in Prague. Such a statement is not to be found in the collection of 289 articles about Vladimir Prelog [15]. The opportunity to learn more about his scholarship arose on the occasion of the establishment of the „Ivo Andrić – Vladimir Prelog" Fund, at the suggestion of Berislav Topić, vice-president of the Napredak main branch in Zagreb [42,43]. Since this required Prelog's formal consent, the then president of the HKD Napredak, Franjo Topić, sent him a letter (written by Berislav Topić) explaining that Prelog was a „former scholarship holder" of the Society. Prelog agreed, noting, however, that „I do not know how suitable a person I am for such a position because before the war, at the invitation of Nobel laureate Ružička, I went to Switzerland to work in his laboratory [44]. Unfortunately, this is the only direct confirmation that Vladimir Prelog was indeed a Napredak scholarship recipient.[4]

[4] Planiralo se u povodu toga događaja obaviti razgovor s profesorom Prelogom u Zürichu ili ga, još bolje, pozvati da održi predavanje u Sarajevu, no ništa se nije ostvarilo (M. Milošević, osobno priopćenje, 2023.).

[4] It was planned to hold an interview with Professor Prelog in Zurich on the occasion of this event or, even better, to invite him to give a lecture in Sarajevo, but nothing came of it (M. Milošević, personal communication, 2023).

nu) stipendiju od 600, a za drugi samo 60 kruna, no za kasnije studiranje je primao stipendiju u iznosu od čak 1 200 kruna [41]. Iznosi stipendija su se vrlo razlikovali, krećući se, primjerice za školsku godinu 1912./1913. od 1,6 kruna (izvanredna potpora) do 800 kruna (maksimalna redovna potpora za sveučilišni studij). Za školsku godinu 1922./1923. stipendija za sveučilišni studij iznosila je od 6 000 do 16 000 dinara – sadašnje Napretkove godišnje studentske stipendije iznose 2 000 do 3 000 KM, odnosno 1 028 do 1 542 EUR = 7 656 do 11 574 HRK [45]. Za godine 1924. – 1945. nedostaju podatci [10], no može se pretpostaviti da je Prelog mogao računati s mjesečnim prihodom od 500 do 1 300 dinara. Rečenica „Morao sam studij završiti što prije, jer mi je otac bio prisilno umirovljen iz političkih razloga i nije mi mogao više financijski pomagati" ([20], str. 23)[5] jasno pokazuje da mu stipendija nije bila dovoljna da pokrije sve životne troškove. Očeva potpora bila je vjerojatno jednaka ako ne i veća od iznosa stipendije, jer se Prelog žali da mu „mjesečna plaća od 2.000 dinara", koju je primao kao docent na Tehničkom fakultetu, „nije dostajala ni za vrlo skroman život" ([20], str. 112). Za usporedbu, u to je vrijeme prosječna radnička nadnica u Jugoslaviji iznosila 26,56 dina-

The amount of Prelog's scholarship can only be speculated upon. Ivo Andrić for example received a (apparently monthly) scholarship of 600 kronor for the first semester, and only 60 kronor for the second, but for later studies he received a scholarship of as much as 1 200 kronor [41]. The amounts of the scholarships varied greatly, ranging, for example, for the 1912/1913 academic year from 1,6 kronor (extraordinary support) to 800 kronor (maximum regular support for university studies). For the academic year 1922/1923, the scholarship for university studies was from 6 000 to 16 000 dinars – current annual student scholarships from Napredak amount to 2 000 to 3 000 KM, or 1 028 to 1 542 EUR = 7 656 to 11 574 HRK [45]. Data for the years 1924–1945 are lacking [10], but it can be assumed that Prelog could have counted on a monthly income of 500 to 1 300 dinars. The sentence „I had to finish my studies as soon as possible, because my father was forcibly retired for political reasons and could no longer support me financially" ([20], p. 23)[5] clearly shows that his scholarship was not enough to cover all his living expenses. His father's support was probably equal to, if not greater than, the amount of the scholarship, as Prelog complains that his „monthly salary of 2 000 dinars" which he received as an assistant professor at the Faculty of Engineering „was not enough for even a very modest life" ([20], p. 112). For comparison, at that time the average worker's wage in

[5] Zbog „žestokih (filozofsko-fakultetskih) trzavica" Milan Prelog, tada na dužnosti dekana, umirovljen je 14. 1. 1926. s još osmoricom profesora ([24], str. 126). Živio je od mirovine oko godinu dana, dok nije dobio mjesto sveučilišnog profesora u Skopju ([24], str. 127).

[5] Due to „fierce (philosophical-faculty) conflicts", Milan Prelog, then serving as dean, was retired on January 14, 1926, along with eight other professors ([24], p. 126). He lived off his pension for about a year, until he was offered a position as university professor in Skopje ([24], p. 127).

ra [46], što čini mjesečnu plaću od oko 700 dinara.[6]

Drugi neizravan zaključak koji se može izvesti iz dostupnih podataka je da Preloga otac nije samo materijalno podupirao, nego mu je i svojim utjecajem pomogao da postane Napretkov stipendist. Da bi se dobila stipendija netko se morao za studenta založiti, o čemu govori negativan primjer Ive Andrića kome je nesuglasje s Jurom Caratanom, članom Napretkove uprave u Višegradu, dugo priječilo da postane stipendist [41]. Nasuprot tome, Milan Prelog je bio drugi tajnik HKD Napredak u prvoj središnjoj upravi, izabranoj 3. prosinca 1905., te još u dva mandata, 1907. i 1908. godine [47]. Objavio je i dva članka u *Napretkovom Kalendaru* [47], jedan pod inicijalima M. P. (1908.), drugi pod punim imenom (1911.), iz čega se može zaključiti da je bio aktivan član Društva dok je živio u Sarajevu; za poslije nema dokaza osim sumarne konstatacije

[6] U usporedbi tih iznosa treba uzeti u obzir realnu vrijednost novca i strukturu cijena (za 1920. godinu): 1 kg crnog kruha 10 K, 1 kg svinjetine 50 K, 1 kg govedine 42 K, 1 L ulja 80 K, 1 kg kave 60 K, 1 kg šećera 40 K, 1 L vina 20 K, 1 kg riže 32 K, 1 kg krumpira 5 K, kutija šibica 1 K, komad sapuna 30 K, par cipela 700 K, bolje odijelo 3 000 K; najveća radnička nadnica u cementnoj industriji bila je 29 kruna (1920. godine) ili 50 dinara (1928. godine) [48]. Socijalne razlike bile su velike; u slavonskom poduzeću za eksploataciju šuma Našička d. d. raspon mjesečnih plaća (1935. godine) kretao se od 200 din (žene i djeca) do 20 000 dinara (najviši činovnici u upravi) [49]. Plaća redovnog profesora na zagrebačkom Tehničkom fakultetu bila je (1922. godine), 12 000 kruna ([50], str. 120), dakle oko 20 000 dinara; 1 K ≈ 2 din [51].

Yugoslavia was 26,56 dinars [46], which makes a monthly salary of about 700 dinars.[6]

Another indirect conclusion that can be drawn from the available data is that Prelog's father not only supported him financially, but also helped him with his influence to become a Napredak scholarship holder. In order to obtain a scholarship, someone had to advocate for the student, as is shown by the negative example of Ivo Andrić, whose disagreement with Jure Caratan, a member of the Napredak board in Višegrad, prevented him from becoming a scholarship holder for a long time [41]. In contrast, Milan Prelog was the second secretary of HKD Napredak in the first central board, elected on December 3, 1905, and in two more terms, in 1907 and 1908 [47]. He also published two articles in *Napredak's Calendar* [47], one under the initials M. P. (1908), the other under his full name (1911), from which it can be concluded that he was an active member of the Society while he lived in Sarajevo; for the latter, there is no evidence except for the summary statement

[6] When comparing these amounts, one should take into account the real value of money and the price structure (for 1920): 1 kg of black bread 10 K, 1 kg of pork 50 K, 1 kg of beef 42 K, 1 L of oil 80 K, 1 kg of coffee 60 K, 1 kg of sugar 40 K, 1 L of wine 20 K, 1 kg of rice 32 K, 1 kg of potatoes 5 K, a box of matches 1 K, a bar of soap 30 K, a pair of shoes 700 K, a better suit 3 000 K; the highest worker's wage in the cement industry was 29 kroner (in 1920) or 50 dinars (in 1928) [48]. Social differences were great; in the Slavonian forest exploitation company Našička d. d. the range of monthly salaries (in 1935) ranged from 200 dinars (women and children) to 20 000 dinars (highest officials in the administration) [49]. The salary of a full professor at the Zagreb Faculty of Technology was (in 1922) 12 000 kronur ([50], p. 120), i.e. about 20 000 dinars; 1 K ≈ 2 dinars [51].

da je Prelogov „otac bio dugogodišnji član Središnje uprave“ [43].

Otac nobelovca Vladimira Preloga bio je svjestan i politički angažiran Hrvat, jedan od studenata koji su 1898. godine u Zagrebu zapalili madžarsku zastavu, pa je zbog toga morao studije nastaviti u Pragu [24]. Po političkoj je orijentaciji bio naprednjak, član Hrvatske narodne zajednice, političke stranke koja je formirana na temeljima pravaštva, te član Hrvatskoga kluba u Sarajevu i uredništva sarajevske *Bosanske vile*, lista za književnost, kulturu i društvena pitanja. Bio je stalni suradnik zagrebačkih časopisa *Savremenik*, *Hrvatska njiva* (poslije: *Jugoslavenska njiva*) i *Riječ*, u kojima je vodio polemike sa svojim ideološkim protivnicima te kritizirao povijesna djela bez znanstvene osnove, sve radi podizanja kulturnih i znanstvenih standarda u našoj sredini [24].

ZAKLJUČAK

Iz biografije Vladimira Preloga može se vidjeti da je budući nobelovac, za razliku od svog oca i Ive Andrića koji su bili prepušteni sami sebi, napredovao u karijeri imajući uvijek oslonac u nekome, bilo u svom ocu bilo u učiteljima i kolegama (Kuria, Votoček, Lukeš, Marek, Ružička). U tom svjetlu treba gledati i na činjenicu da je treći hrvatski dobitnik Nobelove nagrade bio Napretkov stipendist: stipendija za studij kemije u Pragu bila je Prelogu dobrodošla no ne i presudna pomoć na putu prema vrhuncima kemijske znanosti.

that Prelog's „father was a long-standing member of the Central Administration“[43].

The father of Nobel laureate Vladimir Prelog was a conscious and politically engaged Croat, one of the students who burned the Hungarian flag in Zagreb in 1898, and as a result had to continue his studies in Prague [24]. He was politically progressive, a member of the Croatian National Community, a political party formed on the basis of the right wing, and a member of the Croatian Club in Sarajevo and the editorial board of the Sarajevo *Bosanska Vila*, a magazine for literature, culture and social issues. He was a regular contributor to the Zagreb magazines *Savremenik*, *Hrvatska njiva* (later: *Jugoslavenska njiva*) and *Riječ*, in which he conducted polemics with his ideological opponents and criticized historical works without scientific basis, all with the aim of raising cultural and scientific standards in his environment [24].

CONCLUSION

From the biography of Vladimir Prelog, it can be seen that the future Nobel laureate, unlike his father and Ivo Andrić, who were left to their own devices, progressed in his career always having someone to lean on, whether it was his father or his teachers and colleagues (Kuria, Votoček, Lukeš, Marek, Ružička). In this light, we should also see the fact that the third Croatian Nobel laureate was a Napredak scholarship recipient: the scholarship to study chemistry in Prague was a welcome but not crucial help for Prelog on his way to the heights of chemical science.

ZAHVALA

Autor zahvaljuje gospodinu Mariju Miloševiću iz zagrebačke podružnice HKD Napredak na pomoći pri nalaženju izvora za pisanje ovoga rada.

IZJAVA O SUKOBU INTERESA

Ovaj rad nije objavljen u istom obliku niti ponuđen za objavljivanje u bilo kojem drugom periodičnom ili neperiodičnom izdanju. Autor izjavljuje da nije u sukobu interesa.

FINANCIRANJE

Autor za ovaj rad nije primio nikakva sredstva.

ACKNOWLEDGEMENTS

The author would like to thank Mr. Mario Milošević from the Zagreb branch of HKD Napredak for his help in finding sources for writing this paper.

CONFLICT OF INTERESTS STATEMENT

This paper has not been published in the same form, nor offered for publishing in any other periodical or non-periodical publication. The author declares that he has no conflict of interests.

FUNDING

For this paper, the author did not receive any funding.

LITERATURA / *REFERENCES*

[1] Paušek Baždar S: *Džanić, Husein*, Hrvatski biografski leksikon, sv. 3, **1993**, str. 739–740.

[2] https://bs.wikipedia.org/wiki/Husein_Džanić

[3] https://www.info.hazu.hr/en/clanovi/sunjic-vitomir

[4] Trinajstić N: *Mladen Deželić – zaboravljeni hrvatski prirodoslovac*, N. Trinajstić: *Ogledi o znanosti i znanstvenicima*, Matica hrvatska, Zagreb, **1998,** str. 31–49.

[5] Flegar V, Paušek-Baždar S: *Mladen Deželić – gradnja Prirodno-matematičkog fakulteta te početci nastave i znanstvenih istraživanja iz kemije u Sarajevu*, Prirodoslovlje **2015**;15(1-2):79–100.

[6] K. Z.: *Akademik Mladen Deželić, osnivač i dugogodišnji urednik GLASNIKA povukao se u penziju*, Glasnik hemičara i tehnologa Bosne i Hercegovine (Sarajevo) **1968**;16:5–13

[7] Rac M, Lovrić AŽ: *Primjeri političkog onemogućavanja rada hrvatskih prirodoslovaca. I. dio: Profesori Ivo Horvat, Stjepan Bertović i Boris Vrtar*, Radovi Leksikografskog zavoda „Miroslav Krleža", Vol. 3, Leksikografski zavod „Miroslav Krleža", Zagreb, **1993**, str. 223–229.

[8] Dizdar Z: *Djelovanje HKD „Napredak" u banskoj Hrvatskoj (1902. – 1941.)*, Čas. suvr. pov. **2004**;36(3):1081–1099.

[9] Dizdar Z: *Djelovanje Hrvatskog kulturnog društva "Napredak" u Zagrebu i na području Hrvatske i Slavonije od 1907. do 1950. godine*, Hrvatska revija **2008**;8(4):71–79.

[10] Lovrenović K, Kovačević M, Kristić S, Šapina H, Štimac V: *Arhiv Napretka: analitički inventar*, HKD Napredak, Sarajevo, **2004**, 1045 str.

[11] https://napredakjajce.ba//stipendije-fond-ivo-andric-vladimir-prelog/

[12] Leček S: *Suradnja HKD «Napredak» i Seljačke sloge u kampanji opismenjivanja*, Čas. suvr. pov. **2004**;36(3):1108–1125.

[13] Marić F, Milošević M: *Djelovanje Hrvatskog kulturnog društva Napredak u Zagrebu između 1992. i 2017. godine*, HKD Napredak, Zagreb, **2018**, str. 592.

[14] Obad S, Bavić V, Gverić A: *Hrvatsko kulturno društvo Napredak – Zadar (1994. – 2014.): u povodu dvadesetogodišnjice rada,* HKD Napredak, Zadar, **2018**, str. 57.

[15] Dumić M, Kovačević K: *Ogledi o Vladimiru Prelogu / Homage to Vladimir Prelog*, Fakultet kemijskog inženjerstva i tehnologije, Zagreb, **2010**, str. 616.

[16] Kovačević K: *Hrvatski velikan Vladimir Prelog*, Privlačica d. o. o., Vinkovci, **2018**, str. 88.

[17] Raos N: *Nobelovac Vladimir Prelog – Novo lice kemije*, katalog izložbe, Tehnički muzej, Zagreb, **2008**, 38 str.

[18] Kaštelan-Macan M: *Živa baština Vladimira Preloga*, Fakultet kemijskog inženjerstva i tehnologije, Zagreb, **2010**, 159 str.

[19] Prelog V: *My 132 Semesters of Chemical Studies*, American Chemical Society, Washington, DC, **1991**, pp. 120.

[20] Prelog V: *Moja 132 semestra studija kemije*, prev. Carić H, Fakultet kemijskog inženjerstva i tehnologije, Zagreb, **2007**, 124 str.

[21] Hargittai I: *10. Vladimir Prelog*, Candid Sciences: Conversations with Famous Chemists, Imperial Press, London, England, **2000**, pp. 138–147.

[22] Dumić M: *Vladimir Prelog. A Nobel laureate and a teacher of generations of Croatian ogranic chemists*, J. Herak (Ed.): *Distinguished Croatian Scientists in the World*, Part three, Croatian-American Society, Zagreb, **2005**, pp. 248–259.

[23] Eschenmoser A: *Vladimir Prelog zum Gedanken,* Chimia **1998**;**52**(1-2):74–75.

[24] Matasović J: *Milan Prelog*, Narodna starina **1932**;11(28):115–130.

[25] Prelog V: *Eine Titriervorrichtung*, Chem Ztg. **1921**;45:736.

[26] Kauffmann GB, Jursík F, Rae ID: *Emil Votocek (1872 – 1950): A Tribute to the Chemist-Composer-Lexicographer*, J. Chem. Educ. **1999**;76:511–519.

[27] May L: *The lesser known chemist-composers, past and present*, Bull. Hist. Chem. **2008**;33(1):35–43.

[28] Protiva M: *Vladimir Prelog's Prague years and my later contacts with him*, Croat. Chem. Acta **1996**;69(2):399–408.

[29] Jakopčić K: *Vladimir Prelog i Zavod za organsku kemiju*, Kem. Ind. **2007**;56(3):95–107.

[30] Balenović K (ur.): *Leopold Ružička. Centennial 1887 – 1987*, Rad Jugoslavenske akademije znanosti i umjetnosti, Rad Jugosl. akad. znan. umj., kem. **1989**;[443]:197.

[31] *Nobel Prize in Chemistry 1975. Vladimir Prelog. Facts*, Nobel Prize Facts, https://www.nobelprize.org/ /chemistry/1975/prelog/facts/

[32] Trinajstić N: *Profesor Vladimir Prelog, sudobitnik Nobelove nagrade za kemiju 1975.*, Kem. Ind. **1976**;25(5):295–298.

[33] Prelog V: *Chirality in chemistry*, Science **1976**;193:17–24.

[34] Seiwerth R: *Prelog's Zagreb school of organic chemistry (1935. – 1945.)*, Croat. Chem. Acta **1996**;69(2):379–397.

[35] Balenović K: *Lavoslav Ružička: Stara domovina i kemija u Hrvatskoj 1918 – 1988*, (Balenović K, ur.): *Leopold Ružička. Centennial 1887 – 1987*, Rad Jugosl. akad. znan. umj., kem. **1989**;[443]:131–198.

[36] Laszlo P: *On the self-image of chemists 1950 – 2000*, Hyle **2006**;12(1):99–130.

[37] Sunko D: *Vladimir Prelog i organska kemija u proteklom stoljeću*, Kem. Ind. **2007**;56(3):91–94.

[38] Raos N: *Sukob stare i nove kemije u Hrvatskoj*, Kem. Ind. **2021**;70(3-4):163–170.

[39] Prelog V: *Gedanken nach 118 Semestern Chemistudium*, Naturwissenschaftlische Rundschau **1985**;38:259–266.

[40] Prelog V: *Neka razmišljanja nakon 118 semestara studija kemije*, Rad Jugosl. akad. znan. umjet., kem. **1986**;[425]:7–18.

[41] Babić V, Vekić D: *Ivo Andrić i Hrvatsko kulturno društvo „Napredak"*, Hum, časopis Filozofskog fakulteta Sveučilišta u Mostaru **2012**;(8):343–351.

[42] S. P.: *Napretkovu Fondu za stipendije Prelogovo ime*, Hrvatski narodni godišnjak za 1997., Napredak, Sarajevo **1996**, str. 325.

[43] *Napretkovu Fondu za stipendiranje Prelogovo ime*, Stećak, studeni **1996**, 8.

[44] Topić B: osobno priopćenje, Zagreb, **2023**.

[45] *Napretkov natječaj za stipendije*, 23. 1. 2019., https://napredak.hr/napretkov-natjecaj-za-stipendije/

[46] *Jugoslavija*, Enciklopedija Leksikografskog zavoda, Leksikogradski zavod FNRJ, Zagreb, **1954**;(4):1–48.

[47] Marić F: *Pregled Napretkovih hrvatskih narodnih kalendara 1907. – 2002.: povodom 100. obljetnice utemeljenja Hrvatskog kulturnog društva Napredak*, HKD Napredak, Zagreb – Sarajevo, **2002**, 627 str.

[48] Šimončić-Bobetko Z: *Razvoj cementne industrije u Hrvatskoj u razdoblju između dva rata (1918 – 1941)*, Povijesni prilozi **1983**;2(1):97–167.

[49] Kulundžić Z: *Politika i korupcija u Kraljevini Jugoslaviji*, Biblioteka Vremeplov, Stvarnost, Zagreb, **1968**, str. 80–81.

[50] Seiwerth R: *Pozivi Lavoslavu Ružički na visoke škole u Zagrebu 1919-1926*, (Balenović K (ur.): *Leopold Ružička. Centennial 1887 – 1987*, Rad Jugosl. akad. znan. umj., kem. **1989**;[443]:107–129.

[51] *Gospodarstvo, Kraljevina Jugoslavija*, https://hr.wikipedia.org/wiki/Kraljevina_Jugoslavija