Vrhunska znanstvenica in pedagoginja, prof. dr. Katarina Čufar je konec leta 2020, v prvem teden decembra, prejela dve prestižni priznanji: Zoisovo priznanje za pomembne znanstvenoraziskovalne dosežke za razvoj dendrokronologije in znanosti o lesu in Zlato plaketo Univerze v Ljubljani za izjemne znanstvenoraziskovalne dosežke, za zgledno pedagoško delo ter za zasluge pri krepitvi ugleda univerze. Kratko predstavljamo nagrajenko in njeno raziskovalno delo.

Ključne besede: dendrokronologija, znanost o lesu, anatomija lesa, državno priznanje, zlata plaketa univerze

Abstract: At the end of 2020, Prof. Dr. Katarina Čufar received two prestigious awards: the Zois Prize for important scientific research achievements in the development of dendrochronology and wood science, which is a state award of the Republic of Slovenia, and Golden Plaque from the University of Ljubljana for outstanding scientific research, exemplary teaching and achievements in enhancing the university’s reputation. We briefly introduce the prize-winner and her work.

Keywords: dendrochronology, wood science, wood anatomy, award

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je je omogočila, da danes vemo, kdaj natančno so bile med leti 3770–2450 pr. n. št. naseljene posamezne koliščarske naselbine na Ljubljanskem barju (Čufar et al., 2015). Datiranje je omogočilo boljše razumevanje življenja ljudi na našem ozemlju v prazgodovini ter njihove povezanosti s kulturami v širšem geografskem območju. Rezultati in skrbno hranjen arheološki les iz raziskav so ključni za nadaljnje temeljne raziskave, kot je na primer proučevanje genetike in migracij hrasta v obdobju 10.000 let po zadnji poledenitvi (Wagner et al., 2018). Material so porabili tudi za raziskave gospodarjenja z goznimi viri v daljini preteklosti (Out et al., 2020).

Pri mnogih lesnih konstrukcijah in predmetih, pomembnih za našo kulturno dediščino, dendrokronologija pomaga poleg starosti ugotavljati tudi izvor lesa ter originalnost in vrednost predmetov, kar najbolje prikazujejo raziskave umetniških in uporabnih predmetov, glasbenih inštrumentov ter konstrukcij različnih stavb od gradov, cerkva, palač ter mestnih in kmečkih stavb, od bivališč do kozolcev (Čufar et al., 2014a, 2017, 2020). Material in rezultati iz omenjenih raziskav so pripomogli k rekonstrukciji klime v Sloveniji za zadnjih 500 let in v Evropi za zadnjih 2000 let (Čufar et al., 2008a; Cook et al., 2015).

Razvoj dendrokronologije nagravena s svojimi sodelavkami in sodelavci gradi na trdni osnovi poznavanja anatomije lesa in fiziologije dreves. Prav zato so izredno pomembne raziskave živih dreves, kjer dendrokronologija, navezana na klimatologijo, med drugim pojasnjuje, kaj omejuje in kaj podpira rast določenih dreves in drevesnih vrst na določenem območju, kar je posebej pomembno takrat, ko se glavni dejavniki (npr. klima) spreminjajo in je preživetje dreves ogroženo (Čufar et al., 2014a; Cailleret et al., 2017; Novak et al., 2017). Temeljne raziskave širše skupine na področju delovanja kambija ter nastajanja lesa (ksilema) in skorje (še posebej floema), ki vključujejo drevesa iz pretežno zmerno celinskih (Cuny et al., 2015; Martinez del Castillo et al., 2018), hladnih alpskih (Rossi et al., 2016; Li et al., 2017) in vroče suhih sredozemskih okoli (De Luis et al., 2013; Novak et al., 2013; Prislan et al., 2016), so prinesle številna bazična spoznanja. Ta spoznanja pa so nadgradili z uporabo satelitskih podatkov (Decuyper et al., 2020) in opazovanjem listne fenologije dreves (Škrk et al., 2020).
Šernek, M., & Petrič, M.: Prof. dr. Katarina Čufar – prejemnica Zoisovega priznanja za pomembne dosegke in Zlate plakete Univerze v Ljubljani

Izseleki raziskav so bili predstavljeni v prestižnih objavah, ki jih je svetovna znanstvena skupnost prepoznała in dobro sprejela, kar se odraža tudi v visoki citiranosti objav (Bibliography..., 2020a, b).

Iz bibliografije nagrajenke je razvidno, kako pomembno je sodelovanje ter delo raziskovalk in raziskovalcev v Sloveniji ter kako je domače dosežke potrebno in mogoče vpeti v delo mednarodnih konzorcij. Pri tem nagrajenka deluje tudi kot glavna urednica revije Les/Wood, kjer z uredniškim delom in objavljanjem skrbi za slovenski jezik in slovensko znanstveno izrazoslovje.

Na kratko opisane temeljne in aplikativne raziskave se tesno prepletajo in medsebojno dopolnjujejo, zato smo veseli, da je bilo delo Katarine Čufar prepoznavno in nagrajeno z državnim priznanjem.

Redna profesorica dr. Katarina Čufar je na področju znanosti o lesu tudi izvršna in med študenti izjemno priljubljena pedagoginja. Naključje je hoteło, da ji je prav v istem tednu, kot ji je bilo podeljeno Zoiso priznanje, kot ugledni mednarodni raziskovalki in odlični predavateljici tudi Univerza v Ljubljani podelila enega svojih najvišjih priznanj, Zlate plakete. Prof. Čufarjeva je Katedro za tehnologijo lesa, ki jo vodi, postavila na svetovni zemljivod odlično opremljenih laboratorijev, v katerega radi prihajajo tuji znanstveniki in študenti. Zavzeto skrbi tudi za prenos znanja v prakso. Svoje vrhunske izsledke objavlja v najuglednejših svetovnih publikacijah, ob tem pa ji vedno uspe poiskati čas za najrazličnejše zahtevne vadstvene funkcije in ne nazadnje, za prijazno besedo svojim sodelavcem, ko se slučajno srečamo na hodniku ali ob kavici.

Sodelavci Oddelka za lesarstvo na Biotehniški fakulteti smo se obehuglednih priznanj naše pedagoģinje in raziskovalke, prof. dr. Katarine Čufar, izjemno razveselili in ji iskreno čestitamo! Verjamemo, da se našim čestitkam pridružuje tudi vsi ostali, ki z njo tako ali drugače sodelujete, ali pa jo poznate kot svojo sedanjo ali bivšo profesorico.

Slika 2. Predavanje v mikroskopirnici na Oddelku za lesarstvo. Foto: Angela Balzano.

Figure 2. Lecture in a microscopy classroom at the Department of Wood Science and Technology. Photo: Angela Balzano.
Šernek, M., & Petrič, M.: Prof. Dr. Katarina Čufar received the Zois Prize for important achievements and the Golden Plaque of the University of Ljubljana

Figure 3. The oldest wheel in the world with an axle is 5,150 years old and is kept by the City Museum of Ljubljana MGML. Most of the basic research on the wood of the wheel and other finds from pile-dwelling settlements of Ljubljansko barje was conducted at the Department of Wood Science and Technology of the Biotechnical Faculty, in cooperation with the Institute of Archeology RC SASA. Photo: Rado Likon (Vrhunci..., 2020).

Figure 4. Dendrochronological analysis of a violin to determine the age and origin of the instrument. Photo: Rado Likon (Vrhunci..., 2020).
In the first week of December 2020, our top scientist and teacher, Prof. Dr. Katarina Čufar, received two truly prestigious awards: the Zois Prize for important scientific research achievements in the development of dendrochronology and wood science, and Golden Plaque from the University of Ljubljana for outstanding scientific research, exemplary pedagogical work and achievements to enhance the reputation of the University.

Katarina Čufar received the Zois Award for important achievements for the development of wood science, especially in the field of wood anatomy and dendrochronology and for the transfer of knowledge on cultural heritage and archaeology. In this way, she contributed to scientific research and development in the fields of both the life sciences and humanities in the Republic of Slovenia.

Katarina Čufar, in cooperation with colleagues from Slovenia and around the world, has spent many years studying the most important physiological processes in trees, including those related to cambium activity and the formation of wood and bark (Čufar et al., 2008c; Prislan et al., 2011, 2013; Gričar et al., 2014). Such processes are driven by internal and environmental factors, especially climate, and their influence is recorded in wood anatomy (Balzano et al., 2018).

Wood with its cells and tissues therefore represents an archive of past events, which is investigated by dendrochronology. Dendrochronology is the study of tree-rings and is based on cross-dating, which can be used to determine in which calendar year the wood was formed. Dendrochronology thus makes it possible to date the wood, which is sometimes the ultimate goal of research. However, such dating can be a great challenge, as Slovenian cultural heritage also contains objects that are thousands of years old (Čufar et al., 2014b). Katarina Čufar pioneered the field of dendrochronology in Slovenia, where reference chronologies first had to be established (Čufar et al., 2008b). The creation of such chronologies sometimes seems to be a never-ending project. Ideally we need chronologies of the main tree species for all periods of interest, and all regions in geographically heterogeneous Slovenia. This requires well-organised teamwork with broad interdisciplinary and international cooperation.
The research work of Katarina Čufar and her colleagues helped us to determine the age of wood in pile-dwelling settlements in the Ljubljansko barje and the oldest wooden wheel in the world (Čufar et al., 2010; Čufar & Velušček, 2012). Dendrochronology has made it possible to determine exactly when the pile-dwelling settlements at Ljubljansko barje were inhabited in the period between 3770 and 2450 BC (Čufar et al., 2015). Dating this made it possible to better understand the life and cultural connections of people in the distant past. The research results and carefully preserved archaeological wood enabled further basic research, such as the DNA study, which explained how populations of oak trees changed in space and time over a period of 10,000 years after the last glaciation (Wagner et al., 2018). The material was also used to study woodland management in the distant past (Out et al., 2020).

For constructions and objects of cultural heritage, dendrochronology helps to determine the origin of wood and the originality and value of objects, which is best shown by studies of musical instruments and constructions of castles, churches, palaces and various buildings, including rural architecture (Čufar et al., 2014a, 2017, 2020). The material and results of numerous studies have enabled reconstruction of the climate in Slovenia over the last 500 years, and in Europe over the last 2,000 years (Čufar et al., 2008a; Cook et al., 2015).

Katarina Čufar together with colleagues developed dendrochronology on a solid foundation of wood science, including wood anatomy and tree physiology. She showed that the study of living trees is necessary to relate dendrochronology to climatology and explain the factors that limit tree growth. This is particularly important when the climate changes and the survival of trees is threatened (Čufar et al., 2014a; Cailleret et al., 2017; Novak et al., 2017). Basic research by a wider group on cambium activity and the formation of wood (xylem) and bark (especially phloem) in trees from temperate continental (Cuny et al., 2015; Martínez del Castillo et al., 2018), cold alpine (Rossi et al., 2016; Li et al. 2017) and hot dry Mediterranean environments (De Luis et al., 2013; Novak et al., 2013; Prislan et al., 2016) have produced a number of fundamental findings. These were scaled up to studies using remote sensing data (Decuypere et al., 2020) and terrestrial observations of leaf phenology in trees (Škrk et al., 2020). Most of the papers were published in prestigious publications and acknowledged by the global scientific community, which is reflected in a high citation frequency (Bibliography 2020 a, b).

The bibliography of Katarina Čufar shows that the arduous work of researchers in Slovenia can and must be integrated into the work of international consortia. Katarina Čufar also serves as editor-in-chief of the journal Les / Wood and is also involved in the development of Slovenian scientific terminology.

The basic and applied research briefly described here are closely intertwined and complement each other, so we are pleased that the work of Katarina Čufar has been recognized and awarded the high state award of the Republic of Slovenia.

Katarina Čufar is a full professor who is known as an excellent teacher in the field of wood science. She is extremely popular among students. Coincidentally, in the same week that the Zois Prize was awarded to her, the University of Ljubljana presented her with one of its highest awards, the Golden Plaque. As an internationally recognized researcher and outstanding teacher, Prof. Čufar has put the Department of Wood Science and Technology and the team she heads in Wood Science on the world map of well-equipped laboratories with highly qualified and friendly staff. Therefore, the Wood Science team is a very popular partner, and the laboratories are constantly visited by scientists and students of all grades from all over the world. Katarina Čufar is also actively involved in the transfer of knowledge into practice. Together with co-authors she publishes in the most prestigious publications. At the same time, she always manages to find time for numerous challenging management functions and, last but not least, for a friendly conversation with her colleagues when we happen to meet in the hallway or over a coffee.

The staff of the Department of Wood Science of Biotechnical Faculty are very happy and proud that our teacher, scientist and colleague Prof. Dr. Katarina Čufar has received both prestigious awards. We sincerely congratulate her! We believe that all those who have worked with her in one way or another, or got to know her as a teacher, join us in congratulating her.
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