

**WALTER LIESE (1926-2023) – DOLGO IN PLODNO ŽIVLJENJE ZNANSTVENIKA,
UČITELJA, VODJE IN AMBASADORJA ZNANOSTI****WALTER LIESE (1926-2023) – THE LONG AND FRUITFUL LIFE OF A SCIENTIST,
TEACHER, LEADER AND AMBASSADOR OF SCIENCE**Katarina Čufar^{1*}

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Izvleček / Abstract

Izvleček: Prof. dr. dr. h. c. mult. Walter Liese (1926–2023) je bil vodilni znanstvenik, učitelj, mentor, direktor, vodja, predsednik IUFRO, večkratni častni doktor in ambasador znanosti na področju gozdarstva in lesarstva. Po diplomu in doktoratu iz gozdarstva je opravil pionirsko in izjemno življenjsko delo na področju elektronske mikroskopije ter biologije in zaščite lesa ter bambusa. V obdobju 1963–1991 je deloval kot profesor na Univerzi v Hamburgu, vodja inštituta za Biologijo in zaščito lesa in direktor Zveznega raziskovalnega centra za gozdarstvo in lesarstvo. Njegovo delo je imelo izjemen vpliv na razvoj znanosti in laboratoriji, ki jih je vodil, so bili referenčna točka za znanost o lesu in bambusu na svetu. Bil je aktiven član svetovne organizacije IUFRO in v letih 1977–1981 njen predsednik ter izjemen ambasador znanosti in povezovalac. Vsestransko je podpiral znanstveno skupnost v Sloveniji. Leta 1994 je kot prvi znanstvenik s področja gozdarstva in lesarstva prejel častni doktorat Univerze v Ljubljani. Tudi po uradni upokojitvi je nadaljeval z raziskovalnim delom in ostal povezan s svetovno znanstveno skupnostjo.

Ključne besede: biologija lesa, zaščita lesa, elektronska mikroskopija, bambus, IUFRO

Abstract: Prof. Dr. Dr. h. c. mult. Walter Liese (1926-2023) was a leading scientist, teacher, mentor, director, leader, president of IUFRO, multiple honorary doctor and ambassador of science in the forestry and wood science community. After his BSc and PhD in forestry he pioneered and carried out outstanding work in the field of electron microscopy and the biology and protection of wood and bamboo. From 1963 to 1991, he was a professor at the University of Hamburg and director of its Institute of Wood Biology and Wood Protection, and a Director of the Federal Research Centre for Forestry and Forest Products in Hamburg, Germany. His work had a decisive influence on the development of science, and the laboratories he led were a reference point for wood and bamboo science worldwide. He was an active member of IUFRO and its president from 1977 to 1981, where he acted as an outstanding ambassador and mediator for science. He supported the scientific community in Slovenia. In 1994, he was awarded an honorary doctorate by the University of Ljubljana. Even after his official retirement, he continued his outstanding work, remained committed to science and connected to his worldwide scientific community.

Keywords: wood biology, wood preservation, electron microscopy, bamboo, IUFRO

1 ZNANSTVENIK, UČITELJ IN VODJA**1 SCIENTIST, TEACHER AND LEADER**

Svetovna znanstvena skupnost s področja lesarstva in gozdarstva žaluje, ker nas je zapustil prof. dr. dr. h. c. mult. Walter Liese (31. 1. 1936–24. 2. 2023) (slika 1). Bil je izjemen profesor, učitelj, mentor, vodja, podpornik, znanstvenik, ambasador in komunikator znanosti, ob vsem tem pa dober ko-

lega in prijatelj znanstvenic in znanstvenikov po vsem svetu. Po tem, ko je svoj 97. rojstni dan 31. 1. 2023 kot vedno praznoval povezan s svojo svetovno skupnostjo, je po kratki bolezni umrl na svojem domu v Reinbeku pri Hamburgu. V njegov spomin so bili po vsem svetu objavljeni številni prispevki, ki so podrobno osvetlili njegovo dolgo življenjsko pot in izjemne dosežke. Tudi v Sloveniji se ga s hvale-

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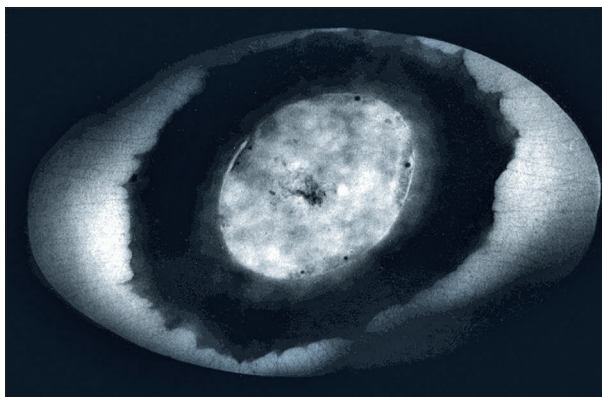
Slika 1. Prof. dr. dr. h. c. mult. Walter Liese leta 2005 (Foto: arhiv Thünen-Institut).

Figure 1. Prof. Dr. Dr. h.c. mult. Walter Liese in 2005 (Photo: archive Thünen-Institut).

žnostjo spominjamo kot profesorja, vzornika, prijatelja in podpornika.

Liesejeva življenjska in znanstvena pot je dobro dokumentirana v njegovih številnih znanstvenih objavah in prispevkih, kjer so se ga kolegi spomnili ob njegovih življenjskih jubilejih (npr. Schulz, 1991; Schmid, 2001; Eckstein & Schmitt, 2006; Thünen-Institut, 2016; Wikipedia, 2023) in v spomin (Dujesiefken, 2023; Schmitt & Koch, 2023; IUFRO, 2023). Svoje dolgo življenje je z veliko hvaležnostjo opisal tudi sam v obliki spominov, ki jih je delil s svojo skupnostjo (Liese, 2013, 2016, 2018).

Walter Liese se je rodil v Berlinu in odraščal v bližnjem Eberswaldu, kjer je njegov oče Johannes Liese (1891–1952) deloval kot profesor gozdne botanike na eni najstarejših gozdarskih visokih šol na svetu. Tako je Walter že kot otrok imel veselje z gozdom in lesom ter je želel študirati gozdarstvo. Kot je zapisal v svojih spominih (Liese, 2013, 2018),



Slika 2. Prva objavljena slika obokane piknje v lesu iglavca, tanek preprat, transmisijski elektronski mikroskop (Liese, 1951a) (Foto: arhiv W. Liese).

Figure 2. First published image of a softwood bordered pit, thin section, transmission electron microscope (Liese, 1951a) (Photo: archive W. Liese).

je njegovo generacijo tragično zaznamovala druga svetovna vojna, ki se je razplamtela v času njegovega šolanja na humanistični gimnaziji. Zaradi vojne je gimnazijo moral zaključiti predčasno, junija 1943, z izredno maturo. Takoj po tem je bil vpoklican v nemško vojsko. Vojno in nevarno povojno obdobje na begu v zahodni del Nemčije je preživel tudi ob pomoči številnih dobrih ljudi in ob trdem delu za preživetje.

Leta 1946 se je lahko vpisal na študij gozdarstva v Freiburgu in leta 1950 diplomiral. Nato je deloval na Gozdarskem botaničnem inštitutu Hannoversch Münden, pod Univerzo Göttingen, kjer je leta 1951, pri 25 letih, doktoriral iz gozdarstva z disertacijo "Vpliv strukture lesa na prodiranje oljnih sredstev za zaščito lesa" (Liese, 1951a) pod vodstvom profesorja Herberta Zycha. Mentor ga je povezal s profesorjema in bratoma Helmutom in Ernstom Ruska, ki sta mu omogočila prve raziskave lesa z elektronskim mikroskopom. V Liesejevi disertaciji je bil tako objavljen prvi posnetek mikrostrukture lesa na svetu, posnete z elektronskim mikroskopom (slika 2), Ernst Ruska pa je leta 1986 prejel Nobelovo nagrado za fiziko kot soizumitelj elektronskega mikroskopa (Schmitt & Koch, 2023).

Po doktoratu in poroki s Katrin Else Pabst (1952) je deloval kot znanstveni asistent na Gozdarskem inštitutu Severnega Porenja-Vestfalije, v industriji za zaščito lesa in med leti 1953–1959 kot asistent na Gozdarskem botaničnem inštitutu v Freiburgu,

kjer je med drugim nadaljeval delo na področju elektronske mikroskopije in leta 1957 habilitiral za visokošolskega učitelja z delom "Ultra-struktura rastlinske celične stene" (Liese, 2013; Schmitt & Koch, 2023). V Freiburgu sta se zakoncema Liese rodila tudi sinova Andreas in Stefan.

Liese je bil že na začetku kariere seznanjen z bambusom, »lesom revnih«, ki je bil za razrušeno povojno Nemčijo zanimiv kot morebiten nov surovinski vir. Zgodaj je imel možnost proučiti bambus tudi s pomočjo elektronskega mikroskopa. Nova spoznanja so se zdela strokovnjakom iz Indije obetavna za boljše impregniranje bambusa z zaščitnimi sredstvi. Na prvem daljšem službenem bivanju v Indiji je Liese bambus tudi поблиže spoznal kot široko uporaben material (slika 8). Bambus je tako postal in ostal pomemben predmet raziskav v Liesejevem življenju (Bamboo Pioneers, 2023; Escobar Destacadas, 2023; INBAR, 2023; International Bamboo, 2023). Liese je že zgodaj sodeloval tudi s kolegi iz Japonske (Hiroshi Harada), Avstralije (Alan Wardrop), Kitajske in drugih držav.

Leta 1959 je postal asistent pri prof. Brunu Huberju na Gozdarskem botaničnem inštitutu Univerze v Münchnu. Po Huberjevi nenadni smrti je Liese moral prevzeti obsežno pedagoško delo, administracijo in zanj zahtevne botanične ekskurzije v Alpah (Liese, 2013). Ob tem je še naprej uporabljal elektronsko mikroskopijo na Inštitutu za raziskave lesa pri znamenitem prof. Franzu Kollmannu.

Leta 1963 se je Liese z družino preselil v Hamburg, kjer je postal profesor Univerze v Hamburgu, vodja univerzitetnega Inštituta za biologijo in zaščito lesa in hkrati direktor Zveznega raziskovalnega centra za gozdarstvo in lesarstvo. To je zahtevalo veliko energije in spretnosti pri usklajevanju obveznosti profesorja in vodje inštituta pod okriljem državnega ministrstva za kmetijstvo, skupaj z vsemi političnimi nalogami. Liese je to usklajevanje opravil z odliko in vzpostavil svetovno znan »hamburški model« kjer so se prepletale aktivnosti univerze, inštituta in gospodarstva (Schmitt & Koch, 2023).

Oba inštituta sta delovala v istih prostorih, najprej na gradu Reinbek (slika 3), pozneje, od leta



Slika 3. Liese s sodelavkami in sodelavci Inštituta za biologijo in zaščito lesa v gradu Reinbek (Liese, prva vrsta, četrti z leve) (Foto: arhiv W. Liese).

Figure 3. Liese and the staff of the Institute of Wood Biology and Wood Protection at Reinbek Castle (Liese, first row, fourth from left) (Photo: archive W. Liese).

1970, pa v novozgrajenem kompleksu Lohbrügge-Bergedorf, Hamburg.

S povezovalnim načinom vodenja so se zabrisale meje med inštitutskim in univerzitetnim ter raziskovalnim in pedagoškim delom in model sodelovanja je odlično deloval. Liese je vizionarsko razširil domet raziskav, od temeljnih na področju biologije lesa do uporabe znanosti v praksi, na primer zaščite lesa. Raziskave so prinesle nova spoznanja o lesu, od njegovega nastanka v drevesu do njegove uporabe. Diplomantom lesarstva na Univerzi v Hamburgu so se tako odprla številna vrata v industrijo in znanost v Nemčiji in po svetu, Hamburg pa je postal stičišče svetovne znanosti o lesu.

Liese je deloval v Hamburgu osemindvajset let do uradne upokojitve 31. marca 1991 in v tem obdobju dosegel izjemne uspehe.

V svojih spominih je opisal, da je pedagoško delo, ki ga je opravljal z velikim veseljem, imel za glavno nalogo svojega poklica. Poučevanje je jemal resno in je vanj vložil veliko energije. Stik s študenti v učilnicah, laboratorijih in na znamenitih ekskurzijah se mu je zdel življenjska naloga, ki ga je vedno ohranjala vitalnega. Tradicionalne daljše ekskurzije v tujino so bile tudi za študente izredno poučne. Za-



Slika 4. Liese (desno) in študent Dieter Eckstein (levo) leta 1963 na ekskurziji v Franciji (Foto: arhiv S. Wrobel).

Figure 4. Liese (right) with his student Dieter Eckstein (left) in 1963 during an excursion in France (Photo: archive S. Wrobel).

radi dobrih stikov so spoznavali stroko v zahodni in tudi v takrat za stike dokaj zaprti vzhodni Evropi.

Liese je bil mentor pri več kot 75 diplomah in 40 doktorskih disertacijah, pri čemer je s študenti vedno navezal pristne človeške stike. Ker so ga študenti imeli iskreno radi, je z mnogimi ostal v stiku do konca svojega dolgega življenja. Med njimi je bil tudi Dieter Eckstein (1939–2021) (slika 4), ki je pod Liesejevim mentorstvom diplomiral leta 1965 in leta 1969 doktoriral ter postal znamenit profesor (Čufar, 2021). Liese je kot mentor svojim študentom omogočil razvoj novih znanstvenih pristopov. Tako je imel na primer tudi zasluge za uvedbo dendrokronologije v Hamburgu (Čufar et al., 2024).

Dirk Dujesiefken je tudi diplomiral (1981) in doktoriral (1985) pod njegovim mentorstvom (Liese, 2013) ter kasneje ustanovil Inštitut za arboristiko v Hamburgu in postal profesor. Z Liesejem sta ostala povezana in skupaj pripravila več objav in nazadnje knjigo o principu CODIT (Dujesiefken & Liese, 2023).

Kljub obsežnemu pedagoškemu delu, vodenju in administrativnim zadolžitvam Liese znanosti ni nikoli zapostavljal. Kot je sam napisal, je velike obremenitve zmogel, ker je delal z velikim veseljem. Hvaležen je bil, da je lahko vse življenje upravljal in razvijal elektronsko mikroskopijo ter tako lahko reševal zelo raznolik nabor zanimivih tem na področju anatomije, biologije, patologije in zaščite lesa ter bambusa in ratana. Skupno je objavil okoli 500 znanstvenih publikacij, šest knjig in 200 del splošne narave. Scopus (2023) navaja 159 del, objavljenih v obdobju 1951–2021 v najuglednejših revijah, pri čemer je prvi članek s področja doktorskega dela (Liese, 1951b). Poleg objavljanja je bil Liese dolga leta urednik, sourednik in član uredniških odborov znanstvenih revij kot so Holz als Roh- und Werkstoff; Wood Science and Technology; Forstwissenschaftliches Centralblatt in drugih. Dolga leta je bil tudi v uredniškem odboru naše revije Les/Wood.

Liese je veliko službeno potoval in bil kot profesor, gostujoči znanstvenik in sodelavec pri projektih razvojne pomoči v osebnem stiku s kolegicami in kolegi v približno sedemdesetih državah vseh celin. Predavanja je imel v okoli 50 državah. V času, ko sta bili Nemčiji strogo ločeni, je veliko energije vložil v vzdrževanje stikov s člani širše družine, prijatelji in kolegi iz takratne Demokratične republike Nemčije.

31. marca 1991 se je uradno upokojil in postal zaslužni profesor. Razbremenjen uradnih administrativnih zadolžitvev in rednega poučevanja se je z veseljem še bolj posvetil znanstvenemu delu. Do pozne starosti je redno prihajal na inštitut in ostal v stiku s kolegi, tujimi gosti in študenti, imel dostop do najnovejše literature, bil vključen v reševanje zahtevnih znanstvenih vprašanj ter še naprej veliko objavljaj. Imel je tudi številna vabljenja predavanja doma in v tujini, kamor je še naprej redno zahajal v okviru najrazličnejših projektov.

Po upokojitvi se je intenzivno posvetil raziskovanju bambusa in ostal v osebnem stiku s kolegicami in kolegi iz dežel, kjer je bambus gospodarsko pomemben (Bamboo Pioneers, 2023; Escobar Destacadas, 2023; INBAR, 2023; International Bamboo, 2023). Objavil je okoli 150 znanstvenih člankov o bambusu in ratanu ter negi sestojev. S sodelavci je objavil tudi knjige o anatomiji bambusa, ohranjanju bambusa in negi rastlin, na primer *Bamboo: The Plant and its Uses* (Liese & Köhl, 2015).

2 AMBASADOR ZNANOSTI V SVETU IN V SLOVENIJI

2 AN AMBASSADOR OF SCIENCE IN THE WORLD AND SLOVENIA

Liese je postal svetovno znan kot vodja tudi na področju povezovanja v znanosti. Bil je zelo dejaven v organizaciji IUFRO (Mednarodna zveza organizacij za raziskovanje gozdov), ki so jo ustanovili davnega leta 1892 v kraju Liesejeve mladosti Eberswalde. Izvoljen je bil za člana stalnega odbora, člana organizacijskega odbora za revizijo statuta IUFRO, sopredsednika delovne skupine za tropske gozdove v okviru sekcije Gozdni proizvodi, regionalnega predstavnika za zahodno Evropo in predsednika odbora za mednarodne odnose 1968–1976, v obdobju 1977–1981 pa je bil predsednik IUFRO (Teplyakov, 2019).

Kot predsednik je vložil veliko truda v organizacijo svetovnih kongresov, kamor bi se v času številnih političnih razkolov in delitev enakopravno lahko vključili znanstveniki iz vsega sveta. Tako je dosegel, da je bil svetovni kongres IUFRO prvič organiziran v Aziji (Kjoto, Japonska, 1981). Z znanstveno diplomacijo je dosegel, da so se ga udeležili in se po dolgem času osebno srečali znanstveniki iz Ljudske republike Kitajske in Tajvana, kar je bilo



Slika 5. Walter Liese (levo) in Dušan Mlinšek (desno), zaporedna predsednika svetovne organizacije IUFRO (Foto: arhiv IUFRO).

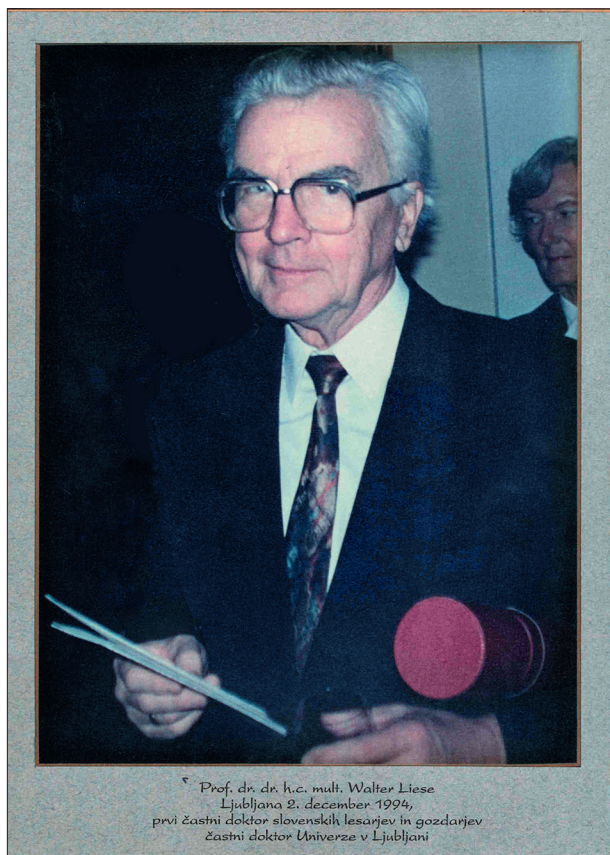
Figure 5. Walter Liese (left) and Dušan Mlinšek (right), two successive presidents of IUFRO (Photo: archive IUFRO).

pred tem nepredstavljivo. Liese je zaslužen, da je ponovno zaživelo sodelovanje med zahodno in tedanjo vzhodno Evropo. Zelo dobro je razumel razmere v vzhodni Evropi in Nemčiji. Dejavnosti Lieseja in somišljenikov so pripomogle k brisanju meja in vzpostavljanju Evrope in sveta brez meja. Spodbujal je tudi mednarodno širitev IUFRO. Organiziral je prvo srečanje upravnega odbora v Sovjetski zvezi, v Moskvi in Sočiju (1980). Podprl je izvolitev prvega predstavnika iz Azije in države v razvoju za predsednika IUFRO—dr. Salleh Mohd Nor iz Malezije (1990). Predlagal in podpiral je tudi izvolitev prof. dr. dr. h. c. Dušana Mlinška za prvega predsednika iz socialistične države in Ljubljano za organizacijo 18. svetovnega kongresa IUFRO (1986) (IUFRO, 2023; Salleh, 2023; Teplyakov; 2019) (slika 5).

Prof. dr. dr. h. c. mult. Dušan Mlinšek (30. 9. 1925–15. 12. 2020) z Oddelka za gozdarstvo Biotehniške fakultete Univerze v Ljubljani je kot vrhunski slovenski znanstvenik iz Liesejeve generacije istočasno začel delovati v okviru IUFRO in prevzemati vodilne vloge (Diaci, 2015, 2021; Teplyakov, 2019). Liese in Mlinšek sta imela izjemno karizmo ter številne

skupne interese in talente, zato ni presenetljivo, da sta postala velika prijatelja za vse življenje.

Dušan Mlinšek je bil izvoljen za predsednika IUFRO za obdobje 1982–1986 in na tem prestižnem položaju nasledil Lieseja, kot prvi in edini predsednik IUFRO iz socialistične države. Tudi on je namenil veliko energije povezovanju. Veliko truda je vložil v organizacijo in uspešno izvedbo 18. svetovnega kongresa IUFRO v Ljubljani leta 1986, ki je s tem slovensko gozdarstvo in lesarstvo trdno umestil v enakopravno mednarodno okolje. IUFRO kongres v Ljubljani je močno podpiral tudi Liese, ki je med drugim dejavno sodeloval v okviru satelitskega srečanja IAWA (International Association of Wood Anatomists) (Shortle, 1986). Lieseja in soprogo Katrin so med kongresom zaradi pomanjkanja hotelskih zmogljivosti v Ljubljani nastanili v nekdanji rezidenci predsednika Tita na Bledu.



Slika 6. Prof. dr. dr. h. c. mult. Walter Liese, častni doktor Univerze v Ljubljani, 2. december 1994 (Foto: N. Torelli).

Figure 6. Prof. Dr. Dr. h.c. mult. Walter Liese, Honorary Doctor of the University of Ljubljana, 2 December 1994 (Photo: N. Torelli).

Liese je zaradi svojih zaslug postal častni član IUFRO leta 1982, Mlinšek pa je ta častni naslov prejel leta 1989 (Teplyakov, 2019).

Že leta 1966 je Liese sodeloval pri ustanovitvi Mednarodne akademije znanosti o lesu (IAWS) in bil med prvimi izvoljenimi člani (IAWS, 2023). Bil je tudi urednik revije Akademije "Wood Science and Technology" od prve številke leta 1966 do leta 1995.

Zaradi izjemnih zaslug pri povezovanju ljudi in podiranju meja je Liese prejel častne doktorate (dr. h. c.) univerz v Sopronu, Zvolenu in Poznau. Leta 1994 je prejel tudi častni doktorat Univerze v Ljubljani in je še vedno prvi in edini častni doktor s področja gozdarstva in lesarstva (slika 6). Pobudo za podelitev častnega doktorata je vodil prof. dr. dr. h. c. Niko Torelli (Oven, 2020), ki ga je Liese izredno spoštoval in imel z njim doživljenjske prijateljske stike.

Na Oddelku za lesarstvo smo skupaj z Oddelkom za gozdarstvo in obnovljive gozdne vire Lieseja gostili leta 2005 (slika 7), ko se je udeležil prireditve ob 80-letnici prof. dr. Dušana Mlinška. Takrat je za študente pripravil zelo zanimiva predavanja s celovito predstavitvijo lastnosti in rabe bambusa. Predal nam je tudi študijska gradiva za oblikovanje predavanj o bambusu, ki so jih študenti deležni še danes. Kasneje, ko je Liese začel razdajati svojo bogato knjižnico, je Oddelku za lesarstvo poklonil tudi več temeljnih knjig s področja lesarstva.

Liese je bil kot direktor inštituta zelo naklonjen slovenskim znanstvenicam in znanstvenikom, ki smo redno prihajali na izpopolnjevanja v Hamburg. Sama (Katarina Čufar) sem prof. Lieseja spoznala še kot študentka leta 1980 in ostala v stiku z njim tekom številnih izpopolnjevanj v Hamburgu (slika 9). Na inštitutu je bilo za goste dobro poskrbljeno. Za študijska bivanja smo se lahko dogovorili brez posebnih formalnosti. Za nas se je vedno našel delovni kotiček in sogovorniki za naša vprašanja. Udeleževali smo se lahko vseh javnih dogodkov inštituta, ki je bil tedaj v centru dogajanj v stroki. Poskrbljeno je bilo tudi za neformalno druženje s skupno kavo, prigrizki in prostočasnimi aktivnostmi. Liese, ki je imel velike zasluge za sproščeno in svobodno okolje, idealno za delo, je bil pozoren do vseh, ki smo delali na inštitutu. Kadar ni bil na potovanju, je op-



Slika 7. Profesor Liese z zaposlenimi in študenti Oddelka za lesarstvo (levo) in s profesorjem Nikom Torellijem, december 2005 (desno) (Foto: arhiv K. Čufar).

Figure 7. Professor Liese, with the staff and students of the Department of Wood Science and Technology (left) and with Professor Niko Torelli, December 2005 (right) (Photo: archive K. Čufar).

ravil reden obhod po laboratorijih. Med kratkimi pogovori se je vedno pozanimal o našem delu in bil tako na tekočem z dogajanjem. Kljub zasedenosti sta si s soprogo Katrin vzela čas za goste iz tujine, največkrat za skupno kavo na njenem domu ali kosilo v eni od kitajskih restavracij. Tako je gradil skupnost tistih, ki smo gostovali na inštitutu in smo prihajali iz vsega sveta. Iz naših srečanj je nastalo veliko plodnih sodelovanj.

Lieseja smo vsi zelo spoštovali ter občudovali njegove neverjetne talente in energijo ter izjemne uspehe. S svetovno mrežo je ostal v stalnem stiku. Kot upokojenec se je naučil uporabljati novosti kot je internet in elektronska pošta, ki sta postala dostopna šele po njegovi upokojitvi. Tako je z veseljem in veliko hvaležnostjo ostal v stiku s sodelavci z vseh delov sveta. Pošto smo si izmenjali tudi za božič 2022 in na njegov rojstni dan 31. 1. 2023, ne da bi vedeli, da nas bo v kratkem za vedno zapustil.

Walter Liese nam je zapustil znanstvene prispevke, ki živijo v njegovih skrbno pripravljenih objavah in imajo trajen vpliv na znanost o lesu. Ostali so nam lepi spomini na izjemnega kolego, vzornika in prijatelja. Zelo ga pogrešamo.

The global wood science and forestry community mourns the loss of Prof. Dr. Dr. h.c. mult.

Walter Liese (31 January 1936–24 February 2023), a professor, teacher, mentor, leader, promoter, outstanding scientist, communicator, networker, colleague and good friend to many scientists around the world. After celebrating his 97th birthday on 31 January 2023, as always connected with his worldwide community, he died after a short illness at his home in Reinbek near Hamburg, Germany. Numerous articles have been published worldwide in his honour, paying tribute to his long life and outstanding achievements (Anon.; Schmitt & Koch, 2023; IAWS, 2023). He will also be gratefully remembered in Slovenia as a professor, role model, friend and supporter of our scientific community.

Liese's life and scientific career is well documented through numerous publications written by his colleagues on his various anniversaries (e.g. Schulz, 1991; Schmid, 2001; Eckstein & Schmitt, 2006; Thünen-Institut, 2016; Wikipedia, 2023) and recent *in memoriams* (Dujesiefken, 2023; Schmitt & Koch, 2023; IUFRO, 2023). He has also written memoirs and shared them with his community (Liese, 2013, 2016, 2018).

Walter Liese was born in Berlin and grew up in nearby Eberswalde, where his father, Johannes Liese (1891-1952), was a professor of forest botany at one of the oldest forestry colleges in the

world. Already as a child, Walter had a passion for forests and wood and wanted to study forestry. In his memoirs (Liese, 2013, 2018) he writes that his generation was tragically shaped by World War II, which broke out during his time at the Humanistisches Gymnasium. Because of the war, he had to leave the grammar school early, in June 1943, with an extraordinary matura. Immediately afterwards, he was drafted into the German army. He survived the war and the dangerous post-war period when he fled to the western part of Germany. He survived with the help of many good people and by working hard.

In 1946, he enrolled in the University of Freiburg to study forestry and graduated in 1950. He then worked at the Forest Botanical Institute Hannover-Münden, which belonged to the University of Göttingen, and completed his doctorate in forestry in 1951. His thesis was entitled "The influence of wood structure on the penetration of oil-based wood preservatives" (Liese, 1951a, b), and was completed under the supervision of Professor Herbert Zycha. His mentor put him in touch with Professors Helmut and Ernst Ruska, who enabled him to carry out his first research on wood using an electron microscope. In his dissertation, Liese published the world's first electron microscope image of a wood microstructure (Figure 2) (Liese,

1951a, 2018; Schmitt & Koch, 2023). Ernst Ruska was awarded the Nobel Prize in Physics in 1986 as co-inventor of the electron microscope.

After completing his doctorate Walter Liese married Katrin Else Pabst (1952). He worked in the North Rhine-Westphalia Forestry Institute, in the wood preservative industry, and from 1953-1959 as an assistant at the Forest Botanical Institute in Freiburg. He continued his work in electron microscopy, and was habilitated as a university teacher in 1957 with the thesis "Ultrastructure of the plant cell wall" (Liese, 2013; Schmitt & Koch, 2023). His sons Andreas and Stefan were also born in Freiburg.

Early in his career, Liese was introduced to bamboo (Figure 8), the "wood of the poor", which was of interest as a possible new source of raw materials for the devastated post-war Germany. Early on, he also analysed bamboo with an electron microscope and obtained promising results for better impregnation of bamboo with preservatives. During his first extended assignment in India, Liese also familiarized himself with wide use of bamboo in Asia. Bamboo thus became and remained an important research object (Bamboo Pioneers, 2023; Escobar Destacadas, 2023; INBAR, 2023; International Bamboo, 2023). Liese also worked with colleagues from Japan (Hiroshi Harada), Australia (Alan Wardrop), China and other countries.



Slika 8. Bambus v njegovem naravnem arealu (levo) in na domačem vrtu leta 2022 (desno) (Foto: arhiv W. Liese).

Figure 8. Bamboo in its natural site (left) and in the home garden in 2022 (right) (Photo: archive W. Liese).



Slika 9. Profesorji Josef Bauch, Katarina Čufar in Walter Liese (od leve proti desni) na novoletnem srečanju Inštituta za biologijo in zaščito lesa v Hamburgu, december 2006 (Foto: arhiv K. Čufar).

Figure 9. Professors Josef Bauch, Katarina Čufar, and Walter Liese (from left to right) at the Christmas meeting of the Institute of Wood Biology and Protection in Hamburg, December 2006 (Photo: archive K. Čufar).

In 1959, Liese became assistant to Prof. Bruno Huber at the Institute of Forest Botany at the University of Munich. After Huber's sudden death, Liese had to take over teaching, administration and the demanding botanical excursions in the Alps (Liese, 2013). At the same time, he continued to use electron microscopy at the Institute for Wood Research of the famous Prof. Franz Kollmann.

In 1963, Liese and his family moved to Hamburg, where he became a professor at the University of Hamburg, head of the Institute of Wood Biology and director of the Federal Research Centre for Forestry and Forest Products (Bundesforschungsanstalt für Forst- und Holzwirtschaft). This required a great deal of energy and skill to reconcile the tasks of a professor and head of the institute under the auspices of the Ministry of Agriculture with all the associated political tasks of the era. Liese managed this balancing act with excellence and established the world-famous "Hamburg model", in which the traditional activities of the university, institute and industry intertwined (Schmitt & Koch, 2023).

The two institutes were housed in the same buildings, first in Reinbek Castle and later, from 1970, in a newly built complex in Bergedorf, on the outskirts of Hamburg (Figure 3).

The integrative management style blurred the boundaries between institute and university work



Slika 10. Na domačem vrtu v Reinbeku leta 2015 (Foto: arhiv W. Liese).

Figure 10. In his home garden in 2015 (Photo: archive W. Liese).

and the cooperation model worked perfectly. Liese expanded the research spectrum in a visionary way, from basic wood biology research to the practical implementation of wood preservation, for example. The research led to new insights into wood, from its formation in the tree to its use. This opened many doors for wood graduates from the University of Hamburg to industry and science in Germany and worldwide, and Hamburg thus became a hub for global wood research.

Liese worked in Hamburg for 28 years until his official retirement on 31 March 1991, during which time he achieved outstanding success.

In his memoirs, Liese described how he saw teaching, which he practised with great pleasure, as the main task of his profession. He took teaching seriously and invested a great deal of energy in constantly updating his lectures. He regarded contact with students in the classrooms, laboratories and on the famous excursions as his life's work, which always kept him vital. The traditional excursions abroad were also extremely informative for the students. Thanks to good contacts, they were able to familiarize themselves with the profession in Western Europe and also in Eastern Europe, which was still quite closed at the time.

Liese supervised more than 75 graduation theses and 40 doctoral theses, and he always made genuine human contact with the students. As he was sincerely appreciated by his students, he remained in contact with many of them for the rest

of his long life. Among them was Dieter Eckstein (1939-2021), who graduated under Liese's supervision (1965), obtained his PhD in 1969 (Figure 4) and became a famous professor of dendrochronology (Čufar, 2021; Čufar et al., 2024).

Dirk Dujesiefken, also graduated (1981) and completed his doctorate (1985) under Liese's mentorship (Liese, 2013), later founded the Institute of Arboriculture in Hamburg, became a professor and remained linked with his supervisor (Dujesiefken, 2023). They produced several publications together, including a very recent book on the CODIT principle (Dujesiefken & Liese, 2023).

On 31 March 1991, Liese officially retired and was appointed Professor Emeritus. He stopped teaching and no longer had any official administrative duties, but he was happy to continue his scientific work. In the next three decades he regularly visited the institute and kept in touch with colleagues, foreign guests and students and had access to the latest literature. He dealt with challenging scientific issues and continued to publish. He also gave numerous invited lectures at home and abroad, where he continued to be a regular guest as part of various projects.

He also devoted himself intensively to bamboo research, maintained personal contacts with colleagues in countries where bamboo is economically important (Bamboo Pioneers, 2023; Escobar Destacadas, 2023; INBAR, 2023; International Bamboo, 2023) and published around 150 scientific papers and books on bamboo and rattan (e.g., Liese & Köhl, 2015).

Liese has also become world-renowned as a leader in the field of scientific networking. He was very active in the IUFRO (International Union of Forest Research Organizations) (Figure 5), which was founded in 1892 in Eberswalde, where he had spent his youth. He was elected as a member of several committees and working groups and as president of IUFRO from 1977-1981 (Teplyakov, 2019).

As president, he worked hard to organize world congresses in which scientists from all over the world could be equally involved in a time of many political divisions. He succeeded in organizing the IUFRO World Congress in Asia for the first time (Kyoto, Japan, 1981), and through scientific diplomacy

made it possible for scientists from the People's Republic of China and Taiwan to participate and meet in person, which had previously been unthinkable. Liese also made an important contribution to the revival of cooperation between Western Europe and what was then Eastern Europe. The activities of Liese and his associates contributed to the creation of a Europe and a world with fewer borders.

Prof. Dr. Dr. h.c. Dušan Mlinšek (30 September 1925–15 December 2020) from the Department of Forestry, Biotechnical Faculty, University of Ljubljana, as a top Slovenian scientist of the Liese generation, worked within IUFRO and also took on leadership roles (Diaci, 2015, 2021; Teplyakov, 2019). Liese and Mlinšek shared exceptional charisma and many common interests and talents, and therefore it is not surprising that they became great friends for life.

Dušan Mlinšek was elected president of IUFRO for the period 1982-1986, succeeding Liese in this prestigious position as the first and only IUFRO president from a socialist country (Figure 5). He also invested a lot of energy in networking and put a great deal of effort into the organization of the 18th IUFRO World Congress in Ljubljana in 1986, which thus made Slovenian forestry and wood science known around the world. The IUFRO Congress in Ljubljana was strongly supported by Liese, who, among other things, actively participated in the IAWA (International Association of Wood Anatomists) activities (e.g., Shortle, 1986).

Liese became a Honorary Member of the IUFRO in 1982 and Mlinšek in 1989 (Teplyakov, 2019).

Liese was also involved in the founding of the International Academy of Wood Science (IAWS) in 1966 and was one of its first elected members. From the first issue in 1966 until 1995, he was editor of the Academy's journal *Wood Science and Technology*.

For his outstanding contribution to bringing people together and breaking borders, Liese was awarded an honorary doctorate (Dr. h.c.) by the universities of Sopron, Zvolen and Poznan and by the University of Ljubljana in 1994 (Figure 6). He was the first and remains the only honorary doctor in the field of forestry and wood science of the University of Ljubljana. The activities to award him this honour were coordinated by Prof. Dr. Dr. h.c.

Niko Torelli, for whom Liese had great respect and a lifelong friendship (Oven, 2020).

The Department of Wood Science and Technology, together with the Department of Forestry and Renewable Forest Resources in Ljubljana, hosted Liese in 2005 (Figure 7) when he attended the celebration of the 80th anniversary of Dušan Mlinšek. At that time, he gave a very interesting lecture to the students and staff of wood science and technology, in which he comprehensively presented the properties and use of bamboo. He also provided his hosts with study material for the development of lectures on bamboo, which are still given to students today. Later, when Liese began to give away his extensive library, he donated several fundamental books on wood science to the library of the Department of Wood Science and Technology in Ljubljana.

As head of the institute in Hamburg, Liese was very supportive of the Slovenian scientists who regularly visited it for scientific exchange. The author of this paper (Katarina Čufar) got to know Prof. Liese as a student in 1980 and stayed in contact with him during regular study stays in Hamburg and afterwards. Thanks to Liese and the colleagues, the guests were well looked after at the institute. It was possible to arrange study visits without any special formalities, and there was always a work corner and partners to talk about the research. In addition, it was possible to take part in all the public events at the institute, which was a centre of wood research worldwide. There were also informal meetings with coffee, cake and snacks as well as leisure activities. Liese looked after all of us who worked at the institute. He regularly walked through the institute to say hello and inform himself of the work being done and its progress. Despite a busy schedule, he and his wife Katrin regularly made time for guests from abroad, usually for a coffee at their home or for lunch in one of the city's Chinese restaurants. In this way, he also built up a community of guests from all over the world, and many fruitful collaborations resulted from these encounters.

We all had great respect for Liese and admired his incredible talents and energy, as well as his extraordinary successes. Even as a Professor Emeritus, he remained in regular contact with his global community. He learned to use innovations such as the Internet and email, which were invented and

became available after his retirement. He kept in touch with his friends and colleagues worldwide with joy and gratitude.

At Christmas 2022 and on his birthday on 31 January 2023, we exchanged our last emails, not knowing that he would soon leave us forever. But Walter Liese leaves us his scientific contributions that will live on and have a lasting impact on wood and bamboo science and beyond. We have fond memories of a great colleague, role model and friend. We will miss him very much.

ZAHVALA

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