

Special Issue Dedicated to the Memory of Professor Ayhan Ulubelen (1931-2020)



Prof. Dr. Ayhan Ulubelen who is one of the pioneers and a world-wide recognized authority in Natural Products Chemistry, has passed away on 29 November 2020 in Istanbul. Her sudden loss was very sad for us, her former PhD students, undergraduate students and her colleagues. In fact, we had planned almost a year ago, to publish a special issue in 2021 for the celebration of the 90th birthday of Professor Ulubelen in the journal "Records of Natural Products". Professor Ulubelen was the honorary Editor of this journal since its first issue published in the year 2007. Unfortunately, her unexpected loss didn't allow us to celebrate her 90th birthday. Therefore, we now publish this special issue to commemorate her valuable achievements

and contributions to Natural Products Chemistry, to science and to education.

Professor Ayhan Ulubelen was born in Istanbul in 1931. She completed her undergraduate education in Chemistry (B.Sc. degree, 1951) at Istanbul University and she was appointed to the Faculty of Pharmacy in Istanbul University in 1952. She obtained her Ph.D. in Analytical Chemistry at the same Faculty in 1956 under the supervision of Prof. Dr. Rasim Tulus. She worked as a Fulbright fellow at the College of Pharmacy of the University of Minnesota as a post-graduate between 1960-1962 with Prof. Ole Gisvold on the chemistry of *Digitalis* glycosides. She returned home in 1962 and joined again the Faculty of Pharmacy at Istanbul University as an Assistant Professor (1962-1967). In 1963, she was invited by Prof. Jack R. Cole, Dean of Faculty of Pharmacy at Arizona State University to work on the cancer research program on "The Screening of Plant Extracts Rich in Glycoproteins" as an NIH contractor (1963-1967). In these first years of her career, she obtained three times the American Pharmaceutical Association Young Scientist Award (1962, 1963, 1964). When Professor Ulubelen was back home, she became a full Professor (1967) and the Head of the Department of General Chemistry at the Faculty of Pharmacy, Istanbul.

Throughout these years Professor Ulubelen has searched the secondary metabolites of over a hundred plants, and investigated their chemical properties and their biological activities. Her research has focused on the isolation and structure elucidation of diterpenoids, triterpenoids, alkaloids and flavonoids from Turkey and foreign country plants. She is a forerunner in phytochemical research in Turkey, and the main part of her studies consists of *Salvia* diterpenoids and *Delphinium* diterpene alkaloids. She has also investigated many plants growing in Turkey including various species of the Lamiaceae (*Salvia*, *Thymbra*, *Teucrium*), Ranunculaceae (*Delphinium*, *Aconitum*, *Consolida*), Rutaceae (*Ruta*, *Haplophyllum*), Asteraceae (*Achillea*, *Centaurea*, *Haplopappus*, *Pulicaria*), and Umbelliferae (*Smyrniium*, *Ferula*) families.

Prof. Ulubelen has worked with distinguished scientists; with Prof. Hieldebert Wagner first in Munich (1969), and then in Regensburg (1976), and in later years with Prof. Wolfgang Voelter in Tubingen (1992) as a visiting Professor with DAAD fellowship. Unfortunately, Prof. Voelter has passed away on 21 January 2021, just after 50 days of the loss of Professor Ulubelen. In fact, they were very close friends. She has also worked with Prof. Shoji Shibata at the University of Tokyo in 1977 with a JSPS Grant, Their friendship had continued until the death of Professor Shibata on 12 July 2016. She

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has visited Prof. T. J. Mabry's labs for several times to work together on plants rich in flavonoids between 1980-1981 and 1993-2000 through NATO grants. She has also collaborated with Prof. Dr. Attur-Rahman and his group from Karachi University within the last 25 years. Professor Ulubelen was bright, warm and distinguished and she was able to pursue her collaboration and friendship with her colleagues. During her studies of over 65 years, she has published more than 320 articles, authored 2 books, and 12 book chapters in international books. Her works have received almost 5000 citations in WOS (almost 8000 citations in Google Scholar), so far. During her consultancy in the Division of Plant Chemistry at Marmara Research Center (MRC) at TUBITAK where I was then a young researcher, the group published about 100 articles. Ayhan Ulubelen's contributions have been recognized by the awarding of many honours including honorary membership to the Chemical Society of Turkey (first time ever this award was given, 1985), membership to the NATO Scientific Committee (selected from among ten NATO countries, 1986-1990), the Science Award by TUBITAK (the Scientific and Technological Research Council of Turkey 1991). She was also chosen as a full member (1994-2001) of the TUBA (Turkish Academy of Sciences) and then as an honorary member since 2001. She also served in the Chemrawn Committee of IUPAC first as an associated member, and then as a full member (2003-2009).

Besides a brilliant and productive career of over 65 years which has been devoted to the discovery of bioactive natural products, Professor Ulubelen has mentored many graduate students. About 10 of her PhD students have proceeded to prominent positions in the academia, and I am proud to be one of the 8 women professors among her former PhD students. Some of her other students took position in pharmaceutical and chemical companies, and most of them preferred to serve as public pharmacists.

One of the most important features of Professor Ulubelen was her ability in teaching the most difficult subjects of chemical science in the easiest and most understandable way without compromising the quality. She lectured in General Chemistry, Organic Chemistry and Analytical Chemistry besides Phytochemistry, and particularly Natural Products Chemistry for over 40 years. All through these years she has radiated her enthusiasm in research, her motivating energy and her joy at working on the bench in the laboratory. Her dignity originated from her bright mind and problem-solving approach. A brilliant intellectual, an avid reader with unbounded curiosity for the world, she has been a role model for her students. We are lucky and privileged to have known and worked with her. We will always remember her as an outstanding scientist, an intellectual, a charming warm personality and a most beloved teacher. She will always live in our hearts...

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