Mehmet Ozan Sungurlu, the Legendary of Turkish Petroleum Geologist

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Abstract. On the occasion of the 100th anniversary of the Republic of Türkiye, I would like to pay tribute to M. Ozan Sungurlu (1939-1990), the most important Turkish field and petroleum geologist. He pioneered geological observations throughout Türkiye. His scientific work was published in several articles, many of which were co-authored by Turkish academic geologists. His work (TPAO report no 871) on Southeast Türkiye is considered a classic and was enriched by his detailed

10   geological map. This article was written in memory and appreciation of M. Ozan Sungurlu, who made a great contribution to the petroleum geology of Türkiye and whose sectoral importance in the world is undisputed.

On the occasion of the 100th anniversary of the Republic of Türkiye and decades after the loss of a famous representative of field geology, the attempt to illustrate his personality through successors is a difficult endeavour as long as his contemporaries

15   are deceased and no direct reports are available. In such a context, only a professional biographer who has most of the necessary documents — the totality of which is usually only a wish — can achieve a satisfactory result. However, this is extremely rare. I find myself in such a situation when we try to understand the bright sides of the personality traits and work of one of the leading personalities of field geology in Türkiye. M. Ozan Sungurlu (1939–1990), thirty-three years after his death, is not intended to be an exhaustive analysis of his life and work. The "*Tribute to the Master*" by Balkaş (2014) and the recently

20   published book *"My Brother Ozan Sungurlu"* by Dervişoğlu (2022) have provided a wealth of detail on the subject.

The author would like to pay tribute to M. Ozan Sungurlu, who is an outstanding field geologist who evokes deep gratitude in the hearts of his many friends and colleagues for the benefit of our country and TPAO. The life and work of pioneer geologists such as M. Ozan Sungurlu represent a historical and fundamental reference point that present and future generations of geoscientists should remember. He handed down a wealthy legacy to all geologists. He bountifully shared his all-inclusive

25   experiences and affected them with his endless wonder. He was also a great intergenerational geologist, a motivating friend, and an excellent administrator.

M. Ozan Sungurlu was a Turkish geologist who was born in Gümüşhane, on October 20, 1939. His parents were Süleyman Faik Sungurlu, a government officer, teacher, and folk poet, and Hatice Sungurlu, a housewife. He was the last of seven children. After primary and secondary school in Gümüşhane. The child and the adolescent then followed the path of learning.

30 Even though he was not one of the brightest students, he was good at the subjects that interested him (Dervişoğlu, 2022). However, his teachers provided him with valuable background knowledge that formed the basis for his later career. However, as is common at this age, those who have chosen a profession that follows their passion are usually diligent and smart students. He attended high school in Eskişehir in 1956. He graduated from İstanbul University with a diploma in geology and received a Bachelor of Science degree in 1964. There is no known about his geology studies at the University of İstanbul. On December

35 22, 1965, he married his colleague Ms. Bilge from İstanbul University. Bilge earned a bachelor's degree in geology from Istanbul University. She was a devoted wife and life partner who always had Ozan's best interests at heart (Dervişoğlu, 2022). They have two children, Faik Sungurlu and Ebru Sungurlu.

M. Ozan Sungurlu began his career as a field geologist at the Mineral Research and Exploration Institute (MTA) between 1964 and 1967 and attended the exploration group of the Turkish Petroleum Corporation (TPAO) in 1969. His extremely valuable

40 contributions to the exploration effort led to his appointment as a vice manager of the Exploration Group in 1980, manager of the Exploration Group in 1984, and Vice President of TPAO in 1989. His dedicated, thorough, and scientific work throughout his life rightly earned him a reputation as an exemplary geologist and manager. He was President of the Turkish Association of Petroleum Geologists from 1980 to 1981.

His interest in integrated geological processes, where he became a researcher who used data and field relationships to challenge

45 established dogmas for the geological problems in Türkiye. His extraordinary interest in the fundamentals of geological thinking drove him to solve the complex regional geology of Türkiye, especially the events from the Mesozoic to the present. He continued to be professionally active and published on the structural geology of southeastern Türkiye and the regional geology of the Turkish part of the Tethyan region. He also contributed importantly to the geological studies of both TPAO and universities. M. Ozan Sungurlu's credibility as a person of wholeness allowed him to be a bridge between TPAO and

50 universities. Particularly, 1980-1990, released new fieldwork works to be produced in several studies that mentioned a new attribute of petroleum geology. For his colleagues and friends at Istanbul Technical University (İTU), Şengör et al. (1991) M.

Ozan Sungurlu was: *"This extraordinary interest in earth sciences, combined with his superior intelligence and comprehension power, made him the greatest geologist in Türkiye has ever been".* He earned the love and respect of all, not only through his achievements but also through his humble personality, as a sensitive, thoughtful, compassionate person, sincere and loyal

55 friend, and his love of humanity. His colleagues and friends found his sudden death unacceptable and are convinced that he will make many more contributions to his country and his profession. He dedicated his time, energy, and skills to uphold the highest professional standards (Balkaş, 2014).

M. Ozan Sungurlu emphasized the great importance of careful surveys and thorough analyses and repeatedly called on geologists to carry out field studies, especially those that precede the field, and to summarize all new data on the regional

60 geology of petroleum areas in Türkiye (Balkaş, 2014). It amazed one at the diversity of its geological activity, his amazing working capacity, and its wealth of energy. However, it is worth noting that he should note the diversity of geological activity, amazing working capacity, and wealth of energy in the petroleum areas of Türkiye. has a unique style. His studies interacted strongly with the best Turkish geologists represented by men such as İhsan Ketin, A.M.C. Şengör, Yücel Yılmaz, Naci Görür, Fuat Şaroğlu, and Necdet Özgül. He tirelessly spent many years in field research, gained extensive mapping experience, and

65 mastered analysis and synthesis. Based on this comprehensive knowledge of regional geology, M. Ozan Sungurlu, through his brilliant problem-solving skills in field geology, made effective predictions of new petroleum prospects and later realized these predictions through exploration. The enormous efforts and skills to which he has contributed have borne fruit worthy of him. TPAO Report No. 871 is the best report of its time and the best report he wrote. Thanks to this report, the understanding and interpretation of the northern territories were achieved (Balkaş, 2014). He impressed everyone with his gentle charisma, the

70 clarity of his presentation, and the thoroughness of his argumentation. He captivated everyone with his study of general geology in different parts of Türkiye. He presented every geological problem in his studies in a rich and fantastic aspect. He had a fascinating memory for the meticulous elaboration of the geology of all parts of Türkiye. He emphasized the need to study more intensively the general problems of our country such as regional geology, stratigraphy, tectonics, and especially paleogeography. He encouraged all academics to work intensively on field geology and to carry out extensive studies.

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75   In 1991, M. Ozan Sungurlu received the '*TÜBİTAK Service Award*' from The Scientific and Technological Research Council of Türkiye (TÜBİTAK) for his work that significantly increased our country's oil and gas production through the promotion and studies initiated by the Turkish Petroleum Corporation (TPAO) in collaboration with universities.

As a sign of TPAO's loyalty to M. Ozan Sungurlu, this well was named M. Ozan Sungurlu-1 after the oil discovery in the Karadut-1 well in 1991. The field was subsequently developed and organized as an "*Ozan Sungurlu oilfield*". In 1991, his

80   colleagues and the oil industry organized the *"Ozan Sungurlu Symposium Proceedings"* under the title *"Tectonics and Hydrocarbon Potential of Anatolia and Surrounding Regions"* and published scientific literature to honour his name and try to pass on his ideals to future generations. The valuable contributions of the symposium were summarized in a book that will be a lasting work for all geoscientists. In addition, a special issue of the TPJD Bulletin was published in 1992 by the Turkish Petroleum Geologists Association in memory of M. Ozan Sungurlu (Balkaş, 2014).

85   The Ozan Sungurlu Foundation for Science, Education, and Aid was founded in 1991 by his colleagues to honour his name and has been operating for over 30 years with the support of his family. Since 1991, the foundation has awarded non-repayable educational scholarships to support financially disadvantaged geoscience students and the children of deceased TPAO employees who require assistance. During this time, hundreds of students were awarded scholarships. It is his wish to honour the memory of the late M. Ozan Sungurlu by ensuring that the service of the Foundation will continue for many years to come

90   (Balkaş, 2014).

In 2001, due to the support and contributions of Prof. A.M.C. Şengör, the American Association of Petroleum Geologists (AAPG) decided to award an honorary award in the name of M. Ozan Sungurlu to a successful international student to be selected every year. M. Ozan Sungurlu has been a shining example for many young geologists by giving them the opportunity to receive an international education and learn modern geological thinking overseas. He has also encouraged TPAO's

95   participation in international meetings.

M. Ozan Sungurlu, vice president of TPAO, passed away on November 27, 1990, as a result of a tragic traffic accident. He was on his way to field studies and could not be saved despite all efforts at the age of just 51. Almost 33 years after the death of this illustrious and extraordinary Turkish geologist, this humble compilation of his life and character intends to serve as a tribute, an homage, and an inspirational example to future generations of geoscientists in Türkiye and in the rest of the world.

100   His warmth, almsgiving, and enthusiasm for exploration made science a source of enormous inspiration for all those who

worked in TPAO. The community of TPAO has been sorely missing his presence.

Finally, M. Ozan Sungurlu is honoured as one of the pioneers of geology in Türkiye, who dedicated his life to the country and

the study of geological science and left an example of a noble and fruitful life that deserves international recognition. He was

an outstanding field geologist and a true patriot who always worked to improve the socio-economic conditions of the country.

105   His example will continue to inspire and encourage new generations for many years to come to face the scientific challenges

ahead and continue to explore the geology of Türkiye.

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125 **M. Ozan Sungurlu's Selected Bibliography from TPAO Archive: His Contributions to Field Geology in the Türkiye**

Sungurlu MO, Soytürk N (1970). Sivas havzası ve civarının jeolojik etüdü: TPAO Arama grubu rapor no 482.

Gümüş Ö, Sungurlu MO (1970). Antalya civarında yapılan jeolojik etüt hakkında not: TPAO Arama grubu rapor no 644.

Sungurlu MO (1971). İstanbul boğazı-Bulgaristan sınırı arasında Karadeniz kıyı olanaklarının jeolojisi: TPAO Arama grubu rapor no 535.

130 Sungurlu MO (1972). Teke yarımadası doğu kısmının jeolojisi: TPAO Arama grubu rapor no 712.

Sungurlu MO (1973). VI. Bölge Gölbaşı-Gerger arasındaki sahanın jeolojisi. TPAO Arama grubu rapor no 802.

Sungurlu MO (1974). VI. Bölge kuzey sahalarının jeolojisi ve petrol imkanları: TPAO Arama grubu rapor no 871.

Sungurlu MO (1975). Sinop sahalarının petrol imkanları: TPAO Arama grubu rapor no 908.

Sungurlu MO (1978). Doğu Toroslarda yapılacak saha çalışmaları için öneriler: Arama grubu rapor no 1225.

135 Sungurlu MO, Açıkbaş D, Perinçek D, Balkaş Ö (1978). Körkandil ölçülmüş stratigrafik kesiti: TPAO Arama arşiv no 7880.

Sungurlu MO, Arpat E (1978). Türkiye doğu kesiminin jeolojisi ve beklenir kabuk yapısı. TPAO Arama grubu rapor no 1204.

Açıkbaş D, Sungurlu MO, Akgül A, Erdoğan T (1979). Geology and petroleum possibilities of Southeast Turkey. TPAO Arama grubu rapor no 1410.

Yılmaz Y, Sungurlu MO, Perinçek D (1979). Cilo dağlarında eski bir okyanus kabuğu? Türkiye Jeoloji Kurumu, Altınlı
140 sempozyumu, özel sayı, s, 45.

Şengör AMC, Yılmaz Y, Sungurlu MO (1984). Tectonics of the Mediterranean Cimmerides: nature and evolution of the western termination of Palaeo-Tethys. Geological Society, London, Special Publications, 17, 112 - 77.

Sungurlu MO, Perinçek D, Kurt G, Tuna E, Dülger S, Çelkdemir E. Naz H (1985). Elazığ-Hazar-Palu alanının jeolojisi. Petrol İşleri Genel Müdürlüğü Bülteni, no 29, s. 83-189.

145 Ketin İ, Sungurlu MO (1992). GDA'da kenar kıvrımları kuşağı içinde yer alan Çermik-Kevan antiklinalinin jeolojisi hakkında tarihsel bir inceleme: TPJD Bülteni,4,1, s, 1-8.

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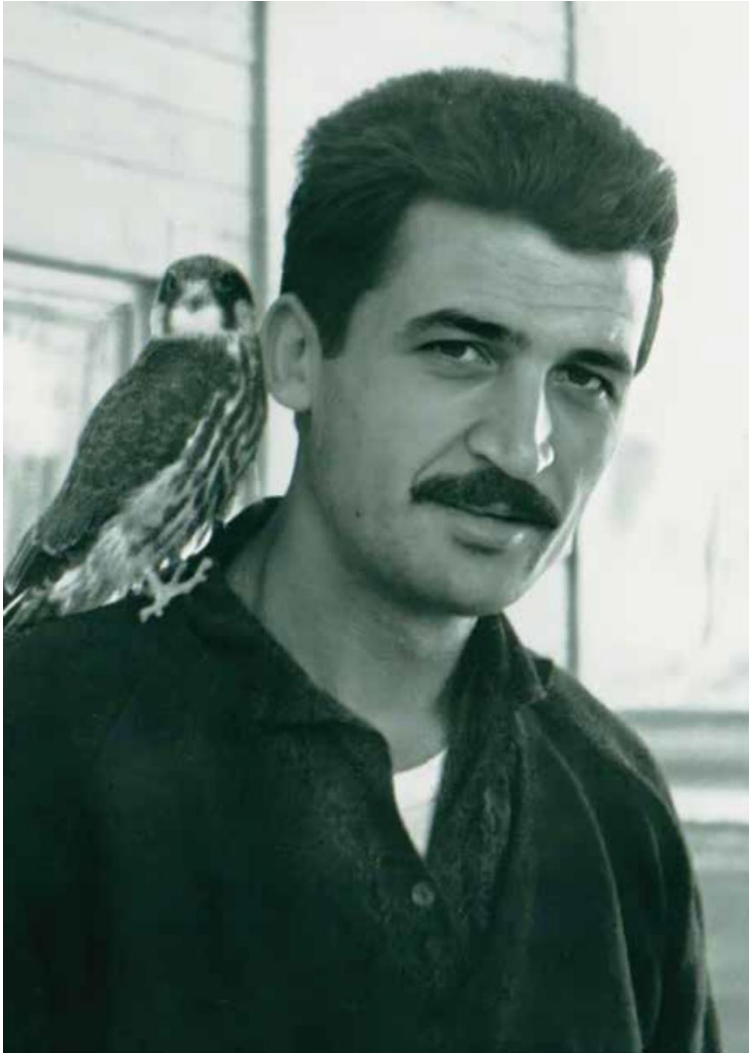
Figure 1: A photo from fieldwork 70's in Adıyaman SE Anatolia (from Dervişoğlu, 2022)

References

Balkaş, Ö.: Tribute to Masters- Mehmet Ozan Sungurlu (1939-1990). 67th Geological Congress of Turkey, TMMOB JMO,

155   14 th April, Ankara, 2014.

Dervişoğlu, S. G.,: Kardeşim Ozan Sungurlu, s, 91. 2022.

Şengör, A.M.C., Okay, A.I., Görür, N.,: Ozan Sungurlu'nun ardından: Büyük bir doğa bilimci. Cumhuriyet Gazetesi - Bilim
ve Teknik Dergisi, s, 4. 1991.