İhsan Ketin (1914–1995): Innovative Mind in a Conservative Society with No Scientific Tradition

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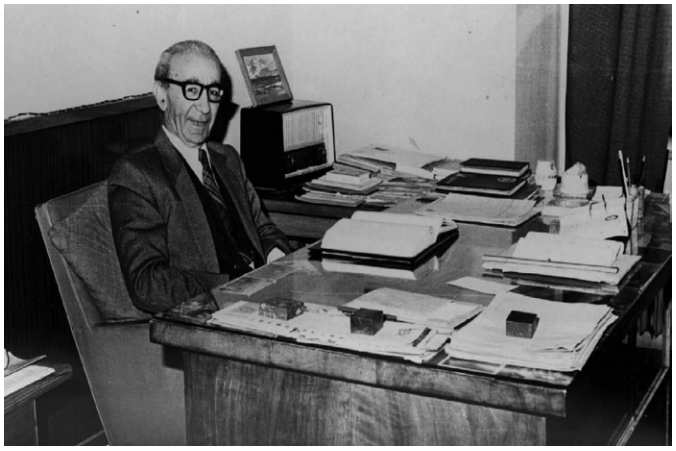

Professor İhsan Ketin (1914–1995) in his office at the ITU.

CHILDHOOD YEARS AT THE FOOT OF A VOLCANO

İhsan Ketin, the nestor of Turkish geologists, was born in the spring of that eventful year 1914, in the central Anatolian town of Kayseri (classical Mazaca, Caesarea of the Romans), into a poor family. As a child, he was captivated by the beauty of the majestic volcano of Erciyes (Mt. Argaeus of the ancients), which towered over his city of birth. His family took summer holidays on the flanks of the volcano, creating in him a binding love of nature. Ketin's outstanding academic abilities were noticed early, and he was able to attend high school in his hometown, one of only eighteen high schools that existed in Turkey at the time. His education was supported by a state scholarship provided by the new Turkish Republic, founded in 1923 by the great visionary Mustafa Kemâl Atatürk (1881–1938) out of the ruins of the Ottoman Empire.

Atatürk was determined to transform his country into a modern society. To that end, he sent scores of young people to various European countries on state scholarships to become educated. They were to return home and become high-school teachers who would educate the youth of Turkey in the principles of modern science and humanities. Ketin was one of those chosen. In 1932, 18-year-old Ketin was sent to Berlin to study geology.

TO GERMANY IN THE 1930s

The Berlin of 1932 was a chaotic place. Raging inflation and rampant terror greatly disturbed the quiet youth from Anatolia. Adding to Ketin's discomfort was the dogmatic teaching style of Hans Stille (1876–1966), with whom he was assigned to study. A chance conversation with a more senior Turkish student gave him the idea to move to Bonn, where the great German geologist Hans Cloos (1885–1951) held sway. A more fortunate choice cannot be imagined. Ketin and Cloos rapidly warmed to one another, and Cloos realized that sending Ketin back to Turkey with only a bachelor's diploma would be a terrible waste. He arranged with the Turkish authorities in Berlin to extend Ketin's scholarship to enable him to complete a doctorate.

Ketin's Bonn days were happy, although after the Nazis came to power in 1933, academic freedom was significantly curtailed in the universities. Cloos managed to protect both his institute and his students, especially the foreign students who came from societies such as Turkey that were not well regarded by the Nazis. Ketin fondly remembered the Saturday tea parties thrown by Mrs. Cloos in the garden of the institute, where discussion topics ranged from geology to general culture. Later, Ketin's colleagues and students (including the author) were impressed with Ketin's deep knowledge of European culture, especially classical music.

TECTONICS OF TURKEY

Ketin completed his doctorate in 1938. He returned to Turkey and was appointed an assistant professor at the University of Istanbul, which had been revitalized in 1933 by the sweeping reforms of Atatürk. A year later, in December 1939, Ketin's career research agenda was set when the North Anatolian Fault awakened from its century-long slumber. A catastrophic earthquake with a moment-magnitude of 7.8 claimed the lives of approximately 33,000 people, injuring an additional 100,000, and reducing the city of Erzincan to a heap of ruins. This was followed in rapid succession by a series of earthquakes along a zone in northern Turkey that had been interpreted as a "cratonic break" or "cicatrice" by both Turkish and foreign geologists who had been working in the country. Ketin realized that such "interpretations" were mere words; they contributed nothing to our understanding of the nature of the structure. In 1948, Ketin published his classic paper on the North Anatolian Fault, which he interpreted to be a major, active, strike-slip fault. This was a time when even the interpretation that the San Andreas Fault was a strike-slip fault was subject to debate. Ketin inferred that portions of Turkey on the south side of the North Anatolian Fault were drifting westward (he used the word "Westdrift") relative to areas to the north. He also noted that areas to the south were seismically relatively quiescent. He reasoned, therefore, that either the whole of Africa was drifting westward with respect to Eurasia, or another fault existed south of what he called the Anatolian block. That prediction was verified by another catastrophic earthquake in 1971 on a left-lateral fault (later named the East Anatolian Fault). This study and Ketin's continuing work on the neotectonics of Turkey played an important role in the development of the understanding of continental deformation (Şengör and McKenzie, 1997).

Ketin's studies also showed that the big crystalline massifs in Turkey, the Menderes in the west and the Kırşehir in the center, were young structures, products of Alpide evolution, not old "median masses." He realized that Turkey was an asymmetric orogen that developed from north to south, just as Eduard Suess had earlier surmised. That model had been rejected by Kober and

A very characteristic photograph: Ketin (fourth from left) in the field in 1987 with his colleagues A.M.C. Şengör (second from left), Bulgarian geologist Georgi Chatalov (third from left, embracing Şengör and Ketin), Ali Polat (far left, an undergraduate student at the ITU, now professor at the University of Windsor in Ontario, Canada), and Sancar Kasar (extreme right, a Turkish petroleum geologist). During this excursion Chatalov and Ketin identified a tectonic window in the Strandja Mountains.

Stille in favor of their own symmetric orogen model, which remained dominant until plate tectonics showed that it was wrong. In 1966, Ketin brought out his mature views on the tectonics of Turkey in a paper clearly delineating the main tectonic units of the country. Those views still form the basis of modern work on the paleotectonics of Turkey, similar to the fundamental role his 1948 paper played in elucidating the neotectonics of the country.

A KIND AND OPEN-MINDED MENTOR

Ketin loved to go into the field with colleagues and students. He enjoyed a good wine and a good argument in the evenings with them, perhaps harkening back to the tea parties in the garden of the Bonn institute in his student days. All of these were very uncharacteristic of most of the stuffy Turkish professors. Ketin said he acquired his free and friendly habits from Cloos, as a young student. I recall as a high-school student myself, sitting cross-legged on Ketin's desk, congenially arguing with him about the nature of the Bursa Depression, when one of his stuffier colleagues walked into the room and was clearly shocked to see a young student sitting on the master's desk, arguing with him! Such was the atmosphere Ketin had created. When a colleague or a student pointed out a mistake he had made, he was genuinely pleased and encouraged the publication of a correction. In 1984, I pointed out to him that on his 1946 map of Uludağ (one of the three mythological Olympuses), south of the city of Bursa, he had misidentified the Triassic mélange as Permian schist. After he went into the field with me and convinced himself that I was right, he asked me to publish the correction. I told him that if I did that, in the conservative patriarchal society of Turkey, people would say that "the upstart assistant was trying to embarrass his master," and they would not believe me. But if he published it himself, admitting his mistake and correcting it, it would make an impact. He did just that in 1985, in a symposium volume published in his honor upon his retirement. Ketin was interested in truth, not authority.

Ketin was an extraordinary personality. He was kind, modest, and soft-spoken, but he did not tolerate mediocrity and idleness. In 1942, he had married the geography teacher Bedia (née Alpün). They had three sons, one who died in 1945 and another in 1969. He buried the great pain in his bosom and, while providing psychological support for his bereaved wife, did not permit his family's misfortunes to impair his work. He was a dedicated teacher and wrote the best (in some subjects, the only) geology textbooks in Turkey. When he was head of the department, he required nothing of the other members but to do good research. The research he valued most was that which contributed something genuinely new to geology. His own work, based on observations made in Turkey, significantly contributed to the development of tectonics in the twentieth century.

Ketin was honored with an honorary fellowship by The Geological Society of America, a foreign membership by the Geological Society, London, and a Steinmann Medal by the Geologische Vereinigung. The Bonn Institute renewed his doctorate with an honorary "golden doctorate" at the fiftieth anniversary of his obtaining his original degree. He also received the highest awards of the Turkish Council of Scientific Research and Technology and the Geological Society of Turkey, and he was an honorary member of the Turkish Academy of Sciences. He was one of Cloos' students to whom Cloos dedicated his delightful book *Conversation with the Earth*.

Ketin's influence on geological studies in Turkey can hardly be overstated. At the time of his return from Germany, there was very little modern geological research activity in Turkey. In contrast, by the end of his career, Ketin had played a major role in creating a globally respected, indigenous geological research community. The greatness of this accomplishment can only be appreciated properly by those closely familiar with societies in which no scientific tradition exists. One of Ketin's lasting legacies is the wide range of opportunities he created for his younger colleagues and students. He used to say that this was his attempt to pay back Atatürk for the opportunities he himself had been given.

FURTHER READING

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