

Autobiography by Michael Polanyi

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Contribution to "Midcentury Authors".

Michael Polanyi (March 11, 1891 -

I was born in Budapest, into a family which for some time had achieved prosperity as manufacturers, mill owners, and the like. In my father's generation they entered the professions and when I was born, a beginning had been made of a home of some intellectual ^{Ambitions} distinction. When I was eight years old, my father who as a civil engineer had been constructing railways in Hungary and financing them, lost his considerable fortune. My older brothers and sisters, whose education until then had been in the hands of tutors and governesses, were sent to schools and I myself, the fifth child, entered school too. My father died when I was 14 and we were left in ^{Straitened} ~~straightened~~ circumstances, which obliged me to earn my living henceforth by tutoring rich schoolboys. At the same time, my mother, a woman of great intellectual charm, became the centre of friends comprising most young painters, poets, novelists and scholars of the new generation in Hungary.*

I grew up in this circle, ^{dreaming of great things.} ~~taking it for granted that I would do great things.~~ ~~Already~~ At school I started to produce scientific theories and literary essays, on subjects of which I knew ^{nothing} little. I was about 18 when George Polya, a fellow-student a few years my senior, who was to become a great mathematician, warned mother: "Michael walks alone, he will need a strong voice to make himself heard". Today at 75, my voice has not yet carried far; I shall die an old man as an infant prodigy.

While a student of medicine (as which I had entered the University of Budapest at seventeen) I published a few scientific papers of negligible importance; my real entry to a scientific career occurred in my fifth academic year. In the summer of 1912 I had spent a few weeks at the Technische Hochschule in Karlsruhe (Baden), where I made an impression on Professor Bredig by my

* See Paul Ignatus, The Hungary of Michael Polanyi, in The Logic of Personal Knowledge, Routledge, London 1961.

familiarity with the Third Law of Thermodynamics, which at that time was still regarded as a novelty. I had an idea, that the Third Law - which applies to the absolute zero of temperature - would also hold at extreme pressures. Back in Budapest, I set aside my medical studies and worked frantically for six months in developing this theory. The product was sent to Professor Bredig in Karlsruhe for approval. Not feeling competent to judge my paper, Bredig forwarded it to Einstein. The manuscript came back with the words "I like the paper of your Mr. Polanyi very much".

Bang, I was created a scientist. The paper was published at full length in the principal German journal of physical chemistry in Leipzig. I expected to hear from all sides about my discovery of a new law of thermodynamics; but nobody paid attention to it. I was unknown, my ideas were above the heads of many and seemed unexciting to those who understood them. The paper was really not important and since I did not pursue it further, it was soon forgotten.

The following year, having concluded my medical course, I went back to Karlsruhe as a student of chemistry. By the end of the academic year I had produced and published a number of theoretical papers, among them one on adsorption, which is the condensation of gases on the surface of solids. In August 1914 the war broke out and I joined up as a medical officer. But in 1916, during an illness in hospital and while recuperating afterwards, I finished my theory of adsorption and presented it to the University of Budapest as a thesis for the Ph.D.

The Professor of mathematical physics, to whom my paper was assigned, had never heard of my subject matter. He studied my work bit by bit and then asked me to explain a curious point: my result seemed correct, but its derivation faulty. Admitting my mistake I said that surely one first draws one's conclusions and then puts their derivation right. The professor just stared at me.

However, this way of following my nose without proper guidance was to have peculiar results. My theory was acclaimed at first, but soon after declared unscientific, impossible. I had conceived it in ignorance of the discoveries made two years earlier by Debye and Bohr, which apparently excluded the possibility of the lines I had adopted. Acclaim had come from people as ignorant as myself of the new discoveries. Then, after 10 to 15 years, it turned out that I had been ~~quite~~ right. But my theory had been discredited too long, and though it is now well established, the whole subject matter is still darkened by long standing error. I have told this story in Science in September 1963 (Vol. 141, p. 1010-1013).

I shall skip my main scientific work between 1918 to 1948. My notes, ⁴ ~~when~~ published, will show how this work continued to benefit and also to suffer from my defective schooling and excessive speculations. Icarus-like I flew so near the sun that my wings were ever in danger of melting away. I shall skip also my work on Soviet Economics (1935) and my Full Employment and Free Trade (1945), which first derived from the Keynesian theory the policy of deficit financing as the bulwark of capitalism.

I believe that I came into my true vocation in 1946 when I set out on the pursuit of a new philosophy to meet the need of our age. My way of starting ~~off~~ with little or no schooling was wholly beneficial here. For a sound knowledge of philosophy makes the necessary radical advances extremely difficult, One must shoot here first and ask questions afterwards, as I have always done - for better for worse.