

POLANYI, MICHAEL (March 11, 1891–), British scientist, social scientist, and philosopher, writes; "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. 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 fourteen and we were left in straitened 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 young painters, poets, novelists and scholars of the new generation in Hungary.

"I grew up in this circle, dreaming of great things. At school I started to produce scientific theories and literary essays, on subjects of which I knew nothing. I was about eighteen 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 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 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



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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 ten to fifteen years, it turned out that I had been 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 and 1948. My notes, if 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 of 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 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 or worse."

Michael Polanyi, the son of Michael Pollacsek and the former Cecilia Wohl, began his career in 1923 at the Technische Hochschule in Berlin, at the same time becoming a member of the Kaiser Wilhelm Institute for Physical Chemistry. He left Germany in 1933 and went to England as Professor of Physical Chemistry at Victoria University, Manchester. As a scientist Polanyi has interested himself in a great variety of subjects—among them X-ray crystallography, plasticity, adsorption, chemical reaction kinetics, bond energies, and polymerization. The quality and importance of his work was such that in 1944 he received the immense distinction of election as a Fellow of the Royal Society.

Meanwhile Polanyi's willingness to "follow his nose" had led him into an assortment of fields far removed from physical chemistry. Thus the pamphlet *U.S.S.R. Economics* (1936) was followed by *The Contempt of Freedom*, in which he argued that liberty, which survives only if it can develop, was impossible under the Soviet system. The restrictiveness of Marxist doctrine is also discussed in *Science, Faith and Society*, while *Full Employment and Free Trade* reflects Polanyi's adherence to Keynes's economic theories and his disapproval of the ways in which these theories have been applied.

Polanyi's growing interest in the social sciences was confirmed when in 1948 he exchanged his chair in physical chemistry at Victoria University for one in social studies. His work on liberty, best approached perhaps through the essays collected in *The Logic of Liberty*, led to his principal achievement as a philosopher, the doctrine of tacit knowing.

Polanyi has always believed (as he says above) that "one first draws one's conclusions and then puts their derivation right." The doctrine of tacit knowing develops from this attitude, stating that we know far more than we can express, far more than science has yet confirmed. Polanyi believes that this tacit dimension of knowledge is the source of man's infinite potential, and for this reason opposes any political or intellectual system which tends to limit freedom of thought. The notion that belief precedes understanding is developed in *Personal Knowledge* and *The Tacit Dimension* into "a sweeping humanist epistemology in which science, the arts and humanities are seen as unified."

Many academic philosophers tend to dismiss Polanyi's philosophical writings as no more than "a lively discussion of the personal element in the work of thought," but this view is by no means universally accepted, as Fay Sawyer's comments in *Ethics* (October 1960) suggest: "Almost any reader of Polanyi's works can ferret out alleged facts to dispute. A restrained Anglo-Saxon critic is likely to react with distaste to many of the impassioned, not to say overblown passages. More disturbing is the number of undefined terms and improbable usages. . . . Polanyi is no philosopher's philosopher. He was an outstanding scientist and is now struggling—not altogether successfully—to make systematic and coherent a large view. . . . He has constructed an interpretation of all knowledge which is both illuminating and consistent. Apart from the relatively picayune objections noted earlier, the residuum of incoherence may be due to the absence of any rigorous metaphysics, which might rationally . . . have related the various parts of Polanyi's philosophy."

Michael Polanyi was married to Magda Kemeny in 1920 and has two sons. He retired in 1958 from Victoria University, where he is now professor emeritus. Polanyi has taught as a visiting lecturer or professor at a number of British universities, and in the United States at Chicago, Virginia, Berkeley, Yale, and Duke. He was a senior research fellow at Merton College, Oxford, in 1959-1961; distinguished research fellow at the University of Virginia in 1961; fellow of the Center for Advanced Study in the Behavioral Sciences at Stanford in 1962-1963; senior fellow at the Center of Advanced Studies, Wesleyan University, in 1965. He holds honorary degrees from nine English and American universities.

PRINCIPAL WORKS: *Atomic Reactions*, 1932; *U.S.S.R. Economics*, 1936; *The Contempt of Freedom*, 1940; *Full Employment and Free Trade*, 1945; *Science, Faith and Society*, 1946; *The Logic of Liberty* (essays), 1951; *Personal Knowledge*, 1958; *The Study of Man* (lectures), 1959; *Beyond Nihilism*, 1960; *The Tacit Dimension*, 1966; *Knowing and Being* (essays), 1969.

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dom, Berlin, 1960; History and Hope, 1962; The Logic of Personal Knowledge: Essays Presented to Michael Polanyi, 1961; Who's Who, 1973. *Periodicals*—American Anthropologist October 1960; Christian Scholar March 1960; Ethics July 1967, April 1969; Journal of Religion January 1966, April 1968; Nature January 3, 1948; Religion in Life Spring 1965; Review of Metaphysics June 1960; Science September 1963.

POLI, UMBERTO. See "SABA," UMBERTO

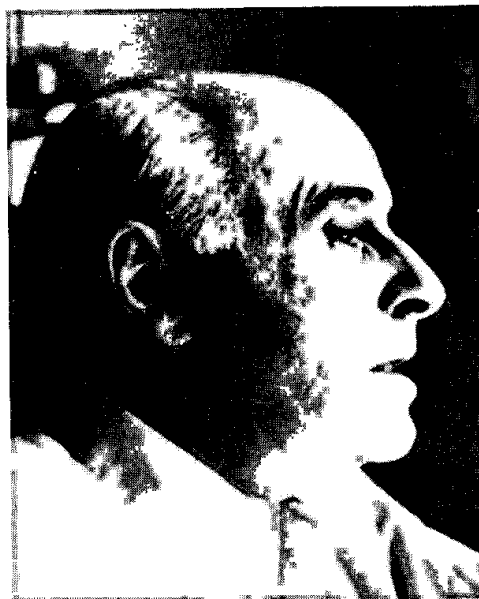
***PONGE, FRANCIS** (March 27, 1899–), French poet and critic, was born in Montpellier, the son of Armand Ponge, a bank director, and the former Juliette Saurel. He attended schools in Avignon and Caen, and the Lycée Louis-le-Grand in Paris, and served briefly in the army. Further studies in literature and law qualified him to enter the École Normale Supérieure, but at that point he decided to devote himself to writing. His first poems appeared in *La Nouvelle Revue Française* in 1923. For a time he worked in the publishing houses of Gallimard and Hachette and was also editor of the Lyon newspaper *Progrès*. During World War II he joined the Resistance under the pseudonym Roland Mars. He was an active member of the Communist party from 1937 to 1947.

Ponge's work was not widely noticed until the publication of his slim but hotly discussed volume of prose poems *Le Parti pris des choses* (Taking the Part of Things, 1942). Each of these poems is devoted to a single object—a plant, a shell, a cigarette—which is scrutinized so intensely that it becomes a strange and richly complex world in itself. In his geography of these microcosms, Ponge employed allegory, metaphor, and a great variety of rhetorical devices, especially puns, seeking, he said, "to assist man to see things and to see himself through things."

One of the many writers who admired and learned from these prose poems was Sartre, who discussed them in *Situations 1* (1947), welcoming Ponge's determination to limit himself to "things," and to lay the foundations of a "phenomenology of nature." Ponge, however, has denied that he is a phenomenologist, though he starts from the same point of view: that we are prevented from gaining a full knowledge of the world by the stereotyped modes of thinking and seeing that we impose upon it—our tendency to assign things to neat categories, ignoring those potentialities that do not fit.

In *Le Grand Recueil* (The Great Anthology, 1961) he explains what he is trying to do. This collection of essays and poems is in three volumes: in *Lyres* he writes of art and artists, love and death, emphasizing the need for a new definition of things; in *Méthodes* he shows how this definition is to be reached; and in *Pièces* he gives some examples of

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the practical application of his method. He says that a single object contains so much richness that he cannot imagine attempting to write about any but the simplest things: stone, grass, fire, etc. The truth of a thing's existence can be expressed only when the poet breaks through the abstractions that have grown up around it, and sees it concretely. The man who has direct contact with the sensual world is not the one who thinks in clichés like "hard as a stone" and orders experience in terms of received ideas, but the man who accepts things as his equal.

Most of Ponge's poetry since *Le Parti pris des choses* is scattered in periodicals and limited editions, and is characteristically tentative and reiterative—speculations about the nature of language as well as of things, "notebooks on the making of poems" rather than fully realized works of art. This is exemplified in *Le Savon* (1967, translated as *Soap*), which assembles his reflections on that humble commodity over a period of twenty-five years. As one critic wrote in the *Times Literary Supplement*, Ponge "began tackling his soap in 1942 . . . [and] continued to turn it this way and that in jets of language until 1967, by which time he had exhausted it to the point of non-existence. . . . The critic has to ask himself whether *Le Savon* amounts to a genuine prose poem, or whether it remains just a quaint collection of notes and doodles. The answer is, perhaps, that like so much of M. Ponge's writings it is a failed poem with a special interest for poets and linguists." It would be possible to apply this judgment to *Pour un Malherbe* (1965), which contains the notes Ponge wrote between 1951 and 1957 for a critical work on François de Malherbe (1555–1628),