natural that he turned out to be, as someone has said, 'an oracle, to whom one turned with all observations and ideas'.

With the years, Phragmén also became increasingly acknowledged abroad for his penetrating contributions to scientific discussion. In the field of theoretical metallurgy in particular, there are many proofs of his authoritative position. A list of 53 of his publications may be found in *Jernkontorets Annaler* 1944, *128*, 533–535.

In a relatively short working life, Gösta Phragmén was able to give a lustre to Swedish research in metallurgy and metallography through his scientific contributions. The level in this field of research was markedly raised under the influence of his example and criticism. His colleagues remember him with gratitude and admiration as an incomparable fellow-worker, and a straightforward and honest man.

A. Hultgren, B. Kalling, A. Westgren

Victor Moritz Goldschmidt
1888-1947

Victor Moritz Goldschmidt was born 1 January 1888 in Zürich. His father Heinrich J. Goldschmidt named his son after his teacher Victor Meyer. The Goldschmidt family came to Norway 1901 when Heinrich Goldschmidt took over a chair as Professor of Chemistry in Kristiania (Oslo).

Goldschmidt's first important contribution was within the field of geology and mineralogy. His two first larger works were his doctor thesis *Die Kontaktmetamorphose im Kristianiagebiet* and *Geologisch-petrographische Studien im Hochgebirge des südlichen Norwegens.*

Goldschmidt has been named the founder of modern geochemistry and crystal chemistry. A series of publications under the title *Geochemische Verteilungsgesetze der Elemente* is usually referred to as the start of geochemistry, the science that describes the distribution of the chemical elements in nature. The geochemistry has not only greatly inspired the field of mineralogy and geology but also theoretical chemistry and crystallography.—Goldschmidt's work on atom and ion radii has been of enormous importance for crystallography. His work in this area has no doubt inspired the introduction of the Pauling covalent, ionic, and van der Waals radii.

Goldschmidt took great interest in the technical application of his science; the utilization of olivine for industrial refractory goes back to him. He was for many years the head of the Norwegian Committee for Raw Material (Statens Råstoffkomité).

There has hardly ever been a person in the Norwegian university world who made such an early and rapid career as Goldschmidt. Withouth even taking the usual exams or degrees he got a post-doctoral fellowship from the University already at the age of 21 (1909). He obtained his Norwegian doctor's degree when he was 23 years old (1911). This is a degree that is usually obtained at an age of 30 to 40 years, even 50 years and more is not unusual. In 1912 Goldschmidt got the most distinguished Norwegian scientific award (Fridtjof Nansens belønning) for his work *Die Kontaktmetamorphose im Kristianiagebiet*. The same year he was made Docent (Associate Professor) of Mineralogy and Petrography at the University of Oslo (at that time 'Det Kongelige Frederiks Universitet'). In 1914 he applied for a professorship in Stockholm. The selecting committee unanimously chose Goldschmidt for the chair. But before the Swedish king had made the final official approbation, the University in Kristiania was able to secure him a similar chair. This was quite an unusual procedure and speed for appointing a professor. Usually it will take at least two years to obtain a new chair at a Norwegian university and one or two years to have the professor appointed. In Goldschmidt's case it seems that all tradition of slowness was abolished, a fact that the University of Oslo shall always be grateful for. In 1929 Goldschmidt was called to the chair of mineralogy in Göttingen, but he returned to Oslo in 1935.

During the German occupation Goldschmidt was arrested but released by initiative of colleagues shortly before his planned deportation to a German concentration camp. He later fled to Sweden and went on to England.

After the war he returned to Oslo again where he died on 20 March 1947, only 59 years old.

A larger work *Geochemistry* was edited and published posthumously in England in 1954.

O. C. A. Bastiansen