iron and heated under pressure. Copper sulphide and ferrous cyanide result and the latter is treated with an alkali to produce soluble ferrocyanide.

Tschermiak mixes thiocyanate with ninety per cent. of its weight of dried oxide of iron and heats the mixture at 450° C. for one hour. The resulting mass contains an amount of cyanate corresponding with 90 per cent. of the theoretical yield, together with a little alkaline sulphate. The cyanate is purified by recrystallization at 0° C. when the sulphate separates.

To prevent the production of cyanates in the treatment of ferrocyanide for cyanide, Chaster grinds together the anhydrous ferrocyanide and alkaline carbonate in proper proportions and mixes the mass with finely divided wood-charcoal, or with gas-tar, resin, bitumen or similar substances, after which it may be treated in the furnace in the usual way.

In the reactions and processes here set forth, even though they may not all be operative and though some may even be questionable, there is food for fruitful study and much help for future work. And they illustrate the promptness with which rational investigation responds to the commercial demand.

WM. MCMURTRIE.

OBITUARY.

VICTOR MEYER, who died on the 8th of August, was born in Berlin on the 8th of September, 1848. His first published chemical investigation appeared in April, 1869, and was published from the laboratory of Professor Baeyer, who was at that time professor of chemistry at the Gewerbe Academie in Berlin.

In 1871 Meyer was made professor of chemistry at Stuttgart; in 1872 he was called to Zurich; in 1885 he went as professor of chemistry to the University of Göttingen, where he remained until 1889, when, upon the retirement of Professor Bunsen, Meyer was called to his place as professor of chemistry in the University of Heidelberg.

Meyer was an extremely active and able chemical investigator. His activity is shown by the fact that since the appearance of his first paper in 1869 there have appeared in the *Berichte der deutschen chemischen Gesellschaft*, up to the time of his death, 275 separate papers from his pen, with hosts of other papers from his laboratory, the work of which was suggested and inspired by him. Besides the papers published in the *Berichte*, occasional papers have appeared in Liebig's *Annalen*, the *Journal für praktische Chemie*, the *Zeitschrift für physikalische Chemie*, and the *Zeitschrift für anorganische Chemie;* added to these are lectures and addresses published in the more popular journals. While the large number of his published papers testifies to his activity, their intrinsic worth and the unusual number of really important papers among them gives ample evidence of his great ability.

One of his early investigations gave to organic chemistry the reaction

$$C_6H_5SO_3K + HCOONa = C_6H_5COONa + KHSO_3,$$

which is now frequently made use of to introduce the carboxyl group into aromatic compounds. Meyer was the first to prepare a nitro-paraffin, and practically all that is known about this interesting group of compounds is due to Meyer and his pupils. His work upon the ammonium bases and his discussion with Ladenberg over the points raised, a discussion which unfortunately mingled with considerable personal feeling on the part of these two experimenters, is familiar to most students of organic chemistry.

In 1883 Meyer announced his discovery of thiophene in commercial coal-tar benzene, which in spite of its large contents of sulphur, had been previously overlooked on account of the close resemblance of its properties to the properties of benzene. Following this came a long series of articles by Meyer and his pupils, giving full accounts of thiophene and its derivatives.

In 1882 Meyer and Janny made clear the structure of the oximes, and in the following year Meyer and Goldschmidt, in studying the action of hydroxylamines on benzil, obtained two isomeric benzil dioximes. A careful study of these compounds forced them to the conclusion that they both had the same structural formula. In 1888 Meyer and Auwers attempted to explain this isomerism by considerations based upon the stereochemistry of carbon. Van't Hoff and Wislicenus have assumed that when carbon atoms are singly linked there is free rotation around their common axis. They pointed out that unless this free rotation was assumed isomeric modifications would result. Meyer and Auwers suggested that the evidence of the two isomeric benzil dioximes could be explained if free rotation in their case were not assumed. It is necessary, according to this view, to assume two different kinds of single union between two carbon atoms, one which permits of free rotation, and one which does not.

Later in the same year Meyer and Reicke put forward an ingenious hypothesis concerning the nature of valence in the carbon atom in order to explain the lack of free rotation in some cases of singly linked carbon atoms. These views have never strongly appealed to chemists. One probable reason for this being that the speculations of Meyer and Reicke were followed very closely by a paper from Hantzch and Werner upon the stereochemistry of nitrogen, in which the isomerism of the oximes was referred to the nitrogen atoms in a manner that gave a simpler, and on the whole, more satisfactory explanation of the subject.

Stereochemistry (a name which by the way was first suggested by Meyer), has been a favorite field of investigation for Meyer, and he has made many contributions, both experimental and theoretical, to the rapid advance of this subject.

In 1894 Meyer introduced to the chemical world a new series of organic bases which contained iodine but no nitrogen, which he called iodonium bases.

Meyer's work has not been limited to the field of organic chemistry. His apparatus for the determination of the vapor-density of liquids and solids is perhaps in more common use than any other.

By using platinum and porcelain vessels he has studied the vapor-density of numerous inorganic compounds and elements at a white heat. In this connection I cannot do better than quote from an address made by Meyer, at Heidelberg, in 1889: "To-day new methods of experiment permit of comparatively easy determination of the vapor-density and consequently of the molecular state of substance at the highest temperatures. Numerous inorganic compounds, and the elements themselves, have been studied with regard to their vapor density at a white heat. While many of them, as oxygen, nitrogen, sulphur, and mercury, remain unchanged under such conditions, the molecules of chlorine, bromine, and iodine were split into two atoms in conformity with Avogadro's surmise in regard to the compound nature of the elementary molecules. In the same manner the vapor-density and the molecular condition of the less volatile elements, zinc, thallium, antimony, and bismuth were successfully determined at a white heat. To-day pyrochemical work is limited to a temperature of 1,700° C., because vessels of porcelain and platinum, to the use of which we are limited, fuse above that temperature.

"The possibility of performing quantitative experiments at those temperatures seemed to us, some few years ago, to be an unexpected progress, but to-day we complain that the trivial cause of a want of proper vessels forbids us to increase the temperature to 2,000° or 3,000° C. There is no doubt that we should arrive at new unthought-of facts, that the splitting of other elementary molecules would be possible, that a new chemistry would be revealed to us, if, being provided with vessels of infusible material, we could work at temperatures at which water could not exist, and at which detonating gas would be a non-inflammable mixture."

In 1885 Meyer published a monograph upon his pyrochemical investigations. In 1888 he published another monograph upon thiophene and its derivatives. At the time of his death he was engaged with his colleague, Professor Paul Jacobson, in the preparation of a manual of organic chemistry, the second volume of which approaches completion. This work, so far as published, is the best extended treatment of the subject known to the writer.

The death of Victor Meyer in the midst of his work and in the prime of life is an irreparable loss to chemistry—it is a loss that will be much lamented wherever chemistry is studied.

G. M. RICHARDSON.

SEPTEMBER 21, 1897.

BOOKS RECEIVED.

Electric Smelting and Refining. The Extraction and Treatment of Metals by Means of the Electric Current. Being the second edition of "Elektro-Metallurgie." By Dr. W. Borchers. Translated, with additions, by Walter G. McMillan. London: Charles Griffin & Co., Limited;