

ends of the two systems meet and the folds fall into line.

In Africa, according to Wegener, the ancient gneiss foundation shows a sudden change of strike at the head of the Gulf of Guinea, and in South America there is a similar sudden change at Cape St. Roque. When the two continents are brought together the two different strikes and the line of separation between them become continuous. But in bringing about this coincidence he gives to the gneiss north of the Gulf of Guinea a north-east to south-west strike, and this is very far from the truth. Over a large part of the area the actual observations indicate that the prevalent direction is from north to south.

In South Africa a folded mountain range runs from east to west. In Buenos Ayres a folded range belonging to the same period has been described. According to Wegener one was the direct continuation of the other. But before they reach the western coast the South African folds, and the range that they have formed, turn to the north and run roughly parallel to the western coast. Wegener's explanation of this deviation is far from convincing.

It will thus be clear that the geological features of the two sides of the Atlantic do not unite in the way that Wegener imagines, and if the continental masses ever were continuous they were not fitted as Wegener has fitted them.

Obituary.

PROF. GEORGE LUNGE.

ON January 3 Prof. Lunge died in his eighty-fourth year. For more than thirty years, from 1876 to 1907, he held the professorship of applied chemistry in the Polytechnic Institute of Zürich, directing the destinies of this department with characteristic energy, and with a success that attracted students from far and near, who sought to equip themselves for a career in industrial chemistry by a training under one who was recognised as the authority, especially in the branch of the manufacture of "heavy chemicals."

Dr. Lunge by his literary activity, as in other ways, contributed greatly to the advancement of chemical technology. His treatise on "Sulphuric Acid and Alkali," which has passed through several editions, is not only indispensable to the technologist, but is also replete with knowledge. As Mr. T. W. Stuart, himself a leader in the alkali industry in this country, and one of the few early contemporaries of Dr. Lunge, recently stated, "When you refer to these books on any obscure subject in the Alkali industry, you never go empty away, but always find in them a wealth of information."¹ A similar statement might justly be made in respect to Lunge's "Coal Tar and Ammonia," his "Technical Chemists' Handbook," and his "Handbook of Methods of Technical Gas Analysis," etc., each and all of which are essential to the equipment of the chemical technologist.

George Lunge was born at Breslau on September 15, 1839; from 1856 to 1859 he studied at the universities of Breslau and Heidelberg, graduating as Ph.D. In 1864 he came to England, with the object of obtaining technical experience. For a part of the twelve years spent in this country he was employed in the tar distillery of Messrs. Major and Co. at Wolverhampton, and in 1868 he was appointed chemist and manager to the Tyneside Alkali Company at South Shields. Dr. Lunge's efforts to obtain a footing in one or other of the twenty-six chemical works on the Tyne were at first far from encouraging, for, as Mr. Stuart tells us, a partner in one of the largest of these works offered Dr. Lunge the post of chemist at 1*l.* per week, which even at that time was but 2*s.* above the wage of a labourer! In the small works at South Shields Dr. Lunge continued until 1876, when he received the call to the chair of applied chemistry at Zürich. It is not without interest

to note that his chief publications and researches deal with those phases of chemical industry, with the actual practice of which his sojourn in England had made him familiar.

At the time of his residence on Tyneside the Newcastle Chemical Society was founded, with Mr. Isaac Lowthian Bell (later Sir Lowthian Bell, Bart.) as its first president. Dr. Lunge became a member of this society, taking an active part in its proceedings and was elected president in 1872. In 1883 this society became merged into the Society of Chemical Industry and was formed into a local section of that society. However, Dr. Lunge, until the time of his death, retained his membership of the local section, using its Proceedings as the medium of publication from time to time of important scientific communications, and in many other ways evincing his sustained interest in its welfare.

The first Hurter Memorial Lecture was delivered in 1899 by Dr. Lunge before the Liverpool section of the Society of Chemical Industry, who selected for the subject of the lecture—"Impending changes in the general development of industry, and particularly the Alkali industry."

Drs. Hurter and Lunge, like many German chemists, *e.g.* Caro, Pauly, Otto Witt and others, came to England in the sixties of last century to gain a practical knowledge of British chemical industries. Dr. Hurter remained in this country and became identified with the Lancashire alkali industry, while Dr. Lunge returned to the continent, and based his teachings and writings on experience gained in the rival industry of the Tyne. Dr. Lunge had a complete command of the English language, writing and speaking it with ease and fluency. He married Miss Bowron, the daughter of a member of the firm of the owners of the Tyneside Alkali works at South Shields.

P. P. B.

PROF. JAMES RITCHIE.

WE much regret to record the death of Prof. James Ritchie, Irvine professor of bacteriology in the University of Edinburgh. Up to the end of the summer term of 1922 Prof. Ritchie carried on his work with his customary energy and zest. In the holiday which he took during August in Perthshire, however, the early symptoms of his last illness began to give anxiety, and he died on January 28.

The record of Ritchie's life shows that since he

¹ *Chemical Trade Journal and Chemical Engineer*, January 19.