

conditions, the constitution of the germ is unaffected thereby, and that any change in it is necessarily discontinuous. Hence, though individual growth is inevitably continuous, organic evolution must be discontinuous; and any analogy between race-history and individual history must be false. The idea that the latter recapitulates the former "cannot be applied to concrete instances."

That likeness does not necessarily imply relationship is true enough; but there is more than "likeness" when we find the last of an ascending series of fossils repeating in its life-history the adult stages of the successive species immediately preceding it, all those stages having been linked by gentle gradations. The semblance of continuous evolution may conceivably be explained by an appeal to the mongrel (heterozygote) constitution of the germ, and by allowing wide limits of modification to the soma, in successive species. But why is the trend of germinal saltation so often the same as that of somatic modification, and why should individual growth repeat and follow this trend? These are questions not of analogy, but of fact, and are not to be dismissed with a bare denial.

Biologists may differ on these matters, but all might read with pleasure Dr. Johannsen's criticism of Prof. Bergson's "Élan vital."

F. A. BATHER.

PROF. OTTO N. WITT.

BY the sudden death, through heart-failure, on March 23, of Otto Nikolaus Witt, Geheimer Regierungsrat and professor in the Technical High School of Charlottenburg, at the comparatively early age of sixty-three, and in the full maturity of his intellectual power, Germany loses one of the most distinguished of her teachers of chemical technology, and one of the most successful of her pioneers in the application of organic chemistry to industrial pursuits. Of Russian extraction, Witt had intimate associations with all the countries now warring against Germany. Like Hofmann, Griess, Caro, Martius, and others who could be named—the founders of Germany's unrivalled supremacy in the manufacture of the so-called coal-tar dyes—upwards of thirty years ago Witt spent some time in England as a member of the now defunct firm of Williams, Thomas and Dyer, then engaged in the industrial production of this class of colouring matters. He took kindly to English life, moved freely in scientific and literary circles in London, joined the Savile Club, which had then its home in Savile Row, had his boat on the river, and enjoyed to the full the hospitality which his many social gifts, the range of his knowledge, his admirable conversational powers and charm of manner readily secured for him.

Witt spoke and wrote our language with ease and fluency. *Habitué*s of the Royal Institution well remember the brilliant Friday evening discourse he gave on the development of the

synthetic indigo industry, illustrated with a wealth of material and a mass of detail which his close connection with the great firms which have combined to exploit that industry had enabled him to accumulate. Among the many fruits of his scientific activity in England at that time may be mentioned his paper in collaboration with Thomas, on the induline group, published in the Transactions of the Chemical Society for 1883. At another period of his career he was associated with Nöltling and Grandmougin, at Mulhouse, in developing the chemistry of the indazole derivatives, and his Alsatian connections brought him into contact with the leading manufacturers of synthetic colouring matters in France, and he learned to know Paris and to appreciate its scientific interests as fully as he knew and valued those of London.

The most fruitful period of Witt's scientific activity was comprised between the years 1876 and 1892. During the earlier years of his connection with the Charlottenburg institution, he was hampered by the want of adequate laboratory accommodation, and in spite of his acknowledged position as an authority on that particular section of applied organic chemistry with which his name and fame are indissolubly associated, and notwithstanding his generally recognised powers as a teacher, his success in creating a school fell short of his hopes, and neither the number of his students nor the character of their output, as determined by the quality and number of their communications to chemical literature, were commensurate with his aspirations.

Witt was one of the earliest to attempt to explain the properties and colour of dyes in terms of chemical constitution, and his memoir of 1876, published in the *Berichte* of the German Chemical Society, attracted considerable attention by the originality and boldness of its views, and the ingenuity with which they were supported. The terms "chromophor" and "chromogen" which he introduced in order to denote the special groups and molecules which he conceived to be concerned with the production of colour are still current in the literature. Although Witt's hypotheses have not wholly stood the test of time, the paper will always have its place in the history of the subject. It is at least noteworthy as the production of a young man of twenty-four.

Witt's name is associated with the discovery of certain typical classes of synthetic dye-stuffs. His published work includes papers on the indulines and indophenols; on the nitroso-derivatives of aromatic amines, eurhodines, eurhodols, safranines, etc., and he contributed the monographs on azines, indamines and indophenols, artificial indigo and indigoid dyestuffs, and triphenylmethane colouring matters to the "Dictionary of Applied Chemistry," published by Messrs. Longmans, Green and Co. They are amongst the most valuable articles in that work, and are characterised by Witt's excellent literary qualities, his grasp of principles, his power of co-ordination, his sense of proportion, and felicity of expression—qualities

exhibited in no less degree in his frequent contributions to *Prometheus*, with which he was associated as editor for many years, a periodical which played much the same part in Germany as NATURE does among English-speaking communities.

Witt was a singularly gifted man, of great attainments, artistic and literary, of large sympathies and wide interests, far removed indeed in mental habit and outlook from what is usually regarded as the typical German professor. He had an extensive knowledge of what is best in the literature of nearly every European nation, to which his remarkable linguistic attainments gave him ready access. In early life he was attracted to biological problems, was an excellent microscopist, and rivalled Cleve in studying and delineating the lower forms of organic life. In his later years he was devoted to the culture of orchids, and was an occasional visitor to the Temple show of our Royal Horticultural Society, and a frequent purchaser at the plant auctions in London. Of his power of initiative and capacity for organisation and direction, and of his merits as a host, those who attended the International Congress of Applied Chemistry at its meeting in Berlin, of which he was president, have a pleasurable and grateful recollection. T. E. THORPE.

NOTES.

WE regret to announce the death, on April 10, in his eightieth year, of Dr. W. Grylls Adams, F.R.S., Emeritus Professor of Natural Philosophy and Astronomy in King's College, London.

THE death is announced, at nearly sixty-two years of age, of Dr. Louis Waldstein, author of "The Sub-conscious Self," and of many articles on pathological subjects.

ON Monday, April 12, at a meeting of the Council of the Royal Society of Arts, the society's Albert Medal was presented to Senator Guglielmo Marconi "for his services in the development and practical application of wireless telegraphy." The medal, which was instituted in 1863 to commemorate the Prince Consort's presidency of the society, is awarded annually as a reward for "distinguished merit in promoting arts, manufactures, and commerce."

ACCORDING to a message to the *Morning Post* from its Stockholm correspondent, the projected Anglo-Swedish Antarctic Expedition, under the leadership of Prof. Otto Nordenskjöld, has been postponed until the war has been brought to a conclusion. It will be remembered that the expedition was to sail in August next.

THE death is announced of M. Edmond Rigaux, of Boulogne, in his seventy-seventh year. M. Rigaux was a well-known authority on the geology of the Boulonnais, and contributed especially to our knowledge of the Jurassic rocks and fossils of that region of France. He was a foreign correspondent of the Geological Society of London, and in 1883 received

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the Lyell Fund of the Society in recognition of the value of his researches.

THE Jacksonian prize of the Royal College of Surgeons for 1914 has been awarded to Mr. Jonathan Hutchinson for his essay on the pathology, diagnosis, and treatment of trigeminal neuralgia, and the John Tomes prize to Mr. J. F. Colyer for his work on comparative dental anatomy and pathology. The subject of the Jacksonian prize for 1916 will be "Methods and Results of Transplantation of Bone in the Repair of Defects caused by Injury and Disease."

PROTOZOOLOGISTS and marine biologists will be interested to learn that the whole of the collections and library of the late Fortescue W. Millett, of Marazion and Brixham, have been acquired by Mr. Heron-Allen, and will be incorporated as a special section of the Heron-Allen and Earland collection, to which the collection of the late J. D. Siddall, of Chester, was also added recently. It is hoped that this entire collection, numbering some 10,000 slides, and the library which accompanies them, will ultimately be incorporated with the Museum of Oceanography and Marine Biology, which it was the ambition of the late Sir John Murray to found. Broadly, his object was to form his collections of material and soundings into a department of the Natural History Museum in conjunction with the H. B. Brady and W. B. Carpenter collections, which are already there. The co-ordination of the Brady, Carpenter, Murray, Millett, Siddall, and Heron-Allen and Earland collections would form a reference museum of oceanic deposits and type specimens without an equal in the world.

THE death is announced at the age of sixty-three of the well-known bacteriologist, Friedrich Loeffler, director of the Institute of Infectious Diseases, Berlin, and formerly Professor of Hygiene and Director of the Hygienic Institute, University of Greifswald. Loeffler's name is best known as the co-discoverer with Klebs of the diphtheria bacillus; this was in 1884. A year or two previously the presence of peculiar bacilli in the diphtheritic membrane was noted by Klebs, but it was Loeffler who afterwards isolated and cultivated this organism. With Koch and Gaffky, Loeffler carried out investigations on disinfection with steam at the Imperial Institute of Hygiene, Berlin, and he showed the keenest interest in the comparative study of the infectious diseases of animals, such as the diphtheria of calves and of pigeons. He was with Schütz the discoverer of the nature of the causative organism of foot-and-mouth disease, which he proved to belong to the group of micro-organisms known as "filter-passers," which owing to their minuteness are invisible with the highest powers of the microscope, and are capable of passing through the pores of a porcelain filter. To Loeffler also belongs the credit of achieving some of the early work associated with the application of aniline dyes to the staining of bacteria, "Loeffler's Methylene Blue" being used to this day as a routine laboratory stain. Loeffler's name will ever rank with those of Pasteur, Koch, and Ehrlich as a pioneer in the domain of bacteriological research.