

been weakened in this way might regain their strength if the mites and fungi could be kept down; but those which are naturally weak cannot be made strong. During the time plants are being forced they may also be weakened by overwatering and consequent asphyxiation of the roots, or by allowing the roots to become too dry and then overwatering. The foliage of such plants may be free from spots and distortions, but usually the leaves are badly diseased. The spotting and distortion of the foliage is often due to the direct attacks of several genera and species of aphides and of the young of the bulb mite; to the injection of water into the young leaves in watering or syringing, and to the presence of water between the young leaves of plants having soft foliage. The injuries from the attacks of organisms are always more severe in the susceptible or naturally weakened bulbs."

No single course of treatment can be recommended to help this trouble. Careful selection of the bulbs, rotation of crops, avoidance of premature cutting of the stems or digging of the bulbs, the use of aerated soil, care in watering, the careful destruction of aphides and mites and the use of chemical fertilizers, instead of those derived from animal excrement, are recommended as likely to materially check the disease.

CHARLES E. BESSEY.

UNIVERSITY OF NEBRASKA.

#### NOTES ON INORGANIC CHEMISTRY.

A RECENT number of the *Zeitschrift für anorganische Chemie* contains a review of the recent work on the genesis of petroleum and other natural hydrocarbons. Engler's hypothesis is that petroleum is formed by the distillation of animal fats at high pressure. Lobry de Bruyn has described a demonstration of this method of formation as a simple laboratory experiment. Heusler

calls attention to the fact that Engler's distillate contains a considerable quantity of unsaturated hydrocarbons, which is not the case with petroleum. By treatment with aluminum chlorid these hydrocarbons are changed into a high-boiling lubricating oil; hence it is probable that petroleum formation took place in two stages, the first distillate being changed by metallic chlorids into petroleum. According to Oehsenius, petroleum was formed from plant and animal remains by heat and pressure under the influence of the salts derived from sea water. On the other hand, Moissan finds in his work on the metallic carbids, a confirmation of the theory first proposed by Mendeleef, that petroleum originates from the action of water on metallic carbids in the interior of the earth. Uranium carbid, for example, yields with water both solid and liquid hydrocarbons. These are, indeed, in part unsaturated, but at a higher temperature saturated hydrocarbons might be formed from them by the action of hydrogen, which is often evolved from carbids by water. Aluminum carbid and glucinum carbid, indeed, give with water pure methane (marsh gas). Viola believes that the asphalt and the petroleum of Castro de Volci, near Rome, in Eocene limestone and sandstone is of intratelluric origin, and has been distilled from great depths. The region shows decided evidence of volcanic phenomena. On the other hand, van Werweke holds that the petroleum of Pechelbronn, in Lower Alsace, has originated in Tertiary strata and has not come from below.

In a polemic article in the *Zeitschrift für angewandte Chemie*, D. Holde claims that the theory that petroleum has originated from animal remains should be known as the Engler-Höfer theory, Höfer having first proposed the theory in 1888 in his 'Das Erdöl und seine Verwandte,' and Engler having

by his experiments shown that petroleum can be thus formed.

FINALLY, Moissan, in the *Comptes Rendus*, states it as his opinion that according to its geological relations the formation of petroleum is to be ascribed to three different causes: (1) the decomposition of organic substances under the influence of pressure and heat; (2) the purely inorganic reaction between water and the metallic carbids; (3) volcanic processes. In many localities it is possible that all three of these factors may have contributed to the formation of petroleum.

J. L. H.

#### SCIENTIFIC NOTES AND NEWS.

IN accordance with plans that we have already announced, the General Committee of the British Association for the Advancement of Science has decided that the next meeting will be at Bristol, under the presidency of Sir William Crookes.

SIR JOHN LUBBOCK has accepted the presidency of the International Congress of Zoology, which meets at Cambridge in August of next year. Sir William Flower was, as we regret to learn, compelled to resign the office, in view of the other pressing demands on his time and of medical advice.

PROFESSOR C. A. YOUNG, Professor A. A. Michelson and Professor E. S. Dana have been elected honorary members of the Philosophical Society of Cambridge University.

THE medals of the Royal Society will this year be awarded as follows: The Copley Medal to Professor Albert von Kölliker; a Royal Medal to Professor A. R. Forsyth; a Royal Medal to Sir Richard Strachey; the Davy Medal to J. H. Gladstone; and the Buchanan Medal to Sir John Simon.

SIR ROBERT BALL, President of the Royal Astronomical Society, has been presented with the Jubilee Medal.

DR. GEORGE H. HORN, the eminent entomologist, died at Philadelphia on November 25th. He was one of the Secretaries of the Philosophical

Society and was formerly Corresponding Secretary of the Academy of Natural Sciences. He had been until recently professor in the University of Pennsylvania, though his connection with that institution was chiefly honorary. Dr. Horn was only fifty-eight years of age, and his death, following those of Cope and Allen, is a further severe loss to the city of Philadelphia and to science in America.

THE Rev. Dr. Samuel Houghton, from 1851 to 1881 professor of geology in Trinity College, Dublin, died on October 31st, aged seventy-six years. He was an original and versatile writer, having made many contributions not only to zoology and physiography, but also on medical subjects, including an elaborate work on the Principles of Animal Mechanics.

By a private letter from Dr. J. Buttikofer we are informed that, although by the necessities of his recent appointment as Director of the Rotterdam Zoological Garden he has been obliged to leave Leyden Museum, where he has spent so many happy years, and which contains nearly all the zoological collections made by him in different countries of the world, he hopes, that as Leyden is distant but three-quarters of an hour from Rotterdam, to be able to do some ornithological work there. He is now engaged in finishing his report on the ornithological results of the Borneo Expedition, which he accompanied as zoologist, and of which some account was printed in SCIENCE of April 23, 1897.

PROFESSOR R. A. PHILIPPI, who, for forty-three years, has been Director of the National Museum in Santiago, Chile, having reached the age of ninety years, has resigned, and is succeeded by his son.

A MONUMENT to the eminent surgeon, the late Professor Billroth, was unveiled in Vienna on November 7th. Professor Gussenbaur, formerly assistant to Professor Billroth, made the principal address.

A BUST of Michael Faraday was unveiled at the Michael Faraday Board School, London, on November 15th. The bust, which is of white marble, was presented to the School by the managers of the Royal Institution of Great Britain, and is a copy of the original bust exe-