synthesis rather than those of splitting and oxidation. Hypertrophy as an outcome of increased functional activity is a familiar phenomenon, but as Nussbaum remarks the hypertrophy induced by testicular or ovarian hormones resembles rather the effect of the growth energy exhibited by the developing embryo, in that it is dependent upon influences other than those arising from functional use. What these influences may be is at present a matter of pure speculation. In his recent most interesting contributions to our knowledge of growth Rubner has been led to assume that the property of growth in the young organism is connected with certain special chemical complexes in the protoplasmic material, complexes which have nothing directly to do with the simple maintenance of the nutrition of the cell and which after adult life is reached disappear for the most part from the general soma. In line with this hypothesis one might assume that the hormones given to the blood by the reproductive cells contain such complexes which when anchored in certain tissues lead to an accelerated growth. Perhaps the clearest and most interesting experiments made upon the reproductive hormones are those reported by Nussbaum. He chose for his experiments the males of *Rana fusca* whose reproductive organs go through a cyclical development each year. At the proper period the preparation for the mating season shows itself in the hypertrophy of the seminal vesicles, of the thumb pads and of certain muscles in the forearm. If the frog is castrated these hypertrophies do not occur, or if they have begun before the castration is performed retrogressive changes take place. On the other hand, the usual hypertrophy of the nuptial organs can be initiated in a castrated frog if pieces of the testis from another frog are introduced into the dorsal lymph sacs. The pieces thus introduced do not become grafted permanently but are gradually absorbed and the growth of the thumb pads and of the muscles in the forearms falls off after this absorption is completed. Nussbaum believes that the stimulating effect of the testicular hormones is not exerted directly upon the tissues which show the increased growth, but rather upon the portions of the central nervous system which innervate these tissues. This belief rests upon the experimental fact that if the peripheral nerves going to the glands and papillæ of the thumb pads are severed on one side the testicular hormone affects only the other intact side. This experiment and the conclusion drawn from it opens up the interesting question whether perhaps the reproductive hormones in general exert their effect through the central nervous system. This has not been the usual belief, and the experiments of Nussbaum are open to the obvious objection that the section of the peripheral nerves may have induced certain secondary changes in metabolism which indirectly antagonized the action of the testicular hormone. At present these experiments, so far as I know, have not been repeated with this objection in mind and it is somewhat gratuitous to criticize the author's conclusions until further work is reported.

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Sir William Crookes[1]

The generation just passing away and that now enjoying the vigor of its beginning, are fortunate in this country, because they are recognizing the privileges and advantages of anniversary celebrations. The indulgence in

[1] Address of Professor Charles Baskerville before the Chemists' Club, Harvard Night, November 27, 1909, on which occasion Sir William Crookes was elected to honorary membership in the club.

such celebrations is not empty sentimentality, but possesses a practical value. They not only acquaint us with past events, but develop a true appreciation of their historical significance; and more than that, they stimulate within a finer realization of the actuating motive of sentiment, which is, after all, the basis of sympathy, the torch that leads one along dark passages and warms the heart to the best endeavors.

On December 10, 1859, appeared the initial number of Volume I. of the *Chemical News*. This journal, founded, owned and edited by William Crookes, is well known to English reading chemists the world over. However, some of the circumstances of its founding and subsequent development may not be known to all present. I shall, therefore, venture to direct attention to one or two important events in its history. In 1843, William Francis and Henry Croft founded the "*Chemical Gazette,* or Journal of Practical Chemistry in all its applications to Pharmacy, Arts and Manufactures." This journal was conducted until 1859, when it was followed by the "*Chemical News;* with which is incorporated the *Chemical Gazette:* a Journal of Practical Chemistry in all its applications to Pharmacy, Arts and Manufactures." The last-mentioned journal was founded and edited by William Crookes. From Volume III., the title has been the *Chemical News and Journal of Physical Science.*

In introducing the *Chemical News* to the chemical public, it was stated in the first number that "the diffusion of facts which may tend to improve and augment our knowledge of the arts and sciences upon which most of the operations of civilized life are based, must be a pleasing task to those who hold in esteem the welfare of mankind. It is with this feeling that the *Chemical News* is introduced to the world." Further,

> . . . There is no weekly journal in England which has for its aim the publication of those scientific processes and discoveries, the knowledge of which tends so greatly to increase our importance as a nation devoted to improvement, refinement and industrial excellence. It is therefore to supply this deficiency that the *Chemical News* is now launched into the stream of scientific literature.

Although he did not bind himself to an inflexible rule of action, the plan laid out by the editor was as follows:

> Each number will be divided into several sections, which will have a general but no individual connection with each other. We shall commence with scientific and analytical chemistry, under which head will be given the results of elaborate investigations in the laboratory, by those pioneers of our science who by their labours pave the way for the subjects treated of in our next department—technical chemistry. Here will be described the practical applications of the processes, formulæ or chemical agents, which the labors of the purely scientific chemist have placed at the disposal of the manufacturer. In the department of agricultural chemistry especial care will be taken to place before the agriculturalists of the United Kingdom all the most interesting and useful information to be derived from Home or Continental sources, or from the States of America.
>
> Pharmacy, toxicology, &c., next follow, and the medical profession will here find from time to time everything of interest relating to Pharmacy, Materia Medica and Toxicology. Discussions upon medical reform and jurisprudence will also be freely admitted into these columns.

It was also announced that "The proceedings of the various learned societies in which the readers may be supposed to take particular interest will be given," as well as notices of books, patents, etc., and chemical notices from foreign sources, scientific notes and queries, laboratory memoranda, and answers to correspondents.

As the knowledge of chemistry was extended and the publication of other chemical journals devoted to special subjects was begun, the *Chemical News* has found it advisable to alter its original plan considerably; for instance, after the *Journal of the Society of Chemical Industry* was founded in 1882, it no longer remained the sole record for those interested in chemical manufactures; and the founding of various English journals on medical and pharmaceutical subjects has rendered the omission of these branches necessary.

The board of trustees of the Chemists' Club, in recognition of the successful completion of

the one hundredth volume of the *Chemical News* at the end of next month, unanimously resolved to forward a suitably engrossed letter of congratulations to Sir William Crookes. The letter has been prepared and reads as follows:

The Chemists' Club of the City of New York extends to Sir William Crookes, of London, hearty congratulations upon the completion of the one hundredth volume of the *Chemical News*, which, under his direction, has been so successfully devoted for a half century to "the diffusion of facts which may tend to improve and augment our knowledge of the arts and sciences upon which most of the operations of civilized life are based," and its members wish for him not only many more years in fruitful service, but that they and other men of science may profit by further additions to his already long list of rich contributions to theoretical specialized and practical scientific knowledge.

Morris Loeb, *President*

Parker C. McIlhinney, *Secretary*

Furthermore, the trustees unanimously voted to recommend that the club elect Sir William Crookes to honorary membership, and I was designated to present the matter to the club at this meeting. I perform this duty, which is a privilege, with extreme pleasure, and regard myself fortunate in being able to close my term as a trustee in paying a graceful tribute to one so deserving of our admiration and esteem, and one whose personal friendship I have enjoyed for a number of years.

William Crookes was born in London on June 17, 1832, and studied chemistry and later assisted Hofmann at the Royal College of Chemistry. In 1854 he became superintendent of the meteorological department of the Radcliffe Observatory, Oxford, and in 1855, professor of chemistry at the Science College, Chester ("Chester Training College"). In 1859 Crookes founded the *Chemical News*, to which reference has already been made; and in 1871 he became editor of the *Quarterly Journal of Science*, having previously served as coeditor with James Samuelson from the founding of the journal in 1864.

Crookes has been a fellow of the Royal Society since 1863, and was knighted in 1897. In 1887 he succeeded Dr. Hugo Müller as president of the London Chemical Society, serving two years. Crookes was elected president of the British Association in 1898, and, previously, in 1886, he had served as chairman of the chemical section. He has also been president of the Institute of Electrical Engineers. He has received honorary degrees of doctor of science from Oxford, Dublin and Cape of Good Hope universities.

Crookes engaged in original research at an early age, his first paper "On the Selenio-Cyanides" being published in 1851. In 1861 he discovered the element thallium, and in subsequent years investigated its properties and compounds. In 1865 he discovered the process of separating gold and silver from their ores by sodium amalgamation. In 1872 he was led by his experiments in determining the atomic weight of thallium to consider the subject of repulsion resulting from radiation, and invented the radiometer, which he afterwards modified as the otheoscope. He was engaged at the same time in examining the physical phenomena of modern spiritualism, and having become convinced of the existence of force exerted by an intelligent, disembodied agency, he announced his conclusions in his "Researches in the Phenomena of Spiritualism" (1874). Later Crookes pursued a course of investigation in regard to the properties of matter in a vacuum, and published some of the results in his "Molecular Physics in High Vacua" (1879). He asserted that he had discovered a fourth state of matter, the ultra-gaseous protyle, in which he maintained that the molecules are not in contact as in a liquid or gas, but isolated. Crookes's method of producing extreme vacua rendered incandescent electric lighting a practical possibility.

In 1880, in recognition of his discoveries, the French Academy of Sciences gave Crookes a gold medal and a prize of 3,000 francs. In 1875 the Royal Society awarded a Royal Medal to Crookes, and the same society awarded him the coveted Davy Medal in 1888, and the Copley Medal—"the ancient olive crown of

the Royal Society," as it was termed by Davy —in 1904. Three times has he been the Bakerian lecturer of the Royal Society.

Crookes has published the following treatises: "On Thallium" (1863); "On the Manufacture of Beet Root Sugar in England and Ireland" (1870); "Select Methods in Chemical Analysis" (1871, 1886, 1888, 1895); "A Practical Handbook of Dyeing and Calico Printing" (1874, 1883); "Dyeing and Tissue Printing" (1882); "La Genese des Elements" (1887); "Die Genesis der Elemente" (1888); "Elements et meta-Elements" (1888); a translation of Rudolf von Wagner's "Die Chemische Technologie" (1872, 1881, 1892); and several other less important translations and editions of German and French works on chemical subjects.

The list of his scientific papers would be too long to present here, but it may be said that Sir William Crookes is an authority on the rare earths and rarer elements, and on spectroscopy and sanitary science.

His investigations on the rare earths have been chiefly on the phosphorescence spectra of yttrium, samarium (cathode-luminescence spectrum) and erbia (luminescence spectrum); on the absorption spectrum of didymium; and on the separation of these earths and their distribution (universal distribution of yttrium and scandium). In 1899, Crookes announced the existence of a new element, *victorium*, earlier called *monium*, and previously (in 1886) he claimed to have discovered two new elements, *ionium* and *incognitum*. In 1876, Crookes devised the well-known "Crookes Tube," and in 1903 the spinthariscope. His investigations of the radio-active elements have also been noteworthy, and in 1900 he fractioned uranium nitrate into an inactive product, thereby obtaining an active substance, Ur-X.

In sanitary science, the important work of Crookes has been on sewage disposal, on water supply and contamination, on the use of disinfectants, and on the wheat problem.

Crookes has delivered the following addresses: "On Radiant Matter" (British Association, Sheffield Meeting, August 22, 1879); "On Radiant Matter Spectroscopy" (Bakerian Lecture, Royal Society, May 31, 1883); address to the chemical section of the British Association, Birmingham Meeting, September 2, 1886, dealing with the nature and origin of the so-called elements; "Genesis of the Elements" (Royal Institution, February 18, 1887); address as president of the Chemical Society, anniversary meeting, March 28, 1888; "On Recent Researches on the Rare Earths" (annual general meeting of the Chemical Society, March 21, 1889); "Diamonds" (Royal Institution, June 11, 1897); British Association Inaugural address, Bristol, 1898, dealing mainly with the "Wheat Problem"; and his admirable lecture on "Diamonds" before the British Association, Kimberley meeting, September 5, 1905.

Sunday evenings, Sir William is at home. Within his study walls, bebooked to the ceiling, one may find then the finest minds of science in England or other lands, grappling in discussion with the unsolved problems, which oftentimes become no clearer than the increasing denseness of the tobacco smoke. Promptly at eleven o'clock there comes a bright rift in the clouds as Lady Crookes enters and charmingly leads all to the dining room below.

Punctilious in the performance of every duty, courteous but vigorous in argument, modestly assertive, learning from the youngest, Sir William draws out the humblest until he would become almost bold, yet, in return, he gives generously from his rich store of wide knowledge and large experience. Such is the man the trustees would have the club honor and thus gain luster itself, for William Crookes, the *savant*, ornaments any company, and his life work is an inspiration for the present generation and the generations of men of science to come.

THE INTERNATIONAL AMERICAN CONGRESS OF MEDICINE AND HYGIENE

THE International American Congress of Medicine and Hygiene of 1910 in commemoration of the first centenary of the May revolution of 1810, under the patronage of his excellency, the President of the Argentine Republic,