

THOMAS HENRY HUXLEY.

The eminent naturalist, Thomas Henry Huxley, died at Eastbourne, England, on the 29th of June, 1895, his mind remaining clear to the last. In the death of Professor Huxley science loses one of its foremost exponents and the world one of her most interesting characters. The position of Huxley was unique, and his death now leaves Herbert Spencer the sole survivor of the grand quartet of mental giants, Darwin, Tyndall, Huxley and Spencer, who succeeded in forcing their views regarding man's relations to lower forms of life and to the cosmos, commonly called "evolution," upon an unwilling and recalcitrant public. Dr. E. L. Youmans defined Huxley's position in the world of science as that of a "philosophical biologist," and as such he ranked among the very first of the world. By his individual work in biology Huxley made important additions to the facts and truths gathered by Charles Darwin from his observations on animals and plants and by Tyndall in physics and Mr. Spencer in sociology. Upon these sciences taken collectively the doctrine of evolution is based. Like all evolutionists, Huxley soon ran foul of the churchmen and was denounced as an infidel. He denied the insinuations, and in 1869 he invented, or rather revived, the term agnostic. To the new doctrine of agnosticism, of which he was the champion, and to his attacks on religion, was due much of his fame. He was at all times an intrepid defender of science, and he was a tower of strength to the evolutionists.

Professor Huxley was born in 1825, at Ealing, Middlesex, England. He was educated at Ealing School, at which his father was a teacher. At the age of seventeen he entered the Charing Cross Medical School, and after three years of hard study he graduated with the degree of bachelor of medicine, taking high honors in physiology. He then entered the naval service as surgeon and accompanied Captain Stanley's expedition to the Eastern Archipelago, and during the voyage made observation on the natural history of the sea, devoting special attention to the Medusæ. On his return to England he was appointed to succeed Dr. Edward Forbes as professor of paleontology at the Government School of Mines in London. He was also made Fullerian professor of physiology to the Royal Institution and examiner in physiology and comparative anatomy of the University of London. In 1856 he went with Tyndall on his first trip to the Alps. In 1858 he was made Croonian lecturer to the Royal Society. At this time Huxley gave numerous lectures on "The Relation of Man to the Lower Animals." In 1863 he was made professor of comparative anatomy at the Royal College of Surgeons and remained there seven years. In 1872 he was made lord rector of Aberdeen University, and in 1873 he was made secretary of the Royal Society. On the death of Frank Buckland, in 1881, he succeeded that naturalist as inspector general of fisheries, and on the death of Mr. Spottiswoode, in 1884, Professor Huxley was elected president of the Royal Society. Professor Huxley made a visit to America in 1876, where he gave some remarkable lectures, which were published in the SCIENTIFIC AMERICAN SUPPLEMENT, Nos. 41, 42, 43 and 44. Professor Huxley was a member of the principal scientific societies of the world and received many honors and decorations. He had the degrees of LL.D., Ph.D., D.C.L. and M.D. conferred upon him.

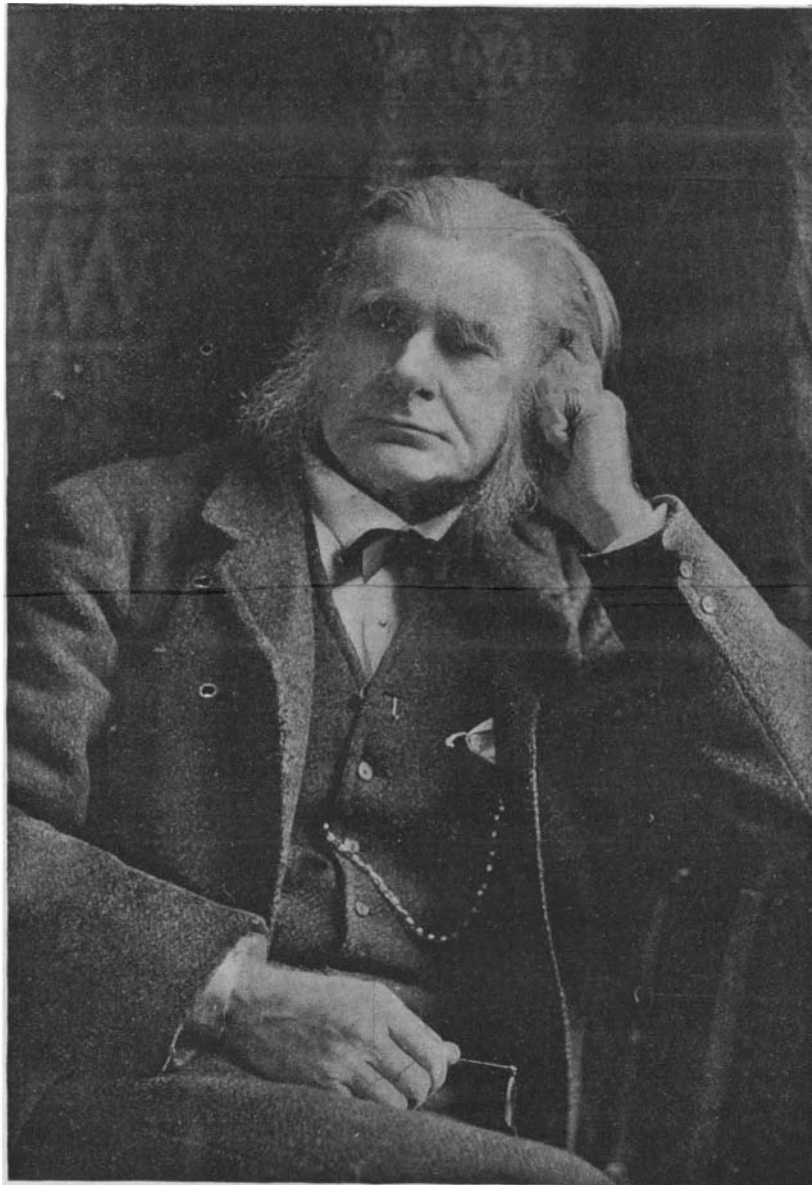
Professor Huxley began his literary work while he was studying medicine at the Charing Cross Hospital. His writings did much to popularize science. They include "Oceanic Hydrozoa" and "Man's Place in Nature," 1863; "Lessons on Comparative Anatomy," 1864; "Lessons in Elementary Physiology," 1866; "An Introduction to the Classification of Animals," 1869; "Lay Sermons, Addresses and Reviews," 1870; "Manual of the Anatomy of Vertebrated Animals," 1871; and "Critiques and Addresses," 1873. Other works were on "Origin of Species," "More Criticism on Darwin and Administrative Nihilism," "American Addresses," "Physiography," "The Crayfish," "Science and Culture," and the "Advance of Science in the Last Half Century."

For the last ten years Professor Huxley has been practically in retirement. He had a contempt for autobiographies, but he once sketched his own character in a few words. "That man," said he, "has a liberal education who has been so trained in youth that his body is the ready servant of his will and does

with ease and pleasure all the work that as a mechanism, it is capable of; whose intellect is a clear, cold logic engine, with all its parts of equal strength and in smooth working order, ready, like a steam engine, to be turned to any kind of work, and spin the gossamers as well as forge the anchors of the mind; whose mind is stored with a knowledge of the great and fundamental truths of Nature and of the laws of her operations; one who, no stunted ascetic, is full of life and fire, but whose passions are trained to come to halt by a vigorous will, the servant of a tender conscience: who has learned to love all beauty, whether of Nature or of art, to hate all vileness, and to respect others as himself. Such a one, and no other, has had a liberal education." The world can add no higher tribute to the author of these words than to say that such a man was Thomas Henry Huxley.

Motions of the Pianoforte Wire.

The motion of a pianoforte wire when struck has been investigated by Herr W. Kaufmann, whose paper on the subject in Wiedemann's Annalen and noticed in Nature, is accompanied by a set of very interesting photographic records, obtained by a modification of the method invented by Raps and Krigar-Menzel. By vibrating the wire in front of a luminous slit, and throwing the image of it upon sensitive paper rotat-



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ing upon a cylinder, a white line is traced upon a black ground. This line, which is due to the interruption of the luminous slit by the opaque wire, exhibits all the motions of the particular point in the wire which is crossed by the slit. In order to bring the plane of the slit into exact coincidence with the wire, an image of the slit, produced by a lens with the aid of the electric arc, was thrown upon the wire itself. Since the hammer struck the wire at the point photographed, the motion of the wire was traced from the very first, the commencement of the vibration being the most interesting stage. Hard and soft hammers were tried, the latter corresponding to those actually used in the piano. It was found that the duration of contact is longer with feeble than with hard striking. As the force increases, the duration of contact rapidly approaches a limiting value equal to that of a hard hammer of equal weight. But the practically most important resultant was the proof that when a wire is struck at a point between one-seventh and one-ninth of its length, the fundamental tone has a maximum, and the harmonics—especially the third—are very feeble. Hence a wire thus struck gives its strongest and richest tone. This fact is acted upon by piano builders, but is not explained by supposing that the notes of the higher harmonics are struck, thus preventing their being heard. They are heard, but are outweighed by the more harmonious ones.

Interesting Medical Discoveries.

Several interesting medical discoveries have recently been made in Vienna, and announced at meetings of the Society of Physicians. Thus, Prof. Wagner von Jauregg, who is in charge of the department in the university devoted to mental diseases, was induced by the improvement that always follows upon an infectious disease in cases of insanity, especially if it is accompanied with high fever, to bring about that condition artificially by means of inoculation with Koch's tuberculin. He now claims that, though the decidedly favorable symptoms soon disappeared after each injection, there was such a steady clearing of the confused sensorium as to encourage him to continue the experiments. In the course of a discussion that ensued, it was mentioned by Prof. Albert that transfusion of blood and subsequent high fever had caused astonishing changes in the mental condition of one of his patients, whose pronounced melancholia had disappeared as if by magic, after the fever had subsided.

He, too, anticipated good results from the artificial production of high fever in persons mentally deranged.

Dr. Riehl, a lecturer at the same university, also has made a curious discovery. A man was recently brought into his ward suffering from blisters and swellings on his hands, as well as on one eye, which he had touched with a swollen hand. The man was a gardener, and he attributed the blisters to a species of primrose, *Primula obconica*. Experiments were made and it was found that the tiny hairs on the leaves and stalks irritated the skin and gave rise to swellings and inflammation. Dr. Riehl succeeded in extracting the poison which the plant contains, apparently for its own protection, and, by means of injections with it, claims to have healed more than one obstinate skin disease. His experiments are not yet completed, but they promise good results.

The sero-therapeutic method, applied with so much success in the cure of diphtheria, has recently been applied by Messrs. Hericourt and Richet to the treatment of cancer. They collected the serum of the blood of an animal which they had inoculated with a solution containing cancerous or carcinomatous debris. Then, with a few cubic centimeters of this virus, they inoculated two patients afflicted with cancerous tumors of the abdomen or the stomach. In both cases the tumor diminished and there was a manifest improvement. These are results worthy of attention. Although it cannot yet be said that cancer is conquered, this is an important step toward victory.

Jonah and the Incandescent Lamp.

One of the most interesting sights of New York is a performance at one of the Jewish theaters on the Bowery, there being several near Canal Street patronized exclusively by Russian Hebrews, in which the plays are produced in the Jewish-German-Russian jargon with a mediæval crudity. Each theater has its own playwright, who, however, owing to the fondness of the audience for realistic scenes,

has to divide the honors of the reproduction with the important personage who creates the realistic accessories.

How important the functions of the latter are, says the Electrical World, will be evident from the following description of a scene from a play entitled "Jonah," produced at the Old Bowery Theater.

"After Jonah has been thrown overboard, for a moment," says the reporter, "it appears that nothing can save him. But, just as he is sinking for the last time, a great fish comes along, shaped something like a flounder, and deporting itself like a ball of rubber; it opens a very wide mouth and Jonah climbs in. Instantly the ship, which has been hammering the stage boards in its wild tossing, becomes still. The ballet sailors on the deck set up a jubilant chorus, and a gauze-dressed angel drops down from the flies, while the fish—which has disappeared behind the scenes—turns about and re-enters with a new side presented to the audience. This new side is as open as the day. Through an oval window in the whale's larboard quarter Jonah is disclosed sitting in great splendor of red and green, with glow lamps, and not a suggestion of discomfort."

THE highest temperature in the world is recorded in the great desert of Africa, where the thermometer often marks 150 degrees Fahrenheit.