predictive value of these equations is quite independent of the assumptions upon which they were originally based.

This investigation of fundamental life processes shows that they appear to obey the laws of chemical dynamics. It illustrates a method of attack which may throw some light upon the underlying mechanism of these processes and assist materially in the analysis and control of life-phenomena.

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ISAO IIJIMA

Professor Isao Iijima, head of the department of zoology in the Imperial Uinversity, died of apoplexy at his home in Tokyo on March 14. His father, a Samurai of the Daimyo Inouyé of Shizuoka, was one of those devoted to foreign learning in the decades before the restoration: proceeding to Nagasaki, he studied European ideas through the medium of the Dutch language—later suffering imprisonment on account of these interdicted studies. The son Isao, born Bunkyu-ni-nen (1860), followed the father's footsteps, was early a student of foreign languages and science, and was eager to master physiology and anatomy. So he found his way presently to the Imperial University of Tokyo, which then was beginning its famous career. Here he came under the guidance of the American zoologist, Professor Edward S. Morse, whose inspiration soon turned him from medical studies to pure science. Thereafter he went to Leipsic, where he took his doctorate with Professor Leuckart. Returning to Japan about 1885, he was appointed a member of the faculty of the Imperial University, where he was to remain until the day of his death; in the last years he was also professor in zoology at the Nobles' College, Tokyo. Foreign zoologists will always remember Iijima, side by side with Kakichi Mitsukuri, as taking foremost and genial place in all zoological matters in Japan. His knowledge of the general subject was unusually wide: a fluent lecturer, an attractive personality, he popularized zoology and brought help to it from many sides; for not only was he the trained morphologist, but the old school naturalist as well, bird expert notably, having among his friends collectors and gunners in all part of Japan; his hobby took him everywhere, and as a good shot he was as welcome in the hunting parties of the Emperor as with the pheasant-stalking peasants on the hillside near Misaki—where for many years he spent his summers. Here was the seaside laboratory of his zoological department, and offshore were the great depths of Okinosé (6,000 meters) from which many a red-turbaned fisherman, and Kuma Aoki especially, brought him the rarest of glass-sponges. These Iijima made his life-long study: and he dealt with them in memoirs which, published in the main in the *Journal of the Science College,* are classics, indeed—though Iijima himself would be apt to add, in his joking way, that this was not as great a feat as it seemed, since he was the only life-long specialist in the field! In point of fact, these sponges were poorly represented throughout the world (large museums had sometimes not more than a few small specimens—usually a ragged Hyalonema, or a defective Venus-basket), till the discovery was made of many species, genera, and even families of them in Iijima's district of the Pacific where nature seemed to have taken many pains to keep them alive in an early geological "garden."

In a practical direction Iijima's studies carried him to the culture of "artificial" pearls, and several of his students, the late Dr. Nishikawa especially, developed this industry with great success—having devised new modes of causing the pearl oyster to produce hemispherical, more-than-hemispherical, and in the latest time completely spherical pearls.

Bashford Dean

SCIENTIFIC EVENTS

EX-SECRETARY MEREDITH ON RESEARCH

(From a correspondent)

The organization of research is now receiving so much attention that the fear is ex-