the beneficial use of remedies and defenses which chemistry at present can neither analyze nor synthesize, such, for example, as diphtheria antitoxin; but they are aware that this condition of their art is unsatisfactory and ought not to be permanent. The animal body consists of well-known chemical substances, and its functions depend on chemical reactions. Digestion is largely a chemical process. The animal body consists of innumerable cells in great variety, each of which acts under chemical and physical laws. Hence the belief of the biologist of to-day that chemistry—analytical, structural and physical—can and will come to the aid of the science and art of medicine in the large sense, and will ultimately enable biological science to comprehend the vital processes in health and disease, and to penetrate what are now the secrets of life and death.

Charles W. Eliot

## *THE BUREAU OF FISHERIES*

The annual report of the Commissioner of Fisheries shows that the bureau has just completed the most successful of the forty-five years of its existence. The number of fish produced and distributed was greater, and the cost of production per million less, than in any previous year. Fifty permanent hatcheries and seventy-six sub-hatcheries, auxiliaries, and egg-collecting stations have been conducted and the output during the fiscal year 1915 was over four billion young fish and eggs, an increase of more than 241,000,000 over the previous year. Plants of food fishes were made in every state and territory; fish eggs were distributed to the fish commissions of twenty-seven states; and consignments of eggs were sent to Porto Rico, Cuba, India, and Japan. The distribution of the output required over 146,000 miles of travel by the five special cars of the bureau and 491,000 miles by detached messengers. The introduction of the hump-back salmon of the Pacific coast into Maine streams, which last year was an experiment, is now a reality, as many of these fish were taken during the summer of 1915 in the Maine rivers; furthermore, ripe eggs have been taken from them—a proof of thorough acclimatization. The counter-experiment of transplanting the Atlantic lobster in Pacific waters is still in progress.

The Bureau of Fisheries has done and is doing much for the conservation and utilization of food fishes which have heretofore been wasted. Each year when the Mississippi and Illinois Rivers, with their various tributaries, overflow their banks and later recede, millions of young fish are left stranded in temporary pools or where in a short time they would perish. Rescue work is, however, undertaken by the bureau, and in 1915 over eight million valuable food fish were saved and delivered to applicants, deposited in public waters, or returned to the main rivers.

The Alaskan seals are the most valuable herd of wild animals ever owned by any government, and the Bureau of Fisheries is their custodian. The revenue to the government from the seal skins—when commercial killing is resumed—will be very large, and efforts are being made to find uses for the seal carcasses, aside from the comparatively small number required by the natives for food. The old practise of using only the skin and wasting the carcass can no longer be countenanced. The report of the special investigators who went to the Pribilof Islands in 1914 to make a thorough study of the conditions of the seal herd was submitted in January, 1915, and presents in detail a statement not alone of the condition of the seal herd, but also of the fox and reindeer herds belonging to the government, and of the natives who inhabit the seal islands. A new method of obtaining supplies for the Pribilof Islands was instituted in 1914–15, and a large saving will result therefrom.

## *APPOINTMENTS AND DISMISSALS AT THE UNIVERSITY OF PENNSYLVANIA*

As a result of the case of Professor Scott Nearing at the University of Pennsylvania, professors of the university appointed a com-