

be solved. But bacteriology in a sense other than that commonly received is destined to be a subject of vast importance in the prevention of disease. I mean the biology of bacteria in its widest sense, embracing not only, as it does now, the determination of species, their external forms, their conditions of occurrence, and the effect of their presence in organisms, but also, and this more especially, their physiological chemistry. It is in physiological chemistry, in all its extent, that we are to find the study of the future. In this subject physiology, pathology, and bacteriology, as it will be, will be one. Physiology, in its departments of digestion, absorption, secretion, and nutrition, is now simply physiological chemistry; and when we analyze the functions of the specialized organs of the body, and find how these depend on nutrition as well as on specialization of structure, we can determine how great a part in physiology the chemistry of the cell and tissue plays. Pathology, in the sense in which we now use it, is quite as much interested, if not more so, in the advances made in physiological chemistry, for not only are a large number of diseases merely derangements of nutrition, but the phenomena of zymotic diseases are referable to the products of decomposition caused by bacteria in the organism. This study of physiological chemistry in its broader aspect has already begun. Bacteriologists are now engaged in the investigation, on the one hand, of the chemical products of the growth of bacteria, and, on the other, of the proteid compounds in the animal body which annihilate micro-organisms or prevent their growth. Pathologists have commenced the study of the chemistry of the tissues in disease. But most busy of all has been the physiological chemist himself. The researches on the proteids alone during the past three years might be considered as epoch-making, showing, as they do, how crude was our knowledge on many points connected with these. There is, indeed, a life's work in these for many an investigator in the future. That the phenomena of life occur in a complexity of proteids shows how far-reaching any important addition to our knowledge of them may be.

To physiological chemistry, then, belongs the future. Closely related as it is to physiology, pathology, bacteriology, and general biology, it will tend to overshadow these, and the number of its students will be greatly reinforced from the ranks of those endowed with scientific curiosity, for, in one of its branches, that of the physiology and chemistry of the cell, a subject now developing into prominence, the investigator stands face to face with the mother of mysteries, and there is no student who would not give a lifetime of work to be able to lift a corner of the veil to behold her features.

In therapeutics, physiological chemistry will be a modifying factor. At present we search the whole earth through for drugs to add to our list, and