"Nerve force, as far as we can see, is the result of chemical change "occurring under the influence of life in the molecules which compose "nerve tissue. Chemical processes, the breaking up of complex com- "pounds, and the formation of simpler compounds, with consequent re- "lease of the energy held latent in the former, is the constant element "in the production and conduction of nerve impulses. Some chemical "compounds may come into relation with the tissue in which the change "is occurring without exerting the slightest influence upon it. But an- "other substance may come even in amount inconceivably minute, whose "molecules are so arranged as to fit, as it were, with the changing mole- "cules of the living tissue. The energy the new molecules bear seems to "blend with that which is in process of ordered release in the living "tissue, and to blend so effectively as to derange it entirely. Such an "influence as I have spoken of seems to be exerted widely in the case of "aconitia. Its contact with some living nerve structures seems to be so "instant and precise as to induce the production of an excess of energy, "sweeping all before it; on others, to oppose the process, to induce a "sudden stillness among the changing molecules, and to arrest all action. "Among the nerves thus influenced may be those on which depend the "action of the heart, and with a sudden spasm or a sudden stillness, the "heart stops and life is ended."

I have quoted these last three paragraphs from a clinical lecture delivered several years ago by Sir William Gowers. I have not altered his words; they approach near enough to what I wish to impress upon you to serve my purpose. They lay down in a striking manner that the sole difference that we can determine from a chemical point of view, between the living, palpitating matter and protein, between "imperial Cæsar" and his own dead "clay," is brought about by chemical combination; by the entrance of certain molecules into combination with the living or *biophoric* molecules of certain controlling cells of the organism, and forthwith, from being active and reactive, these become inert—dead—protein. That some similar change takes place in connection with the death of the tissues in general is indicated by the change in reaction when any cell passes from the living to the dead state. Living matter has a feebly alkaline reaction; with the onset of death, the reaction becomes acid. Or, otherwise, in passing from the relatively unstable proteidogenous to the dead, relatively stable proteid state, the biophoric molecules either take up alkaline molecules (or ions) from the surrounding cell sap, or give up acid ions to the surrounding fluid; they surely undergo chemical change.

Now the very constitution of the protein molecules, as revealed to us