entiate between these two classes then we may find names for those systems which now seem to have properties which place them in neither of the above.

Before concluding, attention is directed to the irritating, although not very serious, mistake in the translations of the German terms "disperse" and "dispersions Mittel" by some authors. The German adjective "disperse" is "dispersed" in English, not "disperse," and "disperse Phase" is "dispersed phase," while "dispersions Mittel" is "dispersion medium" and not "dispersion means." These mistakes are like the old one of translating "Wanderung der Ionen" "wandering of the ions" instead of "migration of ions."

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ADDRESS AT THE FUNERAL SERVICES OF JOSEPH YOUNG BERGEN

I have known Mr. Bergen for nearly thirty years, and for a considerable time I was intimately associated with him in the authorship of a book, a text-book of physics. He did not begin his scientific work as a physicist; he began it as a chemist, and he did not end it as a physicist; he ended it as a botanist. But these changes in the subject of his labors, like the changes in his place of residence—from the middle west to New England, then to Italy, then back to New England—came from no fickleness of interest or infirmity of purpose. They were the result of certain hard conditions working on a man of extraordinary versatility, of extraordinary capacity, of extraordinary devotion to high ideals.

As a teacher he was not content merely to hold a place; he was receptive, active-minded, original; his alertness of observation, his catholicity of interest, his energy of imagination, enabled him to take the dry, dull matters of daily experience and kindle them into a source of illumination and vivifying power. As a writer of books he was not satisfied to give the public of his readers merely what it wanted. In physics and later in botany he took a large part in a great revolutionary movement affecting the teaching of science in all the secondary schools of this country, so that his name became familiar to all the progressive teachers of physics or teachers of botany throughout the land. And in those other writings, of a less formal character, in which he and Mrs. Bergen cooperated with perfect sympathy, there was a solidity of substance and a quality of form that commanded, I believe, the respect and the approval of profound scholars.

Nor was this all. What a fine, brave thing it was for a man of middle life, with an assured position as a teacher and with little financial assurance elsewhere, to give up this position and go to Italy, in order to pursue his scientific studies in their higher aspect, the aspect of original research, and to give his wife the physical conditions of life which she needed and for which she longed. And how finely, how bravely, he bore the care, the anxiety, the sorrow, that come to all of us in some measure and that came to him, it might seem, almost beyond measure.

With this character and this career, what manner of man did he seem to those who met and talked with him? I remember him vividly as I used to see him twenty-five years ago, the tall, spare, slightly bending figure, the long, swift, gliding stride, the abundant tawny hair and beard, the great brow jutting over the resolute, patient, illuminated face. And what was his manner of conversation? He talked freely and of many things, but not in commonplaces. It was not that he avoided commonplaces; they did not occur to him; he had not a commonplace mind. If one was in the mood to indulge in the ordinary gossip of the day, one was not in condition to sustain worthily a conversation with him.

But on one matter, one great matter, he never, so far as I can now recall, spoke to me. He was the son of a minister, and he once described to me with a certain grimness of humor some of the trials of a minister's family; but of religion, of religious faith or creed, he did not speak. He may have had a feeling, since I was a constant church-goer

and he was the contrary, that we should not be sufficiently in sympathy to discuss these matters with good feeling. I do not know how this may have been; but, speaking as one who, though subscribing to no formal religious creed, has a religious faith which is precious and a religious experience that is vital, I can not easily believe that our friend had nothing of these possessions. For the best evidence of something divine within ourselves and of something divine greater than our individual selves comes to us through affliction and sorrow borne with love; and this experience he had in full.

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SCIENTIFIC EVENTS

THE MEDALLISTS OF THE ROYAL SOCIETY

AT the anniversary meeting of the Royal Society on November 30, the president, Sir J. J. Thomson, conferred the medals of the society. The work of the recipients was thus characterized:

Copley Medal.—M. Emile Roux, Pasteur's chief collaborator, succeeded him as the director of the Institut Pasteur, which he has successfully developed and maintained as the foremost school of bacteriology, both for teaching and for research. From the early eighties, when he was associated with Pasteur and Chamberland in the study of anthrax and the production of vaccines against this disease, he has played a leading part in the development of our knowledge of the processes of immunity. His work with the distinguished veterinarian Nocard upon the contagious pleuro-pneumonia of cattle was the first demonstration of the existence of "ultra-microscopic," or, as they are now termed, filterable viruses as disease-producing agencies; his work with Yersin, the first full study of the bacillus of diphtheria and of its toxins. He shares with the late Professor Behring, of Marburg, in the introduction of diphtheria antitoxin as a practical means of prophylaxis and cure, and with him as cofounder of serum therapeutics was awarded the Nobel prize. All the leading French bacteriologists of our generation have been his pupils.

Royal Medals.—Dr. Aiken is distinguished for his lifelong researches on the nuclei of cloudy condensation, embodied in a series of memoirs communicated to the Royal Society of Edinburgh. The latest of these appeared in the present year. Dr. Aitken's discoveries opened up a new field of investigation in physics, and constitute a chapter of knowledge of great importance intrinsically and in their relation to the physics of meteorology. Dr. Aitken, who has pursued his work as an amateur, has displayed great experimental ingenuity, and his remarkable construction of the "dust-counter" has provided a permanent scientific appurtenance of precision to the physicist and climatologist. Among other contributions to science, Dr. Aitken has made important advances in our knowledge of the formation of dew.

Dr. Smith Woodward has been for many years keeper of the department of geology in the British Museum, and has published a very large number of valuable memoirs on fossil vertebrates, especially fishes. He has also published an important "Catalogue of Fossil Fishes in the British Museum," and his "Outlines of Vertebrate Paleontology," published in 1898, is a standard text-book on the subject. Dr. Smith Woodward's original memoirs are too numerous to mention, but they have secured for him a world-wide reputation, and he is universally regarded as one of the highest authorities on vertebrate paleontology.

Davy Medal.—M. Albin Haller, professor of organic chemistry at the Sorbonne, Paris, founder and first president of the International Association of Chemical Societies, and at the present time the most representative chemist of France, is distinguished for his many and important contributions to chemical science during the past forty years. His investigations have covered a very wide field in the domain of organic chemistry, the most important being those dealing with compounds belonging to the camphor group. He has maintained over a long period of years the reputation of the Sorbonne School of Chemical Research, created by Dumas and Wurtz, his predecessors in the chair.

Buchanan Medal.—Sir Almroth Edward Wright was the first (1896) to apply laboratory knowledge on typhoid immunity to the protection of human beings against enteric fever. Against formidable opposition he carried out a long series of observations with the highest scientific acumen and unsurpassed technique, and laid the foundations for the effective elimination of enteric fever from the armies of the world. Nothing of importance has been added to his work down to the present time.

Hughes Medal.—Professor C. G. Barkla's investigations have mainly dealt with X-rays, and