I hope to have shown in the first part of these considerations that the usual corpuscular interpretation of Schrödinger's $\psi$-function rests upon an unjustified overinterpretation of the observed facts, in contrast to the basic idea of quantum theory, which is the idea of complementarity. In the second part I tried to point out that, although the corpuscular interpretation is working in the case of small intensities, it represents only a very limited point of view in describing what is observed in reality.

# OBITUARY

## SARA GWENDOLEN ANDREWS

ON December 13, 1936, there passed away a woman with the rare gift of genius, Mrs. Ethan Allen Andrews, the wife of Professor E. A. Andrews, of Johns Hopkins. Mrs. Andrews, born Sara Gwendolen Foulke, died suddenly of a heart attack at her home in Baltimore. She had lived a retired life for years and many biologists in recalling her personally must go back to the memory of the beautiful, gracious young woman who made such a charming figure in the Woods Hole circle of the early 1890's.

Mrs. Andrews was born at Bala Farm in Pennsylvania in 1863. She studied at private schools and later for a time at Bryn Mawr, the University of Pennsylvania, Woods Hole and Roscoff on the French coast. She was married to Professor Andrews in 1894. Her earlier investigations dealt with infusoria and rotifers, but she became deeply interested in the structure and habits of protoplasm in general. And this is the theme of her classic memoir, "The Living Substance as Such: and as Organism," published as a special supplement of the *Journal of Morphology* in 1897, a memoir which carried her name and aroused admiration in biological circles throughout the world.

"The Living Substance" is not a paper with a definite contribution of fact or relationship between facts to be laid away after its essence has been incorporated in the handbooks. It is that and more. It has both depth and a grasp of many ideas. And one can read to advantage and with pleasure to-day this record of the multifarious experiences of a very thoughtful mind and a remarkable pair of eyes, aided by the best microscopic equipment of the time, in an exploration of the appearance and behavior of living protoplasm in protozoa, myxomycetes, leucocytes of invertebrates, sea-urchin and starfish embryos, fish eggs and other things.

The living substance, because of its tendency to take up water, exhibits itself to us as a Bütschli-structure, having the form of an emulsion, but it is only the continuous substance, separating and surrounding the droplets of included material, water and other things, that is alive. This is constantly active and its behavior is pictured as leading to changes in the general appearance of protoplasm. The alveoli, containing the discontinuous non-living stuffs, are increased or diminished in size or rearranged with the production of thin membranes, pellicles, within a protoplasmic mass or at its surface, constituting in the latter location a cell membrane. The thin lamellae between the alveoli may burst and disappear or their substance may "crawl or flow away," thinning and breaking in places and thickening elsewhere, or it may flow out at the surface of the mass or into the alveoli in the shape of delicate filose pseudopods forming in some cases new lamellae, one series of such changes in what Martin Heidenhain ("Plasma und Zelle," 1907) has called the architectural structure of cytoplasm culminating in cell division.

The histological section of this notable work is followed by a survey of the various phenomena of living nature as exhibited by individual organisms, all looked on as the outcome of the activities of substances, species-plasms or idioplasms, conceived of as isomorphic, everywhere differentiative and directive, and not optically analyzable. But while the potential features of a species are not localized within its idioplasm, the latter may transform itself into visible intra-cellular differentiations of many kinds for the discharge of particular functions. All these are designated "substance organs." Whether such ideas are tenable time and the future history of our present concept of genes as persistent and self-perpetuative entities will show. However that may be, the reader turning the pages of this memoir, now forty years old and which did not come into its own at once but encountered some inept criticism, will readily recognize, employing the words of von Baer, that we have here "observations and reflections" of genius.

H. V. WILSON

## RECENT DEATHS

THE death at the age of sixty-one years is announced of Dr. H. B. Carey, professor of materia medica, botany and pharmacognosy and dean of the College of Pharmacy at the Medical Center, San Francisco.

DR. GEOFFREY M. JAMES, formerly professor of chemistry at the University of Pennsylvania, died on February 17 as the result of an automobile accident. He was forty-five years old.

DR. HENRY M. CHANCE, mining and consulting engineer of Philadelphia, from 1874 to 1884 assistant state geologist of the Pennsylvania Geological Survey, died on February 19. He was eighty-one years old.

DR. THOR ROTHSTEIN, formerly professor of neurology at Rush Medical College, Chicago, died on February 20 at the age of seventy-two years.

RICHARD C. MCGREGOR, the managing editor of *The Philippine Journal of Science,* died on December 30 at the age of sixty-five years. He served for many years as ornithologist of the Bureau of Science and made numerous trips through the Philippines collecting specimens of birds. He wrote a number of articles on birds and bird life. His two-volume monograph and check list of Philippine birds are standard works.

# SCIENTIFIC EVENTS

## TOUR OF EUROPEAN INDUSTRIAL LABORATORIES UNDER THE AUSPICES OF THE NATIONAL RESEARCH COUNCIL

A TOUR of European laboratories in England, Germany and France for leaders in industry and banking from all sections of the United States has been arranged under the direction of the Division of Engineering and Industrial Research of the National Research Council, of which Maurice Holland is the director; Dr. Vannevar Bush, of the Massachusetts Institute of Technology, is the chairman, and Howard A. Poillon, of New York, is the vice-chairman.

According to present preliminary plans, the group will sail from New York on May 14 on the *S. S. Champlain.* While in Europe this delegation of American business leaders will visit the scientific research laboratories of private industry representing eighteen major fields, as well as the laboratories of governments, universities and trade associations.

This is the fourth educational tour of research laboratories conducted by the division for American executives. The other three projects, which were participated in by many business leaders, were tours to industrial and university laboratories in the United States. These were held in 1930, 1931 and 1935 under the direction of Mr. Holland.

While preliminary plans for the European tour have been under way for several years, details and the final program will be worked out by an advisory committee composed of industrialists and bankers who were members of the past tours. Invitations for the trip are now being sent to industrialists and bankers who are interested in research.

While in Europe organizations such as the Department of Scientific and Industrial Research in England, the Verein Deutscher Ingenieurs in Germany, the Sorbonne in France and others will be hosts. Membership in the party will be limited to a hundred in accordance with the request of several of the European engineering and scientific groups.

Members of the executive committee of the Division of Engineering and Industrial Research of the National Research Council are: Carl Breer, V. Bush, F. O. Clements, Galen H. Clevenger, E. S. Fickes, R. C. H. Heck, Frank B. Jewett, Fred Lavis, F. B. Llewellyn and Howard A. Poillon.

## THE NORTH CAROLINA MEETING OF THE AMERICAN CHEMICAL SOCIETY

THE annual meeting of the American Chemical Society will be held at the University of North Carolina from April 12 to 16. Programs will be presented for all divisions except Fertilizer Chemistry, the History of Chemistry, Leather and Gelatin Chemistry and Petroleum Chemistry. The preliminary program gives the following details:

*The Division of Agricultural and Food Chemistry* will meet all day Tuesday in joint session with the Divisions of Biological Chemistry and Medicinal Chemistry in a Symposium on the Vitamin B Complex. On Wednesday afternoon, the same divisions will cooperate in a Symposium on Vitamins Other than Those of the B Complex. On Wednesday morning, the Division of Agricultural and Food Chemistry alone will hold a Symposium on Flavors in Foods and Food Products and on Thursday morning a session for the presentation of general papers. The divisional luncheon will be held Thursday noon.

*The Division of Biological Chemistry* joins with the Divisions of Agricultural and Food Chemistry and Medicinal Chemistry in a Tuesday Symposium on the Vitamin B Complex and a Wednesday afternoon program on Vitamins Other than Those of the B Complex. On Wednesday and Thursday mornings divisional papers on other subjects will be presented.

*The Division of Cellulose Chemistry* will have a general symposium on Tuesday covering the present-day knowledge in certain fields of cellulose chemistry; the fields to be covered are not yet defined. General papers will be given in two Wednesday sessions.

*The Division of Chemical Education* will hold three sessions for the presentation of general papers, including an informal colloquium on the teaching of qualitative analysis.

*The Division of Colloid Chemistry* may cooperate with the Division of Cellulose Chemistry in its Tuesday symposium on present-day knowledge in certain fields of cellulose chemistry. On Wednesday two sessions will be held for presentation of general papers.

*The Division of Gas and Fuel Chemistry* will present a general program in two sessions.

*The Division of Industrial Engineering Chemistry* expects to schedule a large number and wide variety of general papers.

*The Division of Medicinal Chemistry* will join with the Divisions of Agricultural and Food Chemistry and Biological Chemistry on Tuesday in a Symposium on the Vitamin B Complex and on Wednesday afternoon in a