In a quotation, which I transcribe freely, Purkinje predicted, in a sense, the fate of some of his studies:

> So long as an observation stands isolated in the domain of natural science, or has not been brought into relation with a more or less important experience or practical application which gives it rank or tangible character, it is always in danger of passing unheeded or sinking into oblivion; not until the unceasing search for knowledge unearths new objects on which it fits does it earn recognition and a secure place in science.

Neither the stir which Purkinje's findings made in his day nor the flattering but sincere eulogies which Goethe heaped upon the personality and genius of Purkinje sufficed to prevent the recession of those observations into obscurity.

In notes, which have reference to the phenomenon here considered, Goethe wrote in his journal or annals of 1821:

> Turning now to scientific research, I will say that above all Purkinje's work on subjective vision excited me very much. I made notes of it, and intending to make use of them subsequently in my paper, I had a copy made of the accompanying plate. This arduous task was executed by the artist accurately and gladly, since he had previously been frightened by similar phenomena, but now, learning that they signified nothing abnormal or did not herald a pathological condition, he was much relieved.

Later, when Goethe discusses Purkinje's studies, we are informed that it was the noted copper engraver, Schwerdgeburth, of the court of Weimar, who had fears for his sight if not for his sanity. This artist himself had made sketches of the impressions as they appeared to him, which pictures Goethe preserved for comparison with Purkinje's.

Purkinje harassed himself hunting for the explanation of his "Lichtschattenfigur"; he teased apart the fibers of the dried crystalline lens, he examined the granules of the frozen vitreous humor, he investigated the retina microscopically, but all to no avail; its true causation stayed concealed. If he had known the existence and significance of the rods and cones, discovered by Huschke and Treviranus more than a decade later, I am certain he would not have hesitated to bring the facets of the luminous mosaic into relation with those retinal elements. It remained for Czermak to suggest that relationship. To-day, in spite of the objections that may be raised against this conception, we can still accept the light patterns induced by ocular pressure as a sublimated or ethereal image, as it were, of the retinal architecture. In part, the evidence has already been intimated above. The contention that the individual units of these scintillating mosaics can not be identified with the counterparts of the visual cells, because these are microscopic and beyond the normal range of naked vision, is no harder to refute, it seems to me, than it is to explain how the small surface area of the retina is able to grasp the forms of all the multitudinous and relatively gigantic objects in the external world stretching far to the horizon, and convey them to our conscious perception in their proper relation and magnitude.

If an apparently correct explanation has been offered as to the meaning of the retinal pressure images, such can not be said of the quivering movements of their innumerable facets. Their vibrations are independent of the periodicity of the pulse; they are neither synchronous with it, nor are they modified or accented by it. They are rapid and of exceedingly short amplitude. These characteristics lead the writer to place them in the category of Brownian motion. Is it the entire visual cell, or only a part of it—the photic material disseminated in its protoplasm—that executes the luminescent dance? If the suggestion embodied in this query is substantiated, it will be with a certain strange realization that here in our complicated organism is a place in which we can sense directly, so to say, the existence of our individual cells and to a limited degree their life.

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THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

THE SPRING MEETING OF THE EXECUTIVE COMMITTEE

THE regular spring meeting of the executive committee was held in the board room of the Cosmos Club, Washington, D. C., in two sessions, forenoon and afternoon, April 21. For the forenoon session President Millikan was in the chair, and for the afternoon session Chairman Cattell presided. The following members were present: Cattell, Compton, Curtiss, Kellogg, Lillie, Livingston, Millikan, Moulton, Wilson. Absentees were Johnston and Ward. The following items of business were transacted:

(1) The minutes of the last meeting of the committee were reported to have been approved by mail.

(2) The permanent secretary reported that more than 3,500 advance, prepaid orders for the *Proceedings* volume for 1925–29 (which will include the directory of members, with about 21,000 names) had been received by April 1. The prepublication price is $2.50 to those whose names occur in the directory; it will be $3.00 after publication. To those whose names are not in the directory the price is $4.00. With cloth binding the book costs $1.00 more in each

case. The manuscripts are now being typed and they will go to press in June. It is planned that publication will occur in October. Readers may be reminded that this volume appears at four-year intervals, the volume for 1922–25 having been published late in 1925.

(3) The permanent secretary reported that the average income rate from the treasurer's funds, for the fiscal year from October 1, 1927, to September 30, 1928, had been calculated on the basis of par value, actual cost (or appraised value) and market value of securities, as requested by the executive committee at the fifth New York meeting, with the following results: Par value, $190,600.00; income rate, 4.51 per cent. Actual cost, $145,430.33; income rate, 4.71 per cent. Market value (September 30, 1928), $145,-616.12; income rate, 4.70 per cent. The total income for 1927–28 was $6,350.50, and the treasurer's funds were distributed among twenty-four different securities.

(4) With reference to membership, the permanent secretary reported a total enrolment of 18,391 on April 1, when there were 16,747 members actually paid up for the current year, representing 91.06 per cent. of the total enrolment. On September 30, 1928, the end of the last fiscal year, the total enrolment was 16,328, with 94.54 per cent. actually paid up for that year. From April 1, 1928, to April 1, 1929, the total enrolment has been increased by 13.73 per cent., from 16,235 to 18,391. The growth of the association has been unusually rapid during the half year just closed.

(5) The permanent secretary reported that a new edition of the booklet of information about the association had recently been published. This contains much information of various kinds and will be sent free to any one requesting it. The fourth cover page bears a graph showing the yearly increase in membership for the last eight years, ending September 30, 1928.

(6) In connection with the above-mentioned report on the *Proceedings* volume now in preparation a request was received from the Library of the George Peabody College for Teachers for a set of the back volumes of the *Proceedings,* and it was voted that that library be furnished gratis with a set of the *Proceedings* as nearly complete as possible. (Volumes 24, 25, 54 and 67–73 are now out of print; there are now available forty sets of the remaining volumes.)

(7) It was voted that four copies of the *Proceedings* volume now in preparation be furnished gratis to *Biological Abstracts.*

(8) Dr. Wilson reported that he had recently consulted with members of the Pacific Division on its general relations with the association and that it had been suggested that the association might well hold regularly a summer meeting (or perhaps two summer meetings, near the beginning and near the end of summer) in the west or other suitable region. This suggestion was regarded favorably by the executive committee, and a special committee, consisting of Dr. Millikan and Dr. Kellogg, was named to confer with the officers of the Pacific Division on the possibility of improving the status of the Pacific coast meetings.

(9) The proposed revised constitution of the Pacific Division, referred to the executive committee for ratification or suggested modification, was considered and referred to the special committee on Pacific relations just mentioned.

(10) The executive committee approved the appointments of Frederick G. Keyes (to succeed Fred Ophuls), E. M. Symes (to succeed H. C. Parmelee) and K. H. Condit (to succeed C. Harold Berry) in the sectional committee on scientific and engineering symbols and abbreviations, of the American Standards Association, the American Association for the Advancement of Science being one of the sponsors for that committee.

(11) Dr. John Johnston had found it necessary to resign from membership in the executive committee, and his letter of resignation was read and was accepted with unanimous regret. Dr. Arthur A. Noyes, past president of the association, was named to succeed Dr. Johnston, to complete the four-year term ending at the close of the annual meeting of 1931–32.

(12) Dr. J. E. Anderson was elected secretary of Section I (Psychology), to succeed Dr. E. S. Robinson, resigned.

(13) Dr. C. W. M. Poynter was elected secretary of Section N (Medical Sciences), to succeed Dr. E. V. Cowdry, resigned.

(14) Dr. A. G. McCall was elected auditor of the association, to succeed Dr. Lyman J. Briggs, resigned.

(15) A gift of $100, to be used in the creation of an additional emeritus life membership, was reported and was accepted with great appreciation by the executive committee.

(16) Dr. A. A. Michelson was elected to emeritus life membership. Dr. Michelson joined the association in 1877 and was elected to fellowship in 1879.

(17) Sixty-two members were elected to fellowship, distributed among the sections as follows:

Section A (Mathematics)	15
Section B (Physics)	1
Section D (Astronomy)	1
Section E (Geology and Geography)	15
Section H (Anthropology)	1
Section K (Social and Economic Sciences)	1
Section L (Historical and Philological Sciences)	2

Section M (Engineering)	20
Section N (Medical Sciences)	1
Section O (Agriculture)	3
Section Q (Education)	2
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(18) The executive committee asked the Secretaries' Conference to consider and make recommendations on the question of securing more uniform standards among the several sections in the nomination of members for fellowship.

(19) It was voted that a single official representative of the association be named for the approaching South African meeting of the British Association, instead of several representatives as in recent years, and the president was requested to make the appointment.

(20) Separate petitions of the Pacific Division and of the Southwestern Division were considered, asking that each division be regularly represented in the executive committee of the association. The executive committee did not favor the proposal of a constitutional amendment for the enlargement of the committee, but called attention to the constitutional provision that two elections to the committee are regularly made at each annual meeting; a member of a division may be occasionally elected to the committee by the regular procedure.

(21) A report was read from the special committee on freedom of teaching, with special reference to the evolution theory (E. G. Conklin, S. J. Holmes, H. F. Osborn, J. C. Merriam and R. A. Millikan), and the executive committee adopted the following resolution on the theory of evolution. It is based on the council resolution of December 26, 1922, with minor word changes.

Resolution on the Present Status of the Theory of Evolution

(Adopted by the Executive Committee of the Council, April 21, 1929.)

Inasmuch as the attempt has been made in several states to prohibit in tax-supported institutions the teaching of evolution as applied to man, and

Since it has been asserted that there is not a fact in the universe in support of this theory, that it is a "mere guess" which leading scientists are now abandoning, and that even the American Association for the Advancement of Science has approved this revolt against evolution, and

Inasmuch as such statements have been given wide publicity through the press and are misleading public opinion on this subject;

Therefore, the executive committee of the Council of the American Association for the Advancement of Science adopts the present resolution, which is a reaffirmation of the resolution adopted by the council of the association at the fourth Boston meeting, December 26, 1922, in order that there may be no ground for misunderstanding of the attitude of the association, which is one of the largest scientific bodies in the world, with a membership of more than 18,000 persons, including the American authorities in all branches of science. The following statements represent the position of the council with regard to the theory of evolution:

(1) The Council of the Association has affirmed that so far as the scientific evidences of the evolution of plants and animals and man are concerned, there is no ground whatever for the assertion that these evidences constitute a "mere guess." No scientific generalization is more strongly supported by thoroughly tested evidences than is that of organic evolution.

(2) The Council of the Association has affirmed that the evidences in favor of the evolution of man are sufficient to convince every scientist of note in the world, and that these evidences are increasing in number and importance every year.

(3) The Council of the Association has affirmed that the theory of evolution is one of the most potent influences for good that have thus far entered into human experience; it has promoted the progress of knowledge; it has fostered unprejudiced inquiry, and it has served as an invaluable aid in humanity's search for truth in many fields.

(4) The Council of the Association is convinced that any legislation attempting to limit the teaching of any scientific doctrine so well established and so widely accepted by specialists as is the doctrine of evolution would be a profound mistake, which could not fail to injure and retard the advancement of knowledge and of human welfare, by denying the freedom of teaching and inquiry which is essential to all progress.

(22) In connection with a discussion of the present high prices of scientific publications, the executive committee made the following statement: The executive committee regards it as to the interest of science and scientific research that the prices of scientific publications be kept as low as is compatible with excellence of production.

(23) The executive committee was in agreement that it is highly desirable that some source other than the treasury of the American Association be found for an American contribution to the Naples Zoological Station such as has been made by the association in recent years. A special committee, consisting of F. R. Lillie, Edmund B. Wilson and H. B. Ward, was named to consider this need.

(24) The executive committee adjourned at 5:30 P. M., to meet at Washington on October 20 next, at 10 A. M.

BURTON E. LIVINGSTON,
Permanent Secretary