A. Woods, Dr. Roger T. Atkinson and Dr. F. R. Stubbs. Dr. Quincy was connected with the department from its inception to the present time, and its rapid development has depended very much upon his zeal and devotion. This loss will be long regretted.

MR. F. G. HOPKINS, late demonstrator of physiology at Guy's Hospital, has been appointed to the new university lectureship in chemical physiology at Cambridge University.

DISCUSSION AND CORRESPONDENCE.

SHALL THE INTERNATIONAL EQUIVALENT OF 'ANLAGE' BE PRIMORDIUM OR PROTON?

TO THE EDITOR OF SCIENCE: In *Nature*, for August 25, 1898, p. 390, appeared a communication from Arthur Willey entitled 'What is Anlage?' He well remarks:

"To be obliged, on every occasion, to write 'Anlage' in inverted commas s a standing testimony to the deficiency of our scientific nomenclature and a constant offence to our æsthetic susceptibilities."*

After pointing out the more or less obvious objections to *forecast*, *fundament* and *rudiment*, he concludes:

"The word that commends itself to me as being at once accurate and well-sounding is *primordium*, and I trust some of your readers will criticise it whether favorably or unfavorably."

I have hesitated to respond to the foregoing cordial invitation because the alternative term in the title of this note was first, in recent times, at least, proposed by me. Nearly six years ago, in an article on the Brain ('Reference Handbook of the Medical Sciences,' IX., p. 104, note), *proton* was employed to 'designate the primitive, undifferentiated mass or rudiment of a part.' It was also introduced in my review of two works on Human Embryology (*The Nation*, LVI., No. 1454, p. 350):

"One author translates Anlage *fundament*. The other adopts it as an English word, regardless of its multifarious and incongruous senses, the confusion that attends its pronunciation and spelling, and the improbability of its acceptance by French embryologists. Neither seems to have thought of reverting to Aristotle, whose phrases, *τὸ πρῶτον*; *ἡ πρώτη ὕλη*; *ἡ πρώτη αἰτία*, suggest the short word *proton*, already familiar in numerous compounds, and eligible for adoption into any modern language."

Proton was also referred to in my 'Neural Terms International and National' (*Jour. Comp. Neurology*, VI., 289, December, 1896); and in 'Some Neural Terms,' 'Biological Lectures' [Marine Biological Laboratory], 1896–1897, p. 158. It has been employed by S. H. Gage, address as President of the American Microscopical Society, 1895 (SCIENCE, August 23d, p. 211); by Mrs. S. P. Gage, 'Comparative Morphology of the Brain of the Soft-shelled Turtle and the English Sparrow' (*Proc. Amer. Micros. Soc.*, 1895, p. 228); by B. B. Stroud, 'The Development of the Cerebellum in Man and the Cat,' *Jour. Comp. Neurology*, V., July, 1895, p. 88; by Joseph Collins, Translation of Jakob's 'An Atlas of the Normal and Pathological Nervous Systems,' 1896, p. vii.; by C. J. Herrick, *Jour. Comp. Neurology*, IV., p. 6, April, 1894; by A. Meyer, *idem*, VIII., p. liv.; and, with editorial commendation, in the *Philadelphia Medical Journal*, May 7, 1898, p. 798. It is defined in Gould's 'Medical Dictionary.'

These uses of *proton* were evidently unknown to Mr. Willey; doubtless he was likewise unaware that the very question propounded in the title of his note had been considered in the article, 'Inquiries Regarding Current Tendencies in Neurological Nomenclature,' by C. L. and C. J. Herrick, in the *Journal of Comparative Neurology*, VII., 162–168, March, 1898. In a circular dated December, 1896, which was 'mailed to about one hundred and fifty of the leading neurologists and anatomists of the world,' was included the following item:

"Kindly underscore your preference among the following, making any comments or additions which may seem best to you: (a) *Proton*, *fundament*, *rudiment*, for the German *Anlage*."

To this query were received forty-two replies, tabulated on p. 166: *Beginning*, *origin* and *foundation* had each one American advocate; *fundament*, six (three American and three European); *rudiment*, nine (five and four); the retention of *Anlage* was favored by eleven (eight and three); but *proton* was preferred by thirteen (seven American and six European).

Had the above facts been known to Mr. Willey he would, of course, have included *proton* among the possible equivalents for *Anlage*. Were *proton* not available *primordium* would be acceptable to me. I venture to express the

*The needless adoption of German words into English had already been vigorously reprobated by Schäfer. *Nature*, August 13 1896; p. 341.

hope that the shorter word of Aristotle may find favor with Mr. Willey.

BURT G. WILDER.

ITHACA, N. Y., November 18, 1898.

POST-GLACIAL CONNECTICUT.

TO THE EDITOR OF SCIENCE: A note in your issue of the 28th ult. makes my 'Postglacial Connecticut at Turner's Falls,' in the Chicago *Journal of Geology* (July–August), 'invoke the agency of ice' to cut the abandoned gorges at the Bird Track Quarry and Poag's Hole. This is just only in so far as it is true that had there been no glacier there would be no postglacial superposed gorge. The gorge, like all those of its class, was cut by the river and a clear photograph is reproduced, showing the visible water wear on these rocks in a region where all others are beautifully rounded by glaciation.

MARK S. W. JEFFERSON.

BROCKTON, MASS., November 11, 1898.

SCIENTIFIC LITERATURE.

Handbuch der physiologischen Optik. H. VON HELMHOLTZ. Hamburg und Leipzig, Leopold Voss. 1896. Second Revised Edition. Pp. xix+1334. M. 51; Bound, M. 54.

The phenomena of vision are so far-reaching and at the same time so organically related that they may almost be regarded as the subject-matter of a separate science. It is neither possible to include them under physics, under physiology or under psychology, nor to distribute them among these sciences. The photochemistry of the retina, the anatomical and histological data, and the comparative and evolutionary relations, add still further to the range of the subject. On vision is based one of the more important departments of medicine; for ophthalmology can in most cases not only offer a correct diagnosis, but also a cure. Probably a majority of the whole population needs its services, and if we add the hygiene of the eye, including the proper lighting of schools, the proper printing of books, etc., there is no one to whom the scientific study of vision is not of practical importance. The phenomena of vision are further factors in the production and appreciation of the great plastic arts — painting, sculpture and architecture. Finally, the world in which we live is before all the world we see.

If there be a science of vision, von Helmholtz should be honored as its founder, and it should date from the completion of the *Physiologische Optik* in 1867. It is true, the doctrine of special creations belongs to the past. Like other departments of knowledge, vision has had a long history and a gradual development. von Helmholtz found at hand not only the greater part of the materials for his structure, but also many of the designs. From the side of physics he had the series of contributions from Kepler, Descartes, Newton, Lambert, Young, Brewster; from physiology there were Haller, Priestley, J. Müller, Plateau, Volkmann, Purkinje; from philosophy Berkeley; from art da Vinci and Goethe—to mention but a few of many names. Contemporary with von Helmholtz worked Aubert, Hering, Listing, von Graefe, Brücke, Vierordt, Donders, von Bezold and many more. But of them all von Helmholtz alone saw the range and unity of the subject, and prepared one of the few books that make an epoch. So well was his work performed that it has scarcely had a successor—only Aubert's *Grundzüge der physiologischen Optik* deserves to be mentioned—and it remained for von Helmholtz himself, in old age, with energies diverted to other channels, to write a new edition of his great work.

To give in a review an account of the contents of a book extending to 1,300 pages, written with great conciseness and covering a range of subjects so wide, is evidently infeasible. Still less possible would it be to enter into critical discussion—an article might be written on each of a hundred topics. This notice must be confined chiefly to the new edition, and the eulogy appropriate to the first edition must be tempered with criticism.

Publication of this edition was begun in 1888. In the course of about a year three parts were issued, treating of the anatomy and dioptics of the eye. About forty pages are here added in addition to substitutions for material omitted, and thorough revisions throughout. The pages in the new edition are, however, somewhat smaller than in the old. This Section concludes with the description of von Helmholtz's great