

exercise class, conducted by Planck himself, which nominally began at 8 a.m., but usually about 8.15. The medical lectures began at 6 a.m., so the University building was well aired by that time.

Planck lived some distance away, in the Gr \ddot{u} newald, and travelled into Berlin by the Stadtbahn. His train often ran parallel to the one I was in from Charlottenberg for a short distance, and Planck could be seen, in a compartment filled with clerks and shop-girls, conning his notes in preparation for the lecture. In the lecture itself he used no notes. He began by writing down a simple equation, but would soon be in the middle of a Fourier series, or, as in the theory of elasticity, a complicated equation which seemed to develop itself. He never made a mistake and never faltered. Very rarely he would take his notes out, look at the board, say "Ja", and put them back again. He spoke in a quiet, audible and pleasant voice, and was the best lecturer I ever heard. He had no mannerisms except one: he had two sticks of chalk before him in parallel arrangement, which he changed about in place from time to time when he was not writing; he had a small reading desk and did not walk about. The mathematics on the board was extremely neat and legible, even when German vector symbols were used, and was set out in systematic order.

Planck's method was to develop the subject logically from general principles, and even when short cuts were possible, he liked to bring each topic into its logical sequence in a general scheme. This made some of it hard going for such as myself. He disliked vector methods, and although he usually wrote the final result in vector form when desirable, the deduction was in terms of Cartesian or polar co-ordinates. He had two favourite sentences. One was "Wir k \ddot{o} nnen noch einen Schritt weitergehen", and the other "Jetzt ist die Sache vollst \ddot{a} ndig gen \ddot{u} gend erledigt".

His lectures on sound included some theory of music, and he gave an extra demonstration with a special harmonium of the natural scale and its necessary modification, "w \ddot{a} hrend die praktische Musik, besonders seit der Einf \ddot{u} hrung der Instrumente mit festen T \ddot{o} nen, mit einer endlichen, nicht zu zahlreichen Menge von T \ddot{o} nen auskommen muss".

Planck was just then developing the 'second' quantum theory of continuous absorption and discontinuous emission (which brought in the half quantum of zero-point energy). He was conservative, and a little shocked by Einstein's bold development of the photon. He was keenly interested in the impact of the quantum theory on general philosophical ideas, and shrank from the extreme view that its later phases removed the validity of the law of causality. To the rather pessimistic outlook which came over what was once regarded as the solid foundation of science he was unsympathetic. Theoretical physics had progressed, it is true, but to him it still had a meaning.

PROF. E. N. DA C. ANDRADE writes: "In the last paragraph of my obituary notice on Prof. P. Lenard (*Nature*, December 27, p. 895), I venture to refer to him as 'a dark genius'. Going through some old papers I have just found a letter, dated 1936, from a well-known German physicist whose name I refrain from quoting because of the difficulty, at the present time, of obtaining his permission. It contains the following passage which I have translated except for the actual quotation.

"I have found the following lines in Hebbel which refer there to the Lord God, but apply very well to Lenard in our Heidelberg time:

"'Und aus seinen Finsternissen tritt der Herr, soweit er kann'."

WE regret to announce the following deaths:

Prof. E. C. C. Baly, C.B.E., F.R.S., Grant professor of inorganic chemistry in the University of Liverpool during 1910-37, on January 3, aged seventy-six.

Prof. P. A. C. Dangeard, member of the Botanical Section of the Paris Academy of Sciences, on November 10.

Dr. C. A. Mitchell, formerly editor of *The Analyst*, on January 5, aged eighty.

Mr. W. H. Pick, of the Meteorological Office, on December 26, aged fifty-seven.

Prof. H. A. Prichard, White's professor of moral philosophy in the University of Oxford during 1928-37, aged seventy-six.

NEWS and VIEWS

New Year Honours

THE New Year Honours list includes the names of the following men of science and others associated with scientific and university work:

G.C.I.E.: Sir Maurice Gwyer, vice-chancellor of the University of Delhi.

G.B.E.: Sir Edward Mellanby, secretary of the Medical Research Council.

K.B.E.: Sir James Irvine, principal and vice-chancellor of the University of St. Andrews.

Knights: Prof. F. C. Bartlett, professor of experimental psychology, University of Cambridge; Mr. H. Cloughton, recently principal of the University of London; Dr. J. D. Cockcroft, director of the Atomic Energy Research Establishment, Ministry of Supply; V. Z. de Ferranti, chairman and managing director of Ferranti, Ltd.; Dr. W. Ivor Jennings, vice-chancellor of the University of Ceylon; The Hon. C. J. Lowe, chancellor of the University of

Melbourne; H. R. Ricardo, chairman and technical director, Ricardo and Co., Ltd.; Dr. R. V. Southwell, rector of the Imperial College of Science and Technology, London.

C.B.: Dr. G. M. Bennett, Government chemist.

C.S.I.: W. T. Hall, chief conservator of forests, United Provinces, India.

C.M.G.: A. P. Mitchell, director of land surveys, Palestine; W. A. Robertson, forestry adviser to the Colonial Office.

C.I.E.: J. Petty, chief conservator of forests, Sind; W. D. West, director of the Geological Survey of India; Dr. R. E. Mortimer Wheeler, director-general of archaeology, India.

C.B.E.: H. W. Bennetts, principal of the Animal Health and Nutrition Laboratory, Western Australia; G. L. T. Brough, deputy director of electrical engineering, Admiralty; J. C. Bugher, director of the Yellow Fever Research Institute, Yaba, Lagos,