

taxonomist in such genera as *Ulmus*, *Salix* and *Nothofagus*. The intermediate forms normally have a random distribution in the area common to both parents, but they can be arranged in graded sequences analogous to naturally occurring clines by taking advantage of a suitable character, for example, leaf shape in *Ulmus*. For such an arrangement of hybrid forms, Melville⁶ proposed the term *nothocline* and described a nothocline based on the variation of leaf shape in the numerous forms of the hybrid *U. glabra* Huds. × *U. Plotii* Druce. The primary need for a method of classifying hybrid swarms can thus be satisfied. The road is opened for attempts to correlate other characters, such as properties of the timber or resistance to disease, with the variable character on which the nothocline is based.

The arrangement of the individuals composing a species into clines enables the taxonomist to present the data of variation in a form in which it can readily be grasped. The silviculturist may be able to draw useful conclusions from such data. Thus it is probable that glabrous forms of the Shagbark Hickory are more hardy than pubescent forms, while some at least of the

intermediate-leaved forms of the Black Pine are the most desirable silviculturally. If it proves feasible for the taxonomist to define ecoclines—a gradient related to conditions of the habitat—in woody species, some help may be afforded in the choice of the most suitable form for a particular site. A study of the European Larch on these lines would be useful. Until further work has been done on hybrids, the value of the nothocline remains problematical, though it seems probable that when linkage exists between morphological and silvicultural characters, it will be revealed by the groupings arrived at in this type of classification. If this proves to be the case, the taxonomist may be able to indicate the best forms for propagation from the numerous wild forms in such hybrid swarms as those connecting the elms, *Ulmus glabra* and *U. Plotii*, and the common pedunculate and sessile oaks, *Quercus Robur* and *Q. petraea*.

¹ Langlet, O., *Svensk. Skogs. foren. Tidsk.*, 1-2 (1938).

² Kalela, A., *Comm. Inst. Forest. Fenn.*, 26, 1-445 (1938).

³ Huxley, J., *NATURE*, 142, 219 (1938).

⁴ Gregor, J. W., *New Phytol.*, 38, 321 (1939).

⁵ Lindquist, B., *Acta Phytogeog. Suecica*, 4 (1932).

⁶ Melville, R., *Proc. Linn. Soc.*, 151, 157 (1939).

OBITUARIES

Prof. C. Białobrzęski

PROF. CZESŁAW BIAŁOBRZĘSKI, who was recently executed by the German authorities in Poland, came from a family of Polish country squires, settled in the Ukraine. He was born in 1879, when the Ukraine was a province of the Russian Empire. His earlier scientific and academic career was spent in the University of Kiev. Like other selected candidates for professorships he was sent abroad to continue his training. Langevin was the man to whom he chose to be attached. To Białobrzęski, he was the embodiment of the ideal physicist, the man uniting philosophical clarity and vigorous theoretical penetration with fine understanding of experimental work. Białobrzęski was all his life a faithful admirer of Langevin, in spite of a fundamental difference of views in everything but physics.

At Kiev, Białobrzęski held his first two appointments, as *Privat-docent* and assistant professor. After Smoluchowski's premature death, the University of Cracow chose Białobrzęski to be his successor. It was, however, not until a year or two after the end of the Polish-Bolshevik War that many Poles living in Soviet Russia were allowed to leave for Poland. Białobrzęski was among those repatriated. He was appointed professor at the University of Cracow; but a year later he answered the call to the capital. He settled in Warsaw, as professor of theoretical

physics in the University, a position which he held until his death.

Theoretical physicist though he was by virtue of his appointment, he could never face being severed from a general physical laboratory. After some struggles, he had a laboratory of his own, well equipped and staffed with talented young people. The work of this laboratory is well known to every specialist in spectrography or dielectrics.

Białobrzęski published few papers. The subjects treated in his papers during his professorship in Warsaw were stellar radiation, absorption and diffusion of light, and dielectrics. His last papers were on cosmic ray bursts and on ionization in liquid dielectrics.

Białobrzęski was a very active member of the International Institute of Intellectual Co-operation, an organ of the League of Nations. Owing to his efforts, and undoubtedly to the keen interest he took in philosophical problems, about thirty leading theoretical physicists from Europe and America were invited to Warsaw by the Institute of Intellectual Co-operation for the purpose of discussing the philosophy of physics. This meeting took place on May 29-June 2, 1938, under the presidency of Prof. Białobrzęski.

He was a member of the Polish Academy of Sciences and several times president of the Polish Physical Society.

M. MATHISSON.