

had the rhythm of the rising ionic  $\cup \cup \cup \cup$  as in "Phoen.", 1539.

A registration of "Hickory, dickory, dock" showed a rhythm of  $\cup \cup \cup \cup \cup \cup$ ; this is a hemiepes as in "Medea", 412. The line "Gems of a master's art" (Bridges, "Buch der Lieder") was spoken with the rhythm  $\cup \cup \cup \cup \cup \cup$ ; this is one form of the dochmius as in "Agamem.", 1166. "Here a little child I stand" (Herrick, "Grace for a Child") registered with the rhythm  $\cup \cup \cup \cup \cup \cup$ ; this is a lekytheion as in "Phoen.", 642. "Tell me thou star whose wings of night" (Shelley, "The World's Wanderers") was spoken with the rhythm  $\cup \cup \cup \cup \cup \cup$ ; this is the choriambic dimeter as in "Antig.", 332. "Fear no more the heat of the sun" (Shakespeare, "Cymbeline", 2, 4, 249) had the rhythm  $\cup \cup \cup \cup \cup \cup$ ; this is the choriambic dimeter as in "Antig.", 107. "A wet sheet and a flowing sea" (Cunningham, "A Wet Sheet . . ."), yielded the rhythm  $\cup \cup \cup \cup \cup \cup$ ; this is a form of the glykoneus as in "Iphig. Taur.", 1097. The line "Ein schönes, wohlgewachsenes Buch" (Ginzkey, "Das Buch"), spoken by the poet himself<sup>3</sup>, showed

the rhythm  $\cup \cup \cup \cup \cup \cup$ ; this is the iambic dimeter, a common ancient form. "Die Damen im schönen Kranz" (Schiller, "Der Handschuh"), spoken by a German, registered with the form  $\cup \cup \cup \cup \cup \cup$ ; this is the ancient telesillion.

The lengths of the vowels in ancient Greek verse are known. The examples given here seem to justify the conclusion that, wherever the lengths of the vowels in ancient Greek verse correspond with the lengths in English and German verse as determined by registration and measurement, the rhythmic scheme is the same. Many—perhaps all—the ancient forms may be established on this principle. Greek metrics thus becomes an exact science consisting of numbers obtained by measurements.

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<sup>1</sup> See NATURE, 132, 138; 1933.  
<sup>2</sup> Janvrin, "Analyse von zwei von John Galsworthy gesprochenen Gedichten", Z. Exper.-Phon., 32, I, 147; 1930.  
<sup>3</sup> Scripture, "Anwendung d. graphischen Methode auf Sprache u. Gesang", 73, Leipzig, 1927.

### Points from Foregoing Letters

PROFS. F. A. PANETH and G. P. Thomson state that during the bombardment of heavy hydrogen with positive rays (positively charged hydrogen atoms) they had obtained, like Harnwell, Smyth and Urry, measurable amounts of helium; they consider, however, that this is not helium of mass 3 resulting from atomic transmutation, but helium gas adsorbed on the walls of the glass discharge vessel, and afterwards released by the hydrogen.

The only way to explain satisfactorily the long life period of the radioactivity of potassium, according to Dr. K. Sitte, is to assume the existence of a rare isotope of mass 43, which loses an electron and becomes the calcium isotope of the same atomic mass.

From the transitory changes in the absorption spectrum of the liver enzyme catalase, when monoethyl-hydrogen peroxide is added to it, Dr. K. G. Stern deduces the formation of an intermediate compound. This compound breaks down less rapidly than the intermediate compound presumably formed between catalase and hydrogen peroxide, since in the latter case there is no apparent change in the enzyme spectrum.

Dr. E. E. Jelley has studied the dichroism of some rare-earth salts and has found that bands are missing from the absorption spectrum for certain ray directions and planes of vibration. These ray directions for zero absorption differ from band to band, and are not always coincident with the axes of the Fresnel wave surface. He considers that this is strong evidence that at least some of the electronic orbits of the incomplete *N* shell are fixed with regard to the crystal structure, and that the rare-earth ions as a whole are incapable of free rotation.

The magnetic susceptibilities of single crystals of thallium metal parallel and perpendicular to the hexagonal axis, and their variation with temperature as the crystal changes to cubic symmetry, have been investigated by Prof. S. R. Rao and K. C. Subramaniam. The authors consider that the hexagonal

structure is due to the three valency electrons of thallium, while in the cubic structure only the single valency electron is active.

The elastic constants of glass have been calculated by Dr. E. Hiedemann from measurements of the velocity of short (ultra-sonic) compression waves. Observations were made with crossed nicols upon the nodal lines produced in a cube of glass by the transverse waves which bring about double refraction at the position of maximal elastic strain.

An additional wave produced by earthquakes, due to reflection first at the earth's surface and then at the boundary of the earth's core, has been identified at the Dominion Observatory, Wellington. This provides, as R. C. Hayes points out, a method of locating abnormally deep earthquakes from a single record near the epicentre.

Dr. V. B. Wigglesworth has shown that in the blood-sucking bug, *Rhodnius prolixus*, the corpus allatum secretes the active substance which prevents the appearance of adult characters ('metamorphosis') until this insect is full-grown; and also, in the mature female, a substance which causes development of the eggs.

The amount of nitrates and phosphates in the surface waters of the Pacific Ocean off the coast of New South Wales is reduced to a mere trace after the attainment of a maximum in diatom production (for example, in spring), according to Prof. W. J. Dakin and A. N. Colefax; this phenomenon is similar to that observed by Harvey and Atkins in the English Channel.

Experience suggests that one is not so likely to receive severe sunburn when the skin is covered with a thick layer of perspiration. Prof. W. H. Crew has made qualitative spectroscopic observations which show that perspiration absorbs, to a considerable extent, the erythema-producing rays of sunlight. The small amount of uric acid in human sweat may be the principal agent in causing this absorption.