

vitamin D from cod liver oil and from tunny liver oil are different or identical. But they show that both these forms of vitamin D are different from irradiated ergosterol.

OTTAR RYGH.

State Vitamin Institute,  
Skøyen, Oslo.  
Aug. 6.

- <sup>1</sup> *J. Biol. Chem.*, 97, 249; 1932.
- <sup>2</sup> *Z. Vitaminforsch.*, 2, 241; 1933.
- <sup>3</sup> *Science*, 80, 596; 1934.
- <sup>4</sup> *Bull. Soc. Chim. Biol.*, 16, 609; 1934.
- <sup>5</sup> *Biochem. J.*, 20, 685; 1926. 26, 264; 1932.
- <sup>6</sup> *Hope Seylers Z. Physiol. Chem.*, 224, 86; 1934.

### Abnormal Magnetic Behaviour of Treated Cobalt Wire

THE magnetisation curve was determined for a length of cobalt wire of 0.194 in. diameter in the condition as received and the result is shown by the curve *A* in Fig. 1. In this figure the values of  $4\pi I$ , that is, the 'metallic magnetic density', are plotted against the magnetising force as abscissæ. The maximum permeability of the wire in this condition was found to be 100, the corresponding value of *H* being about 35 oersteds.

The wire was then heated by passing an alternating current through it in an atmosphere of hydrogen, and the current was of sufficient strength to raise the temperature of the wire quickly to about 1,200° C., this temperature being maintained for a few seconds. The magnetisation curve was obtained after the wire had cooled down, and the result is shown by curve *B* in Fig. 1. The maximum permeability in this case was found to be 370, the corresponding value of *H* being 7 oersteds. So far as I am aware, this is the highest value for the permeability of cobalt at room temperature which has yet been recorded.

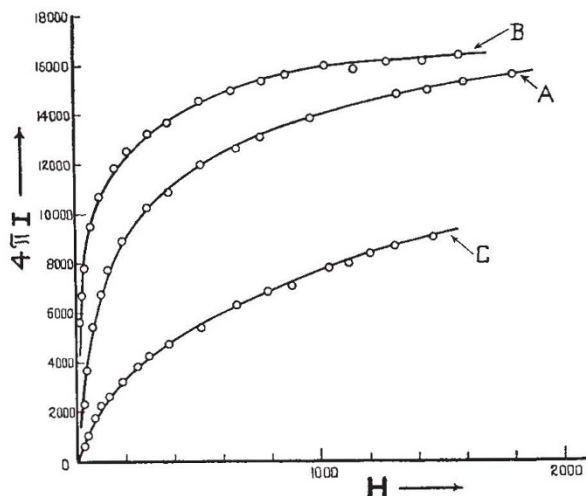


Fig. 1.

The wire was next placed in an atmosphere of hydrogen and an alternating current of frequency 50 was passed through it for several hours, the current being such that the temperature was maintained at about 1,200° C. After the wire had cooled down, the magnetisation curve was again obtained and is shown by curve *C* in Fig. 1. The striking features of this curve are that the saturation metallic density would appear to be only about 60 per cent of that of the normal cobalt, whilst the maximum permeability is now only 30.

The treatment is being continued to find out to what magnetic condition the wire will eventually settle down, and similar investigations are being made for iron and nickel wires.

T. F. WALL.

Department of Electrical Engineering,  
The University,  
Sheffield,  
Aug. 6.

### Unit of Force in the M.K.S. System

THE decision of the International Electrotechnical Commission to recommend the use of the M.K.S. system of electrical, mechanical and magnetic units, as reported in NATURE of July 6, may have far-reaching consequences, for experience has shown that a unit in daily use by engineers soon becomes a familiar quantity, and as such is preferred for quantitative work even by the pure physicist. The statistical examination of the question by G. A. Campbell<sup>1</sup> shows this very clearly: the practical units, volt, ohm, ampere, coulomb, etc., are used by the pure physicist far more than the corresponding c.g.s.m. or c.g.s.e. units. Since the M.K.S. system also possesses advantages for mathematical work, it is at least possible that it may ultimately become universally used.

This possibility will be very considerably increased if all the units have convenient names. In the M.K.S. system, the unit of energy is the joule, and the unit of power is the watt, but no name has yet been assigned to the unit of force, the force which, acting on a mass of 1 kilogram, gives it an acceleration of 1 metre per sec. per sec. G. Giorgi<sup>2</sup> has provisionally used the word 'vis' but the 's' ending makes the use of the plural awkward. Moreover, the derivation of the word is not in conformity with the derivation of the names of the closely related units of energy and power, which have been called after famous men of science. We venture to suggest that 'newton' would be more appropriate. The name of Newton is universally associated with the idea of impressed force, the word complies with the suggestion of G. A. Campbell<sup>1</sup> that the name chosen should have no more than two syllables, and as Newton's name cannot but occur again and again throughout the teaching of even the most elementary mechanics, pronunciation should present no difficulty in other countries.

We understand that the unit of magnetic flux has been called the 'weber'. If the ampere-turn be adopted as the unit of magnetomotive force, which means that the system would be rationalised, then no additional names for units would be necessary. This is certainly not the strongest of arguments for rationalisation, but we would emphasise the importance of easily remembered names with no risk of confusion, and would deprecate the use of a unit for *H* which would require yet another new name. Although a definite ruling on the use of the c.g.s.m. units, the gilbert, gauss, oersted and maxwell has been given, there is still confusion between them in published papers.

L. HARTSHORN.  
P. VIGOUREUX.

National Physical Laboratory,  
Teddington, Middlesex.  
Aug. 12.

<sup>1</sup> *Bull. Nat. Res. Council*, No. 93, 48; 1933.  
<sup>2</sup> Intern. Electrotech. Commission, Memorandum on the M.K.S. System of Practical Units.