two stable indium isotopes is analogous to the behaviour of the metastable levels[3] of the two stable odd silver isotopes Ag[107,109].

A fuller account will be published later.

I am indebted to Mr. D. West for initial discussions which led to these experiments, to Mr. K. W. Allen for his advice in the neutron flux measurements, and to Prof. M. H. L. Pryce for his comments on the results.

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Ultrasonic Dispersion in Organic Liquids

I HAVE measured the velocity of sound, v, at frequencies between about 700 and 3,000 kc./s., and at temperatures between about $+ 15°$ and $- 80°$ C., in the following liquids : *iso*-butyl alcohol ; geraniol, $(CH_3)_2 . C : CH . (CH_2)_2 . C(CH_3) : CH . CH_2OH$; di-dihydrocitronellyl ether $[(CH_3)_2 . CH . (CH_2)_3 . CH(CH_3) . (CH_2)_2]_2O$. There is evidence of negative dispersion $(\partial v/\partial f < 0)$ in all three liquids, and of positive dispersion $(\partial v/\partial f > 0)$ in geraniol and di-dihydrocitronellyl ether near the lower end of the temperature-range. The negative dispersion in *iso*-butyl alcohol is very small and near the limit of experimental error, but it is more pronounced in the other two liquids.
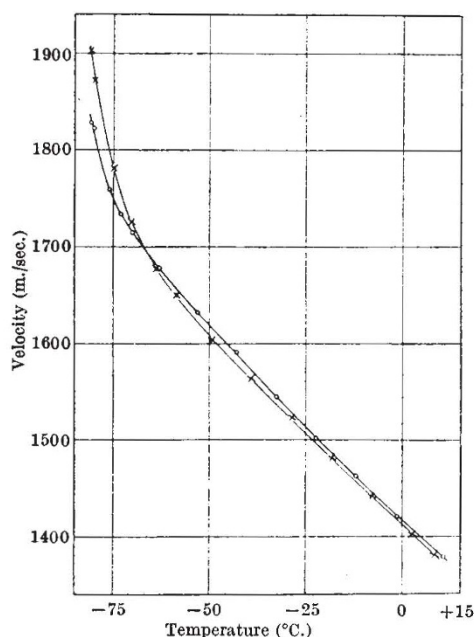
VELOCITY OF SOUND IN DI-DIHYDROCITRONELLYL ETHER AS A FUNCTION OF THE TEMPERATURE AT 689 kc./s. (○) AND AT 2102 kc./s. (×)

The accompanying graph, which refers to di-dihydrocitronellyl ether, is an example of the ultrasonic behaviour of these compounds. It will be seen that the onset of positive dispersion is marked by a more rapid increase of the velocity of sound with falling temperature than at higher temperatures.

A full account of this work will be published elsewhere.

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Magnetic Susceptibility of Mica

THE magnetic susceptibilities of various natural micas have been measured by Wilson[1] and Nilakantan[2] ; the latter also measuring the anisotropy. It was found that for micas which are substantially free from inclusions of magnetite, and in which the iron is therefore present in the crystal lattice, the paramagnetic susceptibility is proportional to the iron content. It was therefore surprising that Eitel and Dietzel[3] should report that synthetic mica containing only 0·05 per cent of iron is still paramagnetic, since a small cleavage flake orientated itself parallel to the magnetic field. A rough calculation shows that a mineral corresponding to their synthetic fluorphlogopite ($KMg_3AlSi_3O_{10}F_2$) should have a specific diamagnetic susceptibility of $- 0·35 \times 10^{-6}$ c.g.s. units, and using the usual Bohr magneton value for iron of $P_B = 5$ and calculating the paramagnetic susceptibility of iron from the relation $P_B = 2·84\sqrt{\psi T}$, where ψ is the susceptibility per gram-ion, one finds that 0·2 per cent of iron corresponds to a paramagnetic susceptibility of just $+ 0·35 \times 10^{-6}$ c.g.s. units. A mica with a greater iron content should therefore be paramagnetic, but with less iron should be diamagnetic. Eitel and Dietzel suggested that the anomalous paramagnetism found by them was connected in some way with the highly anisotropic crystal structure of mica.

We have prepared synthetic mica[4] by the method used by Eitel and Dietzel, and a measurement of its susceptibility by the Gouy method gave a value of $1·60 \times 10^{-6}$ c.g.s. units at a field of about 9,000 oersteds between the pole pieces for a specimen containing 0·04 per cent of iron. The paramagnetism thus appeared to be very high indeed, and would correspond to a Bohr magneton value for iron of $P_B = 25$.

Closer investigation has, however, shown that this apparent large paramagnetism is spurious, and that the observed effect is really due to the ferromagnetism of inclusions of magnetite in the synthetic mica. This conclusion is based on the following facts : (1) the susceptibility decreases with increasing field strength ; (2) a large part of the iron in the synthetic mica prepared by us can be washed out by dilute sulphuric acid, although such a treatment scarcely affects a natural mica which is free from inclusions ; thus confirming that magnetite inclusions are present in the mica prepared by us, and hence in that prepared by Eitel and Dietzel also. Although we have not been able to extend our measurements to sufficiently large fields, our results indicate that at very large field strengths this synthetic mica should become diamagnetic, the ferromagnetic inclusions then being saturated and the intrinsic diamagnetism of the mica causing a cleavage flake to set perpendicular to the field.