

## Antimicrobial Action of Some Aromatic Compounds

NUMEROUS recent researches have directed our attention to the antimicrobial action of various aromatic amino or nitro compounds containing the following functional groups: sulphamide,  $R-SO_2NH_2$ ; thio,  $R-S-R'$ ; dithio,  $R-S-S-R'$ ; sulphone,  $R-SO_2-R'$ ; thiophenol,  $R-SH$ ; sulphinic acid,  $R-SO_2H$ . By chemical analogy with the arsenic compounds in which the arsenoxide group shows *in vitro* a very high parasitocidal activity, we have been led to a study of the *para*-substituted aromatic sulphoxides.

Experiments on mice have proved that 4:4'-

diacetylaminodiphenyl sulphoxide (m.p.  $292^\circ C$ . uncorr.) and also other sulphoxides, symmetrical or asymmetrical, containing the groups OH,  $NH_2$  or  $NO_2$  in the *para*-position, administered by mouth, show an extremely high curative activity not only against *Streptococcus*, but also against experimental gonococcal infection.

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## Points from Foregoing Letters

By feeding a dog with oil and with radioactive phosphorus (as sodium phosphate) and then determining the proportion of 'labelled' phosphorus in the lecithin of the blood and of the intestine, Prof. G. Hevesy and E. Lundsgaard find that the additional lecithin found in the blood contains only a small amount of the active phosphorus, and conclude that during the absorption of neutral fats lecithin is formed outside the intestinal tract.

Drs. J. R. Edisbury, J. A. Lovern and R. A. Morton state that fish viscera other than liver contain vitamin A, and that halibut viscera constitute a very rich and hitherto neglected source of the vitamin. Evidence is adduced that vitamin A in liver is, at least in part, associated with protein.

From the intensity of the components of the hyperfine structure of the resonance line of potassium, Dr. D. Jackson and H. Kuhn deduce that the magnetic moment of K39 is positive, and that the nuclear spin has a value of  $3/2$ , in agreement with the findings of Millman, Fox and Rabi. The centre of gravity of the components of K41 overlaps the weaker component of K39.

An increase in the number of kicks in a 'neutron' counter when placed inside a lead chamber leads B. Arakatsu, K. Kimura and Y. Uemura to assume that neutrons are liberated from lead by cosmic ray photons. When the lead chamber is filled with paraffin, a further increase in the number of kicks of the counter is observed.

Investigations of oxide films on iron by means of electron diffraction throws further light on the three oxide layers (composed of ferrous, magnetic and ferric oxide). T. Iimori gives a diagram showing the regions of stability of the various forms of iron oxide and concludes that, with rising temperature, iron atoms migrate more vigorously towards the surface and check any further oxidation of the lower oxides.

N. S. Nagendra Nath states that the asymmetry in the curve showing the energy distribution of the electrons emitted by radioactive substances ( $\beta$ -decay) is explainable on the assumption that the final process consists of a shower of neutrinos, the number in the shower depending on the transition energy of the nucleus.

An inexpensive low-temperature thermostat, useful

also as a cold aquarium, is described by L. C. Beadle and F. A. Booth. A constant temperature is maintained by means of a controlled circulation of water from an ice tank, the flow being induced by a stream of air bubbles in a connecting tube.

Prof. C. S. Gibson directs attention to the production of thin gold films or mirrors on glass and other surfaces by deposition from organic gold compounds such as diethylmonobromogold.

Dr. S. C. Blacktin describes experiments indicating that, with a fine coal dust, its spontaneous electrical activity varies with the treatment to which the dust is submitted, and that such activity seems to increase with the increase of adsorbed material on the particles and to decrease with decrease of such adsorbed material.

D. A. Peak discusses the evidence concerning certain aspects of the structure of sterols and bile acids and suggests that the fusion of the *C* and *D* rings is in the *cis* and not in *trans* position as hitherto believed.

The separation of the *cis* form of azobenzene by extracting an acetone solution exposed to light with water and then further extracting the aqueous solution with chloroform is described by G. S. Hartley. The *cis* and *trans* forms come to equilibrium under usual conditions, the change being activated by light. The *cis* form has a greater absorption coefficient for blue light and its melting point is somewhat higher than that of normal azobenzene. In benzene solution it has a dipole moment of 3.0 Debye units.

By heating strongly stretched hydrated cellulose (viscose silk) for half an hour at  $200^\circ C$ . in water or in formamide, Prof. K. H. Meyer and N. P. Badenhuizen, jun., find that it is changed into native cellulose, as shown by X-ray diffraction patterns. The authors consider that at  $200^\circ$ - $300^\circ C$ . native cellulose is the stable form and hydrate cellulose is the non-stable.

A small amount of a crystalline dinitro-phenyl hydrazine derivative which appears to be that of ascorbic acid has been separated from urine by Dr. C. P. Stewart, H. Scarborough and Dr. P. J. Drumm.

A diene synthesis which may help towards the synthesis of cholesterol and similar substances is described by A. B. Meggy and Prof. R. Robinson.