nearly perpendicular to the cylinder axis; the dissymmetry of the reflexion diminished for all planes with increasing angular distance from the basal plane. This may be attributed to a disintegration of the bent crystal into glide lamellæ (Fig. 3*a*). Such a process is bound to occur, as otherwise bending would produce extremely high tensile stresses on the convex side, and extremely high compressive stresses on the concave side of a thick block (Fig. 3*b*). If the crystal consists of thin bent lamellæ, lattice planes perpendicular to these will show no dissymmetry of the X-ray reflexions, since initially plane sections perpendicular to the surface of a lamella remain approximately plane in elastic bending.

In the case of polycrystalline metals, the mutual interference of neighbouring grains will give rise to particularly sharp curvatures and thin lamellæ. The dissymmetry effect cannot be observed if the focal length of the curved lattice planes becomes too small compared with the radius of the X-ray camera, but the reflexions will show the diffusion and broadening (Scherrer effect) usually attributed to random fragmentation. With increasing deformation, the elastic energy of the bent lamellæ and their mutual surface energy become high enough for recrystallization to occur. This is strikingly illustrated by observations of Andrade and Chow[5], who found that the tails in Laue photographs of distorted iron crystals broke up into distinct spots at sufficiently high temperatures; with sodium and potassium, this process took place at room temperature, but continuous tails were observed at very low temperatures. All metals may recrystallize at room temperature if the distortion is severe enough. At a given temperature, therefore, local curvatures of the lattice and its splitting up into lamellæ, with the accompanying diffusion of X-ray reflexions, increase only up to a critical distortion at which recrystallization begins[6]. The existence of such a limit to the amount of diffusion has been observed by Gough and Wood[4].

E. Orowan.
K. J. Pascoe.
Cavendish Laboratory,
Cambridge.
July 30.

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Photo-Electric Alloys of Alkali Metals

In order to obtain very thin photo-electric layers, P. Görlich[1] investigated alloys of alkali metals with other metals and found that very thin layers of cæsium-antimony and cæsium-bismuth alloys are sensitive to visible light. I have made some further experiments with these alloys and obtained some results which are summarized below; a more detailed description will be published elsewhere.

The most sensitive alloys of cæsium and rubidium with bismuth and antimony correspond to the stoichiometric formulæ BiM_3 and SbM_3, M representing the alkali metal.

The alloy layer with the highest photo-electric quantum yield is $SbCs_3$. At the optimum wavelength of 4600A., one electron is emitted for only five incident light quanta.

The electric resistance of the antimony-cæsium alloy rises sharply with increasing Cs : Sb ratio. The specific resistance of pure antimony is 4×10^{-5}, the specific resistance of $SbCs_3$ is $1 \cdot 6 \times 10$. The alloys of lower photo-electric sensitivity have a lower specific resistance than $SbCs_3$. The rise of resistance during the formation of the photo-electric alloys is accompanied by the disappearance of metallic reflection. The alloys of the $SbCs_3$ type can therefore be regarded as semiconductors. They represent borderline cases between metallic alloys and ionic crystals, as is to be expected from the position of bismuth and antimony in the periodic system.

It has been impossible to obtain antimony-cæsium alloys in which the ratio of cæsium to antimony is greater than 3 : 1. The same is probably true for corresponding alloys.

Superficial oxidation of the alloys increases the photo-electric sensitivity to light of longer wavelengths. This effect can be explained by the lowered work function of the surface.

From theoretical considerations one would expect that a semiconductor with low surface work function, as represented by the $SbCs_3$ alloy, would be a good photo-electric emitter. But to explain the exceptional properties of the $SbCs_3$ alloy, as compared with the other alloys of the same type, the structure of these alloys would have to be investigated in more detail.

A. Sommer.
Cinema Television, Ltd.,
London, S.E.26.
Feb. 11.

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Influence of the Synthetic Œstrogen Triphenylethylene on the Growth and Egg-laying Capacity of Poultry

Robson and Schönberg[1] have shown that triphenylethylene, a synthetic substance which is easily prepared and now commercially obtainable, will induce œstrous changes in the genital organs and mating in ovariectomized mice and hypophysectomized rabbits. The effect in mice may last for several months. Robson[2] has reported on the induction of œstrous changes in the monkey and bitch by triphenylethylene. He stated also that no toxic changes were observed in these animals or in mice injected with large doses of triphenylethylene[3].

We have investigated the action of triphenylethylene on the growth of poultry and on their egg-laying capacity. The experimental part of this work was carried out by one of us (A. G.) at the Animal Nutrition Experimental Station, Faculty of Agriculture, Giza, Cairo. So far as could be ascertained, no experiments of this kind have hitherto been reported.

The average weight of a hen during the period September 1938–November 1939 was increased by 74·23 per cent after receiving 0·7 gm. triphenylethylene in comparison with 64·54 per cent increase of those not receiving triphenylethylene. The egg-laying capacities of hens are practically unaffected by triphenylethylene as regards either weight or number of eggs.

The average weight of the male turkey chicks was almost uninfluenced by triphenylethylene, in contrast to females, which increased their average weight by 311·5 per cent after receiving 2·73 gm. triphenylethylene a head. Female birds to which no triphenylethylene