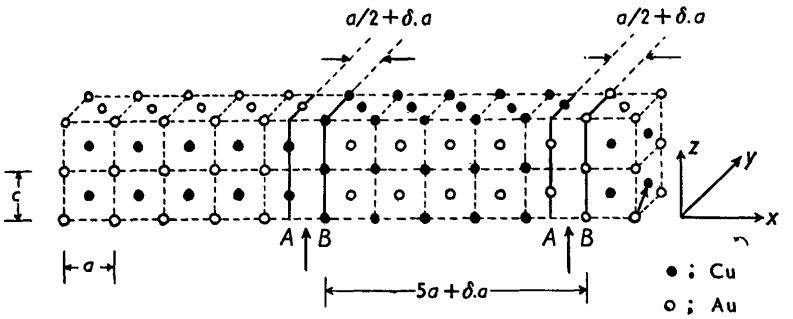

Fig. 2. The ordered structure of CuAu containing antiphase domains in the x direction.

Around the other normal spots, however, the calculated intensities for satellites are far smaller than those actually observed. For this and other reasons we consider satellites actually observed around the normal spots to be the mere repetition of those around the direct spot, i.e. the secondary elastic scattering effect occurs in our film (owing to the small angle of Bragg reflexion in electron diffraction and to the mosaic structure in an evaporated film) as Cowley, Rees & Spink (1951) observed in films of long-chain paraffins.

Thus, the satellites around the direct spot and the other normal spots can be explained by the existence of the elongation $\delta.a$ at each boundary between antiphase domains and by the characteristics of electron diffraction. It is exceedingly difficult to observe these satellites by means of X-rays, owing to their depressed intensities, and the inherent lattice defect in CuAu II has therefore been hitherto overlooked.

A report in detail will appear in the *Journal of the Physical Society of Japan*. We wish to express our sincere thanks to Dr G. Honjo for his kind discussions.

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Space group of fluoranthene.

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The molecular formula of fluoranthene, first given as $C_{15}H_{10}$ by Fittig & Gebhard (1877), was later established unambiguously by Braun & Anton (1929) as $C_{16}H_{10}$. Groth (1906–19) gave the following data for the monoclinic crystals:

$$a:b:c = 1{\cdot}495:1:1{\cdot}025,\ \beta = 97°\ 10'.$$

Single crystals obtained from a concentrated solution in ethanol have been studied by the author.

Goniometric study as well as rotation photographs about different axes gave a different c direction as fundamental, and the following values of the axial lengths and axial angle were obtained:

$$a = 18{\cdot}46,\ b = 6{\cdot}205,\ c = 22{\cdot}11\ \text{Å},\ \beta = 121°\ 45',$$

whence $a:b:c = 2{\cdot}975:1:3{\cdot}563$.

The density was found by the flotation method to be $1{\cdot}238 \pm 0{\cdot}01$ g.cm.$^{-3}$, whence the number of formula weights $C_{16}H_{10}$ per unit cell is 8. Over-exposed zero-level Weissenberg photographs were taken about the b and a axes by the normal-beam method, giving $(h0l)$ and $(0kl)$ reflexions respectively. First- and second-level Weissenberg pictures about the b axis were also taken by the equi-inclination method, giving $(h1l)$ and $(h2l)$ reflexions respectively. The indexing of the spots showed the following conditions of extinctions:

hkl: no systematic extinctions;
$h0l$: present only when $l = 2n$;
$0k0$: present only when $k = 2n$.

Thus the space group is $P2_1/c$ and two molecules of fluoranthene form one asymmetric unit in the unit cell of the crystal.

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