fibroin micelles; acetylation may have a similar effect. Treatment with EDTA reactivates the catalyst poisoned by ferric or cupric ions; in fact, EDTA treatment produces a more active catalyst. Also, treatment of silk fibroin with acetic anhydride prior to the preparation of the catalyst gives a strongly active product.

In an attempt to determine the mechanism of catalytic asymmetric reactions, silk fibroin, its palladium chloride chelate, the silk-palladium catalyst and 6-Nylon catalyst were examined by X-ray diffraction and infra-red spectrophotometry. The reaction of the palladium in the silk complex with *p*-nitroso-dimethylaniline was also observed.

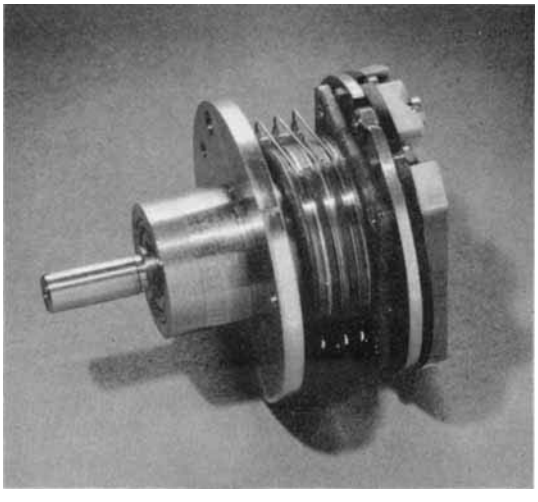
Infra-red absorption measurements indicate that the NH, OH, COOH and CONH groups of the fibroin participate in the chelate formation. On reduction, the chelate linkages are broken and the palladium is then present in an atomic form. Studies by X-ray diffraction suggest that chelate formation does not significantly alter the arrangement of the fibres. Distinct patterns due to palladium atoms are observed after hydrogenation of the complex. Chemical reaction with *p*-nitroso-dimethylaniline confirms the presence of some of the palladium of the complex in a readily reactive state while the remainder appears to be dispersed in the fibre structures.

It is concluded that part of the palladium atoms in the catalyst are assembled in fine crystalline particles and the remainder probably becomes regularly arranged in the micelle structures of the fibres. There is a possibility, also, that certain regular structures emerge in the protein carrier itself.

No definite explanation of the mechanism of catalytic asymmetric reduction is given although it is suggested that it is related to the structure of the carrier. The lack of activity in this type of reaction of catalysts prepared in acetic acid is so far not understood.

B. M. G.

PLATINUM METALS IN POTENTIOMETERS



To achieve complete reliability of contact at the low brush pressures necessary for long life, Kelvin & Hughes Ltd. have made careful selection of materials for their precision potentiometers.

The example illustrated is a miniature sine-cosine potentiometer intended mainly for use in airborne equipment. This has a flat Corundite former wound with either 10 per cent rhodium-platinum or 20 per cent copper-platinum wire according to the resistance required. The face of the winding is swept in a circular track by brushes of platinum-gold-silver alloy wire, soldered end-on to beryllium-copper blades so that the contact area does not increase with wear. Slip rings of copper-palladium are used with platinum-gold-silver brushes.

Only 1-5/8 inch in diameter, the potentiometer provides 18′ revolution and 0.5 per cent sine law accuracy, with life expectation exceeding half a million revolutions.