times found to be ~50 kg mm^{-2}, but twinning occurred before and/or after this stress value. As twinning sometimes commenced at a stress level of ~20 kg mm^{-2}, the magnitude of the Peierls–Nabarro force cannot be as great as originally supposed if a dislocation model for twinning is assumed. Maximum tensile stress was sometimes only a little higher than 50 kg mm^{-2}, but with other specimens profuse twinning continued for appreciable extension. The maximum stress recorded (Fig. 1) was ~500 kg mm^{-2} when the specimen was unloaded, this being the limit of the load cell. Twinning was identified metallographically at all stress values.

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RADIOCHEMISTRY

A Simple Preparation of 5-Iodo-2′-deoxyuridine labelled with Iodine-131 using Iodine Monochloride

Methods so far described for the preparation of 5-iodo-2′-deoxyuridine are based either on the iodination of deoxyuridine by free iodine in the presence of an oxidizing acid or free iodine in an alkaline medium[1–3]. The compound labelled with iodine-131 has been obtained by adapting the iodination in acid[1,4] but the specific activity of the product has not been reported.

The method described here gives consistent yields of 65–70 per cent of 5-iodo-2′-deoxyuridine and iodine-131 uptakes of 55–60 per cent of the iodine-131 used. The method is suitable for preparing mg quantities having a high specific activity.

Carrier-free Na ^{131}I in aqueous solution, obtained from the Radiochemical Centre, Amersham, was placed in a conical 10-ml. stoppered test-tube. The water was evaporated by placing the tube in a water-bath at about 40° and gently blowing a stream of nitrogen over the solution. In order to avoid loss of radioactivity the nitrogen was turned off immediately after the last trace of water had disappeared. For pilot experiments approximately 0·05 μc. was used and in preparations for biological use between 500 μc. and 1 mc. were used.

For each preparation a fresh solution of iodine monochloride[5] in acetic acid, 0·0162 g/ml., was made. For the iodination of 1 mg deoxyuridine, 0·066 ml. of this solution containing 1·5 equivalents was used. The solution was placed in the test-tube which was stoppered and heated in a water bath at 60° for 1 h to effect exchange of ^{131}I and stable iodine. The tube was cooled to room temperature and 1 mg deoxyuridine (grade II obtained from Sigma Chemical Co.) was added. The tube was stoppered and heated in the water bath for a further 1½ h at 60° with occasional gentle shaking. If the bath temperature exceeded 65° there was a tendency for some of the iodine chloride solution to evaporate from the reaction mixture and condense on the glass stopper, giving rise to erratic results. After cooling to room temperature 1 ml. of water was added to the reaction mixture. The resulting solution was adjusted to about *p*H 10 by careful addition of N sodium hydroxide using phenolphthalein as an internal indicator. The product was purified by placing the alkaline solution on a column of 'Dowex resin *A.G.*1' (formate form; × 2; 200–400 mesh, manufactured by the Bio-Rad. Corp.), 2 cm long and 1 cm in diameter[3].

The column was washed with 15 ml. 0·01 N sodium hydroxide, which removed a small amount of iodine-131 containing impurity and eluted with 0·1 N formic acid in 2 ml. fractions. Unchanged deoxyuridine came off in the first 6 ml. of eluate. The next 20 ml. of eluate contained 95 per cent of the radioactivity which could be eluted with 0·1 N formic acid. The radioactivity was measured in a well-type scintillation counter.

The phenolphthalein and unreacted ^{131}I-iodide were retained by the resin. The yield of 5-iodo-2′-deoxyuridine was determined by measuring the ultra-violet absorption of the solution at 288 mμ in a Unicam model 500 spectrophotometer.

The purity of the product was checked by comparing it with authentic material (California Corp. for Biochemical Research) by descending chromatography in ethyl acetate saturated with phosphate buffer (0·05 M, *p*H 6·0)[3].

The radioactivity on the chromatogram was counted in an automatic chromatogram scanner. The main peak was followed by a small peak which contained 10 per cent of the total activity.

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CHEMISTRY

Occurrence in Egg Yolk of Plasmalogenic Triglycerides

Evidence has recently been obtained for the existence of a new class of glycerides containing a vinyl ether linkage. Such glycerides were extracted from the digestive glands of *Asterias forbesi*, the common starfish[1,2], and from the milk fat, beef tallow and ox heart[3]. According to Kiyasu and Kennedy, such neutral plasmalogens may be named plasmalogenic diglycerides and plasmalogenic triglycerides respectively[4].

The present report describes the isolation from egg yolk of a plasmalogenic triglyceride to which the tentative structure I could be assigned:

$$\begin{array}{l} CH_2\text{—}O\text{—}CH=CH\text{—}(CH_2)_{15}\text{—}CH_3 \\ | \\ CH\text{—}O\text{—}CO\text{—}R_1 \text{ (or } R_2) \\ | \\ CH_2\text{—}O\text{—}CO\text{—}R_2 \text{ (or } R_1) \end{array} \qquad \text{(I)}$$

$$R_1 = CH_3\text{—}(CH_2)_{14},\ R_2 = CH_3\text{—}(CH_2)_{16}$$

In two different runs, dry hen eggs and fresh egg yolks were extracted successively with acetone, diethyl ether and boiling ethanol. The acetone extracts contained about 96 per cent of the total extractive material and were discarded. The combined ether extracts furnished a colourless, crystalline solid which was recrystallized from 95 per cent ethanol. Working up the mother liquor by crystallization, chromatography of the resulting substance over activated alumina, followed by recrystallization from acetone, gave colourless prisms, m.p. 34°–39°. The yield of the thus obtained substance I was about 100 mg from 4 kg dry eggs.

The following chemical and physical data were decisive for the establishment of the structure I. The lipide contained no phosphorus. Carbon–hydrogen analysis, calculated for $C_{55}H_{106}O_5$: C, 77·9; H, 12·6 per cent; found C, 77·3; H, 12·2 per cent. Catalytic hydrogenation in the presence of Adams platinum catalyst raised the m.p. to 54°–57°. A spot test for aldehydogenic substances with 2,4-dinitrophenylhydrazine[5] was positive. The infra-red