Sodium 3,5-diacetylimino-1,2-dithiole trihydrate (VI), crystallizes from dilute sodium hydroxide solution in one orthorhombic and one monoclinic crystal modification, both colourless. The orthorhombic crystals are needles elongated along the *c*-axis; they become opaque and disintegrate after a few hours in air. The cell dimensions are, $a = 16.18$ Å, $b = 12.00$ Å, $c = 6.94$ Å. Four formula units per unit cell; density, calc. 1.44, found 1.41 g/cm³. The space group, from systematic absences, is $Cmcm$, $Cmc2_1$, or $C2cm$. Fourier projection along the *c*-axis, and least squares refinement of the $hk0$ data,[2] strongly indicate that the correct space group is $Cmcm$. Only about 50 % of a rather loosely bonded water molecule, in addition to two water molecules more firmly bound, is present. This probably accounts for the instability of the crystals.

The monoclinic crystals are laths developed along the *b*-axis, with $a = 11.68$ Å, $b = 10.13$ Å, $c = 12.19$ Å, and $\beta = 111°$. Four molecules per unit cell; density, calc. 1.44, found 1.43 g/cm³. The space group, from systematic absences, is $P2_1/n$.

4,5-Diphenyl-1,2-dithiole-3-thione (VII). The compound crystallizes from ethanol as orange-red orthorhombic prisms, with $a = 16.36$ Å, $b = 27.21$ Å, and $c = 6.02$ Å. Eight molecules per unit cell; density, calc. 1.42, found 1.43 g/cm³. The space group, from systematic absences, is $Pbca$.

3-Methylmercapto-4,5-diphenyl-1,2-dithiolium iodide (VIII). Orange-red orthorhombic prisms from ethanol, with $a = 18.91$ Å, $b = 18.76$ Å, $c = 9.40$ Å. Eight formula units per unit cell; density, calc. 1.71, found 1.68 g/cm³. The space group, from systematic absences, is $Pbca$.

3-Ethylmercapto-4,5-diphenyl-1,2-dithiolium iodide (IX). Orange-red orthorhombic prisms from ethanol, with $a = 19.33$ Å, $b = 18.08$ Å, $c = 10.52$ Å. Eight molecules per unit cell; density, calc. 1.42, found 1.43 g/cm³. The space group, from systematic absences, is $Pbca$.

Meribicyclo-3,5-epidithio-1,4-diphenyl-2,4-pentadienethione-1 (X). Irregularly developed orange crystals, triclinic, with $a = 10.18$ Å, $b = 8.52$ Å, $c = 10.29$ Å, $\alpha = 118.8°$, $\beta = 94.3°$, $\gamma = 101.1°$. Two molecules per unit cell; density, calc. 1.38, found 1.39 g/cm³. A Patterson projection along *b* indicates that the space group is $P\bar{1}$.

Meribicyclo-3,5-epidithio-1,2,4-triphenyl-2,4-pentadienethione-1 (XI). Black needles elongated along the *b*-axis, with $a = 6.24$ Å, $b = 15.05$ Å, $c = 9.83$ Å, $\beta = 91.5°$. Two molecules per unit cell; density, calc. 1.40, found 1.40 g/cm³. The space group is probably $P2_1$; the higher space group $P2_1/m$ compatible with the systematic absences, would require a molecular mirror plane which appears unlikely.

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Unit Cell and Space Group Data on Certain Pyranose Sugars

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Structure investigations of pyranose sugars [1-8] have confirmed Hassel and Ottar's assumption [9] that the pyranose ring is chair formed. It follows that each pyranose isomer may occur in two different conformations one formed by the other through a conversion of the ring.

Different instability factors have been suggested in order to predict which of the conversion forms of a pyranose isomer will occur, and according to this the predicted normal conformations for various pyranose sugars have been listed by Reeves.[10]

From Reeves' stability scheme both conversion forms of β-lyxose seem probable, because the difference between their instability factors is small. In this connection it is interesting to note that the conversion form of β-lyxose which has been found to occur [6] in the crystal *is* the one with smallest instability factors.

α-D-Talose is another pyranose for which both conversion forms seem probable, and a structure investigation of the compound may reveal interesting information about the relative importance of the instability factors.

Unit cell dimensions and space group for α-D-talose are given here together with data for D-*manno*-heptulose and D-*glycero*-β-D-*gulo*-heptose.

Weissenberg and oscillation photographs were taken, using Cu$K\alpha$ radiation, and the densities were measured by the flotation method. The unit cell dimensions given are believed to be accurate to within 0.5 %.

α-D-*Talose*. The crystals are orthorhombic, and the cell dimensions are, a = 8.06 Å, b = 12.17 Å, c = 7.66 Å. Four molecules per unit cell; density, calc. 1.59, found 1.59 g/cm³. The systematic absences are those of the space group $P2_12_12_1$.

D-Manno-*heptulose*. Monoclinic crystals, with cell dimensions, a = 6.60 Å, b = 7.04 Å, c = 9.45 Å, β = 102°. Two molecules per unit cell; density, calc. 1.63, found 1.62 g/cm³. The space group, from systematic absences, is $P2_1$.

D-Glycero-β-D-gulo-*heptose*. Orthorhombic crystals, with cell dimensions, a = 8.59 Å, b = 15.25 Å, c = 6.99 Å. Four molecules per unit cell; density, calc. 1.53, found 1.53 g/cm³. The space group, from systematic absences, is $P2_12_12_1$.

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Further Observations on the Biosynthesis of Polyamines in Regenerating Rat Liver

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In our previous report [1] it was shown that in the chick embryo methionine, ornithine, and putrescine can act as precursors in the biosynthesis of the polyamines spermidine and spermine, whereas no radioactivity was found in the polyamines after administration of ^{14}C-labelled glucose or proline. Subsequently it was demonstrated that in the rat methionine-2-^{14}C and putrescine-1,4-^{14}C are also incorporated.[2] Furthermore, in these studies indirect evidence was obtained that spermidine is a precursor of spermine.

Regenerating rat liver, as a rapidly growing tissue, seemed to be a likely source of further information on the synthesis of polyamines in mammalian tissues. It was shown that in the rat partial hepatectomy causes a rapid and marked stimulation in polyamine synthesis, since a tenfold increase in the specific activity of spermidine compared with the sham-operated controls was observed in the regenerating liver after administration of ^{14}C-methionine.[3,4] In contrast, our preliminary results (unpublished) with labelled putrescine indicated no significant difference between the specific activities of the spermidine isolated from normal liver and that derived from the regenerating organ. This was somewhat unexpected, especially since it has recently been reported by Dykstra and Herbst [5] that the rate of conversion of putrescine-^{3}H to spermidine was almost doubled as little as 2 h after partial hepatectomy. These observations led us to make a more detailed study of the incorporation of putrescine into spermidine during liver regeneration, the possible role of arginine as a precursor of polyamines, and the interconversion between spermidine and spermine.

Material and methods. The animals used were two-month-old female albino rats weighing 135 to 145 g, if not otherwise indicated.

The radioactive material was dissolved in 0.9 % NaCl and administered intraperito-