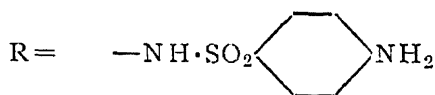
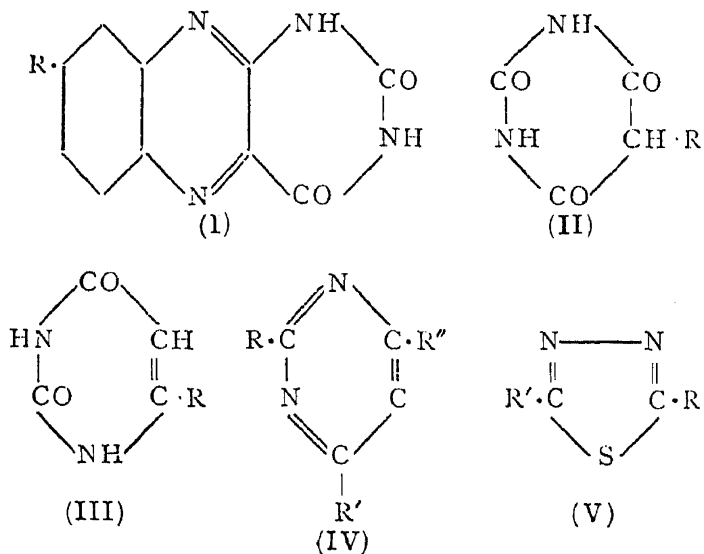


Similarly, 2-sulphanilamido-pyrimidine (IV, $R' = R'' = H$), the corresponding 4-methyl (IV, $R' = Me, R'' = H$) and 4:6-dimethyl derivatives have been synthesised by three different methods. Adenine and 4:5-diaminouracil have also yielded the sulphanilamido derivatives with one molecule of the sulphochloride); but in these cases, a decision between the two possible structures has not been made.



2-Amino 1:3:4-thiodiazole and 2-amino-5-methyl 1:3:4-thiodiazole have similarly yielded 2-N¹-sulphanilamido-1:3:4-thiodiazole (m.p. 216-18°) (IV, $R = H$) and 2-N¹-sulphanilamido-5-methyl thiodiazole (m.p. 180-82°) (IV, $R = CH_3$) respectively.

Similar derivatives of the above and related structures are being synthesised.

Full details will shortly be published.

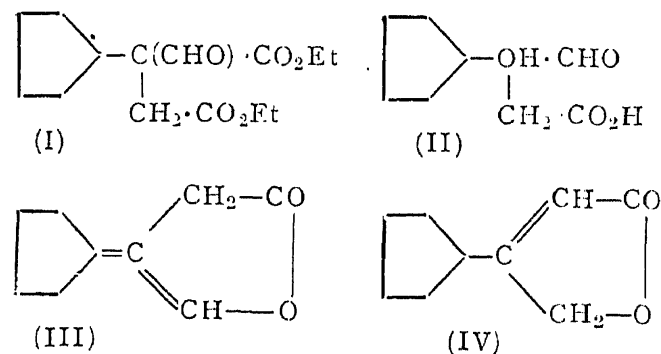
These compounds are being tested in the usual experimental bacterial infections.

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October 1, 1940.

Lactones Related in Structure to Cardiac Aglucones: The Lactone of β -Cyclopentyl β -Aldehyde-Propionic Acid

As early as 1937, work was started by the author with a view to synthesising lactones related in structure to cardiac aglucones.^a In a detailed communication published last year,^{1b} a standard method was described for the synthesis of β -ring substituted succinic acids as an essential groundwork for the larger plan of synthesis of the lactones. A scheme for the synthesis of the lactones was given, and applying the scheme to the case of α -cyclopentyl succinic acid (I), and its successful if peculiarly^b difficult, conversion to β -cyclopentyl- β -aldehydopropionic acid (II) were described. The accumulation of large amounts of (II) to convert it into (III)² a β -substituted $\beta\gamma$ -unsaturated- γ -lactone of the type found in cardiac aglucones—was being delayed but was, however, pursued. In a very recent communication³ Elderfield and his collaborators have,



without giving experimental details, outlined a different method of synthesis of such lactones. In their scheme, lactones of type (III) are obtained through the isomeric $\alpha\beta$ -unsaturated lactones of the type (IV). We have sought to apply this new scheme in the case of the synthesis of (III) and (II). We have succeeded in obtaining them, and hence there can be no doubt about the validity of the various structures in either of the two schemes.

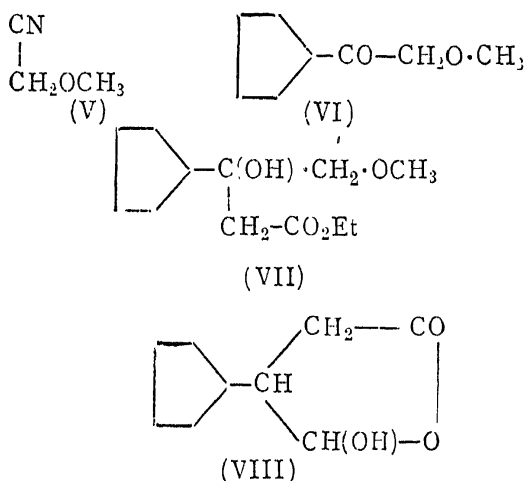
Methoxy acetonitrile (V)⁴ was condensed with the Grignard reagent from cyclopentyl bromide to yield the ketone (VI), b.p. 192-194°/680 mm. (2:4-dinitrophenyl hydrazone, m.p. 130°). The ketone on treatment with zinc and ethyl bromoacetate furnished in excellent

¹ Ganapathi, K., *Proc. Ind. Acad. Sci.*, 1940, **11**, 298; **12**, 274; *Ind. Jour. Med. Res.*, 1940, **27**, 971; *Curr. Sci.*, 1940, **9**, 314.

² *J. Ind. Chem. Soc.*, 1938, **15**, 77.

³ *Ibid.*, 1937, **14**, 627.

yield the hydroxy ester (VIII), b.p. 140°/6 mm. Simultaneous dehydration, demethylation and



lactonisation of (VII) was effected by HBr in acetic acid. Distillation of the product so obtained yielded in the place of the expected $\alpha\beta$ -unsaturated lactone² (IV), the requisite $\beta\gamma$ -unsaturated- γ -lactone (III),⁵ b.p. 155°/5 mm. The proof for the structure (III) would seem to lie in the fact of its immediate response to the very characteristic Legal's test,⁶ its slow reduction of the Tollen's reagent,⁵ and its rather high b.p. This point is, however, kept open. On treatment with absolute methyl alcoholic potash (3%), (III) furnished the hydroxylactone, presumably (VIII), tautomeric with the aldehydo acid (II). The semicarbazone of this newly prepared aldehydo acid melted at 196° and under identical conditions of heating* the semicarbazone previously described by the author^{1b} melted at 196°, and the mixed m.p. of the two specimens was not depressed.

The lactone (III) is almost insoluble in water and is not affected appreciably by prolonged boiling with water. Further work is being carried on in the direction of incorporating features in (III) which would make it water-soluble.

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July 27, 1940.

^{1a} Ranganathan, *Curr. Sci.*, 1937, **6**, 277.

^{1b} —, *J. Ind. Chem. Soc.*, 1939, **16**, 107.

² Wjndaus, *Wiss. Math. Phy. Kl. Göttingen*, 1935, **70**,

³ Fried, Rubin, Paist and Elderfield, *Science*, 1940, **91**, 35.

⁴ Henze and Rigler, *J. Amer. Chem. Soc.*, 1934, **56**, 1350.

⁵ Cf. Wolff, *Annalen*, 1885, **229**, 250, 254.

⁶ Jacobs, Hoffmann and Gustus, *J. Biol. Chem.*, 1926, **70**, 1.

* The melting point varies with the rate of heating.

Soap Gels in Pinene

PRASAD AND MATHUR¹ found that sodium oleate dissolves in pinene at 140° and the clear solution sets, on cooling, to a transparent gel. It has been found by the authors that potassium oleate, sodium palmitate and sodium stearate also dissolve in pinene when heated to 140°, and a clear solution thus formed sets, on cooling, to a transparent gel. The time of setting of these gels has been determined by Fleming's method and has been found to decrease with (i) an increase in the amount of soap in the gel and (ii) a decrease in the temperature at which the solution is allowed to cool.

All these gels exhibit the phenomenon of syneresis but the rate of syneresis of different gels is different. It is maximum in the gels of sodium oleate and least in those of sodium palmitate.

A systematic study of the several properties of these gels has been started in this laboratory and some of the results obtained are being communicated for publication elsewhere.

MATA PRASAD.

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September 30, 1940.

¹ Prasad and Mathur, *Curr. Sci.*, 1940, **9**, 119.

Iwanoffia terrestris (Iwan.) Pascher from Fyzabad

THIS terrestrial member of the order Chaetophorales was originally described by Iwanoff from Russia in 1899 as *Stigeoclonium terrestris*. It was found growing on moist earth. On account of the presence of biciliate macro- and micro-zoospores, Pascher described it as a new