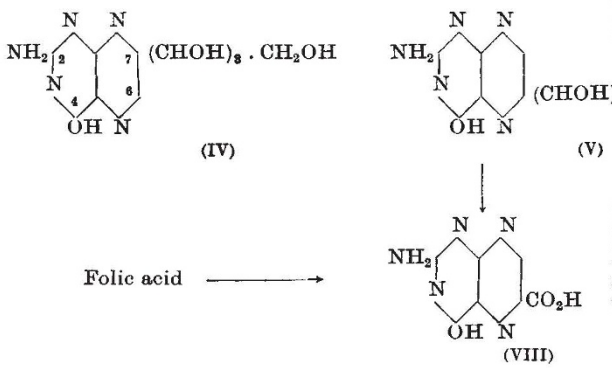
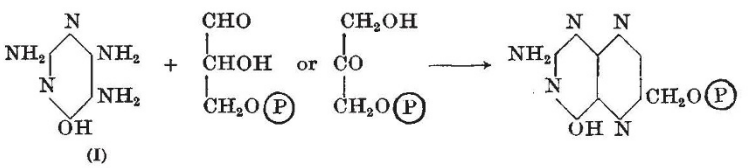
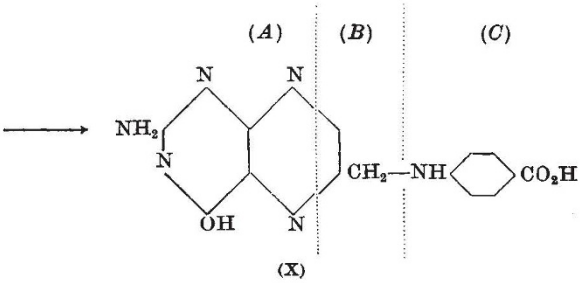
The lack of concordance between the respective specific rotations recorded by the Swiss authors and our own observed values led us to repeat our own work, and we have fully confirmed our own observations. In spite of the slight difference in the optical rotations of (II) and (III), we are of the opinion that our products (II) and (III) are substantially the same compound, 2-amino-4-hydroxy-6-*d*-*arabo*tetrahydroxybutylpteridine (V), for the following reasons. On oxidation with periodic acid, (II) and (III) afforded aldehydes yielding acids (VI) and (VII) on further oxidation. The acids (VI) and (VII) were shown to be identical with 2-amino-4-hydroxypteridine-6-carboxylic acid (VIII), which we obtained by aerobic alkaline hydrolysis of folic acid[3], and distinct from 2-amino-4-hydroxypteridine-7-carboxylic acid (IX), which we obtained by oxidation of 2-amino-4-hydroxy-7-methylpteridine[4], by their ultra-violet absorption spectra in alkaline solution. Furthermore, the sodium salts of (VI), (VII) and (VIII) in aqueous solution all showed the same intense sky-blue fluorescence, while that of (IX) showed a bright green fluorescence in ultra-violet light.



While discussing pteridines and sugars, it is engaging to consider the possible biogenesis of pteroic acid (X). (X) can be regarded as being composed of three fragments, (*A*) being common to (X) and to guanine, (*B*) being a triose, and (*C*) being *p*-aminobenzoic acid. The triose could be either 3-phosphoglyceraldehyde or phosphodihydroxyacetone; both are theoretically capable of participating in oxidative ring-closures of the type discussed in the present communication, and the direct alkylation of aromatic amines with (*ortho*)phosphoric esters is an established reaction[5].





A full account of this work will be published elsewhere.

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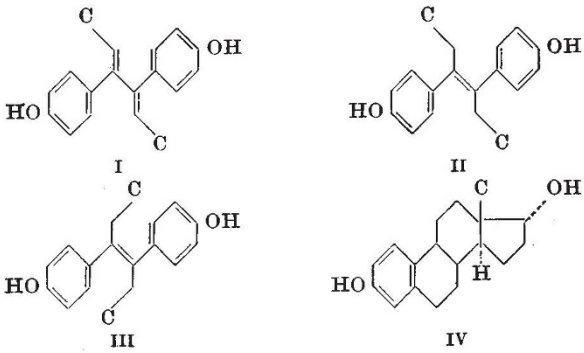
Configuration of Synthetic Œstrogens

It has recently been shown[1] by a consideration of the molecular resonance properties associated with various structural models that the observed[2] centrosymmetrical nature of the hexadiene-œstrol molecule (*pp'*-dihydroxy-3 : 4-diphenyl-2 : 4-hexadiene) [I] requires the hexadiene chain to exist in the planar *trans-trans*-configuration shown below. The two benzene rings are probably rotated by some 50° out of the hexadiene plane in order to reduce the steric interference of the *ortho* hydrogen atoms. Similar arguments lead to a non-coplanar structure of stilbœstrol (*pp'*-dihydroxy-αβ-*trans*-diethylstilbene [II], in which the conformation of the aliphatic hexene chain must be expected to approximate to a zig-zag shape rather than to the *S*-form [III], the latter offering much greater steric opposition to the resonance-induced tendency of the stilbene skeleton to attain full coplanarity.



In connexion with the high physiological potencies of stilbœstrol and its analogues, there has been a tendency to draw an analogy between the 'paper' structure [III] and the established arrangement of the nuclear carbon atoms in the molecule of the natural œstrogenic hormone 'α'-œstradiol [IV]. This analogy appears to have no basis in fact, and must not be regarded as a clue to the actual configurations of the synthetic œstrogenic molecules, which are more correctly represented in two dimensions by [I] and [II].

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Herts. Nov. 13.

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[2] Carlisle and Crowfoot, *J. Chem. Soc.*, 6 (1941).