

Copy of a printed "E. J. Ambrose and A. Elliott's Collagen molecular model" referenced as "Ambrose and Elliott's collagen model"

Contributors

Cowan, J.

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Wellcome Collection
183 Euston Road
London NW1 2BE UK
T +44 (0)20 7611 8722
E library@wellcomecollection.org
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paper) was no doubt intended to be diagrammatic only, and it may be modified to account for the infra-red dichroism which we have observed, without losing its essential features. If it is folded so as to bring the N—H group to the outside of the fold, instead of the C=O group as in Huggins's diagram, we get the spiral shown in figure 6. This arrangement may be visualized by imagining a planar zigzag fold (as in figure 6*a*) in the plane of the figure, and then pushing alternate C=O groups below and above this plane. In this way, the plane of the OC group

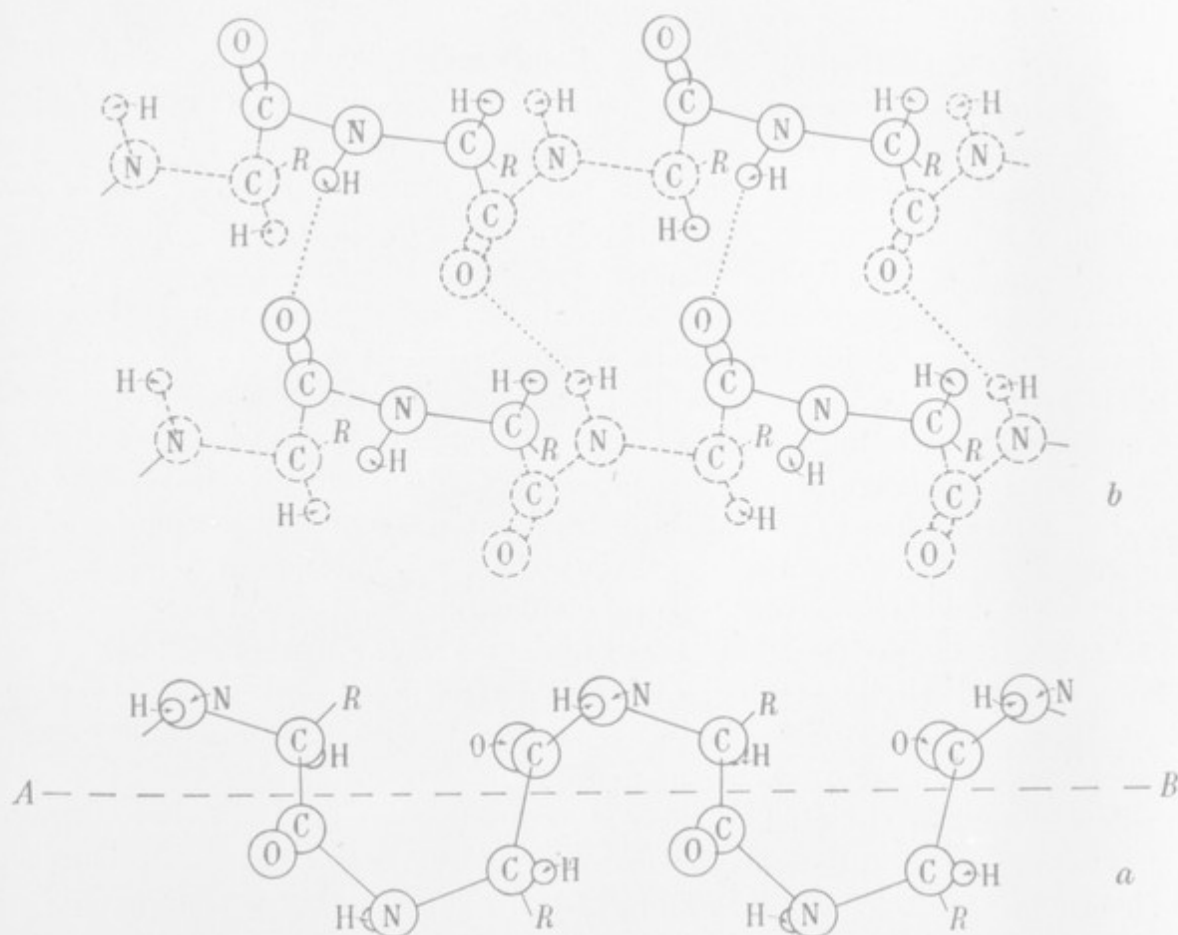


FIGURE 6. Fold proposed for collagen. See text.

is brought sufficiently near the perpendicular to the fibre axis to account for the unique feature of the collagen spectrum, namely, the 'perpendicular' dichroism of the 4600 cm^{-1} band, which indicates the direction of the in-plane C=O deformation mode.

Figure 6*b* shows a side elevation of the spiral. In order to assist interpretation, atoms and bonds which are on the side of the section plane *AB* nearest to *b* are shown in broken line. The diagram is roughly to scale as far as bond lengths and bond angle are concerned. The perpendicular N—H and C=O stretching modes and the parallel N—H deformation mode follow readily from the model. It is of