

## BAKERIAN LECTURE

### Amino-acid analysis and the structure of proteins

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The recent speculations of Bermann and Niemann (B.-N.) on protein structure are reviewed in the light of new analytical data for certain proteins. The molecule of edestin would appear to be a system of six peptide chains of like composition and mol. wt. 50,000, the constituent residues of which conform to the B.-N. stoichiometric rule in that the number of residues of each of the thirteen residue species for which data were obtained was expressible in terms of 2 and 3. The molecule of lactoglobulin is a system of eight or nine peptide chains, not all of which can be of like composition, while that of egg-albumin is a similar system of four chains, in agreement with the recent views of Astbury. The analytical data show that the molecules of the two latter proteins contradict the B.-N. rule, but it is possible that the component peptide chains may conform to it. Insulin (mol. wt. taken as 35,500) appears to be a system of eighteen peptide chains, in agreement with Bernal's deductions from crystallographic data. The conclusion that the molecules of these and other proteins as systems of peptide chains is based in part on titration data and in part on the estimation of free amino-N; new suggestions are put forward as to the way in which the component peptide chains linked together.

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