centrifuge showed that all the radioactivity was in the supernatant fraction. Further fractionation on Sephadex G-25 and G-75 showed two peaks, one of which had a high radioactivity count and a high E_{250} value. The presence of cadmium and thiol groups was confirmed. The protein resembles metallothionein in spectral and chromatographic properties. Attempts are under way to prepare this protein in quantity, to test the homogeneity of the preparation and to measure other physicochemical properties.

Kagi, J. H. R. (1970) *Abstr. 8th. Int. Congr. Biochem., Switzerland*, p. 130

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The Denatured State of Ovalbumin

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The denatured state of a protein obtained in 6M-guanidine hydrochloride plus 2-mercaptoethanol can be characterized by, among other things, intrinsic viscosity $[\eta]$. With increase in temperature bond rotation in the polypeptide chain will be facilitated, and therefore the chain will be shortened, which will result in a decrease in $[\eta]$. The denatured state therefore can be further characterized from measurements of $[\eta]$ as a function of temperature. A notable decrease in $[\eta]$ with temperature must be observed for the denatured protein. This diagnostic criterion of a denatured protein has been generally ignored. In the present communication we present our findings on the temperature-dependence of the intrinsic viscosity of the denatured state of ovalbumin.

The intrinsic viscosity of ovalbumin was measured in 6M-guanidine hydrochloride plus 2-mercaptoethanol at pH 4.85 and at different temperatures in a Cannon-Fenske viscometer with a flow time of 482.0 s for water at 30°C. The intrinsic viscosity of the completely unfolded ovalbumin was found to be 37.4 ml/g at 25°C, which is in agreement with the value calculated by the empirical equation of Tanford (1968). The viscosity showed little or no change in the temperature interval 25–35°C. However, as expected, at higher temperatures the intrinsic viscosity was considerably decreased, confirming our finding that in 6M-guanidine hydrochloride plus 2-mercaptoethanol ovalbumin exists as a randomly coiled protein.

Tanford, C. (1968) *Advan. Protein Chem.* **23**, 121

Studies on Ovomuroid: Hydrogen Ion Equilibrium in the Acid pH Range

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Ovomucoid is an important trypsin inhibitor and is known to interact with the enzyme. Although it is known, in a general way, that this protein-protein interaction prevents the expression of the biological activity of trypsin, very little is known about the mode and extent of this interaction. Information about the native conformation of ovomucoid and the nature of its accessible chemical groups should be helpful for a proper understanding of the trypsin-ovomuroid interaction. This prompted us to investigate the nature of the ionizable groups in ovomucoid. In the present communication we present our findings on the carboxyl groups of ovomucoid.

The H^+ ion titration curve of ovomucoid was obtained by using the cell assembly recommended by Tanford (1955). Ovomuroid was characterized on a DEAE-cellulose column. A symmetrical peak was obtained. The pI of the protein was found to be 4.4, which increased to 4.6 at I 0.15 and at 25°C. The protein concentration was 0.46–0.47%. From the H^+ ion titration curve of ovomucoid it was found that nearly 35 carboxyl groups titrate between pH 1.49 and 6.0, and the value of the electrostatic interaction factor, w , was found to be 0.033, which was similar to the calculated value ($w = 0.033$). The value of w remained unaltered throughout the pH range used in the titration. The electrostatic free energy of native ovomucoid was found to be 9.2 kJ/mol (2.2 kcal/mol) at pH 3.5.

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Structural Requirements of Inducer for the Formation of Penicillin Acylase in *Fusarium* sp. 7.5–5

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Penicillin acylase, an enzyme hydrolysing phenoxy-methyl-penicillin to 6-aminopenicillanate and phenoxyacetate, was purified 200-fold from the culture filtrate of *Fusarium* sp. and was homogeneous on polyacrylamide-disc-gel electrophoresis.

The enzyme was formed adaptatively when the organism was grown in the presence of phenoxyacetate or its derivatives. The amount of enzyme induced depended on the nature of the substitution