species are produced from hexaphenylisocyano molybdenum (0) and molybdenum hexacarbonyl which may be shown from the hyperfine structure of their electron spin resonance spectra to be molybdenum compounds. No electron spin resonance signals are obtainable from the corresponding tungsten derivatives. Work is in progress to elucidate the nature of the valency change in the metals.

We thank Joseph Crosfield and Sons, Ltd., for financial support for one of us (K. H.) and the Mond Division, Imperial Chemical Industries, Ltd., for a gift of phenyl isocyanide.

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BIOPHYSICS

Intrinsic Viscosity Measurements of Bovine Serum Albumin at Different Temperatures

Intrinsic viscosity of bovine serum albumin has been measured by a number of workers[1–6] and values ranging from 3·7 to 4·5 were obtained. All the measurements were made within certain ranges of *p*H (5–7), ionic strength (0·1–0·2) and temperature (20°–28° C). It has been reported that the intrinsic viscosity of bovine serum albumin does not change within the aforesaid ranges of *p*H and ionic strength[3,4]. Naturally the question arises whether the difference in the values of intrinsic viscosity obtained by different authors can be attributed to: (1) the difference in the temperature of the solutions; (2) the difference in the samples, that is, the difference in the heterogeneity factors of the samples (albumin is always found associated with a small fraction of material of higher molecular weight). No experiment has yet been reported which can help in the solution of this problem. The heterogeneity factor of the different samples used by different authors is also unknown.

In the experiment recorded here the intrinsic viscosity of a particular sample of bovine serum albumin has been measured under the same condition of *p*H and ionic strength at different temperatures.

The sample was crystalline bovine plasma albumin, fraction V, obtained from L. Light and Co., Colnbrook, England. The diffusion coefficient of the present sample of serum albumin was obtained[7] as $D^{0}_{25^{\circ},w} = 6{\cdot}73 \times 10^{-7}$ cm²/sec. The ultracentrifugal pattern of the present sample revealed the presence of about 6 per cent material of higher molecular weight.

The viscosity was measured with the help of an Ostwald type of capillary viscometer in a constant-temperature water bath (± 0·01° C). The upper bulb of the viscometer had a volume of 20 c.c. The flow time of 0·1 M sodium chloride at 25° C was of the order of 16 min. The protein solution was prepared by measuring the dry weight with the help of a semi-micro balance and dissolving in 0·1 M sodium chloride. The solution was then filtered through a sintered glass filter. The protein concentration in the filtrate was measured with the help of a Zeiss *PMQ* II spectrophotometer ($E^{1\%}_{1\,cm} = 6{\cdot}67$ at 278 mμ). The flow times of the filtered protein solution and the solvent were measured. The ratio of the averages of five such readings in each case was taken as the relative viscosity (η/η_0) of the protein at that particular concentration. The reduced viscosity of the protein solution was obtained by subtracting 1·00 from η/η_0 and dividing the result by the corresponding protein concentration, c (g/ml.). Freshly prepared protein solution was used for each experiment.

Fig. 1 shows the plot of $(\eta/\eta_0 - 1)/c$ against c for five different temperatures (14°–28° C). Experimental points for all the temperatures were found to fit well in a single straight line (drawn by the least square method) passing through them. The intrinsic viscosity $[\eta]$ of bovine serum albumin was obtained equal to 4·18 ± 0·05 (average deviation of the points from the straight line).

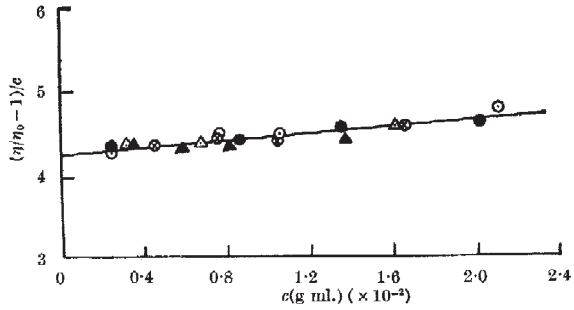

Fig. 1. Plot of reduced viscosity, $(\eta/\eta_0 - 1)/c$, against concentration, c, of bovine serum albumin in 0·1 M sodium chloride at different temperatures. The extrapolated value and the slope of the least-squares line passing through all the points are 4·18 ± 0·05 and 19 respectively. △, 14° ± 0·01° C; ○, 16·50° ± 0·01° C; ●, 20° ± 0·01° C; ▲, 25° ± 0·01° C; ⊕, 28° ± 0·01° C

The experimental value of η thus lies within the range of values reported by others. The present set of data further indicates that the temperature (within the range examined) affects significantly neither the slope nor the extrapolated value, η, of the plot of $(\eta/\eta_0 - 1)/c$ against c. Indirectly this work indicates that the varied results obtained by different authors are due to the differences in the heterogeneity factor of the samples used and hence indicates the necessity of mentioning the heterogeneity factor of the sample while reporting the value of η.

I thank Prof. N. N. Das Gupta and Dr. S. N. Chatterjee, School of Tropical Medicine, Calcutta, for their advice.

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BIOCHEMISTRY

Detection and Documentation of Lipids after Thin-layer Chromatography

A detailed description of methods for the detection of lipids after thin-layer chromatography was recently given by Mangold[1]. Many workers prefer spraying with 2′,7′-dichlorofluoresceine or rhodamine *G* solutions and viewing under ultra-violet light, while others expose the chromatoplate to iodine vapours. Subsequent elution of the lipids and methylation of fatty acids for gas–liquid chromatography is possible because the phosphors do not disturb these procedures. In semi-quantitative and preparative scale thin-layer chromatography we prefer localizing by means of fluorescence which many of the separated lipid spots exhibit under ultra-violet light[2]. In