bin on the fibrinogenolytic mixture, are identical to the peptides in the supernatant after clotting.

Our results indicate that through the action of thrombin the same peptide bonds are split in fibrinogen irrespective of whether its molecule is intact or has been digested with plasmin. Recently Niewarowski and Kowalski¹² have reported that at the digestion of pure fibrin and fibrinogen by plasmin there appears antithrombin activity in the digestion mixture. It is possible that the protein fragments which are formed during fibrinogenolysis and which are substrates for thrombin can act as competitive inhibitors in the reaction between thrombin and fibrinogen and thus contribute to the antithrombin activity. Work is in progress to study the conditions at maximal plasmin digestion and to isolate the protein fragments, that can be proteolysed by thrombin. A more detailed paper on this subject is to be published in *Arkiv för Kemi*.

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Chromic Acid Esters

A Correction

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In a recent paper evidence for the existence of 1:1 complexes of alcohols or acetaldehyde with acid chromate ion was presented. The equilibrium was written $X + \text{HCrO}_4^- = X \cdot \text{HCrO}_4^-$, where X stands for methanol, ethanol, propanol, 2-propanol, 2-butanol or acetaldehyde. But the equilibrium constants became incorrect as no allowance was made for the change of the total number of moles per liter with the alcohol or acetaldehyde concentration.

According to Westheimer *et al.*,^{1,2} the complexes formed in the alcoholic solutions are esters.

In solutions containing acetaldehyde the complex formed may be pictured as chromic acid ester of ethyleneglycol.

The equilibrium constant is

$$K_e = \frac{c_e \cdot \gamma_e \cdot c_w \cdot \gamma_w}{c_1 \cdot \gamma_1 \cdot c_a \cdot \gamma_a} \quad (1)$$

c_e , c_w , c_1 and c_a being molar concentrations of the ester, water, acid chromate and the alcohol, respectively. γ_e , γ_w , γ_1 and γ_a are activity coefficients. For some of the above-mentioned alcohols γ_w and γ_a are known^{4,5}, but since we do not know γ_e and γ_1 we assume that $\gamma_1 = \gamma_a$. γ_1 and neglect variations in γ_w . This enables us to calculate values of K_e from the reported measurements of $\Delta\epsilon$. $\Delta\epsilon$ is the difference between the extinctions at 375 m μ of two solutions both containing 10^{-4} M acid chromate and 10^{-3} M perchloric acid, and one of them also an alcohol or acetaldehyde in varying concentration. Assuming that the extinction coefficients are independent of alcohol or acetaldehyde concentration, we have $\Delta\epsilon = \Delta\epsilon_{K1} \cdot l \cdot c_e$, where l is the length of the optical path in cm and $\Delta\epsilon_{K1}$ the difference between the extinction coefficient of the ester and that of the acid chromate ion at 375 m μ . On introduction of $\Delta\epsilon$ and the total chromate concentra-

Fig. 1. $\Delta\epsilon \cdot c_w/c_a$ versus $\Delta\epsilon$ for acid chromate solutions containing 1) methanol, 2) ethanol, 3) *n*-propanol, 4) 2-propanol, 5) 2-butanol and 6) ethyleneglycol.

Fig. 2. The absorption spectrum of the acid chromate ion 0), and the absorption spectra of the esters of acid chromate with 1) methanol, 2) ethanol, 3) *n*-propanol, 4) 2-propanol, 5) 2-butanol and 6) ethyleneglycol.

tion c_0 in (1) we obtain the following expression.

$$\frac{\Delta\epsilon \cdot c_w}{c_a} = \Delta\epsilon_{K1} \cdot K_e \cdot l \cdot c_0 - K_e \cdot \Delta\epsilon \quad (2)$$

c_w has been calculated from the densities of the solutions⁶. The concentration of ethyleneglycol has been calculated from

Table 1. K_e and the equilibrium constants K reported in Ref.¹ (25°C).

	$10^2 \times K$ litre/mole	K_e pure numbers
Methanol	4.3	4.7
Ethanol	7.7	6.9
<i>n</i> -Propanol	10.9	9.7
2-Propanol	7.8	8.3
2-Butanol	8.2	9.5
Ethyleneglycol		7.2
Acetaldehyde	3.4	

the value of the equilibrium constant for formation of ethyleneglycol in dilute aqueous acetaldehyde solutions⁷. Fig. 1. shows $\Delta\epsilon c_w/c_a$ plotted against $\Delta\epsilon$. From the slope of the straight lines K_e was calculated. Table 1 shows the values of K_e and the values of the equilibrium constants K , reported in Ref.¹ for the equilibrium $X + \text{HCrO}_4^- = X \cdot \text{HCrO}_4^-$. From the measurements of $\Delta\epsilon$ at varying wavelength the absorption spectra of the esters in the near ultraviolet has been calculated (Fig. 2).

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