solid residue taken up in 150 c.c. of ether and evaporated down to 5 c.c. The resulting crystals were filtered off, washed with ether and dried *in vacuo*. The yield was about 400 mgm. The crystals were monoclinic, and had a melting point (uncorrected) of 186–190° (m.p. of succinic acid, 184°). The silver salt of the acid, prepared according to Mrs. Needham's method[4], contained 62 per cent silver (theoretical : 65 per cent). When tested manometrically with a succinoxidase preparation from either pig heart or tracheal cells, the crystalline material was shown to be 91 per cent pure succinic acid.

By the same method succinate was also determined in *Gastrophilus* hæmolymph after deproteinization and ether extraction. The concentration varied from 128 to 404 mgm. per cent. The amount is already high in the half-grown second instar (the earliest stage at which it is practicable to collect hæmolymph), and appears to increase just prior to the second moult, to be followed by a decrease in the early third instar. These changes are summarized below.

Half-grown 2nd instar	2nd instar just prior to moulting	Early 3rd instar	Fully grown 3rd instar
279 mgm. %	351 mgm. %	203 mgm. %	242 mgm. %

To test whether succinic acid might have been formed during dialysis by continuous breakdown—enzymatic or otherwise—from some precursor, the hæmolymph was collected directly into 10 per cent metaphosphoric acid and the silver salt prepared. The yield from some 100 c.c. of blood was 230 mgm. of succinic acid, which shows that succinate is a normal constituent of the blood and not a breakdown product.

Pryor, Russell and Todd[5] reported that succinic acid was obtained from *Lucilia* pupæ, and this suggests that high concentrations of succinate may also be found in other species of insects. At present, however, any indication as to the origin or function of the succinate in the blood must await further study.

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Staphylococcal Coagulation and Fibrinolysis

Smith and Hale[1] were the first to point out that coagulation by staphylococci takes place in two stages. First, the bacterial product is converted to a thrombin-like agent by an activator substance found in plasma. This thrombin-like agent then produces fibrin. Gerheim, Ferguson and Travis[2], and Kaplan and Spink[3] have pointed out that the activator substance is associated with the albumin fraction in ammonium sulphate fractionation, while the latter workers showed that in alcoholic fractionation the activator appears to be associated with the alpha and beta globulins. Kaplan and Spink also have made an important contribution in their studies on the inhibition of the staphylocoagulase reaction.

Staphylococcal fibrinolysis in the past has either been ignored or explained on the basis that staphylocoagulase is a proteolytic ferment[4]. Lack[5], working in Britain, and Gerheim *et al.*[6,7] in the United States, have shown that staphylococcal coagulation and fibrinolysis are distinct phenomena. They are in agreement that staphylococci produce a kinase for the proenzyme, plasminogen (profibrinolysin), just as streptococci do. This kinase has been designated staphylokinase.

Gerheim *et al.*[7], in a series of heat-lability studies, have shown that heating for two hours at 75° C. completely destroys the coagulation precursor (prostaphylocoagulase), while there is little change in the staphylokinase reactivity.

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Excretion of D-Pyrrolidone Carboxylic Acid by Rat and Dog Fed with Tumour Proteins

There has been much controversy about our claim[1] that D-glutamic acid is a constituent of tumour proteins. Many authors were unable to confirm our results, and in their opinion the D-form which we isolated from malignant tumours was formed by partial racemization *in vitro* during the hydrolysis with hydrochloric acid. An explanation of these contradictory results will be given in future publications. Here we wish to record further evidence for the correctness of our views.

In 1940 we reported[2] that the normal dog was unable to digest rabbit tumours (Brown–Pearce) in the same way as common meat. The Neuberg[3] precipitate of the urine contained a peptide fraction which on hydrolysis yielded glutamic acid with 17 per cent D-form. From the peptide fractions of the fæces we isolated glutamic acid with 53 and 57 per cent D-form respectively, that is, with a surplus of the unusual antipode. So far as we know, these experiments have never been repeated in other laboratories. In connexion with some new facts mentioned below, it was desirable to repeat the experiments in our laboratory for a third time. A dog was fed for four days with cooked rat tumours (benzpyrene). The isolation of the peptide fraction of the fæces was carried out in the same way as described previously. In the new case the isolated glutamic acid contained 33 per cent D-form ; the lower value is in good agreement with our general experience that the rat tumours (benzpyrene) produce on acid hydrolysis only about half as much D-glutamic acid as the very malignant Brown – Pearce tumours.