rats emphasizes the fundamental importance of this series of reactions in Nature.

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Photosensitivity of the Iron (III) Ethylenediamine Tetraacetate Complex

In 1952, Jones and Long[1] observed that the iron (III) ethylenediamine tetraacetate complex is photosensitive. Hill-Cottingham[2] also noted the photochemical dissociation of this complex, which he applied for qualitative work in his investigation of the photochemical dissociation of iron (III) chelates by the action of daylight. Weinstein, Robbins and Perkins[3] examined this complex at *p*H 7; they remarked that it is more stable than other metal ethylenediamine tetraacetate complexes over a wide *p*H region. They suggested that it is metabolized in the plant. Heath and Clark have studied the iron supply of plants by using this complex[4].

There are several methods for the quantitative determination of iron by the ethylenediamine tetraacetate complex: two volumetric ones[5,6] for 0·1 *N* and 0·01 *N* solutions, and also two spectrophotometrical ones (one for amounts of 4–500 mgm. iron per litre at 366 mμ[7] and one for amounts of 0·5–12 mgm. iron per litre at 260 mμ[8]). The latter was used for our experiments. However, we found that this determination is carried out preferably at *p*H 3–6, instead of 1–3 as suggested by Uzumasa and Nishimura[8]. The dissociation is then less pronounced.

In connexion with the photochemical dissociation of the complex, we find that: (1) Dissociation depends upon the prevailing daylight intensity; in the dark no dissociation takes place. (2) Dissociation is pronounced when the excess ethylenediamine tetraacetate is small and also at low *p*H values; dissociation is low at high *p*H and large excess of ethylenediamine tetraacetate. The influence of the *p*H is shown by Table 1. Table 2 shows the influence

Table 1. Concentration of iron, $3{\cdot}96 \times 10^{-5}$ *N*; concentration of ethylenediamine tetraacetate, 8×10^{-5} *N*. These solutions, kept in the dark, showed after 0·5 hr. and even after one day extinctions of 0·367 at 260 mμ in 1-cm. quartz cells

*p*H	Extinction after 0·5 hr.	Extinction after 1 day
2·61	0·363	0·216
1·76	0·357	0·188
1·65	0·355	0·164
1·57	0·374	0·146
1·44	0·358	0·124

Table 2. Concentration of iron, $4{\cdot}12 \times 10^{-5}$ *N*. *p*H 4·56. Extinction without dissociation 0·373 measured at 260 mμ in a 1-cm. quartz cell

Ethylenediamine tetraacetate concentration	Extinction after 0·5 hr.	Extinction after 1 day
$4{\cdot}12 \times 10^{-5}$	0·340	0·329
4·33	0·342	0·330
4·94	0·370	0·348

of the concentration of ethylenediamine tetraacetate. (3) Regeneration as found by Jones and Long[1] is possible and very pronounced when ethylenediamine tetraacetate is present in excess. An extinction of 0·362 was observed for an iron solution (concentration $3{\cdot}96 \times 10^{-5}$ *N*; *p*H 1·59) with a 25-fold excess of ethylenediamine tetraacetate and a light path of 1 cm. at 260 mμ in the undissociated condition. By exposing the solution for 24 hr. at a window, the extinction decreased to 0·270.

After keeping this solution for two days in the dark, the extinction increased to 0·358. Then the solution was exposed to light at a window again, this time for three days, and the extinction became 0·311. Finally, the solution was kept in the dark for one day, and the extinction increased to 0·342.

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A Crystalline Substance isolated from Egg Yolk which promotes Growth of a Minute Inoculum of Human Tubercle Bacilli

Egg yolk is the chief component of the solid culture media which are currently employed for the clinical detection of tubercle bacilli[1]. But these egg media coagulate during their sterilization treatment and cannot liquefy again once they are so treated. This property is an essential defect in laboratory practice compared with ordinary agar solid media. So I have attempted to find the growth-supporting substance from a minute inoculum of the bacilli in the egg yolk and to add it to the agar medium which could be used as a routine agar medium for the tubercle bacilli. This substance was isolated in the crystalline form and a simple synthetic solid medium was devised which contained a small amount of it and 'Tween 80' as a carbon source[2]. This in minute amounts supported the growth of human tubercle bacilli. This communication deals with the method of isolating the crystalline substance and its principal properties and those of the synthetic agar medium containing it.

'Tween' solution extract of egg yolk was prepared by autoclaving 10 per cent yolk suspension in 6 per cent 'Tween 80' solution in water at 120° C. for 15 min. The transparent 'Tween' extract of the yolk was