In Fig. 1, Curves 1 and 2 represent the curves of the spectral sensitivity of plates sensitized with erythrosin and phloxine, reduced to the same number of incident quanta. Curves 3 and 4 represent the curves of absorption of these dyestuffs adsorbed on layers of silver bromide.

As it is to be seen from the figure, the wave-length of the maxima of sensitivity coincides exactly with the wave-length of the maxima of absorption of adsorbed dyestuffs (erythrosin, 558 mμ; phloxine, 563 mμ) whereas the maxima of absorption of the dyestuffs in solution lie at 523 mμ for erythrosin and at 524 mμ for phloxine.

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Glyceraldehyde and Embryonic Glucolysis

IT has already been reported[1,2] that anaerobic lactic acid production from glucose in the chick embryo is a true case of non-phosphorylating glucolysis, strongly inhibited by *dl*-glyceraldehyde. As possible intermediates, glycerol, glyceric acid, dihydroxyacetone and methylglyoxal were excluded. We are now able to add to the list pyruvic acid and glyceraldehyde.* Of the two stereoisomers, *only* *l*-glyceraldehyde inhibits glucolysis; this corresponds in its configuration to *l*-lactic acid (sarcolactic acid) which derives from glucose in the body. The inhibitory effect is complete at a concentration of about $2{\cdot}5 \times 10^{-3}$ *M*. The fact that *dl*-glyceraldehyde does not apparently inhibit glucolysis more than about 90 per cent is due to a slow enzymic lactic acid formation from glyceraldehyde itself. This process needs glutathione as co-enzyme and is not based upon a primary condensation of trioses to hexose, as it is not inhibited by amounts of fluoride or iodoacetate which would be enough to poison a secondary glucose breakdown. It is due rather to the non-enzymic formation of methylglyoxal under the experimental conditions, which is then converted to lactic acid by the glyoxalase present.

The exclusion of so many 3-carbon compounds as possible intermediates of glucolysis proper induces us to refer to the work of Nef[3], who showed an *in vitro* intramolecular shifting of the enol linkage along the carbon chain in hexoses, and suggested a similar process for the enzymic breakdown of glucose. Such a shifting of enol linkages would make it possible to understand how *l*-lactic acid can derive from *d*-glucose *in vivo*. The final step would be an intramolecular dismutation. The occurrence of enolization and dismutation would explain the inhibition of glucolysis proper by fluoride and iodoacetate, which also poison (though in different concentrations) the enolase and dismutase of hexosediphosphate breakdown.

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Technique of the Painting Process in the Temple of Vijayalaya Cholisvaram in Pudukottah State

THE ruined temple of Vijayalaya Cholisvaram is situated in the village of Narthamalai (10° 30′ N., 78° 45′ E.) in Pudukottah State in South India, being about five miles to the north-east of Sittannavasal[1] and about 33 miles, as the crow flies, from Tanjore[2]. The temple was probably built in the ninth century A.D. during the time of Vijayalaya, a king of the Chola Dynasty of South India. The details of the paintings, however, have either faded or disappeared, due to the vicissitudes of time and environment, so that it is very difficult to judge of the art as such. But circumstantial evidences go to show that the paintings were probably executed during the eleventh–twelfth centuries A.D., and at any rate, their date cannot be later than the fourteenth century A.D. If they belong to the eleventh–twelfth centuries A.D., they should have been contemporaneous with the Chola paintings in the Brihadisvara temple[2] at Tanjore.

The paintings are executed on the inner walls of the front hall of the temple, which are constructed of large blocks of hornblende-gneiss. The technique adopted is a combination of tempera with fresco. The painted stucco consists of the *Rinzaffo* or the rough coat of lime plaster with a fine lime wash thereon, the latter having been applied while the plaster was still wet. Over this is a layer of paint of appreciable thickness. The thicknesses of the different layers are: painted stucco, 3·3 mm.; rough plaster, 2·3 mm.; lime-wash, 0·4 mm.; paint film, 0·6 mm.

The results of analysis of the rough plaster and the paint film (red paint film being chosen for the purpose) are given in the accompanying table.

	Rough plaster (per cent)	Red paint film (per cent)
Moisture	1·39	1·71
Carbon dioxide	20·95	11·67
Loss on ignition	4·29	11·86
Silica (SiO_2)	37·83	38·85
Iron and alumina (Fe_2O_3, Al_2O_3)	1·79	7·63*
Lime (CaO)	31·73	25·09
Sulphuric anhydride (SO_3)	0·03	0·27
Magnesia (MgO)	0·66	1·68
Undetermined (mostly alkalis)	1·33	1·24
	100·00	100·00

* Al_2O_3 being only 0·73 per cent.

The high value of the loss on ignition of the paint film, amounting to 11·86 per cent, is significant, and goes to show the presence of organic matter in the paint film used as a binding medium.

The only inert material used with the lime is sand.

So far as the pigments are concerned, lime has been used for the white, carbon for black, yellow and red ochres for yellow and red and terre verte for green. There are traces of a light, bluish-green colour, but sufficient quantity of it is not available for identifying the blue pigment.

Full details of the investigation will be published elsewhere.

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