



Absorption spectra of the ethyl chlorophyllides in ether. Solid lines, absorption spectra of chlorophylls *a* and *b*, from Harris and Zscheile (ref. 2); open circles and filled circles, relative absorption coefficients for ethyl chlorophyllides *a* and *b* respectively

their absorption spectra, except for some indirect evidence that they are different from those of the chlorophylls¹.

This has now been tested directly. A sample of the mixed chlorophyllides, which had originally been prepared by A. Stoll, was kindly supplied by Dr. J. Weiss. This sample was dissolved in petroleum ether and chromatographed by the method employed for the chlorophylls². A dark residue remained within $\frac{1}{2}$ mm. of the top of the column. This probably accounts for part of the spectral results previously obtained. The two bands of the chromatogram were twice re-chromatographed.

The spectra of the two chlorophyllides in ether and methanol were measured using a Beckman spectrophotometer. These spectra could then be superimposed exactly on the corresponding chlorophyll spectra² on adjustment of the absorption coefficients at one point, as is illustrated in the diagram. An attempt was made to obtain the absolute extinction coefficients by direct weighing after extracting the dissolved sugar with water. This was unsuccessful, as the chlorophyllides were altered in spectra by this treatment. Despite the lack of the absolute extinction coefficients, the identity of spectral shape leaves little doubt that the spectra of the ethyl chlorophyllides are the same as those of the corresponding chlorophylls.

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W. F. WATSON

C/o British Rubber Producers'
Research Association,
48 Tewin Road,
Welwyn Garden City.
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¹ Rabinowitch, E. I., and Weiss, J., *Proc. Roy. Soc., A*, **162**, 251 (1931).

² Harris, D. G., and Zscheile, F. P., *Bot. Gaz.*, **104**, 515 (1943).

Electrolytic Polishing of Lead in a Sodium Acetate—Acetic Acid Bath

IN the course of experimental work on the anodic behaviour of lead, it was found desirable to produce a high degree of polish on specimens which might have overall areas of as little as 1 sq. cm. An examination of the literature indicated that the recommended bath for polishing this metal was one consisting of 250 c.c. of 60 per cent perchloric acid, with 750 c.c. glacial acetic acid. We considered that, because of the intermittent use that would be made of the solution, it would be unpleasant to store; a search was therefore made for alternatives. The experiment was tried of increasing the conductance and buffer capacity of glacial acetic acid by the addition of sodium acetate, and the present note gives details of useful operating conditions for electrolytic polishing in the resultant solution.

For most of our experimental work, we employed cylindrical lead specimens, about 1 cm. in diameter and mounted with the exposed face vertical. The electrical connexion to the back surface, and also this surface, were coated with a thermal-setting insulating varnish. A graphite or platinum cathode was placed about 5 cm. away from the anode. Contrary to normal practice the current, rather than the applied voltage, was controlled, and by this means the specimen could be etched or polished. Polishing occurred at current densities between 50 and 100 mA./cm.² in a bath of the following composition:

Anhydrous sodium acetate	60 gm.
Glacial acetic acid	315 c.c.
Water	80 c.c.

The over-potential at the anode has been measured by means of a Luggin capillary and saturated calomel electrode, and a value of 4–5 V. was recorded during polishing. Polishing occurred in the following stages on the 1-cm. diameter specimens: (a) etching; (b) polishing began at the edges, working inwards across the surface, followed by the inward growth of a film; (c) after about two minutes, this film completely covered the surface, the over-potential reaching a maximum value; oxygen was not evolved; (d) patches of polish began to show, and after four minutes a highly reflecting surface appeared which was maintained on continuing to pass the current.

If the current is interrupted for a few seconds, on re-starting the above cycle is repeated, etching being first produced on the smooth surface.

ELIZABETH JONES
H. R. THIRSK

King's College
(University of Durham),
Newcastle upon Tyne.
Dec. 1.

Natural Origin of Optically Active Substances and Optical Resolution by Symmetric Agents

THE communication by R. C. Ferreira¹ stresses the implications of his findings (and those of H. M. Powell²) on the origin of 'molecular dissymmetry' in living matter through nucleation of a saturated solution of an externally compensated compound by a crystal containing an excess of one enantiomer. Possibly certain earlier work bearing upon the same fundamental principle runs some danger of being overlooked. It was observed more than a hundred