the Raman line corresponding to an infra-red wavelength of about 74μ marked by an arrow in the photographs reproduced in Fig. 1, which is conspicuous in the dextro form and scarcely visible in the lævo form. This result is sufficiently surprising, and is therefore put forward with all due reserve. Nevertheless, the authors feel reasonably confident of its reality.

Further work has been undertaken to study other optically active substances (both fluid and crystalline). It is also proposed to investigate whether the state of polarisation of the light has any influence on the observed results.

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The Gibbs-Ewald Reciprocal Lattice.

THE Gibbs-Ewald reciprocal lattice is now of such general use in the discussion of problems in crystal physics that it seems worth while to record a simple analytical expression for its definition.

The usual vector definition of the reciprocal lattice is expressed by the relations [1]

$$(\mathbf{b}_i\mathbf{a}_i) = 1 \qquad (\mathbf{b}_i\mathbf{a}_k) = 0 \qquad i + K,$$

where $\mathbf{a}_i$ refers to the vector defining any one of the primitive triplet of translations of the crystal lattice ; and $\mathbf{b}_i$ refers in a similar way to the primitive triplet of the reciprocal lattice.

I now suggest an equivalent formula of a purely analytic type. Let us consider the equation

$$l^{2\pi i \sum_1^3 u_i x_i} = 1,$$

and discuss the simple case in which the x_i are the co-ordinates of a point referred to orthogonal axes. We now consider another space referred to similarly situated axes in which the co-ordinates of a point are u_i. To every point u_i in the second space, there corresponds an infinite number of planes

$$u_1x_1 + u_2x_2 + u_3x_3 = n,$$

where n is an integer. The distance between any two adjacent planes is equal to $n/(u_1^2 + u_2^2 + u_3^2)$. If now we apply the law of rational indices to specify the crystallographically possible planes, we see that the values of u_i are then the co-ordinates of the points of the reciprocal lattice as usually defined.

For the discussion of the case of oblique axes, the tensor form of the equation is probably the simplest. We write immediately

$$l^{2\pi i x_i x^i} = 1,$$

where the x_i are the covariant components of the vector x the contravariant components of which are x^i. The co-ordinates in the reciprocal space can then be associated directly with the covariant components of the co-ordinate vector in the original space.[1] In the use of the tensor form it is interesting to make use of an affine co-ordinate system [2] of constants a, b, c, and angles α, β, γ, appropriate for the crystal under discussion.

I hope to develop the present transformation and also the more general transformation expressed by the equation $F(x_i x^i) = 0$ in connexion with the Fourier integral transformation previously published.[3]

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[1] P. P. Ewald: "Handbuch der Physik", **24**, 241 (Springer, 1927).
[2] E. Madelung: "Mathematische Hilfsmittel des Physikers", p. 85 (Springer, 1925).
[3] A. L. Patterson: *Zeits. f. Phys.*, **44**, 596; 1927.

The Blowfly's Mouth.

THE proboscis of the blowfly has been so often figured and described that students generally have no difficulty in understanding its structure and mode of working. There is, however, one small ambiguity that beginners are liable to find somewhat perplexing, especially when only balsam preparations are used, namely, the use of the word mouth to describe the opening in the centre of the terminal disc. That this opening is not the mouth in the sense of being the entrance to the pharynx is apparent when one dissects a well-distended proboscis that has been cleared in potash. If the disc is snipped off and examined under water without pressure (see Fig. 1), the opening is

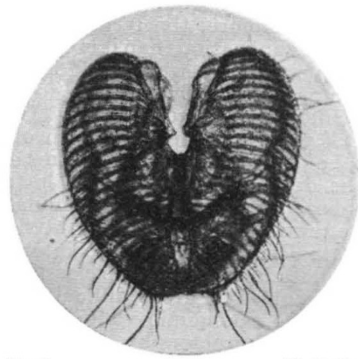

Photo.] [*J. Manby.*
FIG. 1.—Disc of blowfly's proboscis.

found to be identical with the gap lying between the two lobes (*labella*), particularly with the small central region, which is nearly but not quite partitioned off from the upper part and which is continuous behind with the channel-like groove in the haustellum.

If the name mouth is retained for this region of the disc, the question arises what the aperture at the other end of the haustellar groove should be called. Unlike the gap in the disc, this small and deeply placed aperture is concealed from view and somewhat troublesome to find unless the overlying parts be first removed. When this is done—when, for example, the haustellum is cut away—the aperture is seen lying between the epi- and hypopharynx at the end of the rostrum ; and since, besides being associated in this manner with appendages that are plainly oral in character, it opens directly into the front portion ("buccal cavity", Patton and Cragg) of the pharynx there seems to be good reason why it, rather than the opening in the disc, should be called the mouth.

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Organic Chemistry at University College, London.

IT is now an open secret that the Academic Council of the University of London is being moved not to appoint an eminent organic chemist to succeed Prof. Robinson in the chair of organic chemistry in University College, London, but to fill the two chairs of chemistry in this institution by distinguished physical chemists. The acceptance of such a fantastic proposition would disturb the balance of natural philosophical studies in University College so profoundly that immediate public protest is necessary, and the more so in that organic chemistry is not directly represented on the Academic Council.

Physical chemistry is a modern subject ; its achievements, based, on one hand, upon the recent rapid