one is not in a position to place an egg, a larva, or a pupa to a particular species. While engaged in the breeding of sandflies at the Kala-azar Research Laboratory of the Calcutta School of Tropical Medicine and Hygiene, I had an excellent opportunity of studying the immature stages and more especially the larvæ of the species occurring locally.

During a course of systematic study of the larvæ bred from strains of known species, I found that the specific differences are prominently confined to the two terminal segments in the case of the genus *Phlebotomus* and only to the last segment in the case of the genus *Psychoda*. Owing to the semi-aquatic nature of environment adapted by *Psychoda* larvæ, the terminal segment becomes modified into a tubular structure with the spiracular openings arranged at its tip; specific variation was also observed in the case of the sclerites surrounding the anal pore. The *Phlebotomus* larvæ, on the other hand, are remarkably terrestrial (with a series of pseudo-legs), and with the modification of the sclerites of the dorso-ventrally flattened terminal segment admirably adapted as an adjunct organ of locomotion in the larvæ as well as a fixing structure for the pupæ, the posterior pair of spiracles becomes shifted to the penultimate segment in the larvæ. The structural modifications of the terminal segments of two genera and five species occurring locally have been studied by me and my classification is based on the variable nature of these structures. The following genera and species have been studied: Genus *Psychoda*; *Psychoda bengalensis* Brun., *Psychoda plumosa* sp. nov.; Genus *Phlebotomus*; *Phlebotomus argentipes* Ann. and Brun., *Phlebotomus papatasii* Scop., and *Phlebotomus* (*babu*) *minutus* Rond.

A detailed work on this line is in progress and will be published elsewhere.

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Calcutta, Feb. 13.

Integration of Sunlight in the Tropics.

A PHOTO-ELECTROLYTIC method of integrating sunlight has been described by Atkins and Poole (*Proc. Roy. Dub. Soc.*, vol. 19, p. 159). The electric current in a photo-electric cell is proportional to the light falling on it, and the latter can be integrated over any period of time, by measuring electrolytically the total quantity of electricity that passes through a sensitive voltameter in series with the cell. In Dublin, where this method of sunlight integration has been carried out, the average illumination for a bright sunny day in November was estimated as 10,000 metre candles for ten hours.

Using a modified form of the apparatus, which will be described elsewhere, similar investigations have been carried out by us in Rangoon. The observations were made during the early part of November, and it may be of interest, for comparison purposes, to record the results which have been obtained during one week, when the illumination from day to day was decidedly variable. With the apparatus employed a deposit of $8{\cdot}81 \times 10^{-10}$ gm. of copper corresponds to an average illumination of 500 m.c. for one second, and the light was integrated each day over a period of six hours.

For bright sunny days, the copper deposited varied from 9·9 mgm. to 12·4 mgm., corresponding to an average illumination of about 250,000 to 325,000 m.c. A day of variable sunlight gave a deposit of 4·9 mgm. corresponding to an average illumination of 125,000 m.c., whilst the illumination on a particularly dull day was about 60,000 m.c.

In the British Isles an average of 50,000 m.c. is quoted as a reasonable figure for a twelve-hour bright summer's day, which appears to be about the same as that obtained by us over a shorter period, during a particularly dull day in the tropics, whilst the average illumination over a sunny day in the tropics is considerably in excess of the maximum illumination attained during a summer's day in the British Isles, which is quoted as reaching approximately 150,000 m.c. A method is being devised of increasing the sensitivity of this method of sunlight integration, so as to obviate the necessity of employing very sensitive methods of chemical analysis, which is a disadvantage when a great number of records are being made.

It is intended to make a complete study of the illumination at different times of the year, and, under various conditions, also to record diurnal variations in the illumination.

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University College,
Rangoon, Jan. 15.

The Gibbs-Ewald Reciprocal Lattice.

As I received no proof of the note appearing under the above title in NATURE of Feb. 15, p. 238, I wish here to correct certain misprints and to make some slight modifications which would otherwise have been made in the proof.

In line 7, for K read k, and in the equation in line 14, read for l, the exponential e. The distance between any two adjacent planes is of course $n/(u_1^2 + u_2^2 + u_3^2)^{\frac{1}{2}}$. [The fractional index was omitted from the original letter.—Ed., NATURE.]

In the penultimate paragraph, I wish to delete all but the first sentence; and to substitute the following: "With the usual summation convention we write

$$e^{2\pi i u_i x^i} = 1,$$

both sets of co-ordinates being referred to an affine system of oblique axes [2] of constants a, b, c, and angles α, β, γ, appropriate for the crystal under consideration." In accordance with this modification the transformation equation of the last paragraph would then read $F(u_i x^i) = 0$.

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A Superconducting Alloy with Resistance Temperature Hysteresis.

IN some experiments made in collaboration with J. F. Allen and J. O. Wilhelm, we found that the resistance of a ternary alloy of bismuth, lead, and tin dropped slowly with temperature in the usual manner down to 9° K., where it suddenly fell to zero. On raising the temperature, the alloy remains superconducting up to a temperature of 13·2° K., at which point the resistance reappeared and rose quickly to a steady value at 13·8° K. This would appear to be the first time that a resistance temperature hysteresis effect has been observed and measured.

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