NOTES.

THE EFFECTS OF TROPICAL INSOLATION.—In my paper with this title, published in the September number of the *Annals*, I notice that, when speaking of the movements of the sensitive leaflets, I omitted to refer to Oltmann's researches on this subject. Oltmann¹ was the first to show that in *Robinia* it is the pulvini which are directly stimulated to movement by a change in the intensity of the illumination. The observations I have made in Java and Ceylon are of interest as corroborating and extending the results obtained by Oltmann, and later by Macfarlane², on this particular point.

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THE TENSILE STRENGTH OF CELL-WALLS.—Some time ago I estimated the osmotic pressure in the leaf-cells of several plants to range between 20–30 atmospheres (or 200–300 grs. per sq. mm.)³. It seemed to me of interest to ascertain what coefficient of safety was allowed by the plant to meet these high pressures. This may be done by determining the tenacity or tensile strength of cellulose, and estimating the stress in the cell-wall while the cell is distended by these pressures.

The first was ascertained directly by weighing a single hair or fibre, detached from the surface of the seed of *Gossypium*, until it broke. From the breaking weight and the area of cross-section of the fibre, its tenacity may be obtained.

I applied the weight by slowly filling with water a light paper

¹ Oltmann, *Flora*, 1892, p. 234.

² Macfarlane, *Bot. Centralblatt*, 1895, I, p. 136.

³ Notes from the Botanical School, Trinity College, Dublin, No. 2, May, 1897.

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