On the orchid, *Bulbophyllum crassipes* Hook. f. in the Andaman Islands

Confusion existed upon the identity and nomenclature of this plant since its record by Hook. f. from Penang in 1907. Orchidologists like Holtum, Ridley, Taylor, Ker, Lindley, Seidenfaden and others made a series of attempts to solve it to a considerable extent. Although Seidenfaden and Wood\(^1\) as well as Satishkumar and Manilal\(^2\) accorded this taxon a specific rank, we would like to support the views of Pradhan\(^3\) and Sarkar\(^4\) giving a varietal status, *B. caryophyllum* (Hook) Spreng. var. *crassipes* (Hook. f.) U. C. Pradhan to the Indian plants. The diversity of the scapes and spikes with the colour variation of the flowers would support this treatment, ideally under *B. caryophyllum* (Hook) Spreng. var. *crassipes* (Hook. f.) U. C. Pradhan as it differs only by the column feature. It is widely distributed from Sikkim through Assam to northern and northeastern Thailand, with several records from Peninsular Thailand and possibly from Malaysia. The occurrence or distribution of this orchid in Andaman and Nicobar islands has not been mentioned by Vasudeva Rao\(^5\), Lakshminarasimhan and Rao\(^6\) in their enumerations. However, Satishkumar and Manilal\(^2\) have mentioned its distribution in these islands. To the best of our knowledge there are no previous records of its collection at Port Blair except the present ones of South Andaman. It closely resembles *B. cupleum* Lindl, but is quite different from it.

Epiphytes: Pseudobulbs are 6–8 cm distant, faintly 4–5 angled or smooth +3 cm across. Leaves solitary, fleshy, up to 15 cm long. The scapes holding dense spikes measuring up to +8 cm long, usually arising from the base, occasionally from the tip of the pseudobulbs. Flowers brownish yellow with maroon spots, remain open for 15–20 days, wilt and fade to dark brown. Growing on *Hertiera littoralis* Dryland, along the littoral belt, in the back mangals where it is inundated only during high tide.

Figure 1. *Bulbophyllum crassipes* Hook. f. from Andaman Islands.

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Does statistical significance always imply biological significance

Innate short-term variation exists in biological data; e.g. daily body weights, dietary nutrient intakes, physiological or biochemical indicators of body status like basal metabolic rates, blood levels of vitamins and minerals and so on. Any physical or physiological stress such as physical training programme, weight control regime or drug therapy alters the mean value of these parameters. To test the significance of the difference between mean values of these parameters, usually Student's \(t\) test is used. But application of this test sometimes results in a paradoxical situation. The test declares the difference between means to be highly significant but the experimenter feels that the difference is not worthy of attention. The problem is then whether to call the difference a significant one on statistical grounds or to accept intuition of the experimenter that the difference is negligible. Here we illustrate this issue with examples and describe application of a proper test considering biological variation.

Let \(x_1, x_2, \ldots, x_n\) be the observations on \(n\) individuals before treatment and \(y_1, y_2, \ldots, y_n\) after treatment. So \(z_i = y_i - x_i\) is the difference between \(i\)th pair. Consider the null hypothesis of zero difference; viz. \(H_0: \mu_1 = 0\), vs \(H_1: \mu_1 \neq 0\) and consider the common situation where the variables are normally distributed. Sample size calculations require the specification of type I and type II errors, a "difference