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### Part II.—NATURAL SCIENCE.

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I.—*Description of a new Species of the Rhopalocerous Genus Cyrestis from the Great Nicobar.*—By LIONEL DE NICEVILLE, ESQ.

[Received January 31st;—Read February 7th, 1883.]

(With part of Plate I.)

The very beautiful insect described below has been recently received by the Indian Museum, Calcutta, from Mr. A. de Roepstorff, who obtained it at the close of last year from the island of Great Nicobar. It is the first species of the genus *Cyrestis* that has been recorded from the Nicobar group of islands, though three species have been obtained by Mr. de Roepstorff from the neighbourhood of Port Blair in the South Andaman group, all of which belong to the pale section of the genus, while the species now described belongs to the tawny section. It is not unlikely that a "tawny" *Cyrestis* remains to be discovered in the Andamans, as in Sikkim and elsewhere species of both sections occur together; but it is to be remarked that the Andamans even now are exceptionably rich in species of *Cyrestis*. Upper Tenasserim is the only other locality where more than two species are met with as far as I am aware.

CYRESTIS TABULA, n. sp. Plate I, Fig. 1, ♂.

♂ UPPERSIDE. *Both wings* rich deep ochreous, with black markings; all the veins more or less defined with black. *Forewing* with a short longitudinal streak at the base of the cell; immediately beyond this a transverse one reaching from the median nervure to the costa; then a pair of streaks which are wide apart at the median nervure, but joined at the subcostal



nervure; the disco-cellular nervules defined with a fine black line; beyond which is a bow-shaped figure composed of two lines joined at their ends, the outer line straight, the inner one curved, with their points resting on the second median nervule and subcostal nervure; below the cell a pair of streaks reaching the inner margin, the origin of the inner one being where the first median, and the outer one where the second median nervule is given off, the space between them being thickly irrorated with black scales, leaving but little of the ochreous ground-colour visible; two discal lines from the subcostal nervure to the inner margin, the outer one lunulate, the inner one sinuate, the two lines being nearer together at their middle, wider apart at the inner margin, the space between them and within the inner one being irrorated with black scales; a submarginal series of seven bright ochreous spots, broadly defined inwardly with black, one in each interspace except the two lower, which are smaller and placed between the first median nervule and the submedian nervure; the outer margin broadly black, bearing two obsolete paler lines. *Hindwing* crossed by four black lines, the space between each pair, and between both pairs being thickly irrorated with black scales, especially at the lower extremity of the outer pair, where the ground-colour is entirely black, at the upper extremity the ground-colour increasing to the costa is very pale ochreous; a submarginal line composed of six lunules, each lunule having a bright ochreous spot placed outwardly against it; the outer margin more broadly black than in the forewing, the black portion ending at the first median nervule, bearing two intensely black lines, the outer one defined on both sides with a pale fine line, the outer of these two pale fine lines becoming almost pure white from the tail to the anal lobe; which latter, together with a round spot above it is bright ochreous, defined (especially outwardly) with black. There are also some small white, black, and metallic deep steel-blue markings above the round ochreous spot. The tail black, the extremity white. **UNDERSIDE** pale ochreous, the outer portion of the *forewing* and on either side of the submarginal lunules on the *hindwing* somewhat deeper ochreous, becoming ferruginous at the anal angle of the latter. All the markings of the upperside, but narrower and better defined, with no black irrorations, the outer margins (except the extreme margin which is black) concolourous with the rest of the wings; the veins throughout pale ochreous. *Antennæ* black, the extreme tip ochreous. *Thorax* and *body* rich ochreous above marked with three black lines, beneath pale ochreous.

Length of forewing 1.15; whence expanse = 2.4 inches.

HAB. Great Nicobar.

Closely allied to *C. thyonneus*, Cramer (pl. ccxx, figs. E, F), from Amboyna and Bouru in the Malay archipelago, but differing from the



above quoted figure in its much darker colouration throughout on the upperside, more especially on the outer margins; but on the underside it is much paler.

II.—*On the Measurement of Solar Radiation by means of the black-bulb Thermometer in vacuo.*—By S. A. HILL, Esq. B. Sc. Metl. Rep. to N. W. P. and Oudh. Communicated by H. F. BLANFORD, Esq. F. R. S.

[Received March 29th :—Read April 4th, 1883.]

The interesting results of sun thermometer observations, published by Mr. Blanford at page 72, Vol. LI, Part II, of the Journal of the Asiatic Society of Bengal, suggest the possibility of making use of the instrument to measure the heat received from the sun. Even with all the precautions adopted by Mr. Blanford, the excess of the maximum temperature in the sun, above the maximum in the shade, is affected by variations in the following and perhaps other conditions, as well as by variations in the heat emitted from the sun.

I. The thickness of the atmosphere traversed by the sun's rays, which, for moderate degrees of obliquity, may be taken to be proportional to the secant of the sun's zenith distance.

II. The absorptive power of the clear transparent atmosphere, which probably varies with the proportion of water vapour in it.

III. The quantity of haze and dust in the air.

IV. The radiating and reflecting powers of the ground surface in the vicinity of the thermometer.

V. The excess of the maximum air temperature above the temperature at the hour, when insolation is most intense.

The last mentioned condition is subject to a very distinct annual variation. At Allahabad, where hourly observations have been made on four days in each month since 1875, the insolation is most powerful on clear days within a few minutes of noon, while the average excess of the maximum above the noon temperature of the air is the following:

Jan.	Feb.	Mar.	Apl.	May	June	October	Novr.	Decr.
3.5°	3.5°	3.9°	4.1°	3.9°	4.2°	4.3°	4.4°	2.9°

In order to obtain comparable values for the several months we should therefore add these corrections to the figures for Allahabad given by Mr. Blanford. In table I the figures in Mr. Blanford's second table are thus corrected, and the table is extended down to the end of 1882.









Nicéville, Lionel de. 1883. "I.—Description of a new Species of the Rhopaloceros Germs Cyrestis from the Great Nicobar." *The journal of the Asiatic Society of Bengal* 52(I), 1–3.

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