

The fur is thick and soft, with very little lustre, in texture very like that of *V. Chiloensis*. That of the upper parts is nearly unicoloured, of a deepish ferruginous hue, a little darker at the root than at the tip. Below, it is bicoloured, dark brown at the base, tipped with greyish brown, paler and unicoloured on the pubes.

The dentition has not been examined.

Length of the head and body, about	2	10
— of the tail	1	5 $\frac{1}{2}$
— of the head	0	7 $\frac{3}{4}$
— of the ears	0	5
— of the tragus	0	3
— of the fore-arm	1	5
— of the longest finger	2	7
— of the fourth finger	1	10
— of the thumb	0	3
— of the tibia	0	7 $\frac{3}{4}$
— of the foot and claws	0	4 $\frac{1}{4}$
Expanse of wings	10	2

BOTANICAL SOCIETY OF EDINBURGH.

March 11, 1858.—Professor Balfour, V.P., in the Chair.

The following papers were read:—

1. "A few Remarks on the Application of Photography to Botanical Purposes," by Charles J. Burnett, Esq.

2. "Critical Remarks on the genus *Orthotrichum* (Part II.)," by Dr. Benjamin Carrington.

In this second part of his paper, Dr. Carrington gave a detailed description of the various British species of *Orthotrichum*, and entered upon a discussion of their specific distinctions, especially with reference to those species that have of late years been added to the British flora.

3. "Recent Botanical Intelligence," by Professor Balfour.

I. *Gutta Percha of Surinam*.—Prof. Bleckrod of the Delft Academy has recently given a notice of the Gutta Percha of Surinam. The Professor states that Dutch Guiana can supply gutta percha. The Dutch Government took measures to transplant the *Isonandra Gutta* and cultivate it in Guiana; but they have lately discovered in that country a species of *Sapota*, to which Blume gives the name of *Sapota Mulleri*, which yields a juice in every way equal to that of the *Isonandra*. It is probable that other trees of the same natural order may be found to yield a similar product. *Achras Sapota*, the fruit of which is known in the West Indies as "Neesberry," also yields a milky juice like gutta percha. The *Sapota Mulleri* of Blume is probably the tree called "Bullet-tree" by the English, and its wood is known as "horse-flesh." It is a tall tree, yielding in summer a large quantity of milky juice. It appears that, under the name of common Boerowe or Bullet-tree, there have been confounded—

1. the *Lucuma mammosa* of Gaertner (Marmalade-tree), the *Mimusops* of Schomburgk; 2. the White Boerowe, which is the *Dipholis salicifolia* of Alph. DC., and is known in Jamaica as Galimata; 3. the Bastard Boerowe, or Lowranero, which is the *Bumelia nigra* of Swartz; and 4. the Neesberry Bullet-tree, or *Achras Sideroxylon* of botanists, which yields one of the best of the Jamaica woods. *Sapota Mulleri* grows abundantly on slightly elevated situations. In collecting the milk, the trunk is surrounded with a ring of clay, with elevated edges, and then an incision is made in the bark, as far as the liber. The milky juice flows out immediately, and is collected in the clay reservoir. The juice resembles in some respects the milk of the cow; it forms a pellicle on its surface, which is renewed after removal. By the evaporation of the juice, we obtain 13 to 14 parts in 100 of pure gutta percha. Six volumes of absolute alcohol, added to ten of the juice, separates at once all the gutta percha which it contains. Sulphuric æther acts more rapidly than alcohol. The juice is not coagulated by acetic acid. This Surinam gutta percha is said to be sold at Amsterdam at the same price as the best gutta percha of commerce.

II. *Vegetation around the Volcanic Craters of the Island of Java*, by M. H. Zollinger.—DeCandolle, in his 'Géographie Botanique,' has omitted to notice among vegetable stations those around volcanic craters. In Java there are more than sixty of these craters, all isolated and surrounded by vast virgin forests. When the craters are active, and send forth lava (which is not the case with the Javanese volcanos), or cinders, or sand and fragments of rock, or when they exhale continually vapours and gases, then there is no vegetation except some *Oscillariæ*, which are found in hot-water springs. It is only when the direct volcanic action is diminished by the effect of time, or the distance of the crater, that a special vegetation appears. The craters of the Indian Archipelago are characterized by the absence of all parasitic or epiphytic plants, as well as of climbing and twining plants. Woody plants only appear at a considerable distance from the craters. We can easily distinguish three different regions: 1. an interior zone, nearest to the centre of volcanic action; 2. a middle zone, surrounding the first; 3. an exterior zone.

1. *Interior zone*.—This exhibits mostly small species, scattered here and there, belonging to the lower orders of plants, and to those having no corolla. Among these are—*Oscillaria labyrinthiformis*, Ag.?, in warm springs; *Cladonia macilenta*, Hoff., and *Bacillaria obtusa*, Schær.; some Fungi belonging to the genus *Polyporus*; a *Marchantia*; two or three species of Mosses; some Ferns, such as *Selliguea Feii*, Borg.; *Polypodium triquetrum*, Bl.; *Asplenium macrophyllum*, Bl.; *Asplenium mucronifolium*, Bl., and *Gleichenia vulcanica*, Bl. Among the Cyperaceæ, *Phacellanthus multiflorus*, Steud.; and *Polygonum corymbosum*, Bl., is the only Dicotyledon.

2. *Middle region*.—Many social Ferns occur here, some Dicotyledons, for the most part small shrubby plants. Among the Ferns are—*Polypodium Horsfieldii*, R. Br., 3000 to 8000 feet; *Pteris aurita*, Bl.; *Blechnum pyrophilum*, Bl.; *Gleichenia ferruginea*, Bl.;

Mertensia longissima, Kze.; *Lycopodium spectabile*, Bl.; *L. trichiatum*, Borg. We also meet still with *Phacellanthus multiflorus*, a *Carex*, *Polygonum corymbosum*, and *Imperata arundinacea*. A species of *Antennaria* and *Anaphalis*, among Composites; and certain Ericaceæ appear; also *Leontopodium*; *Elsholtzia elata*; *Wahlenbergia lavandulæfolia*, DC.; *Ophelia javanica*; *O. cærulescens*, Zoll.; *Melastoma setigerum*, Bl., the cells of which are said by M. Zollinger to contain crystals of pure sulphur; *Medinilla javensis*, Bl.; *Rubus lineatus*, Reinw.; besides other genera and species.

3. *Exterior region*.—This region gradually loses itself in the ordinary forest vegetation. Some rare Mosses, Ferns, and Orchids appear at the outer portion of the region. Among other plants may be noticed *Synæcia (Ficus) diversifolia*, Mig.; *Rhododendron javanicum*, Reinw.; *Agapetes elliptica*, Don, &c. Amongst the common arborescent plants may be mentioned *Agapetes varingiaefolia*, Don, and *Myrsine avenis*, Bl. The beautiful *Albizzia montana*, Bth., a social plant; *Casuarina montana*, Lesch., and *C. Junghuhniana*, Mig., are on the outer part of the region. We find also here an arborescent *Bæhmeria* and a dwarf *Epilobium*. Some twining plants form transition species, such as *Nepenthes gymnamphora*, Bl., and some varieties of *Polygonum corymbosum*. The order Ericaceæ is the predominant one. The genus *Rubus* is well represented. The Orchid that approaches nearest the craters is *Thelymitra javanica*, Bl.

III. *The Lotus or Sacred Bean of India*.—Dr. Buist gives some notes on the Lotus or Sacred Bean of India in the Transactions of the Bombay Geographical Society. Dr. Lindley is mistaken in saying that the wicks used on sacred occasions by the Hindoos are made of the spiral vessels of the leaves of the Lotus. They are formed, he says, of the dried flower or leaf-stalk. Dr. Buist does not believe that all the spirals of all the Lotuses in India, from the Himalayas to the Line, would make a lump of wick a yard long the thickness of the finger. Individually, the spirals are finer than gossamer; the leaf is 14 to 16 inches in diameter; the stalks about 6 to 8 feet long, and seldom rise higher than 2 or 2½ feet above the surface of the water. The leaf is buoyant enough to support a crow, and is frequently made use of by that bird as a fishing station, from which flies, snails, or water-lizards are preyed upon. The flower has something of the smell of the Tonquin bean, or the blossom of the bean. The upper surface of the leaf is a deep green.

MISCELLANEOUS.

PROF. OWEN'S LECTURES ON PALÆONTOLOGY.

The ninth Lecture, on Oolitic Crocodiles, delivered on the 29th April, concluded as follows:—

Since the publication of the remarks on the cranial structure of the Whitby Teleosaur in my 'Report on British Fossil Reptiles,' of 1841, I have had many opportunities of studying the osteology of



1858. "Botanical Society of Edinburgh." *The Annals and magazine of natural history; zoology, botany, and geology* 1, 454–456.

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