

- Silurian—Carboniferous. Europe, Bolivia, Australia.
 T. amygdala, *Salter*, (M.S.) Tasmania, West.
 T. antipoda, *Salter*, (M.S.) Tasmania, West.

Class CEPHALOPODA.

Lituites, *Breynius*, 1732.

Bigby's Thes. Sil. 1869; Eth. Cat. Aust. Fossils, p. 26; Tryon ii., p. 56.

Shell planorbiform, the whorls close or separate; the last chamber produced in a straight or outwardly curved line; lateral margins of the aperture extended and curved towards the interior of the shell, contracting the aperture into two distinct orifices.

Silurian. North America, Europe, Australasia. (Tryon.)
 L. Gouldii.

Orthoceras. *Breynius*, 1732.

Bigby's Thes. Sil. 1868; Eth. Cat. Aust. Fossils, p. 26; Tryon ii., p. 51.

Shell straight, aperture sometimes contracted. (Tryon.)

L. Silurian to Triassic. N. America, Europe, Australasia.

O. antilope.	Salter. M.S.	Gordon Limestone, Tas.
O. Murchisoni.	"	" "
O. Theca.	"	" "
O. Youngii.	"	" "

Phragmoceras. *Brod.* 1839.

Tryon ii., p. 55.

Shell compressed on the sides, curved; aperture contracted in the middle; last chamber large; siphuncle dorsal, with radiations; septa simple.

Silurian to Devonian. Europe, N. America, Australasia.

One sp. in the Museum of the Tasmanian Royal Society.

TASMANIAN MOSSES, THEIR IDENTIFICATION, &c.,

BY R. A. BASTOW.

[Read May 12, 1885.]

The Mosses of this and the neighbouring colonies are, like the fauna, singular and peculiar, presenting genera and species analogous in many respects to those of the British Isles, and yet many of them have some peculiarity of structure rendering them unique. In "Hooker's Flora Tasmaniæ" we have a great number of Tasmanian Mosses carefully described, and beautiful drawings of many of them are therein contained.

In turning over the plates of Mosses in that large and magnificent work, it will be seen that the plants vary in colour from the palest green, as in some *Hypna*, to almost black, as in *Andreæa*, and after a little thorough Moss hunting, we are able to form a fair idea of the genus to which the tuft belongs by its colour, its habit, and its locality. For instance, the sombre-looking *Andreæa Petrophila* loves the bleak rock, the feathery *Hypnum* selects to slumber in the sylvan shade, whilst the scarlet fringed *Splachnum* may rarely be found, except on decayed animal substances.

But closer observation than the above mentioned is required in order to precisely identify the genus to which a Moss Plant belongs, and this leads me to call your attention to the key to genera of Mosses of Tasmania now submitted to your notice. It will be observed that I have therein followed the principle that "the characters must all be derived from the number, form, proportion, and situation of the organs of fructification," and in so doing I only follow in the wake of eminent muscologists, such as Hedwig, Hooker, Schimper, Muller, Wilson, and Mitten.

In this key the Mosses are in the first place divided into terminal fruiting and lateral fruiting plants; this division at once ridding us of a host of genera as we proceed to identify. When a Moss has been carefully classed, as, for example, a laterally fruiting Moss, then the microscope must be brought into requisition to decide the remaining characters. They are as follows:—

The capsule, or theca of a Moss Plant, is supported on a pedicel or footstalk, called the seta. This is in some genera very long, and in others very short, and frequently forms a specific as well as a generic character.

The supported capsule varies in size and form, and is composed externally and internally of strongly marked parts. The capsules of *Bartramia*, or Apple Moss, are generally spherical; the *Phascum* capsule is ovate and bursts irregularly when ripe; *Campylopus* gracefully bends its neck and buries its oblong urn amongst its foliage; *Tortula* is elongated, and twisted in parts, whilst the robust *Polytrichum* is erect and quadrangular.

The capsules of many are furrowed, others are spotted, whilst the *Hypna*, and other genera growing in shaded nooks, are more frequently of slight fabric and smooth.

This graceful form of fruit is protected by a calyptra, or veil, in some genera dimidiate, and in others mitriform. From the character of the veil important generic distinctions are derived. If we gently raise the veil, the operculum becomes at once visible, and forms a tiny but perfect close fitting lid to the capsule. It is very long beaked in some genera, and scarcely convex in

others; and forms another generic character. But the most interesting part of the capsule is the beautiful appendage, styled the peristome. It is a fringe of scarlet, pale yellow, purple, or intermediate shade, according to the genus to which the plant belongs. The peristome is divided into 8, 16, 32, or 64 segments or teeth. These numbers never deviate, a certain number of teeth are invariably found in a certain genus, they are always regular in number, and thus we have again strong characters for distinguishing genera.

In many of the Mosses the peristome is double, the inner one being much paler in colour than the outer, and in some few genera cilia may be found interposed with the teeth of the inner peristome. These are all abiding characters, and with the forms and arrangement of the leaves and habits of the plants, arranged, illustrated, and generically described as they are in the key before us, will be found sufficient in most cases to identify the genus to which the plant belongs.

May we be allowed to enter a plea for the Mosses of Tasmania which we so ruthlessly uproot from our garden walks and trample down by the road side; their forms are exquisite, their habits are in the charming corners and glades, as well as on the face of the mountain crag, their study is pure and refining, and there remains an insight to the student of contrivance, system, wisdom, Infinite Wisdom, and a source of infinite admiration.

NEW SPECIES OF TASMANIAN MARINE SHELLS,

By W. F. PETTERD.

[*Read May 12, 1885.*]

1. PECTEN AKTINOS, n. sp.

Shell of moderate thickness, irregularly, elongately, and somewhat obliquely orbicular, depressed, marked with irregular prominent lines of growth, ornamented with numerous—fourteen to eighteen—radiating perceptibly imbricated riblets, which are alternately large and small, and again covered with smaller liræ; cellular structure, distinctly visible under the lens, towards the base; ears unequal, moderately prominent; colour, pink to bright rose, with irregular light or dark bands, and again peculiarly marked with numerous small sharply angular patches of white to pink, shaded with deep brownish-red; interior, shining