

*Note on the Wombats living in the Gardens of the Zoological Society.*

By Dr. P. L. SCLATER.

Dr. Gray does not appear to have noticed that the Wombat described by him in the last Number of the 'Annals' (p. 458) as *Phascolomys Angasii* had previously been named by Mr. Gould, in his Introduction to the 'Mammals of Australia,' *Phascolomys niger*. I may also remark that, one of the specimens of *P. lasiorhinus* in the Gardens having died, I sent the skull to Mr. Flower, who has kindly compared it with the typical skull in the collection of the Royal College of Surgeons upon which Prof. Owen founded his *P. latifrons*. Mr. Flower pronounces it quite distinct, and much more nearly resembling that of the common *P. ursinus*. It would appear, therefore, that we have yet to become acquainted with the external form of *P. latifrons*, unless it shall turn out that *P. niger*, Gould, or *P. setosus* of Dr. Gray (figured by Mr. Gould as *P. latifrons*) shall prove to possess a skull with the peculiar characters pointed out by Prof. Owen in his description of the skull of *P. latifrons*.

*On the Functions of the Vessels of Plants.*

By M. GRIS.

After referring to the different opinions held by botanists regarding the functions of the vessels, some maintaining that, although containing only air at most seasons, they are filled with sap in the spring, whilst others hold that, when once formed, they contain only air, the author indicates a means of settling the question by the use of Fehling's solution. This liquid, which is used to determine the presence of glucose, contains sulphate of copper, soda, and tartrates of soda and potash; remains limpid when boiled alone; but if a very small quantity of glucose be added to it, a red precipitate of protoxide of copper is produced; and this, when examined under the microscope, is seen to consist of small flakes of a deep brown or almost black colour. If a few drops of sap be added instead of glucose, the same precipitate of protoxide of copper is observed.

On plunging for a few moments into the boiling solution thick fragments of the wood of the chestnut, beech, poplar, laburnum, &c., at the commencement of the spring, and cutting thin sections from the heart of these fragments for examination with the microscope, it will be seen that an abundant precipitate of protoxide of copper clothes the inner face of the large vessels, so that their course through the thickness of the woody layers is indicated even to the naked eye, or with a simple lens, by very perceptible reddish threads.

As the precipitate is generally very abundant in the cells of the medullary rays, the author thinks we may conclude, from this experiment, that the so-called lymphatic vessels (at all events in spring) contain a sap of a nature closely analogous to, if not identical with, that which is found in the cellular elements of these stems, and that



the precipitate of protoxide of copper is probably caused in both instances by the presence of glucose in the sap.

The author has extended his investigations to some herbaceous plants, and proposes communicating his results to the Academy of Sciences very shortly. He mentions as one of them, that the spiral fibres of the reticulated, annular and spiro-annular, and other similar vessels also present in their interior a red precipitate, formed of small flakes, of a blackish-brown colour when observed under a high power, and apparently identical with that mentioned above. This fact appears to confirm the views of M. Trécul on the structure of these fibres.—*Comptes Rendus*, June 1, 1863, p. 1048.

*The Mode of Development of the Marginal Tentacles in the free Medusoids of some Hydroida.* By A. AGASSIZ.

M. Agassiz has investigated a point hitherto neglected in the development of the medusoids, namely, the mode of appearance of their marginal tentacles. Each medusoid has really originally a limited number of tentacles, which is subsequently increased by the successive appearance of several series of new tentacles. The series of tentacles in these Acalephæ may be compared to the cycles of septa in the Zoantharian polypes; and, in fact, their order of appearance coincides in certain cases with that of the visceral chambers of the polypes, although the exceptions to this rule are very numerous. It is also to be observed that in the Zoantharia the number of chambers of the first cycle is almost always six. In the Acalephs the number of tentacles of the first series is, on the contrary, extremely variable. For a great number of genera M. Agassiz has drawn up formulæ showing the order of succession of the tentacles of different series.

Certain Acalephs are singular, such as the medusoids of some *Tubulariæ*. That of *Corymorpha pendula*, for example, has only a single tentacle of the first series. The tentacles of the second series are two in number, and placed at the extremities of a diameter perpendicular to that corresponding with the tentacle of the first series. The third series consists of a single tentacle, opposite to that of the first series.—*Proc. Boston Soc. Nat. Hist.*, August 1862; *Bibl. Univ.*, 1863; *Bull. Scient.*, p. 161.

*On the Question whether Diatoms live on the Sea-bottom at great Depths.* By WM. STIMPSON, M.D.

In a paper on the Diatomaceæ found in mud collected at great depths from the bottom of the sea off the coast of Kamtschatka, in soundings made by the North Pacific Expedition under Commander Rodgers (Silliman's Journal, ser. 2. vol. xxi. p. 284), the late lamented Professor Bailey made the following remark:—"The perfect condition of the organisms in these soundings, and the fact that some of them retain their soft parts, indicate that they were very



Gris, Arthur. 1863. "On the functions of the vessels of plants." *The Annals and magazine of natural history; zoology, botany, and geology* 12, 78–79.

**View This Item Online:** <https://www.biodiversitylibrary.org/item/88262>

**Permalink:** <https://www.biodiversitylibrary.org/partpdf/65124>

**Holding Institution**

Smithsonian Libraries and Archives

**Sponsored by**

Smithsonian

**Copyright & Reuse**

Copyright Status: Public domain. The BHL considers that this work is no longer under copyright protection.

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at <https://www.biodiversitylibrary.org>.