

fourth pair that they possess on issuing from the egg. When the males have the fourth pair of legs disproportionately large, these legs remain small throughout the preparatory state, and only acquire their large size under the skin of the nympha before the last moult. The larvæ undergo from two to three moults before passing to the state of nymphæ. They have only one pair of hairs at the apex of the abdomen.

The Nymphæ.—The impuberal octopod individuals, or nymphæ, show no distinctive sexual characters. In those species the males of which have the fourth pair of legs disproportionately large, these remain small during the whole of this state, and increase in size under the skin before the last moult, at the same time that the sexual organs are produced. At the same period are formed the posterior prolongations of the abdomen in some species; and at its close the sex of the individuals may be distinguished.

In the larva from which a nympha is to be produced, the fourth pair of feet are seen beneath the skin, folded forwards. These and the lobes and hairs borne by many nymphæ are evidently produced beneath the skin of the larva. The nymphæ have two pairs of long setæ at the apex of the abdomen.

The nymphæ have only the single *granular tegumentary plate of the epistoma*, the *thoraco-abdominal plate* of the sexual individuals being wanting in them. They undergo two or three moults in this state.

The coupled females.—These, although larger, are not always easy to distinguish from the nymphæ; in some species they have two colourless appendages to the hinder part of the body, which do not exist in the nymphæ. This copulation of adult males with individuals having no sexual organs is remarkable, as nothing of the kind has been observed in *Tyroglyphus*, *Glyciphagus*, &c., although a similar phenomenon was noticed in *Psoroptes* by Bourguignon and Delafond. In these avicular Sarcoptidæ a female may often be seen in copulation and retained by the male, showing through her integuments a female with well-developed genital organs. The adhesion of the male to the female is effected by means of the two anal disks possessed by the former. The adhesion lasts for some days, but the actual coition seems to occupy but a small portion of this time. The ova are developed in the ovaries of the females whilst still in this nymph-like form, and before the final moult.

The author remarks upon the relationships of these parasitic Sarcoptidæ, and gives the following list, in a note, of the forms observed by him, which will be fully described in his memoir:—1. *Pterolichus*, g. n., including 5 new species; 2. *Dermalichus* (Koch), sp. *passerinus* (Linn.), *oscinum* (Koch), and 1 new species; 3. *Pteronyssus*, g. n., sp. *Dermal. picinus* (Koch); 4. *Proctophyllodes*, g. n., sp. *Dermal. glandarinus* (Koch), and 4 new species; 5. *Pterodectes*, g. n., with 3 new species.—*Comptes Rendus*, tome lxvi. April 20, 1868, pp. 776–786.

The Pelvis and Hind Limbs of Whales.

Professor Van Beneden has read a paper at the Academy of

Sciences of Brussels describing the pelvis of Cetacea. He has described and figured the femur and tibia of the Greenland Whale; they are both rudimentary, and somewhat similar to the rudimentary femur observed by Mr. Flower when describing the Finner Whale (*Physalus*).

On a remarkable Form of Pleuronectidæ from the Mediterranean.

By Dr. STEINDACHNER.

This fish, described under the name of *Apionichthys Ottonis*, has rudimentary, punctiform eyes, a short, fissure-like branchial aperture, and a long pointed caudal fin, into which the dorsal and anal gradually pass. The length of the head is contained $5\frac{1}{2}$ times, the depth of the body $3\frac{1}{2}$ times, and the caudal $4\frac{1}{8}$ times in the total length. On the blind side of the body the ventral is wanting. The lateral line passes through 87–90 scales; the dorsal contains 70–73 and the anal 52–54 rays. On the upper margin of the lower lip there are 16–17 cilia, but only on the eye-bearing side of the head. The nasal orifice on the blind side of the head is dilated into a disk, and lobed.—*Anzeige der Akad. der Wiss. in Wien*, May 22, 1868, p. 120.

On the Antherozooids of the Mosses. By E. ROZE.

The author's first investigations on the antherozooids of the Mosses led him to express the opinion that these organs are composed of a biciliated filament with two spiral turns, to which a mass of amylaceous granules adhered, but only during their motility. In the spring of this year he ascertained that these granules, instead of being affixed directly to the spiral, are contained in a hyaline plasmic vesicle, which is attached to the filament by a sort of tangential adhesion.

Under a power of 1500 diameters, this vesicle is clearly discerned, both by its spheroidal outline and by the very brisk molecular movements of its contents. It swells in water immediately after the quiescence of the ciliated spiral; then it suddenly bursts, and the amylaceous granules continue in the liquid the lively molecular trepidation which seems normally, in the vesicle, to coincide with the cessation of the ciliary movement.

Except as regards the existence of this vesicle, the facts previously indicated by the author are by no means modified. From this new fact it appears that the antherozooids of all classes of Cryptogamia present not only an organ of locomotion, but also a vesicular appendage filled with a plasmic liquid suspending either non-analyzable grains or amylaceous granules. This fact was foreseen by M. A. Brongniart. The author's recent observations were made upon the antherozooids of various genera of Polytrichaceæ (*Atrichum*, *Pogonatum*, *Polytrichum*), still contained in their mother cells, and upon the free antherozooids of *Bryum capillare* and *pseudotriquetrum*, *Mnium hornum*, and *Hypnum cupressiforme*.—*Comptes Rendus*, tome lxvi. June 15, 1868, pp. 1222–1223.



1868. "The pelvis and hind limbs of whales." *The Annals and magazine of natural history; zoology, botany, and geology* 2, 79–80.

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