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On Pinus Pumilio, HK

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NOTICE RESPECTING *AMPHIPEPLEA GLUTINOSA*.

M. Troschel lately read an account before the Society Der Naturforschender Freunde in Berlin, of the examination in which he had been engaged of *Amphipeplea glutinosa*, Nilss. (*Limnæus** *glutinosus*, Drap.) recently found in the neighbourhood of Berlin. He had accurately examined the tongue and other mouth-parts, and found that from these, as well as from the structure of the mantle and nervous system recently described by M. Vanbeneben, it deserves to form a distinct genus, and to be separated from *Limnæus* and *Physa*. *Amphipeplea* agrees with the former genus in the structure of the antennæ, of the foot, and in the position of the respiratory, anal, and sexual aperture on the right side; with the latter, in the absence of lateral maxillæ, and also from the tongue being provided with serrated teeth. There is therefore between the genera *Physa* and *Limnæus* a twofold transition,—one through the genus *Planorbis*, the second through *Amphipeplea*. I propose therefore the following schema for the family of the water Pulmonata.

- I. An upper maxilla, serrated teeth on the tongue, the mantle generally folding over the shell. Animal active, lively.
 1. Antennæ filiform; foot posteriorly acuminate; respiratory, anal, and sexual aperture on the left side. PHYSA.
 2. Antennæ triangular; foot posteriorly rounded; respiratory, anal, and sexual aperture on the right side. AMPHIPEPLEA.
- II. An upper and two side maxillæ, simple conical teeth on the tongue, mantle not folding over the shell. Animal inactive.
 3. Antennæ filiform; foot posteriorly acuminate; respiratory, anal, and sexual apertures on the left side. PLANORBIS.
 4. Antennæ triangular; foot posteriorly rounded; respiratory, anal, and sexual apertures on the right side. LIMNÆUS.

ON *PINUS PUMILIO*, HK. BY PROFESSOR GOEPPERT.

There are still botanists who regard the Dwarf Pine as a mere form of *Pinus sylvestris* produced by the elevated habitat. The present notice of an experiment made with seed will perhaps not be without interest, and tend to refute this, in my opinion, erroneous view.

In 1828 M. Beinert of Charlottenbrunn in Silesia procured some ripe cones of *P. Pumilio* from the Riesengebirge, together with some

* A multitude of needless synonyms burthen the descriptions of this genus, because conchologists cannot agree as to its orthography:—*Limnæus*, *Lymnæus*, *Lymneus*, &c. We believe the classical authority of Dr. Goodall, whose loss we have to deplore, was decidedly in favour of *Limneus*.—Ed.

of *P. sylvestris*, and planted them on the northern pent of the Lörbeerberg, near Charlottenbrunn, 1800 feet above the level of the sea. In the second year the plants made their appearance, of which, however, only one specimen of *P. Pumilio* succeeded. On the 9th of Sept. 1839, I visited this spot and found the plants in the following condition. The specimen of *P. Pumilio* is at its base one inch in diameter, bends down immediately at its exit from the soil with deflected convexity, and divides at a distance of two inches into two main branches, of which one is 12, the other 9 inches long. Each of these branches again divides 1 inch from their origin into 5 or 6 diverging branches of from 5 to 6 inches in length, which all lie extended on the earth. The numerous leaves are stiff, fasciculate, compressed, curvate, and shortened, just like those occurring on the highest elevations of the Riesengebirge. As yet no flowers have made their appearance. Now while this plant creeps on the soil, the neighbouring specimens of *P. sylvestris* which germinated at the same time have attained a perpendicular height of 10 to 13 feet, with a diameter of from $2\frac{1}{2}$ to $3\frac{1}{2}$ feet.—*Linnæa*, Part V. vol. xiii. 1839.

ON THE NESTS OF THE FIFTEEN-SPINED STICKLEBACK, OR *GASTER-OSTEUS SPINACHIA* OF LINNÆUS.

These nests are to be found in spring and summer on several parts of our coast, in rocky and weedy pools between tide marks. They occur occasionally near Berwick, but seem to be more common near Eyemouth and Coldingham. They are about eight inches in length, and of an elliptical form or pear-shaped, formed by matting together the branches of some common *Fucus*, as, for example, of the *Fucus nodosus*, with various confervæ, ulvæ, the smaller florideæ, and coralines. These are all tied together in one confused compact mass by means of a thread run through, and around, and amongst them in every conceivable direction. The thread is of great length, as fine as ordinary silk, tough and somewhat elastic; whitish, and formed of some albuminous secretion. The eggs are laid in the middle of this nest in several irregular masses of about an inch in diameter, each consisting of many hundred ova, which are of the size of ordinary shot, and of a whitish or amber colour according to their degree of maturity. The further advanced are marked with two round black spots, which are discovered by the microscope to be the eyes of the embryo, at this period disproportionally large and developed. Masses of eggs, in different stages of their evolution, are met with in the same nest. It is evident that the fish must first deposit its spawn amid the growing *fucus*, and afterwards gather its branches