

than the rest. The perigonia are reniform or nearly round, and fixed to the side of the stem by a very short peduncle. The perichætal leaves have but few large and obtuse teeth. The calyx rises from a narrow base into an obcordate form. The calyptra is colourless except at the summit, about the base of the style, where it has the reddish-brown hue of the leaves. The capsule is globose, 4-valved, and in all respects like that of *Jung. Tamarisci*. From this last, *Jung. fragilifolia* may be readily distinguished, —1. by the wider cellulation of the leaves; 2. want of lustre; 3. fragility of the wet leaves; 4. larger auricles in proportion to the leaves; 5. the plane margins of the stipules; 6. the greater relative size of the perigonia to the plant; 7. the large and obtuse teeth of the perichætal leaves; and 8. by the abnormal cellules being much larger.

JUNGERMANNIA GERMANA, MSS. T. T. Caule procumbente, bipinatum ramoso; ramis complanatis, brevibus, patentibus: foliis imbricatis, ovato-rotundatis, integerrimis; auriculis oblongo-ovatis, ventricosis; stipulis obovatis margine recurvis, apice bifidis; foliis perichætalibus integerrimis; calyce oblongo-ovato, tubifero; perigonio lineari-ovato.

On rocks and on trees; very common near Dunkerron, county of Kerry, 1832.

The plant is three inches and sometimes more in length, and matted into patches sometimes a foot in breadth. It is never so black or so shining as *Jung. Tamarisci*. The fertile stems are longer, more branched and more fastigiate; whilst those bearing *perigonia* are far narrower and with shorter branches. The leaves are thin, and do not present the linear mark of enlarged opaque cells as in *Jung. Tamarisci*. The stipules are wider than the stems, and the recurvation of their margin chiefly observable towards the summit. The margins of all the perichætal leaves are quite entire. The *perigonium* is a linear spike as in *Jung. dilatata*, Hook.

A very common species, hitherto confounded with *Jung. Tamarisci*, but readily distinguished when attention is paid to the entire perichætal leaves, to the linear *perigonium*, as well as to the lighter colour and want of lustre of the leaves.

XXII.—On the Anatomy of the Pearly Nautilus. Communicated by W. VROLIK, Professor of Anatomy in Amsterdam.

To the Editors of the Annals of Natural History.

GENTLEMEN,

Dublin, July 27, 1843.

I PRESUME that it will be agreeable to you to receive some details on the anatomy of the Pearly Nautilus (*Nautilus Pompilius*),

which I have had the opportunity of dissecting some time ago at Harlem, with my colleagues Van Breda and Reinwardt. Although the dissection is not completely finished, and I reserve for a more extended memoir the filling up of the hiatuses which I am now obliged to leave, I have thought it convenient to give a brief *resumé* of the principal facts which we have observed, as it may tend to determine the differences of opinion which seem to exist on the subject; and I take advantage of my visit to England to communicate to you the extract of our observations, which M. Van Breda has been so good as to send me for that purpose from Harlem on the 24th of July.

I must first inform you that the Academy of Sciences at Harlem has received two complete specimens of the Pearly Nautilus; the Society owes one to the kindness of M. Serrière, Governor of the Mollucca Islands, who, learning from the Annual Report of the Harlem Society their desire to possess a complete example of that interesting animal, generously transmitted one that had been caught by a hook in the bay of Amboyna. It has been deposited in the museum of the Society.

The second specimen was bought by Colonel Boelen of a fisherman, who had also taken it at a depth of many fathoms in the same bay. This Nautilus lived two days on board the *Boreas*, of which M. Boelen is the commander. It was preserved with great care in spirits of wine, and after having been drawn by M. Verhuell it was submitted to my scalpel. The principal results of its dissection are,—

1. That the chambers of the shell contain only gas. We opened several under water; the gas which we collected contained a greater proportion of azote than the atmospheric air does. M. Van Breda, who analysed it, did not detect the slightest trace of carbonic acid.
2. That the animal is attached to the shell only by the siphon. The two muscles, by which it should adhere to the shell, according to the opinion of many naturalists, are applied only to the horny membrane or girdle, which Owen has so well described in his remarkable work\*. This membrane does not itself adhere to the shell, so that there is no difficulty in detaching the horny membrane in question without the slightest laceration, both from the surface of the muscles and from that of the shell between which it is situated.
3. That the structure and position of the internal organs are, in general, such as Owen has described in his admirable memoir.
4. That the two mandibles are horny, but covered by a bluish calcareous matter, which had evidently been lost in the speci-

\* Memoir on the Pearly Nautilus, 4to, 1832, p. 9.

