XX. — *Remarks on a peculiar form of Spiral Vessel.*

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WHILE recently engaged in examining the decayed gourd of the vegetable marrow, with the view of finding the *Fungi* which are so influential in producing the destruction of fruits, my attention was directed to a peculiar modification of spiral vessel. On placing a bundle of the spiral vessels of the gourd of this plant beneath the microscope, each vessel is plainly seen to be striated by a number of longitudinal lines, which might, at first sight, be regarded as plaits in the enclosing membrane of the *spiral* fibres, but are really secondary *fibrillæ*; as may be proved,—first, by the circumstance that they are distinctly separable from this membrane, and secondly, by the fact, that if a spiral vessel be broken up, and the fibre uncoiled, the longitudinal *striæ* will be observed to have separated into numerous short pieces, which adhere to each turn of the spiral fibre; and again, that if an interior view of a vessel be obtained, the extremities of the *striæ* may be plainly seen interrupting its circularity. These longitudinal *fibrillæ* are very numerous, varying in number from six or eight in the smaller vessels, to as many as twenty in the larger (see Pl. xix. fig. 1, 2, 3). They are very much smaller than the spiral fibres, to the internal surface of which they are attached; and the only office which can apparently be assigned to them, is that of strengthening the walls of the tubes, and preventing, by their adherence, the too great protrusion of the investing membrane of the vessel.

On describing this form of vessel, which I had imagined to have been unobserved, to Mr. E. J. Quekett, that gentleman informed me that he had himself noticed it, and supplied me with the following information respecting it: “The first figure of a vessel with longitudinal *striæ* which I have seen, was in ‘Schultz’s Memoir on the Circulation of the Ducts of the Latex,’ from *Urania speciosa*, though I had previously seen it in *Loasa contorta*, in the *petiole*. It has been observed since by Mr. W. Wilson, in *Typha latifolia*, and I have recently found it in *Canna bicolor*.”

It would therefore appear, that this form of spiral vessel is by no means rare, but still the recorded instances of its occurrence are not so numerous as to render a further enumeration of plants in which it may be found, destitute of interest.

EXPLANATION OF PART OF PLATE XIX.

Fig. 1. A magnified portion of the spiral vessel of the Vegetable Marrow.
Fig. 2 and 3. The same unrolled.