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XLIV.—On Gallionella ferruginea (Ehrenb.)

J.W. Griffith M.D. F.L.S.^a

^a 9 St. John's Square

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what I have deemed an error, but they may be useful as showing us how cautious we should be in founding genera from fragments: this is a most prolific cause of synonyms, with which no science is so overloaded as geology.

Cirencester, Sept. 1853.

XLIV.—On *Gallionella ferruginea* (Ehrenb.).

By J. W. GRIFFITH, M.D., F.L.S.

IN the water of bogs and pools, especially those containing much iron in solution, there are occasionally found microscopic organisms, myriads of which are aggregated around the living or dead stems of plants contained in the water, and forming around them reddish or yellowish brown flakes or filmy masses. The general appearance of these organisms has been well described by Ehrenberg in his great work on the Infusoria*, by whom they were placed in the genus *Gallionella*, with the specific name *ferruginea*. Mr. Ralfs places them among the Diatomaceæ, in the genus *Melosira*, with the specific name *ochracea*†. As the writings of these authors are in every one's hands, we shall pass them over. The latest writer, Kützing, gives the following generic and specific characters:—

“*Glaeotila*, Kützing.—Trichomata eramosa viridia mucosa, ex cellulis monogonimicis composita.—(Paludosæ, inundatæ.) *Gl. ferruginea*, Kg. Phyc. Germ. p. 191.—*G. ochracea*, trichomatibus brevissimis moniliformibus, articulis ovato-globosis. Diam. $\frac{1}{20000}$ ””. —*Gallionella ferruginea*, Ehrenb. Infus. t. 10. f. 7.—*Melosira minutula*, Brébiss. Falais. p. 42. pl. 5.—In fontibus martialibus (v.v.). —Cf. Kg. Bacillar. p. 56, *Gallionella ferruginea*.”

Neither of these observers has detected their true structure; nor is this to be wondered at, for the filaments are exceedingly minute (varying from the $\frac{1}{5000}$ to $\frac{1}{30000}$ inch in breadth, but generally from $\frac{1}{10000}$ to $\frac{1}{20000}$), and it requires no ordinary management of the microscope to render it distinct. Each filament consists of two interlacing fibres, forming flattened compound spirals. The fibres are coloured by peroxide of iron; but they contain no silex, or at least not more than a mere trace, such as is naturally invariably associated with the peroxide. If the filaments be macerated for some time in distilled water, the fibres will separate; but they may be clearly distinguished in the compound filaments with the aid of a good object-glass of high power (400 to 500 diameters); in fact they form an admirable test-

* See Pritchard's History of Infusorial Animalcules, 1852.

† Ann. Nat. Hist. (1843) vol. xii. p. 351.

object for the general excellence of an object-glass ; also of the observer's management of the microscope, for the correction must be accurately adjusted, and the filaments must lie flat upon the slide, otherwise the true structure cannot be made out. I shall detail some further particulars in regard to this beautiful and interesting object, in my forthcoming work "On the Microscope as a means of investigation."

1. *Didymohelix ferruginea*, magnified 220 diameters.
2. The filaments seen when lying sideways, or the adjustment and correction not perfect : 700 diameters.
3. The filaments lying flat (800 diameters), and the uncoiled fibres quite distinct.
4. The filaments separated by maceration.

This organism differs in structure from all others known, and cannot be retained in Kützing's genus *Glæotila*. We therefore propose the name *Didymohelix*, to designate the genus in which it must be placed.

9 St. John's Square.

BIBLIOGRAPHICAL NOTICES.

The Botany of the Eastern Borders, with the popular names and uses of the Plants, and of the customs and beliefs which have been associated with them. By G. JOHNSTON, M.D. &c. 8vo. London, 1853.

WE have allowed too long a time to pass since the publication of this very nice book without directing attention to it. Although it is called Vol. I. of a work entitled "The Natural History of the Eastern Borders," it is complete in itself as a Flora of that district, and is provided with a separate title-page accordingly. It will be remembered that some years since Dr. Johnston published an account of the plants of that part of England and Scotland, under the title of "A Flora of Berwick-upon-Tweed," and, as he has continued since that time to add to the amount of his knowledge of the native vegetation of his neighbourhood, the present Flora is the result of very long and extended research. But the book is far from being merely a catalogue of plants, for in addition to a full statement of the loca-