

cover the surface in one unbroken layer, a phenomenon which *Ersted* observed in 1849, and which led him even then to look upon microscopic plants as the basis of production in the sea. Besides the species of *Trichodesmium* we have another genus, *Katagnymene*, with spiral series of cells in sheaths of slime. Mention must also be made of the remarkable little alga, *Richelia intracellularis*, described by Johs. Schmidt, which lives in cells belonging to various species of *Rhizosolenia* (see Fig. 241). These diatoms appear to have no difficulty in accommodating their guest, which apparently reproduces itself within the cell, and is thus transferred to new generations of the hospitable plant. The riddle is, how did it originally manage to get in? Most likely this happened at a stage when the *Rhizosolenia* had not yet developed the silicated cell-wall of the hermetically sealed chamber with which we are acquainted.

The green colour which predominates in plants on land is practically only to be found at sea in the globular *Halosphæra viridis* (see Fig. 241). This has been described by Schmitz from Naples, where the people call it "punti verdi," that is to say, green spots. It is or may be lighter than sea-water, so that it floats quite close to the surface. On the other hand, Hensen's expedition found it at profound depths, even at 1000 metres, away down near the limit of the penetration of sunlight, but if this denotes anything in its life-history, it must be at any rate in a state of resting. *Halosphæra* is reproduced by zoospores, though we do not know how they proceed to form the small globular cells that little by little grow up to the normal size. The cell-wall is so firm and thick that its outer part is burst at last in the course of growth and discarded, and the inner elastic parts are thus enabled to expand. Cleve has also observed thick-walled

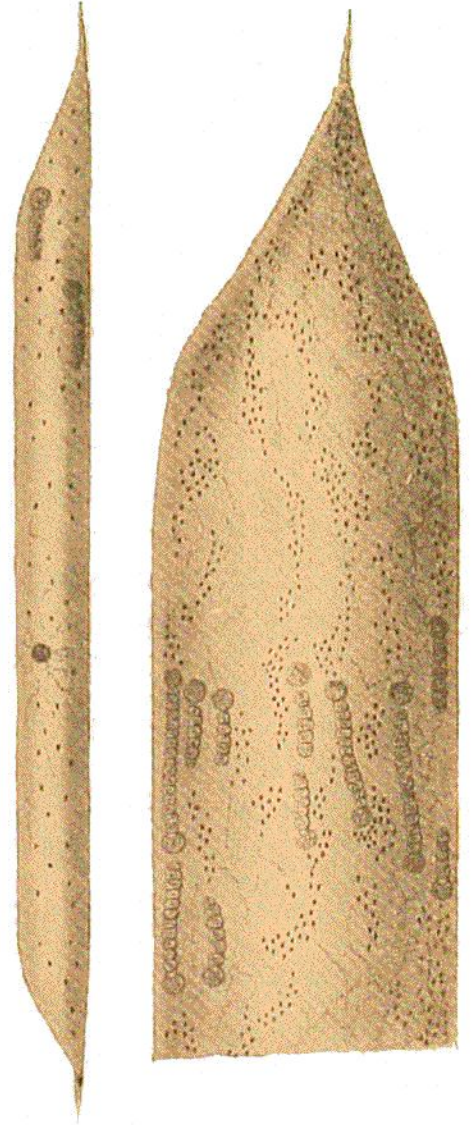


FIG. 241.—CHAINS OF *RICHELIA INTRACELLULARIS* WITHIN THE CELLS OF *RHIZOSOLENIA STYLIFORMIS*. (Karsten.)