stamens and style about as long as the upper lip of the corolla, which is uniformly of a pale lilac. A second form has narrower, more deeply sinuate leaves; flower clusters larger; corolla on the three lobes of the lower lip irregularly spotted with purple; style well exserted, its two lobes rather longer than in the first form. A third form has leaves and flower clusters as in the second form, but the flowers have no spots on corolla, and style not exserted, but only as long as upper lobe of corolla.—JOHN M. HOLZINGER, *Winona, Minn.*

A deep-water Nostoc.—With the first gales of November and March each year there appears upon the shore of Lake Michigan an abundance of an interesting form of Nostoc. It was first observed in 1864 by Professor Oliver Marcy. Thrown out upon the shore by the waves, it appears as small brown, purple and green balls or thalli. These are not always round, but frequently ovoid, and the larger specimens broadly flattened. Generally they are globose, with a firm, tough exterior or periderm. Color varies from light blue-green and flesh-color to brown or purple, the browns prevailing. They are from 2 to 20mm. in diameter the usual size being 5mm. broad. Examined microscopically, the trichomes are thin and regular; diameter of the heterocysts, 5 to 8.75μ; average, 6.87μ; diameter of cells, 2.5 to 5.6μ; average, 3.56μ.

In 1871 specimens were sent to Harvard College, with inquiries as to its species. Dr. Gray replied, "The plant is *Nostoc sphæroides* of Kützing. Pray keep a look-out for it from year to year. It ought not to grow in deep water." This determination proved erroneous, for in Kützing's description the trichomes are said to be swollen between the heterocysts, which is not true of our Nostoc. In 1882 Professor S. A. Forbes, examining dredgings from the lake, found a Nostoc answering the general description of our lakeshore plant, and reported the same in *Science* for June 1, 1883, as *Nostoc pruniforme.* In reply to our inquiries, he said, "It was abundant all along the city front as far out as ten fathoms deep." He referred it to Dr. Wolle, who replied, "I judge rather by your description than by the samples sent that they are *Nostoc pruniforme.*" When Dr. Wolle's' "Fresh Water Algæ" appeared, this Nostoc was not mentioned. Thinking it worthy of further attention, specimens were sent to him, to Dr. Farlow, and several others. In the correspondence which followed, the plant received various names. Dr. Wolle thought it might be *N. cœruleum,* while to others it seemed to have the characteristics of *N. Zetterstedtii* and *N. verrucosum.* Dr. Farlow, having examined both the autumnal and spring stages, writes, July, 1889, "I could not make the measurements of the plant of last year agree with those of *N. pruniforme,* nor can I now, on re-examination. Dr. Barnet, however, is inclined to believe that it is really an autumnal stage of *N. pruniforme,* although it does not agree with descriptions of the type."

It should be stated further, that the base of every thallus shows a thin incrustation of calcium carbonate.

The supply along the shore at the dates mentioned is so abundant that it can be easily provided for class use in most of the laboratories of the country. This year the plant appeared with the gale of October 23, the earliest date noted, and the specimens were the largest yet found.—C. B. ATWELL, *Evanston, Ill.*

Preliminary note on the synonomy of Entothrix grande Wolle.—Two years ago, through the kindness of Rev. Francis Wolle, Bethlehem, Penn., I received specimens of his Entothrix grande. Upon a careful microscopic examination of the material I found it to be an undescribed species of *Lemanea*. I have also had an opportunity, through the courtesy of Dr. Farlow, while at his laboratory during the past summer, of verifying my observation by an examination of *Entothrix grande* Wolle, Rab. Alg. Europ. no. 2538. The species belongs to the section of the *Lamaneaceæ*, for which Sirodot[1] retained the generic name *Lemanea* Bory. The dense coil of enveloping filaments which surround the central axis of the tube, as well as the two or three layers of cells in the cortex, shows the affinity of this species with *Lemanea catenata* Kütz. and *L. nodosa* Kütz If the enveloping filaments of the central axis are carefully dissected away one could not fail to see the Lemanea structure. Mr. Wolle erred[2] also in associating it generically with Harvey's[3] *Tuomeya fluviatilis*. I have also to acknowledge the favor of Dr. Farlow in permitting me to examine type specimens of *Tuomeya fluviatilis* Harv. from Harvey's herbarium. Wolle's figure[4] of Tuomeya fluviatilis, which, by the way, he states is ideal, since he did not have an opportunity of examining specimens, bears not the slightest resemblance to the habit of the type species, which is more nearly that of *Batrachospermun moniliforme*, while it is also more nearly related to *Batrachospermum* in structure.

I hope in a forthcoming paper to give a more detailed account of the structure of Lemanea grandis than can be given here. I have arranged the synonymy as follows:

LEMANEA GRANDIS Atk.

Syn. *Entothrix grande* Wolle, Bull. Torr. Bot. Club, Nov. 1877.
Entothrix grande Wolle, Rab. Alg. Europ. 2538.
Tuomeya grande Wolle., Fresh Water Alg. U. S. pl. 66, figs. 2–8.—GEO. F. ATKINSON, *Auburn, Alabama.*

EDITORIAL.

Every botanist must rejoice at the grand provision that the late Mr. Henry Shaw has made for the promotion of botanical science in this country. As is doubtless known to every reader the largest part of Mr.

[1] Étude sur la Algues d'eau douce de la Famille *Lemaneaceæ*, Ann. d. Sci. 5th Ser. Bot. xvi, Paris, 1872.
[2] Fresh water algæ of the U. S., 1887.
[3] Nereis Bor. Am. III, pp. 66–67, Smithson. Cont. x, 1857.
[4] Fresh water algæ of the U. S., 1887.