the market. The price is remarkably low.—9. *The Chautauqua Flora*, by Edward S. Burgess, Clinton, N. Y: This includes the cryptogams to the end of Hepaticæ. There are 37 lithographed pages, 880 species. Mr. Burgess deserves credit for his enterprise. We notice that he gives no Cistaceæ. We wish much that those who have knowledge of this order would help us in fixing the limits of the species on this side of the Rocky Mountains. Mr. Burgess reports a pink-white variety of Pontederia, found by Mr. Geo. Miner. There seem to be no Cassias in Chautauqua, 49 Carices, and 30 Ferns.—10. *Hay Fever or Pollen Poisoning:* In this essay, reprinted from the Transactions of the Medical Society of New Jersey, Newark, 1877, Dr. Elias J. Marsh, of Paterson, seeks to maintain, as others have done before, that the rose and hay fever, the former in early, the latter in late summer, are caused by pollen floating in the air; in particular the hay fever by the pollen of Ambrosia. It would seem likely enough that susceptible constitutions may be irritated by such agencies, especially as certain regions, sharply marked, are found to be free from the exciting cause, but more accurate observations are needed. We notice one or two botanical misprints. Ambrosia trifolia should be A. trifida. How did the Dr. recognize the pollen of Ambrosia in the air? It is apparently an anemophilous plant, and very probably the pollen is peculiar, and, if certainly identified, the observations would be interesting on that account.—11. *Science Observer*, No. 2, Boston, Mass., Boston Amateur Scientific Society, 4 pages monthly, 25 cents per annum. Solicits exchanges. The present No. is chiefly Astronomical and Mineralogical.

§ 177. **Pontederia cordata**, L.—On page 62 of this volume of the BULLETIN, I gave some observations on this plant, but working with dried specimens, I did not make out its character truly and supposed the lengthening of the style in the coiled up flowers to be a result of growth or tension. There is I believe such an extension, but not to the degree supposed.

This summer, I had the opportunity of seeing some growing plants, and find that Pontederia is as truly trimorphic as Lythrum Salicaria, or even more so. There are three kinds of flowers, not on the same but on different plants. Of these, one has the stigma raised on the style to the top of the flower, a second only to the middle of the flower or top of the tube, and the third with a very short style at the bottom of the tube. There are thus three positions for the stigma. Whenever the stigma is in one of these positions, the two other are occupied respectively by one of the two sets of anthers, three in a set. When the anthers occupy the highest position their pollen is, I judge about $1\frac{2}{3}$ thousandths of an inch in diameter. Anthers occupying the middle position have pollen rather smaller, say $1\frac{1}{3}$ thousandths of an inch in diameter. When at the bottom of the tube, the anthers have still smaller pollen, say 1 thousandth of an inch or less. The pollen in all positions seems to be perfect. It remains to be seen whether all forms ripen seed equally. The stigma of the tallest style is plainly cut into six linear segments. If there is any division of the other stigmas, it is not very manifest. The stamens of each set are not quite uniform in length, and in

the short styled form, in the bud, the lower set is approximate to the upper. This is the one from which the figure in Maout and Decaisne seems to have been taken. The second form is that which Dr. Torrey describes in his Flora of N. Y., and Dr Gray in his Manual, except that the latter makes no mention of the style. Nuttall notices the variation in the length of the style, which he says is "usually about its [the corolla's], length, shortest when the stamina are most exserted." Elliott describes the first form. From the illustration of Eichhornia speciosa, in Lindley's Vegetable Kingdom, we should suspect it also of being heteromorphic.

There are many questions about Pontederia that still require to be answered, and we earnestly request those who live in its neighborhood to examine into them. What insects visit it? There are probably three kinds at least, suited to carry off the three forms of pollen to their appropriate stigmas. What do the insects seek, or where is the honey? Do all the forms ripen seed equally? What is the use of the curious glands that beset the flowering parts?

W. H. L.

§ 178. **Cassia.**—The three kinds of Cassia that are native hereabouts need to be studied in reference to their fertilization. Dr. Torrey seems to be the only writer who refers to the fact that the anther of *C. nictitans*, L., though opening at first with pore-like slits, finally splits down the whole length. But the other two here open only by pores, and I have experimented in vain to find how the abundant pollen is discharged. They are both freely visited by a large bumble bee.

W. H. L.

§ 179. **Lythrum Salicaria,** L., is well established on the Northern R. R. of New Jersey, near Granton.

§ 180. **Symplocos and Alnus.**—Can any of your readers give the size which Symplocos tinctoria attains? During a recent botanical excursion in Southern-Delaware a specimen was found which was thirty-five feet in height, the trunk of which at the base was 28 inches, and, 3 feet from the ground, 23 inches in circumference. I have never seen this tree attain such a size even in the Southern States.

On the same trip a specimen of Alnus maritima was measured as follows: height 23 feet, circumference of trunk at base 16½ inches. These were measured by Mr. Albert Commons and

Wm. M. Canby.

§ 181. **Suffolk County Plants.**—I recently had the good fortune to discover *Zannichellia palustris*, L., in a stream leading into a creek near the Sound. Also the following plants: *Lathyrus palustris*, L., at Wading River; *Spergularia rubra*, Presl., var. *campestris*, Gray, *Myosotis verna*, Nutt., and the white variety of Silene Pennsylvanica, Mx., at East Hampton; *Asclepias incarnata*, L., at Long Pond, Wading River (the variety *pulchra* is very common here); *Potamogeton Oakesianus*, Robbins, at Manorville, Wading River, and Riverhead.

The ponds on the cliffs at Northville were so dried up, that no *Hottonia inflata*, Ell., could be found, but while looking for this I discovered a large quantity of *Onopordon acanthium*, L., at a wood