

than strengthening cells: ducts (.030-.060 mm.) sometimes wanting: leaves 1 in. long.

In the northern States.

30. *P. pungens* Michx. may be looked for here.

\* \* Ducts always internal: bundle-sheath thin-walled.

37. *P. palustris* Miller. Cells of thin-walled layer generally much smaller than those of the epidermis: strengthening cells mostly on ventral side of fibro-vascular region: ducts variable in size (.040-.050 mm.), with few strengthening cells: leaves 10-15 in. long.

*P. australis* Mx.

Virginia to Texas.

38. *P. Cubensis* Griseb. Cells of thin-walled layer large, often equalling those of the epidermis: strengthening cells about as large as epidermal, mostly but one layer; sometimes more in the angles, and even extending to the ducts; none about the ducts nor in fibro-vascular region: ducts variable in size (.050-.080 mm.), often with accessory parenchymatous ones: fibro-vascular bundles but little separated, often blended: leaves 7-12 in. long.

*P. Elliottii* Engelm.

South Carolina and Florida.

NOTE.—We would be pleased to receive from our friends specimens for identification, as doubtless a wider range of forms will lead to some modifications.

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## BRIEFER ARTICLES.

**A case of teratology.**—It is not always that the continuity of the leaf-spiral can be readily demonstrated with opposite or whorled leaves. Teratology sometimes helps us out. A stem of the garden valerian, *Valeriana officinalis*, was lately found which had grown to several times the usual diameter and become much shortened and spirally twisted. Where the tissues of the stem were nearly horizontal the leaf-spiral was nearly vertical and the leaves were inserted vertically with their buds at the side. The twisting, as is common with monstrous formations of the stem, was confined to the single axis.

A. A. CROZIER.

**Puccinia Malvacearum Mont. in Massachusetts.**—I have recently received some leaves of hollyhock from the garden of Prof. C. L. Jackson, at Beverly, Mass., which were attacked by the true *Puccinia Malvacearum* common in many parts of Europe. In all respects the leaves attacked resemble



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