I have little to add except that the ovules in his specimens vary from 6 to 10, more commonly 10; in *P. major* from 8 to 18; also that the capsule in the former is narrower as well as longer than that of *P. major*, being cylindraceous-oblong, and a little over 2 lines in length; the seeds in the former are of twice the size of the latter, dull as well as dark and without the delicate reticulation of the coat which fresh and dry seeds of *P. major* exhibit. Finally, the sepals of the long-podded species are oblong, decidedly narrower than those of *P. major*, and all four, as well as the bract, more strongly and acutely keeled.

On looking at the older descriptions, I observe that the Plantain in question has been taken for *P. major*, probably by Elliott, certainly by Torrey, in his Flora of the Northern States, and by Darlington in the second (and most valuable) edition of the Flora Cestrica. The terms which they use in describing the calyx and the capsule may assure us of this. Mr. Commons remarks that it is much the more common species in his neighborhood. If my memory rightly serves, it is the door-yard Plantain of my natal district, the central part of the State of New York. I have it from Vermont and Canada (so that it may be the plant which Pursh mistook for *P. cucullata*, which is *P. maxima*, Jacq.); and I have small and slender forms of it from South Carolina, Georgia, and Texas, also from Southern Illinois. In short, it is the plant which first Hooker and afterwards I myself mistook for *P. Kamtschatica*. Although there are only four seeds in the pods of the slender specimens which I had formerly examined, there are commonly 6 or 8 ovules, *i. e.* three or four in each cell. I am sorry to say that the only published name applicable to the species is that of *P. Rugelii* of Decaisne, founded on a depauperate form of it. I should have preferred to have it bear the name of some one of those botanists who have evidently had it in hand, without knowing it was an undescribed species, probably indigenous to the country; for I find no trace of it in any other part of the world, not even in our north-western regions from which we have a probably indigenous form of *P. major*, or of the nearly related *P. Asiatica*, of which the real *P. Kamtschatica* appears to be a few-seed form.

FOREIGN PLANTS INTRODUCED INTO THE GULF STATES.—With a few exceptions of those foreign plants which have found their way into this region from the Atlantic coast, or from the country adjoining south of it, their introduction has been effected through the seaports, and, as elsewhere, chiefly by the deposition of ballast from the shipping. In his exploration of the flora of this coast region, the botanist is surprised at finding, almost season after season, plants strange and new to him, arrivals from distant shores in different zones of the new and the old world. As will be seen from the following list, some are mere transient visitors, losing soon their foothold and disappearing entirely, like the West Indian *Melochia melissæfolia*; some reappearing again, after a lapse of years, as the *Mercurialis annua;* while others, adapting themselves more readily to the conditions to which they are exposed in their new home, continue to flourish and to propagate their kind year after year. Some species amongst them spread rapidly into the interior, becoming fully established amongst the denizens of the indigenous flora, and in extending over large areas of ground, covering it to a greater or less exclusion of the native races, add new features to it and affect decidedly for better or worse the economies of man. One of the most striking instances of the kind is offered by the introduction and rapid spread in the Southern States, during the last ten years, of the *Lespedeza striata*, whose history seems to be of sufficient interest to put upon record. Dr. Ravenel mentions first this plant from the *far East* as having been observed by him about twenty years ago near Charleston, S. C. Immediately after the war the rapid spread of a new plant arrested the attention of the farmers in that State and Eastern Georgia (Dr. Mettaur, 1865.).* The year after, the agricultural

*Chapman, BOT. GAZETTE, Vol, III, No. 1, p. 4.

press of the South devoted a good deal of attention to it, in most instances heralding the appearance of the plant, popularly called *Japanese Clover*, as a blessing, destined to convert the barren pine hill and the waste, exhausted fields into rich pasture grounds, and in that way supplying one of the greatest wants in the system of Southern agriculture. By the kind information received lately of Mr. A. Berksman, of Augusta, Ga., I learn that the plant made its appearance in the spring of 1867. The following season (April, 1868) I found it in abundance in the counties of Montgomery and Lowndes in this State (Alabama) wherever a closer and somewhat damper soil afforded to it its proper habitat, gaining a firm hold even among the thickly matted stolons of the Bermuda grass (*Cynodon Dactylon*) covering the rich lowlands. I looked in vain for it during that season in this vicinity. In September, 1869, a friend interested in the matter brought me the first specimens observed in the eastern suburbs of this city. In the following season it was found very common everywhere in the situations most suitable to its growth, continuing with rapidity its progress towards the west, undoubtedly reaching the eastern banks of the Mississippi soon after its arrival here. I have not learned whether the plant has crossed that mighty river. East of it, it covers immense areas, in many places crowding out almost completely the herbaceous indigenous plants, for which the collector now searches in vain in the former habitats taken possession of by the Asiatic intruder. As far as my personal knowledge goes the *Lespedeza striata* extends nearly to the northern confines of this State. I found it in 1873 abundantly in the northern parts of Blount County. It is to be presumed that it occupies the same latitude in the adjoining States. One of the principal causes by which the rapid spread of that plant has been effected, is certainly due to the transfer of the herds of beef cattle following through the South the movements of the armies during the war, and since that time to the increased traffic in live stock between the different sections of the South. Watching its spread closely at its first appearance here, I found almost invariably the plants starting from the decayed droppings of cattle. The hard seeds of the plant are voided with the excrements without injury to their vitality, and finding a medium rich in the elements for their sustenance the young plants developing from it grow with the greatest vigor.

Comparing the introduced plants observed here with those noticed by Mr. I. Martindale on the ballast grounds near Philadelphia, we meet the fact that there are certain species, more than others, bearing the habits of cosmopolitan wanderers. Belonging to different natural orders and coming from zones of our globe separated by wide distances and of different climes, they are noted as arrivals common to both of those places on our coast, where they find themselves surrounded by the vast differences in climatic conditions due to the great one in their gegoraphical position. These plants seem to be endowed with a particular aptitude to accommodate themselves to their new environments in which they have been accidentally placed and where they are exposed to extremely different influences. To illustrate this fact I will mention that amongst a few of my ballast plants which I sent to Mr. Martindale for determination he found the strange *Polanisia viscosa* and the stately *Nicotiana glauca*, both oriental plants collected by me on the ballast grounds at Pensacola, also growing on similar places upon the banks of the Delaware, as well as the *Tournefortia heliotropoides* from the La Plata States, found seemingly firmly established near Montgomery, Ala., (April, 1868). *Diplotaxis tenuifolia* and *Heliotropium Europæum* of Southern Europe are found as firmly established there as in Pensacola or New Orleans; and similar instances can be found in comparing these notes with the interesting list published by Mr. Martindale in Nos. 1 and 10, Vol. 2, of the BOTANICAL GAZETTE.

The following plants from distant shores of the new and from the old world have been observed by me in this region and specimens of them preserved in my herbarium, if not otherwise stated:

Ranunculus muricatus, L., and *R. parviflorus*, L., have been recognized by our earliest botanists as fully naturalized. The first is confined to the coast; the latter extends into the interior.—Montgomery, 1868.

Ranunculus sceleratus, L.—Observed around the wharves of this city for the last few years.—April, 1873 and 1876.

Fumaria officinalis, L.—Ballast ground, Pinto Island, Delta of Mobile river; one specimen only.—April, 1877.

Sisymbrium Thaliana, Gaudich.—Sandy banks of Paseagoula river, Miss.—April. (Europe.)

Diplotaxis tenuifolia, L.—From the Mediterranean region of Europe.—Ballast grounds, Pensacola, Fla. Many specimens in bloom and full of seed.—July, 1874 and 1875.

Alyssum maritimum, L.—From Southern Europe. Galveston, Texas. Dr. Joor.—1875.

Capsella Bursa-Pastoris.—Pinto Island, Mobile river.—April, 1877.

Polanisia viscosa, L.—Flowers yellow. Pensacola, Fla., ballast ground. From Ceylon and Malabar. Only a few specimens.—July, 1875.

Gynandropsis pentaphylla, DC.—Common in waste places upon the banks of the Mississippi, La.—(New Orleans, Riddell). Mexico.

Spergula arvensis, L.—Covering low cultivated grounds near the coast. Europe.

Melochia melissæfolia, L.—For the first time noticed in October, 1875, in the new made ground of a railroad bed near this city. There were many specimens covering the ground extending several square rods; blooming freely and with an abundance of well ripened seeds. Not a plant of it was to be found last summer. The unusually cold weather of the previous winter must have destroyed the plant completely.—A native of the West Indies.

Tribulus cistoides, L.—A beautiful plant with long spreading decumbent stems loaded with golden-yellow flowers open during the hours of mid-day. Seeding abundantly; fully established on the ballast grounds of Pensacola, Fla. July, 1873 and 1875.—Native of Tropical America.

Kallstrœmia maxima, T. & G.—Near the wharves, Pensacola, Florida, not scarce. July, 1875.

Erodium cicutarium, L.—Banks of Mississippi river, Louisiana, (Feliciana, Dr. Carpenter. Riddell, New Orleans.).

Medicago minima, L.—Covering large patches on Pinto Island during the spring; it dries up completely in the summer months, the small prickly legumes covering thickly the ground. Fully established.—From Southern Europe.

Medicago denticulata, L.—New Orleans. Riddell. From Southern Europe.

Medicago maculata, L.—Banks of Mississippi in Louisiana. Carpenter, 1839.

Melilotus parviflorus, Desfont.—Abundant on Pinto Island. April.—From Southern Europe, 1873.

Lespedeza striata.—Since 1869; now everywhere common.

Vicia sativa, L.—Old fields, road-sides; fully naturalized.

Vacchella Farnesiana.—A common shrub near New Orleans (Dr. Riddell) and Pensacola, Fla. July, 1875, ripe seeds; flowers in December.

Indigofera Anil.—Escaped from cultivation attempted by the earliest settlers, but abandoned many years since. Road-sides and fence-rows near dwellings. 1870.

Fragaria Indica, L.—Very common on damp roadsides, shaded ditches and hedges. Flowering and fruiting during nearly the whole year.

Rosa lævigata, Mich., and *Rosa bracteata*, L.—Both from Eastern Asia, noted as fully naturalized by the earliest botanists. The former is a common hedge plant in South Alabama; the latter is more frequently met with west of the Mississippi river.

Helioscyadium leptophyllum, DC.—This annual is common in cultivated grounds and waste places in the coast region of the Gulf States.

Richardsonia scabra, L. Her.—Very common near the coast in this State, having taken possession of old fields and cultivated grounds. Said to have made its appearance at the time of the Mexican war. Twenty years ago when I met the plant here first it was certainly not near as frequent and extended as now. It is not found at a distance of 50 or 60 miles from the seaboard.—From the warmer parts of the American continent.

Acanthospermum xanthoides, DC.—According to Mr. A. Berksman in Augusta, Ga., it has made its appearance there and is rapidly spreading.—From South America.

Parthenium hysterostrophus, L.—Waste places. Common in the streets of Mobile and New Orleans.—West Indies and South America.

Cnicus benedictus, L.—Abundant in open pasture grounds. Montgomery, Ala. Completely naturalized. Flowers April, (1868).

Anagallis arvensis, L.—On ballast ground in several localities, not frequent, the variety with red flowers. Mobile Co.

Centunculus minimus, L.—Sandy fields near the coast. Mobile Co.

Lycopus Europæus, L., and *Lamium amplexicaule*.—Common Mobile Co.

Leonotis nepetæfolia, R. Br.—One specimen in seed in the fall of 1873. Mobile, and not found since. Harrisburg, Texas, Dr. Joor, 1875.

Verbena venosa, Gill and Hook.—Not unfrequent in several localities near this city, on roadsides and cultivated grounds. First noticed in 1865. From Buenos Ayres.—This hardy perennial has also been sent to me by Dr. Joor from Louisiana, and is here completely naturalized but slowly spreading.

Heliotropium Europæum, L.—Large specimens from New Orleans. Dr. Riddell.

Tournefortia heliotropoides, Hook.—This perennial I found in waste places, near Montgomery, Ala., in April, 1868. Quite abundant. From Buenos Ayres.

Nicotiana glauca.—Ballast grounds, Pensacola, Fla., April, 1875–76. Fine specimens sent to me in two successive seasons.—Asiatic.

Hyoscyamus albus, L.—Several large plants amongst the rocks of the ballast ground in Pensacola, Fla., July, 1874. Ripening seeds abundantly and to perfection. Southern Europe.

Ricina humilis, L.—Waste grounds near New Orleans, Dr. Riddell. Banks of Red river near Alexandria, La., Dr. Jos. Hale; numerous large specimens.

Sphonoclea Zeylanica, Gærtn.—Waste places banks of Red river, Alexandria, La., Dr. Jos. Hale, 1839. (Like the last from the Riddellian herb.) Common in the tropics of the old world.

Chenopodium vulvaria, L., (*Chen. fœtidum*, Lam.).—Abundant on the ballast ground, Pensacola. Of a more robust habit than I know the plant from the Mediterranean region of Europe to be. Stems 10–12 inches long. July, 1875.

Salsola Kali, L.—Frequent on the sandy sea beach. Mobile. (From Europe).

Euphorbia Peplis, L.—Ballast grounds Pinto Island, frequent and fully established. (Europe).

Mercurialis annua, L., makes its apearance in some years in abundance near the wharves of the city, in others completely missing. Mobile 1858 and 1866.

Stillingia sebifera.—This Chinese tree is to be considered as fairly naturalized in lower Louisiana.

Aira caryophyllea, L.—Borders of woods and roadsides. For the first time observed near Spring hill, Mobile Co., April, 1877. Numerous specimens. Europe.

Sporobolus Indicus, Brown, *Eleusine Indica*, L., and *Dactyloctenium Ægyptiacum*, Willd., are common grasses around dwellings and in cultivated grounds throughout this region. All eastern plants.

Arenatherum avenaceum, Beauv.—Pinto Island, Mobile river, scarce, 1877.

Avena fatua, L.—A few plants with the above, 1877.

Manisurus granularis, Swtz.—In rich cultivated ground near New Orleans, Louisiana. Riddell.

Sorghum Haleppense.—Escaped from cultivation and fully established in lower Louisiana. Riddell.

The following plants indigenous to Texas and the territories southwest of it have been observed in the eastern Gulf States, and to my knowledge have so far not been recorded. Those occurring in the coast region either on ballast grounds or confined near human dwellings must be regarded as introduced plants; others, however, might be counted as species belonging to the flora of the States east of the Mississippi, having reached here their northern limits:

Trepocarpus Æthusæ, Nutt.—Of these rare Texan plants I found a patch covered with numerous specimens in bloom and with ripe seeds on Pinto Island, Mobile river, July, 1874. The year after in search of a supply of specimens, not a single plant was found, nor has it reappeared since. Also, from Cheefuncte light-house, La. Dr. Riddell, 1839.

Leptocaulis echinatus, Nutt.—Roadsides and cultivated grounds, frequent in the new Green Bay settlements, Mobile Co. April, 1873, first observed; spreading there since with every season. (Arkansas and Texas.)

Gaillardia pulchella, Torrey.—Covering year after year a large part of the ground at Pinto Island. June and September.

Coreopsis Drummondii, T. and G.—This fine Texan annual adorns the lawns, roadsides and open copses on the eastern shore of Mobile Bay, (1859,) also frequent at Pascagrule, Miss., April, 1873. It introduced it is completely naturalized.

Eragrostis vaylepis, Torr.—Quite a colony of it was found at Cedar Point undoubtedly introduced there with ballast. A very beautiful grass.

Pteris cretica, L.—Found on shaded moist banks in woods near Mobile. This fern so frequent in the tropics of the globe is perhaps indigenous here.

Pellea flexuosa.—Of this fern frequent in Mexico, I found fragmentary specimens collected by Dr. Riddell in Western Texas, 1839.

Lycopodium cernuum, L.—New to the flora of the United States, for the first time found on springy claybanks of the bluffs fronting the eastern shore of Mobile Bay, July 4th, 1877. Common throughout all tropical America.—CHARLES MOHR, *Mobile, Alabama.*

"DIE PILZE DES WEINSTOCKES," Wien, 1878.—This is a volume of two hundred and fourteen pages, from the pen of the excellent Mycologist, FELIX VON THUMEN, the well-known author of "Mycotheca Universalis." In this work on the *Fungi of Grapevines*, the author gives descriptions (in Latin) of about two hundred and twenty species that have been found inhabiting either the living or dead vines, fruit, etc., together with references and synonyms. This is followed in each case by an amplified description and remarks in German. Thirty species are described as new. The work is divided into four sections, thus:

I. Fungi inhabiting the fruit, 18 species.

II. Fungi inhabiting the stems and branches, 164 species.
   - A. Inhabiting living stems and branches, 11 species.
   - B. Inhabiting dead stems and branches, 153 species.

III. Fungi inhabiting the leaves, 36 species.
   - A. Inhabiting living leaves, 20 species.
   - B. Inhabiting dead leaves, 16 species.

IV. Fungi growing from the roots, 5 species.