On Four Varieties of British Plants.

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[Read Nov. 19th, 1857.]

I BEG to present to the Linnean Society four or five varieties of British plants, which were collected by myself during the last summer.

The first is a white-flowered variety of the common scarlet Corn Poppy (*Papaver rhæas*, var. *flore albo*). I gathered a single plant in a potato-field, at some distance from the village of Norton, in the county of Durham, on September 18th. The petals, when fresh, were of a beautifully delicate white colour, having a small dark-red spot at their base. I only once before met with the like variety, which was also near Norton, more than twenty years ago; and which is recorded in the late Mr. Winch's 'Flora of Durham and Northumberland.' As far as I can find, no notice is taken of this variety, as a wild plant, in any other Flora of British plants.

The second is, the European Strawberry-tree, or *Arbutus unedo*, of which the varieties here presented are Irish specimens. After a search among our English and Irish works on native plants, I was surprised not to find any mention of these very distinct variations in the form and breadth of the leaves. The one, which I term var. *latifolia*, is a truly noble tree, its leaves much resembling those of the bay-tree, or *Laurus nobilis*, but with their tips often rounded. It is also very robust in its habit, and attains a large size. It was growing in the fissures of the compact grey limestone on the margin of the Torc Lake, or as it is otherwise named, the Middle Lake, at Killarney. The second, which I call var. *angustifolia*, I gathered from a small tree deeply rooted in the crevices of the same limestone rock, on the shore of the lower lake, on the same day, Aug. 21st last. This variety possibly agrees with the var. 7, *salicifolia*, 'willow-leaved,' of the London nurserymen, as mentioned at p. 1118 of Loudon's 'Arboretum et Fruticetum Britannicum,' vol. ii. edit. 2. I will not here enter on the disputed question of the indigenoussness of this beautiful tree, now so abundant about Killarney; but I will only observe against the affirmative side, that none of the *Arbutus* wood has ever, so far as I could learn from many inquiries in the island, been dug up with the other common sorts of bog-wood, among the peat or bogs of the south-west of Ireland.

In the town of Killarney there exists a considerable manufacture of work-boxes, writing-desks, tables, tea-caddies, card-

cases, and other fancy articles of varied and beautiful design, made with thin slices of the *Arbutus-wood*, veneered with skill. Numbers of the poorer class thereby gain a very good livelihood.

The third plant is perhaps only a remarkably large and luxuriant variety of *Astragalus hypoglottis*; or, indeed, it may ultimately be proved from its mature pods to be a distinct and foreign species. I first discovered three or four individuals of it in the summer of 1856, which were growing on the side of the West Hartlepool railway, near the Greatham viaduct in the county of Durham; but the dried specimens which I now exhibit, were gathered in July last, from one of the plants seen by me last year. For the better comparison of the ordinary form of *A. hypoglottis* with this abnormal one, I have attached also a dried and very old specimen of the true "Purple Mountain Milk-Vetch," which was gathered near the Queen's Ferry, Edinburgh.

Smith, in his 'English Flora,' vol. iii. p. 295, gives the entire length of the stem of the normal plant in Britain, as varying from "2-5 inches," and its leaflets are usually "small and ovate"; or rather, as Sir W. Hooker states, "elliptico-ovate." Withering also, in his 4th edition, vol. iii. p. 269, describes the number of leaflets in each leaf as from "six to twelve pairs with an odd one," terminating the leaf; and Mr. Babington says the leaflets are "in eight to ten pairs." Now, in my recent and larger specimens, the stems varied from about 12 to 14 inches in length, the entire stem being stronger but more straggling; the leaves containing fourteen or sixteen pairs of leaflets and a terminal one: the leaflets themselves are less ovate, and more elongated or lanceolate. The flowering stems are nearly double the length of those of the ordinary plant; the flowers are more numerous, and the flower-heads are larger and stouter. Indeed, the whole plant is altogether more robust and upright; and if a variety of *A. hypoglottis*, it presents a very luxuriant condition. At first I was inclined to think that it might be a foreign species (and from further examination of it I retain the same inclination) introduced with ballast, as it was found on the side of a railway only a few miles distant from a considerable seaport, West Hartlepool; and the ballast or ground in which it was growing was a mixture of sand and sea-shells much broken. But had it been growing in a very rich soil, this might have accounted for its remarkable luxuriance of size, and might have induced one to suggest that it might be cultivated, like tares or saintfoin, as food for cattle, with every prospect of success.

I have very recently, with the kind assistance of Mr. Kippist, looked over the species of *Astragalus*, which are preserved in the Linnean and Smithian Herbaria. In Linnæus's collection I did not see any foreign plant at all resembling it; but in Smith's own Herbarium, in the sheet of paper containing many dried specimens of *A. hypoglottis*, the variety marked No. 6 approaches my plant in the form of its leaflets, though not in the number of their pairs. This variety is an Asiatic one, being underwritten "Caucasus," communicated doubtless by Fischer. It is evidently a mere variety of our English *A. hypoglottis*, and retains its chief characters, the leaves excepted.

I next examined the plates in DeCandolle's beautiful '*Astragalogia*,' and observed in his engraving (Tab. 12) of *Astragalus purpureus*, a very considerable resemblance to my plant in its length of stem, its somewhat straggling character, and its general appearance; although its head of flowers is not represented so large, or its leaflets sufficiently long. It is a native of the South of France, chiefly growing in the mountains of Provence.

I will now briefly add DeCandolle's distinctions between *A. hypoglottis* and *A. purpureus*. In his later work, the '*Prodromus Syst. Naturalis*,' tom. ii. p. 281, he describes, No. 1, *A. hypoglottis*, . . . as "piloso-subvillosus" . . . "foliolis obovatis oblongis, sæpe emarginatis 8-10 jugis;" and its pod with one seed in each cell or division; whilst No. 3, *A. purpureus*, he details as being "subvillosus" . . . "foliolis obovatis apice bidentatis," and its pod as having in each division three seeds. Hence the chief differences, besides the seeds, between *A. hypoglottis* and *A. purpureus*, so pointed out, are the less hairiness of the latter plant, and the leaflets furnished at their tips with two small teeth: and, since the leaflets are more fully described in the '*Astragalogia*,' I will here give the passages relating to them:—

"*A. hypoglottis*.— . . . foliola 19-29, opposita, ovata aut ovato-oblonga, 3-8 millim. longa, obtusa aut sæpe in eadem planta apice emarginata, subtus incano-villosa; superne glabra aut pilis quibusdam onusta." (p. 118.)

"*A. purpureus*.— . . . foliola 23-29 opposita, ovato-oblonga, apice emarginata, vel potius bidentata et in sinu brevissime mucronata, pubescentia, aut villosa, 7-9 millim. longa." (p. 117.)

In the number of pairs of leaflets in the former plant there seems to be some error, for DeCandolle makes them 9-14, with an odd one, whereas in our English plant the pairs are only 6-12 at most, with an odd one; and in the '*Prodromus*,' the author

writes 8-10 pairs. In my variety the pairs are 14-16, with an odd one; whilst the bidentations on their tips, in any of them, are scarcely, if at all, perceptible. This, however, is a character likely to be variable in itself, and to assume in some specimens the appearance of mere emargination.

In addition to the greater length of the leaflets in my new plant, their under-sides are less hoary and villous than those of the *hypoglottis*. But I must remark, that the chief and best distinction between these two species is, if constant, the solitary seed in each cell of the bilocular pod of the *A. hypoglottis*, and the three seeds in each of that of the *A. purpureus*.

In examining, a day or two ago, with Mr. Kippist, under a lens and small microscope, an immature pod taken from the lowest flower from one of the heads of each variety or species, eight or nine ovules were plainly visible in each dissected pod; consequently, if the character be a good one, all the ovules except two,—that is, one in each cell in the pod of *A. hypoglottis*, and all, save six, in the pod of the new plant, if *A. purpureus*,—must, in ripening, continue immature or abortive. So I must wait until next summer to decide the accuracy of this distinction, when I hope to procure some mature pods from my variety, or new species. But I shall have no difficulty in obtaining the pods of *A. hypoglottis*, as this pretty plant is common on the sand-links near Hartlepool and Seaton.

Looking then to the more elongated form of the immature pod of my new specimens, and compared with the subcordiform and compressed shape of that of *A. hypoglottis*,—see fig. (a) of Plate 12, and figs. (a) and (b) of Plate 14, in the 'Astragalogia,' and which distinctions are apparent in the dissected young pods contained in papers B 3 and B 4;—I am more inclined to affirm that my recent plant is rather to be accounted as a variety of *A. purpureus*, without the bidentate tips of the leaflets,—the seeds having, most likely, been imported with ballast from Toulon or Marseilles to Hartlepool,—than as a variety of *A. hypoglottis*. And this opinion seems to be in some degree confirmed by the greater number of flowers in each larger head, the much longer peduncles, the greater number of pairs of leaflets, their more lanceolate form, their less hoariness and villousness, than those which respectively occur in *A. hypoglottis**.

* After my paper was read, a gentleman present at the meeting stated that Baxter had figured, in his 'British Phænogamous Botany,' a variety of the *Plantago major*, which he thought was the same as mine. On looking, subsequently, at vol. iii. plate 207, I found that he has figured at No. 7, a small

The fourth and last plant I now submit to notice, is a most curious departure from the ordinary or normal form of *Plantago major*. I discovered three plants of it nearly together on July 13th of this year, in a meadow, at Norton, in the county of Durham. On examination, each single flower will be found to have grown into a separate spike of a close pyramidal form, and the entire flowering panicle or head to have put on a most distinct and compact pyramidal character; so the variety may be distinguished as—*pyramidalis*—*paniculis pyramidalibus densis*. Smith, in his 'English Flora,' vol. i. p. 214, says, "the rose-shaped variety, and the paniced one, are often kept in gardens for the sake of curiosity, and afford remarkable instances of vegetable transformation." He mentions two varieties:—"γ. *P. major*, *panicula sparsa*," figured in Bauhin, Hist. iii. p. 2. 503, *f.*; "δ. *P. rosea*," *ibid.*

On referring however to Bauhin's work, as alluded to by Smith, the woodcuts there given do not resemble my variety, which is by no means rose-shaped. In the accompanying paper (D.) I have dried two flowering heads of the usual form of the *Plantago major*, which were growing near this varied plant, in order that this curious yet very beautiful transformation may be the more distinctly apparent. The rest of the plant does not differ from the common growth of *P. major*.

Botanical Report on the North-Australian Expedition, under the command of A. C. Gregory, Esq. By Dr. FERDINAND MÜLLER, Botanist to the Expedition. Communicated by the Colonial Office.

[Read Dec. 17th, 1857.]

Sydney Botanic Garden, 20th May, 1857.

SIR,—I do myself the honour of transmitting to you a brief general report on my botanical researches, instituted during your exploration of intertropical Australia.

In order to elucidate how far I was justified to advance the general conclusions contained in the following pages, I beg to refer introductorily both to the extent and the directions of your tracks of exploration, along which I endeavoured to ascertain, not

head of the *Plantago major*, very like my transformed plant; but it seems less, and not so pyramidal in its entire form. Mr. Baxter describes it as var. η, and says it was discovered near Oxford, July 26, 1835.