

*Hippion hyssopifolium*. Spr. Syst. Veget. v. 1. p. 589.

*Exacum hyssopifolium*. Willd. Sp. Pl. v. 1. p. 640. Roem. et Schult. Syst. Veget. v. 3. p. 160.

Annual. Stems herbaceous, four-sided, glabrous, the angles slightly winged: branches few, opposite, diffuse. Leaves opposite, decussate, linear-lanceolate, tapering at the base, and embracing the stem with the short petioles, smooth, three-nerved, much paler below. Flowers six or eight together, in axillary whorls, sessile, white, each furnished with a linear spatulate bractea. Calyx five-cleft, divisions acute, margined, reflexed at the point, permanent, and closely embracing the base of the mature capsule. Corolla tubular, five-cleft; divisions obtuse, spreading, oblique at the base. After withering, the corolla remains, closely investing the capsule until it bursts. Stamens five; filaments attached to the middle of the tube, and furnished at the base with a small projection which rests on the stigma, and closes the tube. Anthers linear-oblong, erect, subsagittate, two-celled. Pistil: Germen superior; Style short; Stigma capitate. Pericarp: Capsule two-valved, one-celled, the margins inflexed, and bearing the numerous, small, round, brownish seeds.

This is a common plant, found in a variety of situations. In rich moist soil it grows to the height of from twelve to fifteen inches, and then every part is large in proportion; while, in poor sandy soils, it does not exceed two or three inches. The whole of the plant is somewhat bitter, though much less so than many of its natural allies. Like them it is employed by the natives of this country as a stomachic, and is administered in decoction or powder. Thus used it is also said to act as a laxative, an effect attributed to its tonic properties: one of the best pathological observations we ever heard from a native.

Fig. 1. Flower with the Corolla laid open. 2. Capsule. 3. Section of ditto;—more or less magnified.

## CONTRIBUTIONS TOWARDS A FLORA OF SOUTH AMERICA AND THE ISLANDS OF THE PACIFIC.

By Sir W. J. Hooker, LL.D., and G. A. W. Arnott, Esq., A.M. F.R.S.E.

### I. EXTRA-TROPICAL SOUTH AMERICA.

(Continued from p. 52 of the present volume.)

Before proceeding to the *Baccharideæ* among the *Compositæ*, (the sub-tribe which follows next upon the *Astereæ*, described in our last memoir on South American Botany) we think it but due to our readers to offer some observations upon those *Compositæ* we have already published, especially with reference to the first part of the fifth volume of De Candolle's *Prodromus*, in which inestimable work, as from the date of its publication, was to be expected, many of our species have appeared under names different from those given by us.

731. *Myroscris pygmæa*, Don.—To the synonyms we have already given must be added *Fichtea* of Schultz, in Linnæus, v. 10. p. 255; but the pappus certainly does not consist of scales independent of bristles; for each bristle is dilated on both sides at the base into a scale, of which, in fact, the bristle-forms the midrib.

739. *Macrorhynchus Chilensis*, Less.—To this plant belongs *M. pterocarpus*, Fisch. et Mey. in Ann. des Sc. Nat. 5. p. 295: and we fear that the *M. levigatus* of the same authors may prove not to be a distinct species.

870. *Vernonia ericafolia*, Hook. et Arn.—To our definition may be added, "ramis floriferis ante apicem nudis monocephalis, pappi serie exteriori paleaceo-brevi, achenis turbinatis sericeo-villosis." The plant belongs to De Candolle's section *Leptospermoides*, from all the species of which it is readily distinguished by its narrow leaves.

875.\* *Vernonia squamulosa*, Hook. et Arn.—The var.  $\gamma$ . *leiolepis* of *V. psilophylla*, D C. p. 28, seems to belong to this; but we consider it a distinct and well-marked species.

891. *Elephantopus Carolinianus*, Willd.—Our plant agrees with the *E. Martii*, D C., p. 28.

892. *Alomia spilanthoides*, Don.—To this belongs *Gymnocoronis attenuata*,

- D C., p. 106; but we do not find any difference between this new genus of Professor De Candolle and *Alomia*, except that the former has a simple, the latter an imbricated involucre.
893. *Stevia lanceolata*, Hook. et Arn.—This name may be changed to *S. Gilliesii*, since there is already an *S. lanceolata*, described by Lagasca.
895. *Stevia laxa*, Hook. et Arn.—In this the leaves are occasionally serrated, sometimes they are scabrous, sometimes nearly glabrous, so that it is probable that both *S. linearifolia* and *S. megapotamica*, D C. p. 123, may belong to our species.
896. *Stevia aristata*, Don.—*S. Veronica*, D C., p. 123, appears to be a mere form of this.
898. *Stevia graciloides*, Hook. et Arn.—The pappus consists of fifteen or sixteen bristles.
900. *Stevia hirsuta*, Hook. et Arn.—Has about twenty bristles to the pappus.
903. *Eupatorium squarulosum*, Hook. et Arn.—There are about twenty-five florets in each capitulum, and the species is evidently closely allied to *E. latridentum*, D C., p. 142; but the leaves of the latter are much narrower.
906. *Eupatorium congestum*, Hook. et Arn.—*E. tozziaefolium*, D C., p. 146, is probably the same. The only difference seems to be that in our plant the acheneia are furnished with a few scattered bristles; in *E. tozziaefolium* they are said to be somewhat villous at the angles.
907. *Eupatorium subhastatum*, Hook. et Arn.—*E. bartsiaefolium*, D C., p. 147, may be adduced as a synonym.
908. *Eupatorium concinnum*, Hook. et Arn.—There are about twenty florets in the capitulum; in other respects it is closely allied to *E. trichophorum*, D C., p. 147.
910. *Eupatorium ellipticum*, Hook. et Arn.—The capitulum has about eight flowers; hence the species is allied to *E. hexanthum*, D C., p. 148.
913. *Eupatorium pedunculatum*, Hook. et Arn.—This has from twenty to twenty-five florets in each capitulum, and approaches *E. conyzoides*, D C., p. 143.
914. *Eupatorium latevirens*, Hook. et Arn.—Belongs to De Candolle's second series, of which the species have about eighteen florets in each capitulum, but from all the enumerated ones this is readily distinguished by the narrow, glabrous leaves.
915. *Eupatorium paradoxum*, Hook. et Arn.—This is *Nothites baccharidea*, D C., p. 187.
916. *Eupatorium bunifolium*, Hook. et Arn.—The *E. anethifolium*, D C., p. 182, is probably nearly allied to this, but it comes from a totally different country.
917. *Eupatorium ceratophyllum*, Hook. et Arn.—Probably *E. multifidum*, D C., p. 182, is the same species.
918. *Eupatorium decipiens*, Hook. et Arn.—To this may be referred *E. foliolosum*, D C., p. 174.
- 918.\* *Eupatorium dodoneaefolium*, Hook. et Arn.—A subsequent examination of this plant induces us to consider it rather a species of *Conyza*, near *C. arguta*, D C. p. 377, from which it differs in the leaves being attenuated into a distinct petiole, dotted on the underside, and by the capitula being sessile, and several placed together at the extremity of the branches of the corymb. There are two sterile florets in the centre of each capitulum, surrounded by many filiform ones; the former contain each an abortive style and imperfect anthers.
919. *Eupatorium virgatum*, Don.—*E. pinnatifidum*, D C. p. 149, is one of the forms of this species.
920. *Eupatorium tremulum*, Hook. et Arn.—To our var.  $\beta$ . belongs *E. polystachyon*,  $\beta$ . *angustius*, D C., p. 149. Our var.  $\alpha$ . may be a still narrower and longer-leaved form; but in some points it accords so well with *E. xylophyloides*, D C., that we are almost disposed to consider it as the same. That species, however, is described as having a corymbose inflorescence, with opposite branches, while in our plant it is a panicle, with alternate racemose ramuli.
921. *Eupatorium fulvum*, Hook. et Arn.—There are only four florets in the capitulum and four scales to the involucre, so that it belongs to *Mikania*, according to De Candolle. The pedicels are filiform and as long as the capitula, and are nowhere furnished with a bracteole.
922. *Eupatorium elongatum*, Hook. et Arn.—There are about seven flowers in the capitulum, and the acheneium is angled and sparingly strigose. It approaches *E. pyriformis*, D C., p. 153.
923. *Eupatorium Nummularia*, Hook. et Arn.—The capitulum contains five florets, and the inner scales of the involucre are five, oblong and obtuse; a second series is formed by ovate scales, about half the length of the inner ones; the outer series consists of two linear or almost-subulate scales, longer than those of the intermediate series. It has

- the involucre and corolla of *Eupatorium*; and, perhaps, ought to be arranged in De Candolle's second series of "*Subimbricata*;" but there seems to be no allied species there. Its nearest natural affinity appears to be with *Mikania sessilifolia*, *M. leiolana*, and *M. Nummularia*, of De Candolle. In our specific character, where the leaves are characterized, the word "*dentatis*" should be substituted for "*elevatis*," an error of the press.
925. *Eupatorium reticulatum*, Hook. et Arn. (non Desv., fide D C.)—This is *E. Salvia*, Colla and D C., p. 157, a name which, consequently, ought to be retained.
927. *Eupatorium Paranense*, Hook. et Arn.—To this belongs *E. pullescens*  $\beta$ . D C., p. 154.
928. *Eupatorium pallidum*, Hook. et Arn.—This does not seem to be taken up by De Candolle, unless it is united by him to the preceding; but there are always eleven or twelve florets in the capitulum; the scales of the involucre are pubescent, the inner ones very much so, or almost villous at the apex; the leaves are much broader in comparison with their length; but in both the achenia are glabrous.
929. *Eupatorium ? patens*, Don.—There are only four florets in the capitulum, as in *Mikania*, but the involucre and corolla are those of *Eupatorium*; the scales of the former are about eight or nine in number and unequal, but are loosely imbricated, as in the series "*Subimbricata*;" though to none of that series does it seem to bear any affinity.
930. *Eupatorium Tweedeanum*, Hook. et Arn.—The *E. steviaefolium*, D C., p. 158, approaches very closely to this.
931. *Eupatorium ligulæfolium*, Hook. et Arn.—The *E. gnidoides* of D C., p. 150, does not seem to differ from this; but judging from De Candolle's description, as well as from the examination of our specimens, it ought to be placed in the series "*Subimbricata*," for the scales of the involucre are loosely imbricated, in at most three rows, and not at all striated.
933. *Eupatorium ? calyculatum*, Hook. et Arn.—This plant Professor De Candolle considers a *Stevia*, and it is his *S. calycina*, p. 124.
934. *Eupatorium lanigerum*, Hook. et Arn.—The leaves are, in reality, opposite and not alternate, as stated in our description. To our var.  $\beta$ . belongs *E. Paulinum*, D C., p. 158, which we believe to be only a narrower leaved var. of our *E. lanigerum*.
936. *Eupatorium tanacetifolium*, Hook. et Arn.—To this must be referred *E. Bacleanum*, D C., p. 157.
937. *Eupatorium scandens*, Hook. et Arn. (non Link, nec Linn.)—De Candolle's *Mikania biformis*, p. 202, is the same.
938. *Eupatorium populifolium*, Hook. et Arn.—Here should be brought *Hebeclinium urolepis*, D C., p. 136.
939. *Eupatorium Candolleum*, Hook. et Arn.—This plant belongs to the genus *Conoclinium*, D C., and his *C. betonicaefolium* represents one of the many forms of our species. Sometimes the leaves are villous, sometimes scabrous beneath, and sometimes scabrous only on the nerves.
941. *Eupatorium sulcatum*, Hook. et Arn. belongs to *Mikania*, as defined by De Candolle, and is allied to that author's *M. pentstemoides*, if, indeed, it be not a mere glabrous form of it. Like it the bracteole is small and acute, and the whole inflorescence is pubescent. The capitulum contains five flowers, and there are five scales to the involucre, as in several undoubted species of *Mikania*.
942. *Eupatorium Donianum*, Hook. et Arn., is, unquestionably, the *Campuloclinium macrocephalum*, D C., p. 137.
943. *Eupatorium rufidulum*, Hook. et Arn., is a new species of the genus *Hebeclinium*, D C. The inner scales of the involucre have a short, glabrous, reddish-coloured, membranous appendage.
944. *Mikania sericea*, Hook. et Arn.—The clothing of the leaves should have been thus expressed; "*foliis supra hispidis, subtus densissime strigoso-sericeis*." Perhaps *M. erioclada*, D C., p. 192, may be the same; but the description of its leaves is incomplete. The bracteole, however, in our species is ovate, and situated at the apex, not at the base of the pedicel, in which respect it agrees with the *M. Bannisteria*, but that has broader leaves and a prominent reticulation on their upper surface. In *M. sericea* the hairs on the leaf spring from minute white tubercles, which are very conspicuous on the upper side. The stem and petioles are as in *M. erioclada*. The scales of the involucre are linear-oblong and pubescent.
946. *Mikania scandens*, Willd.—Among our specimens are some with hastate

- leaves, which probably constitute the *M. diversifolia* of D C., p. 201.
949. *Mikania involucreta*, Hook. et Arn.  
—*M. bracteosa*, D C., p. 194, is the same.
952. *Mikania ? trinervis*, Hook. et Arn.  
—*M. laevis*, D C., p. 194, may be considered a synonym to this.
980. *Grindelia diffusa*, Gill.—From a recent comparison of our plant with Dunal's figure of *G. pulchella* (also a native of Mendoza), we have no doubt of their identity. Dunal represents the scales of the involucre as patulous, or recurved at the extremity, and we therefore presume that it is by inadvertence De Candolle describes them as appressed: and further, he attributes only three bristles to the pappus. It is certainly extremely difficult to determine the exact number on account of their very fugacious character, but we feel sure that there are sometimes as many as eight or ten.
981. *Grindelia discoides*, Hook. et Arn.  
—De Candolle's *G. anomala*, p. 316, is the same with our plant.
985. *Solidago odora*, Willd.—Of this there is a fourth var., which may be defined "*δ. scabra*; acheniis glabris." We determined our specimens from Lessing's observations in the Linnæa; but De Candolle restricts the name to the North American form. Our var.  $\gamma$ . is his *S. marginella*, p. 332. Our  $\beta$ . and  $\delta$ . are probably his *S. microglossa*. The state of our plants with spreading racemes seems to belong to his *S. polyglossa*, and those from Buenos Ayres, with a contracted racemose panicle, to *S. linearifolia*,  $\alpha$ ., p. 341, found by Nees in the Pampas of Buenos Ayres (not Chili); while our Chilean specimens, or *S. chilense*, Kunze, are *S. linearifolia*,  $\beta$ . Pöppigii. We are still of opinion that all these Chilean and South Brazilian individuals form but one species. In all their forms the racemes, which compose the panicle, are secund.
986. *Diplopappus foliosus*, Hook. et Arn.—This is *Aplopappus foliosus*, D C., p. 346. Nearly all the other species which we have described belong likewise to *Aplopappus*, as defined by De Candolle.
987. *Diplopappus mucronatus*, Hook. et Arn.—De Candolle seems only to know this plant from our description in the Botany of Beechey's Voyage. It is his *Baccharis Hookeriana*, p. 414; but it properly belongs to his *Aplopappus*.
988. For "*Diplopappus foliosus*" in this place, read "*D. ilicifolius*," Hook. et Arn.
990. *Diplopappus inuloides*, Hook. et Arn.—To this is to be referred *Aplopappus Berterii*,  $\beta$ . *lanceolatus*, D C., p. 348.
991. *Diplopappus grindelioides*, Less.—*Aplopappus Berterii*,  $\alpha$ . is probably identical with this; but it is a very distinct species from the preceding. It has glabrous peduncles, or floriferous branches, and, therefore, cannot be *Aplopappus grindelioides*, D C.
992. *Diplopappus cuneatus*, Hook. et Arn.—We believe *Aplopappus scrobiculatus*, D C., p. 348, to be the same with this plant, but the scales of the involucre are not truly scrobiculate. They present elevations and depressions, owing to the undulated surface.
993. *Diplopappus bellidifolius*, Hook. et Arn., is probably *Aplopappus glutinosus*, D C., p. 347, but the leaves do not agree well with Lessing's description of that plant.
995. *Diplopappus coronopifolius*, Less., is perhaps a different species from the *Aplopappus coronopifolius*, D C., in which the pappus is reddish, and the scales of the involucre are serrulato-ciliated; but most of the other characters sufficiently accord.
1001. *Diplopappus glutinosus*, Poepp., seems a distinct species from the *Aplopappus glutinosus*, D C., p. 347.
1003. *Diplopappus sericeus*, Less., var.  $\alpha$ ., as regards the Chilean specimens from Cuming and Bridges, is *Aplopappus ? sericeus*, D C. p. 349. Those from Buenos Ayres and the East side of the Cordillera appear to constitute the *Aplopappus acuminatus*, D C., p. 349; but the difference assigned between the two species is not constant. Dr. Gillies' Chilean specimens from Peral, (*Aplopappus lividus*, Gill.) are the *Noticastrum adscendens*, D C., p. 279: while Bridges, n. 299, and Gillies' specimens from Curico, Valparaiso and Casa blanca, belong also to *Noticastrum*; and only differ from the type of *N. adscendens* by being more woolly, and having smaller flowers.—This new genus of Professor De Candolle, however, is only distinguishable from *Aplopappus* by the ray being of a reddish colour, and longer than the disk; and we are still inclined to think, that all may be considered as variations of one and the same species.
1004. *Diplopappus diffusus*, Hook. et Arn. (*Erigeron diffusus*, Pers.) is *Aplopappus diffusus*, D C., p. 325.
1006. *Diplopappus hispidus*, Gill., is *Neja linearifolia*, D C., p. 325.
1007. *Diplopappus villosus*, Hook. et Arn.

- appears to be *Neja subvillosa*, D C., p. 326.—We may here observe that *Erigeron filiformis*, Spr., seems to be *Neja tenuifolia*, D C., and *E. Montevidentis* of the same author another species of that genus.
1011. *Aster erigeroides*,  $\beta$ . Hook. et Arn., is *Erigeron fruticosum*, D C., p. 283; but we are still disposed to view it as a luxuriant form of our  $\alpha$ . The habit is that of *Erigeron*, but the characters belong rather to *Aster*.
1012. *Aster subulatus*, Mich.—The Chilian specimens, particularly those of Bridges, n. 183, are the *Tripolium conspicuum*, Lindl. in D.C., p. 254: those from the East coast, *Tripolium subulatum*, var. *Brasilianum*, D C.; but we cannot see how they are to be separated, while there are so many intermediate forms.
1014. *Aster Gilliesii*, Hook. et Arn.—*Aster Gayanus*, D C., p. 227, is probably the same.
- 1015.\* *Sommerfeldtia spinulosa*.—By mistake *Mycrogyne trifurcata* is printed so as to appear a synonym to *Sommerfeldtia*. It ought to commence a fresh line, and to be headed by a new number.
1016. *Erigeron Canadensis*, L.—Although we are rather of opinion; that we are correct in thus naming our specimens, we may observe, that the leaves are ciliated as in the type of that species, agreeing also precisely with those of *E. spiculatus*; the panicle is narrow and elongated as in *E. strictus*, D C. (not H. and A.); and the capitula are similar in every respect to the true *E. Canadensis*. It partakes thus, more or less, of the character of *strictus*, D C., *E. spiculatus*, H. and A., and *E. Canadensis*. If it be desirable to constitute a new species of it, the name *E. sordidus*, Gill., should be retained; and it may be thus distinguished:—caule herbaceo erecto hispido, foliis linearibus glabris secus nervum subtus et margines setulis brevibus cartilagineis rigidulis incurvis scabris, panicula elongata contracta, involucri squamis linearibus disco æquantibus, ligulis disco æqualibus, receptaculo alveolato.
1017. *Erigeron spiculatus*, Hook. et Arn.—Of this Cuming's n. 159, and Bridges' n. 504, seem referable to *E. hirtellum*, D C., p. 290, so far as can be judged from the character. It was an indifferent specimen of this which we had thought might be the *Conyza ambigua* (Bot. of Beechey's Voy.). Cuming's n. 407 is probably *E. Berterianum*, D C., p. 286. Our other specimen corresponds with the *E. spiculatus* of D C.
1018. *Erigeron stenophyllus*,  $\alpha$ . Hook. et Arn., is *Conyza linearis*, D C., p. 378, whilst our  $\beta$ . may be viewed as a form of *E. Berterianum* above quoted.
1019. *Erigeron strictus*, Hook. et Arn., is probably the *Conyza diversifolia*, Weinm. and D C., p. 378, but the difference between many species of *Erigeron* and *Conyza* is so slight as to be with difficulty detected. We have considered those species furnished with ligulate florets, however minute, as belonging to *Erigeron*; and those with entirely filiform florets to *Conyza*.
1021. *Erigeron cinereus*, var.  $\alpha$ , is *E. Pæppigii*, D C., p. 287. Our  $\beta$ . is, perhaps, *E. Andicola*,  $\alpha$ . D C., p. 287, though there are some slight points of difference.
1022. *Erigeron uniflorus*, Linn. ( $\beta$ . nobis) is *E. Andicola*, D C.
1029. *Gutierrezia linearifolia*, Lag., D C. p. 653.—This is also *Brachyris paniculata*, D C., p. 313, and *Galinsogea resinosa*, D C., p. 677. Nor does *Brachyris Newana*, D C., p. 313, appear to be sufficiently distinct, having, probably, been described from small specimens, corresponding with our var.  $\gamma$ , which has broader leaves than the other varieties, and a broader capitulum, and usually a greater number of ligulate florets. We had already noticed the affinity of *Brachyris* with *Gutierrezia*, and, perhaps, they ought to be united.
1034. *Kleinia Porophyllum*, Willd., is *Porophyllum ellipticum*, D C., p. 648.
1036. *Kleinia linifolia*, Gill. et Don., is *Porophyllum lineare*, D C. p. 349.
1038. *Kleinia pumila*, Hook. et Arn., is *Porophyllum linifolium*, D C.—Our other species do not appear to be known to De Candolle.

(To be continued.)

## A DESCRIPTION OF SPARTINA ALTERNIFLORA OF LOISELEUR, A NEW BRITISH SPECIES;

With observations upon that, and *Spartina stricta* of English Authors.

By WILLIAM ARNOLD BROMFIELD, M.D.

HAVING been engaged during last summer, in the intervals of frequent absence, with collecting the rarer plants of Southampton and its vicinity, I was desirous of