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THE ANNALS
AND
MAGAZINE OF NATURAL HISTORY.

[SECOND SERIES.]

"..... per litora spargite muscum,
Naiades, et circum vitreos considite fontes :
Pollice virgineo teneros hic carpite flores :
Floribus et pictum, divæ, replete canistrum.
At vos, o Nymphæ Craterides, ite sub undas ;
Ite, recurvato variata corallia trunco
Vellite muscosis e rupibus, et mihi conchas
Ferte, Dææ pelagi, et pingui conchyliis succo."
N. Parthenii Giannettasii Ecl. 1.

No. 79. JULY 1854.

I.—On the Genus *Lycium*. By JOHN MIERS, Esq.,
F.R.S., F.L.S. &c.

THIS genus is truly cosmopolitan, being found abundantly in Europe, Asia, Africa, and America, in the former more rarely in regard to the number of species, in the latter most abundantly. The species are mostly low straggling shrubs, or bushes of crooked and stunted growth, generally with thorny branches, often barren and knotty, the younger branches bearing usually fasciculated leaves: these branchlets commonly dwindle into short acute spines, which are both leafy and floriferous. They grow ordinarily in maritime situations, or in inland sandy deserts, where the soil is more or less impregnated with saline matter. Contrary to general rule, the leaves and the habit of the plants afford uncertain specific characters; for the leaves are often so polymorphous, that specimens of the same plant are sometimes mistaken for different species, and on the other hand, many species so closely resemble each other, in habit and form of their leaves, that they are frequently confounded together*. For

* This was long ago (1813) shown by Poiret, who says, Dict. Méthod. Suppl. iii. 427 :—"La plupart des espèces qui composent les *Lycium* sont
Ann. & Mag. N. Hist. Ser. 2. Vol. xiv. 1

these reasons I have been led to search for more certain specific characters in the structure of the flowers, which appear to afford constant features that may be relied upon, and this has induced me to remodel the genus, and revise all the species within my reach. As *Lycium* has recently been so fully elaborated by M. Dunal, and the numerous species described by him have been accompanied with such copious and minute details, this may appear to be quite unnecessary; but my inquiries have convinced me, that for the purposes of specific distinction, little value is to be placed upon many of these ample definitions, and that it is requisite to examine the same materials again with more caution. M. Dunal enumerates only three South American species; I have here described thirty: during my travels thirty years ago, I met, on the confines of the Andes, with many plants hitherto unnoticed; and I find in Sir W. Hooker's rich herbarium, other new species, besides several from the northern portion of that hemisphere, as well as many of Asiatic and African origin, which I now propose to describe.

Of the 70 species I have enumerated (besides those that are dubious), 33 belong to the old, and 37 to the new world. Of these, 3 are found in Europe, 2 in Madeira and Barbary, 3 in Tartary, 6 in Arabia, Persia, Guzzerat and Scinde, and 19 in South Africa; and in the other hemisphere, 1 in the United States, 6 in California and Mexico, 1 in the West Indies, 2 in Peru, 6 in Chile, 3 in Southern Patagonia, 13 in the extensive shingle plains that skirt the eastern flanks of the Cordillera, or that penetrate its gorges, 3 in the vast mud deposit that forms the Pampas, and 2 in tropical Brazil. From this distribution it will be seen, that nearly one-fourth of the known species are found in South Africa, and another fourth on the two sides of

tellement rapprochées, qu'elles sont difficiles à bien caractériser, d'autant plus que la plupart cultivées, varient dans la forme et la grandeur de leur feuilles, dans le nombre des divisions du calice et de la corolle, d'où il est résulté de la confusion dans la synonymie, et beaucoup de doutes pour quelques espèces, établies par des auteurs modernes." Indeed the habit of *Lycium* is peculiar, where we observe a constant tendency to the abortion of its branchlets, especially when grown in arid and saline places; we then commonly find in each axil of the stems, a protuberant knotty excrescence, sometimes quite bare, which is, in fact, a leaf-bud or gemma, checked in its earliest development and lignified; generally, a few elementary leaf-scales succeed in escaping from the gemma, forming a fascicle of starved leaves, and often the node is at the same time expanded into a longer or shorter spine, which again bears several similar suppressed nodes. In the same plant, however, when exposed to circumstances that favour a more rapid growth, we observe the nodes expanded into regular lengthened branches and branchlets, with much larger alternate leaves, in each axil. Hence it is, that the appearance of each species may become, and usually is so varied, that we are liable to constant error in determining its individuality from its habit alone, and the form or size of its leaves or spines.

the Andes within the latitudes of Chile; the latter district, however, has been very little explored, and there is every reason to believe it will be found by far the most prolific in number of species of any quarter of the globe.

According to M. Dunal's distribution of the genus, I find it absolutely impossible to determine the sections to which this large number of new species should be referred. He divides *Lycium* into four sections, *Schistocalyx*, *Eulycium*, *Amblymeris*, and *Lyciobatos*: *Schistocalyx*, distinguished by its calyx cleft to the base, comprises only two species, which I have shown do not belong to *Lycium**; *Amblymeris*, another new section, is pre-

* *Huj. op.* xi. 97. The first plant (my *Salpichroma ciliatum*, Ill. Sc. Amer. Pl. i. p. 9 and 133; *Lycium ciliatum*, Schl.) is distinguished by its alternate pointed leaves, nearly as broad as long, almost cordate at base upon a short petiole, with ciliated margins, and covered with short jointed hairs, solitary axillary flowers with the peduncle afterwards reflected, its calyx split to the base into distinct linear segments covered with glandular hairs, especially on its margins, its corolla externally pubescent, with a short tube, and a border of 5 triangular reflected segments, the mouth of the tube closed by a densely villous ring of hairs around the place of insertion of the exerted stamens, the berry encircled by the longer enlarged calyx: such characters are foreign to *Lycium*, but closely correspond with *Salpichroma*, especially with its section *Perizoma*; this is strongly indicated by the triangular segments of the corolla, showing a valvate aestivation, while those of *Lycium* are always very rounded, and remarkably imbricated; this again is farther confirmed by the total absence of any induvial remains of the corolla after its fall, which is a constant feature in *Lycium*. The characters of this plant appeared to M. Dunal so different from others of that genus, as to draw from him the expression "an genus diversum?" I think there can be little doubt of its being allied to *S. rhomboidea* (Ill. So. Am. Pl. pl. 1).

In regard to the second plant, *L. serpyllifolium*, Dun., I observe, from M. Dunal's description, that its leaves are not fasciculated, its flowers are solitary and furnished beneath the calyx with narrow linear bracts, its calyx is split to the base into linear segments, its filaments are recurved at the apex, and its anthers subhemispherical and ciliated, with divaricated lobes; these are all characters quite foreign to *Lycium*, and more appertaining to *Scrophulariaceæ*.

Since the above was written, I have seen the original specimen in Dr. Burchell's collection, and find my previous inferences fully verified. As the plant is yet otherwise undescribed, I will here annex its characters: it is difficult to imagine upon what grounds it could have been referred to *Lycium*.

Peliostomum serpyllifolium. *Lycium serpyllifolium*, Dun. in DC. Prodr. xiii. 509;—suffruticosum, ramis e basi erectiusculis, subvirgatis, rugosis, striatis, albescentibus, ramulis brevibus, glabris, apice rigide et obsolete pubescentibus, foliosis; foliis alternis, viridibus, ovatis obovatisve, subobtusis, in petiololum brevem attenuatis, crassis, enerviis, glaberrimis; pedunculo axillari, brevi, uniflori, bracteolis 2 setiformibus, oppositis, infra calycem gerente, calycis persistentis sepalis 5 linearibus, rigide puberulis, corolla calyce 3-plo longiore, tubo supra basin contracto, demum obconico, hinc late ampliato, nervis plurimis lineato, rigide glanduloso-pubescente, limbi laciniis 5, rotundis, reticulato-venosis et maculato-pictis; capsula

ceded by a long string of characters, a mere repetition of the generic diagnosis, without a single differential feature to discriminate it from other sections; while *Eulycium* and *Lyciobatos* are simply adopted from Endlicher (the latter being the *Isodontia* of Don); these last are founded on the inequality or equality of the teeth of the calyx, and the greater or less inclusion of the stamens; the latter circumstance, of course, depends on the relative depth of the incisures of the corolla: the former character is so uncertain in its value, that in the same specimen the calyx is sometimes found regularly 5-toothed, while at other times it assumes a somewhat bilabiate form, caused during its partial growth by the splitting of two or three of its teeth: in regard to the relative depth of the segments of the border of the corolla, and the consequent amount of inclusion or exclusion of the stamens, I find the extremes of these opposite features mixed together in all the different sections, so that notwithstanding it has been proposed as the rule of distinction, this character has been wholly disregarded in the distribution of the species, as will be seen in the sequel. The best proof that can be shown of the small utility and value of these characters is evidenced by the fact, that while other botanists include in the *Isodontia* of Don (*Lyciobatos*, Endl.), *Lycium Afrum*, *tenue*, *propinquum*, *rigidum*, *cinereum*, *horridum* and *tetrandrum*, and exclude them from *Eulycium*, M. Dunal separates *L. Afrum*, *rigidum*, and two others, to constitute his section *Amblymeris*, leaving all the other species above mentioned in *Eulycium*; his *Lyciobatos* being confined to the old Linnæan species *L. Europæum* and three others, that have no relationship with it whatever, the former species being placed by other botanists in *Eulycium*. Kunth and Schlechtendal, again, station *L. Europæum*, *barbatum*, and *Chinense* in *Eulycium*, and *L. Afrum* in the section corresponding to *Lyciobatos*. This shows what different constructions various authors give to the same characters, and how useless they are for purposes of discrimination.

oblonga acuta calyce paullo longiore.—C. B. S. ad Buffel-bout, Lat. 30° 20' legit cl. Burchell.—v. s. in herb. Burchell, no. 1596.—*Frutex* subpedalis, *radice* fusiformi, lignoso, 5-pollicari; *folia* 3-5 lin. longa, $\frac{3}{4}$ -1 lin. lata, *pedunculus* 1 lin. longus, *bracteoli* $\frac{1}{2}$ lin. longi, *sepala* linearia, acuta, rigida, erecta, 2 lin. longa; *corolla* 5 lin. longa, $2\frac{1}{2}$ lin. lata, contractione basali calyce breviori. limbi lacinie subæquales; *stamina* didynama, inclusa, *filamenta* membranacea, compressa, e contractione tubi orta, apice spiraliter voluta, *antheræ* subtriangulares, æquales, pilis longis hispidae, loculis confluentibus, rima verticali dehiscentes, marginibus valvarum rigide ciliatis: *ovarium* conico-oblongum, calyce tertio brevius, glabrum; *stylus* usque ad medium hirsutulus, superne inflexus, subexsertus, *stigma* minimum, emarginato-bilobum: *capsula* 2-valvis, $2\frac{1}{2}$ lin. longa, $1\frac{1}{4}$ lin. lata, apice subcompressa, acuta, valvis dissepimento parallelis, semibifidis, sepalis persistentibus amplexa.

In order to prevent a multiplication of these errors, it appears desirable to abolish these sections altogether, and to distribute the species of *Lycium* in three new divisions, founded simply on the relative depth of the incisures of the corolla; viz.—1. *Brachycope*, where the lobes of the border are one-third (or less) of the entire length of the corolla; 2. *Mescope*, where the segments are yet longer, but do not exceed the length of the tube; and 3. *Macrocope*, where the divisions of the corolla exceed in length that of the tube: in this latter case the stamens are affixed in the throat of the tube, and are far exserted, when the border becomes expanded.

I have repeatedly endeavoured to show that *Lycium* should not be classed among the *Solanaceæ*, because of the very imbricate æstivation of the segments of the corolla. Prof. Schlechtendal more than twenty years ago (Linn. vii. 72) clearly indicated his doubts to this effect. M. Dunal however, in the 'Prodromus,' still follows the example of preceding botanists in arranging *Lycium* in that family, and constitutes it the type of one of his great divisions of the *Solanineæ* (*Lycineæ*), which there comprises a number of genera that have little relation with it, or with each other, as I have shown (*huj. op.* xi. p. 9). Evidence had previously been offered by me demonstrating its position in the family of the *Atropaceæ* and in the tribe *Atropeæ*, as it possesses those essential characters by which that tribe is peculiarized (*huj. op.* iii. 166). Although in its general features it offers some approach to *Atropa*, it comes nearest to *Mandragora* in its floral structure, but not in its habit, agreeing with it in the form of its calyx, its tubular corolla with a border of five equal segments having an imbricated æstivation, one being always exterior; in its stamens inserted in the tube, the filaments often very unequal in length, being generally furnished with tufts of hair a little above the geniculated points of their insertion; in the style being declined away from the external lobe of the border; in the form of its stigma, its bilocular ovary with large fleshy placentæ adnate to the dissepiment, in its baccate fruit supported by its persistent unchanged calyx, and its spiral terete embryo.

The calyx in *Lycium* is generally small and cupshaped, with five erect teeth; these are mostly equal, but sometimes one, two, or three of the teeth become imperfectly confluent with the others, appearing thus irregularly 3-toothed or bilabiate, a feature originating, as before observed, in the partial splitting of the teeth, a character that often varies in amount with its age, and in the same specimen: it is always persistent, and little changed with the growth of the fruit. The corolla is always contracted below the point of insertion of the stamens, is cylindrical towards the base, the tube being often inflated or more or

less funnel-shaped above, with a border sometimes narrow, having five small rounded imbricated lobes, or frequently these divisions are longer, being often continued through the whole infundibuliform portion of the tube to the insertion of the filaments, in which case they become wholly exerted after the expansion of the border: these features are so constant in different individuals as to afford excellent sectional characters. The corolla, although very often symmetrical in its form, is not constantly so, for in many species the tube is more or less inflated upon the side opposite to that of the more exterior lobe of the border, and both stamens and style are somewhat declined towards this gibbous portion: one, two or three of the stamens are often considerably shorter than the others, which do not exceed the total length of the corolla; they are sometimes even still shorter, and wholly included within the tube after the expansion of the border. The filaments are generally geniculated, or suddenly bent at the point of their insertion into the tube of the corolla, and again curve a little above this point into an erect position, and here they are often furnished with a dense globular tuft of white hairs, which form a fornix closing the mouth of the contracted portion of the tube around the base of the style; in several cases the filaments at their base are distinguished by a flat adnate fleshy process, fringed on its margin, bearing some analogy to the tooth of the filaments in *Cestrum*, or the gland-like scale in *Zygophyllaceæ*; they are sometimes altogether smooth. The ovarium is seated upon a short columnar support, to which the base of the corolla is persistently adnate: after impregnation, the corolla breaks away by an irregular circumscissile line, leaving a free persistent cup, which encircles the lower moiety of the ovarium: in the details given of many species of *Lycium* by M. Dunal, he describes this as a dentate cupular proper disk, but that is certainly a mistake; this circumscission of the corolla is a constant feature, and may always be relied upon as a good generic character, but this fact has hitherto escaped attention. The base of the ovary, enclosed within this indivual cup, is at the same time marked by a glandular enlargement of a different colour, which is a true adnate hypogynous disk, although sometimes this is almost obsolete. The ovarium is uniformly 2-locular, with numerous ovules in each cell attached to a thickened placenta adnate to the dissepiment. The berries supported on the small persistent calyx are scarlet, black, or blue: they contain several flattened reniform seeds, surrounded by pulp, and attached to the central placenta: their slender terete embryo, enclosed in solid albumen, is spirally helical, that is to say, it consists of more than a single volution, which is not coiled in a plane, but rises in the middle in a slightly conical form like the whorl of a snail-shell; the radicle, equal in length

and diameter to the cotyledons, points to the basal angle of the seed at some distance from the lateral hilum, which is situated in a conspicuous sinus on the ventral margin. The following is offered as a more exact expression of its generic features than that given in the 'Prodromus' referred to.

LYCIUM, Linn.; DC. Prodr. xiii. 508 (char. emend.).—*Calyx* tubuloso-campanulatus, 5-dentatus, vel sub-5-fidus, dentibus sæpe irregularibus vel aliquantulum confluentibus, persistens. *Corolla* tubulosa vel infundibuliformis, tubo imo constricto et hinc demum circumscisso, limbo 5- rarius 4-fido, laciniis rotundatis vel oblongis, obtusis, tubo brevioribus aut longioribus, reflexis, æstivatione valde imbricatis, lateribus sese ample tegentibus. *Stamina* 5, rarius 4, laciniis alterna, sæpe inæqualia, medio vel supra basin tubi inserta, longitudine corollæ aut breviora; *filamenta* filiformia, glabra, vel supra insertionem semper geniculatam interdum barbata, sæpe longius hirsuta, aut ad basin glandula lineari antice sita, margine ciliata donata; *antheræ* oblongæ, 2-loculares, loculis adnatis, æqualiter 2-valvatis, rima longitudinali margine dehiscentibus. *Pollen* globosum longitudinaliter 3-sulcatum. *Ovarium* breviter stipitatum, oblongum, imo disco carnosio adnato sæpissime fere obsoleto et cupula libera (corollæ reliquo) circumdatum, 2-loculare, placentis dissepimento coadunatis, multiovulatis. *Stylus* simplex, staminibus subæquilongus, apice paullo incrassatus. *Stigma* depresso-capitatum, plus minusve 2-lobum. *Bacca* calyce sæpe irregulariter fisso suffulta, globosa, aut ovata, 2-locularis. *Semina* plurima, compressa, reniformia; *testa* scrobiculata, crustacea; *embryo* intra *albumen* carnosum, helico-spiralis, teres, *radicula* angulo basali spectante, hiloque marginali evitante, cotyledonibus semiteretibus æquilonga.—Arbusculæ vel frutices *sæpius spinosi, præsertim in America et Africa, pauci in Europa australi et Asia crescentes*; folia *alterna, integra, sæpissime e gemmis foliaceis axillaribus fasciculata*; flores *pedunculati, solitarii, gemini, vel aggregati, axillares, vel sæpius e gemmulis foliaceis in spinis sistentes, aut rarius ex axillis approximatis pseudo-terminales*; corollæ *albide, flavescentes, roseæ, vel coccineæ*.

1. **BRACHYCOPE.** *Corolla fere cylindrica, interdum paullo ventricosa, limbi laciniis parvulis, tubi dimidio longitudine, vel adhuc sæpius brevioribus.*

A. GERONTOGÆ.

* *Filamenta lævia.* Sp. 1 ad 8.

1. *Lycium sævum* (n. sp.);—fruticosum, valide spinosum, spinis patulis, fuscis, nudis, folio brevioribus, aut foliiferis et tunc

longioribus; foliis crebre fasciculatis, spathulato-oblongis, apice rotundatis, a medio in petiolum angustatis, pallidis, crassiusculis, eveniis, utrinque obsolete puberulis; floribus e fasciculis solitariis aut binis, pedunculatis, calyce brevi, tubuloso, submembranaceo, subæqualiter 5-dentato, dentibus pubescentibus, corolla subcylindrica, tubo superne paullo ampliato, utrinque glaberrimo, limbi laciniis 5, rotundato-ovatis, margine subciliatis, staminibus 5 inclusis, 2 faucem attingentibus, reliquis multo brevioribus, filamentis omnino glabris, paullo infra medium tubi insertis; stylo filiformi, tubo æquilongo.—Arabia.—(v. s. in herb. Hook. “ad Cisternas Gedde,” Fischer, no. 98.)

This plant appears to be identical with that described by M. Dunal in DC. Prodr. xiii. 524. as “*L. Mediterraneum*, sectio *longiflorum*, an species diversa? var. δ . *cinereum*,” and found in the same place by Schimper. Its leaves are 6 to 9 lines long, $1\frac{1}{2}$ or 2, rarely 3 lines broad; the peduncle is $1\frac{1}{2}$ line, and the calyx barely 1 line long; the tube of the corolla 5 lines in length, $1\frac{1}{2}$ line diameter; segments $1\frac{1}{4}$ line long, 1 line broad, the margins being slightly ciliated, while all the rest of the corolla is smooth: the stamens are perfectly glabrous, as well as the tube beneath their insertion, one of the stamens being only two-thirds the length of the two that reach the mouth of the tube*.

2. *Lycium Europæum*, Linn. Syst. i. 228; Mant. 97; Sibthorp, Fl. Græc. i. 155. tab. 236. *L. salicifolium*, Mill. Dict. no. 3. tab. 171. fig. 2. *L. Mediterraneum* (§ *breviflorum*), Dun. in DC. Prodr. xiii. 524, cum aliis variis synonymis et citationibus auctorum;—ramulis erectis, subteretibus, glabris, vel albido-pruinosis, spinosis, junioribus angulatis, albescens, et glanduloso-pilosulis, spinis nudis, vel longioribus et gemmiferis, gemmis sæpe tuberculatis; foliis fasciculatis, spathulato-oblongis, apice acutis vel obtusiusculis, imo in petiolum elongatum cuneatis, subglabris vel sub lente parce glanduloso-pilosis; floribus e fasciculis solitariis vel binis, pedunculo longiusculo, calyce subpoculiformi, membranaceo, primo æqualiter 5-dentato, demum sub-bilabiato, dentibus obtusiusculis sphacelato-puberulis; corolla tubuloso-infundibuliformi, glabra, tubo intus infra insertionem staminum piloso, limbi laciniis 5, rotundis, glabris, tubo 4to brevioribus, staminibus 5 inclusis, faucem attingentibus, 3 paullo brevioribus, filamentis medio tubi insertis, et in nervis tot-

* A drawing with analytical details of this species is given in the ‘Illustr. South Amer. Plants,’ vol. ii. plate 64 A.

idem decurrentibus, hinc tuboque pilosulis, parte libera omnino glabris; stylo capillaceo, vix exserto, cum ovario articulato: bacca pisiformi subglobosa.—Per totam Europam Australem, præsertim in Græcia abundat, unde pro sepibus antiquissime introductum, forsân in Africam Borealem spontaneum, Insulasque Madeira et Canarienses.—*v. s. in herb. Hook.* (Madeira) *Lemann*, no. 552 (*in sepibus Portûs Sancti abundantis*)*.

M. Dunal rejects the Linnæan name, merely because the plant is not common throughout all Europe; but on the same ground, the name he has substituted is equally inappropriate, since it is acknowledged by himself, that although it occurs in Southern Europe and the Mediterranean Islands, it has originally been introduced there. If we must reject the Linnæan name, for which I can see no reason, it would be infinitely better to adapt a synonym nearly as old, in preference to a new and unsuitable term, in which case Miller's name, by common rule, would claim precedence over that of M. Dunal.

A considerable difference is observable in this and the preceding plant, both in habit and in the structure of its flowers. It is a species well known, and frequently found in gardens in England. The barren spines measure 3 to 5 lines, but the gemmiferous spines are much longer: the leaves are usually from 9 to 15 lines long, $1\frac{1}{2}$ to 3 lines broad, and attenuated into a slender petiole; the pedicel is 2 lines in length, the calyx is $\frac{3}{4}$ line long; the tube of the corolla is a little curved, 5 lines long, $1\frac{1}{2}$ line diameter in the middle, $2\frac{1}{2}$ lines in the mouth, the rounded glabrous segments being $1\frac{1}{2}$ line in diameter. A specimen in Sir Wm. Hooker's herbarium from one of the Canary Islands (Palma, *Bourgeau*, no. 924), affords a good example of what has been before said respecting the variation of habit and difference in the size and shape of the leaves sometimes found in the same individual. One branchlet bears some short, stout, bare, axillary spines, little more than 3 lines in length; but other axils that are without spines, produce a single large fleshy leaf from 2 to $2\frac{1}{2}$ inches long, and $\frac{1}{2}$ an inch broad, somewhat obtuse at the apex, and attenuated into a petiolar base; another straight branch, 18 inches long, is beset with numerous straight bare spines, 1 to $1\frac{1}{2}$ inch long, accompanied by separate alternate leaves, 3 to 6 lines in length, 1 to 3 lines broad, and without flowers; a third, and more fragmentary portion, has a single spine, $2\frac{3}{4}$ inches long, bearing three small bare spines, each 3 lines in length, and a single spineless nodose axil, producing five fasciculated leaves, about an inch long, and 3 lines broad, with

* A drawing with details of this plant is shown (*loc. cit.*), plate 64 B.

four flowers, the peduncles of which are 4 lines in length : in all of these the corolla had fallen off, leaving the ovary encircled by its induvial cup and the persistent calyx.

3. *Lycium Indicum*, R. Wight, Icon. tab. 1403 ;—glaberrimum, ramis flexuosis, ramulis divaricatis, apice spinescentibus, vel abbreviatis, spinosis, spinis inferioribus nudis ; foliis e gemmis fasciculatis, vel alternis, spathulato-oblongis, ino anguste cuneatis, sessilibus ; floribus (in specimine) subsolitariis (in icon. cit. fasciculatis), calyce pedicello subæquilongo, tubuloso, 5-costato, dentibus cum costis continuis, sinus rotundatis demum inæqualiter fissis : corolla (sicca) pallide flava, infundibuliformi, tubo calyce 4-plo longiore, glabro, limbi laciniis rotundis, ciliatis, tubo 4to brevioribus : staminibus glabris, valde inæqualibus, paullo supra basin tubi insertis, quorum 2 inclusis, 3 subexsertis ; stylo exserto : bacca globosa, pisi magnitudine, apiculata, seminibus paucis.—Penins. Indiæ Orientalis.—*v. s. in herb. Hook. Guzzerat et Scinde (Stocks, n. 112 ; Dr. Thomson, n. 57).*

In this very distinct species the leaves vary considerably in form ; Dr. Wight received his specimens from Dr. Stocks, and from the notes accompanying it, this distinguished botanist was led to infer that it might be only a variety of *L. Europæum* : in those notes Dr. Stocks talks of its bearded stamens, evidently confounding his own specimens with another species growing in Scinde. In Dr. Thomson's plant the leaves are fasciculated, obovate-lanceolate, 4 to 6 lines long, 1 to $1\frac{1}{4}$ line broad ; the peduncle is 1 line long ; the calyx, $1\frac{1}{2}$ line in length, is tubular, with long obtuse teeth ; the corolla is contracted below, its tube being smooth and 4 lines long, its border having five rounded ciliated segments 1 line in diameter ; the membranaceous filaments are quite smooth and included, two of them measuring 2 lines, the other three 3 lines ; the style is 4 lines in length ; the ovary, supported by a closely adnate gland, is surrounded at its base by the induvial cup of the corolla. The specimens from Guzzerat have leaves 12 lines in length and 4 lines in breadth ; those from Scinde are obovate or oblong, 8 lines long, 3 to 4 lines broad : the pedicels, one or two in each axil, are 2 lines in length*.

4. *Lycium oxycarpum*, Dun. in DC. Prodr. xiii. 518. *Lycium Afrum*, Drège.—C. B. S.—*v. s. in herb. Hook. (Drège).*

The specimen above quoted is certainly distinct from *L. Afrum* ; it is entirely smooth, with large knotted glands in the axils, out

* This species with analytical details is seen (*loc. cit.*), plate 64 C.

of which the spines grow ; the leaves are 9 to 14 lines long, 2 to $2\frac{1}{2}$ lines broad ; the pedicels are 5 lines long, the smooth cup-shaped calyx is $1\frac{1}{4}$ line long, the points of the angular teeth being tomentose ; the corolla is tubular and smooth, the tube being $3\frac{1}{2}$ lines long, $1\frac{1}{2}$ line diameter, with small round segments $\frac{3}{4}$ line diameter: the stamens are included, the filaments being dilated at the base, and inserted near the bottom of the tube, and are almost its length, subequal, slender and smooth : the style is exserted*.

The variety α . *grandiflorum* of M. Dunal appears to be *Lycium austrinum*, nob. ; var. β . *parviflorum* and γ . *angustifolium* may probably be small-leaved varieties of *L. oxycarpum*, but it is impossible to judge of this without examination.

5. *Lycium intricatum*, Boiss. Elench. Pl. Nov. Hisp. 143 ; Voy. Bot. Esp. n. 1215 ; Dunal in DC. Prodr. xiii. 525.—Hispania et Africa Boreali.—*v. s. in herb. Hook. Oran. Balansa*, n. 659.

In this specimen the spines are approximate, thick, horizontally spreading, 1 to $1\frac{1}{4}$ inch long, bearing numerous fascicles of leaves larger than those described by M. Dunal ; they are from 4 to 6 lines long, 1 line broad : the peduncles are 2 lines long ; the calyx, slightly pubescent, is 1 line ; the tube of the corolla, quite glabrous, is 6 or 7 lines long ; the lobes of the border are nearly orbicular, smooth, and 1 line long ; the filaments are quite smooth, and fixed in the middle of the tube ; two of the anthers reach the mouth, one is shorter, and the two others are a little exserted : the style attains the length of the lower anther†.

6. *Lycium halophyllum*, Welw. MSS. n. sp. ;—fruticosum, nunc 2-pedale, nunc vix 2-unciale, glaberrimum, ramulis virgatis, costato-angulatis, inermibus vel spinosis : foliis subfasciculatis, valde polymorphis, oblongis, utrinque acutiusculis, vel obtusis et spathulatis, crassissimis, glabris, vix petiolatis ; floribus solitariis, calyce tubulari, 5-dentato, pedicello subæquilongo, corollæ glabræ laciniis rotundatis, tubo infundibuliformi 6to brevioribus.—Lusitania.—*v. s. in herb. Hook. ; ad rupes maritimas prope Lagos et Cabo S. Vicente (Welwich. herb. Algarv. n. 717)*.

A very distinct species, varying greatly in its height, form, and aspect, and in the size and shape of its fleshy leaves : those of the shorter plants are more fleshy and spathulate, 3 or 4 lines long and 1 line broad ; the larger plants have straight branches, with spines $\frac{3}{4}$ to $1\frac{1}{2}$ inch long, with leaves 5 or 6 lines in length and 2 or 3 lines in breadth ; the peduncles are 1 line long ; the

* For a drawing and detail of this species see (*loc. cit.*) plate 64 D.

† A drawing with details of this species is shown (*loc. cit.*), plate 64 E.

calyx, of the same length, is narrow, tubular, with five short equal ciliate teeth; the corolla is narrow, slightly funnel-shaped, a little curved, smooth, 5 lines long, with five nearly orbicular segments, $\frac{3}{4}$ line long, with ciliate margins; the filaments are smooth, inserted below the middle of the tube, two of them reaching the mouth, two somewhat shorter, with the fifth intermediate*.

7. *Lycium orientale* (n. sp.) ;—ramulis griseis, substriatis, virgatis, spinosis, spinis longis, gemmiferis; foliis fasciculatis, aut alternis, lineari-spathulatis, in petiolum gracilem attenuatis, glaberrimis, aut pubescentibus; floribus solitariis, pedicello calyce tubuloso subæqualiter 4–5-dentato ciliato 2plo longiore; corollæ glabræ laciniis brevibus 4–5 oblongis, margine subciliatis, tubo anguste cylindrico superne paullo latiore 4to brevioribus, staminibus inclusis, 4–5, subæqualibus, filamentis glabris, tubo 4to brevioribus, antheris oblongis, basi cordatis, apice connectivo excurrente mucronatis, faucem attingentibus; stylo elongato, capillari, apice incurvo, exserto.—Asia Minor et Arabia.—v. s. in herb. Hook. Smyrna. Arabia Petraea (*E. Boissier*).

This species is probably common throughout the Levant, but has been confounded with *L. Europæum* and *L. Barbarum*, from both of which it is quite distinct. The two specimens above cited differ much in appearance, the Smyrna plant having much larger, linear, subulate, veinless leaves, generally alternate, somewhat thinner in texture and quite smooth: that from Arabia has shorter, spatulate, crisp, fasciculate, pubescent leaves, and sometimes tetramerous flowers, but in the form of the calyx, the length of the tube of the corolla, the shape and size of the segments of its border, the very short similar glabrous stamens, with singularly mucronate anthers, the two specimens quite agree. The latter plant has quite the habit and appearance of *L. Barbarum*, but it differs in the greater length of the tube of the corolla, its shorter and entirely smooth stamens and mucronate anthers. The Smyrna specimen greatly resembles *L. Europæum* in appearance; its leaves are 12 to 15 lines long, 2 lines broad; the pedicel is 2 lines long, the calyx 1 line, the tube of the corolla $5\frac{1}{2}$ lines, its segments $1\frac{1}{4}$ line. In the Arabian plant the leaves are 3 to 5 lines long, 1 line broad, obtuse, slightly pubescent; the peduncle is 2 lines long, the narrow tubular calyx often $1\frac{1}{2}$ line long, the tube of the corolla $4\frac{1}{2}$ lines, the segments 1 line, and the filaments are barely a line in length†.

8. *Lycium Persicum* (n. sp.) ;—glaberrimum, ramulis valde no-

* This species with analytical details is shown (*loc. cit.*) plate 64 F.

† A drawing with details of this species is shown (*loc. cit.*) in plate 65 A.

dosis, breviter spinosis; foliis spathulato-obovatis vel oblongis, in nodis glomerosis fasciculatis; floribus solitariis, calyce parvulo, tubuloso, subæqualiter 5-dentato, margine ciliato; corolla violacea, glabra, longe et anguste tubulosa, superne paullo ampliata, limbi laciniis 5, ovatis, margine subciliatis, tubo sexto brevioribus, staminibus 5, medio insertis, glabris, 2 brevissimis, 2 fauce vix exsertis, 1 intermedio incluso; stylo tenui, stigmatibus exserto.—Arabia.—*v. s. in herb. Hook.* (Aden, *in maritimis*, Dr. Hooker); (*idem*, Dr. T. Thomson).

Near *L. orientale*, but much more gnarled and stunted in its growth; its corolla more slender, its stamens very unequal in length, and its anthers not furnished with the same long mucronate point. Its branches are somewhat flexuose, with rather close internodes, and a spine grows out of each salient node: the leaves are 3 to 9 lines long, $\frac{1}{2}$ to 2 lines broad; the peduncle is 2 lines, the calyx 1 line, the tube of the corolla 5 lines, its segments $\frac{3}{4}$ to 1 line long: the shorter stamens are 1 line, the intermediate 2 lines, the longer ones $2\frac{1}{2}$ lines in length: the flowers are “blue purple*.”

** *Filamenta basi hirsuta.* Sp. 9 ad 14.

9. *Lycium Austrinum* (n. sp.); (an *L. oxycarpum*, var. *a. grandiflorum*, Dun. in DC. xiii. 518 ?)—ramosum, inerme, vel rarius breviter spinosum; ramulis tortuosis, subnitidis, grosse nodosis, nodis approximatis, creberrime foliosis; foliis 5–20 e nodis fasciculatis, glaberrimis, longe lanceolatis, obtusis, vel acutiusculis, in petiolum tenuem spathulatis; floribus e fasciculis 2–5, pedunculis folio brevioribus, calyceque tubuloso 4–5-dentato 3plo longioribus; corolla majuscula, tubulosa, subincurva, imo crassa, coarctata, glabra, intus paullo infra insertionem staminum pubescente, limbi laciniis 5 rotundatis, nervosis, glabris, tubo 6–8vo brevioribus, staminibus valde inæqualibus, filamentis e quarta parte tubi orientibus, imo geniculatis et glabris, mox longiuscule hirsutis, dein glabris, filiformibus, 2 longioribus longe exsertis, 2 intermediis faucem attingentibus, 1 multo breviori inserto; stylo filiformi, apice crassiusculo, incurvo, exserto.—In Africa Australi.—*v. s. in herb. Hook.* Gamka River (*Burke*).

A plant with large conspicuous flowers like those of *L. Afrum*, but narrower and paler; the leaves are much larger and more crowded; it differs moreover, essentially, in the structure of the flowers. The leaves are comparatively thin in texture, veinless, nearly an inch long, including the slender petiole, and $1\frac{1}{2}$ to 2

* This species with analytical details is delineated (*loc. cit.*) in plate 65 B.

lines broad ; the peduncles are 6 lines long ; the tubular calyx 2 lines, the tube of the corolla 8 or 9 lines, the segments are 1 to $1\frac{1}{2}$ line long*.

10. *Lycium hirsutum*, Dun. in DC. Prodr. xiii. 521.—C. B. S.—*v. s. in herb. Hook.* (*Drège*, 7866 b). Graham's Town (*Rutherford*).

This is well distinguished by the rather dense pubescence which clothes the stemlets, the spines and the leaves. In *Drège's* specimen the leaves are elliptic, oblong, acute, attenuated at the base into a slender petiole of one-third the length of the blade ; the total length being 9 to 12 lines, and their breadth 3 or 4 lines. The specimen from Graham's Town is much more branched, the branchlets and spines are nearly at right angles and densely beset with clusters of leaves : here the petiole is nearly obsolete, the leaves are only 3 or 4 lines long and $1\frac{1}{2}$ or 2 lines broad : the flowers, upon an extremely short peduncle, are nearly sessile : the tubular and very pubescent calyx is larger than in the other specimen, its tube being 2 lines, and its nearly equal linear teeth being widely spread and 1 or $1\frac{1}{2}$ line long : the tube of the corolla is 4 lines long, nearly cylindrical, with a border of five rounded oblong segments, ciliated on the margins, nearly a line in length : the stamens are nearly equal in length, inserted considerably below the middle of the tube, hirsute for about one-fourth their length, and reach the mouth : the flowers in this specimen are in a bad condition†.

11. *Lycium arenicolum* (n. sp.) ;—spinosum, glaberrimum, ramis costato-angulatis, ramulis superioribus elongatis, subvirgatis, inferioribus in spinis nodosis abbreviatis, nodis osseis, nitidis, cupulatis, utrinque lateraliter in costis decurrentibus ; foliis creberrime fasciculatis, sessilibus, linearibus, carnosulis, acutis ; floribus 4-meris e fasciculis solitariis, brevissimis, pedunculatis, calyce inæqualiter 4-dentato, dentibus ciliatis ; corolla parva, tubulosa, limbi laciniis 4 oblongis, ciliatis, tubo tertio brevioribus ; staminibus inæqualibus, paullo supra basin insertis, 1 parum exserto, 2 faucem attingentibus, quarto breviori incluso, filamentis basi hirsutulis ; ovario induvio corollæ circumdato, et disco carnosio rubro arcte adnato suffulto ; stylo apice incrassato exserto.—C. B. S.—*v. s. in herb. Hook.* ; *in arenosis ad Orange River* (*Burke*).

This plant has greatly the habit and appearance of *L. tenue*,

* A figure of this species with sectional details is given (*loc. cit.*), plate 65 C.

† This species with sectional drawings is represented (*loc. cit.*) in plate 65 D.

and is remarkable for the cupular nodes that project from the axils, and that are decurrent on each side with the angles of the stem : five to ten leaves grow out of each node, and are 5 to 7 lines long, $\frac{1}{2}$ line broad : the peduncle is barely longer than half a line, the calyx 1 line, the teeth of the corolla $2\frac{1}{2}$ lines, the segments of the border $\frac{1}{2}$ line long*.

12. *Lycium oxykladum* (n. sp.) ;—ramosissimum, glaberrimum, ramis patentibus, ramulisque angulatis, longiusculis, apice spinosis, nodis approximatis, osseis, cupulatis ; foliis parvulis, 4–7 hinc creberrime fasciculatis, spathulato-linearibus, carnosulis ; floribus e fasciculis solitariis, breviter pedunculatis, calyce glabro, poculiformi, subæqualiter 5-dentato, dentibus acutis subciliatis, corollæ tubo infundibuliformi glabro, imo intra calycem piloso, limbi laciniis ovatis, tubo 4–5to brevioribus, margine haud ciliatis, staminibus non longe a basi insertis, filamentis imo glabriusculis, dein longiuscule hirsutulis, superne glabris, 2 longioribus exsertis, 2 medianis faucem attingentibus, quinto breviori incluso.—C. B. S.—*v. s. in herb. Hook.* Uitenhage (*Harvey*, 81). South Africa (*Burke*).

A plant with much the habit of *L. tetrandrum*, but with more fleshy and broader leaves : the leaves are 3 or 4 lines long, $\frac{1}{2}$ line broad ; the pedicel is $1\frac{1}{2}$ line, the calyx 1 line in length, the tube of the corolla 3 or 4 lines, the segments of the border roundish or oval, $\frac{3}{4}$ line long†.

13. *Lycium roridum* (n. sp.) ;—viscoso-roridum, spinosissimum, intricato-ramosum, ramis fuscis, glaucis, striatulis, nodosis, flexuosis, ramulis spinosis ; foliis parvulis, 2–10 creberrime fasciculatis, spathulato-oblongis, vel ovatis, carnosis, pallide glaucis, glandulis minutissimis viscosis utrinque punctatis, pilisque brevissimis sparse scabridis vel interdum glabriusculis ; floribus in medio fasciculorum solitariis, pedunculatis, calyce subtubuloso, æqualiter profunde et acute dentato, carnoso, punctis glandulosis pilisque brevissimis munito, corollæ tubo infundibuliformi glabro, limbi laciniis ovatis, tubo 4to brevioribus ; staminibus infra medium insertis, imo pilis articulatis longiusculis dense lanatis, hinc superne glabris, inæqualibus, omnibus exsertis, bacca globosa, parva, pallida, mucronulata, calyce cupulato, dentibus recurvis suffulta.—In Africa Australi.—*v. s. in herb. Hook.* (*Burke*).

This plant, from its close external resemblance, would readily

* A drawing of this species with analytical details is shown (*loc. cit.*), plate 65 E.

† An outline of this species with floral details is seen (*loc. cit.*), plate 65 F.

be confounded with *L. oxycladum*, but on careful examination it will be found extremely different. The fleshy leaves are 1 or 2 lines long, $\frac{1}{2}$ line broad, cuneate below, with numerous yellowish immersed shining glands on both surfaces; the peduncle is $1\frac{1}{2}$ line long; the tube of the calyx is equal in length to the five equal erect divisions, which are $\frac{3}{4}$ line long; the tube of the corolla is $2\frac{1}{2}$ lines; the segments of its border $\frac{1}{2}$ line long; the berry is nearly 2 lines in diameter, 2-celled, containing eight glaucous-brown, oval, compressed, and somewhat cochleate seeds; these are affixed to the lower portion of the dissepiment, which is membranaceous, and slit in the middle of the upper portion, as in the *Duboisieæ*.*

14. *Lycium acutifolium*, E. Meyer; Dunal in DC. Prodr. xiii. 519.—Pro char. floral. a. cl. Dunalio donato, substit.: calycis dentibus æqualibus, brevibus, acutis, ciliatis, corollæ glabræ laciniis 5 ovatis, tubo superne valde ampliato, basi angustissimo, 4to brevioribus, glabris, staminibus inæqualibus haud procul basin insertis, imo longiuscule hirsutis, superne glabris, 2 longe, 2 paullo exsertis, quinto multo breviori incluso; stylo exserto.—C. B. S.—v. s. in herb. Hook. (*Drège sub nomine L. acutifolium* b. E. M.)

A very distinct species, remarkable for its thin, membranaceous, spathulate, oval, fasciculated leaves, and its very long peduncle. The leaves are 3 or 4 lines long, $1\frac{1}{4}$ to 2 lines broad, attenuated at base into a slender petiole; the very smooth peduncle is 6 lines long; the calyx is 1 line; the tube of the corolla, contracted below, is in its upper portion subcampanulate, 3 lines in length; the segments of the border being 1 line long†.

*** *Filamenta paullo supra basin glabra, mox globula pilorum donata.* Sp. 15 ad 22.

15. *Lycium Afrum*, Linn.; Dun. in DC. Prodr. xiii. 521, cum aliis synonymis et citationibus auctorum.—Pro char. flor. cl. Dunalii substitut. sequent.;—calyce glabro, sæpe margine fuscioso-puberulo, majusculo, campanulato, æqualiter ac breviter 5-dentato, demum 2–3-fido; corolla conspicua, infundibuliformi-campanulata, imo breviter coarctata, glabra, limbi laciniis 5, subrotundis, tubo 5to brevioribus, reflexis; staminibus subæqualibus, inclusis, faucem non attingentibus, filamentis imo geniculatis, nudis, mox fasciculo pilorum donatis, dein superne glaberrimis.—Africa, præsertim in C. B. S.; an in Africam Borealem, Hispaniam, et Lusitaniam introductum?

* This species with full details is shown (*loc. cit.*), plate 66 A.

† A drawing of this species with details is seen (*loc. cit.*), plate 66 B.

—*v. s. in herb. plurimis*, C. B. S. ; *inter alia, spec. coll. Drège (sub nomine L. rigidum, b. Thunb.)*.

This is a well-known species, long cultivated in Europe, conspicuous for its large crimson flowers and copious small foliage. The specimen above quoted from Drège's collection, and described by M. Dunal in the 'Prodromus,' p. 523, as *L. rigidum, var. angustifolium*, Dun., appears to me without doubt a true *L. Afrum*. Specimens from different parts of Southern Africa vary in the length and thickness of their crowded fasciculate leaves, and the species is easily distinguished from all others by its broad calyx and large dark-coloured corolla. The species *L. propinquum* (DC. Prodr. xiii. 526) was founded by G. Don (Dict. iv. 459) simply upon Thunberg's description of *L. Afrum* in 'Linn. Trans.' ix. 153: here, the words "*folia unguicularia*" are translated, "leaves a nail long," which M. Dunal has reconstrued into "*folia 2½ pollicaria*:" to me it appears that Thunberg meant to express the essential feature of unguiculate or spatulate leaves: under this more probable construction there is absolutely nothing in Thunberg's character at variance with what we know of *L. Afrum**.

16. *Lycium carnosum*, Poir. ; Dunal in DC. Prodr. xiii. 522.—C. B. S. ; an *L. Afrum* mera varietas ?

Not having met with any specimen of this reputed species, I cannot form a decided opinion respecting it, but from the published descriptions, no very essential difference is appreciable between this and the preceding species: the principal distinction, and that derived from cultivated specimens, consists in its somewhat smaller berry being of a deep blue, while the other is of a blackish red colour, a mere difference of shade. M. Dunal, from a specimen cultivated at Montpellier, says it is very close to *L. Afrum*, differing only in its smaller stems, fewer spines, thicker, shorter and paler leaves, and in a more greenish hue in the colour of the corolla: a considerable difference in both these respects is often witnessed in indigenous specimens of *L. Afrum*: it does not therefore appear, that the validity of the species rests upon very satisfactory grounds; and this is confirmed by the fact, that among the numerous collections brought from all parts of the Cape colony during the last few years, no specimen appears that can be referred to this species.

17. *Lycium glaucum* (n. sp.) ;—spinosum, glaberrimum, intricato-ramosum, ramulis rugoso-rimosis, vel lævigatis, junioribus niveis, spinis sæpius brevibus, nudis, ex axillis strumoso-

* An outline of this species with its floral analysis is shown (*loc. cit.*), plate 66 C.

nodosis; foliis e nodis 5–10, fasciculatis, angustissime linearibus, carnosulis, glauco-pallidis; floribus in fasciculis solitariis, folio paullo longioribus; pedunculo calyce tubuloso glabro membranaceo breviter et inæqualiter 5-dentato demum fisso subduplo longiore; corolla glabra, infundibuliformi, pallide flava, imo coarctata, limbi laciniis oblongis, obtusis, reticulato-pictis, tubo tertio brevioribus; staminibus 5, subæqualibus, exsertis, filamentis gracilibus, imo breviter pilosis, 2 paullulo longioribus, tubo fasciculis totidem pilorum cum insertione istorum alternis intus donato; stylo capillari, apice inflexo, exserto.—In Persia boreali.—*v. s. in herb. Hook. (Aucher Eloy, n. 5035).*

This is a plant of very gnarled aspect, with prominent warty nodes, of a pale glaucous hue, and with pale flowers half the size of those of *L. Afrum*. It is very distinct from *L. Barbarum*, with which it has probably been confounded. Its leaves are from 5 to 7 lines long, $\frac{1}{4}$ or $\frac{1}{2}$ line broad; the peduncle is 3 lines in length; the narrow tubular calyx is $1\frac{1}{2}$ or 2 lines long, 1 line in diameter; the tube of the corolla measures 4 lines, and the segments of its border $1\frac{1}{2}$ line, and, excepting the five tufts of hair placed alternately with the stamens, between their insertion, it is quite glabrous*.

18. *Lycium echinatum*, Dun. in DC. Prodr. xiii. 513.—Ad char. cl. Dunalii post descr. calycis, adde;—corolla infundibuliformi, pallida, 4-mera, imo coarctata, limbi laciniis rotundis, margine ciliatis, tubo 4to brevioribus; staminibus 4, quorum 2 alternatim longioribus, exsertis, alteris faucem attingentibus, filamentis supra coarctationem tubi glabri insertis, hinc nudis et geniculatis, mox fasciculo pilorum donatis.—C. B. S.—*v. s. in herb. Hook. (Drège, 7870).*

The specimen above cited is quite fragmentary, and is remarkable for the extreme smallness of its fasciculate leaves: the branchlets appear angular and glaucous, with a few short spines, and out of each nodose axil arises a fascicle of small narrow linear leaves, 1 line, rarely 2 lines long, and $\frac{1}{4}$ line broad: out of the midst of these a single flower is seen, the peduncle being 1 line in length; the calyx with four small equal teeth is 1 line long; the tube of the corolla is 2 lines, with four orbicular segments $\frac{1}{2}$ to $\frac{3}{4}$ line long: the insertion of the stamens is at a point one-fourth from the bottom of the tube, which is quite glabrous, excepting a few ciliate hairs on the margin of the segments†.

* This species with analytical details is seen (*loc. cit.*), plate 66 D.

† A representation of this plant with its floral analysis is given (*loc. cit.*), plate 66 E.

19. *Lycium tetrandrum*, Thunb. Linn. Trans. ix. 154. tab. 15; Dunal in DC. Prodr. xiii. 516. *Lycium horridum*, Thunb. loc. cit. 152. tab. 17; Dunal, loc. cit. 516;—intricato-ramosissimum, spinosum, ramulis patentibus, nodulosis, foliis e nodis fasciculatis, obovatis, vel elliptico-oblongis, basi in petiolum brevissimum attenuatis, crassiusculis, glabris; floribus 4-meris in fasciculis solitariis, pedunculo brevissimo, calyce poculiformi, glabro, 4-costato, 4-dentato, dentibus brevibus ciliatis, corolla glabra, infundibuliformi, limbi laciniis rotundatis, margine ciliatis, tubo 4to brevioribus; staminibus 2 longioribus exsertis, 2 alternis faucem attingentibus, filamentis longe supra medium insertis, hinc geniculatis, nudis, et cum fasciculis totidem pilorum tubo adnatis alternis, mox globula pilorum donatis, superne glabris.—C. B. S.—*v. s. in herb. Hook. (Drège, 7872).*—Uitenhage (Harvey, no. 865).—*In herb. meo, Uitenhage (Harvey, no. 1034, sub nomine Lycium horridum).*

Upon the same sheet in Sir Wm. Hooker's herbarium I find four specimens of Drège's collection, all fragments and very bare of leaves; two of these agree with the figure of Thunberg's *L. tetrandrum*, the others, evidently younger branchlets, answer to his *L. horridum*; the structure of the flowers being exactly alike in both. I cannot perceive, in the copious descriptions of these two species by M. Dunal above quoted, anything that can constitute valid differential characters; we may therefore consider them as identical, as Sprengel long ago determined (Syst. i. 700). The older leaves are fleshy, 3 lines long and $\frac{1}{2}$ line broad; the younger leaves are obovate, 2 lines long: in Dr. Harvey's specimen the leaves are obovate, spatulate, 7 lines long, $2\frac{1}{2}$ lines broad; the peduncle is $1\frac{1}{2}$ line, the calyx 1 line, the tube of the corolla 3 lines, the segments of its border $\frac{1}{2}$ or $\frac{3}{4}$ line long*.

20. *Lycium tenue*, Willd.; Dunal in DC. Prodr. xiii. 515.—Pro char. flor. cl. Dunalii substit. ;—pedunculo calyce paullo longiore, calyce glabro, tubuloso, reticulato, subæqualiter 5-dentato, dentibus brevibus ciliatis; corollæ tubo infundibuliformi imo coarctato, calyce 3plo longiore, limbi laciniis 5 erectis, tubo 3plo brevioribus, lævibus, staminibus valde inæqualibus, infra medium tubi insertis, 2 longioribus multo exsertis, 1 mediano faucem attingente, 2 brevioribus inclusis; filamentis imo glabris et geniculatis, mox fasciculo globoso pilorum barbatis, inde glabris.—C. B. S.—*v. s. in herb. Hook. (Drège, sub nomine L. tenue.)*

* An outline of this species and section of its flower is shown (loc. cit.), plate 66 F.

This is a mere fragmentary specimen, agreeing sufficiently with Willdenow's description, but whether it be identical with the original, or it be the same as that described by M. Dunal, I have no means of judging. The foregoing diagnosis is therefore only founded upon Drège's plant above mentioned: it consists of a branchlet 5 inches long, with spinous axils $\frac{1}{4}$ inch apart; the spines are slender, bare, 3 or 4 lines long, each springing out of a crowded fascicle of leaves, which are spatulately linear, 3 to 5 lines in length and $\frac{1}{3}$ line broad; a single flower arises out of each fascicle, the peduncle being 2 lines long; the smooth calyx is $1\frac{1}{2}$ line long, with five short rather equal teeth; the tube of the corolla is 3 lines long, and the oblong segments of its border 1 line*.

21. *Lycium cinereum*, Thunb. Trans. Linn. Soc. ix. 152. tab. 16; Dunal in DC. Prodr. xiii. 516. *Lycium apiculatum*, Dun. loc. cit. 517. *Acocanthera Lycioides*, G. Don. *Cestrum Lycioides*, Licht.—C. B. S.

With these plants I am wholly unacquainted, but from the descriptions quoted, no specific difference is perceptible between them, as was suggested by M. Dunal himself.

22. *Lycium pendulinum* (n. sp.) ;—ramosum, ramulis gracilibus, pendulinis, annotinis strumoso-nodosis, subnudis, apice spinosis, junioribus foliosis, foliis e cupula ossea axillari fasciculatis, linearibus, acutis, in petiolum tenuem imo angustatis, eveniis, glaberrimis; flore e fasciculo solitario, pedunculo gracili, calyce 4plo longiore, calyce tubuloso, breviter ac subæqualiter 5-dentato, corolla infundibuliformi, imo intra calycem coarctata, et extus pilosa, superne glaberrima, limbi laciniis oblongis, venosis, tubo 4plo longioribus, staminibus inæqualibus, uno longiore exserto, 2 faucem attingentibus, 2 brevioribus inclusis: filamentis supra coarctationem tubi insertis, hinc nudis et geniculatis, mox fasciculo globoso pilorum munitis, superne glabris; stylo filiformi, exserto.—C. B. S.—*v. s. in herb. Hook. sub nom. L. Afrum var. pendulum*, N. ab E.

This plant accords more with *L. tenue*, Dun., than with *L. tenue*, Willd.; its branches are very slender and pendulous: the leaves are 4 or 5 lines long, $\frac{1}{2}$ line broad; the peduncle is 3 lines long; the tubular calyx 2 lines, with five short erect teeth; the corolla is 3 lines long, and the oval segments of its border $\frac{1}{3}$ to $\frac{1}{4}$ of its length†.

* This species with sectional drawings is seen (*loc. cit.*), plate 67 A.

† This plant with floral details is shown (*loc. cit.*), plate 67 B.