

XV. *Account of Gamoplexis, an undescribed Genus of Orchideous Plants.*

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Ord. Nat. ORCHIDÆ.

Trib. GASTRODIÆ, R. Br.

GAMOPLEXIS.

CHAR. GEN. *Perianthium* monophyllum, tubulosum, basi ventricosum, limbi breviter 6-lobi segmenta rotundata; exteriora æqualia; interiorum posticum, pedicelli torsione anticum, (labellare) lateralibus paulò majus cæteroquin consimile. *Columna* elongata, erecta, semiteres, marginato-dilatata, apice tridentata cava, basi anticè incrassata stigmatifera. *Anthera* terminalis, mobilis, decidua, carnosâ, bilocularis, loculis parallelis contiguis. *Massæ pollinis* in utroque loculo solitariae, e lobulis majusculis granulatis laxè cohærentibus conflatae. *Glandula* aut *caudicula* nulla.

Herba *parasitica* (?), *aphylla*, *vaginata*, *rufescens*, habitu *Orobanchem* quamdam omninò referens. *Rhizoma hypogæum, tuberosum, annulatum, spongiosum.* Racemus *elongatus, multiflorus, primò nutans, demum erectus.* Flores *mediocres, erecti, pallidè stramineo-virides vel ochroleuci.*

GAMOPLEXIS OROBANCHOIDES (Falc. MSS. cit. in Royle, *Illustrat.* p. 364, et in Lindley, *Genera and Spec. of Orchid. Plant.* p. 384, absque caractere aut definitione.

Hab. In umbrosis humidis inter montes Emodenses ad altitudinem circiter 7000 pedum supra mare; *Dhunaultee, Tyne-Teeba, Simla, &c.* Floret Julio et Augusto.

DESCR. Herba terrestris, tripedalis, omninò lævis, erecta, rigida, aphylla, vaginato-squamata, rufescens, ad arborum radices inter folia putrida passim obvia. *Rhizoma hypogæum, tuberosum, ovoideo-oblongum, depressum, crebrè annulatum, annularum marginibus membranâ scariosâ lacerâ adpressâ (vagarum rudimento) instructis, nunc fibrillis radicum alienarum suprâ reticulatis et superficialiter accretis utrinque tectum, ideoque ut videtur parasiticum, longitudinaliter in humo stratum, ab alterâ extremitate gemmam scapigeram, ab alterâ viviparam (rhizomatiferam) proximâ messe in plantam evolvendam, proferens: fabricâ penitiorè carnosò-spongiosum, medio laxissimè cel-*

lulosum, rimis et fissuris crebris a centro versus peripheriam tendentibus et e distensione inæquali orientibus, percursum, cellulis exterioribus materiâ amyliceâ infarctis; longitudine triunciale, crassitie sesquiunciam emetiens, anthesi peractâ marcescens; fibris radicalibus propriis omninò destitutum. Scapus solitarius, erectus, indivisus, cylindricus, glaberrimus, ferrugineus, solidus, basi digitum minimum, apice pennam cygneam crassus, basi vaginis 3-4 imbricatis obtectus. Squamæ vaginatae adpressæ, ferrugineæ, raræ, limbo obtuso abbreviato scarioso in lacinias 2-3 lacerato, $\frac{3}{4}$ -1 pollicem longæ, intervallis 6-8 pollicum segregatæ. Racemus cylindricus, rigidus, glaberrimus, multiflorus, primò recurvato-nutans, demum erectus, sub anthesi condensatus apice imbricatus, tandem fructifer elongatus, 8-12 pollices longus, $1\frac{1}{2}$ unciam crassus. Flores mediocres, ochroleuci, vel pallidè stramineo-virentes, suberecti, parum odori, pedicellati, bracteis solitariis suffulti. Bracteæ oblongo-spathulatae, apice acutatae, latâ basi sessiles, membranaceæ, ferrugineæ, patulæ, demum (marcescentes) involutæ, circiter 9 lineas emetientes et ovarium multò superantes. Pedicelli breves, crassi, glabri, torti, colorati, 2-3 lineas longi. Perianthium pedicellorum torsione resupinatum, cum ovario subcontinuum, et in ejusdem apice non contracto erectum, monophyllum, tubulosum, nudum, glabrum, persistens, marcescens, circiter 6 lineas longum 2-3 crassum; tubus cylindricus, basi a latere postico (vel labellari) leviter ventricosus, obscurè et inæquidistanter 12-striatus, limbi abbreviati 6-lobi patuli segmenta biserialia, inæqualia, antrorsum subsecunda; tria exteriora æqualia rotundata, colore et fabricâ tubo consimilia, diametro $1\frac{1}{2}$ -2 lineas emetientia, basi contigua, sinu inter lateralia duplò profundiore; tria interiora antè et in sinus exteriorum inserta, tenuissimè membranacea, albicantia, inæqualia: lateralia minuta, orbiculata, undulata, diametro lineam vix attingentia, basi constricta, hinc per fasciam ligulatam haud elevatam et vix manifestam deorsum secus tubum decurrentia; segmentum posticum (vel labellare) duplò ferè majus, oblongo-rotundatum, demissius in tubo (ante sinum exteriorum lateralium profundiore) insertum, circiter 2 lineas longum $1\frac{1}{2}$ latum, cæteroquin consimile: æstivatio imbricata, exteriorum lateralibus antico superimpositis. Columna in ovarii apice erecta, elongata, semiteres, medio leviter arcuata, ad latera marginato-dilatata, anticè longitudinaliter canaliculata, posticè convexa (salvis marginibus) clavata, apice tridentata, obliqua infundibuliformi-cava, dentibus inæqualibus: lateralibus (e marginibus productis excurrentibus) minoribus bidentatis, postico integro; basi incrassata stigmatifera, medio canali aperto percursa, 4 lineas longa, albida. Anthera terminalis, mobilis, decidua, carnosa, obliquè hemisphærica, anticè truncata, denti columnæ posteriori infra ejusdem apicem sulco dorsali affixa, sessilis, rostello obliquè decumbens et apice columnæ cavo semi-immersa, bilocularis: loculis subparallelis, distinctis, longitudinaliter dehiscens, valvulis exterioribus duplò majoribus. Massæ pollinis 2 (in utroque loculo solitariae) granulatae, e lobulis majusculis compositis angulatis laxè cohærentibus segregatim

supra stigma dilabentibus conflatae, pallidè stramineae; granulæ ultimæ 4-ternatim aggregatae. Ovarium obovato-turbinatum, angulis rotundatis obsolete triquetrum, facie labellari subcomplanatum, crassum, pedicello duplò longius, ferrugineo-fuscum, circiter 4 lineas longum, constans segmentis 6 in serie unicâ collateralibus marginibus ad commissuram attenuatis: segmentis costalibus placentiferis duplò angustioribus; placentæ incrassatae, extùs fasciâ olivaceâ manifestæ, multiovulatae. Stigma basin columnæ occupans, ejusdemque faciei parallelum, constans superficie secernente viscidâ convexâ prominulâ circumscriptione ovatâ, medio verticaliter lineâ obscurâ bipartiente percursâ, basi marginibus columnæ confluentibus cinctâ, pallidè ferrugineâ, sursùm in fasciam discolorem ligulatam nec viscidam inter margines columnæ in rostellum excurrentem productâ: rostellum transversè oblongum, truncatum, prominulum, simplex, inter dentes columnæ laterales obliquè porrectum, subtùs callo incrassatum. Capsula coriacea, oblongo-ovoidea, turgida, circiter 8 lineas longa, 4-5 crassa, perianthii et columnæ reliquiis marcidis coronata, trivalvis, rimis 6 verticalibus fenestratim, ut solitò, dehiscens, costis segmentis placentiferis duplò angustioribus. Semina scobiformia, minutissima, numerosissima, integumento alato utrinque attenuato reticulato laxo oblecta.

This genus, named *Gamoplexis* from the cohesion of the perianth-segments, is casually noticed, from a communication in a letter, in Dr. Royle's 'Illustrations,' p. 364, and is thence inserted in Dr. Lindley's monograph on the order without a detailed character. It is allied both in habit and structure to the *Gastrodia* of Brown from New Holland, and to the *Epiphanes Javanica* of Blume, as described by that botanist; but it is sufficiently distinct from both in the cohesion of the labellar segment with the tube of the perianth; and constitutes the only example hitherto ascertained in the order, so far as I am aware, of the union of all the divisions of both whorls of the floral envelope into a monophyllous perianthium.

Gamoplexis appears to be a true parasite, but after a peculiar fashion, which disguises the habit. The tuberous rhizoma emits no root-fibres by which to fix itself on other plants, but is itself matted over by their slender rootlets, which ramify upon it in every direction, slightly imbedded in its surface, to which they adhere with great tenacity, especially to the scarious margins of the abortive sheath-annuli, giving rise to the appearance of the plant being the subject of a parasitical growth rather than a parasite itself. This I observed in numerous instances; but other cases occurred to me in which the surface of the tubers presented no appearance of the kind; and Unger, in his memoir

on parasitical plants, affirms that no true instance of parasitical growth occurs among the Monocotyledones.

I have described the ovarium as consisting of six pieces, such being the apparent condition of the organ, without reference to any theoretical views regarding its numerical composition. Ordinarily, in the *Orchideæ* the placentiferous portions of the valves are brought more or less into apposition by their margins, which are overlapped by the costæ. In *Gamoplexis* the costal segments do not overlap, but are interposed between the placentiferous pieces, and in form they differ from the latter only in being narrower, and this in a less degree than is usual in the order.

Dr. Lindley, the latest systematic writer on the *Orchideæ*, comprises the genera allied to *Gastrodia* in a section of the tribe *Arethuseæ*; but the characters of the pollen-masses composed of largish angular lobules, and the basal stigma, together with the habit, seem sufficient to entitle them to the rank of a distinct tribe, as first suggested by Mr. R. Brown in his 'Prodromus.' The *Arethuseæ*, as now constituted by Dr. Lindley, appear to include a very heterogeneous assemblage of genera.

EXPLANATION OF TAB. XIII.

Fig. 1. A plant of *Gamoplexis orobanchoides*, reduced to half its natural size.

Fig. 2. A flower of the same.

Fig. 3. The tube of the perianthium slit open, and showing, *a.* the labellum; *b. b.* the lateral segments of the inner series; and *c. c. c.* the three segments of the outer series; all cohering.

Fig. 4. The column seen on its labellar face, showing the stigma and fallen pollen-grains.

Fig. 5. The column, seen laterally.

