

PROCEEDINGS
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ADDITIONS TO THE ORCHID FLORA OF PANAMA.

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The new species of orchids from Panama described below formed part of a collection made by Elsworth P. Killip in 1917 and 1918 in the provinces of Panama and Chiriqui.

The type material on which the descriptions are based is preserved in the author's herbarium and duplicate types are to be found in the herbarium of the Rochester Academy of Science.

Camaridium grandiflorum, sp. nov.

Herba caulescens, valida, e basi decumbenti erecta, folia superiora inclusa circa 37 cm. alta. Caulis vaginis distichis omnino obtectus. Vaginae complanatae, arcte imbricantes. Pseudobulbi rari, monophylli, vaginis obtecti, ad caulem appressi, anguste oblongo-cylindracei, glabri, complanati, circa 3.5 cm. alti, plus minusve sulcati. Folia adulta oblongo-ligulata, usque ad 15.9 cm. longa et 2 cm. lata, apice obtuso bilobata, basi complicata, coriacea, valde articulata, nervo medio supra sulcato; folia juniora ovato-elliptica, conduplicata, multo breviora. Pedunculi singuli e bractearum axillis exorientes, erecti et nunc leviter flexuosi, graciles, circa 5.5-8 cm. alti, bracteis nonnullis laxè vaginati. Bractee inferiores plus minusve 3.4 cm. longae, circa 9 mm. latae, lineari-lanceolatae, acuminatae, scariosae, laxè convoluto-vaginantes, nervosae, nervo medio praecipue parte apicali dorso carinato; bractea superior ovalis, circa 2.7 cm. longa et .9 cm. lata, acuminata, acuta, valde cucullata, ovarium et sepala dorsalis dimidium basalem vaginans. Flos grandis. Perianthium paulo patens, textura subcoriacea. Sepala lateralia 3.5 cm. longa, 9.5 mm. lata, lanceolato-oblonga, multinervosa, sensim acuminata, marginibus anterioribus involutis et in apicem mucronatum extensis. Sepalum dorsale simile, paulo angustius. Petala anguste elliptico-lanceolata, circa 3 cm. longa et 8.5 mm. lata trans medium, marginibus superioribus involutis. Labellum parvum, positu naturali gynostemio parallelum, elevatum, trilobatum, valde conduplicatum et decurvum, circa 1 cm. longum; discus extensus in parte basali tertia tuberculatis numerosis et in medio lamella suborbiculari biloba ornatus; lobi laterales erecti, semiobcordati, obtuse acuti, antrosum

falcati; lobus intermedius valde complicatus, dorso carinatus, extensus late ovatus vel semiorbicularis, apice rotundato mucronatus. Columna parva, crassa, circa 7 mm. longa, arcuata, in pedem gynostemio brevioris extensa. anthera semigloboso-conica, minute papillosa.

This species has much shorter, broader leaves, longer peduncles and larger labellum than *Camaridium pulchrum* Schltr. It is distinguished from *C. ochroleucum* Lindl. by its shorter, broader leaves, larger flowers borne on long peduncles, and by the acute lateral lobes of the labellum. From *C. Wrightii* Schltr. it is differentiated by its larger flowers and by the structure of the labellum.

PANAMA, PROVINCE OF CHIRIQUI, in humid forest of the Cordillera, east of the Rio Caldera, *Killip* 3565, February 17-19, 1918. 2,000 meters altitude.

Erythodes Killipii, sp. nov.

Herba alta, terrestris, e rhizomate cauliformi erecta, circa 62.5 cm. alta. Radices paucae, lanuginosae, e nodis exorientes. Caulis glaber, in sicco plus minusve 5 mm. latus, internodiis inferioribus plus minusve 7 cm. longis, superioribus multo brevioribus. Folia in visu septem, oblique lanceolato-elliptica vel ovato-elliptica, usque ad 9.5 cm. longa et 4.2 cm. lata (folium supremum multo minus), in caulis parte superiore approximata, apice subito acuminata, basi in petiolum cuneato-angustata, textura chartacea, nervis tribus prominentibus. Petiolus alatus, basi in vaginam laxe dilatam tubularem scariosam transeuns. Pedunculus ad racemum circa 18.6 cm. longus, densius pubescens, in sicco angulatus, vaginis quattuor laxis scariosis ornatus. Racemus circa 17.5 cm. longus, dense multiflorus, rhachide pubescenti. Bractee inflorescentiae flores conspicue superantes, lanceolatae, longe acuminatae, basi cucullatae, trinerviae, omnino glabrae, marginibus inferioribus irregularibus vel erosulis, marginibus superioribus integris, involutis, usque ad 1.9 cm. longae et 6.4 mm. latae (bractea basalis). Flores in generis mediocres. Sepala petalaeque in galeam agglutinata, pubescentia. Sepala oblonga, circa 7 mm. longa et 2.1 mm. lata, acuta, uninervia, basi obliqua. Sepalum dorsale lanceolatum, circa 7 mm. longum et 3.4 mm. latum, obtusum, uninervium, basi cucullatum. Petala cum sepalo impari arcte agglutinata, ligulato-spathulata, sepalis paulo breviora, circa 2.25 mm. lata prope apicem, uninervia, marginibus superioribus minutissime erosis. Labellum in situ naturali arcuato-decurvum, parte apicali deflexa et partis inferioris marginibus valde involutis; lamina expansa ligulata, circa 6 mm. longa, tertia parte apicali leviter constricta et subito in laminam latam reniformem circa 4.1 mm. latam, obtuse apiculatam dilatata, pars basalis circa 2.4 mm. lata, callis binis obscuris percurrentibus. Gynostemium breve, rostello alte et acriter bifido. Calcar ovoideum, circa 3.5 mm. longum. Ovarium dense glanduloso-pubescentis.

The habit of this species suggests very much the habit of *Erythodes procera* (*Physurus procerus* Schltr, in Fedde Repert. Beihefte 7 (1920) 73). In *E. Killipii* the longer floral bracts are entirely glabrous with the margins partly crosulate. In *E. procera* the floral bracts are one-nerved while in *E.*

Killipii they are three-nerved. Other marks of distinction are found in the terminal lobe of the labellum and in the stouter, ovoid spur. This species is represented in herbaria by specimens from Central America that have been confused with the more slender *Erythrodes vesicifera* (Reichb. f.).

PANAMA, PROVINCE OF CHIRIQUI, Valley of the Rio Caldera, from El Boquete to the Cordillera, *Killip* 3561, February 1st, 1918. 1,400 to 1,600 meters altitude. (Under the same number there is a specimen in the United States National Herbarium accompanied by a different geographical note. The habitat is given on the label as 'Humid forest near Camp I, Holcomb's Trail, near El Boquete, altitude 1,600–1,800 meters.')

***Habenaria patentiloba*, sp. nov.**

Herba terrestris, erecta, mediocris, circa 36 cm. alta. Radices filiformes, flexuosae, villosae, caule infimo decumbenti in tuberculum semiovoideum, terminanti. Caulis strictus, glaber, vaginis foliorum pro parte obtectus, basi nudus, inferne in sicco circa 4 mm. crassus. Folia disticha, in caulis medio, oblongo-lanceolata, acuminata vel acuta, ad basim amplectentem, vaginantem sensim cuneato-angustata, membranacea, nervo medio supra sulcato et subtus conspicue carinato, plus minusve 12.5 cm. longa, 2.6 cm. lata; folia inferiora multo minora lanceolato-elliptica; folia superiora oblongo-lanceolata, in bracteas sensim decrescentia. Racemus circa 9.5 cm. longus, laxiflorus, floribus distichis, decem ut videtur. Bracteae inflorescentiae lanceolatae, longe acuminatae, dorso alte carinatae, scariosae, ovaria pedicellata subaequales vel paulo superantes, usque ad 2.5 cm. longae et 9 mm. latae prope basim. Flores glabri, mediocres. Sepala lateralia reflexa, semiorbicularia, valde obliqua, apice obtusa, trinervia nervo medio prominenti, circa 1 cm. longa et 7 mm. lata. Sepalum intermedium multo minus, valdissime cucullatum, expansum orbiculare, apice revolutum irregulariter truncato, circa 6.5 mm. longum. Petala a basi cuneata latissime transversa, in lobos subaequales divaricatissimos sinu levissimo connexos extensa, circa 2.5 mm. alta a basis medio ad sinus medium et 8–9 mm. lata inter loborum apices; lobus posterior lineariligulatus, apice rotundato nunc acuto margine irregulari; lobus anticus paulo brevior, triangulari-lanceolatus, ultra medium margine posteriore obtuse unidentatus Labellum prope basim trifidum, omnino usque ad 2.14 cm. longum; lobi laterales parvuli, anguste lineares, late patentes, 3.5–4 mm. longi, basi vix 1 mm. lati; lobus intermedius longissimus, anguste linearis, carnosus, marginibus valde revolutis, apice-oblique acutus, usque ad 1.9 cm. longus et 2.5 mm. latus trans basim. Calcar quam ovarium pedicellatum longius, gracillimum, parte anteriore clavatum, circa 2.5 cm. longum. Anthera valde cucullata, in lobos rotundatos leviter divisa. Canales graciles adscendentes. Processus stigmatis valde decurvi, carnosissimi, quam canales paulo breviores.

The unusual petals make it difficult to classify this *Habenaria* species satisfactorily. It would seem to belong to the *Quadratae*. The form of the labellum is suggested by that of *H. virens* Rich & Gal.

PANAMA, PROVINCE OF PANAMA, Orange River Valley, *Killip* 3124, October 7, 1917. 60 meters altitude, dense forest.

Ornithocephalus lanuginosus, sp. nov.

Herba parvula, epiphytica, acaulescens, circa 10 cm. alta. Radices numerosae, glabrae, flexuosae, graciles. Folia equitantia, scalpelliformia, rigida, erecta et patentia, vaginis dense congestis et imbricantibus, articulata, nunc falcata, oblique acuta, in sicco rugulosa et flavo-viridia, usque ultra 23, plus minusve 4.5 cm. longa, 6-7 mm. lata. Inflorescentiae laxissimae, in visu foliis breviores (sed abruptae), dense lanuginosae, in parte superiore floriferae. Pedunculi vaginis singulis vel duabus perlaxe infundibuliformibus ornati. Bractee inflorescentiae reflexae, ovatae, ciliatae, dorso medio alte carinatae, carina plus minusve erosa. Flores minuti, perianthio membranaceo. Sepala petalaeque similia. Sepala lateralia orbicularia, margine eroso-ciliata, uninervia et dorso medio conspicue carinata, carina irregulariter eroso-ciliata, extus sparsim pilosa, circa 2 mm. longa et lata. Sepalum dorsale simile, a basi late cuneata suborbiculare, acutum, circa 2 mm. longum. Petala oblique suborbicularia, margine erosula, dorso verosimiliter carinata, circa 1.9 mm. longa et lata. Labellum trilobatum, lobi laterales inconspicui, valde recurvati, extensi spathulati, circa 1.35 mm. longi, papilloso; lobus intermedius angustissime linearis, in positu naturali valde antrorsum curvatus, conduplicatus, dorso carinatus, acutus, extensus circa 5 mm. longus; discus medio callo maximo crasso plano omnino obtectus. Columna minuta, rostello perlongo curvato ornata. Ovarium densissime lanuginosum.

In specimens collected by J. F. Cowell (298), March 4, 1905, at Gatun, Panama, the racemes bear smaller flowers than those described above.

Ornithocephalus lanuginosus is related to *O. myrticola* Lindl., and to *O. bryostachyus* Schltr. It differs from *O. myrticola* in its relatively narrower sepals and ovate-lanceolate, simple labellum; from *O. bryostachyus* it differs in its broader leaves and in the shorter labellum with different lobes.

PANAMA, PROVINCE OF PANAMA, edge of forest along Panama-Pecora Road, near Tecumen River. Killip 3314, December 30, 1917. 75 meters altitude. On trees.

Pleurothallis falcatiloba, sp. nov.

Herba parvula, erecta, epiphytica, circa 10 cm. alta, rhizomate valde abbreviato. Radices numerosissimae, intertextae, glabrae, flexuosae. Caules perbreves, unifoliati, biarticulati, vaginis binis scariosis tubularibus omnino obtecti, plus minusve 1.5 cm. alti. Folia anguste oblongo-oblanccolata; apice late rotundato minute bilobata et apiculata, basi angusta sensim angustata, coriacea, nervo medio plus minusve supra sulcato et subtus carinato, 5-7.1 cm. longa, 7.9 mm. lata ultra medium. Scapi folia paulo excedentes, gracillimi, teretes, 7.5-8.5 cm. alti. Pedunculi ad racemum vaginis perpaucis tubulatis, apice longe acuminatis valde scariosis ornati. Racemi laxiflori, circa 2.1-2.6 cm. alti (sed juniores). Bractee inflorescentiae vaginis similibus, membranaceae, laxae, infundibuliformes, longe et acriter acuminatae. Flores pro planta grandes; sepala crassiora, ut videtur subparallela. Sepala lateralia dimidio basali connata, circa 11.5 mm. longa, parte apicali dorso carinata, acuminata, carina in mucronem extensa. Sepalum intermedium simile, anguste lineari-lanceo-

latum, longe acuminatum, apice dorso carinatum, trinervium, basi columnae tantum connatum, circa 1.3 cm. longum, prope basim 2 mm. latum. Petala minuta, oblonga, superne paulo dilatata, obtusa, membranacea, uninervia, circa 2.65 mm. longa et 1.2 mm. lata ultra medium. Labellum circuitu ovatum, abrupte trilobatum, circa 4.9 mm. longum et 2.9 mm. latum trans lobos laterales; unguis quadratus; lobi laterales falcato-lineares, antrorsum semilunati et incurvi, obtusi, prope basim papilloso, circa 2 mm. longi; lobus intermedius porrectus, oblongus, parte anteriore oblique rotundatus, acutus, margine irregulari, parte inferiore carinis crassis binis paulo convergentibus ornata, circa 3 mm. longus; unguis et lobi terminalis pars inferior incrassati. Gynostemium circa 4 mm. longum, superne late alatum, ala leviter bilobata in partes semiorbiculares denticulatas, pede crasso brevi ornatum. Pollinia duo, complanato-pyriformia.

This species is very similar to *Pleurothallis bifalcis* Schltr., but it is a more dwarf plant with shorter leaves, almost thrice shorter petals and twice shorter labellum and column. It differs from *P. Wercklei* Schltr. in having far longer sepals, shorter petals and longer labellum. The distinctive characters are the rounded apex of the leaves, the large flower with long sepals and diminutive petals and the unusual linear-falcate lateral lobes of the labellum.

PANAMA, PROVINCE OF CHIRIQUI, Valley of the Rio Quebrada, Killip 3540. February 8, 1918. 1,700 meters altitude. On trees in deep woods.

Scaphosepalum longirepens, sp. nov.

Herba gracilis, epiphytica. Rhizoma longe repens, teres, multiarticulatum, vaginis tubularibus scariosis numerosis pro parte obtectum, usque ad 17 cm. longum. Radices longae, glabrae, flexuosae, circa 1 mm. crassae, ut videtur simplices. Caulis perbrevis, circa 3 mm. longus. Folia lineari-oblancoolata, plus minusve 6 cm. longa et 8.5 mm. lata super medium (raro multo minora), apice acuta, basi in petiolum gracilem canaliculatum inferne uniarticulatum sensim angustata, subcoriacea, nervo medio supra sulcato, subtus alte carinato. Pedunculus e caulis summo exoriens, cum caule et petioli basi vagina scariosa inclusus, arcuatus vel leviter flexuosus, gracillimus, teres, vaginis parvis inconspicuis tubularibus compluribus obtectus, usque ad racemum 4–6.6 cm. altus. Racemus fractiflexus, plus minusve 6 cm. altus, multiflorus, floribus approximatis distichis. Bractee inflorescentiae minutae, erectae, scariosae, infundibuliformes. Flores in genere inter minores. Sepala basi cohaerentia et cupulam formantia. Sepala lateralia usque per duas tertias connata, dorso alte et crasse bicarinata, carinis in caudas binas divaricatas extensis, per omnia circa 6 mm. longa. Sepalum dorsale inferne cum sepalis lateralibus connatum, lingulatum, apice rotundatum et obtuse acutum, dorso medio alte carinatum, parte superiore valde incrassata, circa 4.9 mm. longum. Petala minora, oblique elliptico-ovata, acuta, apice dorso crasse carinata, circa 3 mm. longa. Labellum quam petala paulo brevius, circa 2.5 mm. longum, ex ungue quadrato .65 mm. longo in laminam leviter sed distincte trilobatam subito dilatatum; lobi laterales semiorbiculares;

lobus terminalis porrectus, late oblongus, rotundatus, margine minutissime ciliato; discus inferne callis binis latis semilunatis crassis ornatus. Columna in alam latam tridentatam extensa. Anthera pileata, membranacea. Pollinia duo, pyriformia, complanata.

The elongated rhizome and small flowers distinguish this species from its allies. From *Scaphosepalum Pittierii* Schltr. it differs in having long, creeping rhizomes and a dorsal sepal that is not dilated above. The acuminate petals and distinctly trilobed labellum are also important differentiating characters when comparisons with *S. Pittierii* are made.

PANAMA, PROVINCE OF CHIRIQUI. Humid forest of the Cordillera, east of the Rio Caldera, *Killip* 3567, February 17-19, 1918. 2,000 meters altitude.

***Scaphyglottis laevilabium*, sp. nov.**

Herba epiphytica, erecta vel patens, circa 10-17 cm. alta, rhizomate valde abbreviato. Radices numerosissimae, densae, ramosae, glabrae, flexuosae. Pseudobulbi circa 3 superpositi (2-4), congesti basi pluriarticulati, anguste fusiformes vel cauliformes, pseudobulbo infimo nunc bi- vel trifurcato, articulis nunc radices ferentibus, in sicco valde longitudinaliter sulcati vel striati, pseudobulbi infimi plus minusve 5 cm. longi, plus minusve 3 mm. crassi (usque ad 7.5 cm. longi et 1 mm. crassi). Folia anguste linearia, apice rotundata, minute bilobata, basi conduplicata, leviter angustata, plus minusve 5 cm. longa, 4.5 mm. lata, tenuiter coriacea, nervo medio supra sulcato, subtus carinato. Flores saepissime duo ut videtur, ex apice pseudobulborum exorientes, ovaria pedicellata vaginis scariosis arcte imbricantibus omnino obtecta. Segmenta perianthii membranacea, patentia. Sepala lateralia linearia vel oblongo-linearia, apice dorso carinato acuta, basi leviter angustata et columnae adnata, circa 7 mm. longa et 1.75 mm. lata. Sepalum dorsale simile, gynostemio altius adnatum, oblongum, parte libera 6 mm. longa et 1.65 mm. lata. Petala multo angustiora, linearia, cum sepalo impari columna alte adnata, abrupte acuta, circa 5.8 mm. longa et .9 mm. lata. Labellum positu naturali ungue convoluto, expansum ex ungue crassiore in laminam laevam sensim dilatatum, in circuitu oblanceolatum vel spathulatum, circa 7 mm. longum, 3 mm. latum trans dimidium anteriorem, prope apicem obscurissime trilobatum, apice late truncato-retusum, marginibus anterioribus erosulis. Gynostemium conspicuum, prope stigma brachiis binis triangularibus ornatum, ad basim sensim paulo dilatatum, basi ipsa caverna praeditum. Anthera semiglobosa. Pollinia ut videtur quattuor.

Related to *Scaphyglottis guatemalensis* Schltr. which is distinguished from it by means of smaller flowers, a carinate labellum and an ebrachiate column. *S. Cogniauxiana* DeWilld. is set apart from *S. laevilabium* by its simple labellum.

PANAMA, PROVINCE OF PANAMA. Two miles east of Juan Diaz, *Killip* 3113. October 2, 1917. 60 meters altitude. On branch of tree in dense forest.

Bussey Institution, Harvard University.