

Attempt at a Natural New Classification of the African Angraecoid Orchids

Rudolf Schlechter

A translation into English of

***Versuch einer natürlichen Neuordnung der
afrikanischen angraekoiden Orchidaceen***

as published in

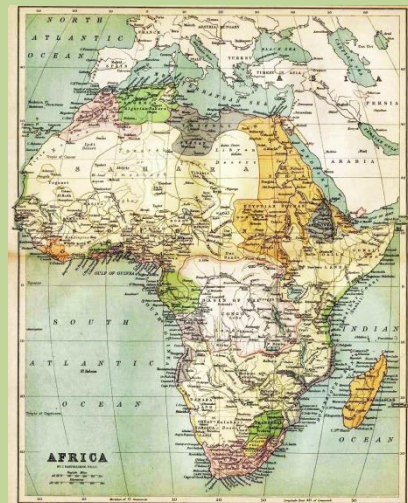
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with introduction and genera index.

H J Katz & J T Simmons



**Rudolf Schlechter
(1872-1925)**



Africa 1885



The Australian Orchid Foundation

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A NOTE ON THE TRANSLATION OF ANGRAECOID ORCHIDS.

The text of the translation has been laid out in a slightly different format to the original work. The full generic name of each species described has been used and all synonyms have been placed on separate lines to improve clarity.

Unfortunately, the original text was poorly proof-read and edited for it contains many errors in spelling, references, dates, page numbers etc. In our copy numerous hand-written corrections were included by an unidentified person and the translators have incorporated these in square brackets where they were legible and appeared to be appropriate. However, where such corrections appeared to involve a taxonomic decision, the text remains unaltered.

This should not be construed as an indication that all the errors have been corrected. The translators/editors have very limited access to source reference material, and apart from making a number of corrections, have probably added a few.

To illustrate the point:

The Finet genus Raphidorrhynchus occurs about 20 times in the text. It is spelt variously, Rhapidorhynchus, Rhapidorrhynchus, Rapidorrhynchus and finally Raphidorrhynchus. For uniformity we have used the latter spelling which conforms with both the text and index entries in 'Die Orchideen'.

In the text, Schlechter cites constantly from 'Die Orchideen' and gives a publication date of 1914. Although we have left this unchanged, the Paul Parey edition available to us and also Loesener's biography of Schlechter give a publication date of 1915.

On page 97 of the original text, species no. 5 Diaphananthe Plehniana Schltr. lists as the synonym Angraecum Relhiana Schltr. The former species name has been used.

On pages 100/101 there are two no. 20 species of Diaphananthe. The last four species on page 101 have been renumbered in sequence, in square brackets.

On page 101, species no. [23] is shown as Diaphananthe vandiformis (Krzl.) Schltr., with the synonym as Listrostachys vandaeformis Krzl. The former species name has been used.

The reference cited for Bull. Soc. Bot. Fr. LIV shows dates of 1907, 1908 and 1909. They have been left unchanged although it would appear that 1907 is probably correct.

Other points noted during the translation:

Stipe and stipes have been used by us as the respective singular and plural terms, whereas a mixture of Latin and English appear in the original text. Stipites as the plural Latin term has been retained where it appears as such.

From the original text it is not always certain whether 'peduncle' or 'pedicel' is implied, even when dimensions are given. To be certain would require a study

of the original description or illustration.

In some literature citations the term 'in' may have been omitted or added, also abbreviations expanded or contracted. Our translation has been typed without any immediate to check.

An alphabetic 'contents list' of genera has been added.

Finally, any comments or corrections on the translation would be very much appreciated.

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November 1986.

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ATTEMPT AT A NATURAL NEW CLASSIFICATION OF THE AFRICAN ANGRAECOID ORCHIDS. *

by

R. SCHLECHTER.

For a long time already, orchidologists have realised that the classification of the angraecoid orchids by Reichenbach fil., Bentham and R.A. Rolfe was completely artificial, since thereby certain naturally related species were generically separated, whilst other very distant ones were grouped together. H. Bolus, who had the opportunity of studying many species in the living state, probably was the first person to speak out against this classification of the Old World species by accepting only Mystacidium, and this in a very restricted sense. He often indicated to me personally that here clearly a number of well-separated genera was present. When Rolfe was considering the Orchidaceae for the 'Flora of Tropical Africa', I, together with many others had hoped that we would see definite and naturally circumscribed genera. Unfortunately, however, he also, probably out of respect for the great master Bentham, again retained the old genera, resulting in a large number of species described by Kränzlin being transferred to other genera. However, I must concede to Rolfe that within the three large genera accepted by him, viz. Angraecum, Listrostachys and Mystacidium, he combined the species often very cleverly. However, by the one-sided consideration of the genera, according to the shape of their pollinaria, this did not prevent the repetition of the same group of species in two, even three different genera.

Let us initially consider the characters by which the three genera were separated.

Following Reichenbach fil. and Bentham, Rolfe states the following in his key:

A. Pollinia with single stipe and gland..... Angraecum

B. Pollinia with two distinct stipes; gland simple or divided.

a. Stipes of pollinia attached to a simple gland..... Listrostachys

b. Stipes of pollinia attached to two distinct glands..... Mystacidium

This is then really the quintessence of the differences between the three genera, which does not appear in the detailed descriptions of the genera which follow, except that for Listrostachys it is stated : 'pollinia 2, etc. situated

* Footnote : Since the treatise, due to unfavourable circumstances, has remained in manuscript form for over two years, the conclusions reached here have been used in my compilation of the orchids known in Madagascar, etc. (Beih. Botan. Centralbl. Bd. XXIII, Abt. II [1915], p. 300).

on a pair of usually slender stipites, distinct or only united at the base, attached to a single, variously shaped gland'. We see thus, that already a partial unification in the manner of an approach to Angraecum is present. What Rolfe's contribution does not mention is the fact that the viscid disc can often be so constituted to be regarded as a single disc, or clearly two separate ones, the latter being united by a delicate membrane and which can be separated only by its forcible rupture. Although there are species where the stipes of the pollinia are united for half their length, in the above case we have a plant which cannot be placed in Angraecum or Listrostachys, even though in other cases, certain species could be placed in either Listrostachys or Mystacidium.

This was the situation until, after my long journeys in South Africa in 1899-1900, I had the opportunity in West Africa of getting to know a large number of very different angraecoid orchids which I analysed live on site and then sketched. These investigations showed me quite clearly, at the time, that the shape of the pollinaria can vary from species to species, viz. occasionally for one species we find a common viscid mass, yet with a clearly, closely related one there are two viscid discs. I have often drawn attention to these cases, which I do not intend to repeat here. Suffice it to say that in 1905, after I had listed all the species I brought with me from West Africa as Angraecum, I publically suggested that until a better division of Angraecum had been found, it would be best to unite all the genera. I suggested that Mystacidium alone should be retained in the delimitation given by Bolus.

Two years later, the French orchidologist A. Finet, who unfortunately died so early, published in the Bulletin de la Société de Paris (vol. LIV) extremely carefully undertaken analyses, which appear to have received only very little attention. Most authors remained rigidly by the old classification, whilst I retained Angraecum, and lately A.B. Rendle has likewise followed my approach. I will come back to the importance of Finet's work, since it had escaped also my notice, because the basic characteristics were insufficiently stressed, and in it, likewise, very widely separated species were united in the one genus. Initially here I should like to describe the further historical development of the classification suggested. I had the opportunity through extended journeys in the monsoon regions, of getting to know closer most of the other monopodial orchid genera, and I saw that for the genus Saccolabium, which was widely dispersed there, quite similar conditions applied as for Angraecum, so that here also a completely new arrangement into more natural species groups appeared to be necessary. Whilst in New Guinea I had already achieved some tangible results and in the Malayan Archipelago the Dutch orchidologist J.J. Smith has also moved in the same direction, we thus saw ourselves compelled during the latter years to carry out a basic division of Saccolabium, partly by J.J. Smith and partly by myself.

When I recently started to make a compilation of all the known orchid genera,

I eventually was confronted by the question of how to treat the angraecoid genera and, like it-or-not, I had at least to make the attempt of creating a change here. The very ample material available to me had to be critically sifted and many difficult analyses made to decide within which boundaries of the groups, which appeared natural to me, certain characters were, or were not, subject to variation. After several months of study, I believed that I had found several good reference points for a natural division of the angraecoid orchids. So as not to be influenced, I had initially completely disregarded all the literature. On checking the latter it now became apparent that Finet had reached quite similar results, viz. two sharply defined groups of genera could be separated by consideration of the shape of the rostellum.

Now let us consider the classification given by Finet. In his key he initially considers the three genera Bonniera, Aeranthus (more correctly Aeranthes) and Acampe. I should like initially to disregard these three, since Aeranthes and Acampe belong to other related types of monopodial orchids, whilst Bonniera, on account of its completely spur and pouchless labellum, stands quite isolated amongst the angraecoid genera. The key then continues as follows :

B. Calcar intus nudum, saccatum vel \pm elongatum.

a. Rostellum concavum.

*. Pollinarium stipes unicus.

+. Stipes integer.....Angraecum

++. Stipes basi integer, apice bifidus vel bilobus.....Monixus

**. Pollinarium stipites 2 discreti.....Macroplectrum

b. Rostellum productum.

*. Stipes unicus, integerrimus.

+. Clinandrium prominulum, margines obsoletos superans.....Saccolabium

++. Clinandrium cavum, inter margines membranaceos occultum.....Raphidorrhynchus

**. Stipes unicus, supra medium bilobus vel bifidus.

+. Rostellum canaliculatum, ad medium incurvohamatum, labellum sessile.....Ancistrorhynchus

++. Rostellum planum, rectum, labellum longe unguiculatum.....Dicranotaenia

***. Stipites duo.

o. Stipites ima basi cohaerentes; glandula unica, vel 2 arcte contiguae.....Listrostachys

oo. Stipites omnino distincti; glandulae 2 discretae.

#. Petala consimilia, integra.

- ¢. Stipites elongati lorati.....Mystacidium
 ¢¢. Stipites breves, pollinia
 subsessilia.....Oeonia
 ##. Petala lobata.....Cryptopus

The importance of this classification key is that it shows the untenability of dividing the African angraecoid orchids into only three genera, hence one is faced with the alternative of either establishing several genera or following my previous suggestion of accepting only the one polymorphic genus of Angraecum, which would, however, present such chaos that no one could find their way through it.

Considering Finet's key closer, we find two large genera-groups, viz. one including those with a deeply emarginate rostellum (if 'profunde emarginatus' instead of 'concavus' had been used in the key, the picture would have been clearer), the other with a distinctly extended rostellum. I likewise, arrived at the same conclusion in my investigations, however, later on I shall consider these two types of column in more detail.

For the further division into genera, Finet then applied nearly the same principles as Reichenbach fil. and his successors used. In my opinion, this is the shortcoming of a treatise carried out otherwise with extreme accuracy and superb illustrations. Its great importance lies in the proof that the previous division is untenable, and in the identification of the two main genera groupings. At a later date I shall prove by means of examples that the characters taken from the shape of the pollinaria fail even in the case of closely related species.

Initially I shall consider some of the genera freshly established, in part, by Finet.

Monixus appears to me to be composed of very heterogeneous elements which clearly have a similar column and similar pollinaria, but which in vegetative construction, both in the shape of the flower and its components differ considerably; this is apparent to anyone comparing the types, e.g. M. claviger (Ridl.) Finet, M. striatus (Thou.) Finet, M. polystachys (Thou.) Finet and M. graminifolius (Ridl.) Finet, which are placed here in juxtaposition and provide the proof that this genus must be a purely synthetic one.

Macroplectrum, originally established by Pfitzer to separate the very conspicuous Angraecum sesquipedale Thou. from the other Angraecum species, contains according to Finet, 20 species and thereby can almost be considered in the sense of Lindley's old genus Angraecum.

Saccolabium, as named by Blume can in no way be considered as the genus name for the two species placed there by Finet, since this genus is completely different. Both species included here, belong to the angraecoid type.

Raphidorrhynchus likewise contains a mixture of generally unrelated types. Since Finet also includes the genus Gussonea here, he should in all circumstances

have retained this name and not created a new one.

Ancistrohynchus I am not familiar with; according to the illustration, it probably should be retained.

Dicranotainia is closely related to the Gussonea type, having clinandria that are either appreciably extended at the back, or are shorter.

Listrostachys, in Finet's case, likewise includes very few related species, so that there appears to be no advantage over the previous delimitation.

We see, therefore, that, despite the great importance of Finet's work for our knowledge of the angraecoid orchids, it still does not create a natural grouping, since closely related species are placed into different genera, whilst on the other hand, the different genera contain types that have very little in common by nature.

This short-coming of Finet's division rests without doubt in the one-sided consideration of the shape of the pollinaria, without regard to the other characters of the floral or vegetative parts.

In consideration of the above statements, I believe it becomes sufficiently clear that to date even an approach to a natural division of the angraecoid orchids had been lacking. Every orchidologist, with the exception of Finet, has held tight to the traditional view, without even making an attempt to alter the boundaries of the genera. In these circumstances I believe that every attempt to give this orchid group a more natural division should be welcomed with pleasure. Since I consider that I am definitely on the right track, I have decided to expand the results which I mentioned partially and briefly elsewhere (cf. Schlechter, *Die Orchideen* (1914), pp. 591-609.) and to provide a more precise definition of the genera, together with a compilation of the relevant species known to me. I stress emphatically that I cannot provide a complete compilation, since a part of the species is present only as incomplete specimens, whilst other species I am not familiar with, such as many species from Madagascar, the Mascarenes and the Comoro Islands. I believe I am correct in the assumption that many of the species from those parts could be regarded as types of separate genera, since many different ones are present there as endemics. The work should not be considered as final and I hope that other orchidologists will carefully check these statements, and where they believe I have shown the right direction, will promote this absolutely necessary division of the angraecoid orchids and so contribute further to their elucidation. No group of genera has been so disregarded in its generic delimitation as this one.

I include in the angraecoid orchids, all of those which approximate more-or-less closely to the Angraecum type. As explained earlier, during the investigation of the orchids of German New Guinea and in my work '*Die Orchideen*', it would appear that in the large group of the monopodial orchids designated Sarcanthinae, a parallel development of certain series of genera has occurred, resulting in certain

special characteristics, such as the suppression or strong development of a lip-spur, extension or contraction of the column, differences in the shape of the lip and the like, may be repeated within these parallel series or sub-series, so that for the uninitiated it is hardly possible to ensure the correct determination of species, even as regards the genera. Nevertheless, one has the feeling that apparently quite similar types, as represented by the Saccolabium and the Angraecum types, belong to completely separate series. The angraecoid orchids form a separate one of these series, in which many of the above-mentioned floral characters are repeated, but which are shown in a similar manner in the parallel series. However, before we consider the floral morphology, it is desirable to describe the vegetative parts in more detail.

The African angraecoid orchids show conspicuous variations in vegetative structure. How great these can be is clearly seen if we compare such minor types as, for example Angraecum Chilochistae Rchb.f. (as illustrated in t. 6 by Bolus in his *Icones Orchidearum Austro-Africanarum*) with the well-known A. sesquipedale Thou. We see here immediately that types also occur where the vegetation axis is reduced to a minute bud covered with small scales, without ever any leaves, or that a distinct stem with large distichous leaves may be formed. But let us begin with the smallest types, i.e. those which never exhibit any leaf-formation and where assimilation must take place through the roots, which as a result are chlorophyll-carrying as with many other leafless monopodial genera, e.g. Taeniophyllum. The shape of these roots is always characteristic for the species, being either long-filiform terete, or less often shorter and almost flattened in the shape of a band. In the latter case the roots tend to attach themselves very closely to the substrate. The vegetative axis in these leafless types usually is reduced to a bud with scales, but, both in Madagascar and East Africa, forms occur with a fairly quickly growing slender stem, covered with scales, which not uncommonly reaches the length of one foot. The inflorescences of these leafless forms usually are racemes, whilst in general for the angraecoid orchids of Africa, single-flowered inflorescences are characteristic for only two genera.

Vegetatively closest to the leafless types are those which, such as several South African Mystacidium species, are leafless for part of the year, but which perennially carry minute leaves on the very much shortened axis for only a few months and thus constitute the transition to the evergreen, almost stemless species.

The leaves of these stemless species tend usually to be of a broader shape and thinner consistency than those species with extended stems. Often they are obovate or elliptical, less often cuneate, thus broadest usually above the middle. The apex is frequently distinctly bilobed. The flowers here also appear in racemes.

The number of different types with extended, leaved stems takes on many shapes. Apart from the stems varying considerably in length and diameter, they can be either lax or hang in an arc, i.e. pendulous with an erect apex, or also rigidly erect,

the foliage of the relevant plant often, or usually, offering the first sign of recognition. For some forms the ensiform, equitant leaf has become the genus characteristic, for others it is of less importance. Subulate leaves are found with some species (footnote : I refer here initially only to species or types, since the genera will be defined later on), they may belong to very different types. Finally, there are many transition forms from the subulate to the broad linear, even to an oval leaf.

The inflorescences are seldom truly single-flowered, viz. without any tendency to a second flower, but usually are in the shape of a raceme, and here belong naturally all those forms which often only produce only a single flower, but always indicate the tendency to more. Many species of the angraecoid orchids of Africa have multi-flowered racemes, but never (which is very characteristic for the whole series) do we see panicles, which are not infrequent with most of the other series of genera.

In discussing the flowers I should like initially to draw attention to the fact that they can vary in size from a diameter of 2.0 to 15.0mm, quite apart from the spur or pouch of the labellum, to which I shall return further below. The flowers of most of the species open fairly wide, a few remain only half-open, i.e. only the apices of sepals and petals part.

The colour of the flowers usually is white, to which not infrequently a pale brownish or yellowish coloration is added, or the flower becomes a pure yellow-green or green, but one can state that the almost pure white flower is the most abundant in the whole series. Many species have a not-unpleasant odour.

The consistency of the tepals; as far as I have been able to observe to-date, is characteristic for the genus, apart from several of the larger genera, but in the latter case a further division would appear desirable.

The sepals usually are very similar, only rarely is the dorsal sepal smaller or markedly concave. In shape we find all transitions between the narrow lanceolate to the broad oval sepal. They can be either very blunt or also long and acuminate, between these two extremes intermediate stages of all kind are found.

The petals tend to be somewhat shorter than the sepals and either similar to these or completely different. They usually are non-uniform in that the front half is broader than the back half, and often in the budform are softer in consistency than the protecting sepals, and sometimes have a finely-toothed, papillose margin. It is frequently seen that the petals are distinctly blunter than the sepals. At times they are closer together than the segments of the outer whorl, but such cases occur seldom. Furthermore, a special mention is made of the lobed, undulate petals of the genus Cryptopus, which can be compared with those of the genus Vanda, but being more distinctly clawed and lobed; and also of the lacerated ones in the case of Crossangis, as well as for several Tridactyle species.

The labellum is that segment of the flower which usually has been considered most in the delimitation of the genera of the orchid family. However, in our

group, despite the multiplicity of shapes, no one has gone to the trouble of utilizing this segment of the flower to classify the genera, even though, as I shall later show, it is very suited for that purpose. The simplest shape is probably the spurless one, differing little from that of the petals, as for Bonniera, which could be pelorial, were not the column so normally formed, as is seldom the case for pelorial orchids. The labellum shape is closest related to another one which differs from the petals only in having a more marked symmetry, together with a spur or pouch at the base of the labellum. Other types have a labellum that usually is broader and of a different shape to that of the petals, furthermore, which is more-or-less funnel-shaped and gradually transforms into a more-or-less funnel-shaped spur. This labellum shape, furthermore, is often characterised by a longitudinal ridge in front of the entrance to the spur. The markedly concave-spathulate shape occurs frequently, but this usually appears to go hand-in-hand with a short, blunt, occasionally oblique pouch at the base of the lip.

The shapes of the lip, so far discussed, are the simplest ones, i.e. they are undivided; we now turn to the lobed or divided kind. These start off where a small tooth-like lobe is found on each side on the margin of the spur opening and terminate finally with a deeply tripartate labellum whose lateral lobes are delicately fringed. Here also there are intermediate shapes. It should also not escape mention that some species have a lip that is dentate on the margin, whilst others are lacking in this. Finally, others have a swollen keel or callus in front of the entrance to the spur and which can extend into a short spur.

I shall return later as to how far the character of the lip can be used for the division of a genus, but I should like to mention already that it is very useful and should not be disregarded.

No less important, or perhaps even more important than the labellum, is the column of the angraecoid orchids. I have indicated already for a long time, that the length and width of the column can vary considerably. The plant which Ridley described as Radinocion has a fairly slender column, but is exceeded in this characteristic by the species described by Kränzlin as Angraecum gracillimum Krzl. To those types with a very short, thick column, we have importantly A. eburneum Bory and A. sesquipedale Thou. No hairiness of any kind, as far as I am aware, has been noticed on the column.

I have already briefly mentioned the importance of the shape of the rostellum; I have been able to establish that those types with a very deeply margined rostellum always have a short, thick column, whose sides are always broadened in an almost auricle manner and protrude forwards; on the other hand, those with a distinctly extended rostellum have a more slender column, which often is narrowed at the middle and which frequently is slightly raised in the clinandrium area. With species of the first type, the rostellum at times may have a sinus provided with a short apex or tooth, which then keeps the two individual viscid discs apart. The

extended rostellum, however, presents quite a different picture. It consists of either a narrow, pointed, lingulate structure, or is deeply bi- or tripartate, but always in such a manner that even with the smallest flowers it can readily be found on closer investigation. For Mystacidium, in Bolus' sense, the lateral, marginal parts of the rostellum are either delicately toothed or distinctly fimbriated.

The anther always is capped; in the front either broadly truncate, especially with those species with a deeply margined rostellum, or extended in an acuminate manner to the front, not infrequently even extended into a definite beak, which can either protrude to the front or rise in front.

The shape of the pollinaria has always been the disputable factor in the delimitation of the genera, so perhaps it is opportune to discuss that here in more detail.

The pollinaria consist here of three parts, viz. the pollinia (pollen masses), the stem (stipe) and the viscid disc, which in the case of orchids is generally designated as a gland, but since I can in no way describe this viscid disc as a 'glandula', I suggest in future to employ the term 'viscidium' and I shall use this in all my future orchid descriptions.

The pollinia in all the relevant types are globose, less frequently, obovate, and with a more-or-less deep, oblique cleft, and as for all Sarcanthinae on the outside almost as hard as cartilage. In colour they vary between pale golden yellow and pale orange-yellow.

Between species, the stipe is the most variable part of the pollinarium. With types having a margined labellum, it is so short that the pollinia can be described as sessile on the viscid disc; with other species we find it as narrow linear and conspicuously long or oblanceolate as well as obovate. As mentioned earlier already there is often a splitting of the stipe which can take on any degree, from a short split to complete division. I have mentioned already that on that account the division between the two genera Angraecum and Listrostachys needs to be completely eliminated; furthermore, this is quite obvious, since this is the sole difference between the two genera. Finet in his already mentioned work in the 'Bulletin de la Société botanique de France' LIV, t. I-XII, has illustrated a series of such pollinaria of the angraecoid orchids, from which it is not difficult to convince oneself that critical genera differences are not to be found there.

The viscid disc, in all those species with a deeply emarginate rostellum, usually is larger than in the others, at times even appreciably larger than the pollinia and not infrequently divided into two quite separate parts. In outline it varies between a circular or broad rhombic to almost half-moon shape. With those types having a divided viscid disc, the oblique elliptical shape is the most frequent. Those species which have a long extended labellum usually have smaller, round viscid discs, but here too there are exceptions, e.g. with a very long, linear

viscid disc. Worth mentioning are those special cases where only a partial separation of the viscid disc into two separate entities occurs. In that case two distinct separate viscid calli can be recognised, but both are so tightly connected by a delicate membrane, that they can be separated only by a rigorous tearing of the membrane.

It will be seen from the above statements that the angraecoid orchids include a series of types which are distinguished by such an abundance of forms that it is really not necessary to create unnatural genera based on quite variable characters, which in particular in dried material, are extremely difficult to identify. Against a grouping of the species in a single genus, Angraecum, which then would include over 300 species, we have the fact that clearly certain groups of species show excellent established characters, which are of equal value to the characters of other genera and which have separated themselves so far from others that hybridization is not possible, either in their homeland or here, despite experiments I have often conducted. We would also gain nothing if we were to accept only one genus, since a division of the species would then produce even greater difficulties and just about eliminate the determination of certain types. Considering these doubts, I have attempted to give as natural as possible a division of the series into genera, and initially I shall discuss only those factors which I believe must receive special consideration.

I have already above drawn attention to the importance of differences in the shape of the rostellum as stressed by Finet. On this basis we can establish two groups of genera, viz. those with an extended rostellum and those with a deeply emarginate rostellum.

Amongst the species with an extended rostellum one can, at first sight, separate those which lack leaves. They differ from most of the others in that the back of the clinandrium is usually markedly extended. For this reason I have resurrected the old genus Gussonea.

I have the following to say regarding the division of the species with distinct leaf formation; it would appear that the TYPE of Reichenbach's genus Listrostachys has never been properly investigated and compared with that classed later as such. This can, however, be readily explained since Reichenbach (fil.) himself, later on placed several completely different types there, these not having the least in common with it. I therefore feel myself obliged to restrict Reichenbach's genus Listrostachys to the basic forms which differ from all the other angraecoid orchids, in that the labellum has a distinct broad claw, whereby the entrance to the spur, which incidentally is very narrow and transverse, is moved a considerable distance from the base of the column. In this delimitation, the genus is very well characterised. I shall deal with the other characters later on when discussing the individual genera.

In further dividing up the angraecoid orchids with an extended rostellum, it

appeared to me to be of importance whether the lip is distinctly lobed or divided, or whether it has a completely undivided lamina. The latter group I have been able to divide initially into types with a smooth lamina without any excrescences or calli, and those with calli or lamellae. Of further importance, I considered the species where the spur transforms into the labellum, i.e. as if a distinct and sharply truncated lamina is present, or if the spur, which is broadened towards the front, gradually transforms into the lip-lamina so that a sharp separation between the spur and the lip-lamina is not possible. A comparison of these characters, as far as I am able to judge at present, shows that in this way, truly naturally related types are brought together, evidently also to form natural genera, as far as one is able to class them as such.

Resulting from the above-mentioned and other partly-vegetative characters, I have felt inclined to accept 23 genera, of which 18 were newly created, whilst the remainder is largely a resurrection of older genera or modifications thereof.

Several of these newly-created genera, viz. Cyrtorchis, Diaphananthe, Cephalangraecum and Tridactyle form such natural groupings that one is more than suprised that anyone investigating the total orchid flora of tropical Africa, had not noticed them. Some of the other ones may require certain modifications when more material becomes available. Nevertheless, I consider it more probable that, in future, further divisions will be necessary, rather than uniting several of the genera I have suggested.

Those types with a deeply emarginate rostellum have been split into seven genera, two of which had to be newly created. Apparently quite isolated here remains the genus Bonniera which is reputed to be completely spur-less, but which otherwise is so closely related to other Angraecum types that one could be justified in assuming that one here is dealing with pelorial forms of certain Angraecum species of the affinity of A. clavigerum Ridl. and A. rostratum Ridl. Since in Europe, good and adequate material of the genus is lacking, this question must at present remain open.

The remaining genera have been separated according to similar characters as those with a beaked or distinctly extended rostellum. The shape of the labellum and entrance to the spur, as well as the petals and the nature of the inflorescence take on the same value in evaluation of the genera, as in the group of genera treated above.

In the compilation that follows, I have considered all those species which I have had available, or whose descriptions were clear enough to recognise with certainty their affiliation to one or other genus. Since thereby a considerable number of insufficiently known species could not be taken into account, it is probable that the number of species in some genera will increase to a fair extent. In that connection I should like to add that we have a whole series of new species which will be described at a later opportunity.

In general I believe that I have managed to delimit the larger part of the genera fairly closely. For Chamaeangis it may perhaps prove necessary later on to raise the two sections to generic rank. With the largest genus, Angraecum, a further division is not out of the question, but at the moment I do not consider it applicable, since particularly among the species not considered, there is an appreciable number which probably will have to be included here, and thus connecting types between several extreme forms may occur.

Finally, I should like to say a few words about the values of the characters used in delimiting the genera.

Above I have written already about the outstanding importance of the differences in the shape of the rostellum and stressed that after very extensive research, I arrived independently at the same result as did Finet, in that we have here two fairly different generic groups which should be separated.

The characters of the perianth peculiarly have been used conspicuously very little to characterise the genera; even though otherwise within the family there has been the tendency to ascribe particular importance to them. Only for Oeonia and Cryptopus have they been given importance and hence probably the species of these two genera have never been tossed around as much as those of Angraecum, Listrostachys and Mystacidium. After intensive research, I have become convinced that in this case the consistency, position and shape of the sepals, petals and lip should be given a greater importance than heretofore. Above all, the lip exhibits excellent characters which, furthermore, usually go hand-in-hand with certain habitual characters and thus give the genus a thoroughly natural impression. In particular, the nature of the spur formation is very characteristic for certain genera, i.e. for many the lip-lamina is strongly truncated towards the entrance of the spur, whilst for others it merges only gradually into the spur without making a sharp delineation between the two parts possible.

Furthermore, the absence or presence of a column-foot appears to me of much value, since it has been shown that for certain related types, this formation is always present in the same manner and length. Such examples are the genera Aeranthus, Calypetrochilum, Podangis and Rhipidoglossum. The length and thickness of the column and nature of the rostellum, at times, also are useful genera characters, but they are not always of equal importance. In addition, their constancy in relation to the other characters also needs to be checked.

From the above remarks it will be seen that the characters previously used for division of the angraecoid genera are not always as important as acclaimed and that it was necessary to provide a completely new division which really brought together naturally associated species from alternative points of view. I have made this attempt and publish it herewith in the manner of a compilation of species known to me. I do not doubt that any species not included in this compilation will be easy to fit into this system when it becomes well enough known. It may perhaps be

necessary to accept one or another further genus, but in my plan I believe that I have achieved an overview. I have tried, where possible, to avoid setting up monotypical or oligotypical genera, but in certain instances it could not be avoided in order to give as precise a genus character as possible. I hardly believe that it will be desirable to unite many of the genera presented if one wants to see in juxtaposition those genera belonging together naturally; it is more likely that in certain cases a further division may be necessary. Furthermore, anyone is at liberty to accept just the one genus Angraecum and consider the genera used here as sections; however the validity of all those genera such as Aeranthus, Mystacidium (in the narrow sense), Oeonia and Cryptopus previously accepted by all orchidologists speaks against this. We would then always drift closer to the less desirable situation of accepting only very few genera in the large families, as has already been suggested for the Primulaceae, Gramineae and others. This point of view certainly would definitely not represent an advance. From these considerations I have therefore found myself obliged to accept the genera listed below. Wherever an old name was available, I have used it.

Before I now start to describe the individual genera in more detail, together with the relevant species, I just wish briefly to provide in the form of a key, those characters with which even the non-orchidologist should be able to determine the genera. Where a few deviations occur, I shall draw attention to them.

I again stress that in the compilation of the list of species, only those have been considered, where I have been able conclusively to establish their affinity with the genera. Various species with which I was not provided with material or whose description was insufficient to establish a closer affinity are thus absent from the list of species.

KEY FOR DETERMINING THE GENERA

FIRST GENUS SERIES

Genera with distinctly extended, even though occasionally short, column foot.

A. Rostellum extended, lip-lamina adnate to spur.

I. Spur with narrow mouth. Lip-lamina clearly truncated

towards the mouth of the spur.....1. Rhipidoglossum

II. Spur with widened mouth. Lip-lamina merging gradually into the spur.

a. Stems not distinctly extended. Leaves equitant, ensiform, acuminate. Flowers in shortened, almost umbellate, racemes..... 2. Podangis

b. Stems extended with flat leaves. Flowers in distinctly extended racemes..... 3. Calyptrochilum

B. Rostellum deeply emarginate. Lip-lamina attached distinctly at the front to the free mouth of the spur..... 4. Aeranthus

SECOND GENUS SERIES

Genera where the column is without foot extended to the front.

1. Rostellum distinctly extended.

A. Lip with a distinct broad claw having a transverse, narrow spur-mouth some distance from the base..... 5. Listrostachys

B. Lip without claw. Mouth of spur directly at the base of the lip, close to the front of the column.

I. Plant leafless. Gynostemium behind the clinandrium and usually extending upwards. Rostellum pointing obliquely downwards.. 6. Gussonea

II. Plant with leaves. Gynostemium behind the clinandrium, not extending distinctly upwards.

a. Lip-lamina with distinct excrescences, calli or numerous tubercles.

1. Spur with narrow mouth, sharply truncated towards the lip-lamina.

+. Lip-lamina with cordate callus. Spur protruding, geniculate, just before the apex.. 7. Lemurorchis

++. Lip-lamina with a hump or horn-like excrescences in front of the spur mouth. Spur bent

downwards..... 8. Diaphananthe

2. Spur with broad mouth. Lip-lamina with numerous, small, dispersed tubercles..... 9. Beclardia

b. Lip-lamina smooth, without distinct excrescences, calli or tubercles.

1. Lip-lamina not, or only indistinctly lobed.

+. Spur with narrow mouth and markedly truncated towards the lip-lamina.

*. Flowers small, in 2-flowered, very short, almost sessile inflorescences..... 10. Phormangis

**. Flowers small, rarely 5.0mm in diameter, often with short cylindrical spur; occasionally swollen towards the apex, never filiform; flowers in extended racemes.

/. Rostellum carnose. Lip-lamina slightly pandurate. Spur bent slightly backwards..... 11. Sarcorhynchus

//. Rostellum thin, not carnose. lip-lamina oval to broad ovate, less often linguiform.

x. Leaves equitant, ensiform. Column moderately long, somewhat narrowed towards the apex. Spur bent forwards.

Rostellum rising.... 12. Bolusiella

xx. Leaves flat. Column very short and uniformly thick. Spur almost parallel to

the ovary. Rostellum short, directed obliquely downwards. 13. Chamaeangis

***. Flower medium large or large, c. 1.0cm and more in diameter, tapering towards the apex, the spur usually filiform.

/. Column short or only moderately long, usually much shorter than half the length of the sepals, always flattened towards the front, only the lower part semi-terete.

x. Lip-lamina with irregular margin, almost denticulate, indirectly trilobed, i.e. with the long apex more truncated than usual..... 14. Leptocentrum

xx. Lip-lamina completely emarginate, never indistinctly trilobed, often blunt, seldom pointed..... 15. Aerangis

//. Column conspicuously slender and long, c. 2.5cm long, almost terete in the lower part..... 16. Barombia

++. Spur with wide mouth. Lip-lamina merging very gradually into the spur.

*. Flowers in extended racemes.

/. Rostellum with three deep cleavages, the lateral segments often finely papillose, or with short cilia..... 17. Mystacidium

//. Rostellum undivided or with two cleavages, always completely glabrous.

x. Stems always distinctly extended. Flowers fairly tough in texture.

§. Sepals, petals and lip-lamina all very alike, more-or-less tapered, spur uniformly tapered towards the apex..... 18. Cyrtorchis

§§. Sepals and petals blunt, lip-lamina almost non-existent, recognised only as the margin of the very wide-open spur. Spur at the apex, Swollen like a blister..... 19. Solenangis

: xx. Stems very markedly shortened. Flowers of a delicate consistency. Spur broad funnel-shaped, with the apex bent back..... 20. Eurychone

** . Flowers with small somewhat rounded

heads..... 21. Cephalangraecum

2. Lip-lamina distinctly trilobed or tripartite.

(Footnote : For the simplest tridactyl species the margin of the lip occasionally has lateral lobes reduced to the size of a small tooth).

+ . Spur with broad mouth. Flowers in almost capitate, shortened, densely flowered spikes. 22. Ancistrorhynchus

++ . Spur with narrow mouth.

* . Plants stemless, or almost stemless, with long and slender-pedicelled inflorescence.

/ . Lateral lobes of labellum undivided. Lip flat at base..... 23. Angraecopsis

// . Lateral lobes of labellum deeply multi-cleaved.

Lip with a conical excrescence at the mouth of the spur..... 24. Crossangis

** . Plants with an always distinctly extended stem.

Inflorescences short and few-flowered or multi-flowered in compact raceme, beset almost to the base with flowers pointing in one

direction..... 25. Tridactyle

2. Rostellum deeply emarginate.

A. Lip completely spur-less and without pouch formation at

the base..... 26. Bonniera

B. Lip with distinct pouch or spur formation.

I. Lip rigidly attached to the spur, without linkage.

a. Lip undivided and pointed, less often shortly trilobed in front, never distinctly four-lobed, and with a large front lobe.

1. Lip narrowed at the base, the column completely free, usually lanceolate-rhombic. Spur with a narrow

mouth..... 27. Jumellea

2. The lip with its base surrounding the column, usually mussel-shaped, cymbiform or funnel shaped with expanded spur mouth.

+ . Lip only with its base surrounding the column, always open above, nearly always undivided, extremely seldom with a short lobule in front, usually mussel-shaped or cymbiform..... 28. Angraecum

++ . Lip surrounding the entire column like a funnel, trilobed in front, with two round, short lateral lobes and with a long linear front lobe..... 29. Oeoniella

b. Lip four-lobed, with two shorter rear lobes lightly surrounding the column and with a much larger, more-or-less distinctly

flabellate, outspread front lobe.

1. Petals not clawed and not lobed..... 30. Oeonia

2. Petals long and narrow clawed, with a distinctly
lobed lamina..... 31. Cryptopus

II. Lip-lamina distinctly attached to the free spur mouth. Lamina flat,
deeply trilobed..... 32. Bathiea

1. Rhipidoglossum Schltr., gen. nov.

The general sorting out of Angraecum necessitates the setting up of a new genus here. In outward appearance it has a certain similarity with some species of the genus Chamaeangis, but due to its short, yet distinct column-formation it must be placed next to Podangis and together with it, must be included in the sub-group Sarcochileae. The nature of the genus is given by the following description :

Rhipidoglossum Schltr. nov. gen.

Sepala petalaeque subpatentia, oblonga vel ovalia, obtusa, petala quam sepala paululo minora. Labellum flabellatum, integrum vel margine subirregulare, indivisum, planum, quam petala multo latius, caccare dependente, plus minusve antrorsum curvato, cylindraceo, ostio angusto, labellum duplo fere superante. Columna pro magnitudine florum media longitudine, pede brevi in labelli basin transeunte, rostello carnosio leviter curvato, utrinque lobulo parvulo tenuiore aucto. Anthera subquadrato-cucullata antice truncata. Pollinia subglobosa, stipitibus 2 distinctis, anguste linearibus, viscidis 2 separatis, ellipticis, satis magnis.

Plantae epiphyticae caulescentes, bene foliatae; foliis carnosulis, patentibus, ligulatis, apice inaequaliter et obtuse bilobulatis; racemis laxe vel subdense pluri- vel multi-floris; bracteis parvulis; floribus parvulis albidis vel flavescentibus.

Species 5 adhuc notae, Africae tropicae speciales.

The genus is distinguished from Podangis, already by its habit, in having extended stems with flat leaves and protruding or pendent racemes. Furthermore, it differs considerably in the flabellate, flat lip-lamina, the thin-cylindrical, more-or-less bent spur, the somewhat longer column and the carnosose rostellum. In the treatment of Podangis I indicated that the genus should be ranked after Aerides.

1. Rhipidoglossum Gerrardi (Rchb.f.) Schltr. comb. nov.

Aeranthus Gerrardi Rchb.f., in Flora (1867), p. 117.

Mystacidium Gerrardi Bol., in Journ. Linn. Soc. Bot. v. XXV (1889), p. 187.

Angraecum Gerrardi Bol., Icon. Orch. Austr.-Afr. v. I [1893], t. 7.

South-East Africa : Zululand-Natal.

The species is very closely related to R. xanthopollinium (Rchb.f.) Schltr. and differs mainly in having somewhat broader, less carnosose leaves and slightly smaller flowers, with the spur being somewhat more bent.

2. Rhipidoglossum Peglerae (Bol.) Schltr. comb. nov.

Mystacidium Peglerae Bol. in Trans. South Afric. Phil. Soc. XVI pt. II (1910), p. 146; Icon. Orch. Austr.-Afr. v. II (1911), t. 6.

South African coastal region : South-east Cape area.

Somewhat similar to the previous one, and like it, related to Rhipidoglossum xanthopollinium (Rchb.f.) Schltr., but differing in the shorter and more compact inflorescences, smaller flowers with only a slightly bent spur and labellum truncated in front; as well as in the more slender and relatively longer pollinia filaments.

3. Rhipidoglossum rutilum (Rchb.f.) Schltr. comb. nov.Aeranthus rutilus Rchb.f. in Flora (1885), p. 382.Listrostachys rutila Ridl. in Bolet. Soc. Brot. V (1887), p. 200.Mystacidium rutilum Dur. et Schinz, Consp. Flor. Afr. V (1895), p. 54.Listrostachys gabonensis Rolfe, in Flor. Trop. Afr. VII (1897), p. 161.? Listrostachys multiflora Rolfe, in Flor. Trop. Afr. VII (1897), p. 162.Mystacidium congolense De Wildem., Pl. Utiles Congo I (1903), p. 151.

West Africa : From Cameroon and Fernando Po to Angola.

Clearly a widely distributed species in the forests of tropical West Africa, but which apparently occurs only in solitary specimens, never in colonies. It is closely related to the East African R. Woodianum Schltr.

4. Rhipidoglossum Woodianum Schltr. comb. nov.Angraecum Woodianum Schltr. in Engl. Bot. Jahrb. [XXVI] [1899], p. 343.Listrostachys Scheffleriana Krzl., in Engl. Bot. Jahrb. XXXIII (1902), p. 75.Mystacidium Mahoni Rolfe, in Kew Bull. (1906), p. 116.

East Africa : Usambara, Nyassaland.

Together with R. rutilum (Rchb.f.) Schltr., this species differs from the others in the genus in having appreciably thinner leaves and longer, pendulous, denser inflorescences. The two species are closely related and perhaps should be united at a later date.

5. Rhipidoglossum xanthopollinium (Rchb.f.) Schltr. comb. nov.Aeranthus xanthopollinius Rchb.f., in Flora (1865), p. 190.Aeranthus erythropollinius Rchb.f., l.c., p. 190.Mystacidium xanthopollinum Dur. et Schinz, Conspec. Fl. Afr. V. (1895), p. 55.Mystacidium erythropollinium Dur. et Schinz, l.c., p. 52.

West Africa : Angola.

I have already drawn attention above to the close relationship between this species and R. Gerrardi (Rchb.f.) Schltr.

2. Podangis Schltr. gen. nov.

I was for a long time in doubt where to place this aberrant genus, until a careful analysis showed that by having a column-foot, it belonged close to Aerides, hence, together with the one following, it did not actually belong to the angraecoid genera. I will initially give the diagnosis of the genus and then indicate the main relationship of the genus.

Podangis Schltr. nov. gen.

Sepala petalaeque patentia, sepala oblonga vel obovato-oblonga, obtusa. Petala paululo breviora, suborbiculari-obovata obtusissima. Labellum cum limbo infundibulari in calcar rectum apice subito inflato breviter excisum dependens productum.

marginē limbi subirregulari, apice minute apiculato. Columna brevis, in pedem deflexum producta, rostello tenui, bifido. Anthera quadrato-cucullata obtuse apiculata, glabra, Pollinia-globosa stipitibus 2 distinctis, tenuibus, viscidio singulo subquadrato, satis amplo.

Plantae epiphyticae, humiles, subacaules; foliis equitantibus, carnosis, gladiiformibus, acutis, erecto-patentibus; racemis breviter pedunculatis, quam folia brevioribus, apice subumbellato-contractis, 10—20-floris; bracteis parvulis; floribus tenuibus gracillime pedicellatis, pulchellis, satis magnis.

Species singula adhuc nota, Africae occidentalis silvium indigenae.

It is difficult to decide to what extent we should consider those genera of Sarcanthinae having a column-foot as a separate group or not. I have united them to a separate sub-group, Sarcochileae and believe it best to leave as such, even though the genera probably evolved from different basic types. Whilst the series of the true Sarcochileae can be followed fairly well without any gaps, Aerides indicates a different origin and Aeranthus, also Podangis and Rhipidoglossum described here, appear to have evolved from the angraecoid orchids. I should like to place both genera between Aerides and Aeranthus and according to my latest compilation of genera, (Footnote: Schlechter, Die Orchideen, 1914) Rhipidoglossum is under genus no. 434a and Podangis under 434b.

1. Podangis dactyloceras (Rchb.f.) Schltr. comb. nov.

Listrostachys dactyloceras Rchb.f., in Flora (1865), p. 190.

Angraecum dactyloceras Schltr., Westafr. Kautschuk-Exped. (1900), p. 283.

Listrostachys forcipata Krzl., in Engl. Jahrb. XIX (1894), p. 254.

Listrostachys saxicola Krzl., in Engl. Jahrb. XLVIII (1912), p. 399.

West Africa : From Lagos to Angola.

The two species founded by Kränzlin do not in any manner differ from Reichenbach's TYPE.

3. Calypstrochilum Krzl.

In Engl. Jahrb. XXII (1895), p. 30.

I have now become convinced that it is necessary to re-create the genus, but based on completely different characters from those stated by its author at the time. I should like to stress that Prof. Kränzlin was not alone in overlooking the identity of his genus with the well-known Angraecum imbricatum Lindl., but in the year following, the same plant was described by Kränzlin as a new Saccolabium, viz. S. Barbeyae Krzl., of course without making any mention of Calypstrochilum. With such a random accommodation of plants in any arbitrary genus and with the complete absence of many of the TYPES of Kränzlin's species, it is, of course, quite out of the question to identify the relevant species. Even the details of the affinity of the relevant species given by its author should not in any instance be taken too seriously, since even though the genus may be correct, the details appear to have been chosen at random. I should like to draw attention, thereby

to my remarks on 'Listrostachys Behnickiana', cf. p. 89. [of original text].

I shall now provide a new diagnosis of the genus.

Calyptrochilum Kränzl. char. emend.

Sepala petalaeque similia oblongo-lanceolata, vulgo acuta, incumbenti-adscendentia, subaequilonga. Labellum concavum e basi infundibulari subcochleatum, circuitu oblongo-quadratum indivisum vel trilobatum, lobis lateralibus oblique semiquadratis, intermedio vel potius antico bene majore plus minusve quadrato, apiculato vel emarginato cum apiculo interjecto, nervis medianis vulgo 5 leviter incassatis e calcaris ostio versus apicem labelli decurrentibus, calcare e basi depresso-infundibari abruptius contracto, genuflexo-decurvo et in apicem obovoideo-inflatum producto. Columna brevis, crassiuscula, rostello producto, bifido, pede decurvo, sensim in calcar transeunte. Anthera ovato-cucullata, apice subrostrato-acuta. Pollinia subglobosa, stipite gracili, singulo, viscidio satis magno elliptico vel subcordato.

Plantae epiphyticae, caulescentes; caule plus minus elongato, bene foliato, crassiusculo, tereti; foliis patentibus vel erecto-patentibus, oblongis, inaequaliter bilobulatis, carnosocoriaceis; racemis quam folia vulgo brevioribus, dense vel subdense rarius laxe pluri- vel multifloris, rachi vulgo fractiflexo-flexuosa; bracteis ovario pedicellato brevioribus vel longioribus, persistentibus, pedunculo brevi, vaginis vel potius squamis pluribus obsessis; floribus niveis vix mediocribus, textura leviter carnosulis.

Specis 10 adhuc notae, Africae tropicae incolae.

The genus belongs to the series of those which are characterised by an, although short, nevertheless distinct, column-foot. It is interesting and characteristic for the genus, as well as for many others accepted here that the flowers of all species agree very well both in texture, as well as shape, also in that the sepals and petals lie flat on each other and only separate gradually towards the apex; furthermore, basically in the lip, with the very characteristically genuflexed spur and slightly swollen mid-veins, with the column having a short foot, widened towards the front and in the deeply two-cleft rostellum. The anther is pointed at the front.

The geographic distribution corresponds completely with that established for many other African genera.

1. Calyptrochilum bokoyense (De Wildem.) Schltr. comb. nov.

Angraecum bokoyense De Wildem., in Bull. Jard. Bot. Brux. V (1916), p. [182].

West Africa : Congo.

Related to C. zigzag (De Wildem.) Schltr.

2. Calyptrochilum emarginatum (Sw.) Schltr. comb. nov.

Limodorum emarginatum Sw. ex Pers. Syn. Pl. II (1807), p. 521.

Angraecum imbricatum Lindl., in Journ. Linn. Soc. VI (1862), p. 137.

Calyptrochilum Preussii Krzl., in Engl. Jahrb. XXII (1895), p. 30.

Saccolabium Barbeyae Krzl., in Bull. Herb. Boiss. IV (1896), p. 40.

West Africa : From Sierra Leone to the Congo Basin.

The species is readily distinguished from all the others in having an almost square lip-lamina, without distinct formation of lateral lobes. Furthermore, its

flowers are somewhat larger and the mouth of the spur less compressed from below. In addition, the species is characterised by the straight, fairly thick rachis of the inflorescence, as well as by the length of the bracts.

3. Calyptrochilum malangeanum (Krzl.) Schltr. comb. nov.

Angraecum malangeanum Krzl., Engl. Jahrb. XXII (1895), p. 26.

West Africa : Angola.

Only a few inflorescences of this species are available, but they leave no doubt that we are dealing with a close relative of C. Moloneyi (Rolfe) Schltr. It is distinguished by the short, basal part of the lip and by fairly large lateral lobes. It is noteworthy that Kränzlin described this species several pages ahead of the genus Calyptrochilum, more-or-less together with it, without realising its close relationship.

4. Calyptrochilum marsupio-calcaratum (Krzl.) Schltr. comb. nov.

Angraecum marsupio-calcaratum Krzl., in Engl. Jahrb. LI (1914), p. 367.

West Africa : Cameroon.

This species appears to be closest related to C. Schoellerianum (Krzl.) Schltr., resembling it closely in habit. It differs in the smaller lateral lobes and in the front lobe of the labellum being deeper incised.

5. Calyptrochilum Moloneyi (Rolfe) Schltr. [Engl. Bot. Jahrb. 53 (1915), p. 595].

Angraecum Moloneyi Rolfe, in Flor. Trop. Afr. VII (1897), p. 145.

West Africa : From Sierra Leone to the Congo Basin.

The species is closely related to C. malangeanum (Krzl.) Schltr., but differs in the front lobe of the labellum being less deeply emarginate and having smaller lateral lobes. The leaves are longish linguiform, very unsymmetrical and bluntly bilobed, c. 5.0-10.0cm long and 1.2-2.5cm broad.

6. Calyptrochilum mombasense (Rolfe) Schltr. comb. nov.

Angraecum mombasense Rolfe, Flor. Trop. Afr. VII (1897), p. 145.

East Africa : Mombassa.

Very similar to the previous one, but according to its author, differing in the shorter spur and with a deeper margined lip.

7. Calyptrochilum ovalifolium (De Wildem.) Schltr. comb. nov.

Angraecum ovalifolium De Wildem., Not. Pl. Utiles Congo II (1906), p. 161.

Central Africa : Congo Basin.

Very similar to C. Moloneyi (Rolfe) Schltr., but differing in the 3.5-5.0cm leaves, which are only shortly bilobed at the apex and of a thicker consistency, and having few, larger flowers. The rachis is twisted. I am not familiar with

the species. It could later on possibly be united with C. malangeanum (Krzl.) Schltr.

8. Calypstrochilum Pynaertii (De Wildem.) Schltr. comb. nov.

Angraecum Pynaertii De Wildem., Not. Pl. Utiles Congo II (1906), p. 160.

West Africa : Congo Basin.

Differing from the previous one in the shorter, triangular, 2.0mm long bracts and larger flowers, as well as in the 8.0-9.0mm long, hence somewhat larger spur. The rachis is twisted.

9. Calypstrochilum Schoellerianum (Krzl.) Schltr. comb. nov.

Angraecum Schoellerianum Krzl., in Bull. Herb. Boiss. II (1894), App. II, p.112.

North Africa : Eritrea.

In habit, longer and more slender than C. Moloneyi (Rolfe) Schltr., with laxer inflorescences and slightly twisted rachis. The spur is longer with more falcate, spreading, markedly rounded-off lateral lobes and a longer, deeply bilobed front lobe, with very undulate margin and with an apicula.

10. Calypstrochilum zigzag (De Wildem.) Schltr. comb. nov.

Angraecum zigzag De Wildem., Not. Pl. Utiles Congo I (1903), p. 143.

West Africa : Congo Basin.

Differing from C. Moloneyi (Rolfe) Schltr. with the rachis twisted strongly in a zig-zag manner and with a longer spur. The leaves are oval, 6.0-7.0cm long, 1.6-2.0cm broad. The racemes are 1.5-2.0cm long. Sepals 5.0-6.0mm long, the petals a little shorter with an apiculum. The lip 6.0mm long, with roundish lateral lobes and oval undulate margined middle lobe. The spur 8.0-8.5mm long, the lower half wide and funnel-shaped, the upper half narrow ovate.

4. Aeranthus Lindl.

Bot. Reg. (1824), t. 817.

I should like to restrict the genus to those species which in Lindley's sense really belong here.

The genus is then characterised in having a markedly extended foot terminating in the spur. The mouth of the spur is then articulated to the usually square lip-lamina. The sepals and petals are pointed and usually protrude obliquely. The lip-lamina usually is broader than the sepals and petals, square or broad-ovate and in the front, more-or-less tapered. The short column has two square auricles, as for the Angraecum species, and a deeply emarginate rostellum, the lateral, slightly drooping petals being inserted into the long foot. The pollinia are attached to short stipes by two separated longish viscid discs.

So far the genus probably includes only the species listed here, which are

restricted to Madagascar, the Mascarenes and Comoro Islands.

1. Aeranthus arachnites (Thou.) Lindl., Bot. Reg. (1824), sub. t. 817.

Dendrobium arachnites Thou., Orch. Iles. Afr. (1822), t. 88.

Madagascar, Mascarene [Islands].

Probably most closely related to A. filipes Schltr. because they have, in common, the straight spur, but which here is shorter, thicker and blunter. In habit it has the stronger growth of A. grandiflora Lindl., but with narrower leaves and smaller flowers.

2. Aeranthus grandiflora Lindl., Bot. Reg. t. 817 (1824).

Aeranthus [Aeranthus] brachycentron Rgl., Gartenfl. (1891), p. 323.

Madagascar, Mascarene [Islands].

Similar to A. arachnites (Thou.) Lindl., but with broader leaves and larger, greenish white flowers. The sepals and petals are extended further; up to 6.0cm long, the petals delicately denticulate at the margin. The lip is similar to the middle sepal and about the same length. The spur with a conical-cylindrical base is bent forward slightly and suddenly extended into a longish blister, grooved above, 1.5-1.7cm. long.

3. Aeranthus caudata Rolfe, in Kew Bull. (1901), p. 149.

Madagascar.

The species is most closely related to A. grandiflora Lindl., but differs in the more slender stem, smaller, translucent flowers with a whitish lip, but with very long-tailed, extended tips, so that the sepals reach a length of about 8.0cm. The spur is bent inwards slightly, is cylindrical, blunt and c. 1.0cm long.

4. Aeranthus dentiens Rchb.f., in Flora (1885), p. 381.

Comoro Islands.

In habit, as well as in size of the flowers, probably best compared with A. grandiflora Lindl., but differing specifically in the more-pointed apices of the sepals and petals and in the labellum. The latter is distinctly dentate on both sides in front of the extended apex and the mouth of the spur is delicately and short haired, the almost straight spur is swollen to a blister in the front half. The colour of the flowers is pale yellow with olive-green apices.

5. Aeranthus filipes Schltr., in Ann. Mus. Col. Marseille (1913), p. 42, t. XIX.

Madagascar.

As mentioned already above, the species is most closely related to A. arachnites (Thou.) Lindl., but differs in the more slender stem, usually having two flowers only, and in the more slender, thin-cylindrical spur. The sepals are c. 2.0cm long, the petals and labellum slightly shorter, the spur being c. 1.0cm long.

6. Aeranthès Hermanni Frapp., in Cordem. Fl. Ile Réunion. (1895), p. 193.

Mascarene Islands; Bourbon [Réunion Island].

Like many orchids of the island of Bourbon; described by Frappier and by Cordemoy, this species requires an explanation. It is presented as being closely related to A. arachnites Lindl., but is supposed to differ in the narrower, stiffer leaves, up to 20cm long and up to 2.0cm broad, in the smaller flowers of a greener colour, and with the spur bent forwards.

7. Aeranthès parvula Schltr., in Ann. Mus. Col. Marseille (1913), p. 43, t. XIX.

Madagascar.

The smallest species in the genus, with leaves only 10-12cm long and 5.0-6.5 mm broad and an almost brush-like, delicate, one-to-three flowered stem, about as long as the leaves. The flowers are white-greenish with 1.0cm long sepals, slightly shorter petals and labellum, and a c. 5.0mm long spur, clavately thickened in the front and bent forwards. Clearly quite a rare species.

8. Aeranthès polyanthema Ridl., in Journ. Linn. Soc. XXII (1886), p. 121.

Madagascar.

The affiliation of this species, which I do not recall having seen, does not appear to me to be completely established, on account of the abundance of flowers on the stems (up to nine flowers) and furthermore, in that the species is given as being related to Angraecum palmiferum Thou. (A. palmiforme Thou. is probably meant). However, Ridley mentions that a true Aeranthès species is present here, hence initially I have accepted it in this place.

9. Aeranthès ramosa Cogn., Dict. Icon. Orch. Aer. t. II (1902).

Aeranthès vespertilio Cogn. l.c. (1902).

Madagascar.

Most similar in habit to A. grandiflora Lindl., but with the flowers more olive-green, the sepals less extended and 5.0-6.0cm long, the petals distinctly tri-lobed and with an almost circular lip with a very distinctly protruding, long extended apex. Distinguished above all else by the c. 60cm long stem, branched at the apex.

10. Aeranthès strangulatus Frapp., in Cordem. Fl. Ile Réunion. (1895), p. 192.

Mascarene Islands; Bourbon [Réunion Island].

Identical comments with those for A. Hermani Frapp can be made for this species, but with one explanation. The species is said to differ at first sight from A. arachnites Lindl. in the stiff, 6.0-12.0cm long and 10-15mm broad leaves which are markedly contracted at the base. The sepals are c. 1.5cm long, the lip broad and oval, the spur is bent forwards and expanded like a blister at the apex.

5. Listrostachys Rchb.f.

In Bot. Zeit. X (1852), p. 930.

It would actually appear that the genus character of Listrostachys has never been correctly interpreted, neither by Reichenbach fil., nor by nearly all those who have investigated the African angraecoid orchids. This does in no way depend alone on that the pollinia are located on two separated stipes having a common viscid disc. To justify the genus, quite different characters are available. The nature of the inflorescence itself, which is closely multi-flowered and strictly distichous, is conspicuous, but furthermore, the labellum also possesses good characters. The lamina actually has a broad claw, which has a protruding groove in front and which hence removes the narrow, almost slit-like, transverse mouth of the spur a distance from the base of the column. The spur standing at right-angles to the lamina, hangs down parallel to the ovary and is cylindrical, blunt and slightly swollen in front. The column is fairly short, but has a distinctly extended rostellum. The pollinia rest on two separate, band-shaped oblongate stipes which are slightly toothed at the margin and which are attached to a common reniform, fairly thick, viscid disc which is distinctly incised at the front.

Only three species listed below belong with certainty here. All three are fairly short stemmed and have linear, protruding leaves which at the apex are carnose, short and unequally bilobed. The obliquely protruding, very stiff inflorescences carry dense, decidedly distichous, little carnose flowers, having the length of the leaves, or slightly shorter.

1. Listrostachys Jenischiana Rchb.f., in Bot. Zeit. X (1852), p. 930.

West African forest region; Sierra Leone.

The flower is known only from the author's description and it is by no means definite whether it is really specifically different from L. pertusa (Lindl.) Rchb. f. It is said to differ from the latter mainly in larger flowers and a narrower spur-mouth. Incidentally, the name has been overlooked in the 'Flora of Tropical Africa'.

2. Listrostachys pertusa Rchb.f., in Bot. Zeit. X (1852), p. 930.Angraecum pertusum Lindl., in Hook. Comp. Bot. Mag. II (1836), p. 205.Listrostachys Zenkeriana Krzl., in Engl. Jahrb. v. XIX (1894), p. 252.Listrostachys Behnickiana Krzl., in Notizbl. Bot. Gart. Berl. XV (1909), p. 122.

West Africa : From Sierra Leone to Gabon.

The species is found frequently in the lowland forests of West Africa and is closely related to the two others. L. Zenkeriana Krzl. does not differ in any manner from the typical L. pertusa Rchb.f. How this author managed to compare L. Behnickiana Krzl., which definitely belongs here, with Diaphananthe pellucida (Lindl.) Schltr. is not clear to me.

3. Listrostachys Pescatoriana (Lindl.) S. Moore, in Baker. Flor. Maur. (18--), p. 354.

Angraecum Pescatorianum Lindl., in Journ. Hortic. Soc. IV (1849), p. 263. Mascarene [Islands].

According to the notes to hand, this species could be closely related to L. pertusa (Lindl.) Rchb.f. Several authors consider it even as a variety of the latter. However, it differs specifically. The flowers are c. 5.0mm broad, with an obovate-longish labellum, truncated in front and with a c. 6.0mm long, slightly clavate, blunt spur.

6. Gussonea A. Rich.

In Mem. Soc. Hist. Nat. Par. IV. (1828), p. 67.

Microcoelia Lindl., Gen. et Spec. Orch. (1830), p. 60.

Gussonia Sprgl., Gen. II (1831), p. 664.

~~Raphidorrhynchus~~ A. Finet, in Bull. Soc. Bot. France v. LIV (1907), p. 32.

Dicranotaenia A. Finet, l.c. p. 47.

Ridley in 1885 in Journ. Linn. Soc. Bot. v. 21, p. 490, supported the re-establishment of this genus. I find myself inclined to follow him wherever it is necessary to define the African angraecoid orchids as closely as possible.

Raphidorrhynchus A. Finet falls into the first group in Finet's Key and into the list of typical Gussonea species, and therefore should be united with this genus. At present it appears to me advisable to place Dicranotaenia A. Finet here, since the differences in the shape of the pollinaria made by the author are not valid, furthermore, the narrowing of the lip-lamina towards the base is of lesser importance here. However, I do not consider it impossible that the genus may, at a later date be re-established, when better characters have been found. At present I know the TYPE only from Finet's illustration, but it could be closely related to Angraecum Koehleri Schltr., the plant I described from Usambara, which I likewise placed in Gussonea. G. macrorhynchia Schltr. is a further aberrant species of the genus Gussonea, but the material so far available is too meagre to form an opinion as to whether it might perhaps be regarded as the TYPE of a separate genus.

The genus otherwise is recognised in habit by the lacking of any leaves, and with the vegetation axis reduced to a bud covered with scale-like sheaths, which in several species gradually develops into an extended leafless stem, but with most of the others no visible length growth is present. Based on these characters in habit the genus can be divided into two sections, viz. :

§ I. Eu-Gussonea, with extended stem and roots appearing laxly at intervals.

§ II. Taeniophylloides, with distinct longitudinal stem growth and bunched, densely-grouped roots.

The genus appears to comprise 24 species, appearing in the whole of tropical Africa and Madagascar. All are epiphytes of the lowland forests, but particularly along the river courses are found on solitary trees.

The species known to me are the following :

§ I. *Eu-Gussonea*.

1. *Gussonea aphylla* A.Rich., in Mem. Soc. Hist. Nat. Par. IV (1828), p. 67.

Angraecum aphyllum Thou., Orch. Iles. Afr., t. 73 (1822).

Saccolabium aphyllum Lindl., Gen. et Spec. Orch. (1833), p. 223.

Mystacidium aphyllum Dur. et Schinz, Conspec. Flor. Afr. V (1895), p. 51.

Raphidorrhynchus aphyllus A.Finet, in Bull. Soc. Bot. Fr. LIV (1907), p. 35.
Madagascar, Mauritius.

According to R.A. Rolfe it is found also in East Africa, but a confirmation of that plant is still needed.

Closely related to *G. defoliata* Schltr., but differing in the spur, which is inflated at the apex in a peculiar manner, with the spur compressed from below, and in the ovate lip-lamina.

2. *Gussonea deflexicalcarata* (De Wildem.) Schltr. comb. nov.

Angraecum deflexicalcaratum De Wildem., in Bull. Jard. Bot. Brux. V (1916), p. 185.

West Africa : Congo.

Apparently a quite characteristic species which is best placed next to *G. defoliata* Schltr.

3. *Gussonea defoliata* Schltr. comb. nov.

Angraecum defoliatum Schltr., in Ann. Mus. Col. Mars. ser. III, I (1913), p. 48, t. XX.

Madagascar.

Very closely related to *G. aphylla* (Thou.) A.Rich., but specifically well separated by the spur being suddenly bent upwards at the blown-up apex, and by the slightly trilobed labellum-lamina.

§ II. *Taeniophylloides*.

4. *Gussonea Bieleri* (De Wildem.) Schltr. comb. nov.

Angraecum Bieleri De Wildem., in Bull. Jard. Bot. Brux. V (1916), p. 182.

West Africa : Congo.

Differs from the related *G. micropetala* Schltr. in the larger flowers.

5. *Gussonea caespitosa* (Rolfe) Schltr. comb. nov.

Angraecum caespitosum Rolfe, in Flor. Trop. Afr. VII (1897), p. 150.

West Africa : Cameroon.

A species I am not familiar with, and which probably could be related to G. micropetala Schltr., but which clearly has shorter inflorescences than the latter and is said to have a spur over 1.0cm long, widening towards the apex, whilst for G. micropetala Schltr. it is more swollen at the centre and only 7.0mm long.

6. Gussonea Chilochistae (Rchb.f.) Schltr. comb. nov.

Angraecum Chilochistae Rchb.f., in Linnaea XX (1847), p. 678.

Raphidorrhynchus Chilochistae A.Finet, in Bull. Soc. Bot. Fr. LIV [Mém.] (1909), p. 35.

Natal to East Africa; Uganda.

Amongst all the species of the genus, this one is characterised by the minute roundish leaves, with a globose, short spur. I consider it probable that different species are included in the description of the species, since the flowers which belong to the smallest within the family are very difficult to examine, whilst on the other hand, such a wide distribution of the species is unlikely.

7. Gussonea conica Schltr. comb. nov.

Angraecum conicum Schltr., Engl. Jahrb. v. XXXVIII (1906), p. 160.

East Africa : Mozambique.

This species is one which in external appearance can be compared with Gussonea globulosa (A.Rich.) Ridl. and like it has a short, slightly pointed spur. It differs, however, in the shape of the lip-lamina and the shortness of the spur.

8. Gussonea cornuta Ridl., in Journ. Bot. (1885), p. 310.

Angraecum cornutum Rchb.f., in Flora (1885), p. 538.

Raphidorrhynchus cornutus A.Finet, in Bull. Soc. Bot. Fr. LIV (1909), p. 34.

Madagascar, Comoro Islands.

This little known species is characterised by the rhombic labellum, with the spur as long as the ovary. Its column is shorter than that of most of the other species.

9. Gussonea crinalis (De Wildem.) Schltr. comb. nov.

Angraecum crinale De Wildem., Not. Pl. Utiles Congo I (1903), p. 320.

West Africa : Congo.

Of this species, I had only flower-less specimens available. These are very similar to G. micropetala Schltr., with which it may later on be united. Currently it is being compared with G. caespitosa (Rolfe) Schltr.

10. Gussonea cyclochila Schltr. comb. nov.

Angraecum cyclochilum Schltr., in Engl. Jahrb. XXXVIII (1906), p. 160.

Madagascar.

Likewise, one of the species with a relatively short, narrow, conical spur. It is otherwise well characterised by the almost circular lip, which is slightly margined in front.

11. Gussonea [dahomeensis] Schltr. comb. nov.

Dicranotaenia [dahomeensis] A.Finet, in Bull. Soc. Bot. Fr. [Mém. 9] (1907), p. 47, t. IX.

West Africa : Dahomey.

12. Gussonea dolichorrhiza Schltr. comb. nov.

Angraecum dolichorrhizum Schltr., in Ann. Mus. Col. Mars. ser. [III], I [1913], p. [192], t. XX.

Madagascar.

This species is probably best compared with G. micropetala Schltr., with which it shows the same habit and shape of the flowers. However, it is well distinguished by the lip, which has an upwards protruding mucro in front and by the tube-like, cylindrical spur, which is slightly narrowed towards the base. In dimensions the two species have much in common.

13. Gussonea Elliottii (Finet) Schltr. comb. nov.

Listrostachys Elliottii A.Finet, in Bull. Soc. Bot. [Mém. 9] (1907), p. 50, [t. 10, f. 1-13].

Madagascar.

Finet is of the opinion that this species is completely different from G. Gilpinae (S.Moore) Ridl., with which it was united by Rolfe. He placed it even in a different genus, which probably is the best proof of how unnatural the previously-accepted genera were. Whilst G. Gilpinae (S.Moore) Ridl. has only a single stipe for the two pollinia, G. Elliottii (Finet.) Schltr. has two which are attached to a common viscid disc. I must refer you to Finet's work for the other differences.

14. Gussonea exilis (Lindl.) Ridl., in Journ. Linn. Soc. Bot. XXI (1885), p. 493.

Microcoelia exilis Lindl., Gen. et Spec. Orch. (1830), p. 61.

Madagascar.

In my opinion Rolfe quite wrongly united this species with G. Chilochistae (Rchb.f.) Schltr.

15. Gussonea Gilpinae (S.Moore) Ridl., in Journ. Linn. Soc. Bot. XXI (1855), p. 491.

Angraecum Gilpinae S.Moore, in Journ. Linn. Soc. Bot. XVI [1877], p. 206.

Madagascar.

According to Finet, the plant outwardly is very similar to G. Elliottii (Finet) Schltr., but specifically well separated by the single stipe of the pollinia, a

further proof that this characteristic should not be given too much importance. The flowers are orange-yellow.

16. Gussonea globulosa (Hochst.) Ridl., in Journ. Linn. Soc. Bot. XXI (1885), p. [491].

Angraecum globulosum Hochst. ex A.Rich., Tent. Fl. Abyss. II, p. 285, [1851].

Saccolabium radicosum A.Rich. l.c. p. 283, [1851].

Microcoelia? taeniophyllum Hochst. ex A.Rich. l.c. p. 285, [1851].

Aeranthus Guyonianus Rchb.f., in Flora (1865), p. 190.

Angraecum Guyonianum Rchb.f., in Linnaea XXII (18..) [1849], p. 865.

Mystacidium globulosum Dur. et Schinz, Consp. Fl. Afr. V (1895), p. 53.

Mystacidium radicosum Dur. et Schinz, l.c. p. 54.

North-East Africa : Abyssinia, British East Africa.

The plant from West Africa relegated here is probably specifically different. The species itself belongs to the simplest types of the genus.

17. Gussonea Koehleri Schltr. comb. nov.

Angraecum Koehleri Schltr., in Engl. Jahrb. XXXVIII (1906), p. 162.

East Africa : Usambara.

I have indicated already above that this species together with [G. dahomeensis] (Finet) Schltr. are distinguished by the lip which is narrowed at the base. The back of the clinandrium is extended for both species and rises almost vertically.

18. Gussonea konduensis (De Wildem.) Schltr. comb. nov.

Angraecum konduense De Wildem., Not. Pl. Utiles Congo I (1903), p. 321.

West Africa : Congo.

According to the author, this species is said to be related to G. crinalis (De Wildem.) Schltr., but differs in the 12-20cm long inflorescence with long pedicels, and in the spur, which is strongly inflated in front.

19. Gussonea macrorhynchia Schltr. comb. nov.

Angraecum macrorhynchium Schltr., in Engl. Jahrb. XXXVIII (1905), p. 22.

West Africa : Cameroon.

This species, by virtue of its bilobed lip-lamina, which is narrowed at the base and is fan-shaped, differs so much from the others in the genus, that I consider it not improbable that it will later on have to be given the status of the TYPE of a separate genus.

20. Gussonea megalorhiza (Rchb.f.) Schltr. comb. nov.

Angraecum megalorhizum Rchb.f., Otia. Bot. Hamb. II, p. 117.

East Africa : Nyassaland.

This species is characterised by the very long roots and lax racemes of small white flowers, with a slightly bent, pointed, narrow conical spur.

21. Gussonea micropetala Schltr. comb. nov.

Angraecum micropetalum Schltr., in Engl. Jahrb. XXXVIII (1905), p. 23, fig. 6.

Angraecum Andersonii Rolfe, in Kew Bull. (1912), p. 134.

West Africa : Cameroon.

A very characteristic species with galeate sepals and petals, inclined towards each other and in the blunt spur, somewhat swollen in the lower half. G. crinalis (De Wildem.) Schltr. can be considered as being closely related to it.

22. Gussonea Perrierii (Finet) Schltr. comb. nov.

Raphidorrhynchus Perrierii A.Finet, in Not. Syst. I, p. 89.

Angraecum Perrierii Schltr., in Ann. Mus. Col. Mars. ser. [III], I (1913), p. [198].

Madagascar.

The plant is somewhat reminiscent of G. micropetala Schltr., but it has slightly more open flowers in a longer raceme, as well as a different spur. The lip-lamina itself is rhombic, with obtuse angles, c. 2.0mm long and with a 6.0mm long blunt spur.

23. Gussonea physophora (Rchb.f.) Ridl., in Journ. Linn. Soc. Bot. XXI (1885), p. 492.

Angraecum physophorum Rchb.f., Ot. Bot. Hamb. II, p. 78.

Madagascar.

I would consider G. megalorhiza (Rchb.f.) Schltr. as the closest relative of this species, which is easily recognised by the tri-lobed labellum and the spur which is swollen at the apex in an almost globose manner. The roots are flatter and broader than for any other species I know.

24. Gussonea Smithii (Rolfe) Schltr. comb. nov.

Angraecum Smithii Rolfe, in Flor. Trop. Afr. VII (1897), p. 149.

German East Africa.

It is said to be most closely related to G. globulosa (Hochst.) [Ridl.], but characterised by the much smaller flowers.

7. Lemurorchis Krzl.

In Engl. Jahrb. v. XVII (1893), p. 58.

It is quite clear that the genus belongs to the monopodial angraecoid orchids, and not to the sympodial Cymbidiinae, as Pfitzer thought. Kränzlin's suggestion of placing it next to Vanda has therefore been the more correct one.

The genus is distinguished by its conspicuous habit in having the leaves attached to 4.0-6.0cm long, free sheaths. The plant thereby takes on the appearance of a species of Oxyanthera or large Phreatia, even though the leaves are fairly leathery, as for the remaining genera of the Angraecum affinity. The inflorescences, further, are noteworthy in the large bracts which initially cover the bud completely and are thrown back only at a later stage. The fairly small flowers are grouped in fairly dense racemes and are somewhat carnose. The sepals and petals appear to be slightly bent back, with the sepals being broadened in a longitudinal manner towards the base, the petals likewise in a lanceolate manner. The lip is mussel-shaped and distinctly trilobed, with rounded-off, large lateral lobes and a smaller, almost circular front lobe, with a cordate, small callus directly in front of the mouth of the cylindrical, blunt spur which is slightly longer than the labellum, and in its upper quarter is bent upwards in a geniculate manner. The column is moderately short, with a large roundish stigma and a fairly thin, rostrate rostellum. The anther is cucullate-roundish and truncated in front. The pollinia are globose and attached to two separate, moderately slender stipes which narrow towards the base, and which in turn are attached to a small roundish viscid disc.

The genus has only one species which is endemic to Madagascar.

1. Lemurorchis madagascariensis Krzl., in Engl. Jahrb. XVII (1893), p. 58, [t. 3].

Madagascar.

I described the genus in somewhat more detail above, since I consider that my evaluation augments, to a degree, the description of the specimens held at the Berlin Herbarium.

The genus is, without doubt, extremely interesting and so far known in a solitary specimen collected by J.M. Hildebrandt. Those collectors active in Madagascar should therefore be particularly on the lookout for it.

8. Diaphananthe Schltr.

Orchid. (1914), p. 593.

The genus established here appears to me to be quite a natural one within the series of the angraecoid orchids. I have already characterised them, together with several other genera appearing here with Latin diagnosis, in my book 'Die Orchideen', which will be appearing soon. The diagnosis for the genus now follows:

Diaphananthe Schltr.

Sepala petalaeque patentia, oblonga vel ligulata, vulgo acuta vel acuminata, subdiaphana, sepala lateralia obliqua vulgo subadscendentia; petala margine interdum subdenticulato-irregularia. Labellum quam petala multo latius, saepe longius, ovale vel subquadratum, antice interdum excisum cum apiculo interjecto, margine vulgo plus minus distincte denticulatum, ante ostium calcaris gibbo vel dente obtuso ornatum, textura tenue, calcare plus minus antrorsum curvatum, labelli longitudine vel paulo longiore, cylindraceo, fusiformi vel clavato, ostium versus vulgo contracto. Columna pro magnitudine florum mediocris, clinandrio adscendente, rostello tenui, decurvo, gracili. Anthera quadrato-

vel reniformi-cucullata, antice truncata vel leviter excisa. Pollinia globosa vel late ellipsoidea, stipitibus 2 distinctis, gracilibus vel oblanceolatis, margine inferiore interdum leviter coalitis, viscidio singulo rotundato vel 2 liberis ellipticis vel rotundatis. Ovarium cylindraceum, subsessile, glabrum.

Plantae epiphyticae, acaules vel caulescentes, foliatae; foliis ellipticis vel ligulatis carnosulis, inaequaliter et obtuse bilobulatis; floribus diaphanis vel subdiaphanis, parvulis vel medio-cribus, niveis vel flavidis, in racemis patulis vel rarius erectis, interdum oppositifloris dispositis; bracteis cucullatis, ovario bene brevioribus.

Species 23. adhuc notae, Africae tropicae incolae.

In my opinion, what is characteristic for this very natural genus is the entire shape of the flower, and not least the broad labellum, which usually is somewhat convex from above and more-or-less distinctly dentate at the margin and which has a distinct conical crest or cornicle below the centre of the lamina. Relative to the size of the flower, the column is moderately tall, usually somewhat narrowed below, but on the other hand, expanded at the level of the stigma, and then again contracted at the slightly rising clinandrium. The pollinia provide the most striking proof here of the validity of my assertion, that, in delimiting the genera, they should not be given too much prominence. Thus for D. pellucida (Lindl.) Schltr. we have a common viscid disc, as also for most of the other species of the genus, but on the other hand, D. kamerunensis Schltr., D. Mildbraedii (Krzl.) Schltr. and several other species have two completely independent viscid discs. Interesting, further, is the fact that several species have their flowers arranged in an opposing manner, or in whorls of three, whilst the majority have alternating flowers.

Based on the differences in habit, I divide the genus into three sections as follows :

- § I. Eu-Diaphananthe. Stemless or almost stemless species with racemes of alternating flowers.
- § II. Gibbostium. Stem markedly extended; inflorescences very slender with alternating flowers.
- § III. Enantianthe. Stem fairly short with fairly thick-carnose leaves. Flowers opposing or in whorls of three, in fairly dense, pendulous inflorescences.

§ I. Eu-Diaphananthe

1. Diaphananthe Bueae Schltr. comb. nov.

Angraecum Bueae Schltr., in Engl. Jahrb. XXXVIII (1906), p. 159.

West Africa : Cameroon.

The species differs from the basic types in as much as the ovate labellum is not dentate at the margin, but otherwise clearly has all the other floral characters pertaining to the genus. The stipes are oblique-lanceolate and in the upper half fairly tightly stuck together, the reniform viscid disc indicating the start of a splitting into two parts.

2. Diaphananthe kamerunensis Schltr. comb. nov.

Angraecum kamerunense Schltr., in Engl. Jahrb. XXXVIII (1906), p. 161.

West Africa : Cameroon.

In describing the species I have already indicated how the previously accepted differences in the genera fall apart, since, according to Rolfe, our plant should be classified as Mystacidium, whilst the clearly related D. pellucida (Lindl.) Schltr. would be a Listrostachys. The two species are very similar, but for D. kamerunensis Schltr. the flowers are double the size and with a differently shaped labellum having a very blunt crest below the middle in front of the mouth of the spur.

3. Diaphananthe Mildbraedii (Krzl.) Schltr. comb. nov.

Mystacidium Mildbraedii Krzl., in Ergeb. Dtsch. Zentr. Afric. Exped. Herzg. Mecklenbg. (1907), p. 86.

East Africa : Ruanda.

The species differs somewhat from the others in the section in having fairly narrow leaves and few-flowered inflorescences with a filiform pedicel, but the flowers cast no doubt that it belongs to the genus. In common with D. kamerunensis Schltr., the species has separated viscid discs. The flowers are very delicate and transparent.

4. Diaphananthe pellucida (Lindl.) Schltr., Die Orchideen (1914), p. 593.

Angraecum pellucidum Lindl., Bot. Reg. (1844), t. 2.

Listrostachys pellucida Rchb.f., in Walps. Ann. VI (1861), p. 908.

Angraecum Althoffii Krzl., in Mitteil. Dtsch. Schutzgeb. II (1889), p. 160.

Listrostachys Althoffii Dur. et Schinz, Conspect. Fl. Afr. V (1895), p. 47.

Listrostachys Thonneriana Krzl., in Dur. et Wildem. Mat. Flor. Cong. III (1899) p. 56.

West Africa : From Sierra Leone to the Congo Basin.

This species is the most popular and therefore best known of all the genus in cultivation, and hence shall be considered as the TYPE of the genus. It is easily recognised by the long pendulous racemes, with fairly large bracts and by the lip, whose margin is distinctly and deeply serrated and with a cornicle-like appendage right in front of the spur mouth.

5. Diaphananthe Plehniana Schltr. comb. nov.

Angraecum Plehnianum Schltr., in Engl. Jahrb. XXXVIII (1905), p. 24.

West Africa : Cameroon.

Amongst the species of the section, this one, besides D. Bueae Schltr. has the smallest flowers. It is somewhat reminiscent of those for D. bidens (Afz.) Schltr., but here they have a shorter spur and are more brownish white. The species,

however, is quite different in habit and can be regarded as a diminutive of D. pellucida (Lindl.) Schltr. with laxer inflorescences and smaller bracts.

§ II. Gibbostium.

6. Diaphananthe acuta (Ridl.) Schltr. comb. nov.

Angraecum acutum Ridl., in Bolet. Soc. Broter. V (1887), p. 199, t. ?

Listrostachys acuta Rolfe, in Flora Trop. Afr. VII (1897), p. [159].

West Africa : St. Thomé [Island].

Rolfe places the species adjacent to D. subclavata (Rolfe) Schltr., which he published first, but I am inclined to compare it with D. mystacidioides (Krzl.) Schltr. In the individual segments of the flowers it probably has the most similarity, but has a cylindrical spur and distinctly larger flowers in denser inflorescences. The lip is more oval with the spur barely longer than the lamina; whilst for D. mystacidioides (Krzl.) Schltr., it is distinctly narrowed towards the mouth and extends beyond the lip-lamina by almost half.

7. Diaphananthe ashantensis (Lindl.) Schltr. comb. nov.

Angraecum ashantense Lindl., Bot. Reg. (1843), Misc. p. 46.

Listrostachys ashantensis Rchb.f., in Walp. Ann. VI (1861), p. 908.

West Africa : Ashanti.

A not very well known species which initially was described from cultivated specimens and which, apparently, has not re-appeared since. Together with D. Papagayi (Rchb.f.) Schltr., it is said to differ from the others of the section in having a broad-pandurate lip-lamina.

8. Diaphananthe bidens (Afz.) Schltr. comb. nov.

Limodorum bidens Afz. ex Sw., Vet. Acad. Handb. Stockh. [1803?], p. 243.

Listrostachys bidens Rolfe, in Flor. Trop. Afr. VII (1897), p. 160.

West Africa : Sierra Leone to Cameroon.

Apparently Angraecum Bakeri Krzl. (Listrostachys Bakeri Rolfe) also belongs to this species, but this matter will probably never be able to be decided with certainty since Kränzlin's TYPE, which was described from living material, was not retained. D. bidens (Afz.) Schltr. is very well characterised by the lip-lamina, which is fairly deeply bilobed in front and with a short triangular mucro between the lobes. In habit the species is very similar to D. longissima (Krzl.).

[Ed. Listrostachys longissima Krzl. = Diaphananthe mystacidioides (Krzl.) Schltr.].

9. Diaphananthe divitiflora (Krzl.) Schltr. comb. nov.

Listrostachys divitiflora Krzl., in Engl. Jahrb. XXII (1895), p. 28.

East Africa : Uganda.

Both in habit and size of the flower, this species doubtless is closest to

D. acuta (Ridl.) Schltr. However, it has a labellum which is slightly incised in front and with a spur uniformly swollen towards the apex and having the length of the lip-lamina.

10. Diaphananthe Margaritae (De Wildem.) Schltr. comb. nov.

Listrostachys Margaritae De Wildem., Pl. Utiles Congo I (1903), p. 150.

West Africa : Congo Basin.

According to the description to hand, this species should be very similar to D. bidens (Afz.) Schltr., but differing in the 5.0mm long, blunt spur which in size, exceeds the oboval c. 1.5mm long, 1.0mm broad lip by a factor of three.

11. Diaphananthe monodon (Lindl.) Schltr. comb. nov.

Angraecum monodon Lindl., in Paxt. Fl. Gard. II (1852), p. 102.

Listrostachys monodon Rchb.f., in Walp. Ann. VI (1861), p. 908.

West Africa : Gabon.

Like D. ashantensis (Lindl.) Schltr., this species is known only from a cultivated specimen. However, it is said to differ from its relatives by the almost circular lip-lamina. The slightly bent spur which is swollen in front is said to exceed the lip-lamina in size by a factor of one half.

12. Diaphananthe mystacidioides (Krzl.) Schltr. comb. nov.

Listrostachys mystacidioides Krzl., in Engl. Jahrb. XXVIII [1900], p. 170.

Listrostachys longissima Krzl., in Engl. Jahrb. XLVIII (1912), p. 400.

West Africa : Cameroon.

In habit the species is most similar to D. bidens (Afz.) Schltr., but the inflorescences are much longer. The flowers are of about the same size, but the lip-lamina is more square-oval and obtuse in front, with a short mucro. The spur is thick cylindrical, blunt and is fairly markedly constricted close to the mouth; it is about half as long again as the lip-lamina.

13. Diaphananthe Papagayi (Rchb.f.) Schltr. comb. nov.

Listrostachys Papagayi Rchb.f., in Flora (1865), p. 189.

West Africa : Principe Island [Guinea].

The species is said to be most closely related to D. ashantensis (Lindl.) Lindl. and, like it, has a longish-pandurate labellum, but differing from it in that the slender (not clavate-swollen) spur is double the length of the sepals. According to Welwitsch the stems are said to be pendulous and to reach a length of 10-12 feet.

14. Diaphananthe producta (Krzl.) Schltr. comb. nov.

Mystacidium productum Krzl., in Engl. Jahrb. XXII (1895), p. 30.

West Africa : Cameroon.

In habit this species has a strong resemblance to D. bidens (Afz.) Schltr., but the leaves are usually shorter and more constricted at the base of the blade; also the inflorescences are even more slender and appreciably laxer. The flowers are smaller than for D. bidens (Afz.) Schltr. and have an almost square labellum, distinctly short bilobed in front, and which is distinctly narrowed in the front third, so that it could be regarded almost as square. The blunt spur which is swollen in front is markedly constricted at the mouth.

15. Diaphananthe Quintasii (Rolfe) Schltr. comb. nov.

Angraecum Quintasii Rolfe, in Bolet. Soc. Brot. IX (1891), p. 140.

West Africa : St. Thomé Island and Angola.

A specimen sent from Angola under Rolfe's name agrees so well with the description that I can probably accept its being this species. I have not seen the TYPE. The species appears in its flowers to have the closest relationship to D. Bueae Schltr., but has narrower, up to 7.5cm long, up to 8.0mm broad leaves and laxer, pendulous, up to 11cm long inflorescences. The sepals and petals are longish, blunt, c. 4.0mm long, the latter slightly somewhat narrower. The ovate, blunt lip with a short crest in front of the spur-mouth, has a 7.5mm long spur, slightly inwards bent and swollen at the apex.

16. Diaphananthe subclavata (Rolfe) Schltr. comb. nov.

Angraecum subclavatum Rolfe, in Boll. Soc. Brot. IX [1892], p. 140.

Listrostachys subclavata Rolfe, in Flor. Trop. Afr. VII (1897), p. 160.

West Africa : St. Thomé [Island].

A little known species which is said to be related to D. ashantensis (Lindl.) Schltr., but which differs in the ovate-elliptical, pointed, non-pandurate labellum. The spur is said to be not very swollen in front and not to exceed the lip-lamina in length. To date, only not fully developed flowers of the species are known.

17. Diaphananthe subfalcifolia (De Wildem.) Schltr. comb. nov.

Angraecum subfalcifolium De Wildem., in Bull. [Jard.] Bot. Brux. V (1916), p. 192.

Listrostachys subfalcifolia De Wildem., in Bull. Jard. Bot. Brux. V (1916), p. 191.

West Africa : Congo.

Related to D. bidens (Afz.) Schltr., but differing in the shape of the lip.

18. Diaphananthe falcata (De Wildem.) Schltr. comb. nov.Listrostachys falcata De Wildem., Plant. Utiles Congo I (1903), p. 147.

West Africa : Congo Basin.

This species is fairly closely related to D. fragrantissima (Rchb.f.) Schltr. Its leaves are falcate, 30-40cm long and 3.0-4.5cm broad. The racemes can be up to 45cm long. The linear, pointed sepals and petals are 1.6-1.7cm long, the lip ovate-longish, margined in front, c. 1.0cm long and 6.0mm broad, with a c. 3.0-5.0 mm long mucro, having a slightly uneven margin. The 10.0-12.0mm long spur is cylindrical and slightly bent at the middle.

19. Diaphananthe fimbriata (Rolfe) Schltr. comb. nov.Listrostachys fimbriata Rolfe, in Kew Bull. (1906), p. 115.

East Africa : Uganda.

Clearly, one of the largest-flowered species of the section which is related to D. fragrantissima (Rchb.f.) Schltr., but which is readily distinguished by the longer-extended sepal and petal tips and the thinner and longer spur. The inflorescences are said to be c. 30cm long.

20. Diaphananthe fragrantissima (Rchb.f.) Schltr. comb. nov.Listrostachys fragrantissima Rchb.f., in Flora (1865), p. 190.

West Africa : Angola.

This species is, in appearance, very similar to D. Welwitschii Rchb.f., but differs specifically in the longer and more falcate leaves of D. fragrantissima (Rchb.f.) Schltr., with its c. 4.0mm broad spur, broadened only on one side. The inflorescences of D. fragrantissima (Rchb.f.) Schltr. attain a length of one foot or more.

[21.] Diaphananthe Kirkii (Rolfe) Schltr. comb. nov.Listrostachys Kirkii Rolfe, in Flor. Trop. Afr. VII (1899), p. 164.

East Africa : Usambara.

Not unlike the previous one, but with smaller and more delicate flowers in slender, up to 40cm long, pendulous racemes. The lip is broad-elliptical and blunt, with the spur barely longer, slightly bent towards the mouth and narrowed appreciably and fairly suddenly.

[22.] Diaphananthe Muansae (Krzl.) Schltr. comb. nov.[Angraecum] Muansae Krzl., in Orchis II (1908), p. 99.

East Africa.

I maintain a certain doubt whether the species is different from D. fimbriata (Rolfe) Schltr., since the description of the latter very well matches Kränzlin's TYPE, which is stored at the Berlin Herbarium. The exception is that in this

case the labellum can be described as being 'panduratum'. In other respects the dimensions agree reasonably well.

[23.] Diaphananthe vandiformis (Krzl.) Schltr. comb. nov.

Listrostachys [vandiformis] Krzl., in Orchis II (1908), p. 136.

Angraecum [Ledermannianum] Krzl., in Engl. Bot. Jahrb. LI (1914), p. 397.

West Africa : Cameroon.

A very robustly growing species with pendent, up to 45cm long racemes. The greenish yellow, almost yellow flowers are as those of D. pellucida (Lindl.) Schltr., but as for all species of the section, the flowers face each other in two's, less often in three's. The almost square lip-lamina is slightly constricted towards the front and tapers off into a fairly large mucro. The spur which narrows towards the mouth is expanded, particularly in the middle and laterally is somewhat compressed; its length (1.0cm) about equals that of the lip-lamina.

[24.] Diaphananthe Welwitschii (Rchb.f.) Schltr. comb. nov.

Listrostachys Welwitschii Rchb.f., in Flora (1865), p. 190.

West Africa : Angola.

In describing D. fragrantissima (Rchb.f.) Schltr. I have already mentioned that the species under consideration here is closely related to it, but that it differs in the shorter leaves and the spur, which is uniformly swollen on both sides.

9. Beclardia A.Rich. (emend.)

Orch. Iles de Fr. et Bourb. (1828), p. 78.

I have re-established the genus here, but have delimited it in a different manner from that done by A. Richard. To avoid the creation of synonyms, I have accepted Richard's names, which was all the easier because the majority of species belonging here represent Richard's genus. Initially, I shall provide the new genus diagnosis here, since that given by A. Richard included Cryptopus as well.

Beclardia A. Rich. (charact. emend.).

Sepala erecto-patentia oblongo-ligulata, subacuta vel apiculata, lateralia obliqua. Petala erecto-patentia oblique spathulata vel subspathulata parte superiore oblique rhombea vel obovato-cuneata, subacuta vel apiculata, sepala paulo sed distincte superantia. Labellum concavum, circuitu quadratum vel latiovato-quadratum, antice emarginatum cum apiculo interjecto, superne medio verrucis numerosis sparsis ornatum, basi sensim in calcar infundibulare transeuns; calcare apice attenuato, obtuso, recto vel levissime incurvulo. Columna brevis, apoda, rostello producto alte bifido. Anthera cucullata, antice apiculata. Pollinia globosa, stipite oblanceolato, leviter bilobulato, discidio parvulo ovali.

Plantae epiphyticae brevicaules; caulibus dense foliatis, crassis; foliis erecto-patentibus lineari-ligulatis, inaequaliter et obtuse bilobulatis, coriaceis; racemis laxae pauci- vel multi-floris erectis vel suberectis, gracilius pedunculatis, folia distincte superantibus; bracteis parvulis, ovario pedicellato multo brevioribus;

floribus erecto-patentibus, niveis vel tenuiter purpurascens, pulchellis, magnitudine mediocribus.

Species 2 adhuc notae insularum Mascarensium et Madagaskariae speciales.

I have considered for a long time whether it could be possible to unite the two species in question here with one of the other genera, but I finally convinced myself that they stand too isolated. Angraecum itself is completely out of the question, likewise the other genera with a margined rostellum.

Amongst the genera with a beaked or extended rostellum Beclardia would appear to have the most accord with Eurychone, but differs considerably in habit, in the coarse flowers, in the lip-lamina, which is covered by numerous warts right in the centre, and in the structure of the column with the deep two-cleft rostellum, also in the pointed anther and in the pollinia.

The geographic distribution, as for so many of the genera established here, also again indicates peculiarly well an accord in having a restricted occurrence. With our not very good and extensive knowledge of the orchids of Madagascar and those groups of islands surrounding this monster island, I consider it possible that at a later date further species will be found for inclusion here.

1. Beclardia brachystachya (Thou.) A.Rich., Orch. Iles de Fr. et Bourb. (1828), p.80.

Epidendrum [brachystachyon] Thou., in Orch. Iles Afr. (1822), t. [84].

Aeranthus brachystachya Boyer, Hort. Maur. (1837), p. 314.

Oeonia brachystachya Lindl., Gen. et Spec. Orch. (1833), p. 245.

Madagascar, Mascarenes.

Finet united this species with B. macrostachys (Thou.) A.Rich., but I do not agree with him, I consider it specifically separate. The inflorescences have fewer flowers, the sepals are broader, the petals are more longish-cuneate, almost truncated at the apex, with a very short mucro, the lip is broad ovate-square, very undulate at the margin in the front half and the apex of the spur, not greatly, but distinctly bent. Furthermore, the flowers are said to be reddish.

2. Beclardia macrostachys (Thou.) A.Rich., Orch. Iles de Fr. et Bourb. (1828), p.

79, t. 11.

Epidendrum macrostachys Thou., Orch. Iles Afr. (1822), t. 83.

Aerides macrostachyon Sprgl., Syst. III (1826), p. 719.

Oeonia macrostachya Lindl., Gen. et Spec. Orch. (1833), p. 245.

Aeranthus macrostachyus Rchb.f., in Walp. Ann. VI [1864], p. 900.

Raphidorrhynchus macrostachys Finet, in Bull. Soc. Bot. Fr. LIV (1908), Mem.

IX, p. 43, t. VIII.

Madagascar, Mascarene [Islands].

I have already drawn attention to the differences between the two species.

B. macrostachys (Thou.) A.Rich. has white flowers in more abundant-flowered, longer racemes, narrower sepals, more spathulate, almost pointed petals, which are almost

clawed below, with a labellum wide in front and in having a straight spur.

10. Phormangis Schltr. gen. nov.

Amongst the West African species so far considered as Angraecum, there was one plant which appeared to have no relationship with any of the others. After investigating this species in the living state, I have arrived at the conclusion that it should be regarded as a representative of a separate genus, which I shall now describe.

Phormangis Schltr. gen. nov.

Sepala petalaeque similia oblonga, obtusa, erecto-patentia. Labellum ellipticum obtusum, concavum, petalis aequilongum, calcare cylindraceo, obtuso, supra medium leviter dilatato, ostio angusto, ovario brevior. Columna mediocris, apoda, rostello simplici, subulato, satis longo. Anthera quadrato-galeata, antice truncata. Pollinia globosa, stipite lineari, viscidio oblongo, magno. Ovarium cylindricum sessile.

Planta epiphytica, parvula, caulibus vulgo aggregatis, ca. 5 cm longis, dense foliatis, vaginis foliorum omnino obtectis; foliis patentibus, linearibus, carnosius; floribus 2—3nis in axillis foliorum fasciculatis, subsessilibus, parvulis, niveis.

Species singula adhuc nota Africae occidentalis silvium indigena.

The genus belongs to the smallest-flowered types of the angraecoid orchids. In floral structure it has a certain similarity to Chamaeangis, however, the habit, and in particular the inflorescence, is so different and so isolated in the whole affinity, that it is probably fitting to separate it generically.

1. Phormangis Schumanni (Krzl.) Schltr. comb. nov.

Angraecum Schumanni Krzl., in Mitteil. Dtsch. Schutzgeb. II (1889), p. 159.

Mystacidium Schumanni Rolfe, in Flor. Trop. Afr. VII (1897), p. 173.

West Africa : From Nigeria to Cameroon.

This species clearly has a very local distribution. It is not uncommon in the high precipitation areas at the base of the Cameroon Range on tall trees, but since its discovery by J. Braun in 1888, peculiarly, it was not re-discovered until 1905 by me, and at about the same time H. Winkler collected it. I have not seen the plant from Nigeria, referred to by Rendle.

11. Sarcorhynchus Schltr. gen. nov.

The genus to be described here is a peculiar small-flowered one. Initially I had hoped to unite it with Chamaeangis, but too many of its characters speak against this. The nature of the genus is regarded as follows.

Sarcorhynchus Schltr. gen. nov.

Sepala petalaeque erecto-patentia, oblonga vel oblongo-ligulata, obtusa; petalis quam sepala distincte brevioribus, obliquis. Labellum circuitu oblongum medio pandurato angustatum, antice abrupte apiculatum, concavum, longitudine sepalis paulo brevius, calcare cylindraceo obtuso medio paululo dilatato, leviter falcato-adscendente, obtuso, ovario fere aequilongo. Columna omnino apoda, brevis; rostello lineari, carnosius, deflexo; stigmatibus rotundato-excavato. Anthera semiglobosa obtusa. Pollinia globosa, stipitibus

2 separatis, linearibus, brevibus, viscidii 2 separatis ligulatis, amplis. Ovarium cylindricum sessile.

Plantae epiphyticae caulescentes, 10—15 cm longae; foliis ligulatis, patentibus, inaequaliter et obtuse bilobulatis, subcoriaceis; racemis ut videtur patulis vel patentibus, laxè multifloris, foliorum fere longitudine, bracteis deltoideis, parvulis, ovario multo brevioribus; floribus parvulis, flavido-virescentibus, glaberrimis.

Species 2 adhuc notae (quarum una nondum descripta) Africae occidentalis incolae.

As indicated already above, the genus is related to Chamaeangis. However, it differs in the shapes of the lip and spur and in the carnose, non-cleft rostellum.

It is interesting that two very similar species are found in Cameroon, but so far only one of them has been described. The second one will be described soon at another opportunity.

1. Sarcorhynchus polyanthus (Krzl.) Schltr. comb. nov.

Mystacidium polyanthum Krzl., Engl. Jahrb. LI (1914), p. 394.

West Africa : Cameroon.

This differs from the second species in the more robust growth, longer, more abundant-flowered inflorescences, larger flowers and in the labellum, much broader in the front, compared with the lower part. The two species are very similar in the shape and structure of the column.

2. Sarcorhynchus saccolabioides Schltr. sp. nov.

West Africa : Cameroon.

As discussed above already, this species is recognised by the smaller flowers, weaker growth and fewer-flowered inflorescences. The lip is of equal width at the apex and above the base, and with a constriction at the middle.

12. Bolusiella Schltr. gen. nov.

The species united here to a genus are easily recognised in their habit. They have equitant, carnose leaves attached to a much shortened stem with dense inflorescences overtopping the leaves and with small white flowers pointed in one direction. The diagnosis of the genus follows.

Bolusiella Schltr. nov. gen.

Sepala petalaeque subpatentia, oblonga, subaequalia. Labellum petalis bene simile, planum integrum, oblongum vel ovato-lanceolatum, obtusum vel acutum, calcare dependente, cylindraceo, obtuso, limbum labelli longitudine haud excedente, ostio angusto. Columna crassiuscula, media longitudine, semiteres, marginibus medio dilatatis, apice leviter contracta. Anthera quadrato-cucullata erostis. Pollinia oblongoidea, stipite ~~singulo vel duplici~~ viscidio communi affixa. Rostellum lineare acutum, apice hamato-adscendens.

Plantae pusillae epiphyticae, subacaules; foliis equitantibus, ensiformibus, carnosis; inflorescentiis pedunculatis dense multifloris, secundis, pedunculo cataphyllis numerosis obsesso, folia superantibus; bracteis persistentibus satis magnis; floribus parvulis, niveis, tenuibus.

Species 5 adhuc notae Africae tropicae et austro-occidentalis incolae.

The genus is characterised not only by its habit, but also by the shape of its flowers and by the column being appreciably swollen at the middle, in relation to the size of the flower, with the rostellum being bent upwards at the apex.

I am particularly pleased to dedicate this genus, whose first species was discovered in South Africa, to the late Harry Bolus, the great investigator of the South African orchid flora.

1. Bolusiella Batesii (Rolfe) Schltr. comb. nov.

Listrostachys Batesii Rolfe, in Flor. Trop. Afr. VII (1897), p. 167.

West Africa : Cameroon, Gabon.

This species is distinguished from the others by the longer and more vigorous racemes.

2. Bolusiella imbricata (Rolfe) Schltr. comb. nov.

Listrostachys imbricata Rolfe, in Kew Bull. (1910), p. 160.

West Africa : Gold Coast.

This species is said to be related to B. Zenkeri (Krzl.) Schltr., but differing in the shorter, 1.0-2.5cm long, 5.0-6.0cm [mm?] broad leaves, pointed, very similar sepals and petals, an almost pointed lip-lamina, and in the longish, slightly inflated and bent spur, which is distinctly shorter than the lamina.

3. Bolusiella iridifolia (Rolfe) Schltr. comb. nov.

Listrostachys iridifolia Rolfe, in Flor. Trop. Afr. VII (1897), p. 167.

West African forest region : Angola.

In common with B. Maudae (Bol.) Schltr., this species has blunt leaves. To date only fruiting specimens are known.

4. Bolusiella Maudae (Bol.) Schltr. comb. nov.

Angraecum Maudae Bol., Icon. Orch. Austr. Afr. I (1893), t. 9.

South-east Africa : Zululand.

This differs in many ways from its definite close relative B. Zenkeri (Krzl.) Schltr. It is more compact in growth than any of the other species. In this case the lip is pointed, but blunt for all the others. According to Rolfe, the pollinia are attached to a common stipe.

5. Bolusiella Zenkeri (Krzl.) Schltr. comb. nov.

Listrostachys Zenkeri Krzl., in Engl. Jahrb. XIX (1894), p. 252.

Angraecum Zenkeri Schltr., Westafr. Kautschuk-Exp. (1900), p. 285.

West Africa : Cameroon.

The pollinia of this species are attached to two separated stipes. The lingiform-longish lip is blunt. The pedicels of the inflorescence are very slender.

13. Chamaeangis Schltr. gen. nov.

Into this separate genus, I have united a series of small-flowered species which did not appear to fit into any of the previously known genera, but which in themselves form a not unnatural group to which I ascribe the name Chamaeangis.

Chamaeangis Schltr. gen. nov.

Sepala petalaeque patentia vel subpatentia, aequalia vel subaequalia, vulgo obtusa, oblonga vel ovalia, rarius ligulata, textura vulgo carnosula. Labellum petalis vulgo simile sed paulo latius, carnosulum, vulgo latiovale rarius ligulatum, laeve, calcare cylindrico, decurvo, apicem versus saepius plus minus dilatato, rarius ovarium excedente, ostio angusto. Columna perbrevis, crassa, apoda; rostello distincte producto; stigmatibus satis magno. Anthera cucullata, antice truncata. Pollinia globosa vel subglobosa, stipite singulo vel saepius 2 separatis, anguste linearibus, gracilibus, viscidio rotundato vel ovato, singulo vel 2 separatis. Ovarium breviter pedicellatum vel subsessile, cylindricum.

Plantae epiphyticae brevicaules vel caule usque pedali, bene foliato; foliis erecto-patentibus vel patentibus vulgo carnosius, lineari-ligulatis vel ligulatis, rarius obovato-ligulatis; racemis laxe vel dense pluri- vel multifloris, secundis vel quaquaversis, interdum floribus 3—4nis plus minusve dense verticellatis; floribus semper parvulis vel perparvulis, vulgo virescenti-flavidis, vel virescenti-albidis, interdum ochraceis; bracteis minutis ovario multo brevioribus.

Species ca. 12 adhuc notae Africae tropicae et insularum Madagascariensium, Mascariensium et Comorensium incolae.

Initially I thought that I could establish two sections based on the whorled flowers of several species, but it became apparent, however, that very closely related species such as C. vesicata (Lindl.) Schltr. and C. Lecomtei (Finet) Schltr. would thereby have been torn apart. I now consider it desirable to distinguish two sections based on their pollinaria, viz.

§ I. Eu-Chamaeangis, with separated pollinia stipes and a common viscid disc. The tropical African species belong here almost exclusively.

§ II. Microterangis, with a common stipe to the pollinia and a roundish viscid disc. This section comprises only species from Madagascar and the Comoro Islands, probably to be augmented by others from those regions. These species, furthermore, always have thin leaves and barely develop a stem. I consider it not improbable that this section may, later on, be elevated to the rank of genus, since in this case the differences in the pollinaria have achieved a certain constancy and go hand-in-hand with other characters.

§ I. Eu-Chamaeangis.1. Chamaeangis Dewevrei (De Wildem.) Schltr. comb. nov.

Listrostachys Dewevrei De Wildem., Pl. Utiles Congo I (1903), p. 145.

West Africa : Congo Basin.

Short stem with leaves 20–26cm long and 2.5cm broad. Racemes densely multi-flowered, up to 40cm long, with small flowers in three's in whorls. Sepals and petals oval, c. 1.5mm long. Lip oval with 6.0mm long spur inflated at the apex.

Readily distinguished from C. ichneumonea (Lindl.) Schltr. by the flowers arranged in whorls.

2. Chamaeangis gracilis (Thou.) Schltr. comb. nov.

Angraecum gracile Thou., in Orch. Iles Afr. (1822), t. 77.

Mystacidium Thouarsii A. Finet, in Bull. Soc. Bot. Fr. LIV (1907), Mem. IX, p. 57.

Madagascar.

A somewhat aberrant species in having the viscid disc consisting actually of two halves joined by a membrane. The sepals and petals are slightly narrower than for the other species and the lip, at its base, has on both sides, a lobe-like extension.

3. Chamaeangis ichneumonea (Lindl.) Schltr. comb. nov.

Angraecum ichneumoneum Lindl., Journ. Linn. Soc. VI (1862), p. 136.

Listrostachys ichneumonea Rchb.f., in Gard. Chron. (1887), II, p. 681.

West Africa : From the Niger Delta to the Congo Basin.

This very characteristic species does not occur as frequently as often considered. Many specimens which I have seen described as 'Angraecum ichneumoneum Lindl.' proved to be Chamaeangis resicata (Lindl.) Schltr. The two species are, however, readily distinguished since for C. ichneumonea (Lindl.) Schltr. the flowers are placed alternately in the whole inflorescence, are somewhat larger and, with a longer spur having a more fusiform, not blister-shaped inflated apex.

4. Chamaeangis Lecomtei (Finet) Schltr. comb. nov.

Listrostachys Lecomtei Finet, in Bull. Soc. Bot. Fr. LIV (1907), Mem. IX, p. 54, t. XI.

West Africa : Gabon.

I have no doubt that a plant from the vicinity of Libreville, which I identified as this species, really belongs here. The species is closely related to C. vesicata (Lindl.) Schltr. but is, as Finet very aptly noted, easily recognised by the broader leaves and more slender, lax, multi-flowered racemes with alternating flowers.

5. Chamaeangis odoratissima (Rchb.f.) Schltr. comb. nov.

Angraecum odoratissimum Rchb.f., in Bonpl. I (1856), p. 326.

Listrostachys odoratissima Rchb.f., in Gardn. Chron. (1880), p. 806.

Listrostachys Pynaertii De Wildem., Not. Pl. Utiles Congo II (1906), p. 164.

West Africa : From Cameroon to the Congo Basin.

I don't consider myself in error if I identify a common species in West Africa, which has appeared often in cultivation under this name latterly, as being Reichen-

bach's species. In habit the species has similarity with C. vesicata (Lindl.) Schltr., but with blunter, broader leaves and denser racemes, with small flowers arranged in 4 to 8's in a whorl and with a very pleasant fragrance. The sepals and petals are roundish, blunt and the lip likewise c. 2.5-3.0mm long. The slender spur is not markedly swollen towards the apex and is c. 1.5cm long.

6. Chamaeangis thomensis (Rolfe) Schltr. comb. nov.

Angraecum thomense Rolfe, in Bol. Soc. Broter. IX (1890), p. 141.

Listrostachys thomensis Rolfe, in Flor. Trop. Afr. VII (1897), p. 163.

West Africa : St. Thomé Island.

This species is said to be closely related to C. ichneumonea (Lindl.) Schltr., but differs in the linear, 12-15cm long, 1.2-1.7cm broad leaves and in the spur, which is only 1.0cm long, somewhat twisted and only slightly swollen at the apex.

The flowers otherwise are almost as large as those of C. ichneumonea (Lindl.) Schltr.

7. Chamaeangis vagans (Lindl.) Schltr. comb. nov.

Angraecum vagans Lindl., in Journ. Linn. Soc. VI (1862), p. 135.

Listrostachys vagans Rolfe, in Flor. Trop. Afr. VII (1897), p. 162.

West Africa : Principe Island.

A still little known species with extended, stemmed, longish-elliptical, 20-25 cm long, up to 5.0cm broad leaves and with, up to 30cm long, pendulous racemes of small, yellow flowers which resemble those of C. vesicata (Lindl.) Schltr., but which are not arranged in two's at right angles. The sepals and petals are c. 3.0 mm long, the labellum according to Rolfe, tridentate in front, but this probably cannot be very prominent. The spur is bent, inflated at the apex and c. 1.25cm long.

8. Chamaeangis vesicata (Lindl.) Schltr. comb. nov.

Angraecum vesicatum Lindl., in Bot. Reg. (1843), Misc. p. 6.

Listrostachys vesicata Rchb.f., in Flora (1865), p. 190.

Angorchis vesicata O.Ktze., Rev. Gen. II (1891), 652.

? Epidorchis vesicata O.Ktze., l.c. (1891), p. 660.

West Africa : From Sierra Leone to the Congo Basin.

A species very characteristic in its fairly pointed, thick, linear leaves and 3.0mm broad, greenish yellow flowers with a c. 1.0cm long, bent spur swollen basically at the apex. It is noteworthy that the lower flowers, or also the uppermost ones are located alternately, whilst at the centre and generally in the remaining parts of the raceme, the flowers face each other in two's.

9. Chamaeangis urostachya (Krzl.) Schltr. comb. nov.

Listrostachys urostachya Krzl., in Engl. Bot. Jahrb. XXII (1895), p. 29.

East Africa : Usambara.

Without doubt the species is most closely related to C. odoratissima (Rchb.f.) Schltr. It has small-longish, 10-12cm long leaves and up to 30cm long inflorescences, usually with 2-3 flowers arranged in whorls, which resemble those of C. odoratissima (Rchb.f.) Schltr., but which are not arranged so densely. The sepals and petals are broad-oval, blunt, and c. 3.0mm long. The lip is very similar to the petals, being equally blunt and with a cylindrical, slightly bent c. 2.0cm long spur, which is slightly swollen at the centre.

§ II. Microterangis.

10. Chamaeangis divitiflora Schltr. comb. nov.

Angraecum divitiflorum Schltr., in Ann. Mus. Col. Marseille (1913), p. 49, t. XXII.

Madagascar.

Almost stemless, with 3-5 linguiform, up to 6.0cm long leaves, which are somewhat narrowed towards the base. The racemes are densely multi-flowered, barely overtopping the leaves. Flowers small, clearly white-yellowish. Sepals and petals elliptical, blunt, c. 1.75mm long. Lip almost circular, c. 1.75mm long and 2.0mm broad with a short mucro, and a straight cylindrical spur, slightly swollen towards the apex.

11. Chamaeangis Hariotiana (Krzl.) Schltr. comb. nov.

Mystacidium Hariotianum Krzl., in Morot, Journ. de Bot. XI (1897), p. 153.

Saccolabium Hariotianum Finet, in Bull. Soc. Bot. Fr. LIV (1907), Mem. IX, p. 32, t. VI.

Comoro Island.

Undoubtedly, the species is closely related to the one above and to the two following. Its leaves are more longish-oval, up to 10.0cm long and up to 4.0cm broad. The multi-flowered inflorescences, pointing in one direction, reach a length of up to 15cm. The flowers are ochre-yellow with longish, up to c. 1.5mm long sepals and ovate petals and the labellum, with the spur, which is slightly swollen at the apex in a clavate manner, being of about the same length as the ovary. The pollinia are attached to an ovate viscid disc by means of slender stipe, which narrows towards below.

12. Chamaeangis oligantha Schltr. comb. nov.

Angraecum oliganthum Schltr., in Ann. Mus. Colon. Marseille (1913), p. 54, t. XXII.

Madagascar.

This species is very similar to C. divitiflora Schltr., but has slightly narrower leaves and with flowers laxly arranged in inflorescences, which distinctly overtop the leaves. The flowers are slightly longer than for C. divitiflora Schltr. and with slightly narrower, longish, c. 2.5mm long sepals and petals, a more rhombic-ovate, pointed labellum and an only 1.25mm long, short-clavate spur. The pollinaria completely resemble those of C. Hariotiana (Krzl.) Schltr.

13. Chamaeangis Pobeguini (Finet) Schltr. comb. nov.

Raphidorrhynchus Pobeguini Finet, in Bull. Soc. Bot. Fr. LIV (1907), Mem. IX, p. 41, t. VII.

Comoro Islands.

A very small species with leaves said to be only 1.7cm long and 6.0mm broad. In contrast, the inflorescence is said to be 7.0cm long, with 3.0-4.0mm broad flowers having ovate, pointed sepals, distinctly narrower petals and a rhombic, indistinctly trilobed lip, with a c. 2.0mm long spur, markedly bent forwards, with the apex swollen in a thick clavate manner.

14. Leptocentrum Schltr.

Orchid. (1914), p. 600.

In order to maintain the TYPES of the various genera established and accepted here as pure as possible, it is desirable to consider such species as the former Angraecum caudatum Lindl., for example, as separate genera. I therefore suggest this well-known plant as the TYPE of a separate genus.

Leptocentrum Schltr.

Sepala petalaeque similia, patentia, lineari-lanceolata vel ligulato-lanceolata acuminata. Labellum e basi cuneata obovatum, margine minute serrulato-dentatum, antice in acumen longum productum, planum, basi margine utrinque carina brevi lobuliformi donatum, calcare filiformi, perlongo, flexuoso. Columna satis longa subcylindrica, basi supra ostium calcaris in dentem brevem producta, rostello elongato, subporrecto. Anthera cucullata, rostrata. Pollinia ellipsoidea, stipitibus 2 basi conatis, gracilibus, apicem versus paulo dilatatis, viscidio parvulo rotundato.

Plantae epiphyticae, acaules vel subacaules; foliis ligulatis, apice inaequaliter et obtuse bilobulatis, coriaceo-carnosulis, amplis, racemo pendulo, gracili, perlaxe 4-8-floro, rhachi flexuoso; bracteis parvulis; floribus speciosis, magnis, sepalis petalisque viridibus, labello niveo, calcare flavido, columna aurea.

Species 3 adhuc notae, Africae occidentalis et insularum Comoro indigenae.

The genus is probably best placed adjacent to Aerangis, but can be distinguished from the latter by the shape of the lip and presence of calli at the base of the lip-lamina, as well as by the small tooth formed in front of the column-base at the upper margin of the spur-mouth. The nature of the pollinaria is most reminiscent of Cyrtorchis, but as mentioned here, often, should not be given too much importance.

The typical species, L. caudatum (Lindl.) Schltr., is a plant at present in cultivation in our hothouses and which always arouses attention by its bizarre

flower shapes.

1. Leptocentrum amaniense (Krzl.) Schltr. comb. nov.

Listrostachys amaniensis Krzl., in Engl. Jahrb. XLIII (1909), p. 397.

East Africa : Usambara.

This extremely interesting species is probably best placed here. In habit it is said to resemble L. caudatum (Lindl.) Schltr., but is much smaller and has shorter inflorescences. The TYPE in the Berlin Herbarium is not quite complete, but I consider that there is no doubt of a relationship to L. caudatum (Lindl.) Schltr. The pollinia are located on a linear ligament divided in the upper third, which is attached to a longish, fairly large viscid disc. For further details I refer to the TYPE description of the species.

2. Leptocentrum caudatum (Lindl.) Schltr. comb. nov.

Angraecum caudatum Lindl., in Bot. Reg. (1836), t. 1844.

Listrostachys caudata Rchb.f., in Walp. Ann. VI (1861), p. 907.

West Africa : From Sierra Leone as far as Cameroon, especially on tall trees in the lowland forests.

The leaves of the plant not infrequently are 20-30cm long and 2.5-4.0cm broad. Frequently, the inflorescences attain a length of 50cm and more; I have seen some over 60cm. The diameter of the flowers is c. 8.0-9.0cm in breadth. The spur is 20-25cm long and is always slightly twisted.

3. Leptocentrum spiculatum (Finet) Schltr. comb. nov.

Raphidorrhynchus spiculatus A. Finet, in Bull. Soc. Bot. Fr. LIV (1907), [Mém. IX], p. 40, t. 8.

Madagascar region: Comoro Islands.

This plant clearly is related to L. caudatum (Lindl.) Schltr., but is smaller in all segments and characterised by the pollinarium having a single common stipe.

15. Aerangis Rchb.f.

In Flora (1865), p. 190.

(Radinocion Ridl., in Bolet. Soc. Brot. V (1887), p. 200, f. A.)

I consider it quite acceptable to resurrect here the genus established by Reichenbach fil. in 1865.

The genus belongs to the genus-group having an extended rostellum and probably is closely related to Leptocentrum and Mystacidium, but is characterised by the usually longish sepals and petals being similar and by the somewhat broader, flat, undivided lip-lamina, with the usually filiform and long spur having a narrow mouth. The moderately short column is usually narrowed towards the base and expanded at the level of the stigma, yet on the other hand is again contracted at the clinandrium. The pollinia usually are located on a common, less often on two

separated stipes and with a common viscid disc.

In habit all the species are, in common, almost stemless and with usually whitish or white flowers arranged in racemes. At times these racemes attain quite an appreciable length, which has in no minor way contributed to the popularity of many species.

The number of species which I consider as belonging here is about 50, but it is almost certain that a whole further series, which at present are not clarified, will be added.

By far the majority of the species have a common stipe for the two pollinia, only a few being characterised in having two stipes which are completely separate down to the base, where they are attached to a common viscid disc. Whether these should, at a later date, be considered as a separate genus I shall now leave undecided, since the material of many other species needs to be examined before this question can be answered conclusively. The species with separated pollinia stipes I have, however, for the present treated as a separate section, viz.

§ I. *Eu Aerangis*, comprising those species with a common stipe.

§ II. *Rangaeris*, comprising those species with two separated pollinia stipes.

In listing the species I should like to stress that amongst those in the first section, there are a few where the pollinia are still insufficiently known, so that the one or other could still belong to the second section.

§ I. *Eu Aerangis*.

1. *Aerangis albidorubra* (De Wildem.) Schltr. comb. nov.

Angraecum albidorubrum De Wildem., in Bull. Jard. Bot. Brux. V (1916), p. 180.

West Africa : Congo.

Related to *A. rhodosticta* (Krzl.) Schltr., but with larger flowers and a differently shaped lip.

2. *Aerangis arachnopus* (Rchb.f.) Schltr. comb. nov.

Angraecum arachnopus Rchb.f., in Bonpl. (1854), p. 93.

West Africa : Gold Coast.

A little-known species which is said to be related to *A. bilobum* (Lindl.) Schltr., but which is said to differ in the more slender growth and narrow-lanceolate, pointed sepals and petals, and in the few-flowered inflorescence. I am inclined to consider this species as *A. Gravenreuthii* (Krzl.) Schltr., but for it the foot-long inflorescence does not agree.

3. *Aerangis articulata* (Rchb.f.) Schltr. [Orchid. (1915), p. 597].

Angraecum articulatum Rchb.f., in Gard. Chron. (1872), p. 73.

Angraecum descendens Rchb.f., l.c. (1882), I, p. 558.

Madagascar.

Most similar to A. Ellisii (Rchb.f.) Schltr., but with slightly smaller, c. 3.0cm broad flowers and a shorter spur. Above all else, it is characterised by the articulated rachis.

4. Aerangis avicularia (Rchb.f.) Schltr. comb. nov.

Angraecum avicularium Rchb.f., in Gardn. Chron. (1887), I, p. 40.

West Africa?

This species could likewise be related to A. Gravenreuthii (Krzl.) Schltr., but is said to have lax, 15 to 20-flowered inflorescences, whilst the latter rarely has more than four flowers. The lip is said to be sharply pointed in front with the spur reaching a length of 10-13cm. The origin of the species, which was described from cultivated specimens, has not been established with certainty.

5. Aerangis Batesii (Rolfe) Schltr. comb. nov.

Angraecum Batesii Rolfe, in Flor. Trop. Afr. VII (1897), p. 139 (non Schltr.).

West Africa : Cameroon.

In habit the species is compared to A. biloba (Lindl.) Schltr., but it has laxer, up to 8-flowered inflorescences, linear-lanceolate, pointed, c. 2.0-2.5cm large sepals and petals, a longish-lanceolate, pointed, revolute labellum and with a 5.5-6.0cm long, somewhat bent, filiform spur.

6. Aerangis biloboides (De Wildem.) Schltr. comb. nov.

Angraecum biloboides De Wildem., in Not. Pl. Utiles Congo I (1903), p. 144.

West Africa : Congo Basin.

As the name states, this species is said to be similar to A. biloba (Lindl.) Schltr. The leaves are obovate, c. 12cm long and 2.5-3.5cm broad. The 6 to 7-flowered inflorescences are said to be 25-30cm long. The sepals and petals are longish-lanceolate and pointed. The c. 7.0cm spur is distinctly longer than for A. biloba (Lindl.) Schltr.

7. Aerangis biloba (Lindl.) Schltr. [Orchid. (1915), p. 598].

Angraecum bilobum Lindl., Bot. Reg. (1840), Misc. 62.

Angraecum apiculatum Hook., Bot. Mag. (1845), t. 4152.

Listrostachys biloba Krzl., in Engl. Jahrb. XXII (1895), p. 28.

Angorchis [biloba] O.Ktze., Rev. Gen. II (1891), p. 651.

West Africa : Upper Guinea.

Similar in habit to the previous one and with obovate-longish, unequally bilobed, up to 15cm long leaves; pendulous, lax, 7 to 12-flowered, up to 25cm long racemes. The sepals and petals narrow-elliptical, pointed, up to 2.5cm long. The lip-lamina slightly broader, pointed, c. 2.0cm long. The spur filiform and c.

4.0cm long.

8. Aerangis appendiculata (De Wildem.) Schltr. comb. nov.

Mystacidium appendiculatum De Wildem., Plant. Nov. Herb. Hort. Then. I (1904), t. 21.

East Africa : Mozambique.

I see no justification for placing the species in Mystacidium. It is one of the smallest-flowered species with 6.0-9.0cm long, and up to 2.0cm broad leaves and c. 10-12cm long, lax, inflorescences. The flowers are 1.5cm in diameter with longish, blunt sepals and petals and a filiform, c. 4.0cm long spur. The stipe of the pollinia appears to be slightly divided towards the apex.

9. Aerangis brachycarpa (A.Rich.) Dur. et Schinz, Conspec. Fl. Afr. V (1895), p. 50.

Dendrobium? brachycarpum A.Rich., Tent. Fl. Abyss. II (1851), p. 282.

Angraecum brachycarpum Rchb.f., in Walp. Ann. III (1852), p. 573.

North East Africa : Abyssinia, Eritrea.

In all appearances this species, of which only fruiting specimens are known, belongs to the affinity of A. biloba (Lindl.) Schltr. and A. biloboides (De Wildem) Schltr. It is said to have a 5.0-7.0cm long spur.

10. Aerangis calantha Schltr. comb. nov.

Angraecum calanthum Schltr., in Engl. Jahrb. XXXVIII (1905), p. 20.

West Africa : Cameroon.

One of the smallest species of the genus, but with flowers three times the size of A. appendiculata (De Wildem.) Schltr., pointed sepals and a more bent, 4.0cm long spur. The leaves are broad-linear, 3.0-8.0cm long and 5.0-8.0mm broad. The inflorescences rarely carry more than 4 laxly-borne flowers.

11. Aerangis citrata (Thou.) Schltr., [Die Orchid. (1915), p. 598].

Angraecum citratum Thou., in Orch. Iles Afr. (1822), t. 61.

Aerobion citratum Sprgl., Syst. III (1826), p. 718.

Angorchis citrata O.Ktze., Rev. Gen. II (1891), p. 651.

Raphidorrhynchus citratus A.Finet, in Bull. Soc. Bot. Fr. LIV., Mém. IX [1907], p. 35.

Madagascar.

A very-well characterised species with yellowish white, c. 2.0cm broad flowers, oval, blunt sepals and petals and an obcordate labellum, with a c. 2.0cm long, bent, filiform spur.

12. Aerangis cryptodon (Rchb.f.) Schltr., [Die Orchid. (1915), p. 598].

Angraecum cryptodon Rchb.f., in Gard. Chron. (1883), I, 307.

Angorchis cryptodon O.Ktze., Rev. Gen. II (1891), p. 651.

Madagascar.

Very similar in habit to A. biloba (Lindl.) Schltr., but with flowers in a c. 25cm long, few-flowered raceme, c. 4.0cm broad. Sepals and petals lanceolate, pointed. Lip longish, with short mucro and a filiform, c. 10-12cm long, twisted spur.

13. Aerangis Ellisii (Rchb.f.) Schltr., [Die Orchid. (1915), p. 598].

Angraecum Ellisii Rchb.f., in Flora (1872), p. 278.

Angorchis Ellisii O.Ktze., Rev. Gen. II (1891), p. 651.

Madagascar.

Very similar to A. articulata (Rchb.f.) Schltr., but more robust with larger, 12-20cm long, 4.0-5.0cm broad leaves, a 40 to 50cm long raceme and c. 5.0cm broad flowers with a 15-17cm long spur.

14. Aerangis fastuosa (Rchb.f.) Schltr., [Die Orchid. (1915), p. 598].

Angraecum fastuosum Rchb.f., in Gard. Chron. (1881), II, p. 748.

Angorchis fastuosa O.Ktze., Rev. Gen. (1891), p. [651].

Raphidorrhynchus fastuosus A.Finet, in Bull. Soc. Bot. Fr. LIV (1907), Mém. IX, p. 38.

Madagascar.

An extremely characteristic and very compact species with 6.0-8.0cm long by 2.5-3.0cm broad leaves and only a 2 to 4-flowered raceme, which only seldom overtops the leaves. Flowers c. 5.0cm in diameter, with narrow-longish, slightly pointed sepals and petals and an elliptical, blunt lip-lamina having a spur c. 7.0 cm long.

15. Aerangis flabellifolia Rchb.f., in Flora (1865), p. 191.

Angraecum flabellifolium Rolfe, in Flora Trop. Afr. VII (1897), p. 135.

West Africa : Angola.

Is the TYPE of the genus and a little known species, which clearly is related to A. biloba (Lindl.) Schltr. It has up to 25cm long, pendulous racemes and flowers which resemble A. Ellisii (Rchb.f.) Schltr., but which are larger and are said to have a 15-25cm long spur. The stipe of the pollinia is divided downwards from the middle.

16. Aerangis flexuosa (Ridl.) Schltr. comb. nov.

Radinocion flexuosum Ridl., in Bolet. Soc. Brot. V (1887), p. 200, fig. A.

Angraecum flexuosum Rolfe, in Flor. Trop. Afr. VII (1897), p. 139.

West Africa : St. Thomé Island.

The species has a more slender column than the others and in this respect approaches the genus Leptocentrum, but it lacks the characteristic labellum of the

latter. The plant clearly is related to A. calantha Schltr., but has broader leaves and more abundantly-flowered inflorescences with c. 2.0cm broad flowers having pointed segments, and with a 1.25–1.5cm long spur. The plant is still in need of further investigation.

17. Aerangis fuscata (Rchb.f.) Schltr., Die Orchid. [1915], p. 598.

Angraecum fuscatum Rchb.f., in Gardn. Chron. (1882), II, p. 488.

Madagascar.

This species stands midway between A. articulata (Rchb.f.) Schltr. and A. Ellisii (Rchb.f.) Schltr. The flowers are 2.8–3.5cm broad with lanceolate, pointed sepals and petals and a slightly broader lip, with a filiform, c. 7.0cm long spur.

18. Aerangis Grantii (Batem.) Schltr. comb. nov.

Angraecum Grantii Batem., ex Baker in Trans. Linn. Soc. XXIX [1875], p. 153.

North East Africa.

Likewise, a species that is in no way known well enough. It is said to be related closely to A. Kotschyana (Rchb.f.) Schltr. and to have a more twisted and more slender 15–18cm long spur, which is not swollen at the apex. Hopefully, better material of the species may soon become available, so that it can be clarified.

19. Aerangis Gravenreuthii (Krzl.) Schltr. comb. nov.

Aeranthus Gravenreuthii Krzl., in Engl. Jahrb. XVII (1893), p. 62.

Mystacidium Gravenreuthii Rolfe, in Flor. Trop. Afr. VII (1897), p. 171.

Angraecum stella Schltr., in Engl. Jahrb. XXXVIII (1906), p. 163.

West Africa : Cameroon.

This species probably is best compared with A. Kirkii (Rolfe) Schltr., with which it has like-sized flowers and fairly long extended petals. Its leaves, however, are quite different from the very characteristic ones of A. Kirkii (Rolfe) Schltr.

20. Aerangis Henriquesiana (Rolfe) Schltr. comb. nov.

Angraecum Henriquesianum Rolfe, in Gard. Chron. (1890), VIII, p. 466.

Angraecum elegans Rolfe, in Bolet. Soc. Brot. IX (1891), p. 140.

West Africa : St. Thomé Island.

This species, with which I am unfamiliar, is compared with A. biloba (Lindl.) Schltr., but said to be of only half the size and have flowers with a diameter of c. 2.5cm. It differs from the previous one, with which it is clearly related, in the more abundantly-flowered inflorescence which directs it to the affinity of A. flexuosa (Ridl.) Schltr., but which is said to have smaller flowers and different leaves. In spite of this, perhaps the two should be united.

21. Aerangis hologlottis Schltr. comb. nov. (Footnote : Included here because it represents the sole non-African species of the genus).

Angraecum hologlottis Schltr., in Fedde Repertor. III (1906), p. 82.

Ceylon.

The sole species occurring outside the African flora in its widest sense. It is well characterised by the stiff, fairly thick peduncles with c. 1.7cm broad flowers, longish, blunt sepals and petals, a not very broad labellum with a cylindrical spur, which barely exceeds the short-stemmed ovary in length. The species is very characteristic and probably has A. hyaloides (Rchb.f.) Schltr. as its nearest relative.

22. Aerangis hyaloides (Rchb.f.) Schltr., [Die Orchid. (1915), p. 599].

Angraecum hyaloides Rchb.f., in Gard. Chron. (1880), I, p. 264.

Angorchis hyalodes O.Ktze., Rev. Gen. II (1891), p. 651.

Madagascar.

Probably best compared with A. hologlottis Schltr., but with broader, elliptical leaves and shorter, slightly bent, dense inflorescences. Flowers c. 1.0cm broad, with not completely spreading, longish, blunt, c. 7.0mm long sepals and petals, a not very broad lip and a cylindrical c. 1.2cm long spur, which is slightly swollen towards the apex.

23. Aerangis Kirkii (Rolfe) Schltr., [Die Orchid. (1915), p. 599].

Angraecum Kirkii Rolfe, in Flor. Trop. Afr. VII (1897), p. 136.

East Africa : From Mozambique to Mombassa.

This species is easily recognised by the unequalled bilobed leaves, markedly broadened at the apex. In its flowers it resembles, in the main, A. Gravenreuthii (Krzl.) Schltr., but the segments are more delicately pointed and the filiform spur is longer, viz. 6.0-7.0cm long.

24. Aerangis Kotschyana (Rchb.f.) Schltr. comb. nov.

Angraecum Kotschyanum Rchb.f., in Osterr. Bot. Zeitschr. (1864), p. 338.

Angraecum Kotschyi Rchb.f., in Gard. Chron. (1880), II, p. 456.

Aerangis Kotschyi Rchb.f., in Ot. Bot. Hamb. (1881), p. 78.

Angraecum semipedale Rendle, in Journ. Linn. Soc. XXX (1895), p. 389.

Raphidorrhynchus Kotschyi A.Finet, in Bull. Soc. Bot. Fr. LIV, Mém. IX, (1907), p. 36.

East Africa : From Mozambique to the upper Nile region.

One of the most beautiful species of the genus. Very similar in habit to A. Ellisii (Rchb.f.) Schltr., but with larger, c. 6.0cm broad and a broad-cordate lip, narrower below, and with a twisted, c. 20cm long spur, slightly swollen towards the apex.

25. Aerangis Laurentii (De Wildem.) Schltr. comb. nov.

Angraecum Laurentii De Wildem., Not. Pl. Utiles Congo I [1904], p. 322.

West Africa : Congo Basin.

This species belongs to the smaller-flowered ones and probably most closely related with the Madagascar A. macrocentra Schltr. It has fairly long (c. 27cm) linear leaves and c. 1.5cm broad flowers with a filiform, c. 6.0cm long spur. At any rate the species is very characteristic.

26. Aerangis luteo-alba (Krzl.) Schltr. comb. nov.

Angraecum luteo-album Krzl., in Pflanzw. Ost-Afr. C (1895), p. 158.

East Africa : Ituri region.

Kränzlin correctly compared this species with A. citrata (Thou.) Schltr. Clearly it is closely related, but has narrower leaves, larger (c. 2.2cm broad) flowers and a somewhat differently shaped labellum, with a spur c. 2.3cm long.

27. Aerangis macrocentra Schltr., [in Beib. Bot. Centralbl. 23, p. 424 (1915)].

Angraecum macrocentrum Schltr., in Ann. Mus. Col. Marseille (1913), p. 52, t. XXV.

Madagascar.

In floral structure this species, of which so far only very sparse material is available, is well characterised in a similar manner to A. stylosa (Rchb.f.) Schltr. by its slightly revolute sepals and petals. The longish, blunt sepals and petals are c. 8.0mm long, the lip ovate-linguiform, blunt and with a 5.5-6.0cm long spur, which is swollen uniformly towards the apex.

28. Aerangis moandensis (De Wildem.) Schltr. comb. nov.

Angraecum moandense De Wildem., in Bull. Jard. Bot. Brux. V (1916), p. 188.

West Africa : Congo.

Related to A. Kirkii (Rolfe) Schltr., but differing in habit, shape of the leaves and in the much shorter spur.

29. Aerangis modesta (Hook.f.) Schltr., [Die Orchid. (1915), p. 600].

Angraecum modestum Hook.f., in Bot. Mag. (1883), t. 6693.

Angraecum Sanderianum Rchb.f., in Gardn. Chron. [1888], I, p. 168.

Angorchis modesta O.Ktze., Rev. Gen. II (1891), p. 651.

Raphidorrhynchus modestus A.Finet, in Bull. Soc. Bot. Fr. (1907), Mém. IX, p. 37.

Madagascar.

In habit, reminiscent of A. articulata (Rchb.f.) Schltr., with similar leaves and almost identical flowers, but with a longer, c. 7.0-7.5cm long spur. The sepals and petals are longish, pointed, the lip is longish-oval with a short mucro.

30. Aerangis mystacidii (Rchb.f.) Schltr. [in Orchis, 9, 14 (1917)].

Angraecum Mystacidii Rchb.f., in Linnaea XX (1847), p. 677.

Angraecum Saundersiae Bol., in Hook. Icon Pl. (1888), t. 1728.

South Africa : From Kaffraria to Natal.

The species actually has much similarity to Mystacidium capense (L.f.) Schltr. [Die Orchid. (1915), p. 597], but with the characters of the genus Aerangis. The flowers are recognised by the longish sepals and petals, the oval, blunt labellum and by the filiform, c. 6.0-7.7cm long spur. The flowers are c. 2.4cm broad.

31. Aerangis pachyura (Rolfe) Schltr. comb. nov.

Angraecum pachyurum Rolfe, in Flor. Trop. Afr. VII (1897), p. 138.

East Africa : Nyassaland.

Clearly, the species must be related to my A. macrocentra Schltr. The flowers are spatulate-longish, 7.0-9.0cm long. The racemes are pendulous and attain a length of 15-20cm. The c. 2.0cm broad flowers have longish-elliptical sepals and petals and an elliptical labellum, slightly narrowed towards the base and with a 7.0-8.0cm long blunt spur, uniformly swollen towards the apex and which is said to be thicker than for all the other species of this affinity.

32. Aerangis pulchella Schltr. comb. nov.

Angraecum pulchellum Schltr., in Ann. Mus. Colon. Mars. (1913), p. [200], t. XXIII.

Madagascar.

Very similar in habit and other respects to A. modesta (Hook.f.) Schltr., however smaller in all segments and narrower in the floral segments. The sepals and petals are longish, bluntish, with slightly pointed, c. 1.0cm long, longish-elliptical, bluntish lip and a c. 6.5cm long filiform spur.

33. Aerangis rhodosticta (Krzl.) Schltr. comb. nov.

Angraecum rhodostictum Krzl., in Notizbl. Bot. Gart. Berl. IV (1896), p. 154.

West Africa : Cameroon.

Very similar to A. citrata (Thou.) Schltr., but quite different, specifically and easily recognised already by the lustrous, red column. The lip has a mucro and in that way differs from A. citrata (Thou.) Schltr. The spur is 4.0-5.0cm long.

The plant from Somalia, placed here by Kränzlin, is completely different from this West African species.

34. Aerangis Rohlfiana (Krzl.) Schltr. comb. nov.

Angraecum Rohlfianum Krzl., in Botan. Zeitg. (1882), p. 341.

North East Africa : Abyssinia.

Rolfe had some justification in comparing this species with A. Kirkii (Rolfe) Schltr., but from which it differs, as well as from the related A. Gravenreuthii (Krzl.) Schltr. in the stiff-erect, denser, multi-flowered inflorescences and in the narrower floral segments, as well as in the much longer spur. The illustration published by Kränzlin in Xen. Orchid. t. 240 is in many aspects, somewhat unbelievable.

35. Aerangis roseocalcarata (De Wildem.) Schltr. comb. nov.

Angraecum roseocalcaratum De Wildem., in Bull. Jard. Bot. Brux. V (1916), p. 190.

West Africa : Congo.

Clearly closely related to A. Gravenreuthii (Krzl.) Schltr., but quite different in habit.

36. Aerangis sankuruensis (De Wildem.) Schltr. comb. nov.

Angraecum sankuruense De Wildem., in Bull. Jard. Bot. Brux. V (1916), p. 190.

West Africa : Congo.

Is said to be related to A. roseocalcarata (De Wildem.) Schltr.

37. Aerangis somalensis Schltr. comb. nov.

Angraecum somalense Schltr., [in Engl. Bot. Jahrb. XXXVIII (1906), p. 163].

North East Africa : Somaliland.

A very compact species whose xerophile character can be recognised almost at once. The longish, carnose leaves are unequally and bluntly bilobed at the apex and are 5.0-7.0cm long. The clearly pendulous inflorescences can attain a length of c. 8.0cm and are laxly 4 to 6-flowered. The sepals and petals are slightly revolute, are longish and c. 1.0cm long. The lip is longish, is conspicuously narrowed at the middle and with a c. 14cm long spur.

38. Aerangis stylosa (Rolfe) Schltr., [in Beib. Bot. Centralbl. 33, ii ?].

Angraecum stylosum Rolfe, in Kew Bull. (1895), p. 194.

Angraecum Fournierae André, in Rev. Hort. (1896), p. 256 cum tab.

Madagascar.

The species belongs to the affinity of A. articulata (Rchb.f.) Schltr. and A. modesta (Hook.f.) Schltr., but is easily kept separate specifically by the slightly revolute floral segments, with the labellum slightly contracted at the middle, and by the longer column.

39. Aerangis Thomsoni (Rolfe) Schltr. comb. nov.

Angraecum Thomsoni Rolfe, in Flor. Trop. Afr. VII (1897), p. 143.

East Africa : Uganda.

So far a little known species, of which to date only inflorescences are known. According to Rolfe, it is related to the Madagascar A. Ellisii (Rchb.f.) Schltr., however the bracts are said to be larger and the perianth segments narrower. Dimensions given for the sepals and petals are 2.7-3.0cm, and for the spur a length of 10-12cm.

40. Aerangis umbonata (Finet) Schltr., [in Beib. Bot. Centralb. 33, ii, 427 (1915)].
Raphidorrhynchus umbonatus A.Finet, in Bull. Soc. Bot. Fr. LIV [1907], Mém.
 IX, p. 37, t. 7.
 Madagascar.

According to the author, this species is similar in habit to A. biloba (Lindl.) Schltr. and said to have identical dimensions, but to differ in the slender inflorescences, long pedicels, as well as in the narrow, long pointed segments of the perianth. The sepals and petals are 2.7-3.0cm long, the labellum 3.0cm, and with a c. 7.0-9.0cm long spur.

41. Aerangis Verdickii (De Wildem.) Schltr. comb. nov.
Angraecum Verdickii De Wildem., Etud. Fl. Katang. (1902), p. 21.
 West Africa : Congo Basin.

According to the description and comments about its relationship, the species is said to be closely related to A. Kotschyana (Rchb.f.) Schltr., but recognisable by a certain dimorphism, which manifests itself in the smaller leaves being bilobed, the larger ones pointed. (This relates probably to a blunting of the shorter lobe.) The flowers are said, furthermore, to be smaller, with 1.2-1.6cm long sepals and petals and a 12-15cm long spur, which is slightly swollen at the apex.

§ II. Rangaeris.

42. Aerangis cordatiglandula (De Wildem.) Schltr. comb. nov.
Angraecum cordatiglandulum De Wildem., in Bull. Jard. Bot. Brux. V (1916), p. 184.
 West Africa : Congo.
 The species is undoubtedly related to A. rhipsalisocia (Rchb.f.) Schltr.

43. Aerangis Engleriana (Krzl.) Schltr. comb. nov.
Angraecum Englerianum Krzl., in Engl. Jahrb. XVII (1893), p. 61, t. 4.
Listrostachys Engleriana Krzl., in Engl. Jahrb. XIX (1894), p. 254.
 East Africa : Bukoba. [Tanganyika].

Kränzlin described two different plants as 'Angraecum Englerianum', viz. one from West Africa and that under consideration here, which probably is most closely related to A. muscicola (Rchb.f.) Schltr. It is characterised by the broad-linear, blunt leaves and by the resupinate, 1.8cm broad flowers in erect racemes. The lip

is broad-ovate with a filiform, erect, 6.0cm long spur.

44. Aerangis filipes Schltr. comb. nov.

Angraecum filipes Schltr., in Engl. Jahrb. XXXVIII (1905), p. 22.

West Africa : Cameroon.

A somewhat aberrant species with relatively small flowers in lax, long racemes. It is distinguished from the others by the pollinaria, which have two separated viscid discs whose ligaments or stipes are shorter than for nearly all the other species of the section.

45. Aerangis graminifolia (Krzl.) Schltr. comb. nov.

Listrostachys graminifolia Krzl., in Pflanzw. Ost-Afr. C. (1895), p. 158.

East Africa : Usambara.

This extremely characteristic species has, to date, been collected only once and stands somewhat isolated in the genus, unless one wants to compare it with A. rhipsalisocia (Rchb.f.) Schltr., with which it has equitant leaves in common. These leaves are fairly stiff, very narrow-linear and pointed and are up to 20cm long and 2.0-2.5cm broad. The erect, up to 7.0cm long racemes are lax, 3 to 5-flowered, with snow-white, c. 2.0cm broad flowers having linear-lanceolate and pointed segments. The filiform spur attains a length of up to 6.0cm.

46. Aerangis mixta Schltr. nom. nov.

Mystacidium Batesii Rolfe, in Flor. Trop. Afr. VII (1897), p. 172.

Angraecum Batesii Schltr., in Westafr. Kautsch. Exped. (1900), p. 283, nec Rolfe.

West Africa : Cameroon.

The plant is closely related to the East African A. Engleriana (Krzl.) Schltr., but easily recognised by the less stiff and broader leaves, the more bent inflorescence and slightly larger flowers, with a longer pendent spur. The pollinia of the two species are very similar.

47. Aerangis muscicola (Rchb.f.) Schltr. comb. nov.

Aeranthus muscicola Rchb.f., in Flora (1865), p. 190.

Mystacidium muscicolum Dur. et Schinz, in Conspect. Flor. Afr. V (1895), p. 54.

Listrostachys muscicola Rolfe, in Flor. Trop. Afr. VII (1897), p. 158.

West Africa : Angola.

The species probably is most closely related to A. Engleriana (Krzl.) Schltr., but is more compact in growth with shorter, broader leaves and similar, but slightly larger flowers with ovate-lanceolate sepals and petals and a rhombic-ovate lip, with a filiform, up to 7.0-10.0cm long spur.

48. Aerangis potamophila Schltr. comb. nov.

Angraecum potamophilum Schltr., in Ann. Mus. Col. Mars. (1913), p. 56, t. XXIII.

Madagascar.

It would appear to me best to place the species next to A. Engleriana (Krzl.) Schltr., but it is shorter in growth, with shorter inflorescences, stiffer and longer leaves and appreciably larger flowers having narrow-lanceolate, pointed sepals and petals and an ovate, more-pointed, 1.7cm long lip, with a c. 8.0cm long, filiform spur. The pollinia are located on fairly short, separated stipes, attached to two separated viscid discs.

49. Aerangis rhipsalisocia (Rchb.f.) Schltr. comb. nov.

Angraecum rhipsalisocium Rchb.f., in Flora (1865), p. 189.

Listrostachys trachypus Krzl., in Engl. Jahrb. XIX (1894), p. 253.

Listrostachys rhipsalisocia Rolfe, in Flor. Trop. Afr. VII (1897), p. 158.

West Africa : From Yorubaland to Angola.

A somewhat aberrant species with ensiform, equitant leaves and usually shorter, lax, 5 to 10-flowered inflorescences. The pedicel and ovary are slightly papillose-haired. The sepals and petals are ovate-lanceolate, protruding, c. 1.0cm long. The lip is somewhat broader, with the 1.2cm long spur narrowed towards the uncinat apex, its mouth being markedly contracted by a membrane located in front of it. The pollinia are attached to two separated, very narrow stipes with a fairly large, obcordate-ovate viscid disc.

50. Aerangis Solheidi (De Wildem.) Schltr. comb. nov.

Angraecum Solheidi De Wildem., in Bull. Jard. Bot. Brux. V (1916), p. 191.

Listrostachys Solheidi De Wildem., in Bull. Jard. Bot. Brux. V (1916), p. 191.

West Africa : Congo.

Differs from the related A. Engleriana (Krzl.) Schltr. in the velvet-haired roots and the lip-lamina which has an undulate margin. In other respects it is very closely related.

16. Barombia Schltr.

Orchid. (1914), p. 600.

The genus for discussion here has been characterised briefly already in my last compilation of orchid genera (Footnote : Schlechter, Die Orchideen (1914), p. 600). Unfortunately, the plant is known so far only as a solitary specimen held at the Berlin Herbarium, and which has only a few flowers.

The genus is characterised as follows :

- *Barombia* Schltr.

Sepala petalaeque subsimilia, patentia, lineari-oblonga vel ligulata, acuminata, glabra. Labellum petalis simile sed basi rotundatum, breviter acuminatum, fere aequimagnum, calcaré, perlongo, filiformis, apice clavato-incrassato. Columna gracillima, e basi subtereti apicé juxta stigma leviter dilatata, petalis et labello paulo brevior, rostello gracili, producto, tenui. Anthera cucullata breviter rostrata. Pollinia nondum nota. Ovarium gracillimum pedicellatum.

Planta subacaulis, epiphytica, habitu generis *Aerangis*; foliis obovato-oblongis, apice inaequaliter et oblique bidentatis, patulis; racemo folia pluries superante, perlaxe pluri- (ca. 3-6-)floro pendulo, gracillimo; bracteis parvulis, ovario gracili multo brevioribus; floribus amplis, textura tenuioribus, fide collectoris albivirescentibus, omnino glaberrimis; ovario gracili pedicellato, sepalis paulo brevioribus.

Species singula adhuc nota Africae occidentalis indigena.

The genus which I have named after the locality of Barombi, where the only specimen to date was found, is related undoubtedly, fairly closely to *Aerangis*, but cannot be united with it on account of the unusual extension of the column, and the nature of the other segments. The *Aerangis* species, even in their extreme types, e.g. *A. flexuosa* (Ridl.) Schltr., do not represent a transition towards this type; they indicate rather that the column never diverges from a definite basic type.

Let us hope that this extremely unusual plant will arouse the interest of botanical collections in Cameroon and that more abundant material may become available for investigation.

1. *Barombia gracillima* (Krzl.) Schltr. comb. nov.

Angraecum gracillimum Krzl., in Engl. Jahrb. XVII (1893), p. 59, t. 5.

West Africa : Cameroon.

The plant which, in its leaves, is reminiscent of *Aerangis biloba* (Lindl.) Schltr. is a very imposing epiphyte, with racemes 30-40cm long. The sepals are almost 5.0cm long, the petals slightly shorter, whilst the spur has an impressive length of c. 20cm. The peculiar column is c. 3.5cm long.

17. *Mystacidium* Lindl.

In Comp. Bot. Mag. II (1836), p. 205.

In regard to the delimitation of this genus, I have on several occasions indicated that I accept it only in the way it was defined by Bolus. In other words, I include here those species whose slender spur has a slightly widened mouth which gradually transforms into the lip-lamina and whose moderately slender column has a trilobed rostellum, with its lateral lobes being either finely toothed or papillose on the margin. I do not consider it important whether the pollinaria then have a single or two viscid discs, since for *M. pulchellum* (Krzl.) [Schltr.], which has a rostellum so exceedingly typical for the genus, there is only a single viscid disc. The labellum-lamina is usually trilobed, in

that it usually has two auricle-like, erect, short lobules at the base beside the column, whilst in rare instances, e.g. as for M. pulchellum (Krzl.) Schltr., auricle formation is suppressed.

As far as I can see, the genus has 10 species when closely delimited in the manner described above. That this is necessary is obvious, since no serious botanist could believe that types such as Angraecum infundibulare Lindl., Angraecum Schumanni Krzl., Aeranthus xanthopollinius Rchb.f. and Mystacidium capense (L.f.) Schltr. could be congeneric, nevertheless, they are now grouped together in this genus by Rolfe.

1. Mystacidium Aliciae Bolus, Icon. Orch. Austr. Afr. II (1911), t. 6.

South Africa : Eastern Cape Colony.

This species is most closely related to M. pusillum Harv., but is more compact in growth, with larger flowers and a shorter spur. Furthermore, the sepals and petals have additionally a broader shape.

2. Mystacidium caffrum Bolus, in Trans. S. Afr. Phil. Soc. XVI (1905), p. 145.

Angraecum caffrum Bol., in Icon. Orch. Austr. Afr. I, t. 8 (1893).

South Africa : From Pondoland up to Natal.

I consider that this species should remain with Mystacidium, since it has a tricleft, even though glabrous, rostellum and the spur has a widened mouth.

3. Mystacidium capense (L.f.) Schltr., [Die Orchid. (1914), p. 594.]

Epidendrum capense L.f., Suppl. (1781), p. 407.

Limodorum longicorne Thgb., Prodr. Pl. Cap. (1794), p. 3.

Limodorum longicornu Sw., in Schrad. Journ. II (1799), p. 230.

Eulophia longicornis Sprgl., Syst. Veget. III (1826), p. 720.

Angraecum capense Lindl., Gen. Spec. Orch. (1833), p. 248.

Mystacidium filicorne Lindl., in Comp. Bot. Mag. II (1836), p. 205.

Aeranthus filicornis Rchb.f., in Walp. Ann. VI (1861), p. 900.

Mystacidium longicornu Dur. et Schinz, in Consp. Flor. Afr. V (1895), p. 53.

South Africa : From Knysna up to Natal.

According to our current nomenclature rules, the plant must expressly receive the above species name. It is the largest species of the genus and has a certain similarity to several Aerangis species, in particular to A. Mystacidii (Rchb.f.) Schltr.

4. Mystacidium Flanaganii Bol., in Trans. S. Afr. Phil. Soc. XVI (1905), p. 145.

Angraecum Flanaganii Bol., in Icon. Orch. Austr. Afr. I (1896), t. 52.

South Africa : Eastern Cape Colony.

The species diverges somewhat from the others in that the rostellum has shorter lateral lobes which are not so distinctly toothed. The flowers are fairly

small, with pointed sepals and petals and a very slender 2.0–2.5cm long spur.

5. Mystacidium gracile Harv., Thes. Cap. II (1863), p. 48, t. 174.

Aeranthus gracilis Rchb.f., in Flora (1867), p. 117.

South Africa : Eastern Cape Colony up to Natal.

A very delicate small species placed about intermediate between M. capense (L.f.) Schltr. and M. pusillum Harv. As mentioned above already, it is related to M. Aliciae Bol., but differs in the smaller flowers and longer spur. The lateral lobules of the labellum are here at times slightly papillose. According to Rolfe, the species is leafless, but I do not think that this applies for the entire year. Apparently the leaves are discarded periodically.

6. Mystacidium gracillimum Rolfe, in Kew Bull. (1913), p. 144.

East Africa : Uganda.

The affiliation of this species with the genus is not quite certain, since the description is not very explicit and I have not been able to examine a specimen. As a species of the genus, the plant would be well characterised by the narrow leaves and by the inflorescences which the author gives as standing erect.

7. Mystacidium Millari Bolus, in Trans. S. Afr. Philos. Soc. XVI (1905), p. 147.

South Africa : Natal.

The leaves of this species are relatively smaller than those of the other species. They are up to 10cm long, thus being about equal in length to those of M. capense (L.f.) Schltr., but are only 1.2–1.7cm broad. The flowers are most similar to those of M. gracile Harv., but the individual segments are broader and blunter, and the spur shorter, whilst in addition the lateral lobes of the rostellum have entire margins and are glabrous. The flowers are white, as for all species of the genus.

8. Mystacidium pedunculatum Rolfe, in Flora Trop. Afr. VII (1897), p. 175.

East Africa : Nyassa District.

In habit the species is said to be similar to the previous one, but the inflorescences are up to 12cm long. The flowers, which Rolfe did not mention, were later described by Finet and indicate the structure of a typical Mystacidium flower. Dimensions, unfortunately, were not given, but it can probably be accepted that the individual-segments approximate in size, to those of M. capense (L.f.) Schltr. The lateral auricles at the base of the lip-lamina are missing in this species.

9. Mystacidium pulchellum (Krzl.) Schltr. comb. nov.

Listrostachys pulchella Krzl., in Engl. Jahrb. XXVIII (1900), p. 174.

East Africa : Nyassa District.

A very delicate and elegant small plant, which is distinguished from all other species of the genus by the stipes of the pollinia being attached to a common viscid disc. It has the undivided lip-lamina in common with M. pedunculatum Rolfe. The spur is somewhat short for a species of the genus, even though it is appreciably slender. The column has the typical Mystacidium rostellum with papillose lateral lobes, which here, as for M. gracile Harv., are slender and subulate.

10. Mystacidium pusillum Harv., Thes. Cap. II (1863), p. 47, t. 175.

Aeranthus pusillus Rchb.f., in Flora (1867), p. 117.

South Africa : Kaffraria to Natal.

The smallest species of the genus with longish, 1.5-2.7cm long leaves and a c. 2.0-3.5cm long inflorescence of small, c. 4.0mm broad, white flowers with a 1.3-1.7cm long filiform spur. The basal auricles of the labellum are semi-circular and blunt; the front lobe is ovate-lanceolate, almost blunt. The sepals and petals are blunt, c. 2.0mm long.

11. Mystacidium venosum Harv. ex Rolfe, in Flor. Cap. V, III (1912), p. 79.

South Africa : Kaffraria up to Zululand.

According to Rolfe, the species illustrated by Bolus as M. gracile Harv. is identical with M. venosum Harv. Accordingly, the two must be very similar, since such a conscientious worker as Bolus would otherwise not have made such a mistake. According to Rolfe, M. venosum Harv. differs in the presence of leaves. I mentioned above already that I did not believe M. gracile Harv. to be truly leafless. I have often seen Mystacidium plants which were leafless during the flowering period, but this could hardly be regarded as a species characteristic, since according to my observations, individuals behave differently in this respect.

18. Cyrtorchis Schltr.

Die Orchideen (1914), p. 595.

I am convinced that this is a well circumscribed genus which has no connection at all with Listrostachys, to which one was accustomed to place the species. Since in founding the genus, I did not provide a Latin diagnosis, I now follow this up.

Cyrtorchis Schltr.

Sepala petalaeque e basi conniventi plus minus patentia, lanceolata, acuta vel acuminata, vulgo falcato-curvata; petala sepalis vulgo paululo minora. Labellum petalis vulgo bene simile, vulgo paulo latius, sensim in calcar longum ostio infundibulare transeuns. Columna brevis, apoda; rostello amplo porrecto, indiviso. Anthera cucullata in rostrum satis latum obtusum producta. Pollinia globosa vel late ellipsoidea, stipitibus 2 distinctis, linearibus vel anguste oblanceolatis, collateralibus, interdum subcohaerentibus, viscidio communi (singulo) oblongo vel lineari vulgo amplo affixis.

Plantae epiphyticae, robustae; caule plus minusve elongato, bene foliato; foliis coriaceis, ligulatis vel oblongis, inaequaliter et obtuse bilobulatis; racemis vulgo arcuatis vel subpatulis, sublaxe pluri- vel multifloris; floribus satis magnis, albis vel brunnescenti-albidis, patentibus, pedicello cum ovario semper bracteam superante.

[22]
Species 16 adhuc notae Africae tropicae et subtropicae indigenae.

It is difficult to say to which genus Cyrtorchis is most closely related. Its column probably shows most accord with Aerangis, but in contrast, the floral shape appears as a larger edition of Mystacidium, yet in habit it differs from both of these.

The general shape of the flower is very characteristic for the genus, the falcate bending being apparent in every respect, so that even with dried specimens there is not a moments doubt whether one is looking at a Cyrtorchis species or not. It is noteworthy that in all species the genus characters agree completely.

I have tried here to unite all those species which I consider with certainty as belonging to the genus, but it is not impossible that one or the other of the already described African species could be included. I have accepted only those species whose membership was certain to me, since I wanted to avoid an unnecessary creation of synonyms.

I believe that now already I can declare with equal certainty that the genus is missing in Madagascar, just as Jumellea is restricted almost completely to Madagascar and the Mascarene Islands. This plant-geographic distribution of certain genera appears to me as a good proof that I have succeeded here also in uniting naturally allied species into genera. Thus even fairly large genera such as Diaphananthe, Tridactyle, Cyrtorchis and Jumellea in the delimitation given here, do not extend beyond certain plant-geographic areas, whilst in the previously used delimitation of the genera one could observe an odd conglomeration.

I shall now discuss briefly the species included in Cyrtorchis.

1. Cyrtorchis acuminata (Rolfe) Schltr. comb. nov.

Listrostachys acuminata Rolfe, in Flor. Trop. Afr. [VII] (1897), p. 154.

West Africa : Principe Island.

One of the species with longish, up to 4.0cm broad leaves, hence very similar in habit to C. Chailluana (Hook.f.) Schltr. The racemes are several-flowered and have fairly large bracts. The clearly white sepals and petals are lanceolate, pointed and 2.5-3.0cm long. The lip also is similar, having a 4.0-5.0cm long, straight spur.

2. Cyrtorchis angustifolia (De Wildem.) Schltr. comb. nov.

Angraecum angustifolium De Wildem., in Bull. Jard. Bot. Brux. V (1916), p. 181.

West Africa : Congo.

Related to C. Aschersoni (Krzl.) Schltr. and like it, characterised by narrow

leaves, but differing from it in growth pattern.

3. Cyrtorchis arcuata (Lindl.) Schltr., [Die Orchid. (1914), p. 596].

Angraecum arcuatum Lindl., in Comp. Bot. Mag. II (1836), p. 204.

Listrostachys arcuata Rchb.f., in Walp. Ann. VI (1864), p. 907.

South Africa : From Knysna to Transvaal and southern Mozambique.

The sole non-tropical species of the genus. It is characterised by the compact growth, narrow linguiform leaves seldom broader than 2.0cm and 5 to 9-flowered racemes up to 10cm long. In shape, the flowers resemble those of C. Sedeni (Rchb.f.) Schltr. and have 2.0-2.5cm long, lanceolate, bent sepals and very similar, but somewhat shorter petals and labellum. The spur is almost 3.0cm long and slightly uncinatate at the apex.

4. Cyrtorchis Aschersoni (Krzl.) Schltr. comb. nov.

Angraecum Aschersoni Krzl., in Mitt. Dtsch. Schutzgeb. II (1889), p. 157.

Listrostachys Aschersoni Dur. et Schinz, Conspect. Fl. Afr. V (1895), p. 48.

West Africa : Cameroon.

A very compact species, relatively short-stemmed for the genus, and with stiff, thick-leathery, almost linear, up to 15cm long and 1.2-1.5cm broad leaves. The racemes are 7.0-9.0cm long; flowers white with c. 1.5cm long sepals and somewhat shorter petals and labellum, with a c. 3.0cm long, double-bent spur.

5. Cyrtorchis bistorta (Rolfe) Schltr. comb. nov.

Angraecum bistortum Rolfe, in Kew Bull. (1893), p. 65.

Listrostachys bistorta Rolfe, in Flor. Trop. Afr. VII (1897), p. 155.

West Africa : Lagos.

Clearly similar to the previous one, but with broader, up to 3.5cm broad leaves and shorter, few-flowered inflorescences. The flowers are white with ovate-lanceolate, pointed, c. 1.0cm long sepals and similar, slightly shorter petals and labellum with a c. 2.5cm long, double-bent spur.

6. Cyrtorchis Brownii (Rolfe) Schltr. comb. nov.

Listrostachys Brownii Rolfe, in Kew Bull. (1906), p. 378.

East Africa : Uganda.

Unfortunately, the description of the species has many gaps, thus the spur has been completely omitted, but there is probably no doubt that this is a Cyrtorchis species which could be most closely related to C. hamata (Krzl.) Schltr.

7. Cyrtorchis Buchholziana (Krzl.) Schltr. comb. nov.

Angraecum Buchholzianum Krzl., in Engl. Jahrb. VII (1886), p. 334.

Listrostachys Buchholziana Dur. et Schinz, Conspect. Flor. Afr. V (1895) p. 48.

West Africa : Cameroon.

This species is characterised by the slender, up to 20cm long inflorescences which overtop the leaves by a factor of about two. It is most closely related to C. Monteiroae (Rchb.f.) Schltr., but differs in the straight, shorter spur. Nevertheless, it is doubtful whether the species really should be retained next to C. Monteiroae (Rchb.f.) Schltr.

8. Cyrtorchis Chailluana (Hook.f.) Schltr., [Die Orchid. (1914), p. 596].

Angraecum Chailluanum Hook.f., Bot. Mag. (1866), t. 5589.

Listrostachys Chailluana Rchb.f., in Flora (1885), p. 381.

West Africa : From Lagos to Loango.

The most beautiful species of the genus with longish, up to 4.0cm broad leaves, undulate at the margin, and with large white flowers having sepals up to 4.0cm long, whilst the yellow-green spur not infrequently attains a length of 12cm. The species is quite common in Cameroon.

9. Cyrtorchis Droogmansiana (De Wildem.) Schltr. comb. nov.

Listrostachys Droogmansiana De Wildem., in Belgique Coloniale (1902), p. 425.

West Africa : Congo Basin.

This species is said to be closely related to C. Hookeri (Rolfe) Schltr., but to differ in longer, 3.0-4.0cm broad leaves and in more denser-flowered inflorescences of white flowers with a spur 4.5-5.0cm long.

10. Cyrtorchis [ealaensis] (De Wildem.) Schltr. comb. nov.

Angraecum [ealaense] De Wildem., in Bull. Jard. Bot. Brux. V (1916), p. 185.

Listrostachys [ealaensis] De Wildem., in Bull. Jard. Bot. Brux. V (1916) p. 185.

West Africa : Congo.

A species of the affinity of C. Monteiroae (Rchb.f.) Schltr., but distinguished by very long leaves and a relatively short lip-spur.

11. Cyrtorchis Erythraeae (Rolfe) Schltr. comb. nov.

Listrostachys Erythraeae Rolfe, in Flor. Trop. Afr. VII (1897), p. 155.

North-east Africa : Eritrea.

When Rolfe described the species, he had seen only fruiting specimens, but since then the flowers have been illustrated by Kränzlin (in Orchis II, p. 50). Accordingly, we here are dealing with a plant which is fairly closely related to C. arcuata (Lindl.) Schltr., but which appears to be well separated specifically by the large rostellum and by the pollinarium. The sepals and petals are lanceolate, pointed, c. 2.3cm long, the spur bent forwards and c. 4.0cm long.

12. Cyrtorchus hamata (Rolfe) Schltr., [Die Orchid. (1914), p. 596].

Listrostachys hamata Rolfe, in Bot. Mag. (1906), t. 8074.

West Africa : Lagos.

A very characteristic species with white flowers and a green spur. In habit it is most closely related to the South African species C. arcuata (Lindl.) Schltr., but is more robust and has longer leaves and inflorescences. The species is easily recognised by the c. 5.0cm long spur, which is short-uncinate and bent backwards.

13. Cyrtorchis Henriquesiana (Ridl.) Schltr. comb. nov.

Angraecum Henriquesianum Ridl., in Bol. Soc. Brot. V (1887), p. 8.

Listrostachys Henriquesiana Rolfe, in Flor. Trop. Afr. VII (1897), p. 157.

West Africa : Principe Island.

Clearly we are dealing here with a species which is very closely related to C. Aschersoni (Krzl.) Schltr., and perhaps even identical with it. The latter, which grows in mangrove formations can be expected to have a broader distribution than previously accepted. According to Rolfe, the species is said to be characterised by especially narrow, c. 15cm long and only 5.0mm broad leaves. I have not seen the TYPE.

14. Cyrtorchis Hookeri (Rolfe) Schltr. comb. nov.

Listrostachys Hookeri Rolfe, in Flor. Trop. Afr. VII (1897), p. 154.

Listrostachys ignoti Krzl., in Engl. Jahrb. LI (1914), p. 395.

West Africa : Cameroon.

The specimen on which Rolfe's description is based, must have been particularly long-leaved, since the leaves usually are shorter and even broader. That the TYPE specimens held at the Berlin Herbarium under the name of Listrostachys ignoti Krzl. really are identical with C. Hookeri (Rolfe) Schltr. is not in doubt, since at such altitudes of the Cameroon Range (1200-1500m altitude) only this one species could occur. The plant is characterised by particularly compact growth, short leaves and squat, laterally spreading inflorescences which barely overtop the leaves. The sepals and petals are narrow-lanceolate, pointed, the former 1.5cm long, with the petals and labellum being slightly shorter. The spur is c. 3.5cm long.

15. Cyrtorchis injoloensis (De Wildem.) Schltr. comb. nov.

Angraecum injoloense De Wildem., in Bull. Jard. Bot. Brux. V (1916), p. 187.

Listrostachys injoloensis De Wildem., in Bull. Jard. Bot. Brux. V (1916), p. 187.

West Africa : Congo.

Related to C. Monteiroae (Rchb.f.) Schltr., but with narrower leaves and characterised by the spur, which is swollen at the apex.

16. Cyrtorchis latibracteata (De Wildem.) Schltr. comb. nov.

Angraecum latibracteatum De Wildem., in Bull. Jard. Bot. Brux. V (1916), p. 188.

Listrostachys Latibracteata De Wildem., in Bull. Jard. Bot. Brux. V (1916), p. 188.

West Africa : Congo.

Clearly the species should be placed next to C. arcuata (Lindl.) Schltr., but it differs in habit and in the slightly smaller flowers held in shorter racemes.

17. Cyrtorchis Monteiroae (Rchb.f.) Schltr., [Die Orchid. (1914), p. 596].

Listrostachys Monteiroae Rchb.f., in Linnaea XLI (1877), p. 76.

Angraecum antennatum Krzl., in Engl. Jahrb. XVII (1893), p. 61.

West Africa : Lagos to Angola.

A very common and widely distributed species. The species name is probably best altered in the way I have used it, since it really is impossible to form a 'Monteiroae' as the genitive of the name Monteiro. The species is easily recognised already by the white-brownish colour of the flowers. In growth it is most similar to C. Chailluana (Hook.f.) Schltr., but the flowers are appreciably smaller, in laxer racemes and have a c. 4.5cm long spur.

18. Cyrtorchis refracta (Krzl.) Schltr. comb. nov.

Listrostachys refracta Krzl., in Engl. Jahrb. XXXIII (1902), p. 74.

East Africa : Usambara.

Amongst all the species of the genus this one is characterised by the much-shortened stems. Kränzlin compared it with Angraecum cucullatum Thou., but they really have nothing in common, even in the shape of the clearly uniform, 3 to 4-flowered, indeed short inflorescences. The flower is a typical Cyrtorchis one, although the sepals and petals are smoother and less falcately bent than for the other species. Very characteristic is the c. 1.7cm long spur, uncinate and backwards-bent at the apex, as well as the flowers which slightly exceed those of C. arcuata (Lindl.) Schltr. in size.

19. Cyrtorchis Sedeni (Rchb.f.) Schltr. comb. nov.

Listrostachys Sedeni Rchb.f., in Gard. Chron. (1878), IX, p. 138.

Angraecum Sedeni Lindl. et Rodig., [Nichols Dict. Gard. i, 79 (1884)]; Lindenia III (1887), p. 81. t. 135.

East Africa.

Likewise a close relative of C. arcuata (Lindl.) Schltr., but with broader and longer leaves. The inflorescences are slightly shorter than the leaves which spread obliquely, or are slightly recurved. The spur is c. 3.0cm long and not bent.

20. Cyrtorchis Sereti (De Wildem.) Schltr. comb. nov.Angraecum Sereti De Wildem., in Bull. Jard. Bot. Brux. V (1916), p. 191.Listrostachys Sereti De Wildem., in Bull. Jard. Bot. Brux. V (1916), p. 191.

West Africa : Congo.

The species has to be compared to C. Whytei (Rolfe) Schltr., but to me it would appear to be more closely related to C. Monteiroae (Rchb.f.) Schltr.

21. Cyrtorchis subcylindrifolia (De Wildem.) Schltr. comb. nov.Angraecum subcylindrifolium De Wildem., in Bull. Jard. Bot. Brux. V (1916), p. 192.Listrostachys subcylindrifolia De Wildem., in Bull. Jard. Bot. Brux. V (1916), p. 192.

West Africa : Congo.

Related to C. angustifolia (De Wildem.) Schltr., but characterised by narrower leaves and a relatively shorter spur.

22. Cyrtorchis Whytei (Rolfe) Schltr. comb. nov.Listrostachys [Whytei] Rolfe, in Flor. Trop. Afr. VII (1897), p. 155.

[East Africa].

Likewise, a species with a relatively short stem. The leaves are longish and fairly broad. The peduncle with raceme is 20-23cm long. The flowers are moderately large; the sepals and petals being short-lanceolate, acuminate; the petals and lip slightly shorter than the sepals. Spur c. 6.0cm long, slightly bent with a broadened mouth, otherwise slender.

Un-classified Species.

Angraecum Wittmackii Krzl., in Mitteil. Dtsch. Schutzgeb. II (1889), p. 158.Listrostachys Wittmackii Rolfe, in Flor. Trop. Afr. VII (1897), p. 158.

West Africa : Cameroon.

Since the founder of this species did not retain any material, it is not possible to establish which plant we are concerned with. Since we are used to his comparisons with completely distant species, the remarks on affinity must be considered unreliable. The species should therefore be regarded as 'species delenda'.

19. Solenangis Schltr. gen. nov.

Here again we have two species of a genus, whose union with any one of the others did not appear acceptable, being well distinguished both by habit and floral structure. The genus is characterised as follows:

Solenangis Schltr. gen. nov.

Sepala petalaeque erecto-patentia, ovalia vel oblonga, obtusa, petala quam sepala vix breviora. Labellum disco subnullo donatum, ore ovato vel ovato-lanceolato, nunc obscure trilobulato, obtusiusculo vel apiculato calcare peramplo utriculari vel alte infundibulari, apice clavato, ovarium superante, dependente. Columna mediocris, apoda, rostello producto alte bifido. Anthera cucullata, antice acuta vel apiculata. Pollinia globosa, stipite lineari gracili, viscidio rotundato. Ovarium breviter pedicellatum.

Plantae epiphyticae inter ramulos arborum et fruticum scandentes; caule elongato, nunc supra 1 m longo, vaginis foliorum oblecto, gracili, laxe foliato; foliis patentibus ovalibus vel oblongis, apice inaequaliter bilobulatis, coriaceis; racemis laxe vel dense multi- vel pluri-floris, patentibus, quam folia brevioribus vel longioribus; bracteae parvula; floribus virescenti-olivaceis, parvulis vel vix mediocribus.

Species 2 adhuc notae, silvium Africae occidentalis incolae.

In floral structure, the genus probably has most similarity with Cyrtorchis and Mystacidium, but is quite different in the shape of the lip and spur, as well as in the pollinaria. In habit the species, when without flowers, are probably most reminiscent of Oeonia. Characteristic for the genus is the labellum, which consists actually only of the spur, since one cannot speak here of a separate lip, unless the short mucro can be considered as such.

1. Solenangis clavata (Rolfe) Schltr. comb. nov.

Angraecum clavatum Rolfe, in Flor. Trop. Afr. VII (1897), p. 145.

Saccolabium oeonioides Krzl., in Compt. Rend. Soc. Bot. Belg. XXXVIII (1899), p. 62.

Angraecum oeonioides Schltr., in Westafr. Kautsch. Exped. (1900), p. 285.

West Africa : From Sierra Leone to the Congo Basin.

The species is easy to distinguish from S. scandens Schltr. by the much smaller flowers in denser inflorescences and by the thicker spur.

2. Solenangis scandens Schltr. comb. nov.

Angraecum scandens Schltr., in Engl. Jahrb. XXXVIII (1905), p. 24, fig. 8.

West Africa : From Cameroon to the Congo Basin.

Like the one above, an extremely characteristic plant. It differs specifically in the much larger flowers, in lax racemes, the more funnel-shaped spur, swollen like a blister at the apex, and in the more slender pollinarium.

20. Eurychone Schltr. gen. nov.

Especially in the case of the angraecoid orchids, Nature appears to have made several peculiar steps which force us to accept a whole series of genera which we would have liked to combine with others. So it is in the case of Eurychone, which initially I wanted to unite with Beclardia, but where there were really too many contradictory characters.

Eurychone Schltr. gen. nov.

Sepala petalaeque ligulata, acuta, erecta vel erecto-patentia; textura tenuia. Labellum subhorizontale infundibulari-cucullatum, obscure trilobatum, multinervium, textura tenue, margine irregulare, basi sensim in calcar late infundibulare apice cylindrico refractum transeuns. Columna brevis, semiteres, rostello producto, lineari, integro, satis longo. Anthera cucullata antica retusa. Pollinia late ellipsoidea, stipite singulo, anguste lineari gracili, viscidio oblongo vel ovali, satis magno.

Plantae epiphyticae subacaules; foliis elliptico-ligulatis, inaequaliter bilobulatis, textura exsiccatione papyraceis; racemis folia vix excedentibus, laxe 5—10-floris, subpatulis; bracteis parvulis; floribus satis magnis albis vel medio viridibus, patentibus; textura tenuibus.

Species 2 adhuc notae Africae tropicae indigenae.

In habit and consistency of the flowers, this genus is suggestive of the larger, short-stemmed species of Diaphananthe, but the floral structure is completely different and in the main, accords with Beclardia. However, a union with the latter is denied, apart from the habit, by the consistency of the flowers, the completely wart-free lip-lamina, the column with completely undivided rostellum, and by the narrow pollen stipe.

Of the two species so far known, one is restricted to West Africa, the other to East Africa.

1. Eurychone Galeandrae (Rchb.f.) Schltr. comb. nov.

Angraecum Galeandrae Rchb.f., in Flora (1865), p. 189.

Angraecum Lujai De Wildem., Pl. Ut. Congo I (1903), p. 142.

West Africa : From Gabon to Angola.

Leaves narrow, cuneate-spathulate, up to 12cm long. Racemes slightly longer, 5 to 10-flowered, slightly recurved. Flowers fairly large, white, translucent, with broad-linear c. 1.7cm long sepals and c. 1.5cm broad, broad funnel-shaped, weakly trilobed labellum, incised in front and with a funnel-shaped, c. 2.3cm long spur, bent upwards at the cylindrical apex.

2. Eurychone Rothschildiana (O'Brien) Schltr. comb. nov.

Angraecum Rothschildianum O'Brien, in Gardn. Chron. (1903), II, p. [131].

East Africa : Uganda.

Similar to the previous species, but differing in broader leaves, shorter, denser-flowered inflorescences, slightly broader sepals and petals, in the broader, almost circular and funnel-shaped labellum, with a dark green central spot, and in the more swollen, recurved apex of the spur.

21. Cephalangraecum Schltr. gen. nov.

In setting up genera it is not often that we have to deal with types that correspond to each other so well in habit as in the case with the new genus Cephalangraecum, which I herewith characterise:

Cephalangraecum Schltr. gen. nov.

Sepala petalaeque vulgo plus minusve similia, oblonga vel ligulata, vulgo obtusa, subpatentia. Labellum vulgo ovale, marginate crenulato-undulatum, sepalorum longitudine, semper obtusum, basi sensim in calcar plus minusve curvatum, apice globoso-vel ovoideo-inflatum transeuns. Columna crassiuscula, brevis, apoda, rostello decurvo, tenui, vulgo trifido. Anthera cucullata, antice truncata vel subretusa. Pollinia subglobosa, stipitibus 2 apicem versus paulo-dilatatis, viscidio communi affixa.

Plantae epiphyticae, acutules vel subacaulae; foliis approximatis linearibus vel anguste ligulatis, coriaceis, apice inaequaliter, et oblique bilobulatis, lobulis inaequaliter eroso-dentatis; racemis capitiformi-abbreviatis, subsessilibus, globosis vel ovoideis, densissime multifloris; bracteis ovatis vel ovato-lanceolatis, acutis vel subacutis, nervis saepius superantibus, persistentibus; floribus parvulis, albidis, textura leviter carnosulis, cum ovario sessilibus.

Species 5 mihi adhuc notae, Africae occidentalis indigenae.

The genus is easily distinguished from the others by its capitiform- shortened inflorescences. The flowers are half-open with longish, usually blunt sepals and petals and a lip-lamina that is undulate at the margin or trilobed by constriction and with a funnel-shaped spur, more-or-less bent and swollen almost like a blister at the apex, that always is shorter than the pedicelled ovary. The moderately short, almost cylindrical column has a distinctly extended, deeply cleft rostellum. The cucullate anther is truncated in front or margined. The pollinia are attached either to two separated stipes or to a common one.

1. Cephalangraecum capitatum (Lindl.) Schltr. comb. nov.

Angraecum capitatum Lindl., in Journ. Linn. Soc. VI (1862), p. 137.

Listrostachys capitata Rchb.f., in Flora (1865), p. 190.

West Africa : From Nigeria to the Congo Basin.

This species is probably most closely related to C. Gentilii (De Wildem.) Schltr., but differs in the unequally bilobed, but blunt leaf apices, the somewhat smaller flowers, with a more slender spur, and in the narrow petals.

2. Cephalangraecum [cephalotes] (Rchb.f.) Schltr. comb. nov.

Listrostachys cephalotes Rchb.f., in Gardn. Chron. (1872), p. 1687.

West Africa.

The precise domicile of this species is not known. It is represented as the TYPE probably only in Reichenbach's Herbarium, where it flowered in 1872 in the Sander's collection. The species is said to differ from C. capitatum (Lindl.) Schltr. in that the lip is slightly trilobed, the spur thicker and thicker at the middle, and with the lip-lamina being almost sagittate at the base. The species does however, need to be investigated.

3. Cephalangraecum Gentilii (De Wildem.) Schltr. comb. nov.

Listrostachys Gentilii De Wildem., Not. Pl. Utiles Congo I (1903), p. 147.

West Africa : From Cameroon to the Congo Basin.

A more robust plant than C. capitatum (Lindl.) Schltr. and outwardly easily

recognised by the leaves having unequal apex lobes with pointed little teeth. The heads, as well as the flowers are slightly larger, have broader petals and the spur is more bent, prior to the apex. The flowers are white, with a yellow central part to the lip.

4. Cephalangraecum glomeratum (Ridl.) Schltr. comb. nov.

Angraecum glomeratum Ridl., in Gardn. Chron. (1885), XXIV, p. 678.

Listrostachys glomerata Rolfe, in Flor. Trop. Afr. VII (1897), p. 166.

West Africa : Sierra Leone.

Already in habit, the species differs from C. capitatum (Lindl.) Schltr., by its compact growth and the shorter, only 7.0-10.0cm long leaves. Furthermore, the lip-lamina is broader and the spur thicker with a funnel-shaped base and clavate, (not blister-shaped) apex.

5. Cephalangraecum Metteniae (Krzl.) Schltr. comb. nov.

Angraecum cephalotes Krzl., in Mitt. Dtsch. Schutzgeb. II (1889), p. 156.

Listrostachys Metteniae Krzl., in Xen. Orch. III (1893), p. 122, t. 270.

Listrostachys Braunii Dur. et Schinz, in Conspect. Flor. Afr. (1895), p. 48.

West Africa : Cameroon.

This differs from all the other species in the section, in having only 1.0cm broad, 10.0cm long leaves, in the broad ovate lip and in the short, blunt spur, attaining only one quarter the length of the ovary, which is extended towards the front and is clavate. The flowers are said to have a diameter of only 3.0-4.0mm.

22. Ancistrohynchus A. Finet.

In Bull. Soc. Bot. Fr. LIV (1907), p. 44.

This genus founded by Finet is identical with the species group gathered around the former A. clandestinum Lindl. It is possible that one of Finet's species is synonymous with another one of his.

We are concerned here with epiphytes having a 1.0-5.0cm long, leaved stem and 3.5-22.0cm long, narrow, linguiform leaves which are unequally lobed at their apex. The much compressed inflorescences are much shorter than the leaves and carry usually, very closely packed, small, pedicelled flowers resembling Cephalangraecum, but which differ in the shape of the lip and structure of the column. The column is fairly short, but moderately slim and extended in front into a deeply cleft rostellum. The hood-shaped anther terminates in front in a broad beak. The almost globose pollinia are attached to a common, slender stipe which is bilobed above for a short distance and which is firmly attached to a fairly large, longish viscid disc.

On the one hand the genus indicates certain relationships to Calypstrochilum, on

the other to Cephalangraecum, but for the species of these genera I have never observed a rostellum similar to the one illustrated and described by Finet.

I must admit that I am surprised that two further species are said to occur (Finet even mentions a third), both from the French Congo region, as well as from Upper Guinea, which seems to be missing in the very copious German as well as English collections. Let us hope that we shall be able to find out more about them.

The two species described by Finet are discussed here, the third one he mentions coming from the Oubangi Basin is said to be present as fruiting specimens only, but to be well distinguished specifically from the two described.

1. Ancistrorhynchus brevifolius A. Finet, in Bull. Soc. Bot. Fr. LIV (1908), [Mém. 9], p. 45, t. IX.

West Africa : French Congo Region.

The species differs from the others in its straight protruding spur, which is almost at right angles to the column, and in its 3.5cm long, 7.0-8.0mm broad leaves having a distinct keel on their back.

2. Ancistrorhynchus brunneo-maculatus (Rendle) Schltr. comb. nov.

Angraecum brunneo-maculatum Rendle, Cat. Talb. Niger. Pl. (1913), p. 105, t. 14.

West Africa : Nigeria, Cameroon.

An interesting species, probably closely related to A. clandestinus (Lindl.) Schltr. and A. Straussii Schltr., but very similar, as are all the species in the genus. It is easily distinguished from the species above by the fairly pointed leaves, on which one lobe (the smaller one) as for A. Durandianus (Krzl.) Schltr. and A. stenophyllus Schltr., is hardly recognisable.

3. Ancistrorhynchus clandestinus (Lindl.) Schltr. comb. nov.

Angraecum clandestinum Lindl., in Hook. Comp. Bot. Mag. II [1837], p. 206.

Listrostachys clandestina Rolfe, in Flor. Trop. Afr. VII (1897), p. 161.

West Africa : Sierra Leone to Cameroon.

Together with A. Straussii Schltr. this species is recognised in the section, in that the two unequal lobes at the leaf apex have free-standing apices.

A. clandestinus (Lindl.) Schltr., however, is more robust and has a common stipe for both pollinia, whilst A. Straussii Schltr., has two separated ones.

4. Ancistrorhynchus Durandianus (Krzl.) Schltr. comb. nov.

Listrostachys Durandiana Krzl., in Dur. et De Wildem. Compt. Rend. Soc. Bot.

Belg. XXXVIII p. 65.

West Africa : Congo Basin.

This species, which previously I considered to be a variety of A. clandestinus (Lindl.) Schltr. is really better considered as a separate species, since it is

distinguished by narrower, pointed leaves on which, as for A. brunneo-maculatus (Rendle) Schltr., the shorter apex lobe is barely visible. The crowns of the inflorescences eventually become extended into short-cylindrical or rather, ellipsoid spikelets.

5. Ancistrorhynchus recurvus A. Finet, in Bull. Soc. Bot. Fr. LIV [1907], [Mém. 9], p. 46, t. IX.

West Africa : Upper Guinea, Congo.

In contrast to A. brevifolius A. Finet, the author gives the following characteristics for this species : spur genuflexed at the middle, directed towards the back, at the base almost parallel to the column. Leaves 22cm long, 1.2cm broad, narrow lingulate, flat, not keeled on the back.

6. Ancistrorhynchus stenophyllus Schltr. sp. nov.

Angraecum clandestinum Lindl. var. stenophyllum Schltr., in Westafr. Kautsch. Exped. (1900), p. [283].

West Africa : Cameroon.

Likewise, probably best considered as a separate species. The flowers clearly are similar to those of A. clandestinus (Lindl.) Schltr., but in shorter, not so abundantly-flowered inflorescences. The very pointed leaves are narrow, linear, 30-45cm long, 4.0-5.0cm broad and give not the faintest indication of being lobed.

7. Ancistrorhynchus Straussii Schltr. comb. nov.

Angraecum Straussii Schltr., in Engl. Jahrb. XXXVIII (1906), p. 164.

West Africa : Cameroon.

This species is distinguished from the others in the section by the appreciably smaller flowers, the straight, longish, very blunt spur which is directed backwards; by the almost square lip-lamina, and by the pollinia on two separate, fairly short stipes attached to a longish, large viscid disc. I consider it somewhat doubtful whether Talbot's two Nigerian specimens, included by Rendle, really belong here.

23. Angraecopsis Krzl.

In Engl. Jahrb. XXVIII (1900), p. 171.

How little respect Prof. Kränzlin gives to the genera which he established is clearly indicated by his subsequent determination of the TYPE of the genus as Angraecum amaniense Krzl. At the time, I saw myself compelled to withdraw Angraecopsis, but only on the basis of my then held opinion, that we could only accept Angraecum in its wider sense until a better division could be found. Now, according to priority rules, we must re-establish two genera founded by Kränzlin without his giving even approximately correct information as to their closer

relationship, viz. Angraecopsis and Calypstrochilum. I must stress in this connection however, that the realisation of these genera does not originate from their author. It is sufficient to mention that Kränzlin determined a Cyanastrum species as Eulophia galeoloides Krzl. and described a Habenaria as a new Epipogum Kassnerianum Krzl.

The genus Angraecopsis shows certain resemblances to Mystacidium, but is well distinguished by the trilobed or tripartite lip-lamina and the narrow mouth of the spur, as well as by the rostellum. The hood-shaped anther always appears to be somewhat extended in front. The pollinia are attached either to a common, or to two separated stipes, which can rest either on a common or on two separated viscid discs.

Previously I was of the opinion that Angraecum falcatum Lindl. should be included here, but now consider it best to regard it as a separate genus for which I suggest the name Finetia in recognition of the services which the French orchidologist A. Finet, who unfortunately passed away so early, rendered for the angraecoid orchids. (Footnote : Angraecum falcatum Lindl. = Finetia falcata (Lindl.) Schltr.) The genus differs from Angraecopsis in its equitant leaves, in the presence of a small crest at the base of the front lobe, between the two short lateral lobes, in the broad, short bilobed rostellum, and in the long pedicelled cylindrical fruits.

Angraecopsis in this delimitation consists of seven species, five of these being tropical-African, and two Madagascan.

1. Angraecopsis dolabriformis (Rolfe) Schltr. comb. nov.

Mystacidium dolabriforme Rolfe, in Flor. Trop. Afr. VII (1897), p. 175.

West Africa : St. Thomé Island.

Clearly belonging together with A. tridens (Lindl.) Schltr. into the closer affinity of A. occidentalis (Krzl.) Schltr. The plant is said to be c. 7.0cm tall and have a multi-flowered raceme of small flowers with axe-shaped petals and with a spur swollen in a clavate manner at the apex.

2. Angraecopsis ischnopus Schltr., [Die Orchid. (1914), p. 601].

Angraecum ischnopus Schltr., in Notizbl. Bot. Gart. Berl. IV (1905), p. 170.

West Africa : Cameroon.

This species probably is closely related to A. tridens (Lindl.) Schltr., but differs in the slender, uncinat spur and in the lateral lobes of the labellum being indistinctly toothed at the apex. The slender peduncle carries at the apex a distinctly shortened raceme of yellow-green flowers.

3. Angraecopsis occidentalis (Krzl.) Schltr. comb. nov.

Saccolabium occidentale Krzl., in Engl. Jahrb. XVII (1893), p. 57.

Angraecum occidentale Rolfe, in Flor. Trop. Afr. VII (1897), p. 142.

West Africa : Cameroon.

This species of the genus is well characterised by the very small flowers of the pendulous, lax, 5 to 10-flowered raceme, and by the markedly bent clavate spur. To date it is known as a solitary specimen only.

4. Angraecopsis parviflora (Thou.) Schltr., [Die Orchid. (1914), p. 601].

Angraecum parviflorum Thou., in Orch. Iles Afr. (1822), t. 60.

Oecoeclades parviflora Lindl., in Gen. et Spec. Orch. (1833), p. 236.

Listrotachys parviflora S.Moore, in Baker, Flor. Maur. (1877), p. 355.

Mascarene Islands.

A very characteristic species which probably is related closest to A. trifurca (Rchb.f.) Schltr., but which is well distinguished by the smaller flowers, broader middle lobe of the labellum and by the narrower lateral lobes.

5. Angraecopsis tenerrima Krzl., in Engl. Jahrb. XXVIII (1900), p. 171.

Angraecum tenerrimum Schltr., in Engl. Jahrb. XXXVIII (1906), p. 164.

East Africa : Usambara.

A very beautiful species with white flowers, distinguished within the genus both by size, as well as the long filiform spur. Undoubtedly it is most closely related to A. occidentalis (Krzl.) Schltr.

6. Angraecopsis tridens (Lindl.) Schltr. comb. nov.

Angraecum tridens Lindl., in Journ. Linn. Soc. VI (1862), p. 132.

Listrostachys tridens Rchb.f., in Flora (1865), p. 190.

Mystacidium tridens Rolfe, in Flor. Trop. Afr. VII (1897), p. 174.

West Africa : Fernando Po.

Definitely also related to A. occidentalis (Krzl.) Schltr. Especially well characterised by the slightly papillose viscid disc and by the short, clavate spur.

7. Angraecopsis trifurca (Rchb.f.) Schltr., [in Beih. Bot. Centralbl. 33, ii(1915), p. 438].

Aeranthus trifurcus Rchb.f., in Flora (1855), p. 540.

Mystacidium trifurcum Dur. et Schinz, in Conspect. Flor. Afr. V (1895), p. 55.

Listrostachys trifurca A.Finet, in Bull. Soc. Bot. Fr. LIV (1908), Mém. IX, p. 51.

Comoro Islands.

Undoubtedly related to A. parviflora (Thou.) Schltr., but well distinguished by the deeper tripartite labellum with broader lateral lobes and the narrow-linear, pointed middle lobe.

24. Crossangis Schltr. gen. nov.

Amongst those orchids brought back by Ledermann from the interior of Cameroon

several years ago, there is a very peculiar angraecoid epiphyte, described by Prof. Kränzlin as a Listrostachys species, but which stands so isolated in that whole series of genera, that I feel inclined to consider it as the TYPE of a separate genus. I characterise the genus as follows :

Crossangis Schltr. nov. gen.

Sepala petalaeque subpatentia; sepala oblonga, obtusa, lateralia obliqua; petala oblique latelliptica, margine obtusiuscule lacerato-fimbriata, sepalis subaequimagna. Labellum trilobum, circuitu perlate quadratum, basi juxta ostium calcaris margine utrinque callo curvato carnosio brevi ornatum, ante ostium calcaris gibbo oblongo obtuso praeditum, petalis aequilongum, lobis lateralibus amplis, peralte pectinato-laceratis, segmentis vulgo plus minus falcatis, lobo, antico parvulo lanceolato-triungulo, subacuto, integro, calcare filiformi, pendulo, ovario pedicellato pluries longiore, ostium versus paulo dilatato. Columna subbrevis, apoda, rostello satis magno carnosio, leviter decurvo. Anthera cucullata antice obtusa. Pollinia globosa stipitibus separatis ut videtur viscidis 2 separatis.

Planta epiphytica, habitu species generis Aerangis imitans, acaulis; foliis obovato-cuneatis, textura pro affinitate tenuioribus; racemis laxe plurifloris, patulis, foliorum longitudine vel longioribus; bracteis parvulis; floribus graciliter pedicellatis, mediocribus, virescenti-albidis.

Species singula adhuc nota, locorum elevatorum terrae Kamerum indigena.

The genus appears to me to be well characterised within this series of genera by the petals being lacerated at the margin and by the labellum being deeply lacerated on both sides. On superficial observation of the herbarium specimens, one could initially imagine to be considering an Aerangis species, but apart from the unique characters of the petals and of the labellum, the fairly thick-carnose rostellum speaks against this, since this never occurs with Aerangis. The slightly broadened spur-mouth and the shape of the spur are, furthermore, slightly reminiscent of Mystacidium. A union with that genus is out of the question for the same reasons as given against Aerangis.

1. Crossangis polydactyla (Krzl.) Schltr. comb. nov.

Listrostachys polydactyla Krzl., in Engl. Jahrb. LI (1914), p. 394.

West Africa : Cameroon.

I should like to draw all those botanical collectors active in the interior of Cameroon, to the attention of this extremely interesting TYPE.

25. Tridactyle Schltr.

Die Orchid. (1914), p. 601.

It appears to me that this is a genus very well and easily distinguished both in habit and floral characters.

Tridactyle Schltr.

Sepala petalaeque patentia; sepala vulgo oblonga, lateralia obliqua, basi margine anteriore vulgo paulo decurrentia et inter se saepius ima basi connata; petala sepalis vulgo bene angustiora obliqua. Labellum vulgo plus minusve cuneatum trilobum vel rarius bilobum, lobis lateralibus saepe apice fimbriato-multipartitis, juxta basin vulgo lobulis 2 auriculiformibus ornatum,

calcare vulgo cylindrico, interdum subclavato, labello 2—4plo longiore. Columna brevis, juxta stigma ampliata, rostello tenui acuto, decurvo. Anthera cucullata antice truncata. Pollinia subglobosa, stipite lineari, interdum usque ad medium bifidum, viscidio parvulo, vulgo rotundato.

Plantae epiphyticae; caule plus minusve elongato, crasso, bene foliato; foliis loratis inaequaliter et obtuse bilobulatis, vel subulatis acutis, coriaceis vel carnosissimis; racemis brevibus vel brevissimis, paucis vel plurifloris, folia nunquam superantibus vulgo multo brevioribus; bracteis parvulis; floribus parvulis.

Species 30 mihi adhuc notae Africae tropicae et subtropicae speciales.

The genus is recognised already on first sight by the short lateral inflorescences. A closer examination of the flowers shows that they have extremely good characters in the shape of the labellum. Only one species shows a slight deviation in this respect and therefore is treated as a separate sub-genus. The column is probably most reminiscent of those of the genus *Aerangis*, but is always much smaller and almost generally has a shorter downwards-bent rostellum.

The two sub-genera which I accept here are characterised as follows:

- I. Eu-Tridactyle, with a trilobed labellum, whose middle lobe is distinctly extended and whose lateral lobes usually terminate as filiform, or are finely lacerated at the apex, but seldom reduced to fine teeth.
- II. Nephrangis, with the lip-lamina narrowed in front of the spur-mouth and then markedly widened into two, round and broad lobes, so that the middle lobe is completely suppressed. It is not out of the question that this sub-genera may later on be raised to the rank of a separate genus.

I. Eu-Tridactyle.

1. Tridactyle acutoemarginata (De Wildem.) Schltr. comb. nov.

Angraecum acutoemarginatum De Wildem., in Bull. Jard. Bot. Brux. V (1916), p. 181.

West Africa : Congo.

2. Tridactyle armeniaca (Lindl.) Schltr. comb. nov.

Angraecum armeniacum Lindl., in Bot. Reg. (1839), Misc. p. 67.

West Africa : Sierra Leone.

It would appear that this species is restricted in its distribution to Upper Guinea. I have not seen the TYPE, but it must be very similar to T. tridactylites (Rolfe) Schltr., although it is said to differ in the clavate spur and to have slightly larger flowers.

3. Tridactyle bicaudata (Lindl.) Schltr., [Die Orchid. (1915), p. 602].

Angraecum bicaudatum Lindl., in Hook. Comp. Bot. Mag. II [1837], p. 205.

Eulophia angustifolia Eckl. et Zeyh., ex Finet in Bull. Soc. Bot. Fr. LIV, p. 51.

Listrostachys bicaudata Finet, l.c. (1908), LIV, p. 51.

South Africa : From Knysna to Zululand.

A fairly vigorously growing species with leathery, broad-linear leaves and c. 8 to 12-flowered inflorescences, which are somewhat shorter than the leaves. The species belongs to a small group which is distinguished by having the apex of the lateral lobes resolved into several fine fringes. The spur is about double the length of the lip.

4. Tridactyle Bolusii (Rolfe) Schltr., [in Engl. Bot. Jahrb. LIII (1916), p. 603].

Angraecum Bolusii Rolfe, in Flor. Cap. [V, iii] (1912), p. 73.

South Africa : Zululand.

According to Rolfe, this species illustrated by Bolus as Angraecum tridentatum Harv., differs from it specifically in the more slender habit, narrower sepals and in the falcate, basal lobules of the labellum. The species belongs to the group having equitant leaves.

5. Tridactyle erecto-calcarata (De Wildem.) Schltr. comb. nov.

Angraecum erecto-calcaratum De Wildem., in Bull. Jard. Bot. Brux. V (1916), p. 186.

West Africa : Congo.

Related to T. lepidota (Rchb.f.) Schltr., but differing in the erect spur and the appreciably longer inflorescence.

6. Tridactyle filifolia Schltr. comb. nov.

Angraecum filifolium Schltr., in Engl. Jahrb. XXXVIII (1905), p. 21.

West Africa : Cameroon.

Similar to the previous one, but more slender and longer in habit, also with smaller flowers and the labellum with short, dentate lateral lobes. The spur is c. 2.0mm long.

7. Tridactyle fimbriata (Rendle) Schltr. comb. nov.

Angraecum fimbriatum Rendle, in Journ. Linn. Soc. Bot. XXX (1895), p. 387, t.32.

East Africa : Uganda, Usagara.

Undoubtedly closely related to T. bicaudata (Lindl.) Schltr., but with leaves of a thinner texture, and spreading, multi-flowered inflorescences of much smaller flowers, having a relatively larger labellum whose basal auricles are obtuse and whose lateral lobes are strongly lacerated. The spur is slender and more than double the length of the labellum.

8. Tridactyle [fimbratipetala] (De Wildem.) Schltr. comb. nov.

Angraecum [fimbratipetalum] De Wildem., in Bull. Jard. Bot. Brux. V (1916) p.

186.

West Africa : Congo.

Distinguished in particular within the genus, above all else, by the lacerated petals.

9. Tridactyle Frommiana (Krzl.) Schltr. comb. nov.

Angraecum Frommianum Krzl., in Engl. Jahrb. LI (1914), p. 398.

East Africa : Usambara.

In habit, the species is most reminiscent of T. tricuspis (Bolus) Schltr., but readily distinguished by the triangular lateral lobes of the labellum, which are truncated and dentate at the apex and protrude almost diametrically to the side, and by the slender, almost pointed spur. The stipe of the pollinia is divided almost to the middle.

10. Tridactyle Gentilii (De Wildem.) Schltr. comb. nov.

Angraecum Gentilii De Wildem., in Not. Pl. Utiles Congo I (1903), p. 140.

West Africa : Congo.

Of all the species of the genus, this one is the largest-flowered and in addition has the longest spur (4.0cm long). In habit, as well as floral characters, it is most closely related to T. bicaudata (Lindl.) Schltr. and T. fimbriata (Rendle) Schltr. The lateral lobes of the labellum, as for both those species, are lacerated into fringes at the apex.

11. Tridactyle Goetzeana (Krzl.) Schltr., [in Engl. Bot. Jahrb. 53 (1915), p. 602].

Angraecum Goetzeanum Krzl., in Engl. Jahrb. XXX (1901), p. 289.

East Africa : Nyassa District.

On superficial observation this East African species could readily be mistaken for the West African T. filifolia Schltr., were not the flowers quite different, since here the lateral lobes of the labellum are equal in length to the triangular middle lobe, and the spur is c. 6.0mm long. The inflorescences are also longer and not uncommonly 5 to 6-flowered.

12. Tridactyle inaequilonga (De Wildem.) Schltr. comb. nov.

Angraecum inaequilongum De Wildem., in Bull. Jard. Bot. Brux. V (1916), p. 187.

West Africa : Congo.

According to the description and comments by the author, related to T. stipulata (De Wildem.) Schltr.

13. Tridactyle Kindtiana (De Wildem.) Schltr. comb. nov.

Angraecum Kindtianum De Wildem., Miss. Laur. (1906), p. 225, [t. 81, fig. 27].

[Listrostachys Kindtiana De Wildem., in Not. Pl. Utiles Congo I (1903), p. 148].

West Africa : Congo.

In habit, probably closest related to T. fimbriata (Rendle) Schltr., having 10-13cm long and 1.1-1.3cm broad leaves. The racemes are 4.0-7.0cm long and about 10 to 15-flowered. Flowers greenish yellow with 2.5mm long, longish sepals and petals. Lip on both sides at the base with small, rounded auricles, and from the middle on, trilobed with a triangular middle lobe and filiform lateral lobes. Spur cylindrical, 7.0-9.0mm long.

14. Tridactyle lagosensis (Rolfe) Schltr. comb. nov.

Angraecum lagosense Rolfe, in Flor. Trop. Afr. VII (1897), p. 145.

West Africa : Lagos.

So far I have not become acquainted with this species, but it must definitely belongs here. It would appear to me that it should be related to T. lepidota (Rchb.f.) Schltr., but the spur is said to be swollen in a clavate manner at the apex.

15. Tridactyle Laurentii (De Wildem.) Schltr. comb. nov.

Mystacidium Laurentii De Wildem., Not. Pl. Utiles Congo I (1903), p. 152.

Angraecum viridescens De Wildem., Miss. Laur. (1906), p. 61.

West Africa : Congo Basin.

Undoubtedly the smallest species of the genus, particularly in the minute flowers, which have the size of a pinhead and occur in very much shortened, 1 to 3-flowered inflorescences. The lip is characterised in that the lateral lobes commence below the middle and often are shorter than the ovate-lanceolate, long-acuminate front lobe. The spur is slightly swollen towards the apex, is blunt and exceeds the length of the labellum by almost a factor of three.

16. Tridactyle Ledermanniana (Krzl.) Schltr. comb. nov.

Mystacidium Ledermannianum Krzl., in Engl. Jahrb. LI [1914], p. 393.

West Africa : Cameroon.

On superficial observation this species could be regarded as a compact form of T. tridactylites (Rolfe) Schltr. However, it appears to me to differ specifically in the falcately protruding lateral lobes and the shorter middle lobe of the labellum, whilst in addition, the sepals and in particular the petals are less pointed. The cylindrical spur is about 8.0mm long.

17. Tridactyle lepidota (Rchb.f.) Schltr. comb. nov.

Angraecum lepidotum Rchb.f., in Gardn. Chron. (1880), XIII, p. 806.

West Africa : From Liberia to the Congo Basin.

This species and T. trachyrhiza Schltr. are especially noteworthy within the

genus in that the lip appears to be almost undivided, particularly in the dried specimens. The lateral lobes that are so readily identified in the other species are reduced here to minute, easily overlooked, little teeth, but at the base of the lip, at both sides of the spur-mouth, we find the basal auricles in the shape of short swellings. In other respects, the affiliation of the two species to this genus is in no doubt.

18. Tridactyle linearifolia (De Wildem.) Schltr. comb. nov.

Listrostachys linearifolia De Wildem., in Not. Pl. Utiles Congo I (1903), p. 149.

West Africa : Congo Basin.

A fairly characteristic species with linear, almost subulate, pointed, up to 13cm long, 1.0mm broad leaves, wrinkled at the sheaths and with very short, only few-flowered inflorescences, with c. 5.0mm broad flowers. The sepals and petals are longish-lanceolate, almost pointed, 2.5mm long. The lip has linear, pointed lateral lobes with the middle lobe twice the length and slightly broader. The spur is straight, pointed, 7.0-8.0mm long.

19. Tridactyle muriculata (Rendle) Schltr. comb. nov.

Angraecum muriculatum Rendle, in Cat. Talb. Niger. Pl. (1913), p. 105, t. XIV.

West Africa : Nigeria.

The species gets compared with T. lepidota (Rchb.f.) Schltr., but is said to differ in the more slender stem, narrower leaves and larger flowers with a much longer spur. The flowers are c. 1.3cm broad, the spur 3.0cm long.

20. Tridactyle nalaensis (De Wildem.) Schltr. comb. nov.

Angraecum nalaense De Wildem., in Bull. Jard. Bot. Brux. V (1916), p. 189.

West Africa : Congo.

Differs from the related T. lepidota (Rchb.f.) Schltr. in the lip.

21. Tridactyle rhodesiana (Rendle) Schltr. comb. nov.

Angraecum rhodesianum Rendle, in Journ. Linn. Soc. [XL] (1911), p. 208.

South-east Africa : Rhodesia.

Very similar in habit to T. bicaudata (Lindl.) Schltr. and with linear, c. 10cm long leaves, up to 15cm long racemes and c. 1.5cm broad flowers. The sepals are ovate, pointed, the petals triangular-lanceolate. Lip, both sides at the base, with a short auricle above the middle, trilobed, with narrow, triangular, pointed, 3.0mm long middle lobe and almost rhombic, slightly margined, 1.5mm long lateral lobes. The spur is filiform, c. 11.5mm long.

22. Tridactyle Scottellii (Rendle) Schltr. comb. nov.

Angraecum Scottellii Rendle, in Journ. Bot. (1895), p. 249.

East Africa : Uganda.

This species is so similar in habit to T. virgula (Krzl.) Schltr., that they can easily be confused. However, they are specifically well distinguished by their flowers, since in this species the shape of the labellum is completely different from that of T. virgula (Krzl.) Schltr. in having a deeply trilobed labellum with long, filiform lateral lobes, whilst T. virgula (Krzl.) Schltr. has short blunt lateral lobes.

23. Tridactyle stipulata (De Wildem.) Schltr. comb. nov.

Angraecum stipulatum De Wildem., in Miss. Laur. (1906), p. [226], t. 82, 83.

West Africa : Congo Basin.

The species belongs to those of smaller size and is most closely related to T. lepidota (Rchb.f.) Schltr., but has smaller flowers, a labellum with longer lateral lobes and is furthermore, especially characterised by the subulate, delicate, stipule-like excrescences on the margin of the leaf sheaths.

24. Tridactyle trachyrhiza Schltr. comb. nov.

Angraecum trachyrhizum Schltr., in Engl. Jahrb. XXVI (1899), p. 343.

South-east Africa : Mozambique.

Can be considered the eastern representative of T. lepidota (Rchb.f.) Schltr. and very closely related to it, but differing in the blunter sepals and petals and with the lip being blunt in front.

The species is more prone to branching of the stems than any of the others.

25. Tridactyle tricuspis (Bolus) Schltr. comb. nov.

Angraecum tricuspe Bolus, in Journ. Linn. Soc. Bot. XXV (1888), p. 163, f. 1.

South Africa : East Griqualand, Natal, Transvaal.

Most similar in growth to T. bicaudata (Lindl.) Schltr. and T. Frommiana (Krzl.) Schltr., but with the lateral lobes of the labellum subulate and not lacerated, and with a relatively longer middle lobe. The stipe of the pollinia is divided at the apex, as for T. Frommiana (Krzl.) Schltr.

26. Tridactyle tridactylites (Rolfe) Schltr. comb. nov.

Angraecum tridactylites Rolfe, in Gard. Chron. (1888), IV, p. 34.

Aeranthus Deistelianus Krzl., in Engl. Jahrb. [XXXIII (1902)], p. 72.

West Africa : From Sierra Leone to Angola.

The most widely distributed and commonest species of the genus in West Africa, often growing in colonies in fairly large quantities. It is closely related to T. armeniaca (Lindl.) Schltr., but readily distinguished from it by the more slender, non-clavate spur.

27. Tridactyle tridentata (Harv.) Schltr., [in Engl. Bot. Jahrb. 53 (1915) p. 603].

Angraecum tridentatum Harv., in Thes. Cap. II (1863), p. 6.

South Africa : Natal.

I have not seen this species. According to Rolfe, it is said to differ from T. Bolusii (Rolfe) Schltr. in more robust growth, narrower petals, and in the obtuse basal auricles of the labellum.

28. Tridactyle virgula (Krzl.) Schltr. comb. nov.

Angraecum virgula Krzl., in Engl. Jahrb. (1895), XXII, p. 27.

Listrostachys virgula Rolfe, in Flor. Trop. Afr. VII (1897), p. 165.

Central Africa : Ruwenzori.

In outward appearance this species has much similarity to T. Scottellii (Rendle) Schltr., but the lip is very different, with the the lamina in this case being broad-elliptical in outline, with bluntish, short, spreading lateral lobes and a broad triangular front lobe. The spur is about three times as long as the lip and swollen in a slightly clavate manner.

29. Tridactyle Whitfieldii (Rendle) Schltr. comb. nov.

Angraecum Whitfieldii Rendle, in Journ. Bot. (1895), p. 250.

West Africa : Sierra Leone.

Without doubt, the species is closely related to T. tridactylites (Rolfe) Schltr. and T. armeniaca (Lindl.) Schltr., but has distinctly smaller flowers and instead of the lateral lobes at the base of the lip lamina, has only thickened, carnose margins next to the spur, as has been observed also with several other species of the genus. The shape of the lip in other respects is similar to that with the two species named above, i.e. the lateral lobes are extended to the front in a filiform manner and the middle lobe is triangular. The slender spur is about four times longer than the labellum.

II. Nephrangis.

30. Tridactyle filiformis (Krzl.) Schltr. comb. nov.

Listrostachys filiformis Krzl., in Engl. Jahrb. XXII (1895), p. 28.

East Africa : Uganda.

I have mentioned above already that I do not consider it out of the question, that this species may later on be raised to the rank of a separate genus. The TYPE specimens are already much withered, but the peculiar shape of the lip is still easily discerned. Next to the spur-mouth, on each side at the margin, there is a truncated, auricle-like lobe. Furthermore, the lip-lamina is then narrowed in a claw-like manner and suddenly broadened into two large, roundish lobes. The spur is slightly broader at the middle and gradually narrowed towards the apex and is almost pointed.

26. Bonniera Cordem.

In Rev. Génér. Bot. XI (1899), p. 416.

Material of this species, established 15 years ago, is available only at the Paris Herbarium, hence naturally it is difficult to gain a clear picture of their value. The illustration published by Cordemoy shows very little detail of the flower which, with the complete lack of a spur or pouch, appears at any rate to be quite isolated in the genus series of angraecoid orchids. A more exact illustration of the column of one species has been published by Finet, but before I consider his evaluation in more detail, I shall describe the general characters of the genus.

The two species clearly are erect, medium-sized, epiphytes with leaved stems, which apparently now-and-again have small branchings. The longish leaves are unequally and bluntly bilobed at the apex. The flowers occur in short, single-flowered inflorescences with a short pedicel carrying 2 to 3 spathes and a bract similar to the spathes. The sepals and petals extended in a narrow-lanceolate manner are fairly alike. The labellum also is similar and according to Finet, does not give the slightest indication of a pouch or spur formation. The column has the deeply margined rostellum of Angraecum and Jumellea, but differs in the absence of the square, lateral auricles so characteristic for these genera, and that it is slightly taller than for the Angraecum species. The anther and pollinia, which are located on two separated, very short stipes attached to a very large viscid disc, hardly differ from those of the Angraecum species.

The genus will probably have to remain isolated, since with the lack of material and the impossibility of initiating observation of its occurrence, a definite decision appears to be impossible at present. I should, however, like to suggest a special lookout by those botanists who have the opportunity of collecting in the island of Réunion, since one cannot completely dismiss the presumption that perhaps peloric forms of certain Angraecum species could occur.

1. Bonniera appendiculata Cordem., in Rev. Génér. Bot. XI (1899), p. 416, t. XI.

Angraecum appendiculatum Boiv., ex Cordem. Flor. Reun. (1895), p. 212.

Réunion Island.

Distinguished from the following one by stronger branching and smaller leaves.

2. Bonniera corrugata Cordem., in Rev. Génér. Bot. XI (1899), p. 416, t. X.

Réunion Island.

According to the illustrations available, the species is easily distinguished from the first one by the wrinkled leaf-sheaths, larger flat leaves, stronger branching and slightly longer inflorescence peduncles.

[Ed. It may be noted that the species notes cite both species having stronger branching].

27. Jumellea Schltr.

Die Orchid. (1914), p. 609.

All the species united in this genus form a very natural group, which is most closely related to certain Angraecum types, but which is very well distinguished by the nature of the inflorescence, as well as floral shape and structure.

The genus is characterised as follows :

Jumellea Schltr.

Sepala petalaeque anguste ligulata, acuta vel acuminata, inter se vulgo bene similia; sepalum posticum vulgo recurvum; sepala lateraliter et petala porrecta vel subdecurva, petala margine anteriore basi cum margine labelli plus minus distincte connata. Labellum planum vel subplanum, vulgo rhombeo-lanceolatum vel rhombeo-ovatum, acuminatum, basin versus angustatum, columnam nunquam amplexans, basi carina mediana usque infra medium decurrente ornatum, calcare filiformi, decurvo vel antrosum curvato, nunquam apicem versus ampliato, vulgo perlongo, ostio parvulo. Columna perbrevis, auriculis 2 quadratis verticalibus, porrectis, pro magnitudine columnae magnis ornata, rostello alte emarginato. Anthera cucullata, truncata vel retusa, erostri. Pollinia globosa vel late ellipsoidea, subsessilia, stipitibus, vulgo 2 separatis, ellipticis, rarius viscidio communi affixa. Capsula longipedicellata, anguste cylindrica fissura singula dehiscens.

Plantae epiphyticae breviaules vel caule satis elongato, interdum ramoso; foliis ligulatis vel linearibus, apice inaequaliter et obtuse bilobulatis, coriaceis vel carnosulis, erecto-patentibus vel patentibus; inflorescentiis semper unifloris, pedunculo brevi vaginis paucis approximatis, compressis et bractea simili obsessis, flore semper longius pedicellato, erecto vel erecto-patente, medioctri vel satis magno, textura subfirmulo (haud valde tenui), capsula longipedicellata, anguste cylindrica.

Species c. 21 adhuc notae, omnes insulae Madagascar et insularum Mascarenensium nec non Comoro speciales adhuc singulae in Africa tropica observatae.

The genus must be placed next to Angraecum, where the column is in very good agreement. However, it is generically well distinguished by the position of the sepals and petals and by the lip which is narrowed at the base and often is clawed, but which never surrounds the column, as it does for Angraecum, and by the filiform spur with a narrow, but never widened mouth as for Angraecum. Finally, the genus has a characteristic inflorescence which readily identifies its species, since even though single-flowered inflorescences occur as for Angraecum, their whole structure is different, with the Angraecum species usually having multi-flowered inflorescences, or with the single-flowered species showing a definite tendency for further flowers, which is never observed with Jumellea. Many species of Jumellea are distinguished by a very pleasant fragrance. Characteristic, furthermore, is the long, cylindrical, long-pedicelled fruit, which on ripening, opens along a slit.

I have allowed myself the liberty of dedicating this genus to the great patron of our knowledge of the flora of Madagascar, Dr. Henry Jumelle, Professor of Botany at the Faculté des Sciences in Marseilles, who not only in his own investigations, but also together with M.H. Perrier de la Bathie has shown particular interest in the flora of Madagascar, but who also in this regard, has had a significant influence on many of his pupils. We also have to thank him for his encouragement only

recently towards the publication of a valuable, critical compilation by Dr. P. Choux of all the Asclepiadaceae so far known in Madagascar.

1. Jumellea arachnantha (Rchb.f.) Schltr. comb. nov.

Aeranthus arachnanthus Rchb.f., in Flora (1885), p. 539.

Comoro Islands.

One of the very short-stemmed species with large, linear, up to 60cm long and 5.0cm broad leaves. The flowers have a long pedicel on a short peduncle. The sepals and petals are narrow-lanceolate, acuminate, up to 4.0cm long. The lip is broad-lanceolate, narrowed at the base, with the spur c. 5.0cm long. The species can be considered as the largest within the genus.

2. Jumellea comorensis (Rchb.f.) Schltr. comb. nov.

Aeranthus comorensis Rchb.f., in Flora (1885), p. 540.

Mystacidium comorense Dur. et Schinz, in Conspect. Fl. Afr. V (1895), p. 52.

Angraecum comorense A.Finet, in Bull. Soc. Bot. Fr. LIV, Mém. IX (1907), p. 13.

Comoro Islands.

In habit the species is said to be very reminiscent of the better-known J. fragrans (Thou.) Schltr., but to be distinguished by the more pandurate lip-lamina, and by the spur which attains a length about five times that of the lip-lamina. Finet illustrates the lip-lamina as being rhombic-ovate with the claw reaching about half way.

3. Jumellea confusa Schltr. comb. nov.

Angraecum confusum Schltr., in Ann. Mus. Col. Marseille (1913), p. 47, t. XIV.

Madagascar.

Undoubtedly, the species is closely related to J. recurva (Thou.) Schltr., but differs specifically in the larger dimensions of the stem and leaves, in the much longer flower pedicels and in the rhombic-lanceolate, very pointed labellum. The spur is 11cm long.

4. Jumellea Curnowiana (Rchb.f.) Schltr. comb. nov.

Aeranthus Curnowianus Rchb.f., in Gardn. Chron. (1883), I, p. 306.

Raphidorrhynchus Curnowianus A.Finet, in Bull. Soc. Bot. Fr. LIV (1907), Mém.

IX, p. 37.

Madagascar.

A very compact species with longish, 6.0-10.0cm long leaves and moderately large flowers. The sepals and petals are lanceolate-linguiform, pointed, c. 2.0 cm long. The lip is obovate, at the base cuneate, with a c. 10.0cm long, bent, filiform spur.

5. Jumellea exilis (Cordem.) Schltr. comb. nov.

Angraecum exile Cordem., in Rev. Génér. Bot. XI (1899), p. 418, [t. 10, fig. 19].

Mascarene Islands : Réunion Island.

Although no flowers of this species are known yet, I believe that according to the illustration I can risk placing it here, since both the appearance of the inflorescence and the long cylindrical fruit are in its favour.

6. Jumellea [filicornoides] (De Wildem.) Schltr. comb. nov.

Angraecum [filicornoides] De Wildem., Pl. Nov. Herb. Hort. Then. I (1904), t. 21.

East Africa : Zambesi District.

This species arouses especial interest in being the sole representative of the genus on the African mainland. So far, the flowers only are known; these being fairly small, with linguiform, c. 1.5cm long sepals, a linguiform-rhombic lip and a slender c. 2.0cm long, straight spur. The distribution corresponds completely with that observed otherwise for other solely pure Madagascan genera.

7. Jumellea fragrans (Thou.) Schltr., [Die Orchid. (1914), p. 609].

Angraecum fragrans Thou., Orch. Iles Afr. t. 54.

Aerobion fragrans Sprgl., Syst. Veget. III (1826), p. 716.

Aeranthus fragrans Rchb.f., in Walp. Ann. VI (1864), p. 899.

Madagascar, Mascarene Islands.

One of the species characterised within the genus by the shortness of the spur, which in this case is only slightly longer than for the sepals and petals. Furthermore, the species is characterised by the presence of a single viscid-disc, a character common only with a few others, since the majority have two separated viscid-discs.

8. Jumellea gladiator (Rchb.f.) Schltr. comb. nov.

Aeranthus gladiator Rchb.f., in Flora (1885), p. 539.

Comoro Islands.

Most similar in growth to J. arachnantha Rchb.f., but is said to differ in narrower sepals and petals, as well as in the narrow lip, barely narrowed at the base. I have not seen the plant personally.

9. Jumellea Henryi Schltr., [in Beih. Bot. Centralbl. 33, ii (1915), p. 429].

Angraecum Jumelleanum Schltr., in Ann. Mus. Col. Mars. (1913), p. 51, t. XXIV.

Madagascar.

The species is extremely characteristic, already in its habit. The closely-leaved, compact stems seldom appear to be taller than a span and have closely

packed, horizontally spreading, linear, blunt, up to 2.0cm long, carnose leaves. The flowers are of medium size, with lanceolate-longish sepals and petals and an obovate-rhombic labellum, with a 11-12cm long spur. It is dedicated to Henry Jumelle.

10. Jumellea lignosa Schltr. comb. nov.

Angraecum lignosum Schltr., in Ann. Mus. Bot. Mars. (1913), p. 52, t. XXIV.
Madagascar.

Probably the most vigorously growing species of the genus, with up to 1.5m tall branched stems and 4.5-6.0cm long, linear-longish leaves. The flowers have 3.6cm long segments and a lanceolate-rhombic, pointed lip, with c. 10.0cm long spur bent in an 'S' shape.

11. Jumellea liliodora (Frapp.) Schltr. comb. nov.

Angraecum liliodorum Frapp., in Cordem. Fl. Réun. (1895), p. 198.
Mascarene Islands : Réunion Island.

Likewise, a very short, compact species with small stems and short leaves, but well distinguished from J. Henryi Schltr. by the shorter pedicel and the spur which is only half as long again as the sepals.

12. Jumellea majalis Schltr. comb. nov.

Angraecum majale Schltr., Ann. Mus. Colon. Marseille (1913), p. 53, t. XXIV.
Madagascar.

This species also is fairly compact with spreading 2.5-4.0cm long and 5.0-7.0 mm broad leaves. The flowers are similar to those of J. recurva (Thou.) Schltr., but are very well characterised by the labellum being distinctly narrowed at the middle.

13. Jumellea neglecta (Frapp.) Schltr., [in Beih. Bot. Centralbl. 33, ii (1915), p. 429].

Angraecum neglectum Frapp., in Cordem. Flor. Réun. (1895), p. 202.
Mascarene Islands : Réunion Island.

Differs from all the other species, in the short spur which attains only half the length of the sepals. In habit, the plant is very reminiscent of J. triquetra (Thou.) Schltr., but has longer leaves of a thinner texture.

14. Jumellea nutans (Frapp.) Schltr. comb. nov.

Angraecum nutans Frapp., in Cordem. Flor. Réun. (1895), p. 201.
Mascarene Islands : Réunion Island.

Clearly related to the previous one and to J. triquetra (Thou.) Schltr. and like both of these, with a very much shortened stem. The flowers, however, are

larger than for J. neglecta (Frapp.) Schltr. and have a spur equal in length to that of the sepals. The flowers of J. triquetra (Thou.) Schltr. are not yet known, but judging by the fruiting specimens they definitely have a shorter pedicel.

15. Jumellea penicillata (Cordem.) Schltr. comb. nov.

Angraecum penicillatum Cordem., in Rev. Génér. Bot. XI (1899), p. 417, t. IX.
Mascarene Islands : Réunion Island.

In habit, also very reminiscent of J. triquetra (Thou.) Schltr. and likewise known only as fruiting specimens, but with more slender, 12-14cm long, 5.0-6.0mm broad, obliquely erect leaves and narrow fusiform, long and thin-pedicelled fruit.

16. Jumellea recta (Thou.) Schltr. comb. nov.

Angraecum rectum Thou., in Orch. Iles Afr. (1822), t. 55.

Aerobion rectum Sprgl., Syst. III (1826), p. 716.

Epidorchis recta O.Ktze., Rev. Gen. II (1891), p. 660.

Macroplectrum rectum A.Finet, in Bull. Soc. Bot. Fr. LIV (1907), Mém. IX, p. 27. p.p.

Mascarene Islands.

Finet, following S. Moore's example, united this species with Angraecum recurvum Thou., but in my opinion they should definitely be separated specifically, since they differ both in size and width of the leaves, as well as in the shape of the labellum and in the relative length of the spur. J. recurva (Thou.) Schltr. decidedly is the less robust of the two species.

17. Jumellea recurva (Thou.) Schltr. comb. nov.

Angraecum recurvum Thou., Orch. Iles Afr.[1822], t. 56.

Aerobion recurvum Sprgl., Syst. III (1826), p. 716.

Angorchis recurva O.Ktze., Rev. Gen. II (1891), p. 651.

Macroplectrum rectum A.Finet, in Bull. Soc. Bot. Fr. LIV (1907), Mém. IX, p. 27. p.p.

Mascarene Islands.

I have stressed already above that I do not share the opinion of S. Moore and A. Finet, but regard this species and J. recta (Thou.) Schltr. as separate species. J. recta (Thou.) Schltr. is more robust and has a lanceolate labellum with a cuneate base, whilst for J. recurva (Thou.) Schltr. this is distinctly narrowed at the middle.

18. Jumellea Rutenbergiana (Krzl.) Schltr. comb. nov.

Angraecum Rutenbergianum Krzl., in Brem. Abhandl. v. IX (1882), p. 25.

Angraecum spathulatum Ridl., in Journ. Linn. Soc. XXI (1885), p. 478.

Angorchis spathulata O.Ktze., in Rev. Gen. II (1891), p. 652.

Madagascar.

Of the species known so far, this one is distinguished by the especially abundant formation of short lateral branches. The stem attains a height of 30–40 cm and has numerous short lateral branches with longish leaves, seldom more than one inch long. The flowers are of medium size with lanceolate, pointed sepals and an obovate-spathulate labellum with a short mucro. The filiform spur is 2.5–3.0 cm long.

19. Jumellea stenophylla (Frapp.) Schltr. comb. nov.

Angraecum stenophyllum Frapp., in Cordem. Flor. Réunion. (1895), p. 200.

Mascarene Islands : Réunion Island.

Stem up to 10 cm long, with linear, 8.0–10.0 cm long, 4.0–6.0 mm broad leaves, which are unequally and bluntly bilobed at the apex. Peduncles short, with 2–3 short sheaths, single flowered. Pedicel 8.0–10.0 cm [?] long. Flowers white, with linear-lanceolate, pointed, 2.5 cm long sepals and petals and a lanceolate, pointed lip, narrowed towards the base and with a filiform 10–12 cm long spur. Clearly related to J. confusa Schltr.

20. Jumellea stipitata (Frapp.) Schltr. comb. nov.

Angraecum stipitatum Frapp., in Cordem. Flor. Réunion. (1895), p. 199.

Mascarene Islands : Réunion Island.

Overall, this species is clearly related to J. confusa Schltr. and likewise previously probably often enough confused with J. recta (Thou.) Schltr. or J. recurva (Thou.) Schltr. However, it differs in the shorter spur exceeding the sepals in length by a factor of only $2\frac{1}{2}$ to 3. The lip-lamina, as for J. majalis Schltr. and J. recurva (Thou.) Schltr. is slightly narrowed at the centre.

21. Jumellea triquetra (Thou.) Schltr. comb. nov.

Angraecum triquetrum Thou., Orch. Iles Afr. (1822), t. 49. quoad specimen fructiferum.

Madagascar.

This very squat species, so far known only in fruit, is characterised by the clavate shape of the fruit. It can be considered as being closely related to J. neglecta (Frapp.) Schltr., but is always recognised by the thicker and shorter leaves and the very short peduncles, which with their few sheaths and the bract, remain hidden between the leaf-sheaths. Let us hope that we may succeed soon in locating the species in bloom.

28. Angraecum Bory

Voyages, I (1804), p. 369, t. 19.

Aerobion Kaempf., ex Sprgl. Syst. Veget. III (1826), p. 679.

Angorchis Nees, in R. Rr. Verm. Schrift (1826), II, p. 423.

Macroplectrum Pfitz., in Engl. u. Prantl., Nat. Pflzf. II, 6 (1889), p. 214.

Lepervanchea Cordem., in Rev. Génér. Bot. (1899), p. 426.

Monixus A. Finet, in Bull. Soc. Bot. Fr. LIV (1907), Mém. IX, p. 15.

It can hardly be disputed that even now, after I have started on the large tidying up of the genus Angraecum, types are still included which are very divergent. However, at the present time I do not wish to split off any further genera; that will be the task of the future monographers of the Sarcanthinae. I have left here all those species which are characterised by the deeply margined rostellum and whose labellum with its margins at the base surrounds the short column, in contrast to Jumellea, where the column remains completely free. Characteristic, furthermore, for the genus is the gradual transformation of the lip-lamina into the mouth of the broadened spur which, in its shape and length, can undergo large variations. Here, in particular, one sees that the differences in the pollinarium, to which so much value had been attached, completely breaks down, since as also for other genera, even closely related species, behave quite differently in the formation of two separate, or a common viscid-disc.

I could perhaps be accused of not removing certain aberrant species, e.g. those with a deeper lobed labellum, such as A. Fournierianum Krzl. and A. andongense Schltr. and the like; however, since these are types standing quite isolated, which may be related to the many still insufficiently known species that could not be considered here, I considered that the time had not yet arrived for their complete exclusion. It is, however, easily possible that the characters taken from the shape of the labellum within the genus Angraecum may not have the same importance as those, for example, in the case of Angraecopsis, Tridactyle and others. As a final decision on this question can then be taken only when all the species, so far known, have been analysed and compared precisely. Such a task is however, at present quite out of the question, since so many of the TYPES are inaccessible to me. Hopefully this may soon be possible after termination of the war period.

In its geographical distribution the genus matches almost completely those of the whole series group of the angraecoid orchids. We can establish two centres of development, one being in tropical West Africa, the other on Madagascar. All types are epiphytes and usually occur separately, only infrequently are they found in larger colonies. The northern boundary of the genus clearly is in the northern part of East Africa, whereas the southern boundary has been advanced much further, since A. pusillum Lindl. can be considered as the most southern species, being found in the Grootvaderbosch in the Swellendam District of the Cape Colony and at the same time can be regarded as the most southern epiphytic orchid of Africa.

Towards the west does not appear to extend beyond Sierra Leone. To the east,

A. zeylanicum Lindl. is found on Ceylon as the extreme salient.

Before I now turn to divide the genus into sections, I should like to stress again that the compilation following includes only those species which I have seen or those which from their description, I could with some certainty, establish as belonging to the genus. The same is valid for the remaining genera considered here, since a whole series of them will be augmented by several of the already described, but insufficiently known species. Already in the 'Flora of Tropical Africa' there are a dozen species about which a decision on generic relationship could not be reached solely from the descriptions.

I have now attempted to group into sections the species listed here which are not intended to represent a complete list, and I have thereby reached the conclusion that the following is probably the most practical division:

§ I. *Pectinaria* (Cordem. as genus, Ctenorchis K. Sch. as genus) includes a series of small-flowered species whose equitant, or almost equitant inflorescences always comprises only a solitary equitant small flower.

§ II. *Lepervanchea* (used by Cordemoy as a genus name for one of the species belonging here) includes the simplest forms, the majority having very minute flowers in lax or dense, several to multi-flowered inflorescences. The sepals and sepals usually are blunt, seldom slightly pointed, the labellum markedly concave, spathulate or cymbiform with a saccate or cylindrical spur often swollen at the apex. The species belonging here are partly South African or Madagascan-Mascarene.

§ III. *Conchoglossum* differs only slightly from *Lepervanchea*, but the inflorescences are always single-flowered on a short or slender peduncle with an equitant or very short pedicelled flower. The labellum has a middle crest at the base of the lamina, as also found frequently with *Eu-Angraecum*. As for *Lepervanchea*, the species here occur partly with a single, partly with two viscid-discs. The species I include here are tropical African or Madagascan.

§ IV. *Pseudo-Jumellea* has the same habit as Jumellea, but with single-flowered inflorescences on a more slender peduncle. The flowers correspond completely with those of the true Angraecum, but usually have a narrower labellum than those of the species of *Eu-Angraecum*.

§ V. *Eu-Angraecum*. This section should perhaps later on be divided into those species with 1 to 2-flowered inflorescences and those with many-flowered racemes, nevertheless I consider that a close relationship of the species brought together here is undeniable. Furthermore, the relationships to the first three sections are such that I do not feel inclined to undertake further divisions at the present time. The section containing the TYPE of the genus, A. eburneum Bory is distributed

over tropical and south-east, southern tropical Africa, as well as over the whole of the Lemurian area.

§ VI. Hadrangis. Here I have united several aberrant types having compact growth, medium-sized flowers of fairly coarse texture in racemes and with the shape of the labellum differing from that of the usual type. Only the future will tell whether these species will remain finally with Angraecum; this question cannot be decided at present, since on the one hand, the material available is too sparse, whilst on the other hand, there are still many angraecoid orchids which I could not consider here, because they still had to be clarified. To guard against later misunderstandings I want to stress that I regard Angraecum striatum Thou. as the TYPE of the section. The species which I have brought together here are all from the Madagascar-Mascarene region.

§ I. Pectinaria.

1. Angraecum Hermannii (Cordem.) Schltr. comb. nov.

Mystacidium Hermannii Cordem., in Rev. Génér. Bot. (1899), p. 421, t. VII.
Mascarene Islands : Réunion Island.

A species known only from fruiting specimens which definitely is closely related to A. pectinatum Thou., but has narrower-elliptical, pointed, clearly less thick, smaller 1.2-2.0cm long, 3.0mm broad leaves and clearly much smaller flowers.

2. Angraecum Finetianum Schltr. comb. nov.

Mystacidium Humblotii A.Finet, Bull. Soc. Bot. Fr. LIV, Mem. IX (1907) p. 22, t. IV.
Comoro Islands.

In common with A. subulatum Lindl., this species has equitant leaves, but with much shorter rhizomes. The flowers are distinguished in having broader sepals, a slightly bent, shorter spur and with pollinia located on two separated, longish viscid-discs.

3. Angraecum imbricatum (Sw.) Schltr. comb. nov.

[Limodorum] imbricatum Sw., Schrad. Neues Journ. I [1805], p. 87.
Angraecum [distichum] Lindl., in Bot. Reg. (1835), t. 1781.
Aeranthus distichus Rchb.f., in Walp. Ann. VI (1864), p. 901.
Mystacidium distichum Pfitz., in Engl. et Prantl. Pflenzfam. II, 6 (1889), p. 216.
Macroleptidium distichum A.Finet, in Bull. Soc. Bot. Fr. LIV (1907), Mem. IX, p. 22.

West Africa : From Sierra Leone to the Congo Basin.

This well-known species hardly requires any comments as to its relationship. The stems are densely bunched and closely beset with distichous, equitant, oblique-oval, blunt little leaves, 0.7-1.5cm long. The flowers are snow-white, with a straight protruding spur.

4. Angraecum pectinatum Thou., in Orch. Iles Afr. t. 51.

Aeranthus pectinatus Rchb.f., in Walp. Ann. VI (1864), p. 900.

Pectinaria Thouarsii Cordem., in Rev. Gen. Bot. (1899), p. 420.

Mystacidium pectinatum Boh. ex Finet, in Bull. Soc. Bot. Fr. LIV (1907), Mem. IX, p. 25.

Macroplectrum pectinatum A.Finet, l.c. (1907), p. 25.

Madagascar, Mascarene Islands.

The genus TYPE. The species has more-carnose, linear, flatter leaves than the others and is thereby easily recognised. Its flowers are also slightly larger, having longish sepals and petals, a spathulate, oval labellum and a cylindrical, blunt, straight spur.

5. Angraecum podochiloides Schltr., in Engl. Jahrb. XXXVIII (1906), p. 162.

West Africa : Nigeria to Cameroon.

A laxly pendulous species with equitant, but more lanceolate leaves and longer stems than for A. imbricatum (Sw.) Schltr. and with more slender, slightly larger flowers. The pollinaria appear to have only a single viscid-disc.

6. Angraecum pungens Schltr., in Engl. Jahrb. XXXVIII [1906], p. 163.

West Africa : Cameroon.

Closely related to the species following, but somewhat more robust and usually more compact in growth with linear, fairly thick, carnose leaves, spiky-pointed at the apex, 2.5-3.5cm long and 4.0-7.0mm broad. The pollinia rest on a common semi-circular viscid-disc.

7. Angraecum subulatum Lindl., in Hk. Comp. Bot. Mag. II (1836), p. 206.

Epidorchis subulata O.Ktze., in Rev. Gen. II (1891), p. 660.

Listrostachys subulata Rchb.f. ex Krzl., in Engl. Jahrb. XXII (1895), p. 28.

West Africa : From Sierra Leone to the Congo Basin.

It is not difficult to recognise the species by its slender growth and almost equitant, pointed, up to 12cm long leaves. Its white flowers resemble those of the previous species and of A. imbricatum (Sw.) Schltr.

§ II. Lepervanchea.

8. Angraecum ambongense Schltr., in Ann. Mus. Colon. Marseille (1913), p. 45, t.

XXI.

Madagascar.

All told, the species has the exact habit of A. calceolus Thou., but the inflorescences are not branched, as illustrated by Thouars. However, the species is quite isolated in the section in the shape of the labellum, so that it is doubtful whether with our future better knowledge of the angraecoid orchids, it will remain here. The lip actually is distinctly trilobed with small, roundish lateral lobes and an appreciably larger, almost square, front lobe, margined in front.

9. Angraecum anocentrum Schltr., in Engl. Jahrb. XXVI (1899), p. 342.

South Africa.

The species is very closely related to A. calceolus Thou., but has slightly larger and broader leaves, a lax, moderately branched flower spike as for the latter, and slightly larger, yellow-green flowers, with a spur slightly swollen at the apex and bent upwards over the flower.

10. Angraecum Burchellii Rchb.f., in Flora (1867), p. 117.

South Africa : George [Knysna] region.

In no way a common species, distinguished from A. sacciferum Lindl. by the small-linear, up to 10.0cm long, 4.0-5.0mm broad leaves and larger, very delicate peduncles. The flowers are very similar to those of A. sacciferum Lindl., but are slightly larger.

11. Angraecum calceolus Thou., Orch. Iles Afr. (1822), t. 78.

Aeranthus calceolus S.Moore, in Bak., Fl. Maur. (187-), p. 353.

Epidorchis calceolus O.Ktze., in Rev. Gen. II (1891), p. 660.

Mystacidium calceolus Cordem., in Flor. Ile Réunion. (1895), p. 220.

Macroplectrum calceolus A.Finet, Bull. Soc. Bot. Fr. LIV (1907), Mem. IX, p. 31.

Madagascar, Mascarene Islands.

I have already commented above how closely the species is related to Angraecum anocentrum Schltr. The best distinguishing character between the two species, apart from the size of the flowers, is the leaf which for A. calceolus Thou. is narrower and of a thinner texture than for those of A. anocentrum Schltr.

12. Angraecum carpophorum Thou., in Orch. Iles Afr. (1822), t. 76.

Epidorchis carpophora O. Ktze., in Rev. Gen. II (1891), p. 660.

Mystacidium carpophorum Cordem., Flor. Ile Réunion. (1895), p. 221.

Mascarene Islands : Mauritius.

Finet considers that the fruiting specimens of this species represent Angraecum calceolus Thou., but I am convinced that we are considering a separate species which is distinguished by larger flowers and a longer and thicker cylindrical, blunt spur.

13. Angraecum caulescens Thou., in Orch. Iles Afr. (1822), t. 75.

Mascarene Islands.

Finet and several other authors regarded the species as a variety of Angraecum multiflorum Thou., but I consider both as specifically different, since in this case the inflorescences are simple (not branched) with 4 to 5 flowers and are equal to, or somewhat exceed the length of the leaves, whilst for A. multiflorum Thou. they are, in contrast, bunched, usually only 2 to 3-flowered and shorter than the leaves.

14. Angraecum cilaosianum (Cordem.) Schltr., [in Beih. Bot. Centralbl. XXXIII, ii (1915), p. 432].

Mystacidium cilaosianum Cordem., in Rev. Génér. Bot. XI (1899), p. 424.

Mascarene Islands : Réunion Island.

Stem up to 30cm long, lax, with linear, 6.0-7.0cm long, 6.0-8.0mm broad, fairly stiff leaves. Inflorescences 1 to 2-flowered with a hair-thin pedicel. Flowers greenish yellow, c. 8.0mm broad, with oval-lanceolate sepals and petals and a slightly broader, markedly concave labellum, with a slightly swollen, slightly bent spur.

15. Angraecum Cordemoyi Schltr. nom. nov.

Mystacidium striatum Cordem., in Rev. Génér. Bot. XI (1899), p. 422, t. XI.

Mascarene Islands : Réunion Island.

A short-stemmed species of the affinity of A. [sacciferum] Lindl., but with larger and broader, 2.5-3.0cm long, c. 1.0cm broad leaves, very delicate, up to 2.5cm long, 1 to 2-flowered peduncles and c. 8.0mm broad, green-white flowers. The spur is cylindrical, bent, and shorter than the ovate, markedly concave lip.

16. Angraecum costatum Frapp., in Cordem., Flor. Ile Réunion (1895), p. 211.

Mystacidium costatum Cordem., in Rev. Génér. Bot. XI (1899), p. 425, t. VII.

Mascarene Islands : Réunion Island.

The species is related closely to A. longinode Frapp., but is distinguished by the denser foliage, thicker rhizomes and the broader leaves which narrow only slightly towards the base. So far this species is known only as fruiting specimens.

17. Angraecum dauphinense (Rolfe) Schltr. comb. nov.

Mystacidium dauphinense Rolfe, in Journ. Linn. Soc. XXIX (1891), p. 54.

Madagascar.

A close relative of A. caulescens Thou., but with longer, up to 15cm long and up to 1.25cm broad leaves with 5 to 7-flowered inflorescences. Sepals and petals lanceolate, pointed, up to 7.0mm long. Lip broad-ovate, markedly concave, with a straight, cylindrical, 7.0mm long spur.

18. Angraecum graminifolium (Ridl.) Schltr. comb. nov.

Mystacidium graminifolium Ridl., in Journ. Linn. Soc. XXI (1885), p. 490.

Epidorchis graminifolia O.Ktze., in Rev. Gen. II (1891), p. 660.

Monixus graminifolius A.Finet, in Bull. Soc. Bot. Fr. LIV (1907), Mem. IX, p. 19.

Madagascar.

This very characteristic species is closely related to A. tenuifolium Frapp., but is said to have resupinate flowers, furthermore, in this case the petals are appreciably smaller than the sepals, which does not appear to agree with Angraecum tenuifolium Frapp. The species is easily recognised by the slender inflorescences pointing in one direction and having small flowers with long-acuminate segments. The cylindrical spur which is slightly swollen towards the apex, is slightly shorter than the equitant ovary.

19. Angraecum inapertum Thou., in Orch. Iles Afr. (1822), t. 50.

Aerobion inapertum Sprgl., Syst. III (1826), p. 717.

Mystacidium inapertum Ridl., in Journ. Linn. Soc. XXI (1885), p. 489.

Epidorchis inaperta O.Ktze., Rev. Gen. II (1891), p. 660.

Madagascar.

Generally similar to A. sacciferum Lindl. from South Africa, but almost twice the size in all segments and usually with single -, at times, 2-flowered inflorescences, which are barely as long as the leaves.

20. Angraecum longinode Frapp., in Cordem., Flor. Ile Réunion. (1895), p. 209.

Mystacidium longinode Cordem., in Rev. Génér. Bot. XI (1899), p. 424, t. VII.

Mascarene Islands : Réunion Island.

Extended stem, up to 20cm long, with lax foliage. Leaves 4.0-6.0cm long, 6.0-11.0mm broad, distinctly narrowed towards the base. Inflorescences short, half the length of the leaves, with about three bracts covering the short pedicel and usually having a single flower. The species is closely related to Angraecum pseudo-petiolatum Frapp.

21. Angraecum madagascariense (Finet) Schltr. comb. nov.

Macroplectrum madagascariense A.Finet, in Bull. Soc. Bot. Fr. LIV (1907), Mem.

IX, p. 25, t. V.

Madagascar.

A small robust species with a densely leaved c. 10-12cm tall stem and short, oval, c. 1.0cm long, blunt leaves. Flowers 3.0-4.0mm long, in few-flowered, up to 8.0mm long, lax racemes, with ovate, pointed sepals and petals and almost semi-globular, acuminate labellum with a short, oval spur.

22. Angraecum minutum Frapp., in Cordem. Fl. Ile Réunion. (1895), p. 209.

Mystacidium minutum Cordem., in Rev. Génér. Bot. XI (1899), p. 424.

Mascarene Islands : Réunion Island.

The diminutive species, which previously could not have been better named, belongs without doubt to the affinity of A. nanum Frapp. and A. parvulum Ayres, should it not be identical with one of these. To date the flowers are not known.

23. Angraecum multiflorum Thou., Orch. Iles Afr. (1822), t. 74.

Aerobion multiflorum Sprgl., Syst. III (1826), p. 717.

Epidorchis multiflora O.Ktze., Rev. Gen. II (1891), p. 660.

Mystacidium multiflorum Cordem., in Rev. Génér. Bot. XI (1899), p. 425.

Monixus multiflorus A.Finet, in Bull. Soc. Bot. Fr. LIV (1907), Mem. IX, p. 19.

Mascarene Islands, Seychelle Islands.

As mentioned already above, the species differs from A. caulescens Thou. in shorter leaves and fewer-flowered, bunched inflorescences. Both species have greenish yellow flowers.

24. Angraecum myrianthum Schltr., in Ann. Mus. Colon. Marseille (1913), p. 54, t. XXI.

Madagascar.

Despite its undisputed relationship to the section, the species stands fairly isolated in that its flowers are produced in very dense, clearly distichous inflorescences, which have the approximate length of the leaves, i.e. 12-18cm. I have described the flowers precisely and illustrated them, so it is unnecessary to repeat the details.

25. Angraecum nanum Frapp., in Cordem. Flor. Ile Réunion. (1895), p. 208.

Mystacidium nanum Cordem., in Rev. Génér. Bot. XI (1898), p. 423.

Mascarene Islands : Réunion Island.

Frappier assumes correctly that his species is very closely related to A. parvulum Ayres, if not identical. Since I have not seen either of these species, I must reserve a definitive opinion. I wish only to state that the species represents a direct connection between A. sacciferum Lindl. and A. pusillum Lindl.

26. Angraecum obversifolium Frapp., in Cordem. Flor. Ile Réunion. (1895), p. 212.

[Mystacidium]obversifolium Cordem., in Rev. Génér. Bot. XI (1899), p. 425, t. VIII.

Mascarene Islands : Réunion Island.

In my opinion the species is most closely related to A. inapertum Thou., but is distinguished by the more extended stem, the more openly placed longer and broader leaves and distinctly larger flowers, which are located on an almost

aristate, 1 to 3-flowered peduncle which is slightly shorter than the c. 5.0-6.0cm long, 8.0-10.0mm broad leaves.

27. Angraecum ochraceum (Ridl.) Schltr. comb. nov.

Mystacidium ochraceum Ridl., in Jour. Linn. Soc. XXI (1886), p. 488.

Macroplectrum ochraceum A.Finet, in Bull. Soc. Bot. Fr. LIV (1907), Mem. IX, p. 26, t. IV.

Madagascar.

Short stem. Leaves narrow-linear, 10.0cm long and c. 6.0-7.0mm broad. Inflorescences very slender, up to 7.5cm long, usually single-flowered. Flowers pale ochre-yellow, slightly larger than those of A. caulescens Thou. and having lanceolate sepals, narrowed petals and a cymbiform lip with horizontally protruding spur, thickened clavately at the apex and exceeding the length of the lip-lamina by a factor of two.

28. Angraecum Oberonia Finet, in Bull. Soc. Bot. Fr. LIV (1907), Mem. IX, p. 10, t. I.

Mascarene Islands : Réunion Island.

In habit reminiscent of A. pusillum Lindl., but with broader, 1.3-1.5cm long and 3.0mm broad leaves, 4.5-5.2cm long, lax, 5 to 8-flowered inflorescences with very small flowers having a pouch-like spur, globose towards the apex and with a small lip-lamina. The species stands somewhat isolated on account of its labellum.

29. Angraecum parvulum Ayres, in Baker, Fl. Maurit. (1877), p. 357.

Angorchis parvula O.Ktze., Rev. Gen. II (1891), p. 651.

Mascarene Islands : Mauritius.

A diminutive species, similar in habit to A. pusillum Lindl. Leaves narrow-linear, 2.5-5.0cm long, 2.0mm broad. Inflorescences the same length as the leaves, 2 to 3-flowered. Flowers c. 4.0mm broad, with longish, blunt sepals, linear petals and ovate-roundish, short-acuminate labellum, with a c. 2.0mm long, ellipsoid, blunt spur.

30. Angraecum patens Frapp., in Cordem. Flor. Ile Réunion. (1895), p. 206.

Mascarene Islands : Réunion Island.

Stem 5.0-15.0cm long, densely beset with spreading, narrow-longish, blunt, 5.0-15.0cm long, 1.0-1.2cm broad leaves. Inflorescence 10-12cm long, branched, laxly multi-flowered. Flowers greenish with ovate-longish, almost pointed, c. 2.0mm long sepals and petals and an ovate, pointed, spathulate labellum with a straight, cylindrical spur, thickened at the apex.

31. Angraecum pseudo-petiolum Frapp., in Cordem. Flor. Ile Réunion. (1895), p. 207.
Mystacidium pseudo-petiolum Cordem., in Rev. Génér. Bot. IX (1899), p. 425,
 t. 7.

Mascarene Islands : Réunion Island.

Very similar to A. costatum Frapp., but with narrower leaves, somewhat contracted below and having shorter [seed] capsules. Flowers c. 2.0mm in diameter with oval sepals and petals, a concave, oval labellum and a shorter, blunt spur. Differs from A. longinode Frapp. in having denser foliage. These three species require a closer comparison.

32. Angraecum pusillum Lindl., in Hook. Comp. Bot. Mag. II (1836), p. 205.

Angorchis pusilla O.Ktze., in Rev. Gen. II (1891), p. 651.

South Africa : From George to Kaffraria.

A very characteristic species with narrow, linear, up to 6.0cm long leaves and lax, up to 10cm long inflorescences. Flowers very small, with 2.0mm long, elliptical sepals and somewhat smaller petals. The lip concave-ovate with a short, 1.5mm long, blunt spur. The plant from Houtbosch (Transvaal) I mentioned, could possibly belong to a different species.

33. Angraecum sacciferum Lindl., in [Hook.] Comp. Bot. Mag. II (1836), p. 205.

Angorchis saccifera O.Ktze., in Rev. Gen. II (1891), p. 651.

Epidorchis saccifera O.Ktze., l.c. (1891), p. 660.

South Africa : From Knysna to Transvaal.

Closely related undoubtedly to the previous one and likewise with a viscid-disc common for the two pollinia. However, it has broader leaves, few-flowered inflorescences barely overtopping the leaves, c. 3.0mm long sepals and petals and a 2.5mm long, rising, thick-cylindrical, blunt spur.

34. Angraecum spicatum (Cordem.) Schltr. comb. nov.

Mystacidium spicatum Cordem., in Rev. Génér. Botan. IX (1899), p. 423, t. 11.

Mascarene Islands : Réunion Island.

Unfortunately, this species which could stand close to A. pusillum Lindl., is so far known only in the fruiting stage. The species is recognised by the 1.5mm long, thickish, narrow-linear leaves, with inflorescences of double the length.

35. Angraecum tenellum (Ridl.) Schltr. comb. nov.

Mystacidium tenellum Ridl., in Journ. Linn. Soc. XXI [1885], p. 489.

Epidorchis tenella O.Ktze., Rev. Gen. (1891), p. 660.

Madagascar.

One of the smallest species of the genus and clearly related closely to A. pusillum Lindl. The complete plant is only 2.5-3.0cm tall, with thin, longish,

c. 1.5cm long leaves and laxly, few-flowered, c. 2.0-2.5cm long inflorescences. The flowers are small, as large as for A. pusillum Lindl. with ovate, blunt sepals and petals, an ovate, concave, blunt lip and a shorter cylindrical, blunt spur.

36. Angraecum tenuifolium Frapp., in Cordem. Flor. Ile Reun. (1895), p. 207.

[Lepervenchea] tenuifolia Cordem., in Rev. Gener. Bot. [XI] (1899), p. 426, t. IX.

Mascarene Islands : Reunion Island.

Quite clearly a close relative of A. graminifolium (Ridl.) Schltr. The stems are flattened, up to 30cm long with linear, 4.0-8.0cm long, 2.0-4.0mm broad leaves. Racemes on delicate peduncles, laxly multi-flowered and slightly overtopping the leaves. Sepals and petals ovate-lanceolate, c. 3.0mm long. Lip concave with a straight, slender, cylindrical spur, as long as the ovary.

37. Angraecum undulatum (Cordem.) Schltr. comb. nov.

Mystacidium undulatum Cordem., in Rev. Gener. Bot. [XI] (1899), p. 425, t. X. Mascarene Islands: Reunion Island.

Likewise a species of the affinity of A. caulescens Thou., but with broader, 4.0-5.0cm long, up to 1.0cm broad leaves and short, up to 2.0cm long, 2 to 3-flowered inflorescences. The flowers are very similar to those of A. caulescens Thou. and are greenish.

38. Angraecum viridiflorum Cordem., in Rev. Gener. Bot. [XI] (1899), t. IX, fig. 16-17.

Mascarene Islands : Reunion Island.

Definitely the smallest species of the genus, only 1.5cm tall with longish, blunt, 8.0-10.0mm long, 2.5mm broad leaves and somewhat shorter, 1 to 2-flowered inflorescences. The flowers, barely as large as for A. pusillum Lindl. with ovate-lanceolate, c. 2.0mm long sepals and petals and a slightly bent spur of half the length. Although Cordemoy illustrated the species, he did not describe it.

39. Angraecum xylopus Rehb.f., in Flora (1885), p. 538.

Macroplectrum xylopus A.Finet, in Bull. Soc. Bot. Fr. LIV (1907), Mem. IX, p. 23.

Comoro Islands.

Although a relationship with A. calceolus Thou. is immediately noticed, this species has almost terete leaves and thereby is immediately recognised within the whole section. The c. 20cm long, very lax, multi-flowered inflorescences are longer than the leaves by about a factor of two. The flowers resemble those of A. calceolus Thou. and are of about the same size.

40. Angraecum zeylanicum Lindl., in Journ. Linn. Soc. III (1859), p. 50.

Mystacidium zeylanicum Trimen, Cat. Ceyl. Pl. (1886), p. 90.

Ceylon.

I have accepted this species here, as it must be regarded as the extreme radiant of the section towards the east, since its closer relationship with A. calceolus Thou. is undeniable. The species is distinguished by its shorter inflorescences, barely attaining the length of the leaves and by the somewhat shorter lip-spur.

§ III. Conchoglossum.

41. Angraecum affine Schltr., in Engl. Jahrb. XXXVIII (1905), p. 19.

West Africa : Cameroon.

I have drawn attention earlier to the relationship of this species and A. clavatum (Rendle) Schltr. It is, in all its segments, larger than the latter and has a common viscid-disc for the two pollinia.

42. Angraecum Baronii (Finet) Schltr. comb. nov.

Macroplectrum Baronii Finet, in Bull. Soc. Bot. Fr. LIV (1907), Mem. IX, p. 24, t. IV.

Madagascar.

I consider that the species is more correctly placed here than with Ctenorchis. It has c. 20cm long stems with lanceolate, up to 2.0cm long leaves and small flowers on very short pedicels. The sepals are ovate, pointed, c. 3.0mm long, the petals narrower, the lip concave, ovate-pointed and with a c. 1.5cm long, blunt spur.

43. Angraecum Braunii Schltr. nom. nov.

Angraecum viride Krzl., in Engl. Jahrb. LI (1914), p. 395.

East Africa : Usambara.

Most closely related to A. clavatum (Rendle) Schltr., but smaller and with more acuminate sepals, petals and lip, and with a shorter, more clavate swollen spur. The leaves are up to 4.0cm long, the green-yellow flowers c. 8.0mm broad.

44. Angraecum clavatum (Rendle) Schltr., Westafr. Kautsch. Exped. (1900), p. 283.

Listrostachys clavata Rendle, in Journ. Bot. (1895), p. 251.

Mystacidium clavatum Rolfe, in Flor. Trop. Afr. VII (1898), p. 172.

Angraecum multinominatum Rendle, in Cat. Talb. Niger Pl. (1913), p. 107.

West Africa : From Sierra Leone to Nigeria.

I have referred above to the close relationship of this species with A. affine Schltr., it is in all segments slightly smaller than the latter.

45. Angraecum curvipes Schltr., in Engl. Jahrb. XXXVIII (1905), p. 21.

West Africa : Cameroon.

Very similar in habit to the several species above, but distinguished by the twisted peduncle, the more concave labellum and by the longer spur, which is swollen at the apex in a fairly marked, clavate manner. The leaves are 1.0-3.0cm long, 4.0-6.0mm broad, the flowers c. 8.0mm broad, with a c. 8.0mm long spur.

46. Angraecum viride (Ridl.) Schltr. comb. nov.

Mystacidium viride Ridl., in Journ. Linn. Soc. XXII (1886), p. 122.

Madagascar.

This species is probably best placed here, unless it were to belong into the section *Lepervanchea*, which can be decided only after seeing it. It is said to be very short-stemmed with longish, up to 1.25cm long, c. 2.0mm broad leaves and c. 2.5cm long, single-flowered inflorescences. The size of the flower is not stated, but is said to be appreciable, yet on the other hand the filiform spur is said to be c. 4.0cm long.

§ IV. Pseudo-Jumellea.

47. Angraecum Elliottii Rolfe, in Journ. Linn. Soc. XXIX (1891), p. 54.

Madagascar.

This species is said to be closely related to A. expansum Thou., but to be characterised by the more lax and more pointed leaves, 2.5cm long peduncles, and by the long acuminate labellum, with an up to 1.75cm long spur which is slightly swollen towards the apex. The lanceolate, acuminate sepals and petals are c. 1.0cm long.

48. Angraecum expansum Thou., in Orch. Iles Afr. (1822), t. 57.

Aerobion expansum Sprgl., Syst. III (1826), p. 716.

Aeranthus expansus S.Moore, in Bak. Flor. Maur. (1877), p. 351.

Epidorchis expansa O.Ktze., in Rev. Gen. II (1891), p. 660.

Mascarene Islands : Mauritius, Réunion Island.

Closely related to A. pingue Frapp., but with more spreading, linear, 4.0-5.0 cm long, 3.5-5.0mm broad leaves. The flowers are similar, but with broad, oval, short-pointed lip and a c. 5.0cm long spur.

49. Angraecum filicornu Thou., Orch. Iles Afr. (1822), t. 52.

Aeranthus Thouarsii S.Moore, in Bak. Flor. Maur. (1877), p. 351.

Aerobion filicornu Sprgl., in Syst. Veget. III (1826), p. 716.

Madagascar, Mascarene Islands:

This extremely characteristic species is held in many collections. It is always easily recognised by the slender growth, the narrow-linear, 4.0-6.0cm long

and 2.5–3.0mm broad leaves, and by the c. 1.5cm broad flowers, with a filiform, up to 11cm long spur.

50. Angraecum implicatum Thou., in Orch. Iles Afr. (1822), t. 58.

Aerobion implicatum Sprgl., Syst. III (1826), p. 716.

Angorchis implicata O.Ktze., in Rev. Gen. II (1891), p. 651.

Macroplectrum implicatum A.Finet, in Bull. Soc. Bot. Fr. LIV (1907), Mem. IX, p. 27.

Angraecum verruculosum Boiv. ex Frapp., in Cordem. Flor. Ile Réunion. (1895), p. 204.

Madagascar, Mascarene Islands?

I consider it somewhat doubtful whether the plants from the Mascarene Islands are really placed here correctly by Finet. In Madagascar, from where Thouars described the species, it appears to occur very seldom. It is probably most closely related to A. filicornu Thou., but is distinguished in habit by the more-twisted stems, shorter, longish, up to 2.5cm long, 1.0cm broad leaves, by the larger, c. 3.0cm broad flowers with broader segments, and by the slightly thicker, c. 10.0cm long spur.

51. Angraecum mauritianum (Poir.) Frapp., in Catal. Orch. Réunion. [1889], p. [13].

Orchis mauritiana Poir., in Lam. Encycl. IV (1794), p. 601.

Angraecum gladiifolium Thou., in Orch. Iles Afr. (1822), t. 53.

Aerobion gladiifolium Sprgl., in Syst. III (1826), p. 716.

Aeranthus gladiifolius Rchb.f., in Walp. Ann. VI (1864), p. 900.

Angorchis gladiifolia O.Ktze., in Rev. Gen. II (1891), p. 651.

Mystacidium mauritianum Dur. et Schinz, in Consp. Flor. Afr. V (1895), p. 53.

Mystacidium gladiifolium Rolfe, in Orch. Rev. (1904), p. 47.

Macroplectrum gladiifolium Pfitz. ex Finet, in Bull. Soc. Bot. Fr. LIV (1907), Mem. IX, p. 27.

Madagascar, Mascarene Islands.

The list of synonyms given for the species is a clear indication how little the genus characters of the angraecoid orchids were established, since nearly every author was inclined to place it in a different genus.

The species is characterised by the somewhat flattened stems with lanceolate, pointed leaves, c. 2.5cm broad flowers with ovate-lanceolate sepals, lanceolate petals and ovate labellum with a filiform, pendulous c. 7.0cm long spur, widened at the throat.

52. Angraecum pingue Frapp., in Cordem. Flor. Ile Réunion. (1895), p. 214.

Mystacidium pingue Cordem., in Rev. Génér. Bot. IX (1899), t. 7, f. 8.

Mascarene Islands : Réunion Island.

I have certain reservations whether this species will not be united with A. Elliottii Rolfe. Like the latter, it has more closely adjacent and more pointed leaves than A. expansum Thou. The sepals and petals are lanceolate, pointed, c. 1.5cm long, the petals being slightly narrower. The lip, likewise, is given as being lanceolate, with a slightly bent, 3.0cm long, horizontal spur.

53. Angraecum teretifolium Ridl., in Journ. Linn. Soc. XXI (1885), p. 484.

Madagascar.

An extremely characteristic species which is said to be related to Angraecum filicornu Thou., but which has over 6.0cm long, terete, pointed leaves which initially stand erect, but later on are slightly recurved. The flowers are of medium size, with lanceolate, c. 1.25cm long sepals and petals and a broad-lanceolate, acuminate lip with a c. 10.0cm long, filiform spur.

§ V. Eu-Angraecum.

54. Angraecum angustipetalum Rendle, in Cat. Talb. Niger. Pl. (1913), p. 106, t. XIV.

West Africa : Nigeria.

Stem extended, uniformly leaved and with lanceolate-longish 7.5-9.0cm long leaves, 2.2cm broad below the middle. Inflorescences probably usually single-flowered on a c. 1.0-1.3cm long pedicel. Sepals narrow-lanceolate, pointed, 2.0cm long, petals narrow-linear. Labellum ovate, pointed, concave, with a 2.0cm long spur, which is slightly swollen towards the apex.

55. Angraecum astroarche Ridl., in Bolet. Soc. Brot. V (1887), p. 199, t. C.

Mystacidium astroarche Rolfe, in Flor. Trop. Afr. VII (1897), p. 170.

West Africa : St. Thomé Island.

Quite clearly the species belongs to the affinity of A. Keniae Krzl. and A. clavigerum Ridl., but has 7.5-10.0cm long, up to 2.5cm broad leaves and usually single-, seldom up to 3-flowered inflorescences on a slender c. 10.0cm long peduncle. The sepals and petals are acuminate, lanceolate, c. 4.0cm long, the lip is somewhat broader with a shallow central keel at the base and a pendulous, cylindrical, c. 2.5cm long spur, slightly swollen at the apex.

56. Angraecum Brongniartianum Rchb.f., in Pescatorea I (1860), t. 16.

Angorchis Brongniartiana O.Ktze., in Rev. Gen. II (1891), p. 651.

Mascarene Islands, Madagascar, Seychelle Islands.

After a precise comparison of the species of the Eburneum group, I consider it appropriate to regard them as true species. A. Brongniartianum Rchb.f. probably is most closely related to A. eburneum Bory, but distinguished by the broader lip and the longer and thinner spur, up to 10.0cm long.

57. Angraecum chloranthum Schltr., in Ann. Mus. Col. Marseille (1913), p. 46, t. XXIII.

Madagascar.

Unfortunately, nothing is known so far about the habit of this plant. There is no doubt of its relationship to A. huntleyoides Schltr. and now I even suspect that the two species could be identical. Both are distinguished by the markedly concave labellum, with the cylindrical spur bent almost into the shape of a circle. I shall discuss below the differences between the two.

58. Angraecum clavigerum Ridl., in Journ. Linn. Soc. XXI (1885), p. 485.

Angorchis clavigera O.Ktze., in Rev. Gen. (1891), p. 651.

Monixus claviger Finet, in Bull. Soc. Bot. Fr. LIV (1907), Mem. IX, p. 17.

Madagascar.

The extremely characteristic species probably is most closely related to A. Keniae Krzl. It is characterised by the up to 10.0cm long procumbent stems with longish, up to c. 2.5cm long, slightly carnosae leaves. The flowers appear on slender c. 2.0cm tall peduncles, apparently always single. The sepals and petals are narrow-longish, pointed, c. 2.0cm long, the lip longish, short-pointed in front with a cylindrical, pendulous, c. 6.0mm long spur, swollen at the apex and bent backwards in an uncinatè manner.

59. Angraecum comorense Krzl., in Engl. Jahrb. XVII (1893), p. 60.

Angraecum Voeltzkowianum Krzl., in Engl. Jahrb. XXXVI (1905), p. 116.

Comoro Islands.

I am quite unable to detect any difference between Kränzlin's two species. The species A. comorense Krzl. probably is related to A. Brongniartianum Rchb.f., but has larger flowers, a more reniform labellum and a straight, 15-16cm long filiform spur.

60. Angraecum conchiferum Lindl., in Hook. Comp. Bot. Mag. II (1836), p. 205.

Angorchis conchifera O.Ktze., in Rev. Gen. II (1891), p. 651.

South Africa : From Knysna to Natal.

Apart from A. Burchellii Lindl., this probably is the rarest Angraecum in South Africa. In that region, the species is completely isolated and its connections lie rather to the East African A. verrucosum Rendle and certain Madagascan species, especially A. Scottianum Rchb.f. from the Comoro Islands. However, it is smaller, with smaller flowers and flat, linear leaves.

61. Angraecum Didieri Baill. ex Finet, in Bull. Soc. Bot. Fr. LIV (1907), Mem. IX, p. 28.

Macroplectrum Didieri Finet, l.c. (1907), p. 28, t. V.

Madagascar.

A very squat species with 12-14cm tall, closely-leaved stems, 1.5-1.8cm long, 6.0-7.0mm broad leaves and a short, single-flowered inflorescence. Relative to the plant size the flowers are very large. The sepals and petals are lanceolate, pointed, c. 3.0cm long. The lip is oval, short-acuminate, c. 1.5cm broad and with a 15cm long, filiform spur.

62. Angraecum eburneum Bory, Voyages I (1804), t. 19, p. 359.

Limodorum eburneum Willd., Spec. Pl. (1806), IV, p. 125.

Angraecum virens Lindl., in Bot. Reg. (1847), t. 19.

Angorchis eburnea O.Ktze., in Rev. Gen. II (1891), p. 651.

Madagascar, Mascarene Islands.

This species has smaller flowers than the others of this closer affinity, which I have designated above as the Eburneum Group. The lip is more reniform, with an extended apex and a c. 8.0cm long, filiform, straight spur. The species has been described and illustrated so often, that it is unnecessary to go into closer details. It is the TYPE of the genus.

63. Angraecum Eichlerianum Krzl., in Berl. Gartenzeit. (1882), p. 434.

Angraecum-Arnoldianum De Wildem., in Miss. Laur. (1906), p. 224.

West Africa : From Cameroon to North Angola.

The differences given by De Wildeman of his species and A. Eichlerianum Krzl. I do not consider as valid, since all possible transitions between these two species occur. I can hardly believe that De Wildeman has seen the TYPE illustration in the 'Berl. Gartenzeit.' (l.c.), otherwise he would probably have noticed that the illustration from 'Xenia', which he cites, is different and quite incorrect.

64. Angraecum Englerianum (Krzl.) Schltr., [in Beih. Bot. Centralbl. 33, ii (1915), p. 433].

Aeranthus Englerianus Krzl., in Engl. Jahrb. VII (1893), p. 62.

Madagascar.

This very well characterised species is most closely related to A. Leonii (Rchb.f.) Veitch, but is readily distinguished by the extended stem, the short, only up to 2.5cm long leaves, and by smaller, even though most attractive flowers, having sepals and petals c. 3.5cm long and with a c. 5.0cm long spur, bent forwards.

65. Angraecum florulentum Rchb.f., in Gardn. Chron. (1885), I, p. 380.

Comoro Islands, Madagascar.

Clearly quite a rare species, which I know only from the collections of Humblot and Hildebrandt and which in habit is somewhat similar to A. ramosum Thou., but with slightly longer and narrower leaves and 2 to 4-flowered inflorescences

which do not overtop the leaves. The clearly white, most attractive flowers have lanceolate, 2.25-2.5cm long sepals and petals and a broader, concave, pointed labellum with a c. 1.2-1.5cm long, slender spur.

66. Angraecum Giryamae Rendle, in Journ. Linn. Soc. XXX (1895), p. 388.

East Africa.

In the size of its flowers, this species is most closely related to Angraecum eburneum Bory, but is distinguished by the fairly deeply margined labellum, with a fairly long-subulate mucro. The spur is slightly bent, very slender and only 5.0cm long.

67. Angraecum huntleyoides Schltr., in Engl. Jahrb. XXXVII (1906), p. 160.

Madagascar.

This species, which at the time I described it from sparse material, is closely related to A. chlorantum Schltr., but has slightly larger flowers and a broader, indistinctly trilobed labellum. The inflorescences probably likewise are not single-, but multi-flowered. I now doubt whether the leaves, which I possessed, really belong to the species, since they would be conspicuously thin for an Angraecum species.

68. Angraecum infundibulare Lindl., in Journ. Linn. Soc. VI (1862), p. 136.

Angorchis infundibularis O.Ktze., in Rev. Gen. (1891), p. 651.

Mystacidium infundibulare Rolfe, in Flor. Trop. Afr. VII [1897], p. 170.

West Africa : From Cameroon to the Congo Basin.

I would consider A. Eichlerianum Krzl. to be the closest relative of this interesting species, but from which it differs in having much larger flowers, and in the much longer, 12cm long spur, which is bent forwards and is filiform at the apex. On account of the immense funnel-shaped labellum, it should be considered, apart from A. sesquipedale Thou., as the largest-flowered within the genus.

69. Angraecum Keniae Krzl., in Engl. Jahrb. XVII (1893), p. 59.

Mystacidium Keniae Rolfe, in Flor. Trop. Afr. VII [1897], p. 171.

East Africa.

According to its habit and general structure, this species appears to me to be most closely related to A. clavigerum Ridl. from Madagascar. The vegetative parts are very similar to those of the latter. The inflorescences are short-stemmed and usually single-flowered. The sepals and petals are lanceolate-longish, acuminate, c. 1.8cm long. The somewhat broader lip has a filiform, 15cm long spur.

70. Angraecum Leonii (Rchb.f.) Veitch, in Man. Orch. Pl. II (1894), p. 134.

Aeranthus Leonii Rchb.f., in Flora [LXVIII] (1885), p. 380.

Angraecum Humblotii Rchb.f., l.c. (1885), p. 381.

Mystacidium Leonis Rolfe, in Orch. Rev. (1904), p. 47.

Macroplectrum Leonis Finet, in Bull. Soc. Bot. Fr. LIV (1907), Mem. IX, p. 30.
Comoro Islands.

This stately, almost stemless species now not infrequently seen in cultivation, is easily recognised by the equitant, iris-like leaves and by the large, funnel-shaped labellum, gradually transforming into an up to 15cm long filiform spur. The inflorescences are 2 to 4-flowered.

71. Angraecum praestans Schltr., in Ann. Mus. Col. Marseille (1913), p. 56, t. XXI.
Madagascar.

So far nothing is known about the habit of the species, it probably grows in a manner similar to that of A. sesquipedale Thou., but has c. 20cm long, 4 to 10-flowered inflorescences with flowers which, on account of their funnel-shaped labellum are more similar to those of A. Leonii (Rchb.f.) Veitch. and nearly the same size. The flat leaves are up to 30cm long and 3.0cm broad.

72. Angraecum Reygaerti De Wildem., in Bull. Jard. Bot. Brux. V (1916), p. 190.
West Africa : Congo.

Said to be closely related to A. Eichlerianum Krzl.

73. Angraecum ramosum Thou., in Orch. Iles Afr. (1822), t. 59.

Angraecum Germinyanum Hook.f., in Bot. Mag. (1889), t. 7061.

Angorchis ramosa O.Ktze., in Rev. Gen. II (1891), p. 651.

Mystacidium Germinyanum Rolfe, in Orch. Rev. (1904), p. 47.

Macroplectrum ramosum A.Finet, in Bull. Soc. Bot. Fr. LIV (1907), Mem. IX, p. 29.

Madagascar, Mascarene Islands, Comoro Islands.

A. Finet has the credit for elucidating this species, known previously only in fruiting specimens, and proving that the well-known A. Germinyanum Hook.f. was identical with it. The species probably is most closely related to A. Scottianum Rchb.f., but differs in having flat, linear leaves, larger flowers with longer acuminate sepal and petal apices, and in the pollinaria.

74. Angraecum rostratum Ridl., in Journ. Linn. Soc. XXI (1885), p. 485.

Angorchis rostrata O.Ktze., in Rev. Gen. II (1891), p. 651.

Madagascar.

Reminiscent of A. clavigerum Ridl. and A. Keniae Krzl. in habit and general structure, but quite different in the flowers. The inflorescences are single-flowered and about as long as the leaves. The sepals and petals are narrow-lanceolate, pointed, coarse, the sepals c. 1.25cm long, the petals c. 8.0mm long. The

lip is broadened at the base and extended in front in a rostrate manner, it is c. 1.25cm long with a gradually tapering, slightly rising, c. 1.25cm long spur.

75. Angraecum Scottianum Rchb.f., in Gardn. Chron. (1878), II, p. 556.

Angorchis Scottiana O.Ktze., in Rev. Gen. II (1891), p. 652.

Angraecum Reichenbachianum Krzl., in Xen. Orch. III (1890), p. 74, t. 239.

Comoro Islands.

It is probably without doubt that the plant illustrated as being Angraecum Reichenbachianum Krzl. does not differ from A. Scottianum Rchb.f. Both illustrations shown in 'Xenia' t. 239 are not natural and partly incorrect. The plant is much more slender, particularly in the floral segments and in the spur. The species rarely has more than a single flower on the peduncle.

76. Angraecum sesquipedale Thou., in Orch. Iles Afr. (1822), t. 66-67.

Aeranthus sesquipedalis Lindl., Bot. Reg. (1824), sub t. 817.

Angorchis sesquipedalis O.Ktze., in Rev. Gen. (1891), p. 652.

Macroplectrum sesquipedale Pfitz., in Engl. et Prantl. Pflanzfam. II, 6 (1889), p. 214.

Mystacidium sesquipedale Rolfe, in Orch. Rev. (1904), p. 47.

Madagascar.

One of the best known orchids and nevertheless one which continuously has been transferred from one genus to another. I consider the species to be fairly closely related to the TYPE of the genus, and after it has been shown that not too much importance should be given to the shape of the pollinaria, I see no reason for removing it from the genus Angraecum.

77. Angraecum superbum Thou., in Orch. Iles Afr. (1822), t. 61-64.

Aerobion superbum Sprgl., Syst. III (1826), p. 718.

Angorchis [superba] O.Ktze., Rev. Gen. (1891), p. 652.

Madagascar.

In all segments, this species is more robust than A. eburneum Bory and is distinguished from the latter in having larger flowers with c. 5.0-6.0cm long sepals and petals and an almost square labellum, margined in front and having a recurved, subulate mucro, and with a spur which in contrast to that of A. eburneum Bory is stronger and c. 8.0cm long.

78. Angraecum verrucosum Rendle, in Journ. Bot. (1895), p. 250.

Mystacidium verrucosum Rolfe, in Flor. Trop. Afr. VII (1897), p. 171.

Angraecum scabripes Krzl., in Engl. Jahrb. XXXIII (1902), p. 73.

East Africa.

This species holds a position approximately intermediate between A. conchiferum

Lindl. and A. ramosum Thou. and like the latter, has roots covered in warts. Its flowers differ from those two above in the c. 3.0cm long, lanceolate-linear, long-acuminate sepals and petals and in the broad-ovate, likewise long-acuminate lip having a c. 5.0cm long, slender spur.

§ VI Hadrangis.

79. Angraecum bracteosum Balf.f. et S.Moore, in Journ. Bot. (1876), p. 293.

Saccolabium squamatum Frapp., in Cordem. Flor. Réunion. (1895), p. 195.

Listrostachys bracteosa Rolfe, in Orchid Rev. X (1902), p. 296.

Mascarene Islands : Mauritius, Réunion Island.

It is difficult to give any relationship to this species, since clearly it stands fairly isolated. Perhaps there are certain connections to A. palmiforme Thou., but the spur is much larger and thicker. The sepals and petals are more pointed and the stem is extended further.

80. Angraecum crassum Thou., in Orch. Iles Afr. (1822), t. 70-71.

Aerobion crassum Sprgl., in Syst. III (1826), p. 717.

Angorchis crassa O.Ktze., in Rev. Gen. II (1861), p. 651.

Madagascar.

The affiliation of this species to the section is still doubtful. I have placed it here since, in habit, it appears to have a certain similarity to the previous one. The flowers appear to approximate more to those of Eu-Angraecum. I have not seen specimens of the species.

81. Angraecum cucullatum Thou., in Orch. Iles Afr. (1822), t. 48.

Aerobion cucullatum Sprgl., in Syst. III (1826), p. 679.

Angorchis cucullata O.Ktze., in Rev. Gen. II (1891), p. 651.

Angorchis Fragrans O.Ktze., in Bull. Herb. Boiss. II (1894), p. 458.

Macroplectrum cucullatum A.Finet, in Bull. Soc. Bot. Fr. LIV (1907), Mem. IX, p. 23.

Mascarene Islands : Réunion Island.

In habit the species differs from all others of the section in its single-flowered inflorescences. I have placed it here only because it shows much similarity to A. striatum Thou. in the structure of its flowers.

82. Angraecum distichophyllum A.Rich. ex Finet, in Bull. Soc. Bot. Fr. LIV (1907), Mem. IX, p. 23.

Macroplectrum distichophyllum A.Finet, l.c. (1907), p. 23, t. III.

Mascarene Islands, but not quite definite.

To me the species appears to be related to A. striatum Thou., but according to the description, it must be more robust and have a distinctly extended stem, with

leaves 19-20cm long and 2.0cm broad and with 7 to 8-flowered inflorescences of equal length, carrying c. 1.5cm broad flowers, having a saccate lip-spur.

83. Angraecum Fournierianum Krzl., in Gardn. Chron. (1894) I, p. 808.

Madagascar.

This extremely characteristic species has its sole relative in A. robustum Schltr. Both are excellently characterised by the labellum having three tips in front and with a rising, slender, funnel-shaped spur. In habit, it is reminiscent of A. strictum Thou. A. robustum Schltr. is the smaller of the two species.

84. Angraecum palmiforme Thou., in Orch. Iles Afr. (1822), t. 68.

Angraecum palmatum Thou., l.c. (1822), t. 69.

Aerobion palmiforme Sprgl., in Syst. III (1826), p. 716.

Angorchis palmata O.Ktze., in Rev. Gen. II (1891), p. 651.

Listrostachys palmiformis Dur. et Schinz, in Consp. Flor. Afr. V (1895), p. 49.

Mascarene Islands : Réunion Island.

This species is well characterised by its peculiar habit, the thick-set flowers with pointed sepals and petals, and by the elliptical, pointed labellum with the short, clavate spur directed horizontally backwards.

85. Angraecum robustum Schltr., [in Beih. Bot. Centralbl. 33, ii (1915), p. 437].

Oenia robusta Schltr., in Ann. Mus. Colon. Mars. (1913), p. 41, t. XVIII.

Madagascar.

As mentioned above already, this species is the sole relative of Angraecum Fournierianum Krzl., but is specifically well distinguished by smaller flowers, the shorter spur and the pointed lobe of the labellum. The crest at the base of the lip-lamina with A. Fournierianum Krzl. is absent here.

86. Angraecum striatum Thou., in Orch. Iles Afr. (1822), t. 72.

Aerobion striatum Sprgl., in Syst. III (1826), p. 717.

Saccolabium striatum Lindl., in Gen. et Spec. Orch. (183-), p. 224.

Angorchis striata O.Ktze., in Rev. Gen. II (1891), p. 652.

Gastrochilus striatus O.Ktze., l.c. (1891), p. 661.

Monixus striatus A.Finet, in Bull. Soc. Bot. Fr. LIV (1907), Mem. IX, p. 18.

Mascarene Islands.

This species, standing somewhat isolated, appears to have most accord with A. distichophyllum A.Rich. and A. cucullatum Thou. It differs from the former in having a more conical spur and in the lip-lamina, and from the latter in the racemed inflorescence and the more robust growth with much longer leaves. The flowers, clearly are white.

29. Oeoniella Schltr. gen. nov.

The synonyms of the plant under consideration here indicate already how incorrectly, in the opinion of the various authors, they were placed in the previously known genera. Initially, I had hoped to leave them in Angraecum, but finally too many factors spoke against this, which would have resulted in a renewed expansion of the genus characters of Angraecum and thus initiated a new blurred delimitation of that genus. I thus find myself compelled to create a new genus here.

Oeoniella Schltr. gen. nov.

Sepala petalaeque patentia vel subpatentia, linearia vel lanceolata-linearia, acuta vel acuminata. Labellum columnam arcte cucullato-amplexans, antice trilobum. lobis lateralibus semiorbiculari-rotundatis, margine subdentato-irregularibus, lobo intermedio bene longiore lineari, acuto, integro, calcare cylindrico, obtuso, brevi, ostio angustato. Columna brevis, utrinque apice in lobum vel potius auriculam triangulo-falcatam adscendentem producta, rostello peralte emarginato. Anthera quadrato-cucullata, antice leviter excisa, truncata. Pollinia subglobosa, stipitibus 2 separatis, viscidio cordato-quadrato amplo communi affixis.

Plantae epiphyticae, caule leviter elongato, bene foliato; foliis patentibus, oblongo-ligulatis, inaequaliter ac obtuse bilobulatis, coriaceis; racemis erectis, folia pluries superantibus, laxe plurifloris; bracteis parvulis; floribus mediocribus, pulchellis, labello niveo, sepalis petalisque flavido-virescentibus.

Species 2 adhuc notae insularum mascarensium et Madagascariae indigenae.

The genus differs from Angraecum in the shape of the column and of the pollinia attached to long stipes, as well as in the trilobed labellum rolled around the column in a funnel-shaped manner and having a markedly protruding spur. It is well separated from Oeonia, the genus it could have been considered as belonging to, by almost the same characters, so that it can be regarded as a truly well-founded genus.

One species, O. polystachys (Thou.) Schltr. is currently in cultivation.

1. Oeonielle Aphrodite (Balf.f. et S. Moore) Schltr. comb. nov.

Listrostachys Aphrodite Balf.f. et S. Moore, in Bak. Flor. Maur. (1877), p. [354].

Mascarene Islands : Rodriguez Island.

Very similar to the better-known O. polystachys (Thou.) Schltr., but more rigid in growth, having narrower leaves and larger flowers. The sepals and petals are more spreading and the lip is more open.

2. Oeonielle polystachys (Thou.) Schltr., comb. nov.

Epidendrum polystachys Thou., in Orch. Iles Afr. (1822), t. 82.

Angraecum polystachyum A.Rich., in Orch. Ile Fr. et Bourb. (1828), p. 74, t. 10.

Listrostachys polystachys Rchb.f., in Walp. Ann. VI (1864), p. 909.

Oeonia polystachya Bth., in Gen. Pl. III (1881), p. 584.

Monixus polystachys A.Finet, in Bull. Soc. Bot. Fr. LIV [1907], p. 19, t. III.

Madagascar, Mascarene Islands.

I have noticed how correctly all the authors have illustrated this plant, in particular regarding the column with the auricles striving upwards in a falcate manner.

30. Oeonia Lindl.

Bot. Reg. (1824) sub t. 817.

(Aeonia Lindl., Bot. Reg. (1824) sub t. 817.)

A. Finet considers Oeonia and Cryptopus, in their column structure, more-or-less as a transition between those genera with a deeply margined rostellum and those with one extended in a rostrate manner. I consider that they should both, anyway, have to be included in the first category, since the whole structure of the column, with its lateral auricles, indicates a deviation from Angraecum, in that for all species with two separated viscid-discs, the more-or-less distinct middle tooth which separates these discs, is more developed in this case. Furthermore, the pollinaria with their pollinia attached to extremely short stipes or being almost equitant, definitely speaks for this relationship.

The genus is characterised by the slender, tall-growing, laxly-leaved stems and the 2 to 8-flowered inflorescences on long peduncles, appreciably over-topping the usually oval leaves. The inflorescences usually carry fairly large white or pink-red flowers whose sepals and petals usually are more-or-less spatulate and by no means attain the size of the labellum. The labellum has two smaller lateral lobes surrounding the column and a much larger front lobe, always deeply incised at the front, hence in two parts, and always with blunt, often almost circular lobules. The column is short and little different from that of Angraecum species, as already mentioned above. The pollinia are very short, or barely stiped and are attached to two separated stipes with elliptical or longish viscid-discs.

So far seven species are known, which I consider as belonging to the genus. The occurrence of them is restricted to the island of Madagascar, so that we are dealing here with a genus endemic to the island.

1. Oeonia Brauniana Krzl., in Xen. Orch. III (1900), p. 172, t. 300.

Madagascar.

A very characteristic species distinguished by the c. 8.0-10.0cm long stem with relatively dense foliage, by the short, clearly always very few-flowered (c. 2 to 3-flowered) inflorescence, barely overtopping the leaves and by the shape of the lip. The latter has two almost square basal lobes which surround the column, and a large 4-lobed front lobe barely exceeding the sepals and petals in size. The spur is short, longish and blunt.

2. Oeonia Elliottii Rolfe, in Journ. Linn. Soc. Bot. XXIX (1891), p. 55, t. 11.

Madagascar.

The leaves of this species and those of O. rosea Ridl. are narrower and more

lingulate than for the remainder. O. Elliottii Rolfe approaches O. Humblotii Krzl. closest in the size of its flowers, but is well distinguished by the shape of the lip, which has two longish lateral lobes, loosely surrounding the column and an obovate front lobe, deeply incised in two in front, and with blunt segments.

3. Oeonia Forsythiana Krzl., in Engl. Jahrb. XXVIII (1900), p. 171.

Madagascar.

This species is so closely related to O. oncidiflora Krzl. that I believe it will probably later on be regarded only as a variety. What induces me to place it here are the less pointed leaves, the slightly narrower sepals, the more-longish lateral lobes and the front lobe of the labellum, which is longer-clawed at the base, as well as the less-bent spur, which is slightly thicker at the narrow end.

4. Oeonia Humblotii Krzl., in Engl. Jahrb. XLIII (1909), p. 397.

Madagascar.

Probably the smallest-flowered species. It is strongly reminiscent of O. volucris (Thou.) Dur. et Schinz, but the inflorescences are laxer and the flowers half the size, with spathulate, longish, blunt sepals and petals and a labellum about three times as long, with almost circular basal lobes and a broad, clawed front lobe terminating in front in two large, almost axe-shaped lobes. The spur is slightly bent, cylindrical, starting from a broader mouth and slightly contracted in the middle.

5. Oeonia oncidiflora Krzl., in Engl. Jahrb. XVII (1893), p. 56.

Madagascar.

Solely by its habit, the species would be difficult to distinguish from O. volucris (Thou.) Dur. et Schinz, without the leaves being more ovate and more pointed. The inflorescence also is similar, but the flowers are slightly smaller, in having appreciably shorter elliptical-spathulate petals, which have only one third the length of the labellum. The species resembles O. Humblotii Krzl. in the shape of the lip and spur, but the flowers are twice larger.

6. Oeonia rosea Ridl., in Journ. Linn. Soc. Bot. XXI (1885), p. 496.

Madagascar.

According to the description, this species has very narrow and short leaves and an only c. 4.0cm long peduncle, barely overtopping the leaves and carrying minute flowers with a diameter of only 1.5cm. The latter appear in the shape of their individual segments to be very similar to those of O. Humblotii Krzl.

7. Oeonia volucris (Thou.) [Spreng. Syst. III (1826), p. 727].

Epidendrum volucre Thou., in Orch. Iles Afr. (1822), t. 81, 82.

Aeonia Auberti Lindl., in Bot. Reg. (1823), sub t. 817.

Aeranthus volucris Rchb.f., in Walp. Ann. VI (1864), p. 900.

Epidorchis volucris O.Ktze., in Rev. Gen. II (1891), p. 659.

Madagascar.

The genus TYPE. The species has larger flowers than all the others and is easily recognised by the sepals and petals having almost the same length as the lip. The latter is trilobed, with a large front lobe, two-cleft in front. According to Thouars the spur is blunt, with an oval base, but after Finet has a subulate extension as for O. Elliottii Rolfe.

31. Cryptopus Lindl.

Bot. Reg. (1824) sub t. 817.

(Beclardia A. Rich., Orch. Ile Fr. et Bourb. (1828), p. 78 [p. pt.].)

I believe that I can deal with this genus in a few words, for since its creation by Lindley in 1824, it has been accepted by all authors in the same manner.

As Finet remarks correctly, the genus has the same column and identical pollinaria as for Oeonia, but differs generically in the long and distinctly clawed petals with lobed lamina, and in the labellum, divided into four narrow lobes and not surrounding the column.

In its habit, the plant is like a robust Oeonia species, with extended stem, issuing aerial roots at intervals and with a slender, long-stemmed, laxly 6 to 15-flowered, sometimes branched inflorescence with fairly attractive, clearly white flowers.

So far only a solitary species is known.

1. Cryptopus elatus (Thou.) Lindl., in Bot. Reg. (1824), sub t. 815.

Angraecum elatum Thou., in Orch. Iles Afr. (1822), t. 79-80.

Beclardia elata A. Rich., in Orch. Iles Fr. et Bourb. (1828), p. 78, t. 11.

Mascarene Islands.

It would appear that the species has not yet been definitely ascertained on the island of Madagascar.

32. Bathiea Schltr. gen. nov.

I have now reached the opinion that this plant, which I initially regarded as an aberrant species of Aeranthus, belongs more suitably to the affinity of Oeonia. More recent investigations forced me to consider the spur, which I saw as an entity, developed from the column-foot, to be, rather, a part of the labellum.

The genus is described as follows:

Bathiea Schltr. gen. nov.

Sepala petalaeque reflexa e basi attenuata lineari-lanceolata, acuta, inter se valde similia. Labellum singulare, lamina plana vel leviter convexa, ad ostium calcaris subarticulata, alte triloba.

basi rotundata, lobis ovatis, acuminatis, lateralibus divergentibus obliquis, intermedio duplo minoribus, calcare filiformi curvato perlongo, ostium versus paulo ampliato. Columna brevis, longibis auriculata, apoda, rostello profunde emarginato, medio liguliformi lineariter donato, structura generis *Oeoniam* in mentem revocant. Ovarium gracilius pedicellatum.

Planta epiphytica subacaulis vel brevicaulis; foliis oblongis spatulatis inaequaliter et obtuse bilobulatis; inflorescentia nondum nota, verosimiliter gracili, racemosa, laxiflora; floribus satis magnis speciosis, sepalis et labello ca. 2 cm longis, calcare 10 cm longo.

Species singula adhuc nota insulae Madagascariae specialis.

Above, I have already given a few details about the affinity of the genus.

The nature of the column, first gave me the idea that this could be a relative of *Oeonia* and I do not believe I am in error, even though the habit of that genus is very well separated from *Angraecum* by the peculiar lip structure, since the lamina is flat, as for *Aeranthus*, and is markedly separated or segmented at the free spur-mouth. The indeed very narrow, recurved sepals and petals which narrow below in a claw-like manner, appear to a certain degree, also to represent genus character.

The genus is dedicated to its discoverer, M.H. Perrier de la Bathie, one of the most successful investigators of the flora of Madagascar.

1. *Bathiea Perrieri* Schltr. comb. nov.

Aeranthus Perrieri Schltr., in Ann. Mus. Col. Marseille (1913), p. 44, t. XIX. Madagascar.

So far nothing is known of the colour of the flowers of this plant, but it is probably white, at least on the lip-lamina. It is hoped that more complete specimens of this most interesting plant may become available, so that the structure of the inflorescence may be established from them.

