

A
CRITICAL REVISION OF
THE GENUS ARISTIDA

BEING A PRELIMINARY STUDY

AND

AN INTRODUCTION TO THE MONOGRAPH

BY

J. TH. HENRARD.



INTRODUCTION.

Being engaged during several years with a revision of the grasses preserved in the Rijks-Herbarium at the University of Leyden, my attention was called to the group of the *Stipeae*, and especially to the very difficult genus of *Aristida*. After an exhaustive study of the literature, I thought it desirable to have a monograph of this genus, containing extensive keys for the determination of all the species hitherto known, and I resolved to prepare such a work. It has been my good fortune that I had at my disposal not only the valuable collections of the Rijks-Herbarium, but that by the courtesy of the directors of the great herbaria in Europe and in America, I could study many thousands of specimens, among them authentic specimens and types. So several years elapsed before the revision was finished. Before I am going to publish my work, it seemed desirable to prepare a preliminary paper on the subject, dealing with the literature studied and the results of the critical examination of the types, moreover the new species found in herbaria are included in this paper.

To find easily the original description and the type specimen, I give in alphabetical order all the species and varieties hitherto described, no matter if they are accepted in my monograph as valid or not.

Botanists who wish to study the genus have not always ready access to the scattered literature of the subject, having brought together this literature, it seemed wise to me to give the dates in this provisional paper. Although in the present paper all the species of our genus are noted, it has been impossible to identify some of them. Species described under the genus *Aristida*, which proved to belong to other genera are omitted, they are included together with the nomina nuda, in a list at the end of my monograph.

A study as given here is based purely on the material found in herbaria as it was impossible to study the genus by cultivation. The only way to get a better idea of many species of *Aristida* is in my opinion to cultivate different critical plants under favourable conditions. I am convinced that there occur hybrids between different species of *Aristida*, hybrids which are not easy to recognize

in herbaria. Field work alone is insufficient to clear up the different varieties of a species, or the differences between allied species. Cultures are necessary to have a better idea of the constancy of the different characters used for discrimination. Let us hope that in the future systematic botanists and especially agrostologists will understand that making incorporations from herbarium specimens alone is entirely arbitrary and is greatly influenced by the material that has been studied in herbaria. So far as I have cultivated different grasses, I have found that many characters used by agrostologists are absolutely constant, but it is a fact that many varieties described in our manuals are but products of local conditions. Such plants were called by botanists „forma”, but such a delimitation is nonsense.

Geographical distribution, in connection with morphological characters has proved to be of great value for grouping different species, the so-called intermediate forms do not invalidate the related groups as species, because in many cases such intermediate plants have proved to be hybrids. The consequences of this, I have accepted in my work and thus more species are recognized in my monograph than were usually accepted by agrostologists.

As little is known about the minor or major importance of a character in our genus, the only thing to do was to study carefully all the characters of our plants, trying to find out if a character is constant or depends on local conditions. As in grasses it is proved that the characters taken from the spikelets are of great value to recognize different species, I have studied the spikelets in the first place and I have therefore given figures of the spikelets and parts of the lemmas, but the morphological and anatomical characters of the vegetative parts of the plants were by no means neglected. There are in our genus many species we can recognize at first sight, but generally we can recognize only the group to which the plant belongs. For the determination of an *Aristida* we ought to examine carefully all the spikelet-characters. Great attention was given by me to the so-called „callus”. The shape of this callus is in many species very remarkable and represents a constant character. Hitherto little attention was given to this callus, but as it is to be seen from my figures, the shape is very variable and it is possible to recognize some species immediately by this callus. In the keys for the determination of the species I used this shape of the callus, indicating it as callus acute, blunt or bifid. A blunt callus may be truncated or rounded at the tip, an acute callus is sometimes very pungent. The so-called bifid callus was never

observed by botanists and is recognized in my work for the first time as a most valuable character to distinguish allied species. I cannot enter here into particulars and must refer to the observations under the different species. In the South-American group of the „*ripariae*”, a group very difficult to recognize, the callus gives us a character to recognize *Aristida riparia*, *oligospira* and *Ekmaniana* at once by the shape of it. In African species we can use the same character to identify some species.

Another important character in our genus is the position of the glumes. In grasses the lower glume is generally shorter and less-developed than the upper. In the genera *Stipa* and *Aristida* we have many species with a so-called inverse position of the glumes, the lower one being longer, and more-developed than the upper, this character is sometimes so extraordinarily striking that species as *Aristida mendocina*, *inversa* and *Stocksii* are to be recognized at once. Much attention was also given by me to the glumes, their nervation and the shape of the tips, to the texture of the lemma and to the prolongation of the lemma, the so-called column or stipe.

Different well-marked species have sometimes quite the same habit, in herbaria we cannot always give much weight to the habit, because the plants are mostly divided too much for preparing herbarium specimens. In the field however, allied species are sometimes to be recognized by their different habits, as is the case with the *Aristida barbata* (*Havardii*); the curious habit of this species is shown in the recent collections of American botanists.

In this revision each species is mentioned and the authentic description is given, to know what the author has said about his species. If a species was recognized as being already previously described, this statement is given in a note following the description. Immediately following this note are given my critical observations, based on the study of the type, or in absence of it at least on an authentic specimen, mostly a duplicate of the type or a specimen sent by the author to another herbarium. In some cases a duplicate proved to be different from the actual type and sometimes exsiccatæ with the same printed numbers on the labels belong to different species.

The figures of the spikelets given in this revision are in many cases of great value to recognize the species. I hope that the species still unknown to me can be studied before my monograph is published and that some types not yet accessible to me may be obtained for study.

I have not visited the herbaria, but the specimens were loaned by the authorities for a more critical study at Leyden.

Through the kindness of the directors of the different herbaria I received fragments of several types or authentic specimens and much information has been obtained through correspondence with the directors of the botanical gardens at Kew, Berlin and Florence.

Through the kindness of Prof. A. S. HITCHCOCK and Mrs. A. CHASE, I received a very valuable set of the American *Aristidas*, among them duplicates of types and a great many portions or fragments of type specimens.

I have to acknowledge the valuable assistance I have received from Dr. L. R. PARODI at Buenos Aires, who placed his beautiful collection of Argentine *Aristidas* at my disposal, together with an important collection of fragments taken from the type specimens of the species described by ARECHA VALETA.

I must further record my obligation to all the persons whose aid in various ways has been of the greatest value in the preparation of my monograph. Among these I must mention: Dr. J. W. C. GOETHART, director of the Rijks-Herbarium, who allowed me to prepare this work; Dr. A. W. HILL, director of the Kew Herbarium, who placed the extensive collections of *Aristida* so liberally at my disposal; Dr. A. B. RENDLE, director of the British Museum, who provided me with fragments, sketches and information.

Prof. Dr. O. JUEL, director of the botanical garden at Upsala has loaned the *Aristida*-collection and the important herbarium of THUNBERG; Prof. C. A. M. LINDMAN loaned all the *Aristidas* from the Riksmuseum at Stockholm, among them the Regnell collections and the Swartz Herbarium. From Prof. Dr. C. CHRISTENSEN I received the *Aristidas* from the Copenhagen Herbarium, among them many types from FOURNIER. Another important collection I received from the Museum at Lund, containing the types of RETZIUS.

The beautiful collections of *Aristida* in the Munich Herbarium, I could study through the courtesy of Prof. Dr. L. RADLKOEFER and Prof. Dr. H. ROSS. Among them I found all the types of the South-American species described by NEES and in the Schreber Herbarium many authentic specimens from SWARTZ and LAGASCA.

The collections of the Berlin Herbarium were placed at my disposal by Prof. Dr. ROB. PILGER. This very rich herbarium contains the types of the *Aristidas* from South Africa, described by NEES, and the types of the species described by Prof. PILGER and Prof. MEZ. Without these types it would have been impossible to get a right idea of the African *Aristidas*. I had the rare privilege to receive in loan from Prof. PILGER all the *Aristidas* from the Willdenow Herbarium. This small but most valuable collection contains

several authentic specimens from HUMBOLDT, BONPLAND and KUNTH.

The *Aristidas* from the Zurich Herbarium, containing some types described by Prof. E. HACKEL, were studied by the liberality of Prof. Dr. H. SCHINZ.

A very interesting collection of *Aristidas* was received for my revision from Prof. Dr. E. DE WILDEMAN at Brussels, I am especially indebted to him for the loan of the beautiful Congo Herbarium.

Prof. Dr. H. LECOMTE was so kind as to send me the types described by FOURNIER, FRANCHET, STEUDEL and HUMBOLDT, BONPLAND & KUNTH, so far as they were present in the Jardin des Plantes. The specimens described by FOURNIER I could compare with the types in the Leningrad Herbarium, received through the courtesy of the director Prof. BORIS FEDTSCHENKO. The Leningrad collection is moreover very important for our genus, because I found many authentic specimens labeled by TRINIUS.

Another very fine collection of *Aristidas* now preserved in the Herbarium of the Orto Botanico at Florence, was submitted for study by Prof. Dr. E. CARANO and Prof. Dr. E. CHIOVENDA. Much valuable information was received from Prof. CHIOVENDA, who is a well-known authority on African grasses.

An interesting type specimen I received from the Lisbon Herbarium, by the courtesy of Prof. Dr. RUY TELLES PALHINHA.

Unfortunately the types of CAVANILLES could not be studied, I never received an answer to my request.

From Prof. Dr. A. THELLUNG, the well-known authority on introduced plants, I received for study a few species collected in Europe on ballast.

One of the most valuable collections of *Aristidas*, the collection in the Vienna Herbarium, I had at my disposal for several years. This very large collection, containing the Herbarium of the late Prof. E. HACKEL, was received in loan through the kindness of Dr. K. v. KESSLER, to whom I wish to pay my sincere thanks.

A small collection of Australian *Aristidas*, was received by the courtesy of Dr. LAIDLAW, systematic botanist of Victoria, for deposit in our Herbarium.

Prof. Dr. A. A. PULLE has loaned the *Aristida* collection, preserved in the Herbarium at the University of Utrecht.

I regret that I could not yet study the Australian types, described by Prof. Dr. K. DOMIN. Receiving no answer from him, I wrote to my friend Prof. HACKEL, who being acquainted with Prof. DOMIN, immediately asked him to loan the *Aristidas* from the Prague Herbarium for my monograph. Prof. DOMIN wrote to his friend HACKEL

that he was willing to send the collections to me, but since I have received Prof. HACKEL's letter on this subject, I did not get a reply to my many requests. I am very sorry, that I could not compare the Australian collections I received for determination, with all the types. I cannot find a single motive for Prof. DOMIN's silence.

I will not conclude this introduction without a word in commemoration of my lamented friend EDUARD HACKEL, the great Austrian agrostologist, whose sudden decease on February 17 of this year was a great loss to me. Since the time I studied more intensively the family of the grasses, he has always shown great interest in my work and during the time I stayed at his pretty home in Attersee, I could admire not only his extraordinary knowledge of the grasses, which he loved so much, but also the noble character of that eminent man.

Finally I had the valuable assistance of Mr. J. BIEGELAAR, officer of our institute, who under my direction, made all the drawings in chinese ink for the zincographs.

LEYDEN, June 1926.

J. TH. HENRARD.

Aristida abnormis Chiovenda.

Annuario del R. Istituto Botanico di Roma VIII. [1899] p. 481

A. annua. Culmi caespitosi, graciles a basi ramosissimi, ramis fastigiatis; nodi glaberrimi: vaginae glaberrimae laeves sulcato-striatae glaucescentes ad os longe albo ciliatae: laminae subsetaceae rigidae breviusculae, arcte convolutae, \pm curvulae, praeter apicem laeves, sulcato-striatae. Panícula ovali laxa ramis inferioribus geminatis vel solitariis erectopatulis, brevibus; verticilli inferioris $\frac{1}{6}$ vel $\frac{1}{4}$ paniculae longi. Spiculae in apice ramulorum subfasciculatae breviter vel longiuscule pedicellatae. Glumae, subaequales lineares, ambae trinerviae in nervis scabridae; I. diu persistens apice acutissima; II. mox decidua apice brevissime trisetula, setula media paulo longiore; ibique marginibus tenuissime denticulatis. Flosculi gluma florifera supra medium \pm laxe contorta sed non articulata; univenia, in nervo et marginibus scabra, apice trisetula, setis valde inaequalibus, media duplo vel triplo longiore caducissimis. Callus longiusculus, linearis acutissimus, longe niveo barbatus.



ARISTIDA ABNORMIS Chiovenda.
From type specimen.

Culmi 15—40 cm. elati; laminae 1—10 cm. longae, 0,5—0,8 mm. latae; panicula 5—10 cm. longa, 8—7 cm. lata; spicula (exceptae setae) 15—20 mm. longa; callus 1,5 mm. longus; glumae 8—10 mm. longae; seta media, 15—20 mm. longa.

Arcipelago Dahalak: Isola Dahalak Cumbeibak 11—12 III. 1892 (T. n. 2667). Sambar: Saati 15—18. II. 1892 (Riva et Schweinfurth n. 375 p. p. mixta cum *A. Adscensionis* sub. nom. *A. coerule-scentis*). Assaorta: Uaafi Kebir 24. III. 1892 (P. n. 2667); Aleita 13. IV. 1892 (T. n. 2668).

Si distingue assai facilmente da tutte le congeneri per la gluma fiorifera a metà contorta, piegata ad angolo ottuso e terminata all' apice da tre setole molto disuguali. Non sarebbe strettamente affine a nessuna delle conosciute e sarebbe un anello di riunione dei due sottogeneri *Arthratherum* e *Chaetaria*, appartenendo però a questo per la mancanza dell' articolazione tra la porzione non contorta e la contorta.

Spiegazione della tavola VI. A. Pianta in grandezza naturale. B. Un fioretto ingrandito 12 volte. C. Una spighetta ingrandita 6 volte. D. Le due glume ingrandite 12 volte.

The specimens cited by CHIOVENDA were kindly received in loan from the Florence Herbarium by Prof. Dr. E. CARANO and Prof. Dr. E. CHIOVENDA.

Aristida abyssinica Trin. et Rupr..

C. B. TRINIUS et F. J. RUPRECHT; Species Graminum Stipaceorum in Act. Academ. Imp. Scient. Petrop. Ser. VI. Tom. V. [1842] p. 134!

Purpurascens; gluma superiore 3—3½ lineali inferiorem acutam lineâ ½—¾ superante; flosculo 3—4 lineali aspero; seta media 6—9 lineali.

In siccis montium et vallium prope Adoam m. Septembri; incolis „Eddini”. (Schimper Un. itin, n. 319!)

Note: = *Aristida adscensionis* L..

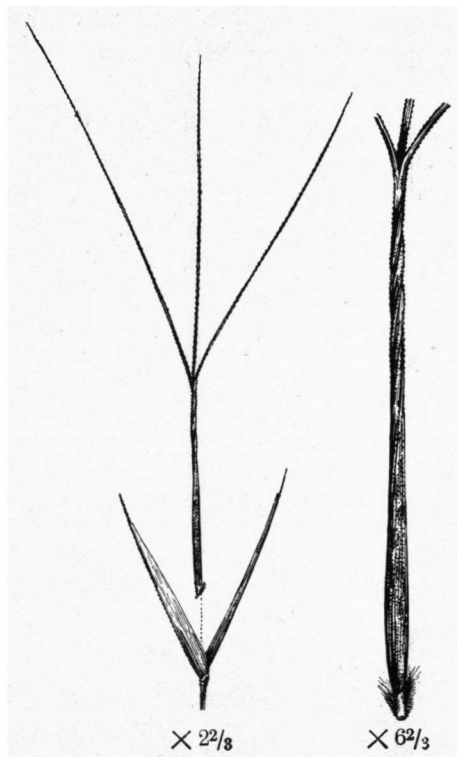
The rule that the description given by an author controls the selection of a type specimen is continually accepted by me. The number Schimper 319 is herbaria is mostly a mixture of two very different plants. One of them is the perennial *Aristida adoensis*, having a lemma shorter than the about equal, long awned glumes, a very acute callus and a dense spikelike panicle with bearded

axils. The other plant is an annual with unequal glumes, a lemma about as long as or longer than the second glume, a less acute callus, and the axils of the panicle are not bearded. The latter plant agrees with the description given by the Russian authors and is accepted as the type. CHIOVENDA (in *Annuario del R. Istituto Bot. di Roma*, Anno VIII. [1899] p. 329) has taken up the name *abyssinica* for the true *A. adoensis*, and gives as date of the publication of *A. adoensis* HOCHST.: RICHARD, *Tent. Abyss. II.* p. 390. Under *A. adoensis* I have explained that the valid publication was given by HOCHSTETTER himself. The rule given above at once shows that the actual type of *A. abyssinica* is the specimen from which the description was drawn and that is not the plant afterwards described by HOCHSTETTER.

Aristida achalensis Mez.

CARL MEZ; *Gramineae novae vel minus cognitae*, in *FEDDE Rep. Spec. nov. regn. vegetab.* XVII. [1921] p. 149!

Perennis, usque ad metralis. Vaginae culmi quam internodia longiores, glabrae; ligulae margine pilis paucis haud multo prominentibus barbatae; laminae basin saltem versus planae, rigidulae. Culmi simplices vel ad basin parce ramosi, glabri. Inflorescentia dense 2-pinnata, spiciformis vel ad basin saepius plus minus interrupta, tenuiter fusiformis; ramulis stricte erectis, usque ad 65 mm longis, fere e basi pluridivisis. Pedicelli vix ultra 1 mm longi. Glumae 1. nerviae, apice auriculatae et in setas tenues productae, I. ad 10, II. ad 11,5 mm longa. Paleae unguis ad 0,5 mm longus, breviter pilosus; articulatio deest; rostrum indistinctum, in parte superiore paucitortum; setae nudaе, fere aequaliter ad 10 mm longae. Argentina, Sierra Achala (Hieronymus).



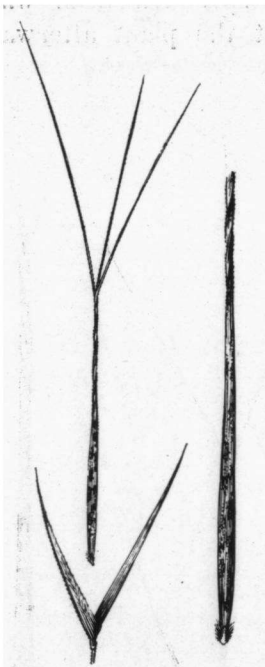
ARISTIDA ACHALENSIS Mez.
From type specimen.

Type in the Berlin Herbarium, kindly lent to me by Prof. PILGER:
 Flora Argentina; Sierra Achala de Córdoba. Paso de la Higuera
 al pié de la Cuesta de Arjel. 24/25 III. 1875. leg. G. Hieronymus.

Aristida achalensis Mez.
var. elongata Henrard nov. var.

= *Aristida elongata* HENRARD olim in Herb. Lugd. Batav..

Gluma I. 9 mm. longa, acuta, scaberrima; gluma II. 11 mm. longa, glabra, setae laterales inconspicuae vel nullae; gluma III. fertilis exserta, cum columna et callo circa 13 mm. longa; callus obtusus, pilosissimus, abbreviatus, circa $\frac{1}{2}$ mm. longus; columna scabra, torta, circa 5 mm. longa; aristae inaequales, media 14—15 mm. longa, laterales 11—12 mm. longae.



$\times 2\frac{2}{3}$ $\times 5\frac{1}{3}$
ARISTIDA ACHALENSIS Mez.
 var. **ELONGATA** Henrard.
From type specimen.

Argentina: Capilla del Monte-Córdoba,
 25. 4. 1925, leg. M. BARROS in Herb. L.
 R. PARODI no. 6389. Typus in Herb. Lugd.
 Bat. sub no. 925. 260—241.

Aristida acuminata Hackel.

E. HACKEL; Gramineae novae VI. in
 FR. FEDDE, Repertorium novarum specie-
 rum regni vegetabilis VII. [1909] p. 313!

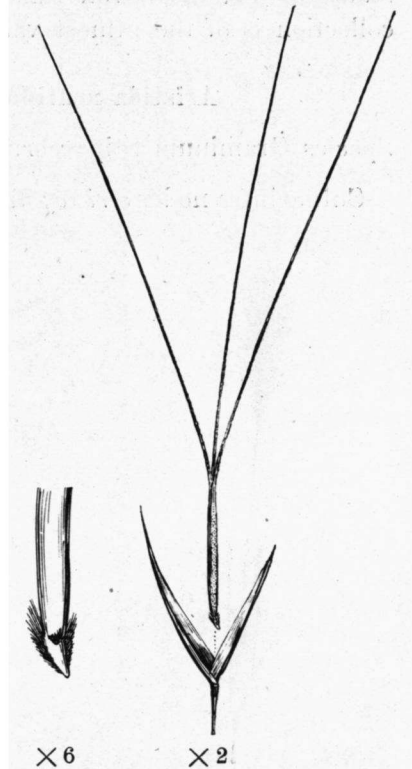
Perennis. Culmi erecti, graciles, circ.
 40 cm alti, teretes, glaberrimi, 2-3-nodes;
 nodo summo supra medium culmum sito,
 simplices. Vaginae arctae v. apice solutae,
 internodiis longiores, teretes, glaberrimae.
 Ligula brevissima, ciliolata. Laminae e basi
 aequilata a vagina vix distincta anguste lineares, saepissime com-
 plicatae vel basi planiusculae, tenuissime acuminatae, innovationum
 ad 30 cm longae culmum subaequantes, culmeae, 6—10 cm lg.,
 omnes junceae (diam. 0,8 mm), suberectae, glabrae, inferne laeves,
 superne scaberulae, nervis crassiusculis subcontiguis supra parum
 prominulis percursae. Panicula lineari-oblonga subcontracta den-
 siuscula, circ. 24 cm lg.; 3 cm lt.; rhachi glaberrima, ramis 2—3nis

subcapillaribus erecto-patulis angulis scabris, primariis inferioribus ad 5 cm longis a basi ad $\frac{1}{4}$ vel $\frac{1}{3}$ longitudinis nudis, dein secundarios paucos 1-2-spiculatos gignentibus, spiculis versus apicem ramorum subconfertis subimbricatis, breviter v. brevissime pedicellatis. Spiculae lineares, sine aristis 10—11 mm longae, brunnescentes. Glumae steriles lanceolato-lineares, subulato-acuminatae, in mucronem attenuatae, carina prominente superne scabrae, 1-nerves, I. 10—12 mm, II. circ. 9 mm longa; gluma fertilis lineari-tubulosa, circ. 10 mm lg., callo minute barbulata, dorso vix scaberula, cum arista haud articulata; arista sine stipite torto, ramis patentissimis capillaribus scabris basi vix semigyro tortis, intermedio circ. 3,2 cm, lateralibus 2,5 cm longis. Palea circ. 1 mm longa.

Brasilia, Rio Grande do Sul. Municipio Rio Pardo, in campis prope Arvio das pedras leg. C. Jürgens.

Eine der wenigen Arten, deren 1. Hüllspelze länger ist als die 2. Solche Arten sind: *A. Spegazzinii* Arech., ein niedriges Gras, Halme ohne Rispe höchstens 18 cm lang, mit nur einem, der Basis genäherten Knoten, kurzen, dünnen, borstlichen Blättern, deren Spreite sich von der an der Mündung etwas geöhrelten und langgewimperten Scheide scharf abhebt; ihre Ährchen sind stark violett gefärbt, die Hüllspelzen plötzlich zugespitzt, die Grannenäste sind mindestens 5 cm lang. Ferner *A. inversa* Hack., im Habitus unserer Art ziemlich ähnlich, aber durch die Hüllspelzen verschieden, die sehr un-

gleich lang sind (die II. dreimal kürzer als die I.), und bei der unteren derselben eine aus dem Ausschnitt der stumpflichen, kurz zweizähligen Spitze entspringenden Mucro besitzen. Endlich *A. Hassleri* Hack., eine stark verzweigte Pflanze mit flachen Blättern und elliptisch-länglicher sehr lockerer, offener Rispe. Die I. Hüllspelze hat hier 3 erhabene Nerven, die II. trägt am stumpflichen Ende ein deutlich abgesetztes Stachelspitzchen; die Deckspelze ist



ARISTIDA ACUMINATA Hackel.
From type specimen.

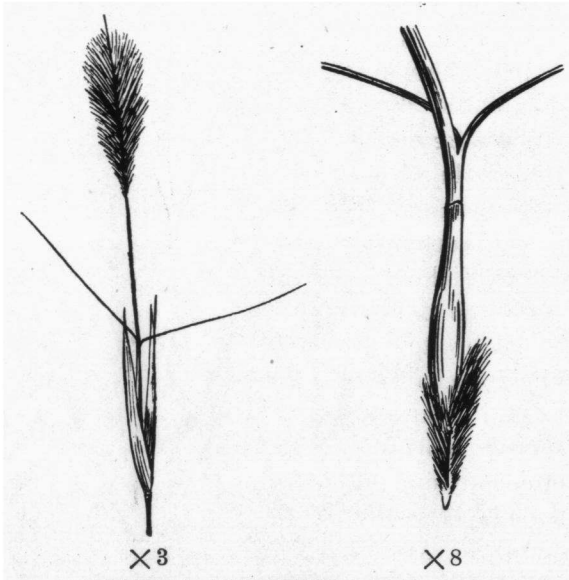
im oberen Teile von feinen Stachelchen sehr rauh, und die Granenäste entspringen aus einem etwas gemeinsamen gedrehten stiel-förmigen Basalteile.

The type, collected by CARLOS JÜRGENS no. G. 79 in HACKEL'S Herbarium, bearing the Vienna number 15486 somewhat resembles LINDMAN'S *Aristida circinalis* but differs in the shape of the panicle and in the awns which are not contorted at the base. All the *Aristida's* from Prof. HACKEL'S Herbarium were kindly submitted for study by Dr. K. R. VON KESSLER. It is evident that this very rich collection is of the utmost value for the knowledge of the genus.

Aristida acutiflora Trinius et Ruprecht.

Species Graminum Stipaceorum loc. cit. pag. 167!

Culmo infra nodos *sericeo*; vaginis et nodis glabris; ligulis brevissime



ARISTIDA ACUTIFLORA Trin. & Rupr.
From type specimen.

ciliatis; paniculae *sesquipedalis*, pyramidatae, lucidulae, demum paullo exsertae radiis geminis patentibus, a basi l. paullo superius floriferis: longiore 7 floro; glumis subaequalibus, glabris: superiore $3\frac{1}{2}$ —4 lineali, apice *breve bidenticulata et cuspidata*, inferiorem *acutatam l. mucronatam vix aut linea dimidia superante*; flosculo bilineali; stipite aristae deciduae *minimo l. semilineali*, non torto, glabro; setis lateralibus

divaricatis, nudis, sub 4 linealibus, media patente 6—9 lin., inferne ad $\frac{1}{3}$ nuda; mucronulo apicali nudo semilineali.

Dongala (Ehrenberg!)

Culmus *sesquipedalis*, teres, flavescens (ut tota planta), ad nodos inferiores ramosus et parum geniculatus, superne cum panícula strictus, *Folia* involuto-filiformia, pleraque semipedem longa, flexuosa,

satis firma, glabra. Proxima *A. plumosae*, sed notis adductis reapse distincta.

The type is in the Trinius Herbarium at the Académie des Sciences de Leningrad, a duplicate in the Berlin Herbarium. The method of treatment of this species by COSSON and DURIEU in their *Flore d'Algérie, Glumacées* p. 291 is wrong. The authors unite *Aristida acutiflora* and *A. brachyathera* but they place *A. acutiflora* as a variety under *A. brachyathera*, thus neglecting totally the priority. Both species are however very distinct and always easy to recognize. Their characters are very constant and among the many specimens I have studied, not a single intermediate one was observed.

Aristida adoensis Hochstetter

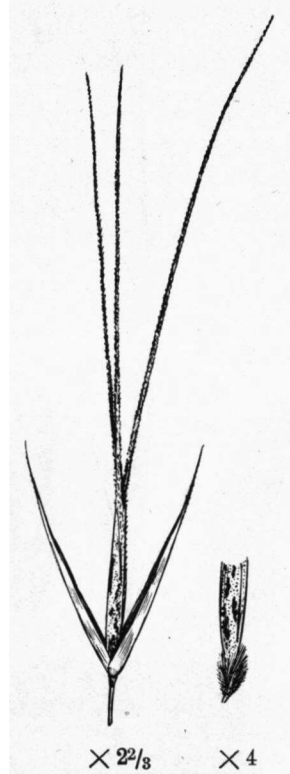
in SCHIMPER; iter Abyssinicum Sectio tertia. no. 1806 = nr. 319a Sect. I, ubi *A. caerulescens* Desf. (sed non *A. vulgaris* var. *abyssinica* Trin. et Rupr. in Act. Acad. Imp. Petrop. Ser. VI. Tom. V., ubi citatur numerus noster 319 — ante oculos habuisse videntur auctores numerum 219b, qui ad *A. vulgarem* eorum pertinet. Differt *A. adoënsis* mea satis superque glumis valvulas superantibus, nec obtusis nec erosis sed in setam acuminatam productis, spiculis majoribus et panicula elongata stricta, nec non ligula et plerumque etiam rhacheos nodis arrecte pilosis). In planitie montana Schire. U.i. 1844. d. 10. Oct. 1840!

ACHILE RICHARD: Tentamen Florae Abyssinicae seu Enumeratio Plantarum hucusque in plerisque Abyssiniae provinciis detectarum et praecipue a beatis doctoribus Richard, Martin Dillon et Antonio Petit (annis 1838—1843) lectarum, Paris, Vol. II. [1851] p. 390!

(Voyage en Abyssinie, Paris, Troisième partie, Histoire Naturelle, Botanique, Tome V).

Descriptio:

A. culmo erecto, basi caespitosa, 1-2-pedali, glabro; glauco, foliis lineari-lanceolatis convolutis (an siccatione?) glabris, glaucis, margine retrorsum scabris; ligula piloso-sericea,



ARISTIDA

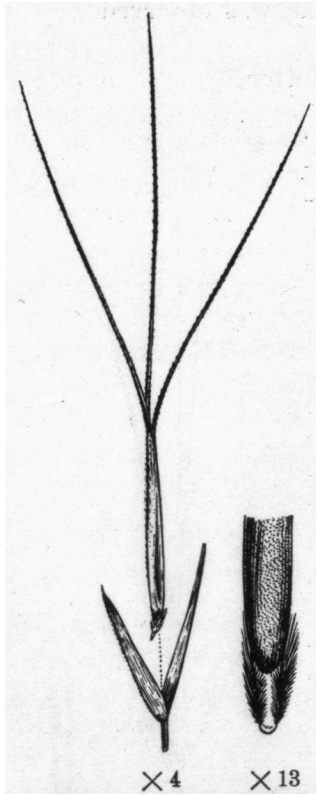
ADOENSIS Hochstetter.

From type specimen.

vaginis glabris; panícula contracta, ramosa, ramis brevibus erectis, lepicenae valvulis inaequalibus lineari-lanceolatis acutis et breviter aristatis, dorso carinatis, exteriore brevior, in carina scabra; palea exteriore longiore convoluta, dorso carinata et scabra, apice triquetra et arista tripartita terminata, aristae ramis aequilongis, similibus triquetro-subulatis, retrorsum argute denticulato-scabris.

Crescit in locis incultis et arenosis juxta *Adoua* et in montosis provinciae *Chiré* (Quartin Dillon et Schimper).

Observation. — C'est avec juste raison que M. Hochstetter a fait de cette plante une espèce nouvelle, après l'avoir rapportée d'abord à l'*Aristida caerulescens* de Desfontaines (*Flor. atl.* I. 109, t. XXI, f. 2). Elle en diffère par les valves aiguës et non obtuses à leur sommet, par ses paillettes plus longues et l'égalité de longueur des trois branches de l'arête terminale.



ARISTIDA ADSCENSIONIS L.

From type locality.
(Ascension leg. Osbeck).

The right date of the publication of HOCHSTETTER'S species is not known to me. The species was edited in exsiccatae with a latin description printed on the label, such a description is a valid publication. From this description the species is easy to recognize.

Aristida Adscensionis Linné.

CAROLI LINNAEI Species Plantarum exhibentes Plantas rite cognitae ad Genera relatas Tomus I Holmiae [1753] p. 82!

Gramen avenaceum, panícula minus sparsa, cujus singula grana tres aristae longissimas habent. *Sloan. jam.* 35. *hist.* I. p. 16. t. 2. f. 56.

Gramen avenaceum maderaspatanum, panícula sparsa aristis longioribus ornata. *Pluk. alm.* 174. t. 191. f. 3?

Habitat in Insula Adscensionis una ex quatuor istius pauperrimae Florae plantis, quarum 1. Sherardia fruticosa 2. Euphorbia origanoides, 3. Portulaca. Osbeck. 2.

Habitus *Festucæ ovinæ*, sed paulo major. Radix cespitem constituens. Culmi inferne ramosi. Folia e basi latiore sensim angustata, plano-canaliculata, subulata. Panicula oblonga, distincta glumis corollæ univalvibus, filiformibus, longitudinaliter convolutis, triplici arista terminatis.

The type in the Linnaean Herbarium at the rooms of the Linnaean Society of London. A beautiful series from the type locality in the Osbeck Herbarium of the Naturhistoriska Riksmuseum at Stockholm was kindly lent by Prof. C. A. M. LINDMAN

Aristida Adscensionis L.

var. *angustifolia* Pilger nov. var..

Annua, caespitosa. Culmi erecti, pergraciles, circa 3 dm. alti, e nodis inferioribus ramosi; vaginae internodiis breviores, laxissimæ; ligula breviter ciliata, auriculæ dense sed breve barbatae; laminae 3—5 cm. longae, circa 1 mm. latae, angulo fere recto patentes vel reflexae, acuminatae, subtus glabrae, supra puberulae; panicula densiflora, angusta, contracta, subinterrupta, ramis suberectis, angulosis, scaberulis, ramuli breves, appressi; glumae inaequales, uninerves, pallidae, inferior acuta, 3½—4 mm. longa, carina scabra, superior 5½—6 mm. longa, laevis, bidentata, inter dentes mucronata, gluma fertilis 6½—8 mm. longa, toto superficie aspera vel scaberula, callus obtusus dense et longiuscule barbatus; aristae rami subaequales, 10—12 mm. longi, intermedio lateralibus paullo longiore.

Insula Socotra: Tamarid, expeditio RIEBECK, 13 Apr. 1881 leg. Dr. G. SCHWEINFURTH no. 280. (Typus in herb. Berolin.).

A very remarkable plant, agreeing with *A. Adscensionis* as to the characters of the spikelets, but the habit in very different on account of the spreading or reflexed blades. Exactly the same plant was collected by Prof. BAYLEY BALFOUR in Socotra, Febr.—March, 1880, no. 94, (Herb. Berl.).

Aristida Adscensionis L.

var. *anthoxanthoides* Domin.

K. DOMIN; Beiträge zur Flora und Pflanzengeographie Australiens, in Bibl. Bot. Heft 85¹ [1915] p. 343!

Caespites humiles densi; paniculae oblongo-cylindricae, circa 3 cm longae, densae et continuae; glumae latiores, omnino scariosae,

haud bidentatae sed nervo medio in mucronem parvum egrediente, circa 4 mm et 5,5 mm longae; *glumellae* haud exsertae; *aristae* circa 10 mm longae.

Abbildung: Tafel XV, Fig. 9—12.

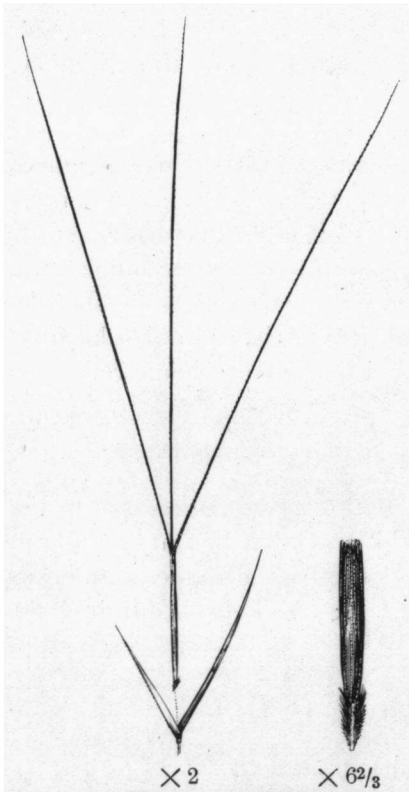
South Australia: Mt. Lyndhurst (MAX KOCH, Okt. 1899, South Australian Plants No. 305).

Diese Varietät ist habituell durch die sehr dichte, länglich-zylindrische Rispe ausgezeichnet.

Note: = *Aristida anthoxanthoides* (Domin) Henrard.

Aristida Adscensionis L.

var. *argentina* Hack.



ARISTIDA ADSCENSIONIS L.
var. *argentina* Hack..
From type specimen.

ap. T. STUCKERT; Contribución al conocimiento de las Gramináceas Argentinas, in Anales del Museo Nacional de Buenos Aires, Tomo XI. [1904] p. 88!

Perennis, culmus simplex, elatior (ad 50 cm. altus), folia convoluta, panicula elongata (ad 20 cm. long.) lineari-oblonga; ramis longiusculis saepe subnutantibus multifloris in 1/3 inferiore indivisis. Glumae steriles sensim acuminatae longiuscule mucronatae, integrae, I, quam fertilis (III.) parum brevior, II, illam superans; (I, circ. 11 mm., II, 14 mm., III, 12 mm., long.) Gluma III, laevis. Arista rami circ. 3 cm. longi.

Stuckert: Herb. arg. no. 10.458, no. 10.488, no. 11.013 y no. 11.446, (XII. 1901), procedentes de Mina Clavero y sus inmediaciones. Dep. San Alberto, Prov. de Córdoba.

In HACKEL'S Herbarium there are 3 sheets named var. *argentina*, Stuckert 10458, 11013 and 11446, a fourth no. 17305 in the same Herbarium was mentioned by STUCKERT in his Tercera Contribución.

Stuckert no. 10488 I have not seen. The description of the *var. argentina* does not agree with all the plants cited. The numbers 10458, 11013 and 17305 have a first glume longer than the second, they belong to a very different perennial species (*Aristida leptochaeta* HACK.). Only the number 11446 has a first glume shorter than the second, in accordance with the description. As to the question „What is the type”, I am of the same opinion as Prof. HITCHCOCK. The description ought to control the selection of the type specimen, and the description prevails, hence the number 11446, the only one with a lower glume shorter than the upper, is taken as the type, that is the specimen from which the description, was drawn (See Journal of Botany June 1924).

The type specimen is a perennial plant and belongs to *Aristida subinterrupta* ARECHAULETA, it differs but slightly from that species in the shorter glumes and shorter awns, in other respects especially in vegetative characters it agrees perfectly with the uruguayan species.

Note: = *Aristida subinterrupta* Arechavaleta *var. argentina* (Hack.) Henr..

***Aristida Adscensionis* L.**

***var. argentina* Hack.**

***subv. densiflora* Hack.**

ap. T. STUCKERT; Tercera Contribución al conocimiento de las Gramináceas Argentinas, in Anales del Museo Nacional de Buenos Aires, Tomo XXI. [1911] p. 65!

Differt a typo panicula densissima, habitus A. Adscensionis v. caerulescentis subv. condensatae Hackel.

St. no. 20.532 (16. XII. 1909) Villa García, cercanías de Tanti, Dep. Sta. María, Córdoba.

Stuckert's number 20532, the only specimen mentioned, in HACKEL'S Herbarium (Hb. Vindob. no. 40528). This is the type and agrees with the type of *Aristida Adscensionis var. argentina* as selected by me, having a somewhat denser panicle.

Note: = *Aristida subinterrupta* Arechav. *var. argentina* (Hack.) Henr..

Aristida Adscensionis L.**var. breviseta Hackel**

ap. T. STUCKERT; Segunda Contribución al conocimiento de las Gramináceas Argentinas, in Anales del Museo Nacional de Buenos Aires, Tomo XIII. [1906] p. 449!

Differt a typo foliis setaceis, panicula lineari subinterrupta, ramis rectis, spiculis parvis (Gluma I. 4—5 mm., II. 5,5—6 mm., III. 3—4 mm. long.) aristae setis brevioribus (ad 8 mm. longis).

Stuckert: Herb. arg. no. 1430. (13. I. 1897) Suburbios General Paz, Córdoba.

The type Stuckert no. 1430 in HACKEL'S herbarium now in the Vienna herbarium under no. 15829 is a rather curious plant and not an *A. adscensionis* at all. It is a 30—35 cm. high perennial plant, the leaves clustered at the base, convolute, rather soft and setaceous; the culms are nearly simple, and strictly erect, the erect narrow panicles are about 15 cm. long. Probably this plant is a distinct species of the *Chaetaria* group but all the spikelets are affected with a black fungus (*Ustilago* spec.?), the lemma is not fully developed and black in lower half part, there is no callus, and the awns are short, the glumes are aucte, 5 and 7 mm. long, 1-nerved, those of an immature panicle at the base of the plant have glumes 5½ and 6 mm. long, but the awns are longer.

It is known that *Aristida*'s, attacked by smut, have spikelets very different in form from those of the normal plants, hence the species is not always to recognize. This ambiguous species cannot be described and is omitted in my work.

Aristida Adscensionis L.**var. coerulescens (Desf.) Hackel****subv. condensata Hackel**

ap. T. STUCKERT; Contribución al conocimiento de las Gramináceas Argentinas, [1904] loc. cit. pag. 91!

Differt a typo, panicula condensata, ramis primariis mox supra basin, secundariis et tertiariis a basi spiculiferis. In typo ramus primarius in 1/3 inferiore nudus, secundarii mox supra basin spiculiferi.

Stuckert: Herb. arg. no. 14.069 (20. III. 1904). Estancia San Teodoro,

ped. Villamonte, Dep. Río I. Prov. Córdoba y con una serie de números de diferentes fechas y procedencias, algunas muestras hasta del Municipio de la ciudad, entre estos últimos hay el no. 12.875 (28. II. 1903) de una forma más débil y más pálida.

Subvariedad que no se diferencia de la variedad típica sino por sus panojas más contraídas.

Ella es citada por primera vez; pero la creo bastante dispersada en la R. A.

Note: = *Aristida Adscensionis* L. var. *condensata* (Hack.) Henr..

The interpretation of HACKEL's subv. *condensata* is rather difficult. The type cited is the number 14069; this plant was not found in HACKEL's collection but there is a beautiful series of this sub-variety written up by him subv. *condensata* or *forma condensata*. The plants studied have no innovationshoots, they are annual, and belong to *Aristida Adscensionis* as to the technical characters of the spikelets, they are different from the perennial old world species *Aristida coerulescens*. Stuckert's number 12875 cited above is in Hackel's herbarium a mixture of typical *condensata* and a depauperate pale form more resembling the typical *A. Adscensionis*. I have placed this *condensata* as a variety under *A. Adscensionis*, differing from the var. *typica* in the robust state, the dense and more spike-like, subinterrupted, long panicle, and in the longer glumes and awns. The authentic specimens, seen by me, bear the following numbers, the Vienna number is given in parentheses: Stuckert 12875 (Vienna number 15805 and 15806); Stuckert 13813 and 13770, the latter with a latin description by HACKEL on the label (V. 15807); Stuckert 13914 (V. 15804); Stuckert 19999 and 20077 (V. 15808). Moreover there is in HACKEL's Herbarium no. 679 KNEUCKER exsicc. labeled *A. coerulescens* DESF. var. *condensata*.

Aristida Adscensionis L.

var. *laevis* Hackel

ap. T. STUCKERT; Contribución al conocimiento de las Gramináceas Argentinas, [1904] l.c.p. 89!

Ut praecedens, (var. argentina) sed culmi e nodis pluribus inferioribus ramosi, folia planiuscula, panicula linearis, pauciflora; glumae steriles obtusiusculae, mucronatae, II, (circ. 11 mm. long.) III, aequans, I, (circ. 8 mm. long.) ea brevior; gluma III, laevis; aristae rami 1,5 cm. circ. longi.

Stuckert: Herb. arg. no. 10454, (XII. 1901). Mina Clavero. Dep. San Alberto, Prov. de Córdoba cum var. praecedente.

Tal vez sería mejor considerarla como subvariedad de la antecedente; mientras que las otras dos variedades se distinguen mucho más netamente.

Note: = *Aristida multiramea* Hackel.

The type specimen Stuckert no. 10454 in HACKEL'S Herbarium (Herb. Vindobon. no. 15812) and another specimen Stuckert no. 10494 in HACKEL'S Herb. Vind. no. 15811, both in HACKEL'S handwriting perfectly agree with the type specimen of HACKEL'S *A. multiramea*. The plants are perennial, have the same habit and the short blades, both glumes have the same characteristic tips. The spikelets are well-developed but immature, the awns are flat at the base and arcuate-contorted but not yet so spreading as in *A. multiramea*.

Aristida Adscensionis L.

var. *longicollis* Domin.

Bibl. Bot. Heft 851 [1915] loc. cit. p. 343!

Valde elata; *panicula* contracta, angusta, saepe 1 dm longa; glumae valde inaequales; *gluma* I. circa 4,5 mm longa, apice bidentata et mucronata, *gluma* II. similis, sed 7 mm longa; *glumella* manifeste exserta, cum stipite 8,5—10 mm longa, parte suprema sterili plus 2 mm longa aristiformis; *aristae* circa 15 mm longae.

Abbildung: Tafel XV, Fig. 5—8.

West-Queensland: dürre Hügel bei Cloncurry (DOMIN, II. 1910). Eine sehr charakteristische Varietät, die aber wohl mit Rücksicht auf die vielen Variationen der Art nicht spezifisch abzutrennen ist.

Note: = *Aristida longicollis* (Domin) Henrard.

Aristida Adscensionis L.

var. *modesta* Hackel

ap. T. STUCKERT; Contribución al conocimiento de las Gramináceas Argentinas, [1904] l.c. p. 89!

Ardua? Culmi humiles (7—10 cm.), basi geniculati simplices, folia brevia, planiuscula; panicula oblonga, brevis (circ. 5 cm. long.) densiflora; spiculae parvae: gluma I. circ. 4—5 mm., II et III. 6 mm. longae, steriles breviter acuminatae, fertilis scabriuscula, ejus aristae rami circ. 12 mm. longi.

Stuckert: Herb. arg. no. 11.707 (XII. 1901). Mina Clavero. Dep. San Alberto, Prov. de Córdoba; y no. 13.139 (28. V. 1903) de las cercanías de la ciudad de Córdoba.

Varietad de cercano parentezco con la *Aristida Adscensionis* L. var. *pumila* (= *A. pumila* Decsne), distinguiéndose sin embargo de ella, por sus glumas (estéres) más obtusas y más cortas.

Stuckert: Herb. arg. no. 13.325 (19. VIII. 1903). Cañada Alegre, Dep. Burruyacu, Prov. de Tucumán constituye también una variedad de la misma, pero no es determinable con seguridad, por causa que sus glumas fueron cambiados de forma por la invasión de un *Ustilago*.

Las variedades de esta especie son plantitas de una altura de 10 á 40 cm., en lo general de muchas espigas, pero de insignificante valor forrajero. Su área geográfica es como ya he dicho muy vasta en la República Argentina, y fuera de ella. Llevan el nombre de *Saetilla*, con ó sin adjetivos, blanca, rojiza, azuleja, etc.

In HACKEL'S Herbarium I saw Stuckert no. 13139. This plant is selected as the type. Moreover there are in the same herbarium the numbers Lillo 3576 and Stuckert 2394 mentioned in STUCKERT'S Segunda Contribución and the number Stuckert 17709 from the Tercera Contribución. All the plants are annual, they agree with the typical form of the variable *Aristida Adscensionis*.

***Aristida Adscensionis* L.**

var. *scabriflora* Hackel

ap. T. STUCKERT; Contribución al conocimiento de las Gramináceas Argentinas, [1904] l.c.p. 89!

Perennis, culmi humiliores, simplices, folia plana v. subconvoluta; panicula stricta, densa, lineari-oblonga, ramis brevibus fere a basi floriferis, spiculae minores, glumae obtusiusculae, mucronulatae; I, circ. 4.5 mm. long., II, 6 mm., III, 7—8 mm. long., praesertim superne carinaeque scabra; aristae rami circ. 1 cm. longi.

La forma de esta variedad se aproxima mucho á la especie *Aristida coerulescens* Desf., sin convergir sin embargo directamente con ella.

No specimens are cited on pag. 89, but in STUCKERT'S Segunda contribución on pag. 450 two numbers are cited: Stuckert Herb. arg. no. 4390 (13. III. 1898) cercanías de Córdoba y no. 9061 (III. 1900) de Tucumán. Both are in HACKEL'S Herbarium, a third specimen, Stuckert no. 10.623, Dep. San Alberti, Prov. Córdoba (16. XII. 1901) also in HACKEL'S collection, is not mentioned in STUCKERT'S Contri-

buciones. The plants are annual, they differ from the typical *A. Adscensionis* but slightly in the lemma, not only scabrous on the keel, but also on the sides, especially toward the summit.

***Aristida Adscensionis* L.**

var. subaequiglumis Domin.

Bibl. Bot. Heft 85^I [1915] loc. cit. p. 343!

Habitu cum varietate typica bene convenit, sed differt glumis (omnino scariosis, bidentatulis, mucronatis) subaequilongis, i. e. circiter 7,5 mm et 6,5 mm longis; aristae circa 12 mm longae, glumella inclusa (nec exserta).

Queensland: Windorah (W. H. ROSE, 1910) (F. M. BAILEY sub nomine *A. BEHRIANAE* misit).

This is according to the characters given by Prof. DOMIN a distinct species. Among the numerous plants belonging to *Aristida Adscensionis* I had the opportunity to examine I never saw a plant having lemmas shorter than the subequal glumes. I have not yet seen the *Aristida Adscensionis* from Australia and among the rich collection of australian *Aristidas* submitted for study by the extraordinary kindness of Dr. HILL, I found not a single specimen I could refer to *Aristida Adscensionis*. Therefore I base on the description given above a new species, named *Aristida peregrina* Henr..

***Aristida Adscensionis* L.**

var. typica Stapf.

O. STAPF in J. D. HOOKER, Flora of British India, Vol. VII. [1897] p. 224!
Gl. III about as long as II.

***Aristida Adscensionis* Swartz.**

OLOF SWARTZ; Observationes botanicae, quibus plantae indiae occidentalis aliaeque systematis vegetabilium ed. XIV, illustrantur, earumque characteres passim emendantur. Erlangae, [1791] p. 40!

A. spica laxa tenui, aristis longissimis crinitis.

Brown. jam. 135. 1.

OBS. Exclude *Pluk. alm.* 174. t. 191. f. 3.

DESCR. *Culmus* caespitosus, 1—2-pedalis, decumbens, geniculatus, simplex, laxis, laevis. *Folia* tenuissima, fliformia, erecta, laevia. *Panicula* ramosa, subcontracta; ramis adpressis, subdivisis, erectis; flosculis breviter pedicellatis, angustis, fuscis. *Glumae calycinae* Val-

vulae subaequales, una quasi *exterior*, paullo inferior, subulata, mutica; *altera* similis, nitens, mutica, carinata, glumam corollinam includens. *Glumae corollinae Valvula* subulata, convoluta, longior, apice aristata, nitens, basi villosa. *Arista* ad basin 3-partita. *Setae* capillares, (lente) cartilagineo-serratae. *Antherae* atropurpureae. *Stigmata* villosa, concoloria. *Semen* minutissimum, acuminatum. *Provenit in sabulosis aridis* Jamaicae australis.

Note: = *Aristida Swartziana* Steudel.

Among the specimens of *Aristida Adscensionis* in the SWARTZ Herbarium at Stockholm, kindly received in loan from Prof. C. A. M. LINDMAN, no plant was found agreeing with the description given by SWARTZ. This description applies to a plant having the following characters: the panicle is lax but contracted, the branches erect and appressed, the glumes are subulate and subequal, the lower but slightly shorter than the upper, the lemma is shorter than the glumes, and the awns are very long and capillary. Such a plant is indeed very different from the plant described by LINNAEUS, and the SWARTZ' plant cannot be the same species. This conclusion was already given by TRINIUS and RUPRECHT.

Among the *Aristidas* in the THUNBERG Herbarium at Upsala, kindly received in loan by the courtesy of Prof. O. JUEL, I found a sheet labeled *Aristida Adscensionis* β , received by THUNBERG from SWARTZ. On the sheet are mounted 4 specimens lacking the bases, but they agree perfectly with the description given by SWARTZ. Moreover they have lemmas with a straight scaberulous beak about 1 mm. long, and a faint joint at the summit just below the branching point of the awns. By these characters the plants are to recognize as belonging to the endemic jamaican species, afterwards called by STEUDEL *Aristida Swartziana*. STEUDEL has not given a description of a plant but he has simply copied SWARTZ' description. The plant in THUNBERG's Herbarium is accepted by me as the type of *Aristida Swartziana*. See that species.

***Aristida adscensionis* Walter.**

THOMAS WALTER, „AGRICOLA", Flora Caroliniana, London, [1788] p. 74! sub nom. *A. adscensionis* L..

32. ARISTIDA. Cal. 2-valvis. Cor. 1-valvis, aristis 3 terminalibus.
adscensionis panicula ramosa, spicis sparsis.

1.

A. S. Hitchcock, The Identification of Walter's Grasses in the sixteenth annual Report of the Missouri Botanical Garden. Scientific Papers. [March 1905] p. 31—56!

pag. 40!

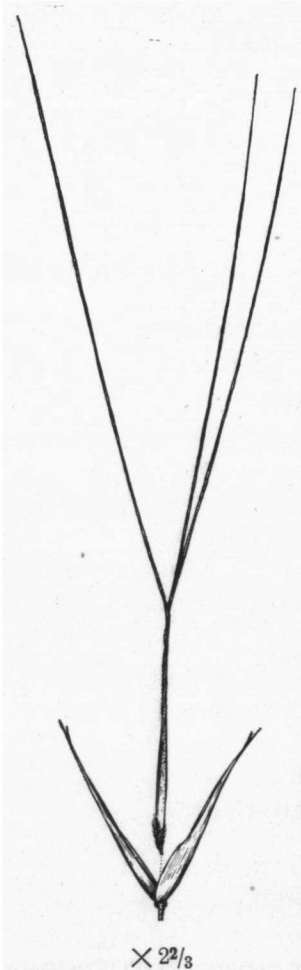
No specimen. Referred to *A. stricta* Michx. by Elliott and to *A. oligantha* Michx. by Pursh. The description applies better to the latter species than to any other species growing in the Southeast. The panicle is few-flowered and loosely branched. Not *A. adscensionis* L. from Ascension Island, but Walter copies Linnaeus' description.

Aristida aequiglumis Hackel.

EDUARD HACKEL ap. HANS SCHINZ: Beiträge zur Kenntnis der Afrikanischen Flora in Bulletin de l'Herbier Boissier, Tome III. No. 8, [1895] p. 381!

Sect. CHAETARIA.

Perennis, caespitosa, gracilis. Culmi erecti, 30—50 cm. alti, teretiusculi, filiformes, glaberrimi, simplices. Vaginae arctae, teretes, internodiis 2-3-plo breviores, glabrae v. ore parce barbatae. Ligula brevissima, marginiformis. Laminae convolutae, filiformes v. setaceae, acutae, 6—10 cm. longae, inferiores curvatae, praeter marginem scabrum glaberrimae, rigidae. Panicula lineari-oblonga, 8—10 cm. lg., stricta, densiuscula, contracta v. erectopatula, ramis inferioribus binis, primario ad medium usque nudo 3-4-spiculato, secundario a basi diviso cum tertiano 1-2-spiculato, ramis tenui-filiformibus rectis scabris. Spiculae subterminales brevissime pedicellatae (pedicello spicula 6-plo brevior) lineares, violascentes v. subrufescentes: glumae steriles aequales, 10 mm. longae, lineares, 1-nerves, laeves, inter apicis denticulos minutos mucronatae; gluma florifera 7 mm. longa, linearis, callo breviberbi, ceterum scabra, violacea, cum aristae stipite 3 mm. longo gyris 2-3 torto scabro



× 2²/₃

ARISTIDA
AEQUIGLUMIS Hackel.
From type specimen.

non articulata; aristae divisiones capillares, erecto-patulae, scabrae, subaequales, 2,5—3 cm. longae.

Transvaal: Pretoria, Kuduspoort (Rehmann n. 4696).

Affinis *A. Meccanae* Hochst., quae differt paniculae ramis fere a basi floriferis, gluma sterili superiore inferiorem fere duplo superante, etc.

The type in HACKEL's Herbarium at Vienna under the Vienna number 15846 is labeled: *Aristida aequiglumis* Hack. n. sp., an authentic specimen also in the herbarium of the Botanical Garden at Zürich, kindly lent by Prof. H. SCHINZ.

Aristida aequiramea Scheele.

ADOLF SCHEELE; Beiträge zur Flor von Texas, in *Linnaea* XXII. [1849] p. 343!

Radix fibrosa caespitosa. Culmus erectus simplex teretiusculus glaber sesquipedalis et ultra. Folia convoluto-setacea rigida elongata glabra scabriuscula, radicalia culmum aequantia, caulina 2 breviora. Vaginae internodiis breviores glabrae striatae scabriusculae ore barbatae.

Panicula racemosa contracta subsecunda ramosa nutans, rami verticillati pauciflori. Rachis, rami et pedunculi scabri, rami filiformes, pedunculi brevissimi. Gluma inferior lanceolata carina scabra aristata perianthium dimidium superans, glumam superiorem dimidiam vix aequans; arista glumam dimidiam aequans. Gluma superior caryopsin paulo superans gluma inferiori plus duplo longior lanceolata glabra apice 2-dentata dorso aristata, arista scabra gluma quadruplo minor. Glumella subulata purpurascens muricato-scabra arista tripartita plus triplo brevior.

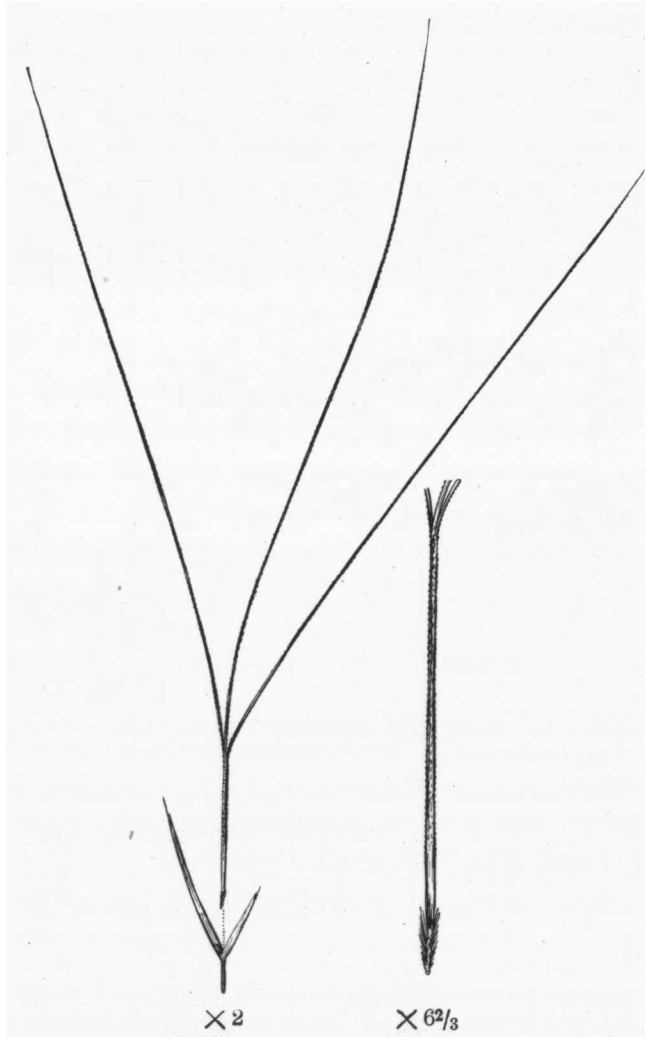
Aristae haud articulatae rami aeliquilongi patentes scabriusculi.

Sesleria? Lindheimer.

Auf steinigem Boden in fruchtbarer Dammerde bei Neu-braunfels, in Texas Musket-grass genannt. Lindheimer. September.

Die hakenförmigen, kleinen Weichstacheln an den Fruchtspezeln sind weiss, daher die Frucht buntscheckig erscheint. Die Aeste der Granne stehen im $\frac{1}{8}$ Winkel von einander ab und sind gleich lang, daher der Name. Mit einer *Sesleria* hat die Pflanze nicht die entfernteste Aehnlichkeit, wohl aber mit *Festuca (Vulpia) stipoides* Desf. und den verwandten Arten.

This is doubtless the plant distributed under 562 as *Aristida aequiramea*, as this specimen agrees perfectly with Scheele's description. The plant in the Herbarium of the Philadelphia Academy of Natural Sciences under this number is identical with the same



ARISTIDA AEQUIRAMEA Scheele.
From type specimen.

number in the U. S. Nat. Herbarium and is labeled by Buckley „*Aristida filipendula*”, and is the form to which Buckley's description applies. (SCRIBNER and MERRILL in Circular no. 34, U. S. Dep. of Agric., May 1901, p. 7!)

Note: = *Aristida purpurea* Nuttall.

I have not been able to locate the type, but specimens of the type collection Lindheimer's no. 562 collected at New Braunfels, September 1846, I saw in different herbaria. They all belong to the species described by NUTTALL.

***Aristida aethiopica* Trin. et Rupr.**

loc. cit. pag. 134!

Pallida, glaucescens; gluma superiore 3—3½ lineali inferiorem acutam lineâ superante; flosculo 4½ lineali, aspero; seta media sub 8 lineali.

Sennaar (Kotschy pl. exs. n. 248! 226! et sub n. 103 Hb. Vindob. cum *A. mutabili* in arenosis Cordofani promiscue: flosculis glabrescentibus 4½—5½ linealibus quidpiam recedens).

Note: = *Aristida Adscensionis* L. var. *aethiopica* (Tr. et Rupr.) Hook. f.

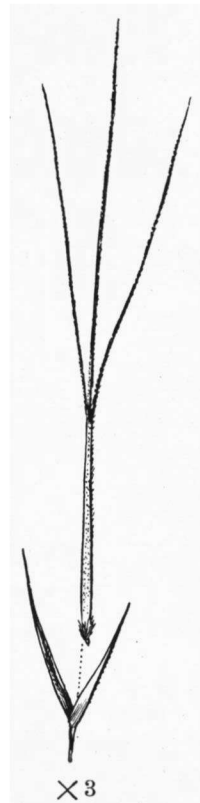
The type is Kotschy 248 in the TRINIUS Herbarium. Duplicates of the type in many of the larger european herbaria. HOOKER unfortunately cites TRINIUS et RUPRECHT l.c. p. 167, this is an error for 134. On pag. 167 the russian authors described *Aristida plumosa* var. *Aethiopica* a totally different plant.

***Aristida affinis* (Schultes) Kunth.**

CHARLES SIGISMOND KUNTH; Révision des Graminées dans les Nova Genera et Species plantarum de Humboldt et Bonpland, Paris [1829] Tom. I. p. 61!

= *Chaetaria affinis* SCHULTES.

JOS. AUGUST SCHULTES in JOAN JAC. ROEMER et JOS. AUG. SCHULTES; Mantissa in Volumen secundum systematis vegetabilium CAROLI A LINNÉ, Stuttgart [1824] p. 210!



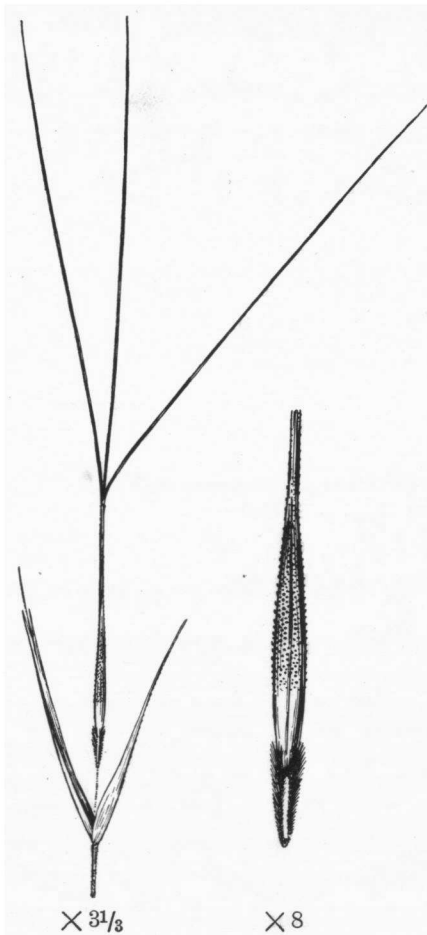
× 3
ARISTIDA
AETHIOPICA
Trin. & Rupr.
From
type specimen.
(Kotschy 248).

No. 5a. *CHAETARIA affinis*; culmo erecto, quadrangulo; foliis line-

aribus striatis, basi pilosis, apice scabris; paniculâ contractâ; aristis 3 terminalibus hispidis, patulis.

ARISTIDA racemosa Mühlenb. *Descr. ub.* p. 172.

Culmus $1\frac{1}{2}$ ped., nodis glabris. Ligula brevissima, retusa. Vagina subpilosa. Paniculae rami gemini, scabri, altero uni-altero 2-3-floro; vel solitarii, uniflori, basi nudi, nec villosi, pedicellis angulatis, sub calyce articulatis. Cal. 1-florus, valvulis inaequalibus, carinatis, scabris, mucronatis, corollâ paulo majoribus. Cor. basi pubescens, pedicellata, atro-maculata, scabra, aristis patulis, nec geniculatis inaequalibus, elongatis (sic). Rad. fibrosa. Maxime *oliganthae* affinis. Mühlenb. *In glareosis*. Nomen mutandum erat, cum jam sit *racemosa* Spreng.



ARISTIDA ALOPECUROIDES Hackel.
From type specimen.

Note: = *Aristida purpurascens* Poiret.

SCHULTES based his species on MUHLENBERG'S *Aristida racemosa* and changed the name on account of the earlier *A. ramosa* SPRENGEL. The type of *Aristida racemosa* MUHL. probably from Pennsylvania in Muhlenberg's herbarium in the herbarium of the Academy of Natural Sciences of Philadelphia.

***Aristida alopecuroides* Hackel.**

E. HACKEL; in Beiträge zur Kenntnis der Flora von Deutsch-Südwest-Afrika und der angrenzenden Gebiete von Dr. HANS SCHINZ. II., in Verhandlungen des Botanischen Vereins der Provinz Brandenburg, Berlin, XXX. [1888] p. 144!

Perennis. Culmi erecti, 40—80 cm alti, simplices. Vaginae praeter os barbatum glaberrimae; ligula brevissima, ciliata; laminae lineares, sensim acuminatae, circ. 20 cm longae, basi 2—3 mm latae,

siccando superne convolutae, glabrae, subtus laeves, supra margine-que scaberulae. Panicula elongato-linearis, cylindrica, subspiciformis, densissima, circ. 20 cm longa, ramis a basi ramulosis ramulis brevissimis ab ipsa basi spiculas crebras ferentibus. Spiculae brevissime pedicellatae, pallide virides, sine aristis 7—8 mm longae, lineares: glumae steriles inaequales, 1-nerves, carina scaberula: inferior 4 mm longa, in setulam ipsa parum brevior abiens, superior 7 mm longa, infra apicis denticulos breviter setigera; gluma florifera cum callo 1 mm longo brevibarbi fere 5 mm longa, linearis, superne tuberculato-scabra, aristae non articulatae stipes 6 mm longus scaber 4—5-spirus, divisiones subaequales 20—25 mm longae gracillimae, patentes.

Affinis *A. congestue* R. et Sch.

Standort: Olukonda, Ondonga Stamm (Amboland).

The type in Hackel's Herbarium at Vienna numbered 15847 was collected by Prof. SCHINZ, the label in HACKEL's handwriting. A duplicate of the type in the Zürich Herbarium.

***Aristida altissima* Arechavaleta.**

J. ARECHAVALETA; NUEVAS *Aristidas* del Uruguay, in *Anales del Museo Nacional de Montevideo*. Tomo IV. [1903] p. 80! *Lámina V. Planta entera en tamaño mitad menor que el natural.*

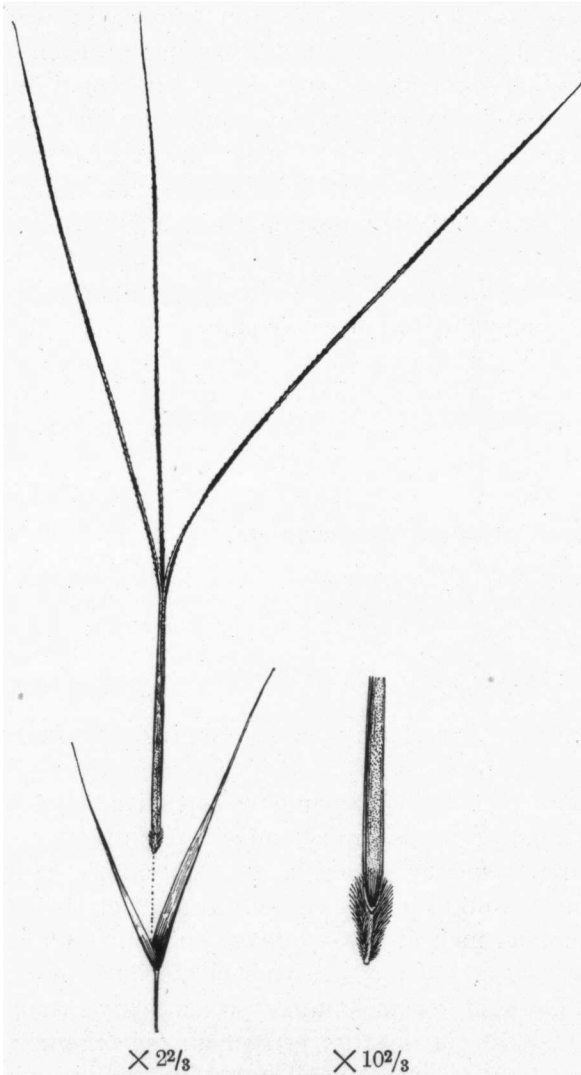
Rizomas ascendentes. Pajas derechas, erectas, cilíndricas, simples, de 80—120 cm de alto, desnudas en sus dos últimos tercios de la altura. Hojas en corto número. Vainas finamente estriadas, abiertas superiormente, 3 arrancan de otros tantos nudos muy juntos y se encajan y llegan á alturas respectivas, de 14, 20 y 25 cm \pm , lígula nula; láminas apergaminadas de 6, 9 y 14 cm de largo, fuertemente estriadas en la haz, mucho ménos en el envés, subconvolutadas, recias y prolongadas en punta. Existen otras hojas inferiores, pocas, cuyas vainas breves, abiertas, llevan láminas largas, convolutadas y rígidas. Panojas de 30 y 40 cm de alto, estrechas; eje cilíndrico, liso, solo um tanto áspero en su extremidad superior; ramas aplicadas contra el eje, más largas que los espacios que las separan. Espiguillas en cortos piés y algunas, la inferior de cada ramita, sentadas. Glumas de color pajizo sucio: I^{ra} de 12 mm \pm de alto, II^{da} de 16 mm \pm , 1-nerviadas, puntiagudas sin escabrosidades, III^{ra} de 12 mm \pm de largo, cilíndrica, pálida y lisa; arista de 30 mm de largo, subiguales, capilares, poco abiertas. Gluma IV mem-

branácea trasovada, sub-2-nerviada, glumelillas tenues con nervios finísimos.

Lo que distingue esta *Aristida* es la longitud de la paja con su panoja, sobre todo, y después, las hojas terminales que forman como un grupo de 3, cuyas vainas se encajan mutuamente.

Vive en campos de Tacuarembó. Florece en noviembre y diciembre.

The type is probably in ARECHA VALETA'S Herbarium in the National Museum at Montevideo. A duplicate type in HACKEL'S Herbarium with the Vienna number 15850. On the label is printed: Herbario de J. Arechavaleta. Plantas de la República del Uruguay, and written in ARECHA VALETA'S hand: *Aristida altissima* Arech. Campos de Tacuarembó, Nov^b 1896.



ARISTIDA ALTISSIMA Arechavaleta.
From type specimen.

***Aristida amplissima*
Trin. et Ruprecht.**

C. B. TRINIUS et F. J. RUPRECHT; Species

Graminum Stipaceorum in Actis Academ. Imp. scient. Petrop. Ser. VI. Tom. V. [1842] p. 155!

Paniculae (adultae) pedalis, effusae, *amplissimae*, lucidissimae, sparsiflorae, rigidae, basi exsertae radiis pseudogeminis (i. e. solitariis a

basi jam divisis) l. rarius ternis, 5 pollicaribus, *stricte* patentibus, remote dichotomo-ramosis, radiolis ultimis $\frac{1}{8}$ —1 pollicaribus unifloris; glumis valde inaequalibus: superiore $5\frac{1}{2}$ —6 lineali, lineari-lanceolata, apice truncata l. erosa, inferiore ovato-oblongâ apice bidenticulatâ et brevissime mucronatâ *triplo* longiore; flosculo quadrilineali, glabro, maculato, apice non torto, sed cum stipite aristae deciduae 7—9—12 *linealis* contortae articulatim conjuncto; seta media patente $1\frac{1}{2}$ —2 pollicari, lateralibus erectis lineis 1—3—6 longiore.

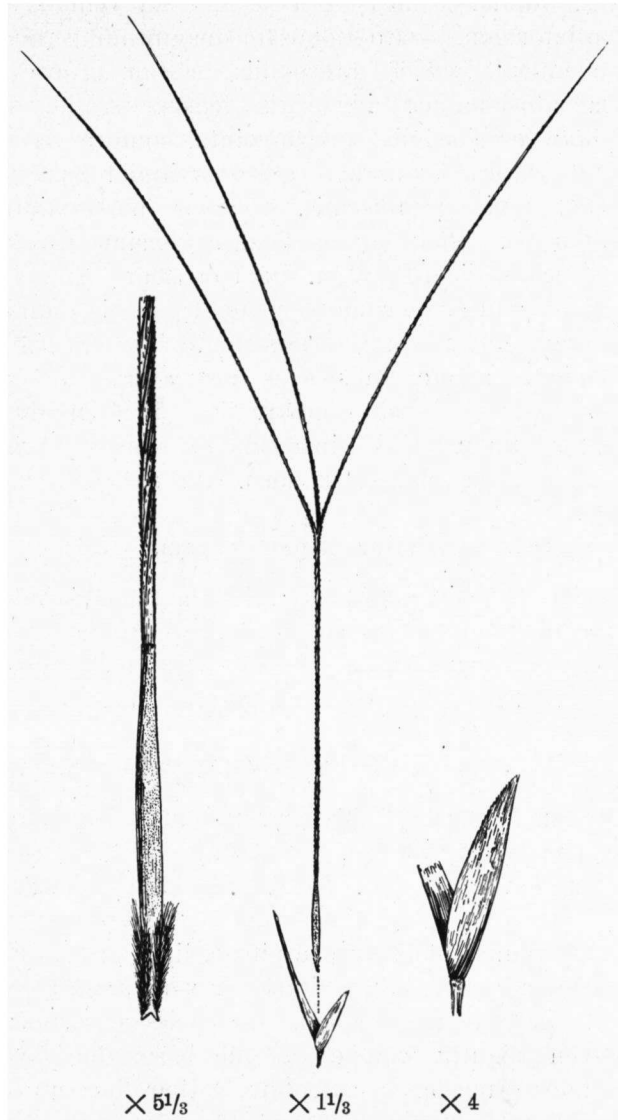
Aristida stipiformis Lamark *Illust.* (1791) p. 157? Poir. *Encycl. suppl.* 1. (1810) p. 452.

Chaetaria Lamarckii R. S. *Syst.* 2. (1817) p. 393. ad syn. Lam.

Aristida Lamarckii Steudel *Nomencl.* Ed. 1. (1825). ad syn. Lam.

Arthratherum comosum Gay! in *Hb. Kunth.*

Senegalia . (Duponis ex Poir. Reichb. !): in arenosis pr. Walo (Perrottet in *Hb. Kunth* !); Nubia ad montem Cordofanum Arasch-Cool passim. Octobr. (Kotschy *Un. itin.* n. 142!)



ARISTIDA AMPLISSIMA Trin. & Rupr.
From Kotschy no. 142.

Radix fibrosa; fibrae crassae, densae, fasciculatae. *Culmus* 2—2½ pedalis, erectus l. obliquus, ramosus, versus nodos (3) eximie compressus, inferne purpurascens. *Nodi* valde tumidi, nigro-purpurascentes, duplices, lineas 2 a se invicem remoti et interdum gemmam bulbiformen, ovato-globosam magnitudinis nucis Avellanae minoris foventes. *Vaginae* internodiis breviores, ore adustae, loco ligulae barbato-lanatae: ciliis satis densis, sordide albidis, lineas 2 longis. *Folia* fere pedalia, subconvoluta, compressa et in hoc statu lineam lata, glabra, laxiuscula. *Panicula* junior basi vaginata, debilis, flaccida, ramis erectiusculis, spiculas angustissimas gerentibus, adulta difformis. *Stipes aristae* aetate sensim prolongatur; in specimine Nubico pollicaris evasit, quod quidem rarius in Senegalensibus; in planta adulta plerumque panicula aristis omnibus delapsis cernitur, flosculo intra glumas persistente. *Aristae* in specimine Poirerii 3 pollicares; ceterum species nostra sine dubio etiam Poireriana, sed *Aristida stipiformis* Lamarckii a D. Roussilon in Senegalia lecta, cujus panicula „illi Stipae junceae similis” (*Arist. funiculata*?) planta adhuc dubia manet, ex herb. ejus recognoscenda.

Note: = *Aristida stipoides* Lam..

The type is Kotschy no. 142 in the Trinius Herbarium. Duplicates of the type in all the larger europaean herbaria. A duplicate of the DUPUIS plant in the Vahl Herbarium at Copenhagen. All the plants have the characteristic form of the callus.

Aristida angustata Stapf,

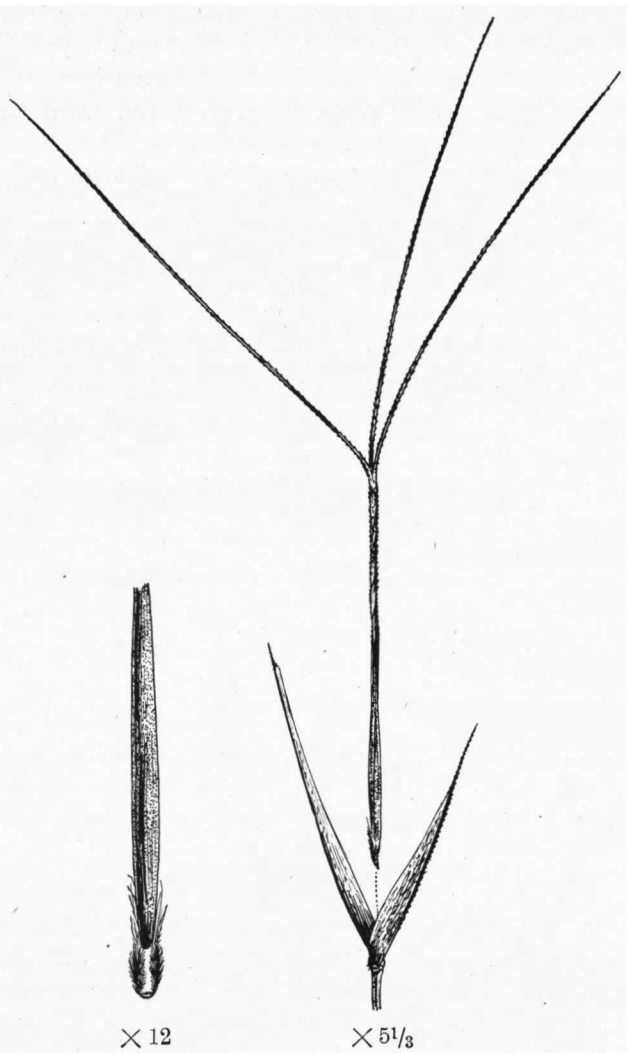
in SIR WILLIAM T. THISELTON-DYER, *Flora Capensis: being a Systematic Description of the Plants of the Cape Colony, Caffraria, & Port Natal*, London, Vol. VII. [1899] p. 556!

Perennial, densely caespitose, light green or glaucous; culms very slender, terete, erect, simple or very scantily branched, wiry, 1—1½ ft. long, about 3-noded, internodes exerted; sheaths very tight, often slightly widened at the base, the lower sometimes woolly; blades setaceously convolute, rather fine, up to ¾ ft. long, curved or flexuous, smooth below, densely pubescent or hispidulous and almost white above; panicle very narrow, often spike-like, 2—4 in. long; rhachis straight or flexuous; branches solitary, the longest up to 1¼ in. long, scantily branched; branchlets filiform; lateral pedicels very short; spikelets yellowish, 4½—5½ lin. long; glumes unequal, oblong-linear, usually shortly mucronate, the lower 2—3½

lin. long, acute, the upper about 4 lin. long, acute or minutely truncate; valve linear, convolute, produced into a short or usually very short beak (when of sufficient length to be slightly exerted then more or less twisted), scaberulous below the beak; callus $\frac{1}{4}$ lin. long; awns continuous with the valve, divaricate 5–7 lin. long, fine; pale hyaline, $\frac{2}{3}$ lin. long; lodicules 5-nerved, $\frac{7}{8}$ lin. long; anthers $1\frac{1}{2}$ –2 lin. long, not apiculate.

COAST REGION:
Cape Div.; between
Newlands and
Clairmont, *Wolley
Dod*, 2387! Sand
Road near Clair-
mont, *Wolley Dod*,
2388! Tulbagh Div.;
Tulbagh, 600 ft.,
Schlechter, 7509!
Worcester Div.;
mountains above
Worcester, *Reh-
mann*, 2582! 2587!
2667! Cathcart
Div.; Windvogel
Mountain, 3500 ft.,
Baur, 1115!

KALAHARI REGION:
Transvaal; Maga-
lies Berg, *E. S. C.
A. Herb.* 304! Hol
Fontein, *Nelson*,
79*! Houtbosch,
Rehmann' 5667!
Bosch Veld, be-
tween the Elands
River and Klippan, *Rehmann*, 5112!



ARISTIDA ANGUSTATA Stapf.
From Rehmann no. 5667.

Note: = *Aristida Welwitschii* Rendle.

The specimens cited above in the Herbarium of the Royal Botanic Gardens at Kew. As the type I have selected a sheet on which are mounted two specimens, both labeled in Dr. O. STAPP's hand, the left hand one is Captain Wolley Dod's no. 2387, the other is Rehmann no. 2582. They agree with a portion of the type of *Aristida Welwitschii* in the British Museum of Natural History at South Kensington, kindly received from Dr. A. B. RENDLE.



ARISTIDA ANNAMENSIS Henrard.
From type specimen.

Aristida annamensis Henrard

nov. spec.

Perennis, caespitosa. Culmi stricte erecti, graciles, ad 1 m. alti, inferne plus minus 2 mm. crassi, leviter compressi vel subteretes, simplices, glaberrimi, paucinodes, nodis glabris. Folia per culmum aequaliter disposita: vaginae arctae, laeves, glaberrimae, internodiis longiores; ore piloso; ligula brevissima, truncata, breviter ciliata; laminae e basi aequaliter lineares, sensim acuminatae, ad 25 cm. longae, planae vel subconvolutae, novellae convolutae, supra scabrae, subtus laeves, glaberrimae, crassinerves, nervo marginali valde prominente, crassissimo, cartilagineo, stramineo. Panicula magna, valde effusa, ad 50 cm. longa, plus minus 20 cm. lata, laxissima, rhachi striato-angulata, scabra, glabra, ramis ternis (i. e. ramis singulis, a basi tripartitis) vel superne binis (ramo altero laterali non evoluto), patulis, leviter flexuosis, subaequi-

longis, remotis, in axillis barbatis, inferne longe nudis, obsolete angulatis, scaberulis. Spiculae ad extremum ramulorum dense aggre-

gatae, nunc longius, nunc breviter pedicellatae, pedicellis scaberulis, apice haud incrassatis, lanceolato-lineares, sine aristis $11\frac{1}{2}$ mm. longae. *Gluma* I. lineari-lanceolata, $11\frac{1}{2}$ mm. longa, aristulata, arista scabra 2 mm. longa, uninervis, nervo extus scabro, *gluma* II. I^a paulo brevior, circa $10\frac{1}{2}$ mm. longa, leviter bifida, in aristam circa 2 mm. longam abiens, uninervis, nervo laevi, *gluma* III. *fertilis* anguste lineari-lanceolata, arcte involuta, minutissime punctulata, cum callo barbato acuto 1 mm. longo, 10 mm. longa, sensim angustata, sine articulatione in stipitem abiens vix perspicuum 1 mm. longum, rectum, non tortum, scabriusculum, aristis basi non tortis, scabris, intermedia maxima ad 20 mm. longa, subpatula, lateralibus 13 mm. longis. *Palea* minuta.

Indo China gallica: Annam, Cameran leg. B. BALANSA, 10 Dec. 1886.

BALANSA published in his Catalogue des Graminées de l'Indo-Chine in Morot's Journal de Botanique Tom. IV. (1890) p. 163, two plants as *Aristida chinensis* MUNRO. Only his number 374 collected near Haïphong is *A. chinensis*, the other plant without a number in his collection is the above described species. In many respects it agrees with *A. chinensis*, it differs however not only in the different habit, but chiefly in the proportions of the longer awned glumes. These are nearly equal, the first but 1 mm. longer than the second, both ending in a 2 mm. long awn. In *A. chinensis* the second glume is much shorter than the first and the awns at the summit are shorter.

Type in Herb. Lugd. Batav. no. 908.83—1369, a second specimen no. 908.83—1345.

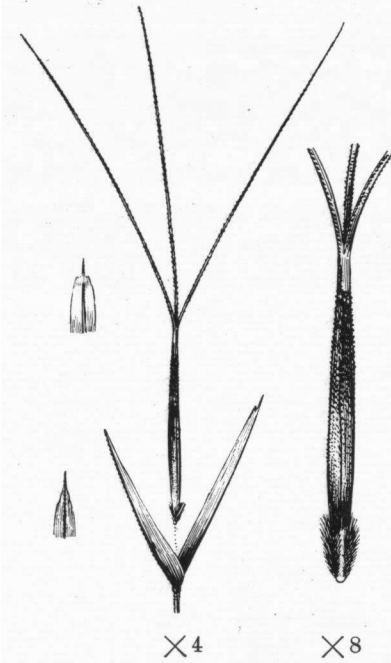
***Aristida anthoxanthoides* (Domin) Henrard**

nov. spec.

= *Aristida Adscensionis* var. *anthoxanthoides* Domin.

(Sect. *Chaetaria*). Probabiliter perennis, caespitosa, glauca; *culmi* erecti vel geniculato-ascendentes, simplices vel interdum a basi ramosi, 10—20 cm. alti, graciles, teretes, vel inferne compressi, striati, superne scaberuli; *vaginae* inferiores basi dilatatae, marginibus hyalinis, compressae, carinatae, valde striatae, internodiis breviores, culmeae arctae, superne scabrae; *ligula* et auriculae pilosae;

laminae e basi aequilata anguste lineares, sensim acutatae sed extremo apice obtusiusculae, 3—5 cm. longae, 1 mm. latae, stricte erectae, rigidae, planae vel siccitate convolutae, supra margineque paulo incrassato in nervis valde prominentibus hispidulae, subtus



scaberulae; *panicula* lineari-oblonga, contracta, densa, spiciformis, basi subinterrupta, 4—5 cm. longa (vel interdum 8 cm.), circa 1 cm. lata, rhachi scabra, ramis fasciculatis, puberulis, basi breviter nudis, ramulis a basi dense spiculiferis paucispiculatis, spiculis imbricatis; *spiculae* lanceolatae pallide-virescentes vel dilute rubescentes; *glumae steriles* inaequales, uninerves, glabrae, gluma I. acutiuscula, carina scabra, $5\frac{1}{2}$ (interdum 4) mm. longa, gluma II. obtusissima vel truncata, erosula, mucronata, carina laevis, infra apicem scabra, 7 (interdum $5\frac{1}{2}$ —6) mm. longa; *gluma* III. *fertilis*, scaberrima, callo subobtusato dense barbato circa 1 mm. longo, $6\frac{1}{2}$ mm. longa, non vel leviter rostrata; *aristae* aequales, scaberrimae, 10—11 mm. longae.

ARISTIDA ANTHOXANTHOIDES
(Domin) Henrard.

From type specimen.

Australia meridionalis, in monte Lyndhurst, Octob. 1899, leg. MAX KOCH (South Australian Plants no. 305). Typus speciei in Herb. Kew.

Aristida Antoniana Steudel,

in WILIBALD LECHLER; Berberides Americae centrales. Accedit Enumeratio plantarum, quas in America australi autor detexit. Stuttgart [1857] p. 56, no. 1774.

Nomen nudum.

A short description is given by DOELL in MARTIUS, Flora Brasiliensis Vol. II. pars III, Gramineae II. [1878] p. 19!

Observ. sub *A. recurvata* H. B. K.

Arist. Antoniana Steudel (Hohenacker, W. Lechleri Plant. Peruv. n. 1774), imprimis culmo humiliore et rigidiore atque glumis acutis,

aristae divisionem fere aequantibus, — *Arist. Riedeliana* praecipue paniculae ramis longioribus erecto-patulis differt.

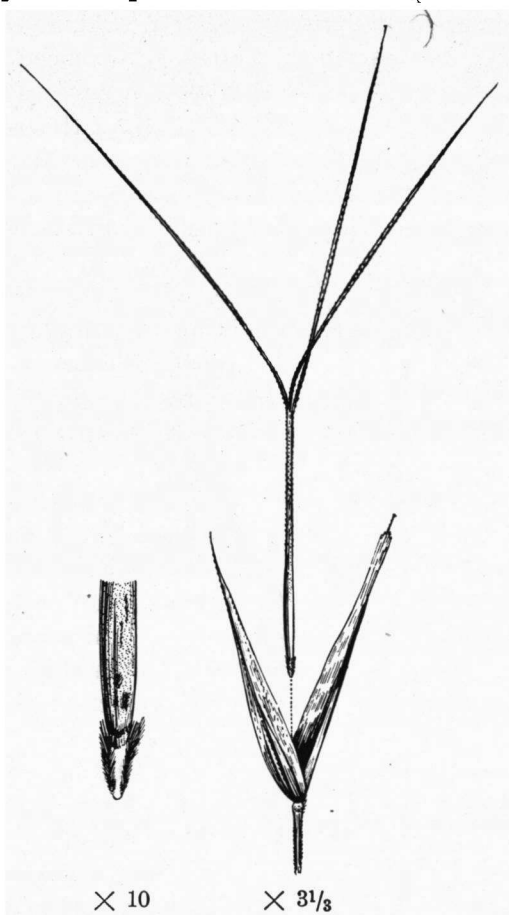
I have seen this number in different herbaria, the name was a nomen nudum till DÖLL compared the plant with *A recurvata* H.B.K. Although the description given by DÖLL is very short, the species must be accepted as technically published. In the herbarium of the Jardin Botanique de l'État at Brussels, Lechler's number 1774 is accompanied by a second label on which is written „*Aristida Antoniana* Steud. vid. Döll". This plant is accepted by me as the type specimen. It is my intention to give an accurate description of this distinct species in my monograph.

***Aristida appressa* Vasey.**

GEORGE VASEY; Descriptions of new Grasses from Mexico, in Contributions from the U. S. National Herbarium. I. [1893] p. 282!

Culms 2 to 4 feet high, slender, smooth; lower leaves not seen, the upper ones narrowly setaceous, erect, 4 to 6 inches long; panicle 8 to 12 inches long, narrow; the branches alternate or in twos, appressed, the lower 3 to 4 inches long, naked below, above subdivided, with appressed spikelets; empty glumes equal or nearly equal, about 5 lines long, setaceously pointed, scabrous on the keel; floral glume 3 times longer, slender, purple, somewhat twisted below the awns, which are nearly equal, the lateral ones about 5 lines and the middle one about 6 lines long.

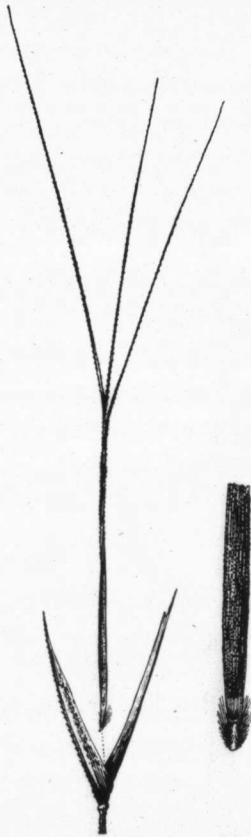
Collected at Guadalajara by Dr. Edward Palmer in 1885. Dr. Palmer



ARISTIDA ANTONIANA Steudel.
From type specimen.

states that the long slender culms are collected by the natives and tied together in bundles for brooms.

The type in the U. S. National Herbarium was collected at Guadalajara in Jalisco by Dr. E. PALMER in 1886 (1885 an error). The species described by VASEY is placed by Prof. HITCHCOCK in his North American Species of Aristida (Contr. U. S. Nat. Herb. XXII. (1924) p. 568) under *A. arizonica* VASEY. As to the synonymy of *A. arizonica* I am not satisfied with the treatment given by Prof. HITCHCOCK. *A. orizabensis* FOURNIER was already doubtfully referred to *A. arizonica* by him, and to my opinion *A. appressa* is also distinct from *A. arizonica*. In HACKEL'S Herbarium I saw an authentic specimen of *A. appressa*, collected by PALMER, received from VASEY. This specimen is very curious as to the long, slender culms and extraordinary long internodes (they are more than 30 cm. long!). As stated by PALMER they are collected by the natives and tied together for brooms.



$\times 2\frac{2}{3}$ $\times 6\frac{2}{3}$
ARISTIDA
APPRESSA Vasey.
From type specimen.

VASEY has probably not seen the basal portions of the plant and he gives the culms as 2—4 feet high. The specimens seen by me are moreover characterized by a very curious crisp pubescence of the culms, the axis, the branches and branchlets, and the spikelets have also a distinct pubescence, at least the lower glume. The panicle is compact, the branches are strictly erect and appressed.

Through the courtesy of Prof. HITCHCOCK, I received a branchlet of the type specimen. This fragment shows the same characters as given above, and agrees perfectly with the plant in HACKEL'S Herbarium, the branches, branchlets, pedicels and spikelets, have the same pubescence, moreover the upper glume has the same characteristic tip, with the two lateral short setae. For this reason, I have accepted the plant, described by VASEY as a distinct species, and taken up *Aristida appressa* among the true species in my monograph.

Aristida appressa* Vasey,*var. *brevior* Vasey.**

G. VASEY; loc. cit. in Contrib. from the U. S. Nat. Herbarium I. [1893] p. 282!

Variety *brevior* var. nov. Culms tufted and strongly rooted, 2 to 3 feet high, with 3 or 4 leaves, 6 to 10 inches long, flat, the upper becoming involute, sheaths glabrous; ligule obsolete; panicle 8 to 10 inches long, the branches appressed; spikelets nearly as in the preceding, but the floral glume little longer than the empty ones, the awns a little longer and nearly equal.

Collected at Rio Blanco by Dr. Edward Palmer (No. 516) in 1886.

The type specimen is in the U. S. National Herbarium. A duplicate of the type was kindly received from the U. S. Nat. Herb. by the courtesy of Mrs. AGNES CHASE. This specimen agrees in habit with the plant described as *A. appressa* VASEY, but differs in some characters, as already stated by VASEY. The column of awns f. i. is much shorter, although distinctly twisted and the spikelets are somewhat shorter. The long internodes are present and also the characteristic pubescence on the culms, axis, branches and branchlets. The spikelets have the same pubescence especially the lower glume. This plant is taken up in my work as a distinct variety of *A. appressa*.

***Aristida arabica* Trinius et Ruprecht.**

Species Graminum Stipaceorum loc. cit. [1842] p. 135!

ut *A. coerulescens*, at gluma superior tantum $2\frac{1}{2}$ — $3\frac{1}{2}$ linealis inferiorem lineâ integrâ superans; flosculus interdum 3 linealis asperulus et paniculae radii contracti, erectiusculi, a basi fere floriferi; folia glauca. — Arabia (Dr. Seb. Fischer!); in monte Sinai (Aucher Eloy! n. 465): ibi in rupibus et rupium fissuris locis siccis m. Majo. (Schimper Un. it. n. 368!)

The type selected by me is Schimper 368 in the Trinius Herbarium. Duplicates of this type in all the larger european herbaria, labeled: In montis Sinai rupibus et rupium fissuris locis siccis d. 26. Mai leg. W. Schimper. Unio itiner. 1835. TRINIUS and RUPRECHT have compared this plant with *Aristida coerulescens* DESF. and they

have given the differences. The plants are perennial and agree with *A. coerulescens*, but they have a more contracted panicle and somewhat shorter spikelets. Because *Aristida coerulescens* is somewhat variable as to the shape of the panicle and the length of the spikelets, *Aristida arabica* is placed by me as a slight variety under *A. coerulescens* DESF..

***Aristida arachnoidea* Litwinow.**

D. LITWINOW; *Florae Turkestanicae Fragmenta*. I. in *Travaux du Musée Botanique de l'Académie Impériale des Sciences de St.-Pétersbourg*, [1902] Livr. 1. p. 21!

Sect. *Stipagrostis*.
Boiss.

Caespitosa, circ. 25 cm. alta. Folia convoluta, filiformia, pungentia, apice glabra, caeterum arachnoideo-lanata. Culmi ascendentes, v. erecti, inferne saepe ramosi, ad internodia et vaginas arachnoideo-lanati. Ligula ad annulum setarum reducta. Panicula depauperata. Glumae persistentes inaequales angustissime lanceolatae, convolutione quasi subulato acuminatae. Gluma inferior 4—5 cm. longa, 7—9-nervia, superne glabra, inferne arach-



ARISTIDA ARACHNOIDEA Litwinow.
From type specimen.

noidea. Gluma superior circ. 3 cm. longa basi et apice glabra ad medium arachnoidea, apice eroso dentata. Glumellae 7 mm. longae, callo stipiformi ciliato 3 mm. longo suffultae, glabrae, apice cum arista articulatae. Arista parte indivisa, parce contorta, recta nuda circ. 10 mm. longa. Seta media 7—8 cm longa basi et summo apice nuda, caeterum arrecte dense plumosa. Setae laterales breviores, 5 cm. longae, inferne sub lente minutissime puberulae, superne pilis longioribus subplumosae.

Habitu *A. plumosam* L. commemorat, sed gluma inferior superiorem superans, unde prope *A. caloptilam* Jaub. et Sp. (Ill. or. tab. 336) collocanda; ab ea autem indumento, glumis longioribus, aristaeque setis lateralibus subplumosis aliisque notis diversissima.

Habitat: TRANSKASPIA (Turcomania). In arena mobili inter fl. Murgab et Amu-Darja, ad stationem viae ferreae Utsch-Adshi; 25 Julii 1897 fructiferam inveni (Exsicc. n. 211).

This beautiful species was edited in exsiccatae. The type in the herbarium of the Académie des Sciences at Leningrad.

***Aristida Arechavaletae* Henrard**

nov. nom.

= *Aristida intermedia* ARECHAVALETA, in Anales del Museo Nacional de Montevideo, Tomo IV. [1903] p. 78! non SCRIBNER et BALL in U. S. Department of Agriculture, Bull. 24. [1901] p. 44!

Through the courtesy of Dr. LORENZO R. PARODI a portion of the type specimen (campos del Uruguay ex herb. Mus. Nac. Montevideo) was submitted for study.

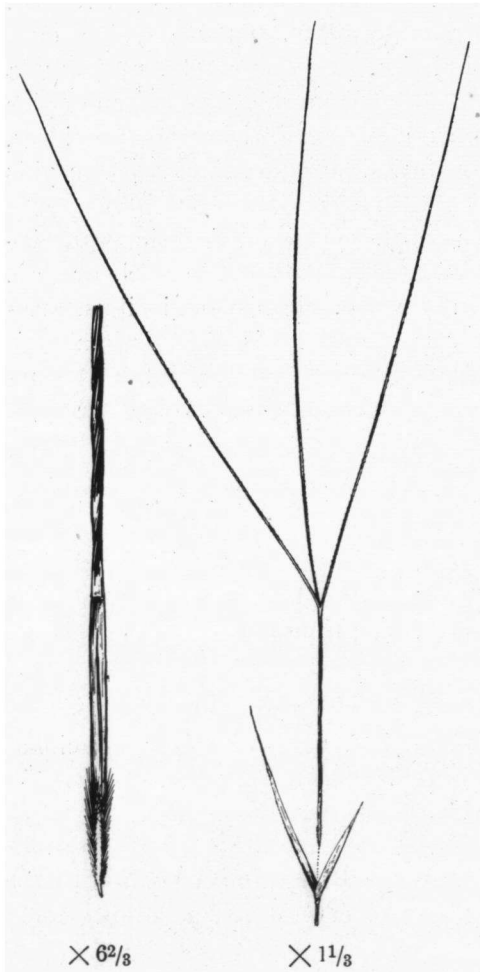
***Aristida arenaria* Gaudichaud.**

CHARLES GAUDICHAUD, in LOUIS DE FREYCINET; Voyage autour du monde exécuté sur les corvettes de S. M. l'Uranie et la Physicienne pendant les années 1817, 1818, 1819 et 1820. Botanique. Paris [1826] p. 407!

A. culmis caespitosis, ramosis; foliis convoluto-setaceis, scabriusculis, curvatis; paniculâ subramosâ, aristis sesqui-bipollicaribus, subaequalibus.

In Novae-Hollandiae orâ occidentali (baie des Chiens-Marins).

Type specimen in the herbarium at the Museum d'Histoire Naturelle in the Jardin des Plantes at Paris, a duplicate of the type in the Kew Herbarium.



ARISTIDA ARENARIA Gaudichaud.
From type specimen.

Aristida arenaria Gaudichaud

var. **hirsuta** Henrard

nov. var.

Foliorum vaginae patule pilosae; laminae pilis longis mollibus, basi tuberculatis conspersae.

Australia Meridionalis; in monte Lyndhurst, Oct. 1898 leg. MAX KOCH no. 95, in Herb. Lugd. Batav. sub no. 908.88 — 499. (Typus).

The same number I have seen among the Australian *Aristida's* received in loan from the Kew Herbarium, collected together with the glabrous state. Another plant belonging to the variety was received from the National Herbarium of Victoria at Melbourne by the courtesy of Dr. W. LAIDLAW.

Aristida arenaria Trinius.

CAROLUS BERNARDUS TRINIUS; De Graminibus paniceis. Dissertatio botanica altera, [1826] p. 25!

Panicula contracta sublineari; Glumis acutiusculis: inferiore superiori $\frac{1}{3}$ -breviore perianthium subaequante; Arista paulo supra basin divisa: laciniis aequalibus (semipollicaribus).

V. sp. Brasil. — Habitus et statura *Aristidae caerulescentis*.

TRINIUS; Graminum Genera quaedam speciesque complures definitionibus novis, in Mémoires de l'Acad. Imp. des Sciences de St. Petersburg, VI^me Série, Tome I. [Sept. 1829] p. 87!

Panicula contracta, sublineari; Glumis acutiusculis: inferiore tertiam partem breviori, perianthium ultrabilineale subaequante; Arista paulo supra basin divisa: laciniis subaequalibus, 7—8-linealibus.

V. spp. Brasil.

1-sesqui-pedalis. Folia involuta, glabra. Panicula spithamaea, angustata, pallida, aristis superioribus purpurascentibus.

Aristida setifolia H. B. K. β *arenaria* (TRIN.) TRIN. et RUPR. loc. cit. [1842] p. 126!

Gluma superiore 4 lineali, inferiorem linea dimidia l. integra superante; flosculo 4—5 lineali; setis divaricato-patentibus, media 6—8 lineali. — *Aristida sabulosa* Kunth Agr. syn. 1833. p. 196. *Chaetaria setifolia* N. E. l. c. var. β . 3. sec. spec. auth. (flosculo 4 lineali, nigro-maculato, setis 8—10 linealibus). — In arenosis pr. Parana ad rivulum Jacaré m. Decembri et in arenosis lapidosis pr. Cuyabá m. Majo (Riedel); in prov. Bahiensi (Martius ex N. E.); in pascuis et locis sabulosis prov. Piaui. (N. E.!)

Note: = *Aristida setifolia* H. B. K. var. *arenaria* Trin. et Rupr..

Aristida Aristidis Cosson, *)

ap. BATTANDIER et TRABUT; Flore de l'Algérie. Monocotylédones, Alger—Paris. [1895] p. 158!

Vivace en touffes denses, chaumes de 5—6 décim., dressés, ramifiés; feuilles étroites linéaires, enroulées, très scabres sur la face supérieure; ligule formée par de longs cils soyeux; panicule lâche pauciflore, bromoïde; glumes très inégales, la supérieure plus grande bifide et pourvue d'une longue arête, l'inférieure également aristée; glumelle insérée sur un long callus velu, linéaire convolutive, de 10 millim., articulée à son sommet avec une arête dont la partie indivise tortile de 15 millim. se termine par trois soies fines égales

*) E. Cosson; Considérations générales sur la distribution des plantes en Tunisie et sur leurs principales affinités de Géographie botanique. Compt. rend. Acad. des Sciences Paris. t. XCVIII. séance du 25 févr. 1884. (nomen).

de 60 millim. 24 Mai—juin. Tunisie, Aïn-Cherichéra à l'ouest de Kairouan. (Mission bot., Tunisie 1883).

Note: = *Aristida longiflora* Schumacher.

The plant was edited in exsiccatae by the Société dauphinoise in the year 1884. The printed label reads: No. 4432. *Aristida Aristidis* Coss. Sp. nov. — (*Vidit Cosson*). Aïn Cherichira à l'ouest de Kerouan: sables des ravins. 20 juin 1883. *Mission botanique en Tunisie en 1883*: MM. E. Cosson, Doumet-Adanson, A. Letourneux, V. Reboud; G. Baratte, E. Bonnet. Don de M. A. Letourneux.

The plants agree perfectly with SCHUMACHER's type specimen in the herbarium of the Botanical Garden at Copenhagen. The *Aristida's* from that herbarium were kindly received in loan by the courtesy of the Director Dr. C. CHRISTENSEN.

Aristida Aristidis Cosson.

var. *Chudaei* Battandier et Trabut.

J. A. BATTANDIER et L. TRABUT; Plantes du Hoggar récoltées par M. Chudeau en 1905, Bulletin de la Société Botanique de France Tome LIII, Série IV, Tom. VI. [1906], Session extraordinaire tenue dans la province d'Oran, en avril 1906, p. XXXII!

Diffère du type tunisien par les glumes plus étroites, moins inégales, la supérieure profondément bifide et pourvue de longs cils sur les bords; la ligule est formée de poils plus courts; l'arête trifide est plus longue et peut dépasser 100 mm., la partie indivise tortile représente à peine le tiers de cette longueur. — Oued Touk-senia, 12 juillet.

Note; = *Aristida pallida* Steudel.

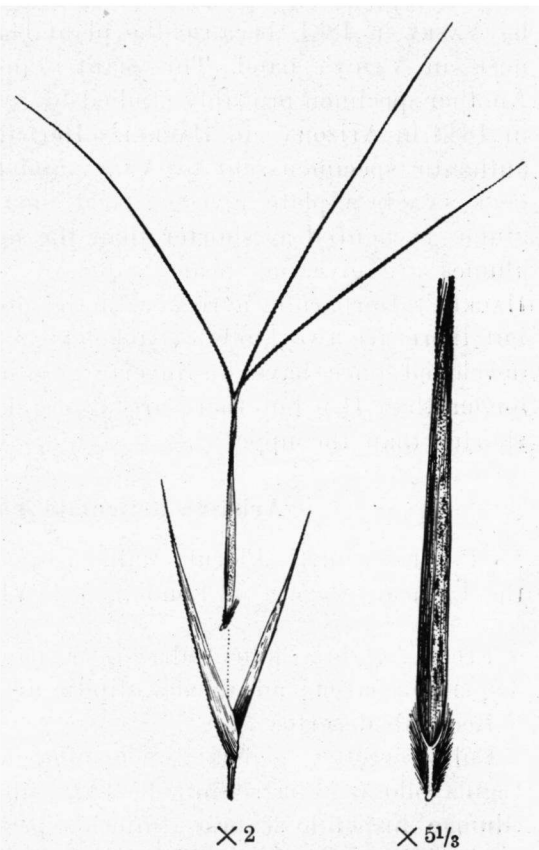
(= *A. Sieberiana* Trin. var. *Nubica* Trin. et Rupr.).

The type is not seen by me, but the accurate description agrees with a plant from Cordofan (Kotschy no. 55), described by TRINIUS and RUPRECHT as *A. Sieberiana* β . *Nubica* and afterwards named *A. pallida* by STEUDEL. *Aristida Sieberiana* is an endemic species from Palestine, while *Aristida pallida* occurs in the central, northern and eastern Sahara.

***Aristida Arizona* Vasey.**

GEORGE VASEY; *New American Grasses* in *Bulletin of the Torrey Botanical Club*, New York. Vol. XIII. [1886] p. 271.

Culms 1 to 2 feet high, tufted, rigidly erect, unbranched, leafy to the middle, smooth; leaves of the culm about four, of nearly equal length, 4 to 8 inches long, canaliculate or becoming convolute, narrow and somewhat rigid, smooth; panicle 5 to 10 inches long, narrow; the branches in twos below, appressed, somewhat distant (the lower internodes 2 to 3 inches long), unequal, the longer one overlapping the internode above, and naked below, the shorter one sessile, each with two to eight short pedicelled spikelets; outer glumes nearly equal, 6 to 7 lines long, bidentate at the apex, mucronate or awnpointed, hispid on the keel, one-nerved or the lower three-nerved; flowering glume to the division of the awn and including the short hairy callus, 7 to 8 lines long, slender, smooth below, scabrous and twisted above, the awns nearly equal, 10 to 12 lines long, widely divergent when mature.



ARISTIDA ARIZONICA Vasey.
From type specimen.

This species differs from *Aristida purpurea*, Nutt., in a more rigid habit, longer leaves, more erect and rigid panicle, and especially in the comparative length of the glumes (in *A. purpurea*, lower glume is only about half as long as the upper); in the longer flowering glume, (in *A. purpurea* the upper glume considerably

exceeds the flowering one), and in the shorter awns. Collected in Arizona.

VASEY. U. S. Department of Agriculture: Grasses of the Southwest, Bulletin No. 12. Part I. [1890]. Plate XXII!

It is difficult to locate the type, because VASEY has not mentioned specimens, although the type locality is given as Arizona. Prof. HITCHCOCK (Contr. U. S. Nat. Herb. loc. cit. p. 569) has selected as the type the New Mexican specimen collected near Las Vegas by VASEY in 1881, because the plant bears the name and a diagnosis in Vasey's hand. This plant is in the U. S. Nat. Herbarium. Another specimen probably studied by VASEY is Rusby 875, collected in 1883 in Arizona. In HACKEL's Herbarium at Vienna there is an authentic specimen sent by VASEY and labeled as given by HITCHCOCK. VASEY's plate gives a good idea of the species, the lower glume is figured as shorter than the upper, in the description the glumes are given as nearly equal, 6—7 lines long. The plant in HACKEL's Herbarium agrees with the plate and with the description but there are two kinds of spikelets in the same panicle, the best developed ones have an inverse position of the glumes (glume I. longer than II.), but there are also spikelets with the lower glume shorter than the upper.

Aristida articulata Edgeworth.

M. P. EDGEWORTH; Florula Mallica, in Journal of the Proceedings of the Linnean Society of London, Vol. VI [1862]. p. 209!

Erecta, glabra, foliis subacerosis, panicula coarctata, glumis subaequalibus, arista ad apicem stipitis articulata.

Rechnab deserto.

Culmi erecti v. geniculatim decumbentes. Vaginae nodique glabri. Ligula pilosa. Folia sesquipollicaria, subacerosa. Panicula coarctata. Glumae hispidulo-sabrae; inferior paullo brevior, carinata, acuta, mucronulata; superior bifida, intra dentes setula mucronata. Flosculus striato-hispidus; arista in glumis latitans, ad apicem stipitis articulata, setis tribus subaequalibus 6—7-linealibus.

The habit is that of *rigescens* (R. S.; Steud. Gr. no. 100, p. 141); but I do not observe any other specimens of this species in the Kew herbarium, nor any in which the awn is jointed at the branching of the setae.

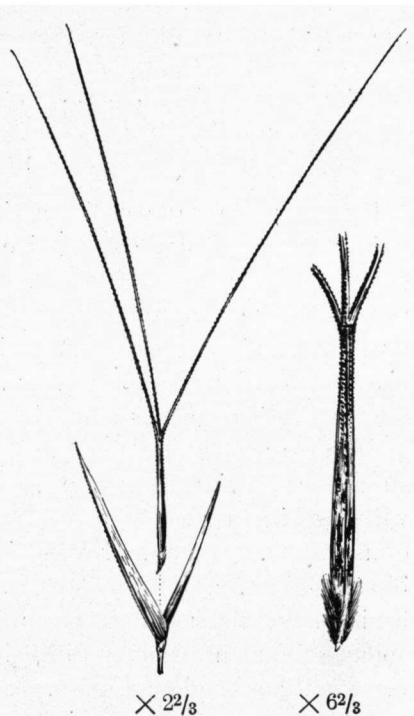
Note: = *Aristida mutabilis* Trin. et Rupr..

The type was not observed in european herbaria, and is probably in the Herbarium of the Botanical Garden at Calcutta EDGEWORTH'S statement that the awns are jointed at the branching of the setae, points clearly to *Aristida mutabilis*, the only indian *Aristida* belonging to the section *Pseudarthratherum*, having the character mentioned by EDGEWORTH. So far as is to conclude from the description EDGEWORTH'S plant seems to be the var. *aequilonga* TRIN. et RUPR..

Aristida arubensis Henrard

nov. spec.

Perennis, dense caespitosa, innovationes ut videtur, intravaginales. Culmi stricte erecti, striati, sublaeves, 2—3 dm. alti, sat graciles, simplices vel parum ramosi. Folia per culmum aequaliter disposita; vaginae inferiores a culmo solutae, superiores culmum amplectentes, internodiis breviores, vel summae iisdem paulo longiores, striatae, glaberrimae, sublaeves, laminae anguste lineares, 20 cm. longae, subtus glaberrimae, supra scabrae, tenuissime acuminatae, eae innovationum breviores, convolutae, subcurvatae; ligula brevissima, truncata, ciliolata, auriculae praesertim foliorum basaliu[m] longe barbatae; panicula stricte erecta, contracta, densiuscula, lineari-lanceolata, ad 10 cm. longa, vix 1 cm. lata, subinclusa vel deinde longe exserta, rhachi subtereti, sublaevi, ramis inferioribus binis, superioribus subsingulis, omnibus filiformibus, stricte erectis, paucispiculatis, rami ramulisque scaberulis. Spiculae pallidae, breviter pedicellatae; glumae inaequales, uninerves, acutissimae vel aristatae, gluma I. 11—12 mm. longa, breviter aristata, glabra, nervo extus scabro; gluma II. 8 mm. longa, mucronata, nervo extus glabro,



ARISTIDA ARUBENSIS Henrard.
From type specimen.

gluma III. *fertilis* linearis, laevis, nervo superne scabro, arcte involuta, callo longe barbato, acuto, 0,8 mm. longo, $6\frac{1}{2}$ —7 mm. longa, haud stipitata sed leviter rostrata, in parte superiore scaberrima, aristis scabris, erectis vel intermedia subpatula, basi haud tortis, intermedia maxima 20—25 mm. longa, lateralibus 17—20 mm. longis. *Palea* minuta.

India occidentalis: Insula Aruba 2—4 Feb. anno 1885 leg. W. F. R. SURINGAR in Herb. Lugd. Batav. sub no. 908.84. — 423, — 422, (typus speciei); insula Curaçao, Christoffelberg, 21 Jan. 1885 leg. W. F. R. SURINGAR in Herb. Lugd. Batav. sub no. 908.84—425, (cotypus).

This species seems to be closely allied to *Aristida cognata*, but may be distinguished from it by the more tufted habit, the many short innovation shoots and especially by the different position of the very unequal glumes, the first one being longer than the second.

***Aristida Asplundii* Henrard**

nov. spec.

Perennis, dense caespitosa, innovationibus probabiliter intravaginalibus. *Culmi* graciles, simplices, subcompressi, arcuato-ascendentes, circa 10—15 cm. alti, infra paniculum puberuli; *folia* in basi culmi plus minusve aggregata, in ipso culmo pauca, brevialia; *vaginae* arctae, internodia superantes, striatae, laeves, margo hyalino; *ligula* brevissima, dense ciliolata, auriculae longe barbatae, collo pubescente; *laminae* angustae, filiformes, convolutae, rigidulae, subpungentes, glaucae ut tota planta, circa 2—4 cm. longae, subtus glabrae, supra scaberulae, margine haud incrassato; *panicula* paulo exserta vel basi inclusa, erecta, 7—8 cm. longa, primo angusta, deinde effusa, laxa, *rhachi* depresso-trigona, scabra, *ramis* solitariis vel subbinis scabris, anthesi angulo recto patentibus, in axillis puberulis, basi ad $\frac{1}{2}$ usque nudis ramulos secundarios ramulosos edentibus, spiculis in ramulis dense imbricatis, brevipedicellatis, pedicellis scabris; *spiculae* angustae, glabrae, *glumae* aequales, acutae vel breviter aristatae, 10 mm. longae, uninerves, carinae scabrae, *gluma* III. *fertilis* angusta, tubulosa, callo 1 mm. longo, subobtusum vel subacutum, dense sed breviter barbato, circa 5—6 mm. longa, apice haud articulata, in stipitem scabram circa 3—4 mm. longam, spiraliter tortam abiens, aristae scabrae, erectae, basi haud tortae, subaequales, 14—15 mm. longae, vel laterales ad 11 mm. longae.

Bolivia: Dep. La Paz, Prov. Pacajes, prope Ulloma, circa 3800 m. s. m., 20. Feb. 1921, leg. ERIK ASPLUND no. 2525 (Typus speciei in Herb. Mus. Botan. Upsaliense).

To the same species belong the following plants, agreeing with the type specimen in all characters, but the panicles not yet totally developed and therefore with a somewhat different aspect: Dep. La Paz, Prov. Pacajes, leg. ERIK ASPLUND no. 2787; La Paz, altoplanitie prope Viacha, 28. II. 1907, 4000 m. s. m., leg. OTTO BUCHTIEN no. 857 (sub nom. *A. humilis* H. B. K.).

Allied to *Aristida divaricata* HUMB. et BOMPL. and agreeing with that species in many characters, but the single branches are short, scarcely 5 cm. long and the numerous short leaves are nearly almost clustered at the base.

***Aristida astroclada* Chiovenda.**

EMILIO CHIOVENDA; *Plantae novae vel minus notae e regione aethiopica* in *Annali di Botanica*, Roma [1912] Vol. X. p. 409!

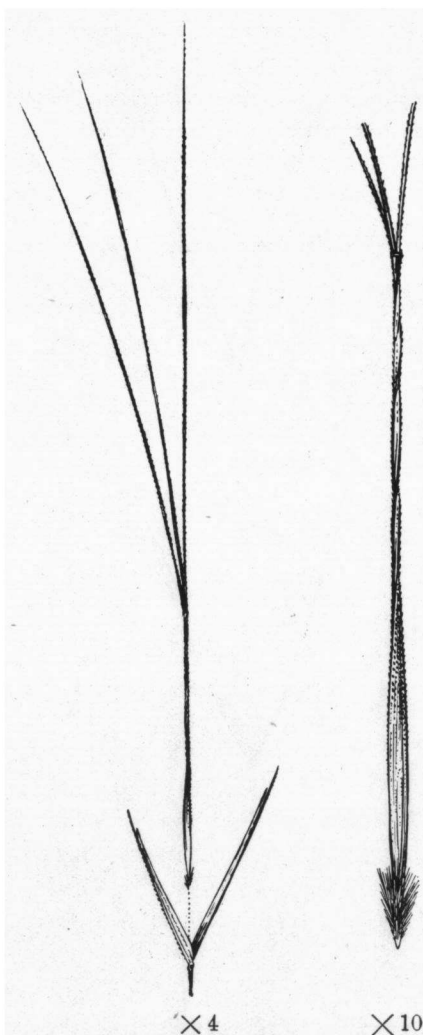


× 10 × 4
ARISTIDA ASPLUNDII Henrard.
From type specimen.

Sect. Pseudarthratherum.

Annua, pallide viridis dein pallide flava. Culmi graciles inferne brunnei per 2–10 cm. simplices, erecti internodiis 1–2 cylindricis, laevibus, glaberrimis. Vaginae omnes apice longe barbatae: laminae setaceae curvulae, striatae, glabrae. Rami ad nodos numerosissimi, dense fasciculati, in nodis inferioribus omnibus abbreviatis, iterum caespitose divisi, in superioribus rami inferiores, elongati, simplices 2–3-nodi, foliiferi, apice panícula bene evoluta terminati, superiores, reiterate caespitose divisi. Paniculae ramulorum caespitosorum line-

ares e fasciculis spicularum 1—3 breviter pedunculatis, adpressis formatae; ramulorum normalium e ramis 4—7 formatae solitariis, filiformibus, basi per 2—3 cm. nudi, callo glabro, apice fasciculo



ARISTIDA ASTROCLADA Chiovenda.
From type specimen.

spiciformi spicularum terminatis, 12—25 mm. longo, 3—5 mm. lato. Spiculae breviter 1—3 mm. pedicellatae, arcte adpressae, pedicellis crassiusculis erectis, apice incrassatis, triquetris, angulis scabris. Glumae steriles lineares angustae, acutissimae et setaceo-mucronatae, carina denticulato-scabra, subaequilongae vel inferior vix brevior, 7 mm. longae, basi 1,5—2 mm. latae, maturae pallide flavae. Gluma florens linearis, angusta, apice sensim in columnam laxè intortam filiformem scabram, apice articulata attenuata, basi abrupte cuneata et in callo obtusiusculo breviter piloso contracta, cum columna mm. 2, et callo mm. 0,5, 7,5 mm. longa, arcte convoluta, 0,6 mm. crassa, undique minutissime granulosa et opaca; aristae tripartitae, rami filiformes tenuissimi, erecto patuli subaequilongi 15 mm. longi. Caryopsis linearis angustissima, 3,5 mm. longa, 0,5 mm. lata glabra.

Species habitu peculiarissimo et gluma florente aristae stipiti longiori optime distincta.

Eritrea: lungo il Gasc presso Ducambia m. 750 c. 21. II. 1911 (Pappi n. 8793).

The type of this curious species in the Florence Herbarium was kindly received in loan from Prof. E. CARANO and Prof. E. CHIOVENDA.

***Aristida atrovioleacea* Hackel**

ap. HANS SCHINZ; Beiträge zur Kenntnis der Afrikanischen Flora XIX, in Bull. de l'Herb. Boissier, 2^me série, Tom. VI, [1906] p. 707!

Sect. Chaetaria.

Perennis, caespitosa, humilis, innovationibus intravaginalibus. Culmi erecti, graciles, ad 12 cm alti, subcompressi, glaberrimi, simplices, enodes, foliis 3—4 ad basin culmi confertis. Vaginae tertiusculae, praeter os parce barbatum glaberrimae, inferiores laxae, saepe a culmo solutae, emortuae persistentes demum fibrosae, summa fere medium culmum attingens. Ligula brevissima, truncata, membranacea, minute ciliolata. Laminae setaceo-involutae (diam. 0,5—0,6 mm), obtusiusculae, inferiores ad 9 cm summa circ. 2 cm lg., erectae, glaberrimae. Panicula ovata, 5—7 cm lg. circ. 3 cm lt., laxiuscula, patens, rhachi tenuifiliformi laevi, ramis binis subcapillaribus scaberulis saepe flexuosis, in $\frac{1}{3}$ — $\frac{1}{2}$ inferiore indivisis, primario inferiore circ. 3 cm longo secundarios paucos unispiculatos edente, spiculis versus apices ramorum subconfertis, subterminalibus brevissime pedicellatis. Spiculae lanceolato-lineares, 5—6 mm lg., atrovioleae. Glumae steriles inaequales, I. circ. 3 mm lg., ovato-lanceolata mucronata v. aristulata, 1-nervis carina scabra; II. lineari-lanceolata 6 mm lg. mucronulata 1-nervis, v. basi sub-3-nervis, carina laevis; gluma fertilis linearis, 4 mm lg., callo breviter barbata, infra apicem scaberula ceterum laevis, apice haud articulado neque torto aristas tenuissimas exserens, quorum media circ. 7 mm longa lateralibus parum longior est.



× 7
ARISTIDA
ATROVIOLACEA Hack.
From type specimen.

∨ Natal: in paludosis prope Newcastle 1330 m, leg. Schlechter sub n. 3414 ann. 1893.

Im Bau der Aehrchen mit *A. bipartita* Tr. u. Rupr. verwandt, jedoch mit sehr ungleich langen Hüllspelzen, deren obere bedeutend

länger ist als die Deckspelze. Bei *A. bipartita* sind die Hüllspelzen fast gleich lang, die Deckspelze fast ebenso lang als die obere Hüllspelze. Es muss jedoch bemerkt werden, dass unsere Exemplare der *A. atrovioleacea* noch nicht in Blüte sind, und dass bei solchen jüngeren Exemplaren die Deckspelze oft noch nicht ihre volle Länge erreicht hat. In den vegetativen Organen ist aber unsere neue Art von *A. bipartita* weit verschieden, schon durch niedrigen Wuchs, völlig knotenlosen Halm (bei *A. bipartita* meist 3-knotig), fein borstliche Blätter.

Note: = *Aristida recta* Franchet.

The type, bearing Prof. HACKEL's handwriting, in the Herbarium of the Botanical Garden at Zürich, was kindly received in loan from Prof. Dr. H. SCHINZ. A duplicate type also in HACKEL's collection at Vienna.

Aristida Balansae Henrard,

in F. FEDDE, Repertorium specierum novarum regni vegetabilis, XVII, [1921] p. 397!

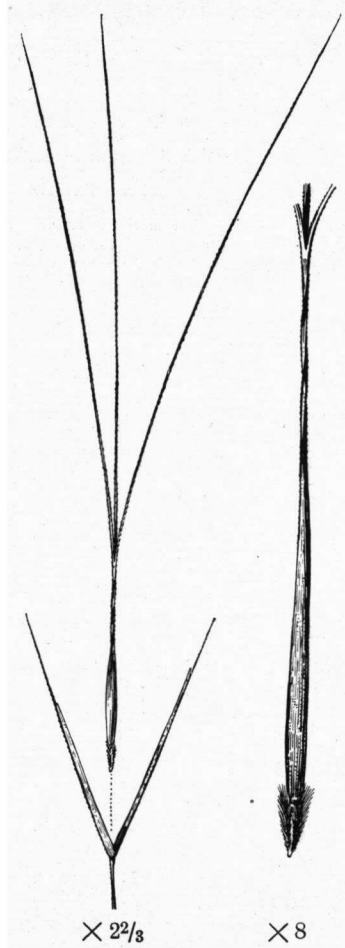
= *Aristida adoensis* BALANSA: Catalogue des Graminées de l'Indo-Chine française in Journal de Botanique par M. LOUIS MOROT Tome IV. [1890] p. 163! non HOCHST..

Perennis, caespitosa. Culmi elati, cum panicula circa 1 m alti, stricte erecti, multinodes, tereti, striati, glabri. Vaginae basales pallidae, glabrae, sub lente striatae, plus vel minus laeves, apice hiantes, vaginae culmi teretes, arctae, internodiis multo longiores, striatae, laeves, glaberrimae, interdum minute scabulae, praesertim ad apicem. Laminae ad insertionem circa 5 mm latae, sensim angustatae, statu sicco complicato-convolutae, in acumen longissimum setaceum abientes, 80 cm longae et ultra, durae, scaberrimae. Ligulae valde abbreviatae, pilosiusculae. Auriculae longe pilosae. Laminae innovationum ut in culmorum sed angustiores, magis convolutae. Panicula satis densa, stricta, angusta, 38—57 cm longa, plus minusve 1 cm lata, saltem in specimine a me viso; rhachis angulosa, in angulis scaberrima; rami 10—13 cm longi, singuli, sed mox supra basin ramosi, in axillis barbatuli, parte inferiori valde plani, cartilaginei, straminei, apicem versus angulosi, scaberrimi, stricti. Ramuli stricte erecti, scabri, spiculas nonnullas erectas ferentes. Ramuli etiam secundi ordinis in axillis paulo

barbati. Spiculae pro plantae magnitudine satis parvae et angustae, cum aristas 3—3,5 cm vel paulo longiores. Pedicelli apicem versus paulo incrassati. Glumae steriles angustissimae, scabrae, pallide virides, gluma prima 7—8 mm longa, in aristam 5—7 mm longam abiens, nervo mediano crasso percursa, gluma secunda prima aequilonga, in aristam 3 mm longam abiens. Gluma fertilis tubulosa, 6—7 mm longa, scabriuscula, in stipitem 4 mm longum, spiraliter tortum abiens, in cuius apice aristae tres, inaequilongae, primo porrectae denique divergentes, quarum media 24—35 mm longa, laterales 20—30 mm longae. Palea minima.

Indo-china gallica: Cochinchina, in vicinitate Saigon, in collibus sabulosis inter Tu-Duc et Bien-Hoa, 31. Octob. 1886 leg. B. Balansa sub nomine *Aristida adoensis* Hochst.; in Herb. Lugd. Batav. sub no. 908, 83—940; ad vias cavas in sylvis prope Thuy daia-mot, 26. Jan. 1865 leg. E. Lefèvre, no. 197 (panicula) in Herb. Lugd. Bat. sub no. 908, 83—915.

Balansa (Catalogue des Graminées de l'Indo-Chine française in Journal de Botanique IV. [1890], p. 163) hat diese interessante Art als *Aristida adoensis* Hochst. bestimmt. Obgleich seine Pflanze *Aristida adoensis* habituell sehr ähnlich ist, ist sie doch bei genauerer Untersuchung davon sehr verschieden. Die echte *Aristida adoensis* Hochst. (in pl. Schimp. Abyss., sect. III, no. 1806, = sect. I, no. 319 als *A. coerulescens*) ist zuerst von Richard in Voyage en Abyssinie V, p. 390, beschrieben worden. Nach den mir zur Gebote stehenden Original Exemplaren ist es deutlich, daß die Pflanze von Balansa etwas anderes ist. Unsere neue Art ist sehr robust und der Blütenstand hat sehr lange Aste, ist daher auch nicht unterbrochen wie bei *A. adoensis*. Aber unsere Art ist besonders ausgezeichnet durch seine Deckspelze, welche in einen Stiel von



ARISTIDA
BALANSAE Henrard.
From type specimen.

4 mm Länge ausgezogen und außerdem spiralisch gedreht ist, ein Merkmal, das bei *A. adoensis* nicht vorhanden ist, da die Deckspelzen dort sofort in drei Grannen übergehen.

Aristida barbata Fournier.

EUG. FOURNIER; Mexicanas Plantas nuper a collectoribus expeditionis scientificae allatas aut longis ab annis in Herbario musei Parisiensis depositas praeside J. Decaisne, Pars II. Gramineae, Paris, [1881] p. 78!

Radice fibrosa robusta; culmis caespitosis glaucis vix pedibus; foliis convolutis clausis glaucis; ligula et collo albo-pilosis; panicula stricta 5-pollicari, radiis triangularibus scabris ternatis erecto-appressis; glumis longis subaequalibus, exteriori scabriore, purpurascentibus, partitionem aristae valde tortae attingentibus, setis lateralibus cum media semipollicari subaequalibus, flosculo laeviore.

In valle Mexicensi (SCHAFFN. n. 513 in herb. Coss.).

The type has been examined at Paris by Prof. HITCHCOCK. The complete description given in Contrib. U. S. Nat. Herbarium XXII p. 569 agrees perfectly with the characters given by FOURNIER. This distinct species has equal, about 10 mm. long glumes, gradually narrowed into an awn, the first glume 1-nerved, scabrous on the keel, the second obscurely 3-nerved, glabrous; the lemma is about as long as the glumes, the upper third narrowed into a twisted neck; the awns are equal, somewhat spreading or ascending and 12—15 mm. long. Under *A. barbata*, HITCHCOCK has mentioned 4 plants. The only number I hitherto saw is PRINGLE 8592 from Puebla, but the different plants of this number seen in herbaria do not agree with the descriptions, they have unequal very obtuse rather broad glumes, lobed and slightly mucronate at the summit, characters agreeing with the species described by FOURNIER as *A. curvifolia*.

Aristida barbicollis Trinius et Ruprecht.

loc. cit. pag. 152!

Paniculae 3—4 pollicaris, *effusae, subsecundae, fasciculiflorae, ovato-pyramidatae, apice nutantis, basi demum exsertae radiis solitariis geminisve, divaricatis l. patulis, 1—2 pollicaribus, inferne nudis,*

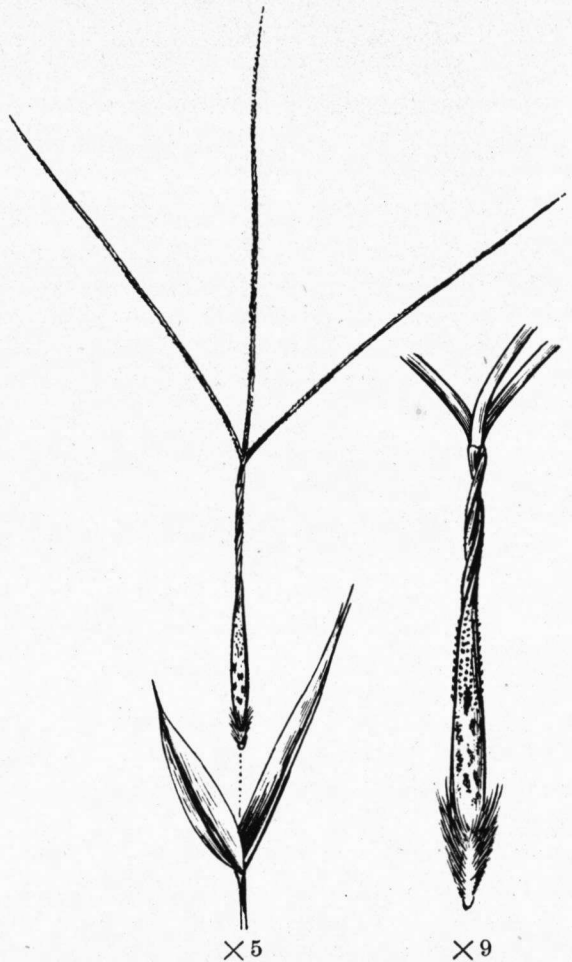
superne dense floriferis; glumis *glabris*, inaequalibus, *breve-cuspidatis*: superiore $3\frac{1}{2}$ lineali apice bidentata, inferiorem lineam $1-1\frac{1}{2}$ superante; flosculo trilineali, superne scabro, apice cyanescente ter quaterve dense torto et cum basi aristae non deciduae distincte articulado; setis subaequalibus, strictis, patenti-divaricatis, 7-9 linealibus; (vaginae ore *longe ciliato-barbatis*.)

Chaetaria Forskølii
N. E. Gram. Afr. aust. (1841) p. 188. (non *Aristida Forskølii* Tausch). Synonymon *Forskølii* (*A. paniculata*) potius var. *A. vulgaris* esse videtur; cf. pag. 135.

In saxosis siccis altit. II. inter flumina Konabrivier et Katrivier in territorio „Ceded” dicto (Ecklon) et ad fl. Zondagrivier alt. 1500—2000 ped. prov. Uitenhage; in saxosis ad Gamka fluvium prope Weltevrede alt. 2500 ped. (Drege pl. exs. spec. e!)

β . *panicula contracta spiciformi*. N. E. I. c. In montanis apricis ad Enon altit. 1500—

2000 ped.; in monte Klein-Winterhoek altit. 500—1000 ped., inter Herrmannskraal et castellum Beaufort altit. eadem et in saxosis ad fl. Key alt. 500 ped. (Drege.) Fl. a Julio mense in Martium. ♀. Valde affinis *A. congestae*, in primis var. β , sed vaginae semper ore ciliis lineam longis, candidis obsitae, folia minus rigida, saepe planiuscula et glumae praeter carinam dorsalem glabrae: inferior brevius cuspidata. In varietate β paniculae strictae bipollicaris radii:



ARISTIDA BARBICOLLIS Trin. et Rupr.
From type specimen.

aut simplices adpressi, paullo supra basin anguste floriferi (Drege pl. exs. spec. a!), aut compositi sessiles paniculam densissimam semipollicem latam formantes. (Drege. spec. b!)

The name is based on *Chaetaria Forskolii* NEES. *Aristida paniculata* Forsk. Descr. p. 25 was given as a synonym, but NEES described a different South African species. FORSKÅL's species belongs to *Aristida Adscensionis*. The name *Forskolii* could not be used on account of the earlier *Aristida Forskohlii* TAUSCH [1836]. Hence the type of *Aristida barbicollis* is also the type of *Chaetaria Forskolii*, the specimen I selected was collected between the Katrivier and the Konabrivier by DRÈGE.

***Aristida basiramea* Engelmann**

apud GEO VASEY; A new *Aristida*, in Botanical Gazette Vol. IX. [1884] p. 76.

Aristida basiramea, Engelmann in a letter to W. Upham. — Annual: culms erect, 6 to 15 inches high, slender, much branched at the base (some of the branches very short but floriferous), and with short floriferous branches enclosed in the upper leaf sheaths: leaves comparatively long (3 to 6 inches), narrowly linear, flat, becoming involute toward the apex, sparsely hairy on the margins below, the upper ones nearly equaling the panicle; sheaths striate, loose; ligule very short, truncate: panicle $1\frac{1}{2}$ to 3 inches long erect, rather lax, its base sheathed by the upper leaf; branches of the panicle short, mostly single, the lower in twos or threes: glumes linear, unequal, 1-nerved, lower one 4 lines, upper one 6 lines long including the short bristle-like point; flowering glume nearly terete, spotted with black, about 5 lines long including the short, acute and hairy callus; middle awn about 6 lines long, the lateral ones about 4 lines long, spirally twisted below (when mature). The sheathed flowers are somewhat smaller.

This species was discovered last season by Mr. Warren Upham, at Minneapolis, Minn. The late Dr. Engelmann suggested the name, in a letter, as indicative of its habit, and would have published it if he had lived. It is closely related to *A. dichotoma*, from which it differs in its shorter, erect (not dichotomous) culms, and in its much larger flowers, and especially in the much longer, spreading, lateral awns. From *A. gracilis* it differs in the shorter panicle, the longer upper leaves with sheathed flowers, and in the flowers being

twice as large. From *A. ramosissima* it differs in wanting the larger size, the diffusely branched habit, the much larger flowers with 3 to 5-nerved glumes, and the strong recurved middle awn of that species. It is probably widely diffused in the prairie region of the Northwest, Mr. Upham having received it from St. Cloud and other places in Minnesota, with reports of it from Iowa and Manitoba. It appears also to be the same as specimens collected in Kansas by Mr. E. Hall and distributed as *A. gracilis*.

Type specimen in U. S. National Herbarium. A duplicate of the type was received through the kindness of Mrs. AGNES CHASE.

***Aristida Behriana* F. v. Mueller.**

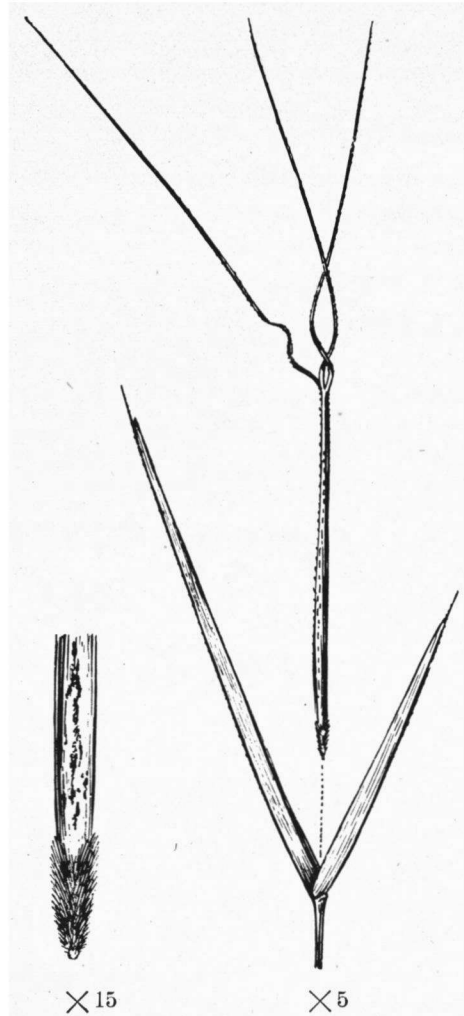
FERDINAND V. MUELLER; Description of fifty new Australian plants, chiefly from the Colony of Victoria, in Transactions and Proceedings of the Victorian Institute (Melbourne) Vol. I. [1855] p. 44.

39. *Aristida Behriana*. (Sect. Chaetaria).

Stems spreading, simple; panicle branched, condensed; bracteas tapering into a setaceous apex; the exterior one half as long as the other, reaching to the partition of the arista; bristles of the latter scabrous.

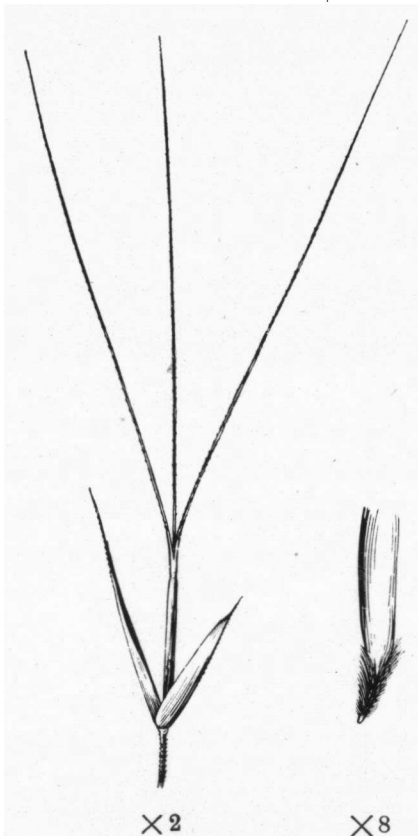
In dry loamy places near Port Adelaide, at the Barossa Ranges, the Murray River, and elsewhere in South Australia.

This grass approaches in its characters to *Aristida calycina*.



ARISTIDA BASIRAMEA Engelmann.
From type specimen.

As is the case with so many species described by v. MUELLER, the type is seldom to locate. Here f. i. only the range is given and the type locality fixed as South Australia. BENTHAM, writing his *Flora Australiensis*, was assisted by F. v. MUELLER. In this work he cites from South Australia: St. Vincent's Gulf to the Murray River and Lake Hindmarsh, F. MUELLER. In the Kew Herbarium there are two specimens from MUELLER, one labeled Hindmarsh and the other Murray River, the latter is accepted as the type.



ARISTIDA BEHRIANA F. v. Mueller.
From type specimen.

Aristida Berlandieri
(Trin. et Rupr.) Hitchcock.

A. S. HITCHCOCK; Mexican Grasses in the United States National Herbarium, in Contributions from the United States National Herbarium, Washington. Vol. XVII. [1913] p. 280!

= *Aristida purpurea* NUTTALL
β. Berlandieri TRINIUS et RUPRECHT,
Mém. Acad. St. Pétersb. VI. Sci.
Nat. [1842] p. 107!

Radiis contractis, fere sessilibus; glumis brevissime dentatis. —
Texas pr. Bejar. (Berland. n. 1777!).
(descriptio ex Trin. et Rupr. l. c. p. 107).

RANGE (sec. Hitchcock): Southwestern United States to southern Mexico. (Coahuila, Nuevo Leon, San Luis Potosi, Puebla).

Note: = *Aristida purpurea* Nutt. var. *Berlandieri* Trin. et Rupr..

The type in the Trinius Herbarium at Leningrad. A. duplicate type in the Vienna Herbarium is labeled „Bejar, 1777” and belongs to the collectio REICHENBACH FIL. under no. 239602 (the left-hand specimen only, the other is *A. glauca* leg. ASCHENBORN). The dupli-

cate agrees with the type in having 1 cm. long lemmas and 3 cm. long awns. The body of the lemma is scarcely beaked, and tuberculate-scabrous in lines from below the middle to the summit. This character agrees perfectly with *A. purpurea* Nutt..

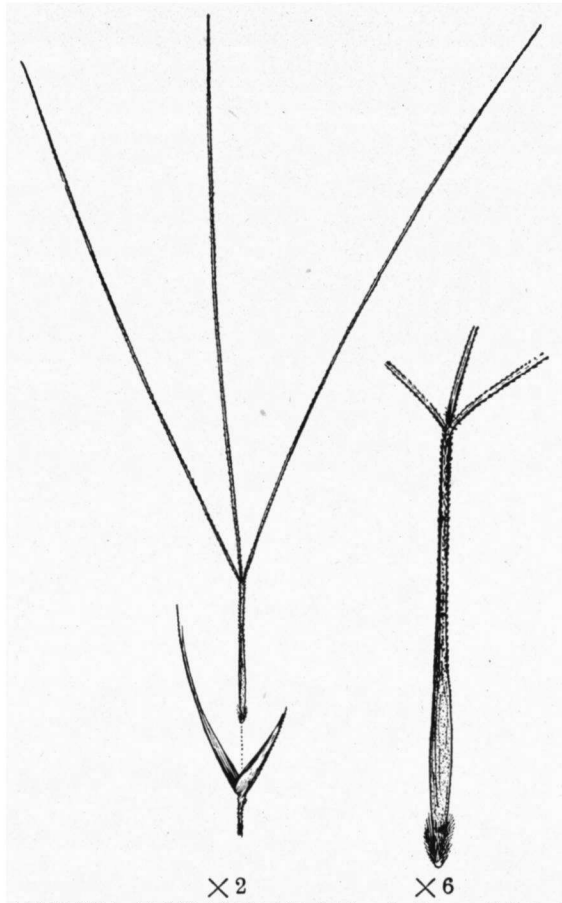
***Aristida Beyrichiana* Trin. et Rupr.**

loc. cit. pag. 104!

Paniculae linearis, ultrapedalis radiis solitariis, remotis, adpressis, pl. min. bipollicaribus, a basi fere floriferis; glumis subaequalibus, 5—6 linealibus flosculum (hebetatum?) triplo breviorum arcte includentibus; flosculo laevi, apice non torto; setis (juvenilibus) omnibus erectis: media semipollicari lateralibus paullo longiore, interdum patente.

In pinetis Georgiae et in territorio Arkansas. (Beyrich!)

Proxima *A. virgatae* et *A. lanosae*, ab hac diversa: vaginis et radiis ad insertionem non lanosis, ab illa: radiis solitariis paullo supra basin floriferis et longitudine glumarum majori.



ARISTIDA BERLANDIERI (Trin. & Rupr.) Hitchc.

From type specimen.

Note: = *Aristida stricta* Michaux.

Type in the Trinius Herbarium at the Académie des Sciences de Leningrad; a duplicate type specimen in Herb. Lugd. Batav. sub no. 908.83—1016, labeled Georgia in pinetis (Beyrich). This is a

plant with awns not yet fully developed, but agrees for the rest with *A. stricta* Mchx., having the striking villous tuft at the throat of the sheaths.

***Aristida bipartita* (Nees) Trin. et Ruprecht**

loc. cit. pag. 144!

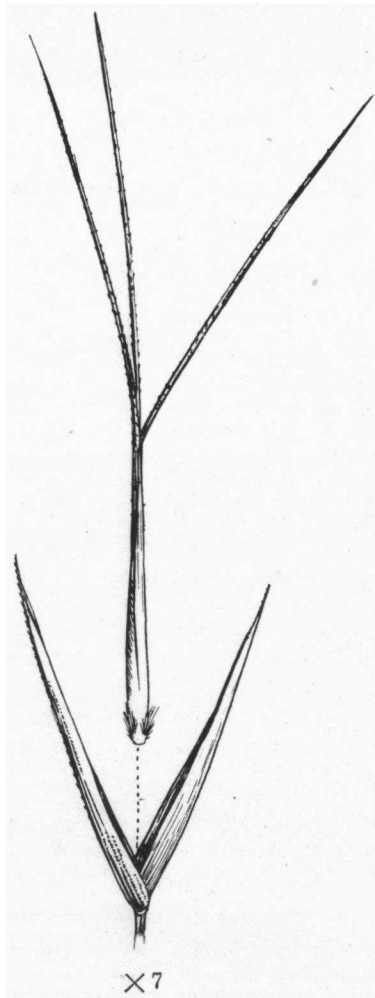
= *Chaetaria bipartita* Nees ab Esenbeck; *Florae Africae australioris*, I. Gramineae. [1841] p. 187!

Description given by Nees, l. c. p. 187!

Paniculae diffusae rariflorae ramis elongatis bipartitis basi longo tractu simplicibus, glumis subaequalibus setaceo-mucronatis flosculo trilineari longioribus, superiori paulo breviori, setis valvula subdimidio longioribus media paulo maiore, foliis linearibus complicatis, vaginis ore barbatis.

In montibus alt. 2000—2500' ad Katrivier fluvium (Ceded Territory), Drège.

Species distincta ramis paniculae longis patentibus usque ad basin bipartitis, tum spatio eximio nudis, iterumque dein laxe ramosis, ramis apicem versus oligostachyis. Spiculae pallidae. Glumae latiusculae, lanceolatae; inferior 4 lineas longa, ex apice integro setaceo-mucronata; superior $3\frac{1}{2}$ lin. longa, ex apice bidentato setigera. Flosculus basi (in stipite) strigosus. Seta media $4\frac{1}{2}$ lin. longa, laterales paulo breviores. Folia fere ut in *Chaetaria curvata*. Barba ad os vaginae patens. Vaginae margine membranaceae, laxiusculae. Ligula brevissima, ciliata. Culmus subramosus, $\frac{1}{2}$ —1 pedem altus, erectus.



× 7
ARISTIDA BIPARTITA
Trin. et Rupr.
From type specimen.

Description given by Trinius and Ruprecht, loc. cit. p. 144!

Paniculae 5—6 pollicaris, depau-

peratae, effusae, subsecundae, apice nutantis, basi exsertae radiis solitariis, ad basin usque bipartitis (longioribus iterum bifidis), divaricatis, 2—3 pollices longis, apice spiculas 1—5 gerentibus; glumis acuminatis, aequalibus, 3—3½ linealibus; flosculo 2½ lineali, glabriusculo, colorato et maculato, apice non torto neque articulado; setis subaequalibus, patentibus, 3 linealibus.

Ceded Territory in montibus altit. 2000—2500 ped. ad Katrivier fluvium. (Drege!)

Rhizoma repens, perenne. *Culmus* ½—1 pedalis, erectus, subsimplex, teres. *Vaginae* internodia aequantes vel iis breviores, ore ciliatae, demum ad nodum coloratum usque apertae. *Folia* curvata, filiformia, pleraque complicata, 3 pollicaria et breviora, viridiglauescentia. Proxima videtur *A. vaganti* Cavan.

A perennial species, easy to recognize. The type, collected by DRÈGE near the Katrivier in the NEES Herbarium at Berlin.

Aristida brachyathera Cosson et Balansa.

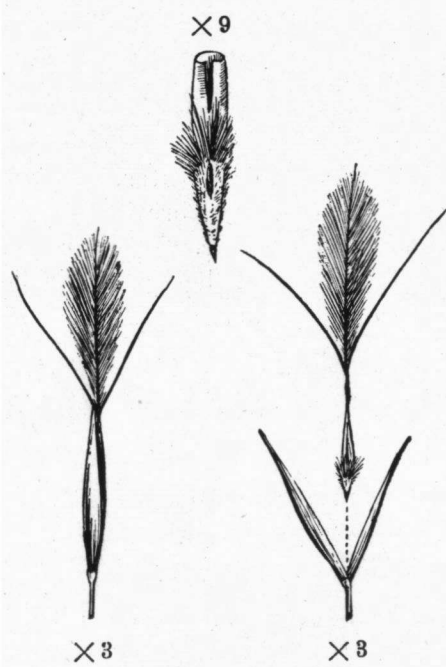
Description de trois nouvelles espèces de graminées, par M. Balansa dans Bulletin de la Société Botanique de France, Tom. V. [1858] p. 169!

Aristida (*Arthratherum*) *brachyptera* *) Coss. et Bal.

Souche trançante, dépourvue le plus souvent de rejets stériles. Chaumes hauts de 5—6 décimètres, simples ou rameux, dressés, cylindriques, pubescents surtout au-dessous des noeuds. Feuilles enroulées, se prolongeant insensiblement en pointe fine et roide, arquées, glabres, presque lisses; ligules très courtes, tronquées, fimbriées; gaines glabres, fendues jusqu'à la base; noeuds glabres. Panicule étroite, dressée, à rachis glabre mais scabre; verticilles à 3—6 rameaux contractés, très inégaux, scabres, soudés le plus souvent entre eux au-dessus de leur point d'insertion. Glumes presque égales, oblongues-lancéolées, insensiblement acuminées, l'inférieure 1-nervée, scabre, la supérieure obscurément 3-nervée; glumelle inférieure oblongue-lancéolée, glabre, articulée un peu au-dessous des arêtes; arêtes égalant la longueur des glumes et ayant le plus souvent leur quart inférieur caché par elles, la médiane plumeuse

*) *Aristida* (*Arthratherum*) *brachyptera* (sphalmate), vide Cosson et Durieu, Flore d'Algérie, Glumacées, pag. 290 et 291!

dans toute son étendue, excepté dans sa partie supérieure qui est presque glabre, les latérales glabres, scabres, étalées, capillaires. Glumelle supérieure ovale-oblongue, tronquée, énervée, glabre, membraneuse, simulant une squamule par sa forme et sa petitesse;



ARISTIDA BRACHYATHERA

Cosson et Balansa.

From type specimen.

callus lineaire, velu excepté dans la partie correspondant au dos de la glumelle inférieure, à poils égalant le quart de la longueur de cette glumelle. Squamules 2, oblongues, entières, tronquées, s'élargissant de la base au sommet et égalant presque la glumelle supérieure qui est deux fois plus large qu'elles. Anthères 3, lanceolées, glabres. Ovaire oblong, glabre; styles 2, terminaux; stigmates plumeux, deux fois plus longs que les styles. Caryopse 2. Mai.

Dunes de sable mobile du Sahara algérien, entre Guerrara et Hadjira (Reboud), et à El Abiod Sidi Cheikh (Cosson), vers 900 m. d'alt.

L'Aristida brachyptera est très distinct de ses congénères. Il a cependant quelques rapports avec

l'Arist. plumosa, dont il se distingue au premier coup d'oeil par ses arêtes beaucoup moins longues, etc.

The type, in the Balansa Herbarium, now in Herb. Lugd. Bat. sub no. 908.83—1376 is labeled in COSSON'S hand: *Arthratherum*, Sables mobiles des dunes à l'Est d'El Biod Sidi Cheikh. 19 Mai 1856, and in BALANSA'S hand: *brachypterum* Coss. et Bal..

Aristida brachypoda Tausch.

J. F. TAUSCH; Botanische Beobachtungen über einige Aristidae, in Flora oder allgemeine botanische Zeitung, Regensburg, Jahrgang XIX. Bd. II. [1836] p. 506!

„Sieber brachte aus Aegypten vier Arten, die er alle vermischt


unter dem Namen *Aristida plumosa* L. in seinem Herbario Florae Aegypt. ausgab, und wovon schon zwei in Kunth's Agrostographia aufgenommen wurden, jedoch lassen mich die dort von Trinius angeführten, nicht ganz richtigen Diagnosen auf eine Verwechslung dieser Sieber-ischen Arten schliessen. So scheint auch schon Forskohl wenigstens zwei davon unter seiner *A. tomentosa**) begriffen zu haben. Ich will sie folgendermassen bezeichnen:

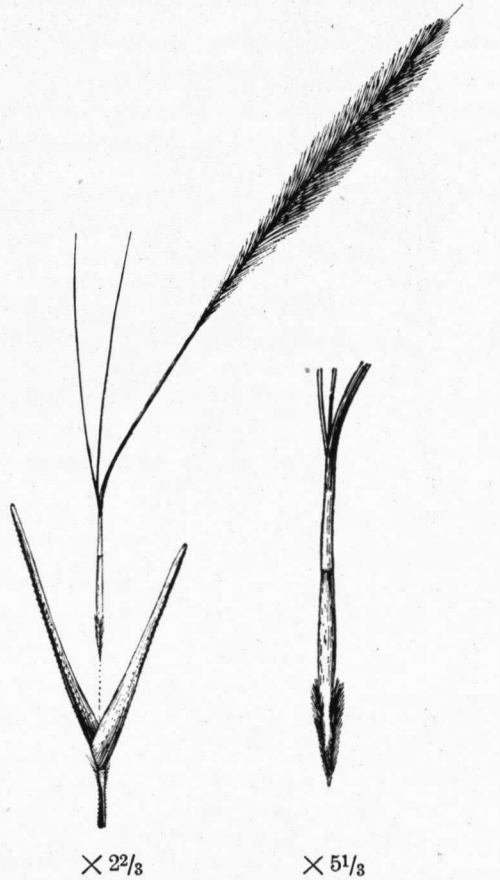
A. plumosa: panicula oblonga, glumis acuminatis inaequalibus flore plus duplo longioribus, arista 3-fida, lacinia media a medio ad apicem arrecto-plumosa, parte nuda laterales excedente, eis que ex toto triplo longiore, ligulis barbatis, vaginis inferioribus lanatis.

A. plumosa L. Vahl symb. 1. t. 3. Sieb. Herb. fl. aegypt. (max. parte).

A. tomentosa Forsk. descr. 25 (partim.)*

A. brachypoda Tausch: l. c. p. 506!

Panicula oblonga, glumis acuminatis inaequalibus flore plus duplo longioribus, arista 3-fida, lacinia media patenti-plumosa basi nuda, lateralibus media fere dimidio brevioribus ejusque basim nudam excedentibus, vaginis glabris, culmis inferne pubescentibus. 



ARISTIDA BRACHYPODA Tausch.
From type specimen.

I was unable to locate the type, but the species described by TAUSCH was distributed in SIEBER'S Egyptian exsiccatae with a

*) *A. tomentosa* FORSK. is an error. FORSKÅL named his plant *Aristida lanata*, from specimens collected by him near Rosette.

printed label reading: „*Aristida plumosa* Vahl (*A. obtusa* Del. *A. lanata* Forsk.) Pyramididen.” Plants agreeing with the description are in nearly all larger europaean herbaria. The beautiful specimens in PERSOON'S Herbarium, in the Rijks Herbarium at Leiden are accepted by me as duplicate types. *Aristida brachypoda* is related to the Linnaean *A. plumosa* but differs chiefly in the glabrous sheaths and in the characters of the spikelets.

Aristida brevifolia (Nees) Steudel.

ERNESTO THEOPH. STEUDEL; Nomenclator Botanicus. Stuttgart, Ed. II. [1841] p. 130! nomen.

= *Arthratherum brevifolium* NEES; Florae Africae australioris, I. Gramineae [1841] p. 183!

Panicula erecta angusta subsimplici, aristae lacinia media $\frac{3}{4}$ —1 pollicem longâ apicem versus plumosa, lateralibus subduplo brevioribus nudis, stipite solido basi membranaceo auriculato valvula cum stipite eius paulo breviori, glumis flosculo subduplo longioribus, altera paulo breviori, culmo fruticoso ramoso vaginis foliisque brevibus distichis tuberculato-asperis, marginibus oreque vaginarum atque articulis lanuginosis.

α. Asperum, vaginis foliisque brevissimis subulatis dense tuberculatis, glumis angustioribus,

tGa Hottentottorum lingua.

β. Floccosum, glandulis in foliis minus crebris, foliis paulo longioribus canaliculatis, glumis latioribus lanceolatis, aristae laciniiis purpureis.

Aarboschjes Colonom.

Var. α. in terra Buschmanorum sub gradu latit. austr. 29. alt. III. solo deserti Karro sabuloso (Namaqualand), Drège.

Var. β. in collibus et in planitie inter Dweka et Gamka, alt. 2500—3000' et ad Zilverfontein (Buschmanland) alt. 2500—3000', (Drège).

Floret a Iunio in Octobrem. 5.

Fruticulus in var. α. semipedalis pedalis, inferne ramosissimus, lignescens, arcte disticheque vaginatus. Vaginae tuberculis glandulosis dense granulatae, subtiliter striatae, ore margineque lanugine alba

densa cinctae, quemadmodum etiam genicula. Culmus apice nudus, tuberculatus. Folia 2—4 lin. longa, disticha, patentia, convoluta, striata, subulata, rigida, tuberculata. Panicula 2—2½ poll. longa, contracta. Ramuli ad basin 3—2-partiti, breves, duo monostachyi, unus distachyus. Spiculae pallidae, glabrae. Glumae lanceolato-lineares, acuminatae, rigidulae; superior 6—6½ lin., inferior 5 lin. longa. Flosculus cum stipite 2¾ lin. longus, laevis, glaber, apice purpurascens, stipite strigoso. Stipes aristae 2½ lin. longus; lacinia media 13½ lin. longa, a basi fere crescendo-, apice decrescendo plumosa, alba; laterales 6½ lineas longae, nudae, capillares, scabrae.

Var. β . differt a forma α culmo altiori saepe bipedali, vaginis magis striatis obsolete granulatis margine oreque quasi pulvinate-lanuginosis geniculorumque etiam annulo densiori, quo fit, ut totus culmus annulis quasi plumorum interceptus esse videatur, foliis ¾—1 poll. longis lineam latis apice tantum convolutis supra pubescentibus margine scabris, glumis latioribus lanceolatis acumine setiformi non ita leniter in glumam abeunte (plerumque bidentato), colore glumarum ex albo purpuraque vario, aristarum laciniis purpureis (lana tamen alba).

Gluma superior 6⅓ lin. longa, inferior 5½ lin. Flosculus cum stipite 2¾—3 lin. longus, glaber, apice truncatus et ala auriculari membranacea brevi stipiti aristae connatus. Stipes aristae 2—2½ lineas longus, angustus, dum avellitur membranam

basi suae adhaerentem secum aufert ideoque basi auriculatus est; lacinia media 9—10 lin. longa, ad 2 lin. spatio a basi glabra, ad apicem crescendo barbata, rhachi violacea; laterales 5—5½ lin. longae, capillares, setulis rarissimis brevissimis conspersae, violaceae.



ARISTIDA

BREVIFOLIA (Nees) Steud.

From type specimen.

Ad not. 1. *Aristida piligera* Burchell. isti similis esse videtur, sed differt culmo uninodi, qui nostrae multinodis, licet tectis a vaginarum amplexu nodis plerisque praeter supremum.

Ad not. 2. *Stipagrosti* generi accedit haec species, sed gaudet non solum arista basi cum processu membranaceo valvulae concreta, sed etiam lodiculis in flore ternis lanceolatis, quarum posterior maior est.

The differences between the two varieties, described by NEES, are so inconstant, that I have not taken up them in my work; the tubercles on the sheaths and on the blades are more or less dense, but always prominent, the length of the blades is variable and in the glumes I have not found differences, although the length is somewhat variable, even in the same specimen. The type in the NEES Herbarium at Berlin, accepted by me, was collected by DRÈGE in Namaqualand (Karoo desert). Duplicates of the type in most of the larger european herbaria. The species is very characteristic and easy to recognize.

Aristida breviglumis Mez.

CARL MEZ; in FEDDE, Rep. spec. nov. loc. cit. XVII. [1921] p. 152!

Perennis, gracillima. Vaginae culmi quam internodia longiores, glabrae; ligulae brevissime pilosae nec margine barbatae; laminae inferiores mediaeque saltem planiusculae. Culmi glabri. Inflorescentia subpauciflora, paullo interrupte 2-pinnatim paniculata subspiciformis; ramulis usque ad 45 mm longis; pedicellis vix ultra 1,5 mm longis. Glumae toto dorso pilis brevissimis erectisque quasi scabridulae, lanceolatae, apice breviter acutae et auriculis nullis in setulam tenuem productae, 1-nerviae, inferior ad 5, superior ad 6 mm longa. Paleae unguis obtusiusculus, brevissimus, non nisi minute pilosus; articulatio deest; setae media ad 15, laterales ad 7 mm longae, nudaе.

Costarica, Buenos Aires (Tonduz).

Note: = *Aristida tineta* Trin. et Rupr..

The type, accepted by me, is Tonduz no. 4879 labeled: „H. Pittier et Th. Durand, Plantae costaricenses exsiccatae. N^o. 4879. *Aristida coarctata* H. B. K.. Environs de Buenos Aires, 2. 1892, legit Tonduz". The lower glume is scaberulous all over, the upper is smooth as in

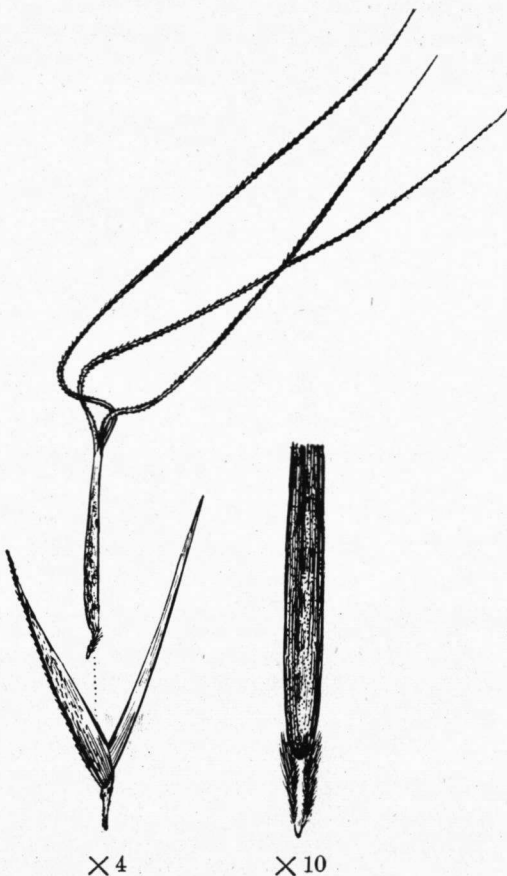
the type of *Aristida tincta*. The shape of the callus and the length of the awns are also in accordance with *A. tincta*. The plants described by MEZ are somewhat depauperate, but for the rest I have not found differences. HITCHCOCK has united *Aristida breviglumis* with *Aristida torta* KUNTH, the latter is accepted by me as a distinct species.

Aristida brittonorum Hitchcock.

A. S. HITCHCOCK; The North American species of *Aristida*, in Contributions from the United States National Herbarium, Vol. XXII. [1924] p. 584!

Plants perennial; culms rather stout, erect, glabrous, about 60 cm. tall; sheaths glabrous; ligule a ciliate membrane, about 0.5 mm. long; blades firm, involute, scabrous on the upper surface, glabrous beneath, stiffly erect, the basal as much as 20 cm. long and 0.8 mm. in diameter when rolled; panicle narrow, interrupted, 30 cm. long, the branches appressed, the lower as much as 5 cm. long; glumes unequal, acuminate, the first 7 to 10 mm. long, scabrous on back and keel, the second 10 to 12 mm. long, glabrous; lemma about 7 mm. long, the sharp callus 1 mm. long, pubescent, the body glabrous, the beak about 1 mm. long, scabrous; awns about equal, 1.5 to 2 cm. long, all contorted in a loose spiral at base.

Type in the U. S. National Herbarium, no. 907580,



ARISTIDA BRITTONORUM Hitchcock.
From type specimen.

collected in white sand in the vicinity of Los Indios, Isle of Pines, Cuba, February 13, 1916, by N. L. Britton, E. G. Britton, and Percy Wilson (no. 14169).

Known only from the type collection.

A fragment of the type specimen has been received through the kindness of Prof. A. S. HITCHCOCK.

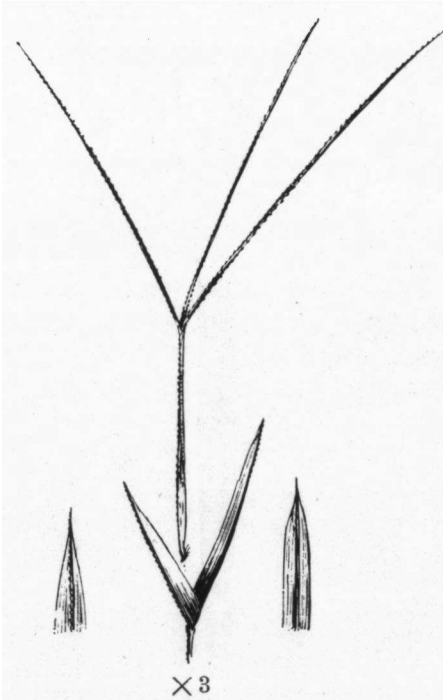
Aristida bromoides Humb. Bonpl. et Kunth.

A. DE HUMBOLDT, A. BONPLAND et C. S. KUNTH; Nova Genera et Species Plantarum. Tom. I. Paris, [1815] p. 122!

A. culmo ramoso; foliis convolutis, interne pubescentibus; panícula simplici, secunda, patula; glumis subaristatis; aristis subaequalibus.

Crescit in montanis regni Quitensis, juxta Tambo de Guamote et Llanos de Tiocaxas, alt. 1600 hexap. ♀ Floret Julio.

RADIX fibrosa. CULMI caespitosi, pedales, ramosi, striati, glabri,



purpurascens. NODI glabri. FOLIA linearia, convoluto-canaliculata, striata, externe glabra, interne pubescentia. VAGINAE striatae, glabrae. LIGULA brevis, ciliato-pubescentia. PANICULA simplex, secunda, bi- aut tripollicaris, ramis alternis, abbreviatis, patulis, densis, rhachique triquetra hispido-scabris. GLUMAE lineares, acuminatae, subaristatae, purpurascens, glabrae, dorso scabrae, inaequales, inferior brevior. PALEAE convolutae, albae, glabrae, inferior gluma superiore paullo brevior, triaristata, aristis subaequalibus, scabris, palea duplo longioribus.

Note: = *Aristida Adscensionis* L. var. *bromoides* (H.B.K.) Henr..

ARISTIDA BROMOIDES
Humb. Bonpl. et Kunth.
From Spruce no. 5918.

Aristida bromoides agrees in

most of the characters with the common *Aristida Adscensionis* but differs chiefly in the acuminate-aristulate glumes. The typical form of *Aristida Adscensionis* has an acuminate not aristulate lower glume and an upper with a slightly bifid apex and a mucro from the sinus. *Aristida bromoides* has longer glumes (I. 7 mm., II. 10 mm.), the body of the lemma is about as long as the upper glume, the lateral awns are 15 mm. long, the central awn is about 18 mm. long and somewhat more spreading. Purplish glumes occur also in the typical *A. Adscensionis*. SPRUCE's no. 5918 from Riobamba (Quito Andes) agrees perfectly with *A. bromoides*. All the plants examined are annual, they belong to my opinion to a distinct variety, hitherto observed in the bolivian and ecuadorian Andes at elevations varying from 2550—3500 M., SPRUCE's locality f. i. lies at an altitude of 2700 meters.

Aristida Browniana Henrard

nov. nom.

= *Aristida stipoides* ROB. BROWN; Prodrumus Florae Novae Hollandiae et Insulae Van-Diemen, Vol. I. [1810] p. 174! non LAMARK, Tabl. Encycl. et Meth. Illustr. d. Genres, [1791] p. 157!

Note: = *Aristida arenaria* x *Aristida Muelleri*.

Aristida stipoides was very insufficiently described by BROWN. Through the courtesy of Dr. A. W. HILL, I was enabled to examine an authentic specimen of BROWN's *A. stipoides*, preserved in the Kew Herbarium. This specimen is accepted by me as the type. The plant is intermediate between the well known *Aristida arenaria* and an undescribed species, named by me *Aristida Muelleri*. The new species, named in honour to the eminent botanist BARON FERDINAND VON MUELLER, has spikelets with the following characters: gl. I. 14 mm.; II. 21 mm.; gl. III. + callus 9,5—10 mm.; column of awns 39—40 mm.; central awn 67 mm., lateral awns 59—60 mm. long. What is generally called in herbaria *A. stipoides* R. BR., is a mixture of the new species and true *A. stipoides* R. BR., the latter is to my opinion a hybrid between *A. Muelleri* and *A. arenaria*; such a deduction however is not proven until the different forms are thoroughly studied by cultures. *Aristida Browniana* (R. BROWN no. 6197) has the following characters: gl. I. 8—9 mm.; II. 15—16, rarely 18 mm.; gl. III. + callus 8 mm.; column \pm 28 mm.; awns 40—50 mm. long. Besides forms agreeing fairly well with the plant

in the Kew Herbarium, there are many intermediate forms more or less approaching the supposed parents. It is impossible to describe such forms, they are placed in my work under *A. Browniana*. DOMIN's *Aristida stipoides* var. *brachyathera* is, according to the description, the above mentioned hybrid, whereas his var. *normalis* corresponds with my *A. Muellerei*. (See that species).

***Aristida Burkei* Stapf,**

in Sir WILLIAM T. THISELTON-DYER; *Flora Capensis* being a Systematic Description of the Plants of the Cape Colony, Caffraria, & Port Natal, London, Vol. VII. [1899] p. 557!



ARISTIDA BURKEI Stapf.
From type specimen.

Perennial, tufted, glabrous; culms rather slender, erect, 2 ft. long, wiry, smooth, 2-noded, sheathed from the lower node to the panicle; sheaths firm, tight; ligule a line of very short hairs or the lowest a tuft of wool; blades coarsely setaceous, involute, $\frac{1}{2}$ -1 ft. long, firm, curved or flexuous, the uppermost exceeding the panicle, smooth below; panicle about $\frac{3}{4}$ ft. by $\frac{1}{2}$ ft., very lax; rhachis smooth; branches distant, 2-3-nate, up to 6 in. long, scantily and remotely branched, filiform, scaberulous or smooth

below; branchlets capillary, flexuous; pedicels as long as the spikelets or shorter; spikelets yellowish, secund, often nodding, 5–6 lin. long; glumes rather firm, rounded at the back, obtuse or emarginate, not mucronate, the upper twice as long as the lower; valve linear, produced into a short slightly twisted beak, smooth, somewhat exceeding the upper glume; callus $\frac{1}{2}$ lin. long; awns continuous with the valve, up to 1 in. long, fine; pale broad, $\frac{1}{2}$ lin. long, 2-nerved; lodicules $\frac{2}{3}$ lin. long; anthers 2 lin. long, cells apiculate.

KALAHARI REGION: Orange Free State; near the Vaal River, *Burke*, 165! near Hoopstad, *Grindon Herb.*!

Type specimen in the Kew Herbarium (*Burke* 165). The plant has been lent through the kindness of Dr. A. W. HILL, Director of the Kew Herbarium.

Aristida californica Thurber.

GEORGE THURBER, ex BOLANDER in Transactions of the California State Agricultural Society during the years 1864 and 1865 [1866], San Francisco, p. 134!, „collected by Prof. Brewer;” no locality. Nomen nudum.

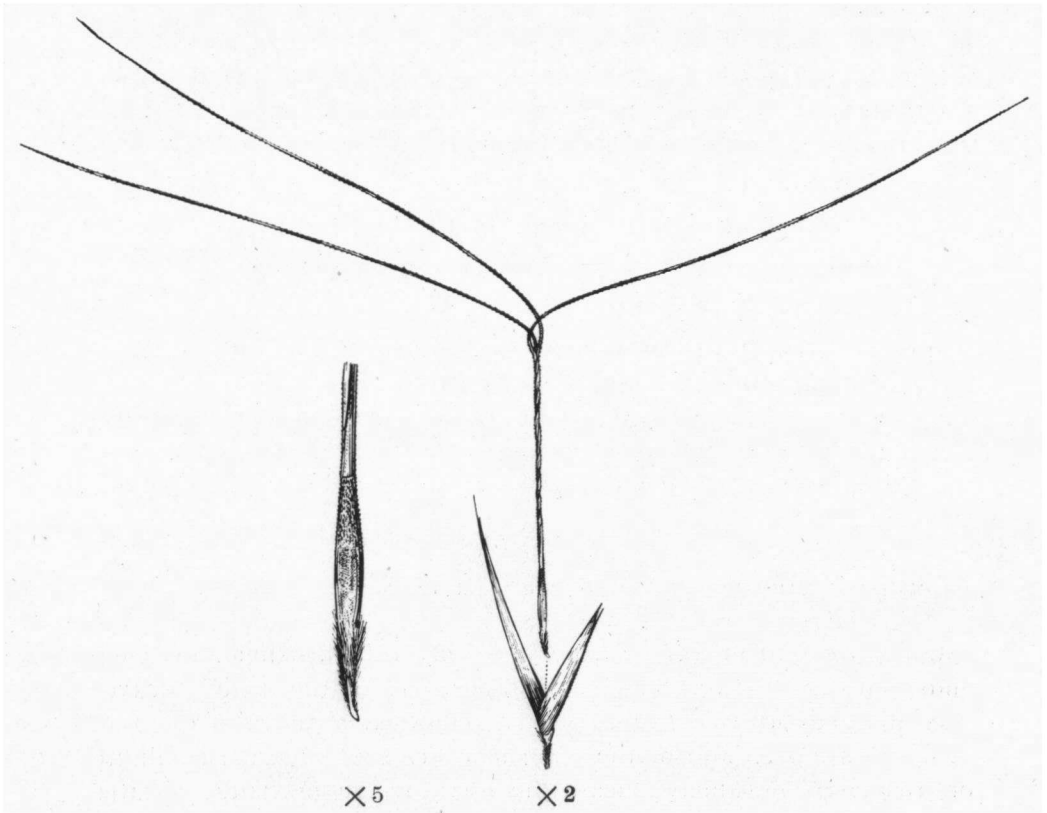
Description in SERENO WATSON, Botany of California (Geological Survey of California, Botany.) 2. [1880] p. 289!

Culms 5 to 10 inches high, very densely tufted, geniculate below and branched above, pubescent, especially at the nodes; leaves involute, pubescent above, scabrous below, the radical from 1 to $1\frac{1}{2}$ inches long, those of the culm shorter, the uppermost minute or reduced to a mere sheath; ligule a fringe of hairs; sheaths shorter than the internodes, loose, striate, pubescent or hirsute; panicle 1 or 2 inches long, racemose, few-flowered, the lower spikelets in pairs (one sessile, the other short-pedicelled), the upper solitary; glumes scabrous on the keel, lacerate-fringed at apex, usually purple with white margins, the lower 4, the upper 6 lines long; floret shorter than the lower glume, with a conspicuous white-hairy callus one-third its length; lower palet minutely scabrous, especially above, pale greenish and marked with purplish-black blotches, the upper palet about one-fourth as long; awns about equal, very slender, minutely scabrous, $1\frac{1}{2}$ to 2 inches long,

twisted below into a slender stipe (5 to 8 lines long), which is articulated with the upper palet and deciduous at maturity.

„Colorado Desert (Schott); Fort Mohave, Cooper.”

See A. S. HITCHCOCK; The North American Species of *Aristida* in Contributions from the U. S. National Herbarium Vol. XXII. [1924] p. 521! A fragment of the specimen collected by Dr. COOPER near Fort Mohave was kindly received from Prof. HITCHCOCK.



ARISTIDA CALIFORNICA Thurber.

From cotype.

(Fort Mohave, Dr. Cooper 2217).

Aristida californica Thurber.

var. fugitiva Vasey.

GEORGE VASEY; Monograph of the Grasses of the United States and British America, in Contributions from the U. S. National Herbarium Vol. III. [1892] p. 49!

Differs from the type chiefly in the lower and more condensed habit, and in the longer empty glumes. Late in the season it is loosened from the sand and blown about by the wind. — Colorado Desert (*C. R. Orcutt*).

As indicated by Prof. HITCHCOCK in his work cited above, the name *Aristida fugitiva* n. sp. was written by VASEY upon one of the sheets of Palmer's no. 501, but he never published his species. When VASEY published his var. *fugitiva* in the year 1892 he based his variety on a specimen collected by Orcutt. VASEY's description applies to the plant cited, hence this one is accepted as the type. A fragment of this plant agrees with *A. californica* and is different from Palmer 501. See under *A. fugitiva* VASEY.

***Aristida calopectila* (Jaub. et Spach) Boissier.**

EDMOND BOISSIER; *Flora Orientalis sive Enumeratio Plantarum in Oriente a Graecia et Aegypto ad Indiae fines hucusque observatarum*, Genevae et Basileae, Vol. V. [1884] p. 497!

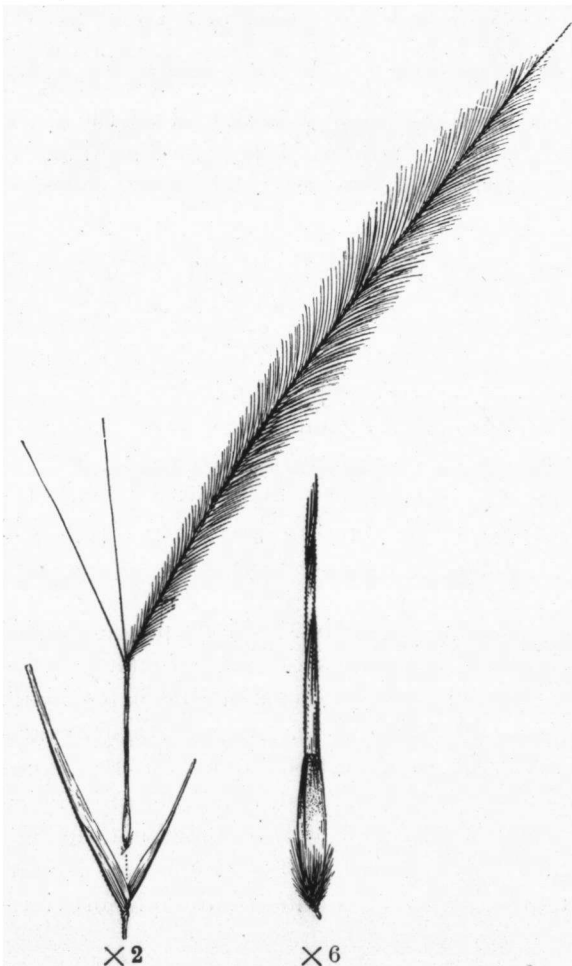
= *Arthratherum calopectilum* JAUB. et SPACH.

HIPPOLYTE FRANÇOIS JAUBERT et EDUARD SPACH; *Illustrationes Plantarum Orientalium, ou choix de plantes nouvelles ou peu connues de l'Asie occidentale*, Paris, Vol. IV. [1850—1853] p. 54! Tab. 336!

Dense caespitosum; multicaule; cauliculis sterilibus paucis v. nullis. Caulibus glaberrimis. Foliis elongatis, involutis, subulato-filiformibus, extus glabris, intus tomentellis; vagina apice barbato-ciliata, caetero glabra. *Glumae valvis inaequilongis*, scabro-puberulis, lineari-oblongo-lanceolatis, subuninerviis, convolutione quasi subulato-acuminatis. *Valva externa longiori*. Flore hrevissime stipitulato. Palea externa (*apice immediatim cum arista articulata*) scabriuscula, delapsa arista emarginata. Aristae (*parte indivisa elongata, contorta*) laciniis lateralibus nudis, lacinia media ex toto plumosa subtriplo brevioribus. Caryopsis esulca.

Gramen caudice brevi diffuso v. ascendente ramoso vaginis emarcidis vestito demum fruticuloso perennans. RADIX e fibris plus minusve elongatis crassiusculis simplicibus subfasciculatis juventute lanuginosis demum induratis constans. CAULES adjecta inflorescentia $\frac{1}{2}$ — $1\frac{1}{2}$ -pedales, aggregati, erecti v. ascendentes, geniculati, graciles, simplices, teretes, medulla farcti, glabri, laevigati v. papillis oculo

nudo inconspicuis scabriusculi, obsolete striatuli, pauci-nodi, ad basin foliosi et vaginis imbricatis obtecti. Nodi crassiusculi, glaberimi, constricti, plerumque rufescentes. Internodia elongata, demum plus minusve exserta. Articulatus summus subfiliformis, strictus, ineunte floratione vaginam vix aequans. FOLIA 3—7 pollices longa (imo folium summum haud raro semi-pedale), glaucescentia, tenuia, rigidula, alia subfalcata v. varie flexuosa, alia strictiora, ecarinata,



ARISTIDA CALOPTILA (Jaub. & Sp.) Boiss.
From Aden, Hildebrandt no. 753.

nervosa (sub lente), extus glabra laevigata, intus tomentella, marginibus attenuata et (sub lente) cartilagineo-serrulata, basi articulata. VAGINAE INFIMAE aphyllae, chartaceae, persistentes, complicatae, subcarinatae, striatae (7-v. 9-nerviae), stramineae, dilatatae, ovato-v. oblongo-lanceolatae, acutae, glabrae, laevigatae. VAGINAE FOLIIFERAE tubuloso-involutae, herbaceae, ecarinatae, 7-nerviae, folio concolores, laevigatae, marginibus membranaceae, apice rotundatae et villis albidis elongatis conspicue barbato-ciliatae, ore annulo setularum brevissimarum barbatae, caeterum glabrae. LIGULA nulla. PANICULA (sub anthesi forsitan nutans; fruc-

tifera erecta, plus minusve contracta) 3—6 pollices longa, simplex, laxiuscula, oblonga, e spiculis numerosis composita. RHACHIS filiformis, continua, semi-teres, scabriuscula, stricta. RAMULI subcapillares, alterni, distichi, solitarii v. interdum inferiores gemini, sim-

plices, scabriusculi, spiculas 3—5 (interdum 7 v. solum 2) longius breviusve pedicellatas racemosim dispositas gerentes; ramuli superiores inferioribus gradatim breviores. PEDICELLI capillares, inaequales (alii gluma breviores, alii longiores), scabri, stricti, apice incrassati. GLUMA persistens, stramineo et violaceo variegata, flore subtriplo longior (praetermissa arista). VALVAE inaequilongae, subconformes, uninerviae, v. trinerviae nervis lateralibus infra medium valvae evanescentibus, subnaviculares, carinatae (nervo medio filiformi), ex oblonga basi longe lineari-angustatae, convolutione quasi subulato-acuminatae, apice modo acute v. obtuse 2- aut 3-dentatae, modo truncatae v. acutatae integerrimae. VALVA exterior (inferior) 7—8 lineas longa, basi intrusa amplexatilis. VALVA INTERIOR paululo altius inserta, valva exteriori circiter sesquilinea brevior, intus ad basin rudimentum stipitifforme brevissimum obtusum glaberrimum adhaerens alterius floris gerens. FLOS adjecta arista sua 3—3½ pollices longus (absque arista 1½—2 lineas). STIPITULUS brevissimus, crassus, subturbinatus, cartilagineus, dense setulosus, basi subulato-angustatus, apice circumbarbatus: setis inaequalibus, albidis, majoribus dimidiam paleae externae longitudinem superantibus. PALEA EXTERNA (generis more tubuloso-involuta, tenuiter trinervia, chartacea, ecarinata, demum rigida) oblonga, apice subangustata, facie marginibusque glabra, dorso papillulis minimis oculo nudo inconspicuis scabriuscula, apice cum arista articulata, delapsa arista emarginata. ARISTA violascens v. albida, longissima, speciosa, e subulata basi setacea, generis more supra basin trifurcata et ad ramificationem geniculata; pars indivisa 5—8 lineas longa (plerumque glumam paululo superans), filiformis, nuda, scabra, contorta, antice canaliculata; laciniae laterales capillares, nudaе, scabrae, divergentes v. subdivaricatae, strictae, 5—8 lineas longae; lacinia media robustior laciniis lateralibus, recta, scabra, ad ima basi longe denseque plumosa, apice nuda. PALEA INTERNA (generis more minima, membranacea, hyalina, enervia, involuta, ecarinata, glaberrima) cuneato-obovata, apice truncato-rotundata, interdum retusa v. obsolete crenulata. SQUAMULAE-HYPOGYNAE geminae, oblique spathulatae, obtusae, integerrimae, striatulae, submembranaceae, glaberrimae, palea interna subaequilongae, ovario sub anthesi longiores. STAMINA 3, supra basin stipituli ovarii inserta. FILAMENTA flaccida, capillaria. ANTHERAE lutescentes, glabrae, elongatae, lineares, basi et apice emarginatae. OVARIUM minimum, obovatum, stipitulatum, glaberrimum. STIGMATA 2, terminalia, elongata (paleam externam subaequantia), filiformia, dense plumosa (pilis simplicibus, sub lente denticulatis), basi nuda. CARYOPSIS palea externa paululo

brevior, inclusa, libera, glaberrima, laevigata, brunnea, stipitulata, subteres, cylindracea, apice obtusa, basi subangustata, ventre sulculi loco linea axili filiformi notata. EMBRYO semini subtriplo brevior, circumscriptione oblongus. (*Exam. s. sp.*)

Crescit Arabia Felici (*Botta!* in Herb. Mus. Par.), nec non secus Sinum Persicum. (*Aucher—Éloy!* Plant. exs. n° 5,445 in Herb. Mus. Par.)

Arthratherum caloptilum ab affinibus speciebus egregie differt gluma, cujus valva externa longior est (nec brevior) valva interna. Ab *Arthrathero plumoso* insuper recedit flore bevius stipitato, aristae parte indivisa contorta, glabritieque vaginarum et caulium.

EXPLICATION DE LA PLANCHE 336

- Fig.* 1. Base de feuille, avec le sommet de la gaine, déployés, grossis.
Fig. 2. Glume entière (avec le pédicelle), grossie cinq fois (de même que toutes les figures suivantes).
Fig. 3. Valve externe de glume, déployée, vue antérieurement.
Fig. 4. Valve interne de la même glume, disposée comme la figure précédente.
Fig. 5. Glumelle-fructifère entière, vue antérieurement.
Fig. 6. La même glumelle-fructifère (dont l'arête a été coupée un peu au-dessus de sa base), vue de profil.
Fig. 7. Paillette interne de glumelle, déployée, vue antérieurement.
Fig. 8. Les deux squamules-lodiculaires.
Fig. 9. Fruit, vu antérieurement.
Fig. 10. Le même fruit, vu postérieurement.
Fig. 11. Section transversale de fruit.

Note: = *Aristida paradisea* Edgeworth.

The very accurate description given by JAUBERT and SPACH, and the beautiful plate identify the species which was earlier described by EDGEWORTH from Aden. The latter agrees perfectly with a plant collected at the type locality by HILDEBRANDT. As the plant described by EDGEWORTH is not in europaean herbaria, I have figured the HILDEBRANDT specimen no. 753. The internodes are quite glabrous and smooth. A closely allied species was described by SAVI in the year 1837 as *Aristida Raddiana* from Egypt, and was also found on the Sinai. TRINIUS and RUPRECHT wrongly inter-

pretated SAVI's species, which differs in the woolly internodes. Probably there occur intermediate forms between *Aristida paradisea* and *A. Raddiana*, but for the present I have kept the two species apart, on account of the different geographical distribution.

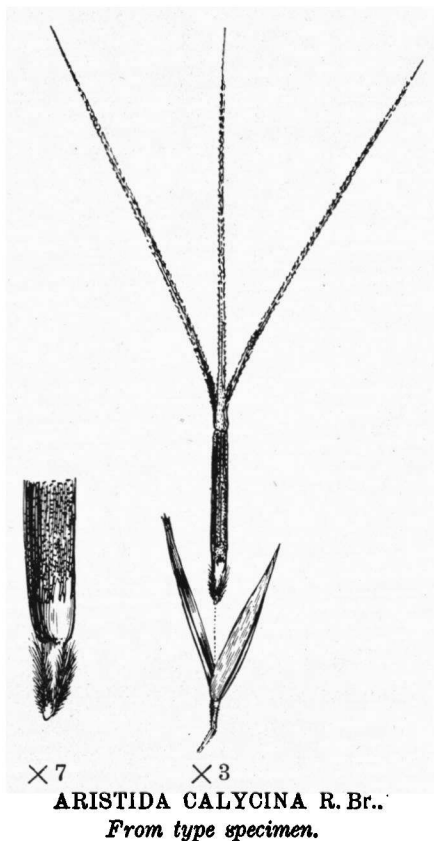
***Aristida calycina* Rob. Brown.**

Prodromus Florae Novae Hollandiae et Insulae Van-Diemen, Vol. I. [1810] p. 173!

I. Arista tripartita, cum valvulâ inarticulata.

3. *A. calycina*, paniculâ subramosâ, glumis coloratis mucronatis subaequalibus longitudine perianthii, aristis flore longioribus, culmo erecto simplici. (T.) v.v.

An authentic specimen collected by ROBERT BROWN (R. Brown Iter Australiense, 1802—5, no. 6198) in the Kew Herbarium, was kindly received in loan from the Director, Dr. A. W. HILL. On the sheet are mounted two different species, one of them is but a fragment lacking the base, with broad flat blades, most of the spikelets are delapsd, the few spikelets prove that this plant is *Microlaena stipoides* R. BR.. The other plants on the sheet are complete and well developed with erect, simple culms. The lower glumes are 7—8 mm., the upper 8—9 mm. long, the lemma is about $7\frac{1}{2}$ mm. and the awns are 17—19 mm. long, the shorter awns are broken off. The blades are convolute, or flat only at the base. The panicle is indeed somewhat branched as given by BROWN. These specimens, agreeing with the rather short description, are accepted by me as the type specimens.



Aristida calycina R. Brown.**var. praealta Domin.**

Bibl. Bot. Heft 85¹ [1915] loc. cit. p. 345!

Valde elata et robusta; *culmi* saepe ramosi, robusti; *folia* elongata, saepe plana lataque (2 mm et ultra); *panicula* maxima, laxissima, diffusa, valde divaricata, saepe 5 dm vel ultra longa; paniculae *rami* capillares, subflexuosi, divaricati; *spiculae* cum typo in summa congruae, *glumae* breviter mucronatae, subaequales, 10—14 mm longae; *glumella* haud exserta (glumis brevior); *aristae* circa 15—20 mm longae.

Nord-Queensland: im Chillagoe-Distrikte in den Savannenwäldern (auf Granit) sowie auf den Karsthügeln ein sehr häufiges Gras (DOMIN, II. 1910).

Diese im genannten Gebiete weit verbreitete Varietät macht den Eindruck einer selbständigen Art, doch stimmt sie, abgesehen von dem robusten Wuchse, den breiten, flachen Blättern und der Form der Rispe, welche an *A. vagans* CAV. erinnert, mit *A. calycina* gut überein, und zwar besonders was den Bau der Ährchen anbelangt.

Note: = *Aristida praealta* (Domin) Henrard.

It is a pity that I have not yet seen the type of this variety, but Prof. DOMIN has promised to sent me his australian *Aristidas* for study. I have found in herbaria some australian specimens agreeing with the description given above. There are many differences; not only the shape of the panicle, but also the spikelet characters are very different from those of the typical *Aristida calycina*, the glumes are subequal and much longer, (up to 14 mm. long), moreover the lemma is much shorter than the glumes. For these reasons I have taken up the variety in my monograph as a distinct species.

Aristida calycina R. Brown.**var. typica Domin.**

Bibl. Bot. Heft 85¹ [1915] loc. cit. p. 345!

(= *A. calycina* R. BR. s. str.).

Queensland: bei Pentland und Charters Towers (DOMIN, II.—III. 1910), beide mit sehr lockeren Rispen; West Side of Middle Percy

Island, forming tussock in sandy soil (H. TRYON), eine sehr schmalblättrige Form mit zum Teil spreizenden Rispenzweigen.

BENTHAM und nach ihm BAILEY beschreiben die Rispe dieser Art als „narrow, often above 6 cm long, with few short erect branches, rarely at length spreading, each bearing 1 or 2, or the lower ones several but few sessile or shortly pedicellate spikelets.” In der Tat ist aber die Rispe bei der typischen Form stets sehr locker und breit, die Seitenäste gespreizt und nur ausnahmsweise findet man einen Teil der Rispe etwas zusammengezogen und daher schmal. Wenn dazu die Aehrchen noch fast blass sind, macht eine solche Form auf den ersten Blick einen fremdartigen Eindruck. Gewöhnlich findet man aber an einer und derselben Pflanze Uebergänge zu der normalen, breiten und ausgespreizten Rispe, wie sich solche z. B. auf den von TRYON gesammelten Exemplaren vorfinden. Auch nach R. BROWNS Originaldiagnose ist *A. calycina* „panicula subramosa, glumis coloratis”, die *A. ramosa* hingegen „panicula simplicis coarctata, glumis coloratis” charakterisiert.

A. calycina ist, auch wenn man die zu ihr nicht gehörigen Formen ausscheidet, mit der *A. ramosa* sehr nahe verwandt und hauptsächlich nur durch die grösseren Aehrchen und deren Teile zu unterscheiden.

I was unable to distinguish *A. calycina* and *A. ramosa* by the dimensions of the glumes and lemmas. Both species differ however in habit and in the shape of the callus and the upper glume. BENTHAM, who certainly saw BROWN's plants was right in describing the panicle as „narrow”. The many specimens of *A. calycina* examined by me, generally have a contracted panicle, whereas Prof. DOMIN states that the contracted panicle is an exception. It may be that the loosely branched effuse panicle is only a temporary state of the inflorescence, such forms are rather rare in herbaria, mature panicles are, so far as I could observe, contracted. See afterwards under *A. ramosa*.

***Aristida canariensis* Willdenow.**

CAR. LUD. WILLDENOW; Enumeratio Plantarum Horti Regii Botanici Berolinensis [1809] p. 99!

A. panicula racemosa, ramis simplicibus alternis adpressis distantibus, calycibus muticis corolla brevioribus, aristis subaequalibus, vaginis foliorum nudis.

Aristida gigantea. *Brousonet*.

Habitat in Canariis. ☉. D.

Gramen spithamaeum vel pedale simillimum *A. adscensionis*, sed diversum calycibus non aristatis, aristis corollae duplo nec triplo longioribus. Ab *A. gigantea* diversa videtur; culmo pedali simplici non ramoso, panicula non effusa. *Calyces* sunt violacei, valvula majore obtusa, minore acuta. An *A. gigantea*, ad specimen mancum forte a Linnaeo filio descriptum, eadem sit, nec ne? determinare non ausim.

Note: = *Aristida Adscensionis* L..

The type in the Willdenow Herbarium at Berlin was examined by me through the courtesy of Prof. L. DIELS and Prof. R. PILGER. The cover bears a label with a diagnosis in WILLDENOW'S handwriting: „Triandria, Digynia, *Aristida canariensis*, panicula ramosa stricta aristis rectis, vaginis foliorum margine glabris. Habitat in Teneriffa ☉.” The sheeth shows a well developed specimen and three branches, with the name *Aristida gigantea?* Teneriffe (*Broussonet*). The plant is a 23–28 cm. high annual, the panicles are narrow and contracted, 7–15 cm. long, the spikelets agree with those of the typical form of *A. adscensionis*. On the sheet is written by MEZ: *Aristida adscensionis* L. *coerulescens*, Carl Mez V. 20. In my work I have taken up *Aristida coerulescens* as a distinct perennial mediterranean species, the differences in morphological characters are not always at once obvious, but they are supported by a distinct and different geographical range.

Aristida capensis Savi.

GAETANO SAVI; Descrizione di una specie di *Elaeagnus* e di varie altre piante, Modena nella tipografia Camerale [1836] p. 261, estratto dal Memorie di Matematica e di Fisica della Societa Italiana delle Scienze residente in Modena, Tomo XXI. Fisica, Modena [1837] p. 198.

Aristida capensis foliis convolutis flaccidis and faucem vaginae ciliatis, culmo tomentoso, panicula racemosa, valvis inaequalibus acuminatis, arista articulata, laciniis plumosis media majore duplam calycis longitudinem aequante. Nob.

Note: = *Aristida lanata* Forsk..

SAVI's type was collected by RADDI in Egypt. SAVI misapplied the name *Aristida capensis*. The true *Aristida capensis* has all the awns plumose, a character that may have induced SAVI to apply the name to the egyptian plant also having 3 feathery awns. I have been unable to locate SAVI's type, which is probably at Pisa, where RADDI's collections are preserved. Duplicates of the type I saw in different herbaria and a complete set of RADDI's egyptian *Aristidas* was examined, through the courtesy of Dr. CARANO and Dr. CHIOVENDA, in the Florence Herbarium. TRINIUS and RUPRECHT already correctly referred SAVI's plant to *Aristida lanata* FORSK..

Aristida capensis Thunberg.

CAROL. PET. THUNBERG; *Prodromus plantarum Capensium*, quas, in promontorio Bonae spei Africes annis 1772—1775, collegit. Upsaliae, Pars I. [1794] p. 49!

A. panicula trichotoma patenti, aristis omnibus villosis.

CAROL. PET. THUNBERG; *Flora Capensis*, sistens Plantae Promontorii Bonae Spei Africes, secundum Systema Sexuale emendatum etc. Volum. I. [1813] *) Upsaliae p. 395!

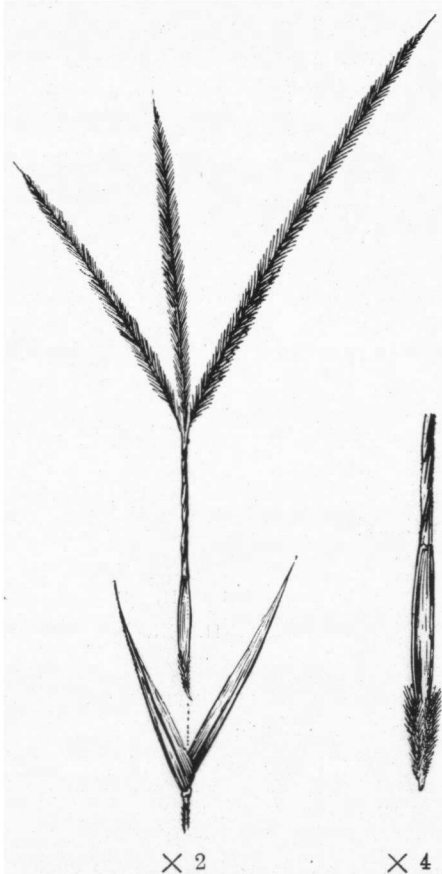
A. (*capensis*.) panicula trichotoma patenti, aristis omnibus villosis. *Avena capensis* LINN. Syst. Veget. XIV. p. 122. WILDEN. Spec. I: 1. p. 460.

Culmus simplex, vel basi interdum ramosus, striatus, glaber, erectus, pedalis & ultra. *Folia* longe vaginantia, convoluto-filiformia, glabra, culmo breviora. *Panicula* trichotoma, ampla, patens. *Pedunculi* & *pedicelli* capillares, glabri. *Pedicelli* uniflori, longitudine calycis. *Calyx* biglumis, aequalis: *glumae* lanceolato-subulatae, concavae, uniflorae, glabrae, longitudine corollae, fuscescentes, basi purpurascens, unguiculares. *Corolla* univalvis, longitudinaliter connivens, basi extus hirsuta, albida, terminata apice aristis tribus. *Aristae* divaricatae, setaceae, enodes, corolla longiores, villosae, apice glabrae, subpollicares, intermedia paulo longiori. *Villus* albus, patens. *Filamenta* tria, brevissima, fundo corollae affixa. *Antherae* lineares, utrinque sulcatae, bifidae, rufescentes, longitudine dimidia corollae.

*) The first volume of Thunberg's *Flora Capensis* was published at Upsala, the first fascicle in the year 1807 (as given on the title-page), the second fascicle in the year 1811 and the third (in which the *Aristidas* are described) in the year 1813. See H. O. JUEL; *Plantae Thunbergianae*, Uppsala, [1918] p. 14!

Differt ab A. adscensionis: aristas hirsutis.
americana : floribus pedunculatis.
plumosa : aristas omnibus villosis & culmo nudo.

Through the courtesy of Prof. O. JUEL, director of the Botanical Garden at Upsala, I have had the privilege to examine all the



ARISTIDA CAPENSIS Thunberg.

From type specimen.

Aristidas from the Thunberg Herbarium. THUNBERG described his species in the year 1794 very shortly, he gave afterwards a longer description, but unfortunately cited *Avena capensis* L. f. as a synonym. Modern authors therefore named the species *Aristida capensis* (L. F.) THUNB., but THUNBERG based his species in the year 1794 on the plant preserved in his herbarium and not on the *Avena capensis*, published, after LINNE's death, by his son. *Avena capensis* is not an *Aristida* at all, but to my opinion and according to the description, a *Danthonia*.*) The name for our species is thus *Aristida capensis* THUNB.. In the Thunberg Herbarium there are three sheets, named α , β and γ . *Aristida capensis* α and γ represent the species afterwards described as *Aristida namaquensis*, *Aristida capensis* β is the plant meant by THUNBERG under *A. capensis*,

*) *Avena capensis* L. f. Supplementum Plantarum, [1781] p. 112!

Panicula coarctata, calycibus bifloris subulatis, corolla pubescente, arista intermedia tortili curva.

Habitat in Cap. bonae spei.

Radix repens. *Folia* graminea, laevia, margine scabra, pauciora. *Culmi* pedales, laeves. *Panicula* quasi spicata, ovato-oblonga, purpurascens: pedicellis ultimis capillaribus. *Calyx* longitudine floris, biflorus: valvulis duabus, aequalibus, attenuatis quasi in aristam. *Corolla* bivalvis. *Valvula exterior* subpubescens, bifida, terminata aristas duabus rectis & intermedia tortili duplo longiore. *Valvula interior* brevis.

because his description given in the year 1813 applies to this specimen (panicula trichotoma, ampla, patens, glumae fusciscentes, basi purpurascetes). *Aristida capensis* α and γ have a narrow, sub-contracted panicle and yellow glumes without a purplish base. *Aristida capensis* is variable, but it is curious that the type is a rare state of the species, having a naked column, thus this plant is not identical with the variety *canescens*, as supposed by TRINIUS and RUPRECHT. I have placed the type as var. *genuina* next to the var. *macropus* (NEES) TRIN. et RUPR., the varieties with a bearded column are more common.

***Aristida capensis* Thunberg.**

var. *barbata* Stapf.

O. STAPF, in *Flora Capensis*, Vol. VII. [1899] edited by THISELTON-DYER, pag. 565!

Culms sheathed all along; sheaths long bearded at their mouths; blades very long, curled, overtopping the panicle; spikelets 8—10 lin. long; foot of awn 1 lin. long, hairy; bristles densely plumose except at the tips.

COAST REGION: Uitenhage Div.; on the downs between the Koega and the Zwartkops Rivers, *Ecklon & Zeyher*, 502! *Zeyher*, 4501! Bathurst Div.; Port Alfred, *Hutton*, 11a!

All the plants mentioned by Dr. STAPF were examined by me, duplicates of the three plants also in the Vienna Herbarium (Herb. Hackel). This variety is easy to recognize by the characters given by Dr. STAPF.

***Aristida capensis* Thunberg.**

var. *canescens* Trin. et Rupr..

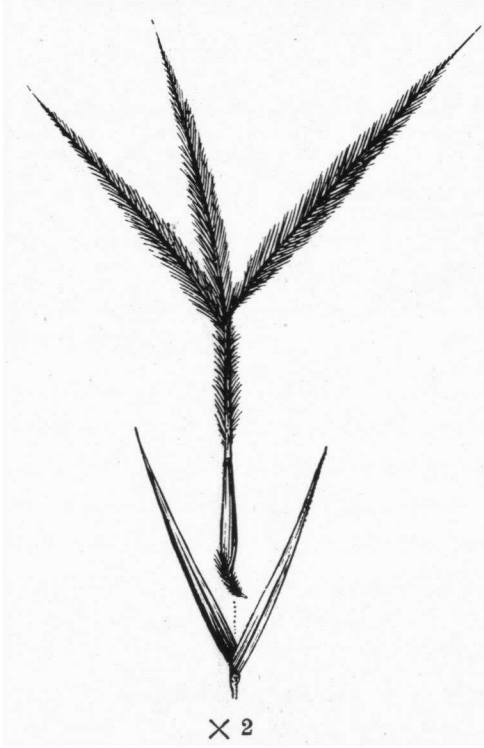
Spec. Graminum Stipaceorum loc. cit. pag. 178!



ARISTIDA
CAPENSIS Thunberg.
var. *barbata* Stapf.
From type specimen.

α . *canescens*. Panicula oblonga 6—8 pollicari lucidula; glumis sub-

aequalibus, 7—7½ linealibus; flosculo 3½ lin., stipite aristae 5 lin., piloso; seta media pollicari; mucronulo apicali nudo; pluma canescente.



ARISTIDA CAPENSIS Thunberg.
var. canescens Trin. et Rupr.
From Hopefield, Bachmann no. 870.

Specimina Bergiana glumis 6½ lin. et stipite aristae 4 lin. mis. cl. Schlechtendahl; praeterea quoque alia his et var. Zeyheri intermedia: stipite aristae tantum bilineali, sed barba setarum 7 linealium apice nudarum canescente, gluma sup. semipollicari; inferiore parum brevior.

This variety represents the common form of the species.

Aristida capensis Thunberg.

var. fulviberbis Trin. et Rupr.,

loc. cit. pag. 179!

γ. *fulviberbis* ut β, (i. e. macropus) sed panicula densior, obovata, 7—8 pollicaris, basi parum exserta; stipes aristae 4 linealis. (Drege spec. a.)

The differences, given by the russian authors, are so unimportant, that I have not taken up the variety *fulviberbis* in my work,

Aristida capensis Thunberg.

var. macropus (Nees) Trin. et Rupr..

Spec. Graminum Stipaceorum loc. cit. pag. 179!

= *Arthratherum capense* NEES var. *macropus* NEES; Florae Africae australioris, [1841] pag. 176!

γ. *macropus*, stipite aristae valvula duplo longiore glumas superante

Var. γ . in planitie ad pedem montis Kamiesberg alt. IV. (Klein Namaqualand), Ecklon; in collibus arenosis ad Ebenezar alt. 300', in planitie sicca inter Goedemanskraal et Kaus alt. 2000—2500' et in planitie inter Kuil et Modderfontein alt. 3500', (Drège.)

Var. γ . in universum nimis congruit cum reliquis, quam quae possit distingui. Lacinia media saepe ad apicem usque plumosa, laterales apice nudae in omnibus. Statura humilior. Vagina ad os longiori barba.

A very distinct variety, characterized not only by the naked column, but also by the golden yellow feathery awns; the only form of the species with a central awn densely plumose to the very tip.

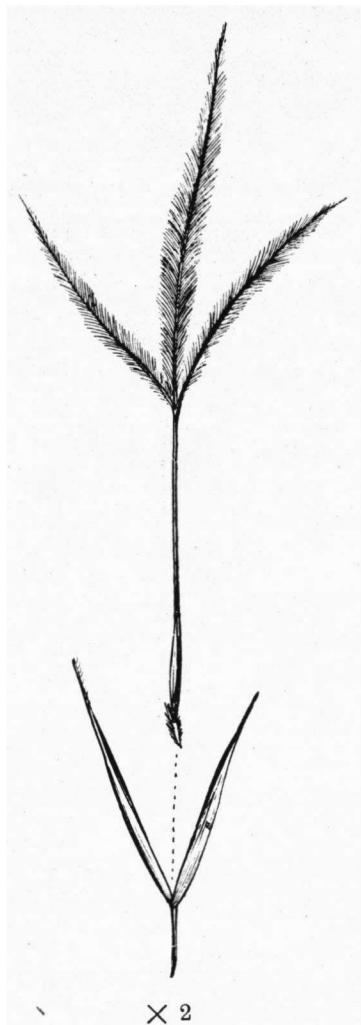
***Aristida capensis* Thunberg.**

var. ***Meyeri* Trin. et Rupr.,**

loc. cit. pag. 179!

ϵ . *Meyeri* ut δ , (i. e. *Zeyheri*) sed glumae aequales 7—8 lin., flosculus $3\frac{1}{2}$ lin. (mis. G. F. W. Meyer Götting.)

Plants, belonging to *Aristida capensis*, with equal glumes, I never saw; the glumes are always more or less unequal in length. I have omitted the variety in my work.



ARISTIDA CAPENSIS Thunberg.
var. ***macropus* (NEES) Trin. et Rupr.**
From type specimen.

***Aristida capensis* Thunberg.**

var. ***Zeyheri* (Nees) Walpers.**

G. G. WALPERS; *Annales Botanices Systematicae*, Lipsiae, Tom. III. [1853] p. 751!

= *Arthratherum Zeyheri* NEES; *Fl. Afr. austr.* [1841] p. 177!

According to NEES, a distinct species and easy to recognize. There are however many intermediate forms between *var. Zeyheri* and *var. canescens*, the characters are not constant and sufficient enough to distinguish *A. Zeyheri* and *A. capensis*. See afterwards under *A. Zeyheri* STEUDEL.

***Aristida capillacea* Cavanilles.**

ANT. JOSEPHUS CAVANILLES; Icones et Descriptiones Plantarum, quae aut sponte in Hispania crescunt, aut in hortis hospitantur. Matritum, Vol. V. [1799] p. 43! Tab. 468. Fig. 1!

Radix fibrosa capillaris ex qua culmi prodeunt vix palmares glabri, articulati, tenues. Folia glauca: radicalia duos tresve pollices longa, subulata, versus basim ampliora; in culmo alterna, vagina brevi, omniaque angustissima. Flores paniculati, paniculis ramosis axillaribus et terminalibus: ramuli capillares, multiflori: pedicelli floribus longiores, ramulis adhuc tenuiores. Calicis valvulae acutissimae, glaberrimae, quarum interior paulo longior. Corollae valvula calice brevior, basi vix hirsuta, terminata aristis tribus aequalibus, calice triplo longioribus. Staminum filamenta tria, brevia, capillaria: antherae fuscae, oblongae. Germen lineare, turbinatum: styli duo capillares: stigmata villosa. Semen minimum, sublineare. Habitat in Luzon altera ex insulis philippicis, floretque Novembri. Vidi siccam in eodem herbario (i. e. Ludovic. Née).

Explic. tabulae quae plantam sistit integram magnitudine naturali. a Flos. b Idem auctus.

Obs. Planta americana a Richardo in patria lecta, quam nuperime mihi communicavit D. Vahl, procerior est nostra philippica.

Note: = *Aristida Cumingiana* Trin. et Ruprecht.

CAVANILLES cited LAMARK's description, but he described and figured a distinct old world species, differing from the South American species in the absence of the column. The description and the plate identify the species, afterwards named *A. Cumingiana* by TRINIUS and RUPRECHT.

***Aristida capillacea* Lamark.**

Tableau Encyclopédique et Méthodique des trois règnes de la nature. Botanique. Première Livraison. Par M. le Chevalier de la Mark. Paris, [1791], Illustration des Genres, pag. 156. n. 777!

A. humilis panicula composita capillacea, aristis laevibus divaricatis.

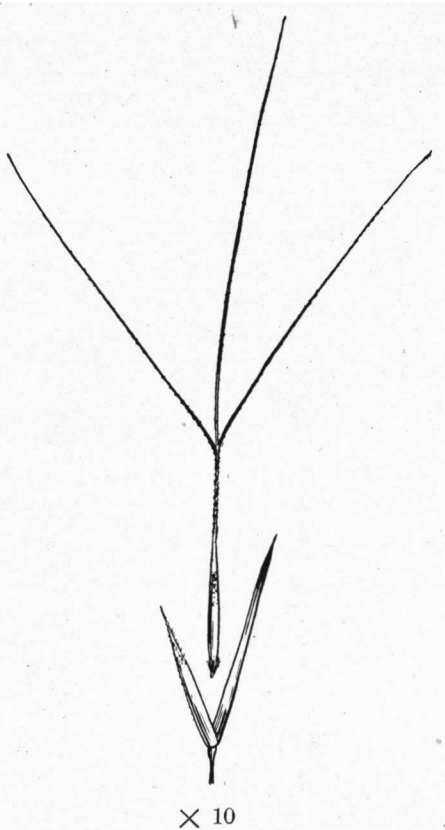
Ex America merid. *Communic. à D. Richard.*

The type, from Cayenne, received from D. RICHARD, is in the Lamark Herbarium (Muséum d'Histoire Naturelle at Paris). RICHARD communicated the plant to different other botanists. I saw a specimen in the Vahl Herbarium. The species is well-represented in europæan herbaria and is easy to recognize by the very delicate habit, very small spikelets and the slender, twisted, scaberulous column, about 2 mm. long.

***Aristida caput-medusae* Domin.**

K. DOMIN; Beiträge zur Flora und Pflanzengeographie Australiens, in Bibliotheca Botanica, herausgegeben von Prof. Dr. CHR. LUERSEN, Heft 85¹ [1915] pag. 344!

Perennis, dense caespitosa, multiculmis, glaucescens, rigidiuscula, eximie xerophila; culmi duri, rigidi, graciles, glaberrimi, laeves (nec striati), ramosissimi, supra medium foliati, circa 5 dm alti; folia culmea valde distantia, rigida, omnino glabra; vaginae breves vel brevissimae, circa 2 cm longae, quam internodia multo breviores; laminae rigidiusculae, anguste convolutae, breves (raro 4 cm longae), erecto-patentes, glaberrimae; ligula brevissima, ad ciliis vix 0.25 mm longas redacta; panicula subcolorata pallidave, coarctata, subspiciformis, late oblongo-cylindrica, subdensa, cum aristis circa 3—6 cm longa et 2.5—3.5 cm lata; spiculae breviter pedicellatae, primo suberectae postremo plus minusve divaricatae; glumae inaequales glumellis conspicue breviores; gluma I. 2.8—3.75 mm longa, ovato-



ARISTIDA CAPILLACEA Lamark.
From Leprieur, French Guiana.

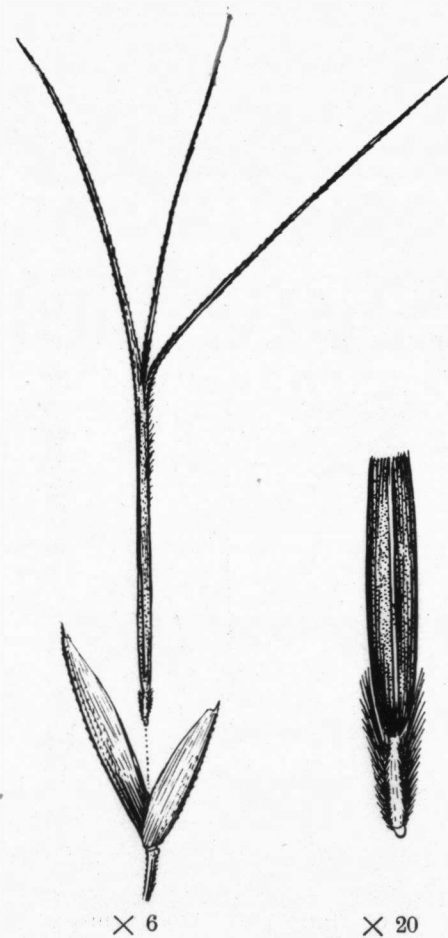
lanceolata, scariosa, uninervis, brevissime vel vix mucronatula; gluma II. quam I. angustior, perangusta, convoluta, scariosa, 4.5—

5.5 mm longa, breviter mucronatula; *glumella* angustissima, lineari-convoluta, laevis, circa 6—7.5 mm longa; *aristae* capillares, subaequales, 8.5—12 mm longae.

Abbildung: Tafel XIV, Fig. 3—5.

Queensland: auf den Sandhügeln der Dividing Range bei Jericho, besonders in den xerophilen Acacien-Wäldern sehr verbreitet (DOMIN, III. 1910).

Eine der *A. vagans* verwandte Art, durch die Form der Rispe aber sofort zu unterscheiden. Es ist dies wohl dieselbe Form, die BENTHAM (Fl. Austr. VII. 563, 1878) als *A. vagans* var. *compacta* aus Süd-Queensland (Warwick, BECKLER, NERNST) beschrieben hat. Diese Varietät wird auch von F. M. BAILEY in Syn. Queensl. Fl. 648 (1883), Catal. Plants Queensl. 56 (1890), Queensl. Fl. VI. 1874 (1902), Compreh. Catal. 622 (1913) sowie von TURNER (Proc. Linn. Soc. N. S. Wales XXX. 87, 1905) erwähnt.



ARISTIDA CAPUT-MEDUSAE Domin.
From Queensland, Warwick (Beckler).

Aristida Cardoso Coutinho.

ANTONIO XAVIER PEREIRA COUTINHO; Separata dos Arquivos da Universidade de Lisboa, Vol. I. [1914] p. 273. Herbarii Gorgonei Universitatis Olisiponensis Catalogus.

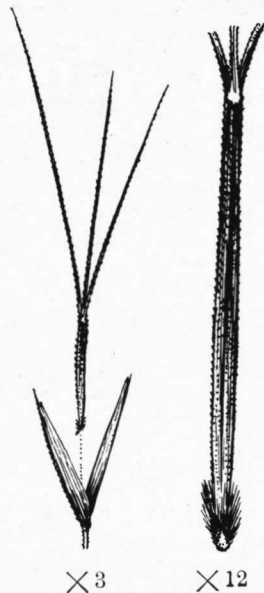
40. *Aristida Cardoso*, P. Cout. (*ad interim*). An nova spec.?

Radix annua, fibrosa; culmi fasciculati, geniculati-adscendentes, 1—4 dm. longi, a basi ramosi, ramis interdum ad nodos fascicula-

tis; folia vaginis glabris subsetacea v. anguste linearia, 0,5—2 mm. lata, plana, superne scabrida, apice setaceo-subulata; ligula breviter pilosa; panicula stricta, ramis plus minusve ad caulem adpressis, pedicellis saepissime spiculis brevioribus; glumae vix inaequales, 6—7 mm. longae, violaceae v. pallide flavescentes, anguste lanceolato-lineares, 1-nerviae nervo valido, inferior (gluma I) angustior et acutior apice sub-3-denticulata denticulo medio majore, superior (gluma II) 1 mm. circa lata apice eroso-ciliata; glumella inferior (gluma III) 4—5 mm. longa, vix scabra, basi annulo piloso brevissimo praedita, apice cum arista decidua articulata; arista inferne breviter simplex non torta, in setas tres scabras parum divergentes et parum inaequales 11—13 mm. longas divisa. Spec. in Sectionem *Arthrathrorum* collocanda.

In Ins. S. Antonii (Cardoso, Set. — 1893);
in Ins. S. Nicholai (Cardoso, Nov. — 1893).

Dr. A. W. HILL, Director of the Kew Herbarium was so kind to sent me a copy of COUTINHO's description. I received beautiful portions of the two plants, cited by COUTINHO, through the courtesy of Prof. RUY TELLES PALHINHA, Director of the Herbarium at Lisbon. The species is very interesting; as to the habit, there is so much resemblance with the common *Aristida adscensionis*, that the plants are always found in herbaria as *A. adscensionis*. The characters of the glumes however are very striking, the glumes are about equal, both emarginate at the summit, or the lower but minutely so, the body of the lemma is much shorter than the glumes and there is a nodule between the lemma and the awns. This nodule is a true articulation, at maturity the awns are deciduous. The species therefore belongs to DOMIN's section *Arthrochaetaria*. The four species described by DOMIN from Australia are said to be perennial, the African species belonging to this section are annual. A fine series of the species was sent to the Rijks Herbarium by the collector from the Cape Verd Islands. These plants agree with the characters given above, the awns however are somewhat variable in length, they are not rarely 20—23 mm. long, although



ARISTIDA CARDOSOII
Coutinho.

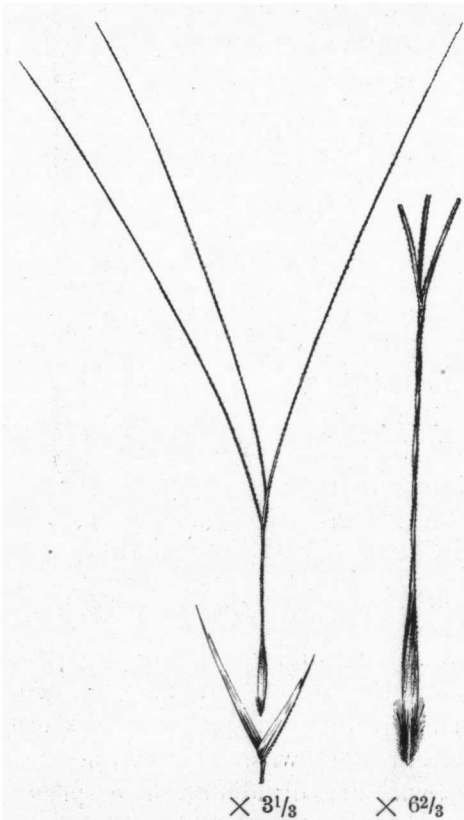
From type specimen.

there is also a specimen with awns 10—14 mm. long, the latter agrees with the type.

Aristida Cassanellii Terracciano.

A. TERRACCIANO; Contribuzioni alla conoscenza della flora dell' Africa orientale: II. Florula di Anfilah, in Annuario del Regio Instituto Botanico di Roma, redatto R. Pirota, Anno V. [1892] p. 941

Culmis gracilibus, abbreviatis, foliis setaceo-convolutis, acutiusculis, margine leviter ciliatis, ligula pilosa lateraliter longe barbata, guaina glabra, basi albo-



ARISTIDA CASSANELLI Terracciano.

From type specimen.

bata, guaina glabra, basi albo-membranacea, panícula oblonga, capillacea, conferta, ramulis 3-floris, glumis inaequalibus carinatis, dorso et margine denticulato-scabris, inferiore cuspidata et minore, altera longiore et apice trifida, cuspidate medio maiore validioreque, glumella minima, basi ad rachidem barbata, stipite gracili recto, apice longe triseta. Quam maxime *A. Schweinfurthii* Boiss., *Fl. or.*, V, p. 493, proxima, sed ligulis et floribus differt. Amico carissimo Cajetano Cassanello, genuensi, Scillae R. Navis praefecto, cuius auxilio Hamphilam peragraré potui, grato animo dicatam nunc volo.

Hab.: terra ferma, verso Ras Morah (24, III).

Note: = *Aristida mutabilis* Trin. et Rupr., var. *tenuis* (Hochst.) Henrard.

The type in the herbarium of the Orto Botanico at Florence is labeled by TERRACCIANO: „no. 1523, *Aristida Cassanellii* n. sp. aff. *A. Schweinfurthii* Boiss., Baja di Anfila, terra ferma, 24. III. 92.” Another label bears the name *Aristida tenuis* HOCHST., given by CHIO-

VENDA. The plant is distinguished by the long column and belongs indeed to *A. tenuis* HOCHST.. The plant was kindly received in loan from Prof. CARANO and Prof. CHIOVENDA.

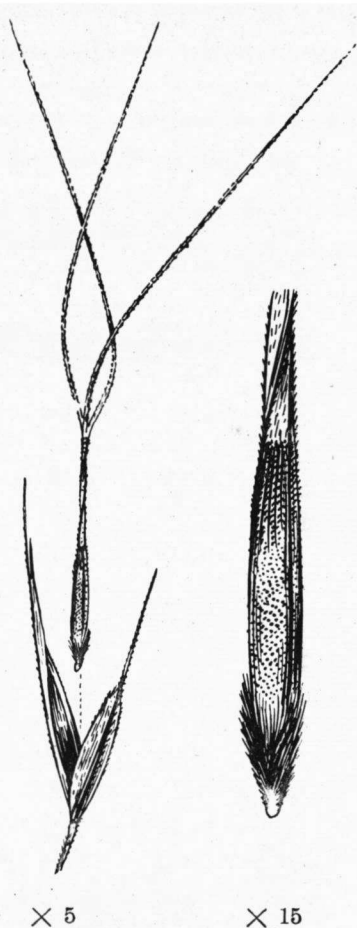
***Aristida caudata* Andersson.**

ANDERSSON; Enumeratio plantarum in Insulis Galapagensibus hucusque observatarum, in Kongl. Svenska Fregatten Eugenie Resa omkring jorden, under befäl af C. A. Virgin, åren 1851—53, utgifna af K. Svenska Vetensk. Akademien, Stockholm, [1861] Botanik 2. p. 49!

74. Panicula 4—5 pollicari, spicatum condensata, basi interdum interrupta, ramis a basi spicatis, brevissimis; glumis cuspidato-acutatis, superiore apice subbifida; flosculo pubescente, longius rostrato, cum arista persistente articulato, infra aristam bis vel semel torto nudis, setis patenti-divaricatis, scabriusculis. — *Ands.* l. c. p. 144.

Hab. locis lapidoso-graminosis insulae Indefatigable (Ipse).

Radix fibris brevibus glabris fasciculata. Culmi caespitosi vel subsolitarii, 2—3-pedales, stricti, basi squamati, parte inferiore subramosi, parum geniculati, firmi, 1—1½ lin. crassi, inferne obscuri, ceterum virides, internodiis parte superiore scabris. Folia subpedalia, acuta, planiuscula vel marginibus revoluta, 2 lin. lata, subtus glabra, supra scabriuscula; vaginae maximam partem internodiorum tegentes, superne juxta margines scabriusculae ceterum glabrae; ligulae loco pili longiusculi albi. Panicula basi vagina inclusa, caudato-oblonga, subarcuata, obtusa, 5—6-pollicaris, medio vix semiunciam lata, ramis usque ad basin spicatis. Spiculae sessiles; glumae hyalinae, nervo viridi scaber-



ARISTIDA CAUDATA Andersson.
From type specimen.

rimo carinatae et aristatae, apice (interdum obsolete) bifidae; flosculus glumis $1\frac{1}{2}$ lin. brevior, trigonus, fuscescens, parte superiore pubescens, longius rostratus, ibique infra aristam cum flosculo articulata semel vel bis tortus; setae divaricatae, glabriusculae, aequales.

Ab ARISTIDA SUBSPICATA certe distinguitur rostro flosculi numquam quater torto, eodemque modo quo ab AR. REPENTE etiam differt: culmo elato stricto, foliis latis supra obsolete pilosis, glumis nullo modo obtusis, setis subuncialibus. ARISTIDAM autem nostram DIVULSAM et COMPACTAM quodammodo conjungit, sed a priori recedit culmo multo crassiori et firmiori, foliis latioribus saepius planis, panicula caudatim contracta, gluma superiori apice interdum bifida, interiori longius aristata, utraque nervo viridi hispido carinata, flosculo hirsutulo longius rostrato, et ab A. COMPACTA culmo, foliis et panicula etiam majoribus, gluma inferiori acutata, rostro semel vel bis tantum torto, setisque etiam glabrioribus.

The type, in the Stockholm Herbarium, has been kindly lent to me by Prof. C. A. M. LINDMAN. Duplicates in many of the larger european herbaria. ¹⁾

Aristida chaetophylla Steudel.

ERNST GOTTLIEB STEUDEL; Synopsis Plantarum Glumacearum Pars I. [1855] p. 420! no. 108 b.

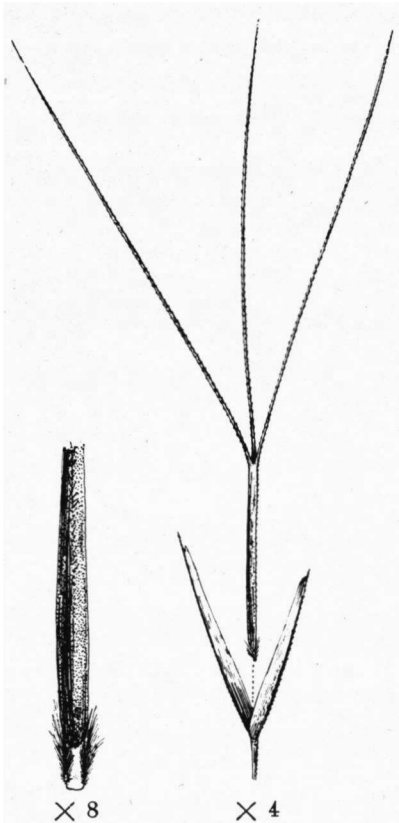
Radice fibrosa caespitifera; culmis erectis simplicibus cum tota planta glaucescentibus, intermixtis sterilibus, floriferis 3-6-pollicaribus; vaginis striatis glabris; ligula vix ulla nisi pilorum brevium series; foliis tereti complicatis in apicem setaceum terminatis glabris scabriusculis culmum subaequantibus; panicula elongata (3-4-pollicari) contracta; radiis solitariis vel subfasciculatis inaequalibus rectis paucifloris; glumis inaequalibus angustis linearibus apice subbifidis et breviter setuloso-mucronatis, inferiore flosculum parum superante, superiore parum eo brevior; arista basi non torta nec articulata, setis parum inaequalibus patentibus 5-7''' longis scabriusculis. Aristidae congestae nr. 108 forte nimis affinis. *Boivin* legit in Madagascar.

¹⁾ It is my intention to give in my monograph an enumeration of all the Aristidas studied by me, with an indication in which herbarium I have seen the specimens.

The type, probably in the Franqueville Herbarium, was not seen by me. A duplicate was found among undeterminate *Aristidas* in the Vienna Herbarium, labeled: Madagascar, 1846—48, Boivin. A fine series of the species, also collected by Boivin, I received for study from the Museum d'Histoire Naturelle at Paris, by the courtesy of Prof. Dr. H. LECOMTE (Herbier E. Drake, labeled by Mss. A. CAMUS as *A. chaetophylla*). The plants have quite the habit of the

A. adscensionis, collected in the Island of Ascension, they are tufted with sterile innovationshoots, thus indicating that they are probably perennial. Although much resembling the true *A. adscensionis*, they differ in the subbifid apex of the glumes. The lower glume is 6 mm. long, subbifid or rather abruptly toothed and narrowed into a short awn, the keel and the sides are scabrous; the upper glume is about 7 mm. long or slightly longer, the apex is bifid with a short awn from the sinus, the awn surpassing the lateral setae, the keel is scabrous; the lemma is about as long as the upper glume and the awns are 15—16 mm. long. *A. chaetophylla* differs moreover in the shape of the callus, which is abruptly truncate and equally broad everywhere (see my figure), whereas the callus in *A. adscensionis* is conical, blunt and rounded at the summit. The glumes have according to STEUDEL'S

description an inverse position (lower glume longer than upper). This character if present indeed, would be of great importance to recognize the species at once from the *A. adscensionis*, but neither the Vienna specimens, nor the beautiful plants from the Paris Herbarium show this character and STEUDEL'S statement is probably an error, all the other characters given in the description perfectly agree with the plants I have seen.



ARISTIDA CHAETOPHYLLA Steudel.
From type specimen.

Aristida chapadensis Trinius.

C. B. TRINIUS; Graminum Supplementa, in Mém. Ac. Imp. des sc. de St.-Pét. Tom. IV. [1836] p. 48!

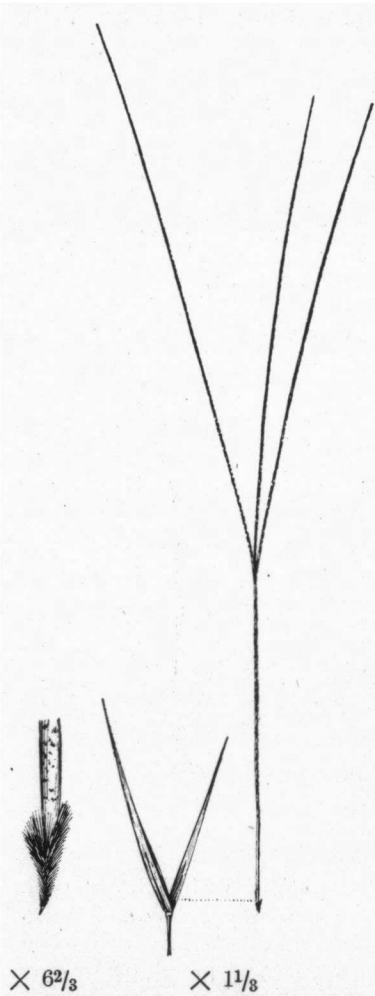
Paniculae (maximae) laxissimae, subsecundae, nutantis radiis 2—4nis, superius floriferis; Glumis subaequalibus, acuminatis, flosculo ad divisionem usque torto et 13—15-lineali duplo brevioribus; Setis patentibus flosculo $\frac{1}{3}$ — $\frac{1}{2}$ longioribus; media paulo majori; Foliis planis convolutisque, glabris.

V. spp. Bras.

Culmus cum panicula 4-pedalis, simplex. *Vaginae* internodio breviores, glabrae l. ad faucem puberulae. *Ligula* margo angustissimus, prominulus. *Folia* inferiora ultrapedalia. *Panicula* ultra-sesquipedalis, laxissima et lucidissima, fuscescendo-purpurascens. *Spiculae* ut in praecedente, sed glumarum subaequalium superior (nec inferior) paulo major et flosculus longior.

TRINIUS et RUPRECHT; Spec. Gram. Stipaceorum, loc. cit. [1842] p. 123!

Paniculae 10—18 pollicaris, exsertae, flaccidae, subsecundae, nutantis radiis 2—4-nis, erecto-patentibus, semipedalibus, longioribusve, divis, infra medium adpresse floriferis; glumis subaequalibus, subcoloratis, 8—10 linealibus; flosculo colorato, apice in stipitem longum tortum attenuato, 12—15 lineali; setis subaequalibus,



× $6\frac{2}{3}$ × $1\frac{1}{8}$
ARISTIDA CHAPADENSIS Trinius.

From type specimen.

patentibus, media paulo longiore subbipollicari.

In siccis arenosis Serra da Chapada. Majo. (Riedel!)

Radix perennis, subrepens. *Culmus* cum panicula 3—4 pedalis, plerumque simplex, erectus, robustus, crassitie pennae anatinae, ad

nodos fuscus tumidus, ceterum sordide fuscescens et maculatus. *Vaginae* internodiis breviores, glabrae et ad oras coloratas hispidulopilosae. *Ligula* subnulla. *Folia* tum plana, tum convoluta, glabra, inferiora ultrapedalia.

The type specimen in the Trinius Herbarium at the Académie des Sciences, Leningrad. Duplicates in several europaean herbaria. A distinct species of DOELL's *Schoenatheron* group, with inverse position of the glumes; easy to recognize by the habit, the panicle and the shape of the callus.

***Aristida Chapmaniana* Nash.**

G. V. NASH, in JOHN KUNKEL SMALL; *Flora of the Southeastern United States*, New York, [1903] p. 118!

Stems densely tufted, 7—10 dm. tall, finally more or less branched: leaf-blades 1—2 dm. long, 1.5—2.5 mm. broad, flat, long-acuminate: panicle 2—4 dm. long, the branches short and appressed: spikelets 6—8 mm. long, rather crowded on the branches, the 2 outer scales 1-nerved, or the first rarely with faint lateral nerves, the first one shorter than the second; usually strongly hispidulous, the flowering scale about 5 mm. long, glabrous or sparingly hispidulous on the upper part of the keel, the central awn widely spreading, at right angles to the scale, 1.8—2.5 cm. long, the lateral awns erect, usually a little more than $\frac{1}{2}$ as long as the central awn, rarely shorter.

In dry sandy soil, North Carolina to Florida and Mississippi-Fall.

Note: = *Aristida virgata* Trinius.

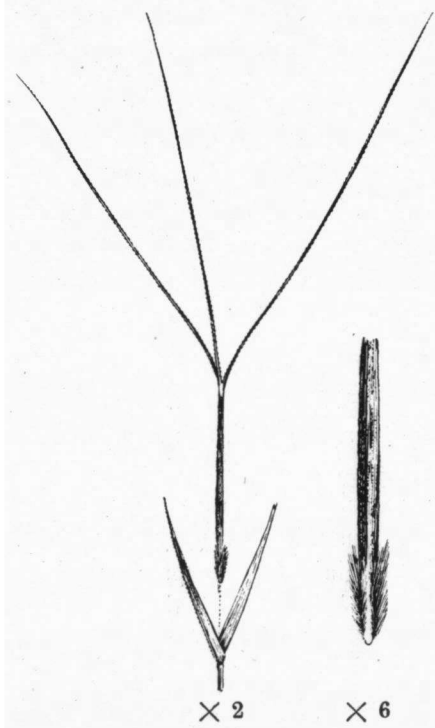
The type in the herbarium of the Columbia University, now at the New York Botanical Garden, was collected in Florida near Apalachicola bij Dr. CHAPMAN. See HITCHCOCK, *Contributions from the U. S. Nat. Herb.* XXII. p. 578.

***Aristida chaseae* Hitchcock.**

A. S. HITCHCOCK; *The North American species of Aristida*, in *Contributions from the United States National Herbarium*. Vol. XXII. [1924] p. 575!

Plants perennial; culms few in a tuft, widely spreading, glabrous,

50 to 60 cm. long; sheaths glabrous, villous at the throat; ligule a ciliate membrane, less than 0.5 mm. long; blades involute, scabrous and also villous with scattering long hairs on the upper surface, glabrous beneath, 10 to 15 cm. long; panicle narrow, 10 to 15 cm. long, the branches appressed, the lower distant about 5 cm. long;



ARISTIDA CHASEAE Hitchcock.
From type specimen.

glumes equal or somewhat unequal, 10 to 13 mm. long, acuminate or awn-pointed, the first 1-nerved with a more or less distinct nerve on one side, scabrous on the keel, the second 1-nerved, glabrous; lemma about 11 mm. long, the callus densely short-pilose, the pilose area nearly 2 mm. long, the body purple-mottled, glabrous below, scaberulous on the back from about the middle, narrowed at summit but scarcely beaked; awns equal, somewhat divergent, flat but not contorted at base, very scabrous, about 2 cm. long.

Type in the U. S. National Herbarium, no. 732548, collected on an open stony hill, at Boqueron, Porto Rico, November 12, 1913, by Agnes Chase (no. 6507).

Known only from the type collection. This species differs

from *A. cognata*, which it resembles in habit, in the longer glumes, lemma, and awns.

A duplicate of the type specimen was kindly received from the U. S. National Herbarium by Mrs. AGNES CHASE.

Aristida chinensis Munro.

WILLIAM MUNRO; Characters of some New Grasses collected at Hong Kong and Vicinity by Mr. Charles Wright in the North Pacific Exploring Expedition, in Proceedings of the American Academy of Arts and Sciences, Boston and Cambridge, Vol. IV. [1860] p. 363!

SECT. CHAETARIA.

Panicula 10—12-pollicari patula exserta, radiis solitariis geminisve usque ad basin bipartitis 1—6-uncialibus nutantibus ad axillas barbatis supra bis dichotomis quandoque axillulis barbatis; ligula ciliata. — Glumae inaequales, inferiori acuminata 5 lin. superiori sub 3 lin. longa. Flosculus apice non torto nec articulato.

Whampoia and Cum-sing-moon.

The type specimen in the Royal Botanic Gardens Kew, from the Herbarium of the late Gen. WM. MUNRO in Munro's handwriting was collected near Hong Kong by WRIGHT (Herbarium of the U. S. North Pacific Exploring Expedition under Commanders Ringgold and Rodgers, 1853—56).

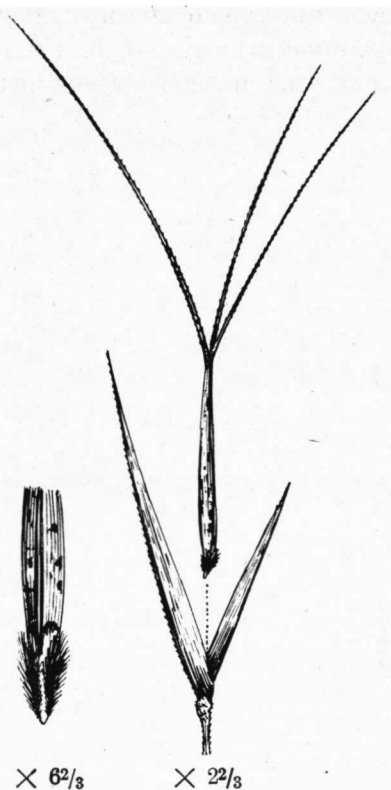
***Aristida ciliata* Desfontaines,**

in HEINRICH ADOLPH SCHRADER; Neues Journal für die Botanik. Erfurt. Band III. [1809] pag. 225!

Emendatio altera ad Floram Atlanticum.

Pag. 109, *Aristida plumosa*, Fl. Atlanticae, est species nova, distincta ab *A. plumosa* Lin. et aliorum auctorum, culmo erecto, glabro, nodis, tantum barbatis, foliis subulatis, rigidis, glaberrimis. Nunc dicenda est *Aristida ciliata*. Foliis rigidis, glabris, convolutis; nodis barbatis; aristâ intermedia longiore, plumosâ.

The species was described and figured for the first time by LAMARK in the year 1791. (Tabl. Encycl. Livr. I. p. 156. no. 778. T. 41, f. 1). He misapplied the name *Aristida plumosa*. His description runs as follows: „A. arista intermedia longiore lanata, culmis ad genicula barbatis. Ex oriente, Barbaria. Com. D. Desfontaines.” The figure is but a rough drawing, but his statement that the nodes are bearded, points clearly to the species afterwards called *A. ciliata*. In the year 1798, DESFONTAINES described the species

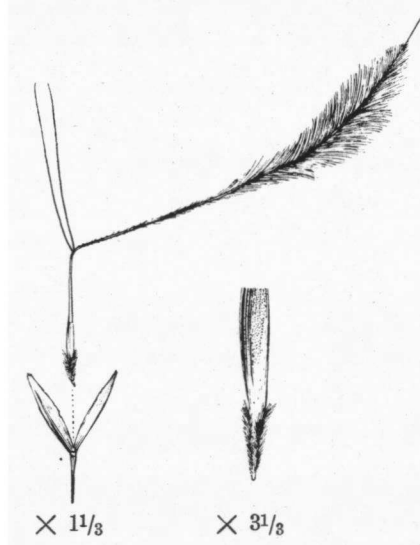


ARISTIDA CHINENSIS Munro.
From type specimen.

more exactly (see this revision under *Aristida plumosa* DESFONTAINES), he already observed that the species has glabrous sheaths, whereas the plants collected by Tournefort (the true Linnaean *A. plumosa*) have tomentose sheaths, till in the year 1809 he recognized his plant as a distinct, different species. His type was collected in Tunis near Kerwan.*) From the description given by DESFONTAINES the species is easy to recognize. I had at my disposition but one spikelet from the type, it was found carefully packed up in Balansa's Herbarium at Leiden with the statement: ex herbario Desfont. *Aristida ciliata*, Desf. *Aristida plumosa*, Desf. atl. (excl. syn.). This spikelet, figured by me, was fortunately in

very good condition and the summit of the central awn was quite undamaged, this is important because the very tip of the plumose part of the awn is naked.

The most accurate description of the species was given by DÉLILE in *Flore d'Égypte*, *Explication des planches*, p. 31, in the year 1813. Pl. 13. Fig. 3. He mentioned the naked tip of the central awn and accurately indicated for the first time the place of the articulation. As to the lemma, DÉLILE says: „elle est articulée circulairement dans son milieu où elle se brise transversalement; l'arête est plumose dans sa moitié supérieure, avec un prolongement sétiforme



ARISTIDA CILIATA Desfontaines.

From type specimen.

au-delà de ses cils latéraux." Compare this excellent description with the very insufficient one given by KUNTH in the year 1835. (*Enum. Plant. Agrost. Synopt. Tom. II. p. 150*), although KUNTH had before him the type (*Descript. juxta specim. Herb. Desfont.*).

A new genus, *Schistachne*, was based on *Aristida ciliata*. This genus was separated by FIGARI and DE NOTARIS on the character of the articulate lemma. This character is shared by several other species of *Aristida*, but since it proves not to be correlated

*) On the topographic maps this locality is given as Kairouan or Kairwan. In JAUBERT and SPACH's *Illustrationes Plantarum Orientalium* there is a beautiful plate of the species (Tab. 334 under *Arthratherum ciliatum*), but the locality given by the authors as Lybia (*Desfontaines*) is an error.

with other characters, does not seem to me sufficient for the segregation as a genus. I have accepted *Schistachne* as a section of *Aristida*, a section closely allied to the section *Stipagrostis*.

***Aristida ciliata* Desfontaines.**

var. *capensis* Trin. et Rupr.

loc. cit. p. 164!

ut β (i. e. *A. Schimperii* Hochst. et Steud.); sed mucro setae mediae apicalis pennatus. Variat ceteroquin glumis omnino pallidis l. basi tantum coloratis, aut e nigricante, sanguineo, stramineo et flavo variegatis; seta media inferne nuda vel a basi jam ciliatopilosa; glumis $4\frac{1}{2}$ —5 linealibus. — *Arthratherum ciliatum* N. E. in *Linnaea* 7. (1832) 3. p. 289. *Arthratherum Schimperii* N. E. Gram. Afr. aust. (1841) p. 178. — Ad castellum Beaufort, in collibus siccis ad Aris prope ostia Gariiep fluminis altit. vix 200 pedum et ad Bitterwatter alt. 2500 ped. (Drege!); ad Gamka fluvium. (Mundt in hb. Reg. Berol!)

The variety is distinguished by the central awn, which is plumose without a naked ex-current tip, the feathery part rounded and obtuse in outline. NEES described the plant as *Arthratherum ciliatum* in the

year 1832. The type is Drège, in districtu Beaufort, in the Nees Herbarium. The variety is limited to Southern Africa. NEES afterwards described the plant in his *Fl. Afric. austral.* as *Arthratherum Schimperii*, but in the same work, on pag. 182, he described an *Arthratherum ciliatum* from North Africa, which is, according to the accurate description and the specimen cited, (collected by Schimper, Wadi Hebran) a very different species, afterwards called by STEUDEL, *Aristida hirtigluma*. It is incomprehensible that NEES



ARISTIDA CILIATA Desfontaines.
var. *capensis* Trin. et Rupr.
From type specimen.

cited not only DESFONTAINES, but also DÉLILE's work and the fig. on plate 15, because from DÉLILE's very good description and his beautiful plate, *Aristida ciliata* is to recognize immediately. NEES thus cited at second hand and probably copied from ROEMER and SCHULTES, *Systema Vegetabilium*, II. p. 399.

***Aristida ciliata* Desfontaines.**

var. genuina Trin. et Rupr.

loc. cit. pag. 164!

Panicula saepe vaginata; gluma superiore $5\frac{1}{2}$ —6 lin.; flosculo fere 3 lineali; stipite aristae $3\frac{1}{2}$ lin.; mucronulo apicali nudo. *Aristida plumosa* (non L.) Lamarck *Illust.* 1. (1791) n. 778. tab. 41. fig. 1. exhib. specim. Desf. rude depictum. Desf. *Fl. Atl.* (1798) p. 109. — Mauritania (Mertens!); in desertis Kahirae prope Suéz, item prope Rosette m. Octobr. (Délile! in hb. Mertens.); in regno Tunetano: in montibus aridis prope Kerwan. ♀. (Desf.)

***Aristida ciliata* Desfontaines.**

var. glutinosa Batt. et Trabut.

BATTANDIER et TRABUT; *Flore de l'Algérie, Monocotylédones*, Alger et Paris, [1895] p. 159!

β glutinosa. — Quelques cils seulement aux noeuds; mais chaumes glutineux en dessous. Aïn—Sefra.

The type, collected near Aïn Sefra, in June 1888, no. 269, in Hackel's Herbarium, bearing the Vienna number 22130, was sent by TRABUT. On the label HACKEL has written: „*β. glutinosa* Trab. genicula parce barbulata non villosa.” The spikelets agree with those of the var. *genuina*, the nodes are partly bearded, other nodes are quite glabrous, but the hairs are probably delapsed. The viscid ring below the nodes is very striking, but this character is not limited to the North African plants. In South Africa there occur other varieties with the same ring below the nodes. The examination of a great many plants has shown that the viscid ring is more or less present on the swollen part of the internode just below the node. We find the viscidness in var. *tricholaena*, var. *villosa* and indicated or very prominent even in var. *genuina*, and this viscidness is an essential character of the species, a character not in corre-

lation with other characters. The var. *Schimperi* differs only in the slightly longer glumes and is omitted in my work as a variety. See afterwards under *Aristida Schimperi* TRIN. et RUPR..

***Aristida ciliata* Desfontaines.**

var. *tricholaena* Hackel.

ED. HACKEL, ap. HANS SCHINZ; Die Pflanzenwelt Deutsch-Südwest-Afrikas, in Bulletin de l'Herbier Boissier, Tom. IV. [1896] Appendix III. p. 18!

Differt a typo gluma sterili superiore infra apicem medio dorso rigide ciliata.

GR. NAM.: Lüderitzhafen, Schinz 672; zwischen Ullgama und Tschirub, Schenck 10!

Both specimens cited, I saw in the Zürich Herbarium, Schenck no. 10, also in Hackel's Herbarium, bearing the Vienna number 22122, a third specimen (Herb. Hackel, Vienna no. 22125) is from Damaraland, collected by Galpin and Pearson no. 7412 and was received from the Kew Herbarium. All the specimens have bearded nodes, but they differ in habit. In wet places the blades are longer and thinner than in the typical form, for the rest they agree with the characters given by Hackel. Another variety, found in the Berlin Herbarium, has both glumes rigidly ciliate, the long hyaline hairs are constantly placed in rows between the nerves. This plant I named:

***Aristida ciliata* Desfontaines.**

var. *pectinata* Henrard

nov. var.

Glumae steriles inter nervos rigide ciliato-pectinatae.

Africa austro-occ.: Zwartbankberg, 18 Apr. 1886, leg. STAPF, no. 9. (Herb. Berolin.).

***Aristida ciliata* Desfontaines.**

var. *villosa* Hackel,

loc. cit. pag. 18!

Differt vaginis laminisque floccoso-villosis.

GR. NAM.: Zwischen ■ Aus und dem Oranjefluss, besonders auf der ■ Anib-Ebene, Schenk 327!.

Aristida ciliata is usually glabrous throughout, excepted the ligules and auricles, the sheath-margins and the bearded nodes. The variety is very remarkable on account of the densely woolly sheaths and the lanate blades. I saw the specimen in the Zürich Herbarium and another in Hackel's Herbarium (Vienna no. 22123).

The three last varieties have a central awn with a naked excurrent tip, the feathery part however, is subacute in outline.

Aristida circinalis Lindman.

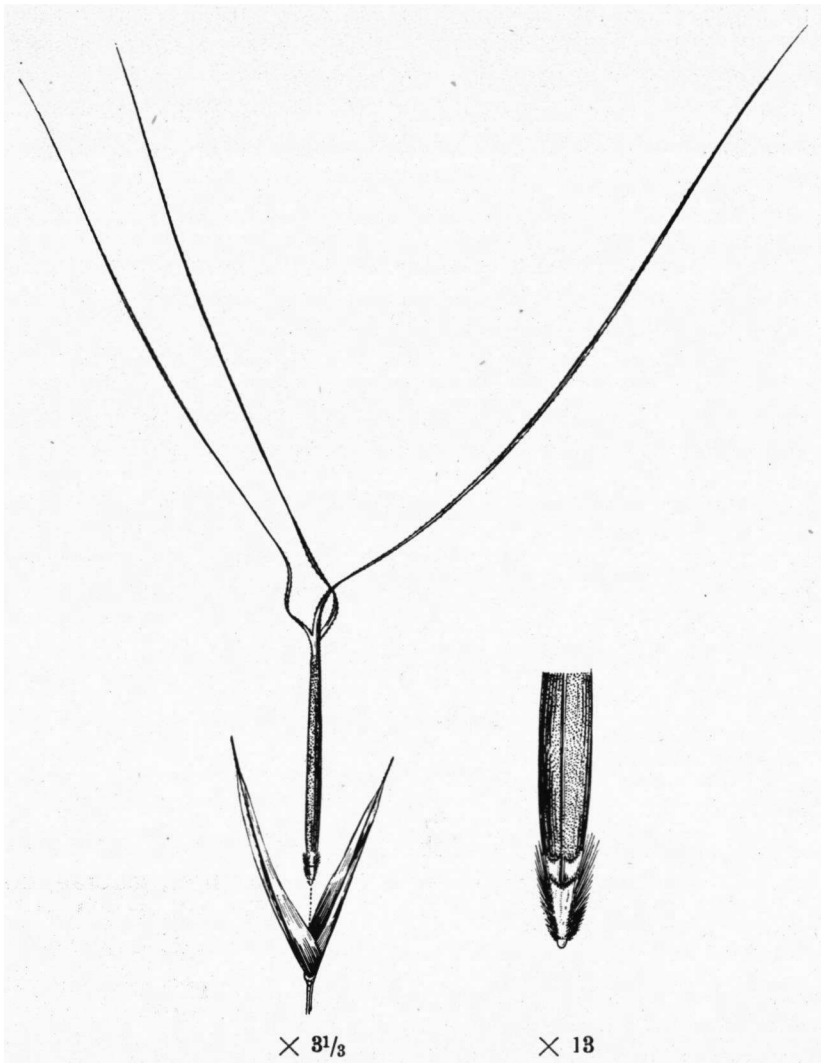
C. A. M. LINDMAN; Beiträge zur Gramineenflora Südamerikas in Kongl. Svenska Vetenskaps-Akademiens Handlingar. Bandet 34. No 6. Stockholm, [1900] pag. 13. Taf. VII, A!

Species (sect. *Rhabdatheron*) *culmis* elatis, rigidis, gracilibus, *foliis* perangustis saepius convolutis, vel setaceis, circinato-flexuosis, *panicula* gracili, laxa, subnutante, lobata, *spiculis* parvis, *glumis* partem indivisam aristae subaequantibus, cuspidatis, gluma inferiore longiore; *ramis aristae* patentibus vel deflexis, partem indivisam bis terve superantibus.

Descr.: *Culmi* erecti, stricti, e rhizomate brevi obliquo dense caespitosi, cum panicula, 0,6—0,75 m alti, teretes, laeves, glabri. *Folia* culmo multo breviora; innovationum subsetacea, 2—3 dm longa, implexo-flexuosa; folia culmi inferiora juncea, 2 mm lata, subconvoluta et circinata, 2 dm longa, superiora (3—4) breviora vaginis diam. 2 mm; *ligula* brevissima albido-hispida. *Panicula* 15—20 cm longa, laxiflora, rhachi laevi, tenui, ramulis capillaceis, fasciculatis, inaequalibus, 1—7 cm longis, scabris. *Spiculae* violaceae, denique stramineae; *glumae* subpellucidae, lineares, ex apice subtruncato vel lacero breviter setoso-cuspidatae, inferior 9—10 mm longa quam superior paulo longior. *Valvula* inferior glabra (stipite hirtello), lanceolato-linearis, superne sensim attenuata, cum arista griseo-violacea 8—10 mm longa, haec plane stricta non torta; *rami aristae* deflexo-patentes, basi applanata paulum tortae, inaequales, media 3—3,5 cm, ceterae 2—3 cm longae.

Habitu affinis *Aristidae tinctae* TRIN. et RUPR. var. *patulae* DOELL, cuius glumae minores, 5—6 mm longae, et aristae ramulus intermedius brevior, 1,5 cm longus.

Aristae fabrica et magnitudine persimilis est *Aristidae recurvatae* H. B. K., cuius panicula erecta, contracta, spiciformis, densiflora. Affinis quoque videtur *Aristidae Riedeliana* TRIN. et RUPR. (spec.



[*ARISTIDA CIRCINALIS* Lindman.
From type specimen.

Herb. Stockh. comparato), cuius culmi compressi, valvula glumis brevior, ramuli aristae breviores, quam valvula indivisa haud multo longiores.

Aristida complanata TRIN. differt foliis strictis, ligula nuda (an semper?), glumis subulatis (longioribus?), inferiore quam superior

multo brevior (superiore in speciminibus austro-brasilianis 15 mm longa), aristae parte indivisa 15 mm longa.

Hab. in *Brasilia austr.*, Rio Grande do Sul, Cachoeira, in campis sabulosis et graminosis apricis, mens. Maio florens et fructificans, Exp. I. Regnell., A, 1527.

The type in the herbarium of the Naturhistoriska Riksmuseum at Stockholm was kindly received in loan from Prof. C. A. M. LINDMAN.

***Aristida coarctata* Humb. Bonpl. et Kunth.**

Nova Genera et Species Plantarum quas in peregrinatione ad plagam aequinoctialem orbis novi collegerunt, descripserunt, partim adumbraverunt AMATUS BONPLAND et ALEXANDER DE HUMBOLDT. Ex schedis autographis Amati Bonplandi in ordinem digessit CAROL. SIGISMUND. KUNTH. Paris, Tom. I. [1815] p. 122!

A. culmo simplici?; foliis planis, interne scabris; panícula ramosa, secunda, subverticillata; glumis subaristatis; aristis subaequalibus.

Crescit in alta planitie Mexicana, inter Burras et Guanaxuato, alt. 1060 hexap. ♀ Floret Septembri.

CULMUS erectus, bipedalis, simplex?, striatus, glaber, inferne purpurascens. FOLIA linearia, plana, sicca convoluta, striata, interne scabra, externe glabra. VAGINAE striatae, glabrae. LIGULA brevissima, ciliata. PANICULA ramosa, subsecunda, quinque-aut sexpollis, ramis subverticillatis, abbreviatis, distantibus, patulis, subsecundis, rhachique scabris. GLUMAE purpurascens, glabrae, dorso scabrae, inaequales, inferior paullo minor, acuminato-subaristata, superior truncata, brevissime aristata. PALEAE convolutae, scabriusculae, albidae, inaequales, inferior glumam superiorem aequans, triaristata, aristis subaequalibus, paleam subaequantibus, scabris.

Praecedenti (i. e. *A. bromoides*) valde affinis.

Note: = *Aristida adscensionis* L.

The type in the Paris Herbarium was kindly received for study through the courtesy of Prof. H. LECOMTE. The printed label states: „Herbier Humboldt & Bonpland. Amérique équatoriale”. On the other label is written: „*Aristida coarctata*, Angostura. This

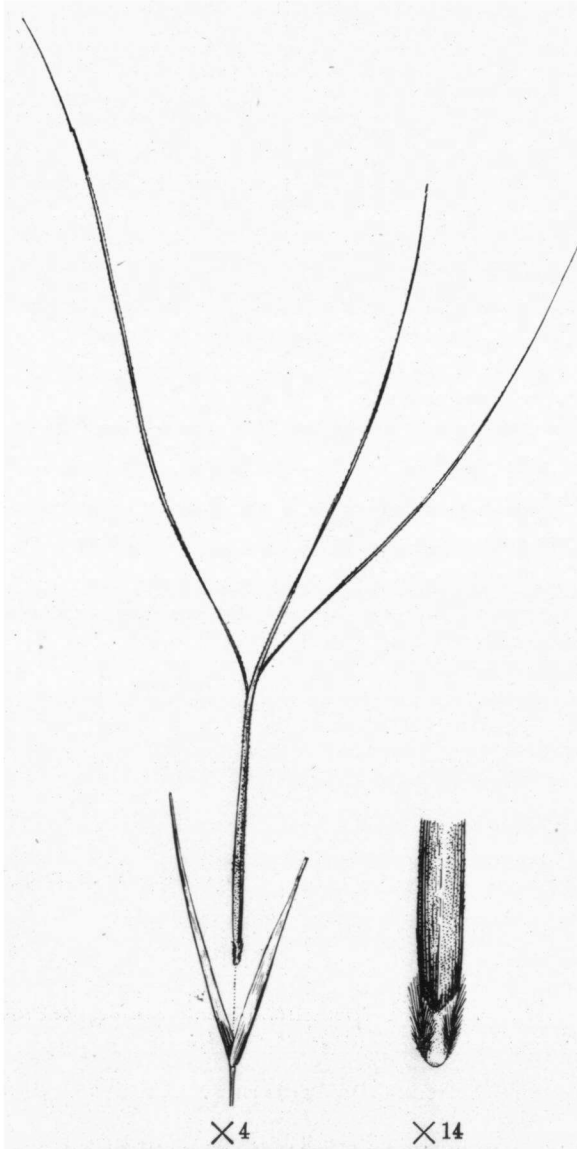
locality is different from the locality given in the description, *A. coarctata* was published from Mexico, between Burras and Guanajuato, while Angostura is a South American locality. There are two different plants on the sheet, both lacking the basal portions. I have carefully examined them. The right-hand specimen has equal glumes, both very acute and awned; the lemma has a central awn with a semicircular bend; the blades are convolute throughout; the panicle is contracted with erect, binate, not whorled branches. The plant belongs to the South American species, described as *Aristida tinctoria* TRIN. et RUPR.. This species is distributed from Costa Rica and Panama through Columbia, Venezuela and Guyana to Brazil, but was never observed in Mexico and the locality Angostura therefore belongs to the right-hand specimen. If we take the right-hand specimen as the type, the species *Aristida tinctoria* must be named *Aristida coarctata*. Applying the rule that the description of a species given by an author controls the selection of the type specimen, we cannot select the right-hand plant, because all the striking characters do not agree with the description. If we study the left-hand specimen, we find unequal glumes, the lower acuminate and aristate, somewhat shorter than the upper, which is truncate at the summit with a mucro from the slightly bifid apex; the awns are less unequal and the central one is somewhat spreading but not semicircularly curved; the blade (only the uppermost one is present) is convolute, but easy to flatten out; the panicle is not contracted, rather lax and loose; the branches are distant, semi-whorled, subsecond and somewhat spreading. All these characters agree with the description. The plant is the somewhat open-panicled form of the common *Aristida adscensionis*, a form not uncommon in Mexico. For these reasons the left-hand specimen is accepted as the type of *A. coarctata*. In the Willdenow Herbarium, there is an *Aristida laxa* W. no. 1806, labeled by TRINIUS: *A. coarctata* Hb. Kth. fide catalogi Kunthii, (coerulescenti quidem maxime affinis!). This plant agrees with the left-hand specimen, cited above, demonstrating that the conception of *A. coarctata* is right.

***Aristida coerulescens* Desfontaines.**

RÉNÉ DESFONTAINES; Flora Atlantica sive Historia Plantarum quae in Atlante, agro Tunetano et Algeriensi crescunt. Paris, [1798] Tom. I. p. 109! Tab. 21. f. 2.

ARISTIDA foliis glabris; panicula coarctata, elongata, arcuata, subsecunda, interrupta; aristis laevibus, subaequalibus.

RADICES fibrosae, tortuosae. Culmus fere filiformis, basi saepe ramosus, 3—9 decimetr., laevis, nodosus. Folia glabra, 1 millimetr. lata. Panicula elongata, coarctata, unilateralis, arcuata, interrupta,



ARISTIDA COERULESCENS Desfontaines.
From type specimen.

16-26 centimetr. longa, coerulescens. Rachis subaspera. Pedunculi capillares, stricti, inaequales. Spiculae teretes, graciles, acutae. Calyx exterior biglumis. Glumae subulatae, inaequales. Calyx interior longior, uniglumis. Gluma gracilis, acuta. Arista tripartita; setis glabris, subaequalibus, glumâ vix duplo longioribus. Semen tenue, elongatum, glabrum.

HABITAT in arvis prope Kerwan. ♀

A. RICHARD; Tentamen Florae Abyssinicae, loc. cit. pag. 391!

ARISTIDA CAERULESCENS. Desf., *Flor. Atl.*, I, 109, t. XXI, f. 2; Kunth, *Enum.*, I, 190.

CHAETARIA CAERULESCENS. P. Beauv., Roem. et Schult., *Syst.*, II, 294.

ARISTIDA CANARIENSIS. Willd., *Enum.*, 99.

A. culmo erecto caespitoso bipedali et ultra; foliis longissimis lineari-lanceolatis glabris, subtus scabris; ligula pilosa, vaginis com-

pressis laxis, retrorsum scabris; panicula elongata contracta, laxiuscula, ramis inferioribus longis erectis; lepicenae valvulis florem aequantibus aut superantibus; exteriori lanceolata, carinata, apice sensim angustata et acutissima dorso scaberula; interiore breviori apice obtuso, subtridentato, dente medio in setula brevi abeunte, dorso uninervio et carinato, scaberulo; palea exteriori apice arista tripartita terminata; aristae ramis triquetro-subulatis, intermedio longiore.

Crescit in planitie montosa provinciae *Chiré* (Quartin Dillon).

Observation. — Les caractères de cette plante s'accordent parfaitement avec ceux de l'*Aristida caerulea* de Desfontaines. Elle est, comme nous l'avons déjà indiqué, très-voisine de l'*Aristida adoensis*. Mais ses feuilles planes, très-rudes à leur face inférieure; ses gaines comprimées, lâches, également rudes; les rameaux de sa panicule plus longs et surtout les valves de la lépicène plus longues que la fleur, la valve supérieure un peu plus courte, obtuse, à trois dents, celle du milieu allongée en une soie courte; les branches inégales de son arête, sont des caractères qui servent à distinguer facilement cette espèce.

This species was usually united by agrostologists with *Aristida adscensionis*. To my opinion it is however a distinct species. DESFONTAINES already stated that his plant was a perennial, but not much weight was given to this character by authors. BALANSA, a very accurate observer, and very familiar with the grasses, studied the species in the field on different localities and he found the species always as a perennial plant. BALANSA's fine herbarium specimens show a stout root-system with many sterile innovation-shoots, distinctly indicating perennial plants. As to the specimens found in herbaria, I will observe, that they are not always collected sufficiently, and that they are often very fragmentary, but beautiful collections distributed by BOURGEOU, REVERCHON and HACKEL from Spain and the fine series collected by BALANSA in North Africa give a good idea of the species. Sometimes herbarium specimens lack the sterile innovation-shoots, these are plants probably flowering for the first time, such specimens were collected by BALANSA, growing together with the perennial plants.

A second fact to notice is the geographical distribution. There are two distinct regions, the one is western mediterranean and includes the europaean localities southern Spain and Sicilia, and the North African range Tunis, Alger and Marocco, extending

westward to the Canaries. The europæan localities already have a subtropical flora and a pronounced North African aspect. There is a second, eastern mediterranean-arabian region extending from Syria and Palestine to Arabia, eastward to Persia and southward to Abyssinia. Here the species is found in the same state, but more variable than in the western range. In the New World the so-called *A. coerulescens* was, as I found, always something else, mostly belonging to *A. adscensionis*, or if such plants were perennial, they appeared to belong to other species.

Aristida coerulescens is moreover a stouter species, with larger spikelets and longer awns, and the habit thus mostly different from the habit of the *A. adscensionis*. I had at my disposition a small portion of the type, found in BALANSA's collection (thus BALANSA already compared his specimens with the type!). I have not seen an authentic specimen with innovationshoots, a duplicate type in the Vahl Herbarium at Copenhagen, sent by DESFONTAINES, unfortunately lacks the base, but the spikelets of the rather meagre specimen agree perfectly with those of the actual type. Because the old types are glued upon the sheets, they are better preserved than many recent types, the latter being often much damaged in course of time. In the type the lower glume is $7\frac{1}{2}$ mm. long, subobtusate or subacute, the upper is $9\frac{1}{2}$ mm. long, obtuse, slightly bifid at the apex with a mucro, the lemma is 8—9 mm. long, the central awn is 23 mm., the lateral ones are about 18 mm. long.

My opinion of the species is based on the spikelets of the type and on the good collections mentioned above. It is to understand that species with a rather large geographical distribution are variable, but for the moment we can only classify them by technical characters. To disentangle the different forms it is necessary to cultivate them under favourable conditions in the mediterranean region. Finally I must observe that *A. coerulescens* was generally found on limestone hills or on calcareous ground, whereas *A. adscensionis* is found in sterile or sandy soil, in fields and pastures. For all the reasons enumerated here, it was impossible to unite *A. coerulescens* with *A. adscensionis*, not even as a subspecies.

RICHARD's description, given above, differs as to the position of the glumes, the first glume is the shorter one and is scabrous on the keel, the upper is smooth and as long as or slightly longer than the lemma. Richard's statement, repeated in the french description, is an error. I saw a duplicate type of RICHARD's plant in the Berlin Herbarium, labeled: „Ex herb. Franqueville, Chiré, Martin-Dillon.” This plant is indeed an *Aristida coerulescens*, and the

spikelets agree with those of the type, demonstrating that RICHARD overlooked the true position of the glumes.

***Aristida coerulescens* Desfontaines**

var. *breviaristata* Schweinfurth.

G. SCHWEINFURTH; Sammlung arabisch-aethiopischer Pflanzen, in Bulletin de l'Herbier Boissier, Tome II. [1894] Appendix n° II. p. 27!

Aristae setis 5—20 mm. longis foliis elongatis.

ARAB., JEMEN. Fuss des Gebel Bura (600 m) 323; Ussil (1134; Wolledje, Fuss des G. Melhan (600 m.) 683; Menacha (2200 m.) 1524; Regma bei Hodjela (900 m.) 981.

ARAB., ADEN. Ueber den Kohlendepôts der Messageries 26, coll. 1881. Loc.: Kies und Gerölle, zwischen Felsblöcken u. s. w., fr. Jan. März 89.

AETH., COL. ERITREA. Saganeiti (2200 m.) 1745, coll. 1892; unter Geleb (1500 m.) 1103, coll. 1891.

The varieties, described by SCHWEINFURTH, belong to my opinion mostly to the typical *A. adscensionis*; having not seen all the plants mentioned, it may be that some of them belong to *A. coerulescens*. The statement that the awns are 5—20 mm. long cannot be used to distinguish the variety from other varieties. Even the type of *A. adscensionis* has awns about 12 mm. long (see my figure on pag. 8). There are many other varieties having awns 10 mm. or less long. Specimens with 5 mm. long awns I never saw. The statement: blades elongate, is insignificant, in both *A. adscensionis* and *A. coerulescens* the length of the blades is very variable. No character is present to distinguish the variety, which is therefore omitted in my work.

***Aristida coerulescens* Desfontaines**

var. *brevifolia* Schweinfurth.

G. SCHWEINFURTH, loc. cit. p. 28!

var. *brevifolia* Schwf. (*A. modatica* Steud. Syn. I, 139), foliis 1.5—6 cm. longis, aristis brevibus 1.5—2 cm. longis.

AETH., COL. ERITREA. Samhar Hügelland in Ost vom Austritt

des Lava (200 m.) 1755, coll. 91; Saati (150 m.) 82, coll. 91; Scheqat-Qieh (80 m.) 1776. 1755, coll. 91.

Loc.: Kiesgerölle und Rinnsale trockener Bäche, fr. Febr.—April.

Nom. vern. in Tigrinia: *zumbia* (Hamasen).

The variety belongs to *Aristida adscensionis*. *Aristida modatica* mentioned as a synonym, was a new name given by STEUDEL to HOCHSTETTER's *Aristida mauritiana*, because there was already a species bearing this name, described by KUNTH from Mauritius. The type of STEUDEL is Schimper no. 1047, described by RICHARD, Tentam. Fl. Abyss. l. c. pag. 392. This plant belongs indeed to *A. adscensionis*. The vernacular Tigre name: Zumbia or zembëa found on the herbarium labels belongs to different forms of the annual *A. adscensionis*. The variety is omitted in my work.

Aristida cognata Trinius et Ruprecht.

Spec. Graminum Stipaceorum, loc. cit. pag. 127!

Paniculae 5—6 pollicaris, longe exsertae, contractiusculae, linearis, subsecundae radiis inferioribus subgeminis, stricte patentibus, mox supra basin floriferis: longioribus $1\frac{1}{2}$ —2 pollicaribus; glumis pallide stramineis, parum inaequalibus, *acuminatissimis*, fere 3 linealibus; flosculo apice scabriusculo, *nec articulado neque torto*, trilineali; setis erecto-patentibus, subaequalibus, media 4—6 lineali.

Aristida Adscensionis Swartz Observ. (1791) p. 40?

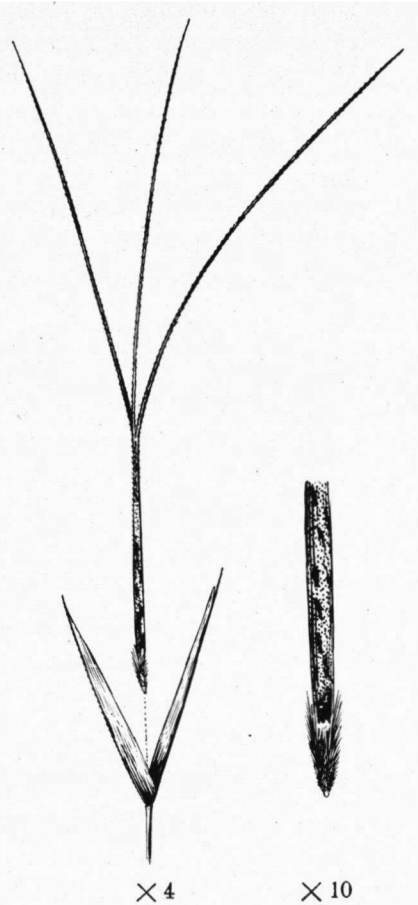
Ins. St. Thomas Ind. occ. (Ventenat in hb. Schrader! nunc Hort. Imp. Petrop.)

Culmi pars abscissa ultrapetalis, ad nodum supremum parum geniculata, pertenuis. *Ligula* suprema minuta in ciliis brevissimas soluta. *Folia* suprema angustissima, filiformi-convoluta, glabra, 3-4 pollices longa. A simillima *A. setifolia* H B K. differt: gluma inferiore multo magis acuminata flosculum aequum inarticulatum fere attingente, aristis minus divergentibus.

β . *media*. Gluma superiore $3\frac{1}{2}$ -4 lineali flosculum apice articulatum et vix tortum adaequante, glumam inferiorem linea dimidia superante; seta media 8-12 lineali. — V. spp. cc.

The authors state that the plant is in Schrader's Herbarium in the Botanical Garden at Petersburg. Through the courtesy of Prof. BORIS FEDTSCHENKO, director of the Botanical Garden at Leningrad, I could study the types from the Herbarium, but *Aristida cognata*

was not found among them. Prof. HITCHCOCK in his often cited work on the North American Species of *Aristida*, states that the type is in Trinius' Herbarium (at the Académie des Sciences) and was sent by SCHRADER. The species was described by the Russian authors from a flowering culm, lacking the base, the description of this fragment agrees with plants from the type locality, collected by EGGERS and distributed in exsiccatae by A. TOEPFFER in 1880. In a key on pag. 532, HITCHCOCK gives differences between the species *A. cognata* and *A. Swartziana* (= *adscensionis* Swartz), especially as to the length of the first glume, the lemmas and the awns. Having studied authentic specimens of *Aristida Swartziana* (Herb. Thunberg, Herb. Schreber) I could not find differences between glumes and lemmas of the two species, the awns in *A. cognata* however are shorter than in the type of SWARTZ. Another character given by HITCHCOCK is the different habit. *A. cognata* with culms spreading and branching at the base, *A. Swartziana* with erect (simple) culms. If we compare the two descriptions given on pag. 576 and 577, we find a great resemblance. Speaking of *A. cognata* HITCHCOCK says: "This species is allied to *A. Swartziana*, but differs in the spreading habit with few innovations, the more dense panicle, and the shorter glumes, lemmas, and awns. The different range tends to confirm the segregation of the forms as species." We cannot use the spikelet characters to separate the two species, and the differences as to the vegetative characters cannot be exactly established because *A. cognata* was described from a fragment and nothing is said about the habit. In herbaria the material of both species is rather scanty. *A. cognata* I saw from



ARISTIDA COGNATA Trinius et Ruprecht.

From type locality.
(St. Thomas, Eggers).

the Virgin Islands and from Saba. There is a specimen in Persoon's Herbarium labeled „Antilles ou Cayenne.”

Notwithstanding all these incertitudes, I have taken up both as distinct species in my monograph, but only on account of the constant combination of the different vegetative characters (so far as they are to infer from the material I have seen) and the different geographical distribution. *A. cognata* is thus characterized by the longer panicle branches, the shorter awns of the lemma, the branched culms and the shorter blades. No value can be attached to the innovations, because most of the herbarium specimens are prepared by dividing the plants.



ARISTIDA
COMA-ARDEAE Mez.
From type specimen.

The group of the „cognatae” is a very difficult one, and more material is wanted to get a better idea of the species of this group, which contains two other species, both with a different position of the glumes (glume I. longer than II.). One of these species I already described as *A. arubensis* (see pag. 41), another occurs in the island of St. Eustatius. All the species have a lemma with a short scaberulous beak and a faint nodule below the branching point of the awns. This nodule is however not a true articulation. What TRINIUS and RUPRECHT described as var. *media* is still unknown, according to the few characters given by them (central awn 20—30 mm. long, articulation indicated), it may be that this variety belongs to *Aristida Swartziana*.

Aristida coma-ardeae Mez.

CARL MEZ; in FEDDE, Rep. spec. nov. loc. cit. XVII. [1921] p. 152!

Perennis, gracillima. Vaginae culmi quam internodia breviores, glabrae, bene scabrae; ligulae in pilorum niveorum comam paullo prominulam mutatae; laminae setiformes, glabrae. Inflorescentia pauciflora, simplex subracemosa, tenuiter cylindrica. Spiculae quam pedicelli satis longiores, breviter pilosae. Glumae apice anguste denticulato-truncatae, 3-nerviae, inferior ad 12, superior ad 14 mm longa. Paleae medio articulatae unguis ad

2 mm longus; rostrum vix tortum, ad 9 mm longum; seta media ab $\frac{1}{3}$ longit. niveo-plumosa ad 75 mm, laterales nuda ad 18 mm longae.

Damaraland (Galpin et Pearson).

Note: = *Aristida Dinteri* Hackel.

The type, in the Berlin Herbarium, kindly received in loan from Prof. PILGER, bearing the name in Prof. MEZ' handwriting, is a duplicate from the Kew Herbarium labeled: ex Herb. Hort. Bot. Reg. Kew, no. 7416. *Aristida* sp. near *A. plumosa*, L., Damaraland, Welwitsch. Coll. Galpin & Pearson. acc. 6. V. 1910. The plant agrees perfectly with the type of HACKEL'S *A. Dinteri*.

Aristida Combsii Scribner et Ball.

F. LAMSON—SCRIBNER and CARLETON R. BALL; Miscellaneous notes and descriptions of new species. United States Department of Agriculture. Bulletin N^o. 24. Washington, [1901] p. 43! Fig. 17.

A tall, strict, leafy perennial, 8 to 12 dm. high, with long, rigid leaves and large compound panicles. Culms simple, terete, smooth. Sheaths longer than the internodes, smooth, striate, 1 to 1.5 dm. long, lower mostly purple; ligule a very short ring; leaf-blades linear, rigid, erect, attenuate into a long subulate point, 3 to 6 dm. long, 2 to 4 mm. wide, flat or semi-involute, smooth below, scabrous and somewhat glaucous above. Panicle large, 4 to 6 dm. long, strict or somewhat flexuous; rachis scabrous; branches long, ascending or suberect, straight or flexuous, compound, scabrous, single or in pairs, one short and few-flowered, the lower longer ones 1 to 2.5 dm. in length, naked at the base for one-fourth their length. Spikelets in pairs, one almost sessile, the other on a pedicel one-half as long as the spikelet; empty glumes lanceolate, one-nerved, 9 to 10 mm. long, including awns, subequal or the upper usually 0.5 to 1 mm. longer, scabrous on the keels or the lower all over, tipped with an awn 0.5 to 1 mm. long, longest on the lower glume; flowering glume 7 to 8 mm. long, slightly scabrous toward the apex; callus barbate, 1 mm. long; awns nearly equal, scabrous, spreading, middle awn 18 to 22 mm. long, lateral awns 16 to 20 mm. long.

Type specimen collected by Robert Combs and C. H. Baker, No. 1069, at Grasmere, Florida, September 21, 1898.

A species with the habit and in part the appearance of *A. palustris* (Chapm.) Vasey, but with a very distinct type of inflorescence.

Note: = *Aristida condensata* Chapm. var. *Combsii* (Scribn. et Ball) Henr..

A fragment of the type in the U. S. Nat. Herbarium was kindly sent by Prof. A. S. HITCHCOCK. The spikelets agree perfectly with CHAPMAN'S *A. condensata* but the lower sheaths are glabrous.

Aristida compacta Andersson.

NILS JOHAN ANDERSSON; Enumeratio plantarum in Insulis Galapagensibus hucusque observatarum, in Kongl. Svenska Fregatten Eugenies Resa omkring jorden, under befäl af C. A. Virgin, åren 1851—53, utgifna af K. Svenska Vetensk-Akademien, Stockholm, [1861] Botanik. 2. p. 50! *)

Panicula 3—4-pollicari, spicatum contracta, oblongo-cylindracea, ramis a basi spicatis, brevissimis, divisis; glumis apice erosis v. bifidis, aristatis, inferiori breviori; flosculo glabriusculo, apice cum arista persistente articulo, infra aristam quater torto, setis nudis divaricatis subaequalibus, media subunciali. — A. l. c. p. 145.

Hab. locis siccissimis admodum elevatis ins. Albemarle (Ips).

Radix fibris longissime pubescentibus fasciculata. Culmi semipedales, dense caespitosi, decumbentes, articulo ultimo geniculatim erecto, tenues, glaberrimi, nitentes, infra nodos angustos atros scabriusculi. Folia rigida, convoluto-filiformia, subpungentia, 1½ lin. lata, subtus glaberrima, in nervis scabre et densissime puberula; vaginae internodiis breviores, clausae, valide striatae, glabrae; ligulae loco pili longi albi. Panicula flavescens, vagina basi inclusa, spiciformi-contracta, densa, cylindracea, 3—4-pollicaris, obtusa; spiculae subsessiles, quam in prioribus majores; glumae latiores, hyalinae, nervo unico (saltem in gluma inferiori) hispido carinatae, inferior apice subtruncata, arista gluma duplo brevior armata, superior inferiori evidenter longior, apice bifida, ex emarginatura aristata. Flosculus glumam inferiorem aequans, pedicello valde barbato insidens, scabriusculus vel punctu-

*) The *Aristidas* from the Galapagos Islands were already mentioned by ANDERSSON in his work: Om Galapagos-Öarnes Vegetation in Kongl. Svenska Vet. Akad. Handl. 1853. Stockholm [1854] p. 143—145.

latus, infra aristam cum flosculo articulatum quater tortus, pallide virens; setae mox divaricatae, minutissime hispidulae.

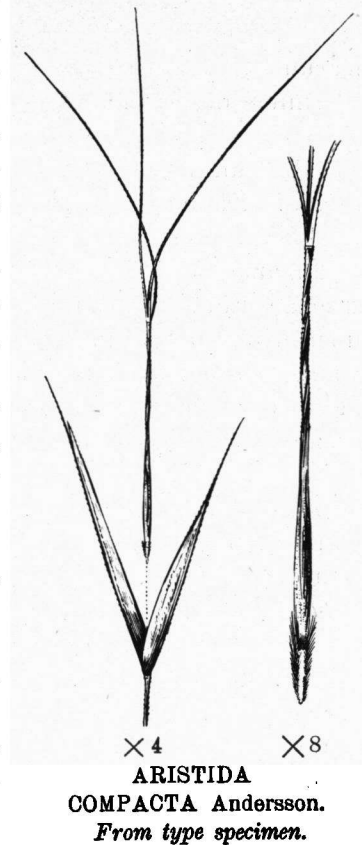
Ab *AR. DIVULSA* differt:—fibris radicalibus pubescentibus, culmis brevioribus, inferne decumbentibus, foliis convolutis subpungentibus, parum latoribus, panicula spiciformi compacta, glumis bifidis longius aristatis latoribus, pedicello flosculi densius barbato, flosculo glumam inferiorem aequante, hispidulo, infra aristam quater torto, setis denique statim divaricatis aequalibus.

Ab *AR. SUBSPICATA*, cui congruit flosculo quater torto, distinguitur fere eisdem notis culmi, foliorum et paniculae, quibus a priore, setisque fere glabris.

AR. REPENS recedit flosculo infra aristam semel torto, setis multo brevioribus. Ab *A. CAUDATA* nostra diversa est flosculi rostro quater torto.

Note: = *Aristida subspicata* Trin. et Ruprecht.

The type in the Naturhistoriska Riksmuseum at Stockholm was compared by me with a duplicate type of *Aristida subspicata*. The differences are so unimportant that I have united both species.



Aristida complanata Trinius.

C. B. TRINIUS; Graminum Genera quaedam speciesque complures definitionibus novis, in Mémoires de l'Académie Impériale des Sciences de St. Petersburg. VI^me Série, Tome I. [1829] p. 85!

Panicula contracta; Glumis acuminatissimis: superiore inferiori tertiam quartamve partem —, perianthio semipollicari paulo longiori; Aristae laciniis valvula triplo longioribus.

V. spp. e Bras. merid. (acc. sub nom. *Aristidae capillaceae* Lam. et *Chaetariae laevis* N. ab Es.)

Tripedalis. Folia praelonga, coriacea, involuta vel plana, glabra, cum panicula fere spithamaea, sublineari-compacta, basin versus saepe interrupta, e glauco et amethystino varia. Aristae squarrosae.

C. S. KUNTH; Agrostographia Synoptica sive Enumeratio Graminearum I. [1883] p. 193!

Trinius' description is copied.

C. B. TRINIUS et F. J. RUPRECHT; Species Graminum Stipaceorum, in Actis Academ. Imp. scient. Petrop. Sér. VI. Tom. V: [1842] p. 115!

Paniculae 5—6 pollicaris contractae, basi subinterruptae et longe exsertae radiis inferioribus *solitariis*, elongatis, superne floriferis, superioribus brevioribus paulo supra basin divisis et dense floriferis; glumis *inaequalibus*, superiore 6—7 *lineali* flosculum parum excedente, inferiore $\frac{1}{3}$ brevior; flosculo glabro, apice non torto, 5 *lineali*; setis stricte patentibus, parum inaequalibus: media longiore, *sesquipollicari*.

Chaetaria laevis Nees ab Esenb. Agr. Bras. (1829) p. 384.

Aristida laevis Kunth Agr. syn. 1833 p. 192.

Inter Monte Video et flumen Rio grande do Sul circa fines regni Paraguayani. (Sellow!)

Rudix perennis, radiculis firmis e rhizomate crasso, fasciculis culmorum basi tumidorum congestis, formato. *Culmi* simplices, 2—2½ pedales. *Vaginae* internodiis longiores, glabrae l. ore breve et parce pilosae, e glauco-coerulescentes. *Ligula* subnulla. *Folia* glabra, inferiora fere bipedalia, plana, lineam lata, striata, superiora convoluto-filiiformia, 3—4-plo angustiora. Affinis *A. pallenti*.

The type is the plant collected by SELLO and distributed from the Berlin Herbarium by OTTO. TRINIUS received the plant with the unpublished name of *Chaetaria laevis* and described the plant very shortly as *Aristida complanata* in 1829. In the same year NEES published his *Chaetaria laevis*. Both names are based upon the same type, they are typonyms. I have accepted the name given by TRINIUS as the earliest valid name of the species, although the description given by TRINIUS is very short, whereas NEES' description is very long and accurate (See the description under *A. laevis* KUNTH). Afterwards in 1842 TRINIUS and RUPRECHT have given a better description of the SELLO plant. A figure of the spikelet is given under *Aristida laevis*. See that species.

***Aristida concinna* Sonder,**

in Dr. JOHANN ANTON SCHMIDT; Beiträge zur Flora der Cap Verdischen Inseln. Heidelberg, [1852] p. 140!

Arthratherum uniplume Drèg. ex parte. panicula erecta contracta demum subpatula, ramis a basi divisis, aristae lacinia media 12—13 lineali procul a basi plumosa, lateralibus $\frac{2}{3}$ brevioribus capillaribus nudis, stipite ad divisuram longe barbato flosculoque bilineali paulo longiori, glumis inaequalibus acuminatis glabris, inferiori 3 superiori 4 lineali, foliis convoluto-setaceis vaginisque glabris, his ore longe barbatis.

Hab. 1) In locis arenosis, praecipue ad littora maris ins. S. Vincentii Janr. 1851! 2) In arenosis ins. Boa Vista Febr. 51!

G. V. Vom Cap der guten Hoffnung (Drèg.) wahrscheinlich durch einen grossen Theil des südl. und mittl. Afrikas sich verbreitend.

Anm. 1. Herr Doctor Sonder hat meine Exemplare einer sorgfältigen Untersuchung und Vergleichung mit der schon früher von ihm bestimmten südafrikanischen Species unterzogen, und sich von der Uebereinstimmung beider Pflanzen hinreichend überzeugt.

Anm. 2. Sehr nahe verwandt mit *Arthratherum uniplume* Nees ab Es. (*Aristida uniplumis* Lichtenst.) und durch folgende Merkmale unterschieden: „aristae laciniae media 9—10 lineali, lateralibus duplo brevioribus, glumisque subaequalibus semipollicaribus.

Anm. 3. Dieses Gras bildet ziemlich dichte Polster und verhält sich in den weiten Sandsteppen der Inseln ähnlich, wie einige Cyperaceen (*Scirpus caespitosus* L. *Eriophorum vaginatum* L.) in den nordischen oder alpinen Torfmooren. Es trägt zur Befestigung des lockeren Bodens wesentlich bei.

Note: = *Aristida papposa* Trin. et Ruprecht.

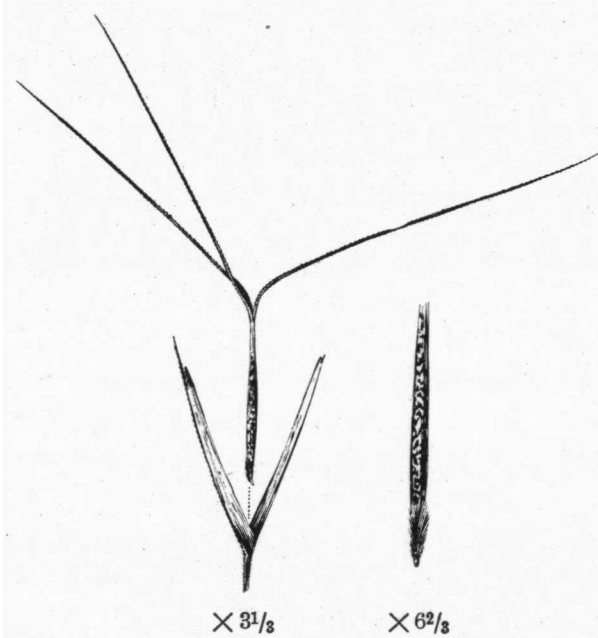
I have seen the type in Sonder's Herbarium (Naturhistoriska Riksmuseum at Stockholm). The plant agrees with the species described by TRINIUS and RUPRECHT.

***Aristida condensata* Chapman.**

A. W. CHAPMAN; An Enumeration of some Plants chiefly from the semitropical Regions of Florida, which are either new or which have hitherto not been recorded as belonging to the Flora of the

Southern States, in COULTER, Botanical Gazette, Vol. III. [1878] p. 191

Culms rather stout, simple, erect; leaves rigid, linear; flat or concave, soon convolute, rough on the margins; panicle long-peduncled, contracted, densely many-flowered (1—1½ feet long); glumes equal, awnpointed, rough on the keel, longer than the paleae; awns erect, straight, nearly equal, longer than the glumes. — Dry sandy soil, West Florida.



× 3¹/₃ × 6²/₃
ARISTIDA CONDENSATA Chapman.
From duplicate type specimen.

A fragment of the specimen collected by Dr. CHAPMAN in Florida near Apalachicola was kindly sent by Prof. A. S. HITCH-

COCK. This plant was sent to Dr. VASEY by CHAPMAN.

Aristida confusa Trinius et Ruprecht.

Species Graminum Stipaceorum, loc. cit. [1842] p. 134!

Culmo pedali, ad paniculam curvato, basi geniculato; paniculae contractiusculae radiis inferioribus nutantibus; gluma superiore 4 lineali inferiorem lineam superante; flosculo demum 5—6 lineali, versus apicem scabro; seta media 7—9 lineali. Reliqua ut in *A. strictiflora*.

Note: = *Aristida curvata* (Nees) Trin. et Ruprecht.

The type is mentioned by the Russian monographers under *Aristida strictiflora* as Drege pl. exs. b.. *A. strictiflora* was another name

given to *Chaetaria curvata* NEES β *minor*. Two localities are mentioned by NEES (see afterwards under *Aristida curvata*), both collected by Drège, one belongs to *A. strictiflora*, the other to *A. confusa*. There are however but slight differences between the two plants. In *Aristida confusa* the upper glume is somewhat longer (10 mm. instead of $7\frac{1}{2}$ — $8\frac{1}{2}$ mm.) and the lemma is $12\frac{1}{2}$ —15 mm. long (instead of $7\frac{1}{2}$ —11 mm.), the central awn is moreover also somewhat longer. I have united *A. confusa* with *A. strictiflora*, the latter is however not a distinct species at all and belongs to *Aristida curvata* (see afterwards under *A. strictiflora*). All the plants agree in the vegetative characters and also in the characters of the very scabrous glumes (glumis undique pilis minutis obsitae), which are both very obtuse, emarginate and rounded at the apex, with a mucro or short awn from the sinus. The specimens are nearly always united with *Aristida adscensionis*, but they are very distinct and they cannot be placed under that species. *A. confusa* thus belongs to *A. curvata* as a rather insignificant variety.

Aristida congesta Roemer et Schultes.

JOAN JACOB ROEMER et JOS. AUGUST SCHULTES; *Systema Vegetabilium* Vol. II. [1817] p. 401!

Culmo erecto, paniculâ coarctatâ spiciformi, aristis scabris, foliis subulatis. *A. coarctata* Lichtenstein *Spic. Fl. cap. Mss.*

Culmus glaber pedalis subsimplex. Folia graminea dimidio culmo breviora, rigida, apice scabriuscula, culmea rara vaginantia. Culmi cum foliis in caespitibus conferti. *Hab. in terra Coranarum, prope Witwater prom. b. spei.*

TRINIUS et RUPRECHT; *Species Graminum Stipaceorum*, loc. cit. p. 153!

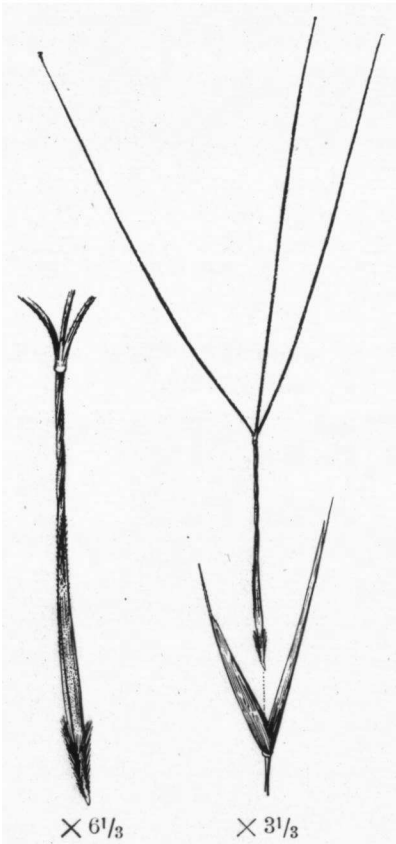
Paniculae $1\frac{1}{2}$ —2 pollicaris, *contractae*, *densiflorae*, *thyrsiformis*, ovalis, demum basi exsertae radiis pluribus l. solitariis, jam prope basin divisis et floriferis; glumis *scabris*, inaequalibus, superiore apice bidentata et setigera (computato subulo $\frac{1}{2}$ —1 lineali) 4—5 lineali, flosculum paullo et glumam inferiorem longe cuspidatam lineâ superante; flosculo 3—4 lineali, superne scabro, apice *bis terve torto* et cum basi aristae non deciduae *distincte articulato*; setis subaequalibus, strictis, patentibus, 5—7 vel 8 linealibus.

Aristida coarctata Lichtenstein! ex R. S. 1817 non HBK.

Chaetaria congesta N. E. ! Gram. Afr. aust. (1841) p. 189.

In terra Coranarum prope Witwater m. Julio (Lichtenst.); in planitie Steenbocksvlakte ad septemtrionem a montibus Winterhoeksbergen prope Uitenhage (Ecklon); in fissuris rupium ad Colesberg alt. 4500 ped.; in saxosis ad Nieuwe Hanton alt. 4500 ped.; ad ripas Key fluvii alt. 500 ped. et ad Port Natal infra 400 ped. (Drege) Febr.—April. ♀.

Radix fibrosa l. subrepens. *Culmi* simplices l. ramosi, $\frac{1}{2}$ —1 pedales, caespitiosi, compressiusculi. *Vaginae* internodiis breviores cum foliis glabrae, ore nudae. *Ligula* brevissime ciliata. *Folia* incurva, bipollicaria, complicata, rigida, pungentia, glauca. *Flosculi* in specimine Lichtensteinii tantum 3 lineales et setae ad summum semipollicares.



ARISTIDA

CONGESTA Roem. et Schultes.
From Drège (Rijks Herbarium).

LICHTENSTEIN'S plant was collected in West Griqualand. From the short description, the species is not to recognize. I have been unable to locate the type and NEES has not seen the specimen, but TRINIUS and RUPRECHT have seen the type or a duplicate type, therefore the description given by the russian monographers is cited above; they state that the lemma and the awns are shorter than in the specimens described by NEES. DRÈGE'S specimen (see my figure) has a lemma + column about 9 mm. long and the awns are $16\frac{1}{2}$ —18 mm. long, whereas in the type the lemma is $7\frac{1}{2}$ mm. long, and the awns are about $12\frac{1}{2}$ mm. long. The authentic specimens I have

seen have a dense, contracted, spike-like panicle, the mouth of the sheaths, the collar and the auricles are not bearded, the ligule and the auricles are shortly ciliate or pubescent. The species belongs to the section *Pseudarthratherum*, a section distinguished by an articulation just below the branching point of the awns. About 8 species of this section occur in South and Tropical Africa, they are

more or less allied and it is nearly impossible for the moment to characterize all these species sharply. The 8 species are: *Aristida alopecuroides* HACK., *A. barbicollis* TR. et RUPR., *A. congesta* R. et S., *A. elytriphoroides* CHIOV., *A. Lommelii* MEZ., *A. longicauda* HACK., *A. Pilgeri* HENR., and *A. Rangei* PILGER. As to the types of these 8 species it is not so difficult to distinguish them, but having studied an extensive material from Africa, it has been impossible to place each plant under one of the cited species. In herbaria there are intermediate forms between *Aristida barbicollis* and *A. congesta*, the two species growing together in the same locality and from the large collections one is inclined to unite all the plants in one, very variable species. The differences however are still present and we have to divide such a species into subspecies and varieties. For the present, I could not do so, in the future when the different forms are cultivated, we probably shall have a better idea of the different forms. *Aristida congesta* is to my opinion the species with naked collars and auricles, characters in combination with a spike-like panicle, short, stiff blades and rather long awns of the glumes. The other 7 species mentioned, have long-bearded collars and auricles. See afterwards under the different species.

***Aristida congesta* Roem. et Schultes.**

var. *genuina* Chiovenda.

E. CHIOVENDA; Graminaceae ap. PIROTTA in Flora della colonia Eritrea, Annuario del Reale Istituto botanico di Roma, Anno VIII. [1899] p. 333!

Guaine tutte all'apice esternamente glaberrime, internamente con una densa serie di peli argentini brevi al luogo della linguetta. Africa australe.

***Aristida congesta* Roem et Schultes.**

var. *pilifera* Chiovenda.

loc cit. p. 333!

Guaine tutte all'apice esternamente e specialmente ai lati della lamina lungamente barbate.

A masen: Ad Rassi 23. IV. 1902 (Pappi n. 4981); presso il forte Bet-Makà 4. I. 1902 (P. n. 421).

Oculè Cusai: Deca-Meré m. 2000 c. s. m. 6. IX. 1902 (P. n. 1709).

Sara è; Lungo il fiume Mareb presso Debarroa m. 1900. c. s. m. 8. X. 1902 (P. n. 462-bis).

Osservazioni. — La var. β . *pilifera* Chiov. per ciò che si riferisce alla struttura della pannocchia e delle spiglette non differisce affatto dalla var. α dell'Africa meridionale. Di questa var. ho potuto esaminare parecchi esemplari raccolti dal Rev. E. Armitage (nn. 850, 851, 867, 2980, 3314). Tutti hanno le guaine culmeari glaberrime alla fauce, non così le guaine dello innovazioni, le quali negli esemplari dei nn. 851 e 867 si presentano evidentemente barbate; ma più scarsamente che non nei nostri esemplari. Gli esemplari di Drège del Museo Fiorentino le hanno tutte indistintamente glaberrime. Forse si deve riferire a questa var. *pilifera*, l'*A. barbicollis* β . *panicula contracta spiciformi* Trin. et Rupr. *Sp. Gram. Stipac.* p. 153.

Note: = *Aristida elytrophoroides* Chiovenda.

In habit and technical characters much resembling the South African *A. congesta*, but with a pronounced tuft of long white hairs on the collar of the sheaths and on the auricles. The type I could study through the courtesy of Prof. CHIOVENDA. The very different geographical distribution of the two varieties tends to confirm the segregation as species. But there occur in South Africa plants I can scarcely distinguish from the plants found in Eritrea. See afterwards under *Aristida elytrophoroides* Chiovenda.

***Aristida contorta* F. von Mueller.**

FERDINAND V. MUELLER; Description of fifty new Australian plants, chiefly from the Colony of Victoria in Transactions and Proceedings of the Victorian Institute (Melbourne), Vol. I. [1855] p. 44.

Aristida contorta. (Sect. *Arthratherum*.)

Stems erect, hardly branched; panicle racemose, contort; bracteas coloured, long tapering into a setaceous apex, the exterior one half as long as the other, equal in length to the calyx; inferior part of the arista closely twisted, half as long as the scabrous bristles, surpassing twice in length the calyx.

On barren places on the Murray River.

Allied to *Aristida stipoides*.

Note: = *Aristida arenaria* Gaudichaud.

Among the australian *Aristidas*, kindly received for study from the Kew Herbarium by Dr. A. W. HILL, I found three sheets as *Aristida contorta*, Murray River, Dr. F. v. MUELLER, they are stamped „Herbarium Hookerianum 1867”. One of the specimens has glumes 9—12 and 18—20 mm. long, but all the lemmas are delapsid. The two other sheets show plants with a lower glume 8—9 mm. and an upper 20—21 mm. long, the column has the same length as in the type of *Aristida arenaria*, and the plants agree perfectly with that type, but the awns are 35—37 mm. long. In the type of *A. arenaria*, the lower glume is about 11 mm. and the upper 19—20 mm. long, the awns are 55—60 mm. long.

Aristida cordobensis Hackel

ap. T. STUCKERT; Contribución al conocimiento de las Gramináceas Argentinas, in Anales del Museo Nacional de Buenos Aires, Tom. XI. [1904] p. 91!

Perennis, caespitosa. Culmi erecti, gracilis, ad 20 cm. alti, teretes, glaberrimi, 2—3 nodi, e nodis omnibus v. saltem inferioribus ramosi, superne breviter nudi. Vaginae teretes, arctae, glaberrimae, internodia subaequant, ligulae breves, ciliares, laminae lineares, sensim acutatae, planae v. in sicco subconvolutae, ad 10 cm. long., 2 mm. lat., glabrae, subtus laeves, supra marginibusque scaberulae, rigidulae, crassinerves.

Panicula linearis, stricta, ad 20 cm. longa, (axillares multo breviores) laxiuscula, basi subinterrupta, rhachi scaberula, ramis brevibus (3—5 cm. long.) rhacheos internodiis plerumque longioribus, erectis, solitariis v. binis scabris, basi breviter v. ad $\frac{1}{3}$ usque nudis, 4—6 spiculatis, spiculis arcte appressis subimbricatis breviter pedicellatis.

Spiculae lineares, 10—11 mm. longae, viridulae v. subviolascetes. Glumae steriles valde inaequales: I. 4 mm. long., lineari-lanceolata, acutissima, 1-nervis, carina laevis; II. 10—11 mm. longa anguste lineari-lanceolata, acutissima, 3-nervis, nervis lateralibus brevibus, carina scabra; gluma III. (fertilis) quam II. fere $\frac{1}{3}$ brevior (8 mm. long.) angusta linearis, arcte convoluta, callo acuto breviter barbato, scaberula, viridula et nigromaculata, apice haud torta neque articulata, sine stipite in aristam abiens.

Aristae rami subaequales, 2—2,5 cm. longi, scaberrimi, primo porrecti, demum basi curvata fere horizontaliter patentes. Palea brevissima. Antherae 1,2 mm. longae.

Stuckert: Herb. arg. no 12,741 (13. II. 1903). Quebrada del río de Alta Gracia, Dep. Río II, Prov. de Córdoba y no 13,003 (28. III. 1903); Municipio de Córdoba en los altos cerca del hipódromo viejo

y con otros números y fechas de las barrancas del Río I, y del Dep. Río I. Prov. de Córdoba.

Note: = *Aristida mendocina* Philippi.

Both numbers cited are in Hackel's Herbarium, bearing the Vienna numbers 15549 and 15550. They are identical with the type of *Aristida mendocina* PHIL.. Stuckert 13003 is accepted as the type, because these plants are the best developed ones. HACKEL'S statement as to the position of the glumes is an error, the lower glume is the longer one and 10—11 mm. long, the upper is much shorter, 4 mm. long; both are one-nerved, or the lower with two very short, faint lateral nerves.

Aristida crinita Presl.

JAN SWATOPLUK PRESL apud KAREL BOŘIWOG PRESL; Reliquiae Haenkeanae seu Descriptiones et Icones Plantarum quas in America meridionali et boreali, in Insulis Philippinis et Marianis collegit Thaddaeus Haenke, Pragae, Tom. I. [1830] p. 223!

A. culmo simplicissimo compressiusculo, foliis convoluto-setaceis, margine scabris, panícula spicaeformi simplici, contracta, locustis fasciculatis, glumis lineari-lanceolatis, setiferis, nervo scabris, inferiore minore, superiore paleam inferiorem carina scabram excedente, aristis longissimis stipiti brevissimo insidentibus, aequilongis scabris.

Hab. in arenosis Peruviae. 24

Radix fibrosa. Culmi densos caespites formantes, firmi, stricti, compressiusculi, glaberrimi, tenuissime striati, 5—6 pollices alti, pennam gallinaceam crassicie aequantes. Nodi obtecti, constricti, glaberrimi, fusci. Vaginae teretes, striatae, glaberrimae, internodia excedentes. Ligula brevissima, margine pilosa. Folia convoluto-setacea, rigida, culmum aequantia aut superantia, margine scabra, striata, glaberrima. Panícula spicaeformis, contracta, una cum aristis 4—5 pollices longa. Rhachis teres alternatim latere uno applanata, angulis scabriuscula, ramos 3—4—5 emittens breves, forma rhacheos, scabros. Locustae 10 lineas longae, in apice ramorum plures in fasciculum collectae densum, stramineae, pedicello brevissimo claviculato scabro insidentes. Glumae lanceolato-lineares, inaequales, inferior dimidio brevior superiore, uninervia, nervo supra medium scabra, seta brevissima scabra terminata, superior paleam inferiorem duplo superans, lanceolato-linearis, uninervia, nervo supra

medium scabriusculo, seta brevissima lineam longa scabra terminata. Corolla pedunculo brevissimo brevissime piloso insidens. Palea inferior convoluta cartilaginea, albida, uninervia, nervo scabra, externe scabriuscula. Arista longissima fere quadruplo palea longior, stipiti brevissimo insidens, ramis convoluto-setaceis, margine scabris, aequilongis. Palea superior nulla? Stamina tria. Stigmata villosa.

Quoad habitum affinis *A. humili*.

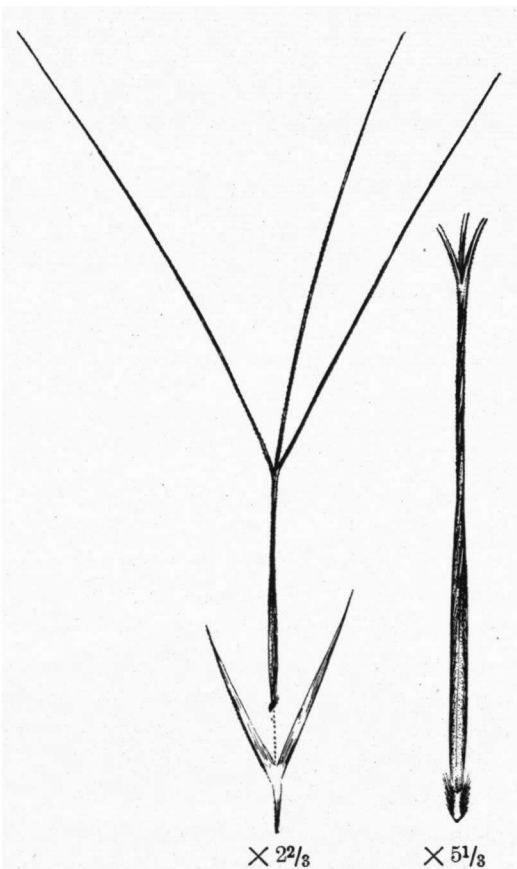
Note: = *Aristida murina* Cavanilles.

The type in the National Herbarium at Prague, two duplicate types in the Vienna Herbarium, one of them numbered 16, another duplicate received by REICHENBACH from PRESL in the Reichenbach f. collection at Vienna bearing the Vienna number 239593. All the plants agree perfectly with the species described by CAVANILLES.

Aristida culionensis Pilger

in J. PERKINS; *Fragmenta Florae Philippinae, Contributions to the Flora of the Philippine Islands, Fasc. II. [1904] p. 145!*

Perennis, culmo elato, superne longissime exserto, nudo, glaberrimo, terete, ad 1,5 m alto, innovationibus intravaginalibus, foliis longis, angustissime involutis; foliis basin culmi versus approximatis, vaginis pro parte sese tegentibus; foliorum lamina elongata, 50—70 cm vel etiam ultra longa, anguste lineari, 3—4 mm lata, glabra, involuta,



ARISTIDA CULIONENSIS Pilger.

From type specimen.

vagina glabra, crassiuscule parum striata, ligula perbrevis truncata, breviter ciliata; panícula ampla, elongata, 40 cm circ. longa, ambitu elliptica, rhachi stricta; ramis ad internodia compluribus arcte approximatis, capillaribus, scabris, imprimis inferioribus a basi pluries divisís, adspectu fasciculatis, circ. 10—12 cm longis; spiculis longius tenuiter pedicellatis; glumis vacuis subulatis, longe attenuatis, acutissimis, inferiore parum supra 1 mm lata, 1-nervia praeter nervos 2 ad basin glumae tantum vix notatos, evanescentes, 9,5—10 mm longa, raro ex nervo longius acutata, 12 mm longa, nervo extus scabra, superiore paulo angustiore, breviter apice bipartita et breviter e nervo acutata, 10—12 mm longa; gluma florifera callo brevi, acuto, breviter albido-barbato instructa, asperula, 12 mm longa, sine articulatione in aristam tripartitam transeunte, aristae ramis 2,2—2,9 cm longis, subaequilongis.

Culión Isl. (MERRILL no. 515, 471). Dry open grassy valley.

Die neue Art ist mit *A. cyanantha* (Nees) Steud. verwandt, unterscheidet sich aber besonders durch die Verzweigung der Rispe, ferner durch völlige Kahlheit der jungen Sprosse.

The type, Merrill no. 471 in the Berlin Herbarium labeled in Prof. PILGER's handwriting was kindly received in loan from Prof. R. PILGER.

Aristida Cumingiana Trinius et Ruprecht.

Spec. Graminum Stipaceorum, loc. cit. pag. 141!

4—6 pollicaris; paniculae oblongae, lucidae, capillaceae radiis ternis, tenuissimis, erectis, sparsifloris; glumis patentibus, inaequalibus: superiore fere $1\frac{1}{2}$ lineali inferiorem distincte superante; flosculo $\frac{3}{4}$ lineali, glumam inferiorem aequante l. paulo excedente, apice scaberrimo, non torto, directe setas flexuosas emittente: laterales suberectas $1—1\frac{1}{2}$ lineales, intermedium divaricatam incurvam duplo longiorem.

Aristida capillacea Cavan. (non Lam.) Icon. 5. (1799) p. 43. tab. 468. fig. 1.

Insulae Philippinae (Cuming! n. 671): Luzon. (Née ex Cavan.) ☉. Specimen Cavanillesii in Hb. Reg. Berol. teste cl. Neesio a



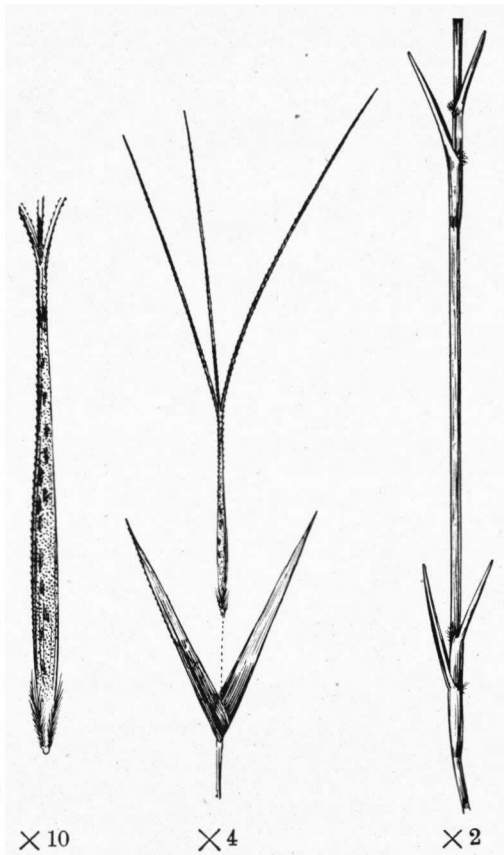
× 10
ARISTIDA CUMINGIANA Trin. et Rupr.
From Cuming no. 671.

planta Lamarckii non diversa; etiam icon et descriptio a nostra recedit: setis aequalibus, stricte erectis; sed setae in apice flosculi sessiles depinguntur ut in *A. Cumingiana*. Addit l. c. Cavanillesius: *Radix* fibrosa, capillaris, ex qua culmi prodeunt vix palmares, glabri, articulati, tenues. *Folia* glauca, radicalia 2—3 pollices longa, subulata, angustissima. *Stam.* 3, filamentis brevibus, antheris fuscis oblongis. *Germen* lineare, turbinatum; styli 2 capillares, stigmata villosa. *Caryopsis* minima sublinearis.

Aristida curtifolia Hitchcock.

A. S. HITCHCOCK; Catalogue of the Grasses of Cuba, in Contributions from the United States National Herbarium. Vol. XII. Washington, [1909] p. 235!

Culms cespitose, from a perennial base, slender, stiffly erect, somewhat compressed, smooth, 20 to 30 cm. high, the alternate internodes often shortened, thus bringing the leaves together in approximate pairs; sheaths smooth, striate, short, 5 to 10 mm. long, sometimes slightly villos at throat; blades short, thick, stiffly spreading, flat, folded or involute, glabrous, 5 to 20 mm. long and 0.5 to 1 mm. wide, or the upper reduced to mere awns 2 to 3 mm. long; inflorescence a narrow nearly simple panicle, 5 to 10 cm. long, the spikelets sessile or occasionally terminating short erect branches about 5 mm. long; glumes nearly equal, 8 to 9 mm. long, 1-nerved, smooth, except



ARISTIDA CURTIFOLIA Hitchcock.

From type specimen.

the scabrous upper part of the keel of the lower glume; lemma 5 to 6 mm. long with a minutely hairy callus 0.5 mm. long, scabrous

toward apex; awns about equal, 10 to 12 mm. long, scabrous, spreading but not recurved or twisted at base.

Type, *Wright* 736, 1865, no. 559960 in the U. S. National Herbarium, which also bears the secondary numbers 282 and 286. Other specimens are: *Wright* 736 in eastern Cuba, 1856—57 in Sauvalle Herbarium; Jata Hills at Guanabacoa, *Hitchcock* in 1906; *Baker & Hasselbring* HC 7208, 7211; Madruga, *Britton & Shafer* 658 in Herb. N. Y. Bot. Gard.

There are two *Wright* specimens of this in the Grisebach Herbarium, „Savannas of Guanacaro, July 28, in small tufts,” no. 282 of 1865, and no. 736 from eastern Cuba, 1856—57.

This species is readily recognized by its stiff, rush-like culms and short sharp-pointed blades. On the Jata Hills it occurs on dry, grassy slopes.

Aristida curtiset Buckley.

S. B. BUCKLEY; Description of Plants. N^o. 3. Gramineae, in Proceedings of the Academy of Natural Sciences of Philadelphia „1862” [1863] p. 92!

Tota glabra, culmo simplici glabro erecto 6—8-policari; vaginis internodio brevioribus; ligulis pauci-pilosis; foliis radicalibus plurimis convolutis filiformibus; panícula stricta pauciflora; radiis geminis inaequalibus unifloris; glumis aequalibus aut inaequalibus carinatis paleam aequantibus vel superantibus; palea inferiore valde 3-nervia; setis brevibus inaequalibus. Northern Texas. May.

Bristles 4-8 lines long, 2-3 parted and sometimes undivided; leaves of the stem 2 inches long; radical leaves 3-4 inches in length; joints of the stem obscure.

ASA GRAY in the same volume of the Proceedings says on pag. 334: „*Aristida curtiset* is founded on depauperate specimens of *A. purpurea*, such as were gathered in Sitgreaves' Expedition”.

„It is impossible to identify this species, as the specimen on which Buckley based his description is a form in which the spikelets are aborted by a species of *Ustilago* *). It is probably *Aristida purpurea*

*) *Sorosporium consanguineum* ELL. et EV. (J. B. ELLIS et B. M. EVERHART, Journal of Mycology, [1887] p. 56), is the species that occurs upon *Aristida purpurea*. It is common in North America. The ovaries are somewhat enlarged, and the whole interior is transformed to a mass of spores enclosed by a thin membrane. Such spikelets have awns much shorter than usual.

Nutt., or some closely related form. Buckley's type is in the herbarium of the Philadelphia Academy of Natural Sciences." (SCRIBNER and MERRILL in Circular No. 34. U. S. Dep. of Agric., [1901] p. 8!)

Aristida Curtissii (A. Gray) Nash.

GEORGE V. NASH, in BRITTON; Manual [1901] p. 94.

= *Aristida dichotoma* var. *Curtissii* A. GRAY, Manual, ed. 6. [1890] p. 640.

GRAY says in his description of *Aristida dichotoma* MICHX.: Culms low, very slender, much branched throughout, ascending; spikelets in narrow strict simple or compound spikes; *lower glumes* nearly equal (3—4" long), longer than the flowering glume and fully equalling its minute lateral awns (or *unequal and shorter*, in var. *Curtissii*, GRAY), the soon reflexed middle awn about as long. Dry sandy or gravelly fields; common, Maine to Ill., and southward. [The habitat and range refer to the species]. In the Gray Herbarium is a specimen collected by A. H. CURTISS in Bedford County, Virginia upon which is written „var. *Curtissii*". Dr. HITCHCOCK examined the type in the Gray Herbarium and a small fragment of panicle is deposited in the U. S. Nat. Herbarium. The spikelets are: Glume I, 5—7.5 mm., glume II, 8.5—10 mm.. Floret 9—10 mm. to base of awns; erect awns 1.2—2 mm.; spreading awn 7—10.5 mm.. The extremes in length are found in the few spikelets on the one branch of panicle, the shorter measurements being of the lower spikelet. [A. CHASE, communication by letter].



ARISTIDA CURTISSII (A. Gray) Nash.

From Oklahoma, Busch no. 1428.

Description by NASH, in BRITTON; Manual l. c. p. 94.

Culms tufted, 2—5 dm. tall, branching. Leaves 4—16 cm. long, 1—2 mm. wide; panicle 5—9 cm. long, the branches erect; spikelets generally 10—12 mm. long, rarely longer, the first scale much shorter

than the second, which usually about equals the flowering scale; the flowering scale 7—11 mm. long; the lateral awns very short, 1—2 mm. long, straight and erect. In dry soil, Mo. and Kans. to the Ind. Terr.; also in Va. Sept.—Oct.

Aristida curvata (Nees) Trin. et Ruprecht.

TRINIUS et RUPRECHT; Spec. Gram. Stipac. loc. cit. p. 133!

= *Chaetaria curvata* NEES ab ESENBECK; Florae Africae australioris, I. Gramineae. [1841] p. 186!

Description given by Nees, l. c. p. 186!

Panicula contracta subsecunda, glumis ex apice emarginato bifido setigeris, inferiori duplo breviori flosculum tri-quadrilinearem aequante, setis valvula paulo longioribus media paulo maiore, foliis planis supra minutissime puberulis superioribus convolutis, ore vaginarum glabro.

α . Foliis retortis.

β . Minor, foliis paniculae strictioribus angustioribus, setula glumae superioris brevissima.

Var. α . in planitie Steenbocksvlakte ad septentrionem a montibus Winterhoeksbergen spectante (Uitenhage), Ecklon.

Var. β . in collibus ad Zondagrivier fluvium (Uitenhage) alt. 1500—2000' et ad Zwartbulletje iuxta Garip fluvium alt. 2500', (Drège).

Floret Martio et Aprili. ♀.

Quod ad habitum accedit Arthrathero Zeyheri, sed huius est generis, aristis sive setis cum valvula concretis, nec nisi anastomosi paulo obscuriori ad speciem articulatis. Folia lineam fere lata, eximie retorta, sed semper tamen plana, striata, acuminata; culmea apice convoluta. Culmi graciles, apice attenuati. Glumae et flosculi e fusco chalybaei. Gluma inferior apice obtuse biloba setula brevissima interiecta; superior profundius fissa, seta saepe lineari. Flosculi valvula carina scabra. Setae scabrae, subviolaceae.

Chaetariam diffusam Tr. esse vix dubitarem, nisi obstarent verba: „gluma superiori perianthio 8-lineali quartam partem breviori;” in nostra etenim gluma superior flosculum ad divisuram usque 3—4 lin. longum aequat. An varietas?

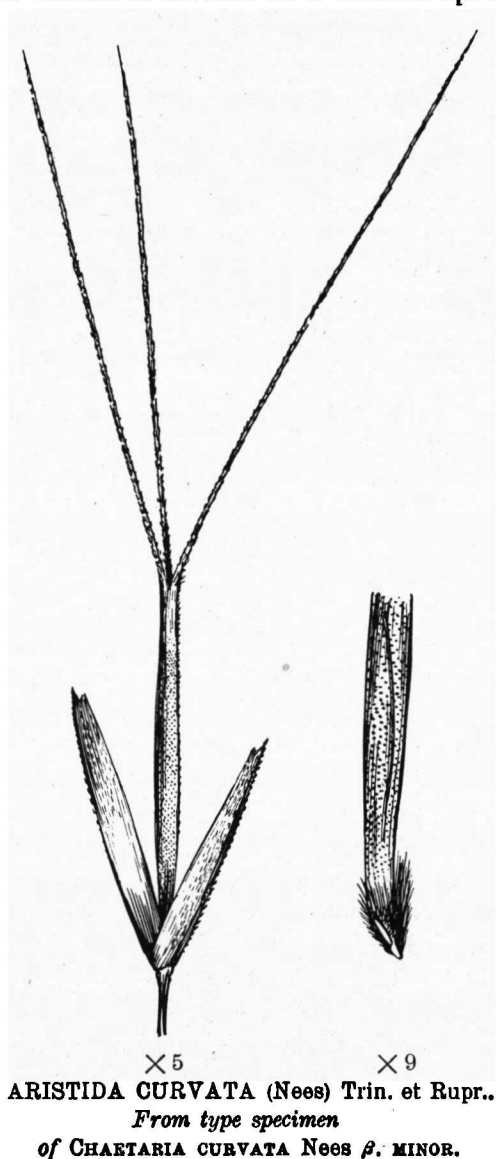
Description given by Trinius and Ruprecht, l. c. p. 133!

Culmo pedali; foliis virescentibus, planis, rigidis, curvatis; panicula colorata, contractiuscula; gluma superiore 3—3½ lineali, apice bidenticulata et mucronata, flosculum nervo dorsali scabrum adaequante, glumam inferiorem truncatam et mucronatam lineâ 1—1½ superante;

seta media 5—6 lineali. — In planitie Steenbocksvlakte ad septemtrionem montibus Winterhocksbergen spectante prov. Uitenhage. Martio, Aprili. (Ecklon).

Adnot. Glumae in omnibus subspeciebus ex Africa australi undique pilis minutis obsitae, sed hoc gradu minori etiam aethiopicis et abyssinicis convenit.

Although NEES described his *Chaetaria curvata* as a distinct species, accurately indicating the striking characters of the species, agrostologists have united the species with *A. adscensionis*, probably on account of the fact that TRINIUS and RUPRECHT placed *Chaetaria curvata* as a „small species” under their *Aristida vulgaris*. The russian monographers already observed that all the South African plants have a distinct pubescence on the glumes and that the summit of both glumes is obtuse or erose and mucronulate as already stated by NEES. From South Africa, as limited in THISELTON—DYER's Flora Capensis, I have not seen a single specimen I could bring under *Aristida adscensionis*, all the plants from South Africa belong to a somewhat variable, but quite distinct species. To this species belong: *Aristida pygmaea* TRIN. et RUPR., *A. strictiflora* TRIN. et RUPR., *A. confusa* TRIN. et RUPR., and *A. pusilla* TRIN. et RUPR. (= *Chaetaria mauritiana* NEES β *nana* NEES), the latter was already supposed by NEES to be a variety of *Chaetaria cur-*



ARISTIDA CURVATA (Nees) Trin. et Rupr.
From type specimen
of CHAETARIA CURVATA Nees β . MINOR.

vata. If we compare the South African plants with *Aristida adscensionis*, the differences in habit and spikelet characters, together with the distinct geographical distribution, confirm the segregation of the South African plants as a species. The type, Ecklon (Div. Uitenhage), I saw in the Nees Herbarium at Berlin. The lower glume is obtuse, lobed at summit, with a short mucro, the upper glume is longer, more deeply lobed or distinctly bifid with a short awn, sometimes about $2\frac{1}{2}$ mm. long, from the sinus.

***Aristida curvata* Nees.**

var. *abyssinica* Richard.

ACHILE RICHARD; Tentamen Florae Abyssinicae seu Enumeratio Plantarum hucusque in plerisque Abyssiniae provinciis detectarum et praecipue a beatis doctoribus Richard, Quartin Dillon et Antonio Petit (annis 1838—1843) lectarum, Paris, Vol. II. [1851] p. 392!

A. CURVATA Nees ab Esenb., in Hochst. *pl. Schimp. Abyss.*, sect. III, n^o. 1796.

ARISTIDA VULGARIS Trin. et Rup.

var. *Abyssinica*.

A. culmo erecto, gracili, a basi ramoso spithameo aut pedali; foliis linearibus convolutis; ligula piloso-setosa, brevi; vaginis laevibus, panicula contracta, elongata ramis erectis; lepicenae valvulis lanceolato-linearibus carinatis et subscabris, apice sensim acutis, exteriore brevior; palea angusta lepicenam duplo superante dorso carinata spinuloso-scabræ; aristae tripartitae ramis triquetro-subulatis denticulato-scabris.

Crescit in montibus prope *Tchélatchéranne* et in provincia *Chiré* mense Octobre (Schimper).

Observation. — Plus petite que *l'Aristida Adoensis*, de couleur violacée, comme elle, cette espèce en diffère par ses feuilles plus étroites, par les valves de sa lépicène aiguës au sommet, et non terminées par une soie courte.

Note: = *Aristida adscensionis* L..

The type in the Richard Herbarium at Paris was edited in exsiccatae by HOCHSTETTER (Schimperi iter Abyssinicum. Sectio tertia. 1796. *Aristida* (*Chaetaria*) *curvata* N. a. E. var. A. vulgaris Trin. et Rupr. var. *abyssinica*. In montibus prope Djeladjeranne U. i. 1844. d. 24.

Oct. 1840.) Specimens of this no. 1796 in all the larger european herbaria. The plants are annual, they agree with the plant described as *Aristida abyssinica* (see this revision p. 2), especially as to the length of the glumes, lemmas and awns; the lemmas are asperulous as in *A. abyssinica* and slightly longer than the upper glumes. As already explained, *Aristida curvata* is a different South African species.

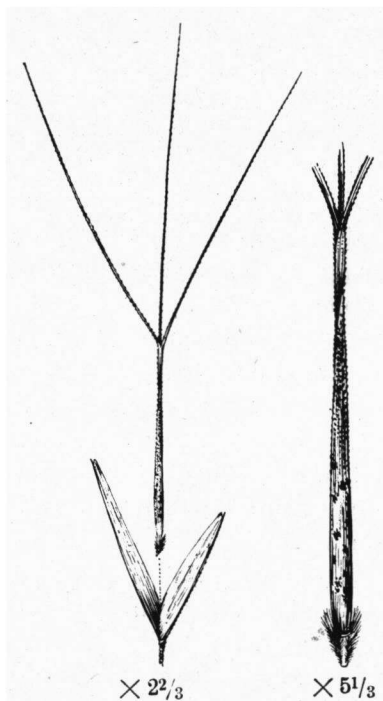
***Aristida curvifolia* Fournier.**

EUG. FOURNIER; Mexic. Plant. etc. Pars II. Gramineae, Paris, [1881] p. 78!

Caespes perennis, culmis densis erectis cum panicula 1—2-pollincaribus, simplicibus, versus nodos sericeis; vaginis strictis glabriusculis ore sericeis; ligula sericea; foliis rigidis, pungentibus, convolutis recurvis, glabris, laevibus; panicula exserta 4—5-pollicari firma stricta, radiis geminis appressis scabrioribus a basi floriferis; glumis stramineis obtusioribus et latioribus quam ceterarum, inaequalibus, superiore longiore flosculum subaequante stramineum et scaberrimum, setis aequalibus rigidis divergentibus scabris.

Inter *La Noria del Viejo* et *Tanquecillos* (KARW. n. 1007); *San Luis de Potosi* (VIRL. n. 1449).

An apparently rare species, described by FOURNIER from two localities. Through the courtesy of Prof. H. LECOMTE, I could examine the plant collected by Virlet (Museum d'Histoire Naturelle at Paris). This plant from FOURNIER'S own herbarium is labeled in his hand. Karwinsky's plant in the Herbarium of the Botanical Garden at Leningrad was kindly submitted to me by Prof. BORIS FEDTSCHENKO. Both plants agree exactly with another. The species is very characteristic and unique among all the American *Aristidas*, by the characters of the spikelets, given in my



ARISTIDA
CURVIFOLIA Fournier.
From type specimen.

figure. Such glumes are never found in New World species, but they occur in species from the Old World. Moreover the species is very distinct by the junciform, very stiff and pungent blades, so firm in texture and so strongly inrolled, that they are scarcely to open, even after boiling in lactic acid. The species was studied by Prof. HITCHCOCK. His description is good and applies to the type, but it is curious that the two plants cited by him, (U. S. Nat. Herb. Contrib. XXII. l. c. p. 559, Hitchcock no. 5566 and Purpus no. 5010) belong to another species. I received a duplicate of Hitchcock's no. 5566, and a fragment of Purpus no. 5010; both plants have very unequal, acute, awned glumes, the upper about twice as long as the lower, they have a totally different texture of the blades. HITCHCOCK already observed in a note, following his description, that the two specimens may belong to a different species, and I am of the same opinion. They belong indeed to *Aristida glauca* (NEES) WALP..

Although Prof. HITCHCOCK had also before him Pringle no. 5892 from Tehuacán (a plant agreeing exactly with the type of *A. curvifolia*), he did not recognize the plant as belonging to that species and he placed Pringle's number under *Aristida barbata* FOURN.. Pringle's no. 5892 I have seen in many europaean herbaria, a duplicate was also received from the U. S. Nat. Herbarium. Prof. HITCHCOCK procured me fragments from all the plants mentioned by him under *A. barbata* FOURN.. The four numbers are cited on pag. 569 in North American Species of *Aristida*. Pringle no. 5892 in the U. S. Nat. Herb., is also *Aristida curvifolia*, and HITCHCOCK no. 6487 from Esperanza exactly agrees with Pringle 5892 (as to the form of the spikelets, the blades of no. 6487 not seen by me). Smith no. 918 from Las Sedas differs from the type of *A. curvifolia* in the equal glumes, it may be that this plant belongs to our species as a variety, but I have not seen the blades. Hitchcock no. 6084 from Tehuacán, does not belong to *A. curvifolia*, the spikelets and the texture of the leaves are very different. The exact determination can only be given after an examination of the whole plant. Since FOURNIER described *A. curvifolia* and *A. barbata*, agrostologists never recognized the two species. It has been possible to clear up this question definitively, after an accurate examination of FOURNIER's types and I am much indebted to all the botanists who have lent those types. My treatment of *A. barbata* was already printed, before I could study the type of this species (see this revision, p. 48). The specimens are immature and the panicles are not yet fully exerted from the upper sheaths. The two plants on the

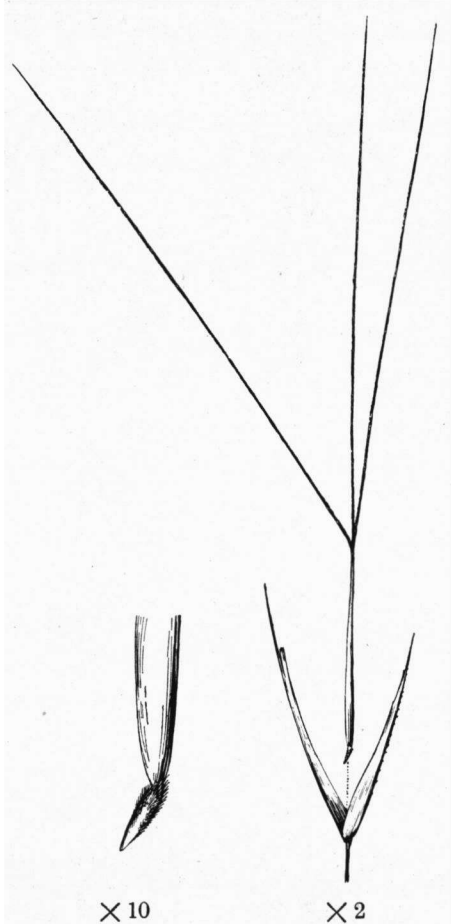
sheet are young specimens of *Aristida divaricata* H. B.. See afterwards under that species.

***Aristida cyanantha* (Nees) Steudel.**

E. G. STEUDEL; Synopsis Plantarum Glumacearum [1855] p. 141!
= *Chaetaria cyanantha* NEES in ROYLE Ind. nr. 64, nomen.

Culmo erecto, geniculis foliisque planis glabris, vaginis ore imberbibus; paniculae effusae radiis semipedalibus tenuissimis semiverticillatis oppositisve, dichotomis et inferne alterne et remote uniradiolosis ad $\frac{3}{4}$ longitudinis nudis, apice tantum floriferis; flosculis cyanescentibus; glumis angustis acuminatis, superiore flosculum aequante, inferiore duplo brevior, setis subaequalibus flosculo 2—3-plo longioribus. ♀ Nepal.

In a note, following the description of *Aristida setacea* RETZIUS, TRINIUS and RUPRECHT described the species shortly. (Spec. Gram. Stipac. l. c. p. 150!)
„*Chaetaria cyanantha* N. E. in „Royle Ind. reg. mont. sup. n. „64. (*Aristida cyanantha* Steudel „Nomencl. 1841), quam hic exponere non posse valde dolemus, quum ramus tantum paniculae praesto sit, verosimiliter species ab *A. setacea* bene distincta: radiis semipedalibus, tenuissimis, inferne alterne et remote uniradiolosis, ad $\frac{3}{4}$ partem longitudinis nudis, apice tantum floriferis, flosculis cyanescentibus et glumis angustioribus. Dimensiones ceterum spiculae eadem ac *A. setaceae*.



ARISTIDA CYANANTHA (Nees) Steudel.
From Griffith no. 6591.

I was unable to find ROYLE's publication. HOOKER (in Fl. of Brit.

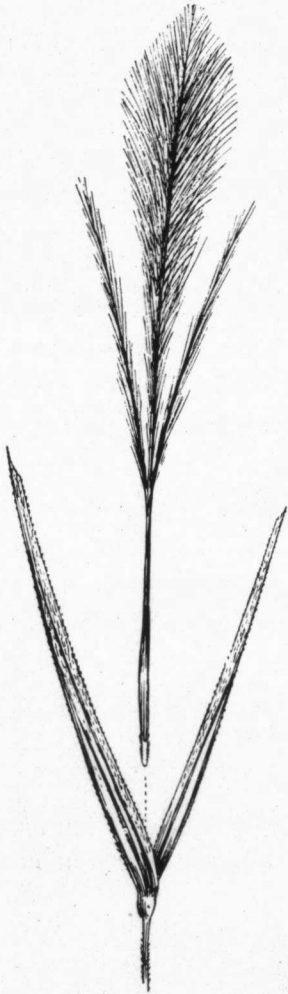
India, VII. p. 225) cites: „*Chaetaria cyanantha*, Nees in *Royle III. Bot. Himal. 424*,” but this is an error. The actual type was not studied by me, but I saw an authentic specimen in the Herbarium of the Botanical Garden at Leningrad, labeled: „N. W. India, Herb. Royle.”

Aristida cyanantha is one of the largest species in the genus, having a spreading panicle with long, thin branches, naked below.

***Aristida damarensis* Mez.**

CARL MEZ; in FEDDE, Rep. spec. nov. loc. cit. XVII. [1921] p. 152!

Perennis, valida. Vaginae culmi quam internodia breviores, margine prope apicem breviter pubescentes; ligulae pilis longis niveis mollibus stipatae; laminae optime subulatae, glabrae. Culmi glabri. Inflorescentia dense 3-pinnatim paniculata, tenuiter fusiformis; ramis subpaucifloris, usque ad 60 mm longis. Spiculae pedicellis satis longiores; glumis dorso breviter sed manifeste scabridulo-pilosis, apice dentatulo-truncatis, 3-nerviis, I. = 16, II. = 14 mm longa. Paleae rostrum plane nullum; setae tota longitudine longissime plumosae, media ad 22, laterales ad 11 mm longae. — Damaraland (Galpin et Pearson).



× 4

ARISTIDA
DAMARENSIS Mez.
From type specimen.

The type in the Berlin Herbarium in Prof. MEZ' handwriting was received as a duplicate from the Kew Herbarium and is labeled: „ex Herb. Hort. Bot. Reg. Kew. no. 7577, *Aristida namaquensis*, Trin., Damaraland, Hackamchab, coll. Galpin &

Pearson. (acc. 6. V. 1910).” Although in habit resembling the *A. namaquensis*, the species is easy to distinguish by the inverse position of the glumes as described by Prof. MEZ, moreover the *A. damarensis* belongs to the section *Stipagrostis*, whereas *A. namaquensis* belongs to the section *Schistachne*.

***Aristida dasydesmis* (Pilger) Mez.**

CARL MEZ; in FEDDE, Rep. spec. nov. loc. cit. XVII. [1921] p. 148!

Perennis, quasi fruticulosa, gracilis. Vaginae internodia subaequant, glabrae; ligulae in pilorum brevium seriem mutatae; laminae crassiuscule setaceo-convolutae, glabrae laevesque. Culmi cum nodis glabri, e nodis dense fasciculatim ramosi. Inflorescentiae pauci-vel subpauciflorae, densiuscule 3-pinnatae, subthyrsoidae; ramulis erectis, usque ad 55 mm longis. Spiculae pedicellis tenuissimis, lateralibus usque ad 7 mm longis stipitatae. Glumae 1-nerviae, inferior latiuscule elliptica apice rotundato-truncatella et obscure denticulata nec ciliata, 4—4,5 mm longa, superior late lanceolata apice emarginata 8—9 mm longa. Paleae unguis ad 0,75 mm longus, glaber; articulatio manifesta; rostrum usque ad 5 mm longum, valde tortum; setae media ad 20, laterales 6—15 mm longae, . nudae. — K a p g e b i e t (Drège), auf Hügeln bei I-Aus (Schlechter no. 11228).

The plants mentioned by Prof. MEZ were examined through the courtesy of Dr. R. PILGER. The DRÈGE specimen (Drège pl. exs. spec. i) was already described by TRINIUS and RUPRECHT as *Aristida vestita* var. *parviflora*. The specimen labeled by MEZ is very meagre and depauperate, SCHLECHTER's number 11228 in the Berlin Herbarium is well-developed and accepted as the type. This plant is labeled by Prof. PILGER, „*Aristida dasydesmis* Pilger n. sp.!\", another label reads: „*Aristida vestita* Thunb. var. *dasydesmis*,” in Pilger's hand. On the sheet MEZ has written „*Aristida dasydesmis* Pilg.” Carl Mez IX. 20., but MEZ published the species as given above. This is wrong,



ARISTIDA
DASYDESMIS (Pilger) Mez.
From type specimen.

because PILGER never published the name *dasydesmis*. *Aristida dasydesmis* is a distinct species and very different from THUNBERG's species, the culms are fascicled from much branched suffrutescent many-noded rootstocks and stolons, the species differs moreover in the ligule, in the short rather few-flowered, contracted panicle and in the shorter glumes.

Aristida debilis Mez.

CARL MEZ; in FEDDE, Rep. spec. nov. loc. cit. XVII. [1921] p. 151!

Annua, gracillima. Vaginae culmi quam internodia breviores, glabrae; ligulae brevissime pilosae nec margine barbatae; laminae basin saltem versus planiusculae, angustissimae. Culmi glabri. Inflorescentia submultiflora, laxe effuseque 3-pinnatim paniculata, fusiformis; ramulis usque ad 0,12 m longis, filiformibus, medium usque sterilibus; pedicellis lateralibus usque ad 4 mm longis. Glumae sublanceolatae, seta terminali nulla acutiusculae, I. = 3—4,5, II. = 6—7 mm longa. Paleae unguis 0,3—0,5 mm longus, brevissime pilosus; articulatio rostrumque manifestius desunt; setae nudaе, media 10—15, laterales 8—12 mm longae.

Venezuela (Moritz); Jamaika (Mac Nab).

Note: = *Aristida adscensionis* L.

The four sheets in the Berlin Herbarium, labeled *Aristida debilis* ad int. by Prof. MEZ, received for study by the courtesy of Prof. R. PILGER are carefully examined by me. One of the sheets, Glaziou no. 12273 from Rio de Janeiro, although bearing the name in Prof. MEZ' hand, was not mentioned by him in the publication. The plant is *A. adscensionis*, the somewhat open-panicled form of that species. Another sheet is labeled: „Botanical Society of London, communicated by Dr. Gilbert Macnab, from the Island of Jamaica, 1846, St. Andrews, Nov. 1845, Herb. Karl Müller Hal., a. 1890 acc.” This plant agreeing with the description is also *Aristida adscensionis*. The two other sheets are from Venezuela both collected by MORITZ under two different numbers. Number 638 was collected in the year 1844, on the label the collector has written: „Colonia Tovar (alt. 4016 ped.) i mont. apic. Dec.”, another label, in a different handwriting, gives: „Columbia 1844 Moritz.” The name Columbia is certainly an error, Tovar is a locality in the venezuelan Andes. The specimen is a very elegant annual plant

and correspondents exactly to the description cited above. This is also the plant chiefly meant by Prof. MEZ, making his description, although some characters, as to the habit, are taken from the Macnab specimen. Moritz no. 638 is accepted as the type of *Aristida debilis*. all the characters of the specimen agree with those of the *A. adscensionis*. The fourth sheet is Moritz no. 1522, labeled Maracaybo, April. The locality given on an accompanying label as Columbia is once more an error. The plant belongs to a quite different species, none of the characters agree with the description of *A. debilis*. The chief characters are: much branched, probably perennial, not elegant species, auricles of the sheaths shortly bearded, panicle stiffly erect, interrupted, the branches erect and appressed, spikelets rather large, the glumes about equal, both long awned, 10—12 mm. long, surpassing the lemma, the latter smooth, narrowed into a very short scaberulous straight beak, including the bearded, 1 mm. long rather acute callus, up to 9 mm. long, the awns up to 30 mm. long or the lateral somewhat shorter, there is an indication of a faint nodule below the branching point of the awns. The new species based on Moritz no. 1522 I named **Aristida Moritzii**, allied to the group of the „*cognatae*”, a group hitherto known only from the West Indian Islands. A. complete description of the new species will be given afterwards.

Aristida decorata Steudel.

E. G. STEUDEL; Synopsis Plantarum Glumacearum [1855] p. 421!

Caespitosa, culmis basi geniculatis vel rectis (cum panicula pedibus et ultra) glabris, tantum vaginis infimis pilosis superioribus glabris internodio brevioribus arctis ore pilosulis; ligula pilorum series, nodis glabris, foliis setaceo-convolutis curvatis et flexuosis glaucis (2—3-pollicaribus); panicula elongata (4—6-pollicari); radiis erecto patulis binis vel solitariis inaequalibus 1—4-spiculatis; glumis inaequalibus, inferiore flosculo brevior, superiore eum superante, apice plerumque utraque bifida; stipite aristae 3—4-lineali, seta media ultra bipollicari fere a basi pinnata, pinnulis 1½—2" longis patentibus, setis lateralibus omnino nudis 7—8" longis tenuissimis facile deciduis. Forsan Aristidae plumosae *Lin.* valde variabilis varietas praesertim plumis aristae longis insignis. A. Forskalii *Notaris* hrbr. et ? *Tausch. Schimperus* hanc formam non legit. Regio Sinaica.

Note: = **Aristida Raddiana Savi.**

The type was not seen by me, but from the description and from the type locality (Sinai), I am convinced that STEUDEL's plant belongs to *A. Raddiana* SAVI, described from Egypt. The synonym *A. Forskalii* Notaris hrbr. belongs to a plant collected in the so-called Arabian desert, between Cairo and Sinai, a region visited by FIGARI, whose collections were studied by DE NOTARIS. FIGARI's plants are in the Florence Herbarium and a set of duplicates I found in the Herbarium of the Botanical Garden at Leningrad. Among the *Aristidas* collected by FIGARI there is a plant agreeing well enough with the description given by Steudel. This plant was the same as *A. Raddiana*, but STEUDEL overlooked some striking characters. In *A. Raddiana* the internodes are glabrous, with exception of the lowermost one, which is woolly, the glumes have moreover an inverse position, a character not mentioned by STEUDEL. All the other characters agree with the type of *A. Raddiana*, a species I have seen from the Sinai. *A. paradisea* is closely allied to *A. Raddiana*, but glabrous throughout and with a different geographical range. See my observations under *A. caloptila* (this revision p. 70).

***Aristida delicatula* Hochstetter,**

in *pl. Schimp. Abyss.*, sect. III, no. 1830. Nomen!

A. RICHARD; Tentamen Florae Abyssinicae. Vol. II. [1851] p. 393!

A. parvula caespitosa: culmo 1-3-4 unciali gracili: foliis linearilanceolatis, scabris; ligula pilosa; panicula ramosa; ramis capillariibus scabris, semiverticillatis; spiculis violaceis minimis longe pedicellatis; lepicenae valvula exteriore flosculum aequante apice seta terminata, dorso carinata et scabra; interna longiore angustiore, acuta; palea exteriore triquetro-subulata, scabra; aristae tripartitae ramo medio lateralibus duplo longiore, omnibus triquetro subulatis scabris.

Crescit in locis arenosis et graminosis prope *Kouaieta*, in provincia *Chiré* (Quartin Dillon et Schimper).

Observation. — La ressemblance la plus grande lie entre elles l'*Aristida delicatula* et l'*Aristida capillacea* de Lamarck, espèce originaire de l'Amérique méridionale. C'est absolument le même port. Cependant la première de ces espèces est encore plus petite dans toutes ses parties. Ses épillets sont constamment de couleur violacée; les valves de sa lépicène sont proportionnellement plus larges;

l'une et l'autre se terminent par une soie dans l'*Aristida capillacea*; les trois branches de l'arête sont très-inégales dans l'*Aristida delicatula*, et à peu près égales dans l'espèce américaine.

Note: = *Aristida Cumingiana* Trin. et Ruprecht.

Aristida densispica Steudel.

E. G. STEUDEL; Synopsis Plantarum Glumacearum [1855] p. 139!

Caespitosa pumila (florens vix pollicaris demum 3-pollicaris) glaucescens; foliis radicalibus e basi latiore (vagina soluta) angustissime linearibus ($\frac{1}{4}$ — $\frac{1}{3}$ " latis, $\frac{1}{4}$ " longis), caulinis 2—3-plo majoribus; ligula margo puberulus brevissimus; thyrso condensato ($\frac{1}{2}$ —1-pollicari) radiis vix ullis sed spiculis omnibus sessilibus confertis; glumis subaequalibus cuspidato-acuminatis bilinealibus; flosculo $1\frac{1}{2}$ -lineali glabro apice vix scabriusculo; setis subaequalibus $2\frac{1}{2}$ —3-linealibus. *Leprieur* legit in Senegalia.

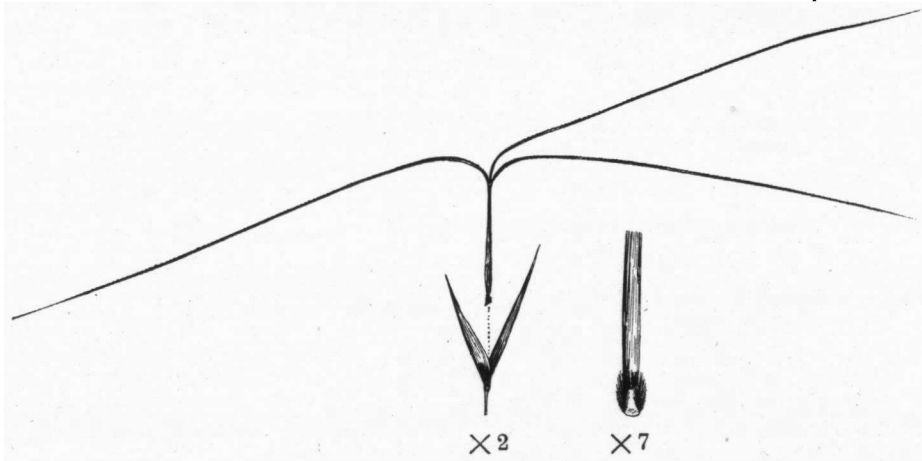
I am informed by Prof. H. LECOMTE that the type is not in the herbarium of the Jardin des Plantes. Many types described by STEUDEL must be in the Franqueville Herbarium, a collection I could not study. *Aristida densispica* is according to the description an interesting species of the *Chaetaria* group, but having not seen a specimen among the large african collections I have studied, I cannot give my opinion, until I have seen a plant agreeing with the description.

Aristida denudata Pilger.

ROB. PILGER, in Wissenschaftliche Ergebnisse der schwedischen Rhodesia-Kongo-Expedition 1911—1912 unter Leitung von Eric Graf von Rosen. Band I, Botanische Untersuchungen, Stockholm [1915] p. 206!

Caespitosa, perennis, innovationibus brevibus extravaginalibus ad basin culmorum erectis vel breviter vel longius repentibus et tum fasciculos culmorum florentium erectos edentibus; culmi pergraciles tenues erecti vel leviter geniculati, laeves, ad circ. 50 cm alti, 1—2-nodi, internodia maxima pro parte nuda, vagina quam internodium 3—6-plo brevior, culmi apice saepius longe e vagina superiore exserti, foliorum culmorum lamina subplana, patens, angustissime linearis, sensim tenuiter angustata, apice ipso obtusiuscula,

5—10 cm longa, 1—2 mm lata, supra hispidula, basi saepe imprimis in foliis inferioribus pilis tenuibus longissimis parce impersa, vagina striata laevis 3—6 cm longa ore imprimis in innovationibus pilis longissimis albidis parce barbata, ligula brevissime membranacea brevissime ciliolulata, vaginae innovationum basium 2—3 cm longae; panicula depauperata, angusta, ad 10 cm longa, nodis distantibus, rami tenuissimi, plerumque bini, longe nudi, apice tantum spiculas 1—2 gerentes; glumae vacuae lanceolatae, longe angustatae acutatae, 8—8,5 et 10—11 mm longae; gluma florifera callo brevi breviter albido-barbato instructa, in aristam transiens, usque ad basin aristae 8 mm longa, aristae tenues, media 3—3,4 cm, laterales 2,5—2,7 cm longae.



ARISTIDA DENUDATA Pilger.

From type specimen.

Nordost-Rhodesia: Bangweolo bei Kamindas, auf ziemlich feuchter Wiese [5. Okt. — n. 887]; am Kalungwisi-river (zwischen dem Bangweolo- und Tanganyika-See), auf feuchter Wiese [30. Okt. — n. 1161].

„Eine charakteristische Art aus der Verwandtschaft von *A. adscensionis* L.“

The two numbers cited are in the Botanical Museum at Upsala, both in Prof. PILGER's handwriting. They were kindly received in loan through the courtesy of Prof. O. JUEL.

Aristida depressa Retzius.

ANDREAE JOHANNIS RETZII Observationes Botanicae, Lipsiae Fasc. IV. [1786] pag. 22!

63. *ARISTIDA depressa* culmis trifido-ramosis decumbentibus, aristas scabriusculis.

Habitantem invenit *honor. KÖNIG* in sterilibus Malabariae cum priori.

Culmi decumbentes, filiformes, plerumque trifido-ramosi, sesquipedales.

Folia angustissima, vix convoluta.

Panicula subsecunda.

Calyx uniflorus, valvulis carinatis acutis albis dorso viridi, exteriore dimidio brevior.

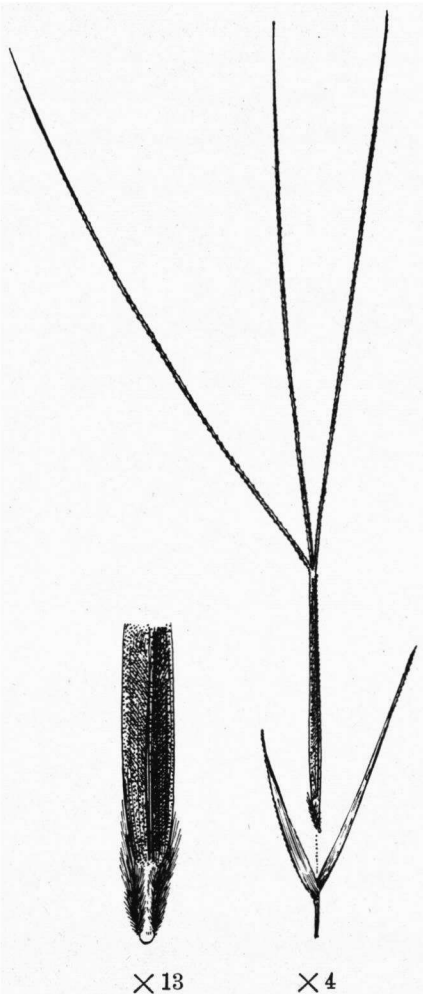
Aristae scabriusculae.

Corolla uti praecedentis basi tantum lanata.

Multum similis priori differt culmo, glumarum calycinarum longitudine relativa et forma. *Flores* ut etiam *Aristae* minores, breviores, minus divaricatae.

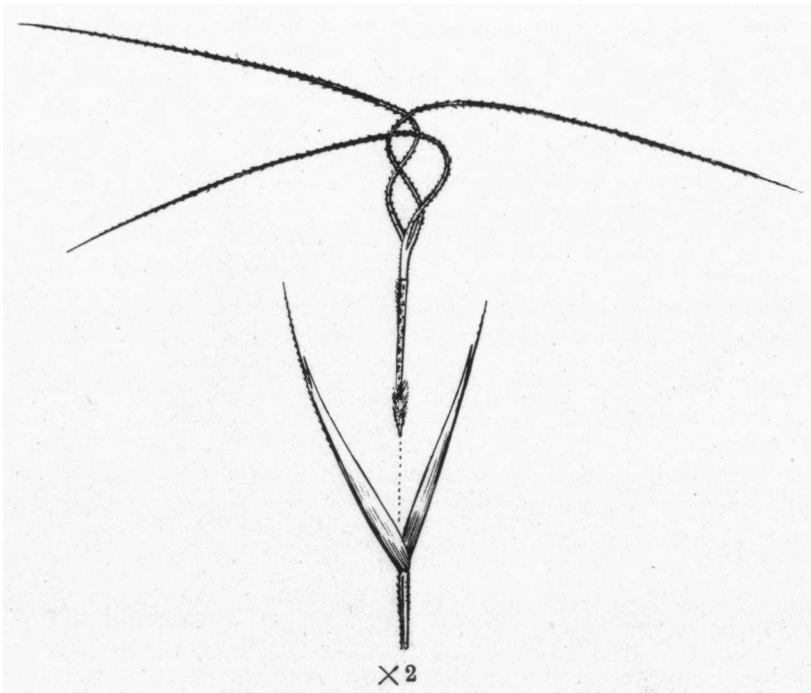
Aristae tertiae longitudo praeter ceteris in distinguendis *Aristidae* speciebus vix aliquid valet.

The type I have seen in the Herbarium of the Botanical Garden at Lund. In the Schreber Herbarium at Munich I found authentic specimens bearing a label in *RETZIUS*' handwriting. In the Willdenow Herbarium at Berlin, there are also two sheets probably received from *RETZIUS*. All these specimens agree perfectly with another and with so many specimens I have seen from British India. This very elegant plant is named by Prof. *MEZ* in some herbaria *Aristida adscensionis indica*, a name we cannot accept, because *RETZIUS* described the plant very accurately and his name has priority, even if we place *RETZIUS*' plant as a variety under *A. adscensionis*. Well-developed plants have sterile innova-



ARISTIDA DEPRESSA Retzius.
From type specimen.

tionshoots but the root-system is rather faint and much resembles that of annual grasses. The blades are thin and setaceously convolute and the panicles are very loose and open. The spikelets differ from those of *A. adscensionis* in the very unequal length of the glumes, the lower glume is about $\frac{2}{3}$ as long as the upper and both are moreover very acute, the lower distinctly awned, the upper without a bifid apex and slightly pointed. Essential differences being present in the characters of the glumes, I could not unite the *Aristida depressa* with one of the allied species. If we give no weight to the characters of the spikelets of grasses, we must unite all the different forms into one very variable species, a species so variable that it is rather impossible to recognize such a species, moreover we cannot neglect the geographical distribution. It is very easy to unite the different forms, but in doing so, we are not satisfied and we still try to disentangle the group. As already observed in this revision, the culture in the tropical regions shall give us in the future a better idea of the value of the different forms.



ARISTIDA DESMANTHA Trinius et Ruprecht.

From type specimen.

***Aristida desmantha* Trinius et Ruprecht.**

Spec. Gram. Stipac. loc. cit. pag. 109!

Paniculae fere semipedalis, apice nutantis radiis geminis, erecto-patentibus, *apice fasciculifloris*; spiculis brevededicellatis; glumis ex apice subulato setigeris, subaequalibus, 7—8 linealibus; flosculo 4 lineali, laevigato, apice cum setis *usque ad basin fere disjunctis* (sua sponte) vix deciduis *articulatim* connexo; setis omnibus patentibus, pollicaribus, subaequalibus, inferne *tortuosis* et basi in stipitem *linealem semel tortum* coalitis.

Texas (Drummond n. 285! — n. 333 in Hb. Mus. Vindob. eadem: depauperata, pedalis, radiis paniculae tantum trifloris).

Bipedalis, stricte erecta, ad nodos ramosa. *Ligula* minima, truncata. *Folia* cum vaginis glabra, convoluta, semipedalia et longiora. Proxima videtur *A. fasciculatae* et *A. tuberculosae*.

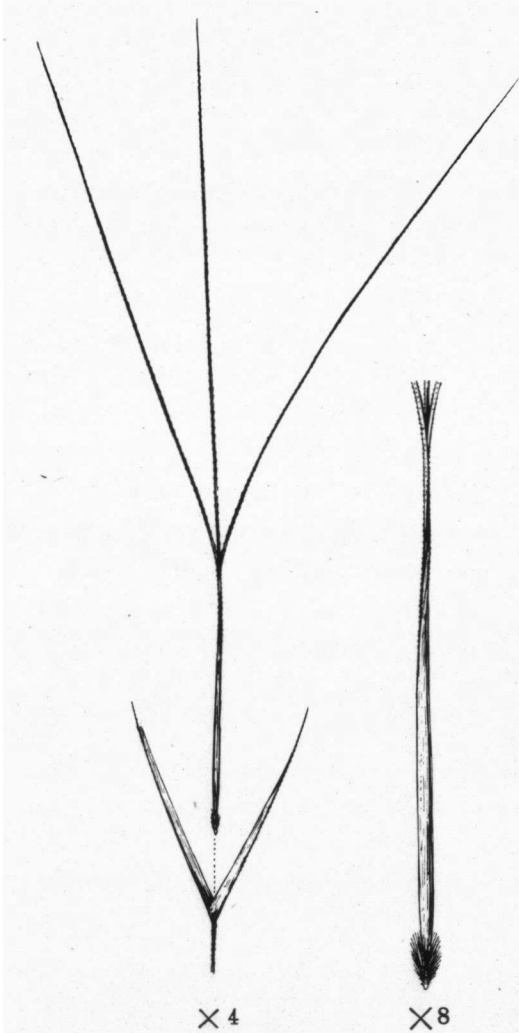
The type, in the Trinius Herbarium at the Académie des Sciences, Leningrad, is Drummond no. 285, a duplicate type determined by RUPRECHT in the Vienna Herbarium. Another duplicate I saw in HACKEL's Herbarium (Vienna number 15636) ex herb. MUNRO. Drummond 333, the cotype is in the Vienna Herbarium determined by RUPRECHT.

***Aristida Dewildemani* Henrard**

nov. spec.

Perennis, caespitosa. *Culmi* elati, stricte erecti, ad 1 m. alti, hinc inde pilis adpersis, inferne 2 mm. crassi, teretes, simplices, multinodes. *Foliorum vaginae* arctae, striatae, inferiores stramineae glabrescentes, superiores dense crispo-lanato-tomentosae, ultimae glabrae, internodiis longiores; ore piloso; *ligula* brevissima, truncata, glabra sed pilis longis niveis stipata, *laminae* lineares, sensim acutatae, ad 30 cm. longae, rigidae, inferne planae, superne convolutae, supra praesertim in parte inferiore densissime lanatae, (vetustae glabrescentes), subtus laeves, glabriusculae, crassinerves, utroque latere nervis circa 8 percursae, nervis marginalibus duobus valde prominentibus, crassissimis, cartilagineis, stramineis. *Panicula* sat longa sed angusta, lineari-lanceolata, 20—35 cm. longa, 1—3 cm. lata, densiuscula, multiflora, inferne subinterrupta, *rhachi* tereti vel subangulata, glabra, laevi; *ramis* elongatis, adpressis, laxiusculis,

inferne nudis, ramis ramulisque subangulatis, scaberulis. *Spiculae* congestae, pedicellis scaberulis, apice haud incrassatis, erectae, lineares, circa 8 mm. longae, flavo-virides vel viridi-violaceae; *glumae steriles* duae subaequilongae vel gluma prima paulo longior, uninerves; gluma I. anguste lanceolata, carina scabra, ad 8 mm. longa



ARISTIDA DEWILDEMANI Henrard.
From type specimen.

sensim in aristam abiens; gluma II. linearis, glabra, sine arista ad 7 mm. longa, apice leviter bifida, interdentes arista scabra circa 1 mm. longa praedita, *gluma fertilis* anguste tubulosa, cum callo obtuso circa $\frac{1}{2}$ mm. longo et stipite leviter tantum torto vel recto, 9 mm. circa longa, laevis sed superne in regione stipitis scabra. Aristae subaequilongae, media circa 18 mm. longa, laterales parum breviores. *Palea* minima.

Congo-belgica: Manzanze, in locis argillaceo-arenosis, maio 1913, leg. H. VANDERYST no. 174 (typus speciei); Sona-Bata, abundans in savannis, maio 1913, leg. H. VANDERYST no. 555 (cotypus speciei). Herb. Mus. Bot. Bruxelles.

This species was already mentioned by Dr. DEWILDEMAN in his very important publications on the Congo Flora as *Aristida*

vestita THUNB., *) a very different South-African species, not yet found in the Congostate. Because the first specimen received from

*) Bulletin du Jardin Botanique de l'état, Vol. IV. [1914] p. 47!

the Congo, collected by HENS was named *Aristida vestita* by Dr. KLATT, nearly all the other plants received afterwards were published under a false name. I recognized the plants as a distinct species and saw the following specimens: Lutété, sol très sec sablonneux, 1888, HENS Série A no. 324 (sans racines); Kisantu, 1900, J. GILLET no. 851; Yindu, 2 Mai 1907, VANDERYST (sans racines); idem; Kisantu, 1907, VANDERYST (sans racines); Kisantu, Lazaret du Sacré Coeur, avril 1911, VANDERYST; idem; Manzanze, Mai 1913, sol argilo-sablonneux, VANDERYST no. 174; idem; Kisantu, sol schisto-calcaireux, Mai 1913, VANDERYST no. 190; idem no. 375; Vallée de la Nyanza, Mai 1913, VANDERYST no. 358; Sona-Bata, abondant dans la savane, Mai 1913, (sans racines), VANDERYST no. 543; idem no. 555.

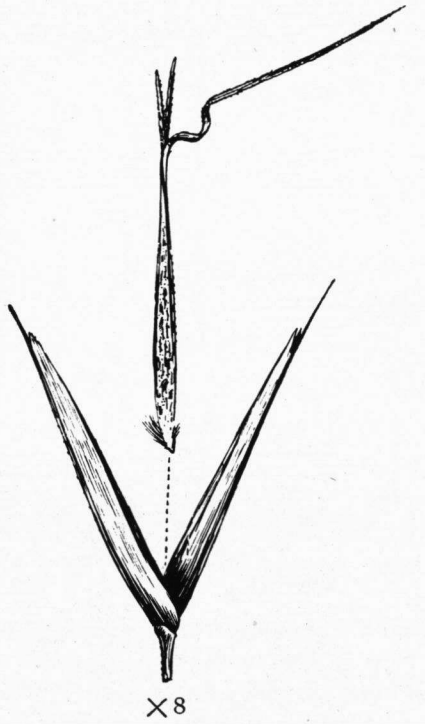
Aristida dichotoma Michaux.

ANDREAS MICHAUX; Flora Boreali-Americana, Parisiis et Argentorati, Tom. I. [1803] p. 41!

A. stricte multicaulis, setacea; culmis dichotomis: floribus parvulis, subspicatis, subuniaristatis: arista gluma brevior et basi contorta; lateralibus brevissimis.

HAB. in Carolina superiore, juxta *Lincoln*, in glareosis.

The type in the Michaux Herbarium at the Museum d'Histoire Naturelle in the Jardin des Plantes at Paris. A supplementary description of the type was given by HITCHCOCK in Types of American Grasses (Contributions U. S. Nat. Herbarium XII. [1908] p. 144). HITCHCOCK says: „The specimen belongs to this species as described in our manuals. Lower glume 5 to 6 mm., upper glume 6 tot 7 mm. long, slightly scabrous on keel and sides, the midnerve extended into a very short awn 0.3 mm. long; lemma sparsely appressed-pubescent, 3-nerved, 5 mm. long to base of awns; cen-

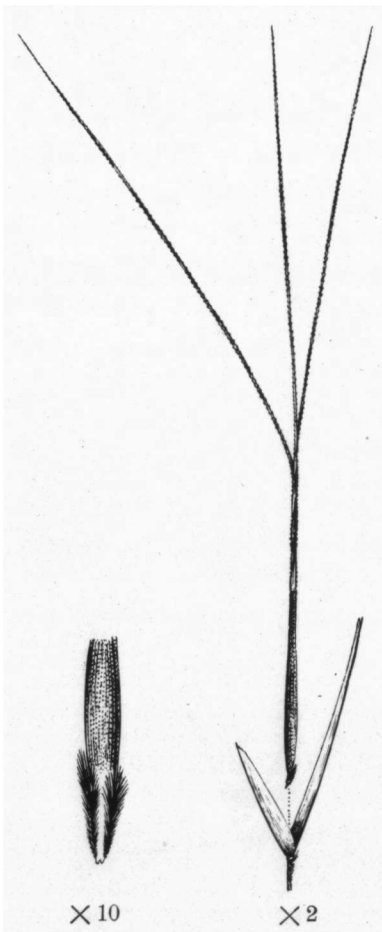


ARISTIDA DICHOTOMA Michaux.
From type specimen.

tral awn 4 mm. long, curved at base to form a half coil, lateral awns erect, 1 mm. long." A duplicate type in the Richard Herbarium, formerly in the herbarium of Drake de Castillo at Paris, now under the control of the Museum. RICHARD distributed some of MICHAUX's plants to other herbaria. I saw an authentic specimen in the Vahl Herbarium at Copenhagen sent by RICHARD.

Aristida diffusa Trinius.

C. B. TRINIUS; Graminum Genera quaedam speciesque complures definitionibus novis, in Mémoires de l'Académie Impériale des Sciences de St. Petersburg, VI^{me} Série. Tome I. [1829] p. 86!



ARISTIDA DIFFUSA Trinius.

From type specimen.

Panicula diffusa, lucidissima; Glumis obtusiusculis, bifido-dentatis: superiore duplo longiori, perianthio 8-lineali quartam partem breviori; Aristae laciniis valvula sesqui-longioribus: media paulo majori.

V. sp. Cap. b. sp.

Bipedalis, culmo simplici foliisque involutis glabris. Panicula dodrantalis, radiis subcapillaribus diffusis. Flores (demum) spadicei, basi purpurei; Aristae squarrosae.

TRINIUS et RUPRECHT; Species Graminum Stipaceorum loc. cit. [1842] p. 157! sub *Aristida vestita* Thunberg α . *A. diffusa*.

Paniculae 6—9 pollicaris, effusae, amplae, lucidae, sparsiflorae radiis 3 pollicaribus, patentibus l. divaricatis, basi nudis; gluma superiore 6 $\frac{1}{2}$ —7 lineali inferiorem duplo superante; flosculo 5—5 $\frac{1}{2}$ lineali; stipite aristae 3 lineali, contorto; seta media patenti-divaricata, subsesquipollicari, lateralibus erecto-patentibus lineis 2—5 longiore; vaginis glabris.

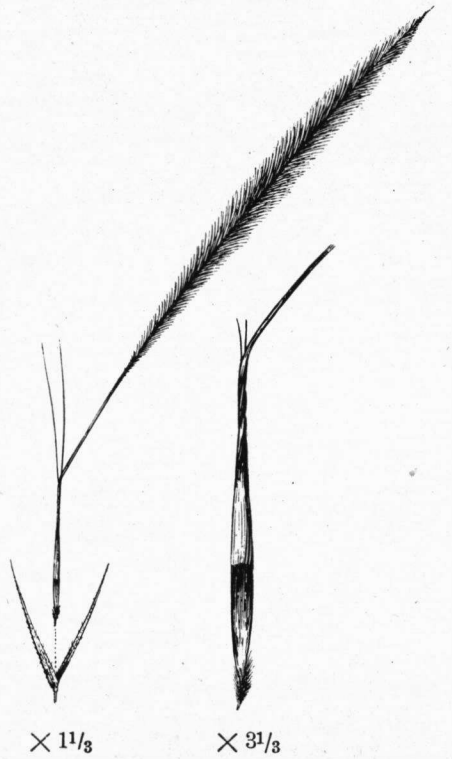
This is the species generally called

Aristida vestita; as to the description given by TRINIUS and afterwards by TRINIUS and RUPRECHT the species agrees with THUNBERG'S *Aristida hystrix*, a plant very different from the indian *Aristida hystrix* L. f.. Probably TRINIUS had not seen the type of *A. vestita* but he studied the very good description in THUNBERG'S *Flora Capensis*. See note under *A. flocciculmis* MEZ.

Aristida Dinteri Hackel

in SCHINZ; Beiträge zur Kenntnis der Afrikanischen Flora, Bulletin de l'Herbier Boissier, Seconde Série, Tome I. N^o. 8 [1901] pag. 767!

Perennis, dense caespitosa, innovationibus intravaginalibus. Culmi erecti, graciles, binodes, ad apicem usque foliati, glabri, scaberuli, circ. 25 cm alti, simplices. Vaginae arctae, teretes, scabrae, internodiis breviores, glabrae nisi ore breviter ciliatae; ligula ciliaris, brevis. Laminae lineares, setaceo-convolutae (diam. 0,6 mm), acuminatae, 12—15 cm lg., scabrae, erectae. Panicula erecta, linearis, laxa, contracta, basi interrupta, ad 12 cm lg., rhachi ramisque glabris scaberulis, his brevissimis (4—8 mm lg.) binis v. solitariis, appressis, unispiculatis, spicula 2—4-plo brevioribus. Spiculae lineari-lanceolatae, pallidae, sine aristis cc. 14 mm longae: glumae steriles subaequales, lineari-lanceolatae, longe acutatae, 3-nerves, pubescentes. Gluma fertilis linearis, 8 mm lg., praeter callum (1,5 mm lg.) breviter sericeo-barbatum glaberrima, in medio facile articulatum rumpens, apice sensim in aristam abiens; aristae stipes 4 mm lg. laxo tortus, seta media cc. 6 cm lg. in $\frac{1}{4}$ inferiore nuda, superius pennata, laterales intermedia 4-plo breviores, tenuissimae, glabrae. Palea 1 mm lg.; antherae 5—6 mm lg.



ARISTIDA DINTERI Hackel.
From type specimen.

Deutsch-Südwest-Afrika (Hereroland); Kan, Dinter 1485.

Affinis *A. prodigiosae* Welw., quae vero abunde differt panicula multiflora ramis 2—5-nis patulis elongatis (ad 6 cm lg.) ramulosis, spiculis longe et tenuissime pedicellatis basi atro-violaceis, aristae ramis lateralibus quam medio duplo tantum brevioribus, foliis brevibus, rigidis, crassis.

This species is wanting in HACKEL's Herbarium at Vienna. The type specimen in the Herbarium of the Botanical Garden at Zürich was kindly received in loan from the Director Prof. Dr. HANS SCHINZ.

Aristida dispersa Trinius et Ruprecht.

Species Graminum Stipaceorum, loc. cit. pag. 129!

Paniculae 1—6 pollicaris pl. min. contractae plerumque coloratae radiis *solitariis l. verticillatis*, a basi fere floriferis; glumis inaequalibus, acutiusculis: superiore 3—4 lineali inferiorem lineam dimidiâ l. integrâ superante; *flosculo glumam mox superiorem, mox inferiorem adaequante*, ad divisuram usque aequo; setis erecto-patentibus, parum inaequalibus, media 6—7 lineali. Ab *A. vulgari*, cujus quasi seriem formarum orbis novi alteram sistit, suadente tum glumarum flosculorumque proportionem mutua tum radiorum numero pro tempore distinctam adhuc servavimus.

α. *A. nana*. Steudel Nomencl. 1841. *Aristida festucoides* Hochst. et Steudel! (non Poir.) in sched. Un. itin. 1835. *Chaetaria nana* N. E. ex Steud. Nomencl. 1841. — Chile: prope Valparaiso (Cuming!); in aridis ad Concon (Pöppig) et in declivibus apricis collium prope Quillota m. Septembri (Bertero hb. n. 994!). ☉.

β. *A. humilis* HBK! Nov. gen. 1. (1815) p. 99 (121) c. descr. — *Chaetaria humilis* R. S. Syst. 2. (1817) p. 396. — In exustis aridis Cumanae m. Septembri. ♀. (Humb.)

γ. *A. bromoides* HBK! Nov. gen. 1. (1815) p. 100 (122) c. descr. — *Chaetaria bromoides* R. S. Syst. 2. (1817) p. 396. In montanis regni Quitensis juxta Tambo de Guamote et Llanos de Tiocaxas altitud. 9600 ped. Julio m. ♀. (Humb.)

δ. *A. coarctata* HBK! Nov. gen. 1. (1815) p. 100 (122) c. descr. — *Chaetaria coarctata* R. S. Syst. 2. (1817) p. 396. *Aristida laxa* Willd. hb. n. 1806. non Cavan. In alta planitie Mexicana inter Burras et Guanaxuato altit. 6360 ped. m. Septembri ♀. (Humb.)

ε. *A. nigrescens* Presl! Reliq. Hänk. 1. (1830) p. 223. — Mexico (Hänke) ☉.

The name given by the Russian monographers is a group name, including the five species mentioned above, of which *Aristida humilis* H. B. K. described in the year 1815 is taken as the type of the group. This one agrees with *Aristida adscensionis* L.

***Aristida divaricata* Humboldt et Bonpland,**

ap. WILLDENOW; *Enumeratio Plantarum Horti Regii Botanici Berolinensis*, Berolini, [1809] pag. 99!

A. panicula effusa nutante, calycibus aristatis corollam aequantibus, aristis corollae inaequalibus, ore vaginarum barbato.

Aristida divaricata *Humboldt et Bonpland.*

Habitat in Mexico. ♀. T.

Sub nomine *Aristidae pallentis* semina accepi, sed ab hac floribus minoribus, aristis brevioribus, oreque vaginarum barbato diversa.

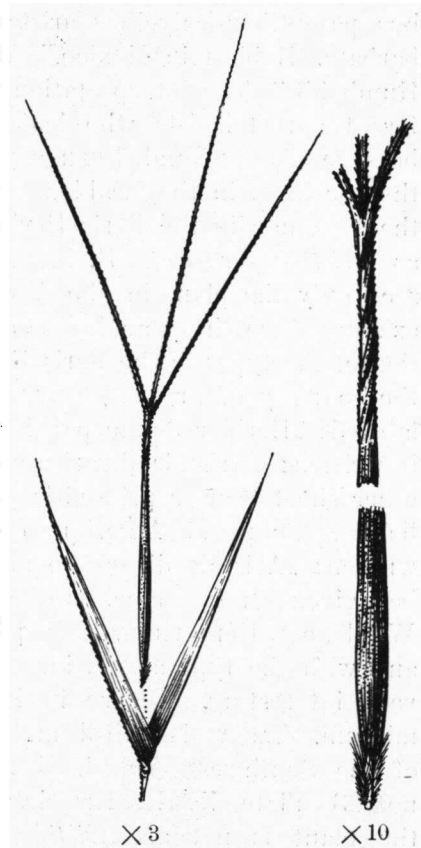
A. DE HUMBOLDT, A. BONPLAND et C. S. KUNTH; *Nova Genera et Species Plantarum* [1815] loc. cit. p. 123!

A. culmo simplici; foliis convolutis, margine scabris; panicula ramosa, subverticillata, divaricata; glumis brevissime aristatis; aristis subaequalibus.

Aristida divaricata. *Willd. enum Hort. Berol.* 1. p. 99.

Crescit regione subfrigida regni Mexicani, inter Salamanca, Guanaxuato et Oveexas, alt. 900—1100 hexap. ♀ Floret Septembri.

RADIX fibrosa. CULMI caespitosi, erecti, pedalis aut bipedales, simplices, striati, compressiusculi, glabri. NODI glabri. FOLIA convolutosubulata, striata, glabra, margine

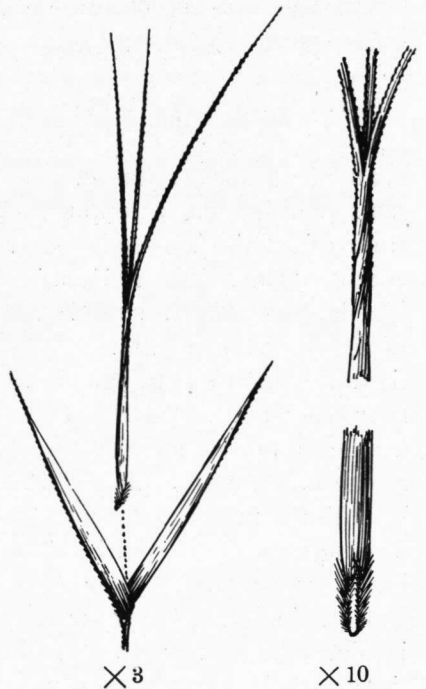


ARISTIDA DIVARICATA Humboldt et Bonpland.
From type specimen. (*Herb. Willd.*)

scabra. VAGINAE striatae, glabriusculae, ore lanatae. LIGULA brevissima, pilosa. PANICULA ramosa, pedalis, diffusa, ramis subternis, longissimis, patulis, angulatis, rhachique triquetra scabris. GLUMAE lanceolato-subulatae, purpurascens, dorso scabrae, apice breviter aristatae, inaequales, inferior paullo brevior, longitudine paleae inferioris. PALEAE convolutae, glabrae, inaequales, inferior coriacea, linearis, basi breviter pilosa, apice triaristata, aristis subaequalibus, longitudine paleae; palea superior membranacea, quadruplo brevior, acuta, mutica.

The type in the Willdenow Herbarium was kindly submitted for study by Prof. PILGER. The cover bears the number 1802 and a label in WILLDENOW'S hand: „Triandria, Digynia, Aristida divaricata, panícula patentissima ramis geminatis aristis nudis inaequalibus patentibus calycibus aristis longitudine corollae, ore vaginae barbato. Habitat in Mexico.” The sheet is labeled: „Aristida 4207 Humboldt.” The interpretation of *Aristida divaricata*, given by different agrostologists who had to deal with it, was often wrong, because TRINIUS and RUPRECHT based their *A. Humboldtiana* upon the specimen in the Willdenow Herbarium, in the supposition that the specimen in the Paris Herbarium described in the *Nova Genera* as *Aristida divaricata* H. B. K. was another species. TRINIUS had seen only the plant in the Willdenow Herbarium. The confusion, existing since the year 1842, could only be solved by the examination of the types in the Paris Herbarium. I could study them through the courtesy of Prof. LECOMTE. There are two sheets, the one was labeled: „Herbier donné par Mr. BONPLAND en 1833”. On the label is written: „Aristida divaricata Willd! Mexique (Guanaxato)”, the other sheet bears a printed label: „Herb. Mus. Paris. Herbier Humboldt & Bonpland. Amérique équatoriale.” On the second label is written: „Aristida divaricata mn. n. 4207. Guanaxuato.” The number given on the label is the same as found on the sheet in the Willdenow Herbarium. The plants agree perfectly with another and with the type at Berlin. The study of the different types was very interesting, because in herbaria *A. divaricata* is generally a mixtum. VASEY described and figured an *A. divaricata* in *Grasses of the Southwest*, Vol. I. U. S. Dep. of Agriculture [1891], under no. 23, Plate XXIII. His description agrees with the plate, but the plant is not an *Aristida divaricata*. In the corrections and emendations VASEY says: „Plate 23. This is *Aristida Humboldtiana* Trin. Trinius excludes *A. divaricata* as a mixed and uncertain species.” The plant figured by VASEY was also called *A. Hum-*

boldtiana by different european botanists. Having demonstrated that both names are typonyms, it is clear that only the plants agreeing with the types, belong to *A. divaricata*. The plant meant by VASEY belongs to a different species. See this revision under my *Aristida gentilis*. Prof. HITCHCOCK has also seen the specimens in the Paris Herbarium and he used the name *A. divaricata* HUMB. et BONPL. ap. WILLD., without having seen the type in the Willdenow Herbarium; he says that *A. Humboldtiana* is based upon *A. divaricata* H. B. K., but that is an error, the russian authors based their species upon the plant in Willdenow's Herbarium and the locality was copied from the Nova Genera. If they had really seen the types at Paris, they would not have described their *A. Humboldtiana* as a new species. WILLDENOW's statement, in a note following the description, that seeds of the species were received under the name of *A. pallens*, has caused much confusion. See afterwards under *A. divaricata* JACQUIN. The description given by HITCHCOCK does not apply to the *A. divaricata* as accepted in my work, but includes several other species, according to the many, cited specimens, I could examine. The true *A. divaricata* is distinguished by the subequal, distinctly awned glumes, the lemma having a well-developed, manifestly twisted scabrous column, the body smooth but punctulate under a lens, and by the about equal awns, the central but slightly longer than the lateral ones. The collar and auricles are bearded, such collars were also mentioned by FOURNIER in the description of *A. barbata* and an examination of FOURNIER's type has shown that *A. barbata* is allied to *A. divaricata* H. et B.. FOURNIER's specimens are not fully grown out and the shape of the panicle is therefore misleading, but the spikelets agree with those of *Aristida Havardii* VASEY, which differs from *A. divaricata* especially in the hemis-



ARISTIDA BARBATA Fournier.

From type specimen.

(Schaffner no. 513 Herb. Cosson Paris).

mine. The true *A. divaricata* is distinguished by the subequal, distinctly awned glumes, the lemma having a well-developed, manifestly twisted scabrous column, the body smooth but punctulate under a lens, and by the about equal awns, the central but slightly longer than the lateral ones. The collar and auricles are bearded, such collars were also mentioned by FOURNIER in the description of *A. barbata* and an examination of FOURNIER's type has shown that *A. barbata* is allied to *A. divaricata* H. et B.. FOURNIER's specimens are not fully grown out and the shape of the panicle is therefore misleading, but the spikelets agree with those of *Aristida Havardii* VASEY, which differs from *A. divaricata* especially in the hemis-

pheric habit of growth and in the shorter glumes and column. A drawing of the spikelet of *A. barbata* is given here to compare the two species and to demonstrate the affinity.

Aristida divaricata Jacquin.

JOSEPH FRANZ VON JACQUIN; *Eclogae graminum rariorum aut minus cognitarum, quae ad vivum descripsit et iconibus coloratis illustravit. Post obitum JACQUINI ad fidem auctoris manuscripti absolvit, titulo ac indice instruxit* EDUARD FENZL. Vindobonae, [1813] p. 7. Tab. 6.

Panicula effusa nutante, calicibus aristatis corollam aequantibus, aristis corollae inaequalibus, ore vaginarum barbato. Willdenow Enum. plant. horti Berolinensis, vol. 1, pag. 99.

Radix annua, fibrosa. Culmi plurimi ex eadem radice, erecti, sesquipedales et ultra, simplices, stricti, graciles, teretes, glaberrimi, nitidi, ad lentem striati. Folia sesquipedalia, patentia, linearia, acuminata, plana, glabra, ad lentem tenuissime sulcata, margine paulisper retrorsum scabra. Vaginae cylindricae, glabrae, ad lentem striatae, ad oras et ubique nudaе, rima clausa. Ligulae breves, erectae, truncatae, ciliatae. Flores in paniculis terminalibus, laxis, elongatis; ramis remotis adpressis. Flosculi in pedicellis capillaribus plerumque bini, coarctati, adpressi. Calyx uniflorus, biglumis, laxis; glumis inaequalibus, lanceolato-oblongis, carinatis, membranaceis, hyalinis, dorso linea purpurascente notatis; exteriore breviori, dorso hispida, apice acuta; interiore longiore, apice dentata. Corolla biglumis, subpedicellata, glumis inaequalibus; exteriore sextuplo longiore, viridi, lanceolato-lineari, convoluta, glabra, basi barbata, apice triaristata, aristis inaequalibus, glumam aequantibus, apice purpurascens, hispidulis; gluma interiore minima, ovato-oblonga, membranacea, mutica, intra glumam exteriorem inclusa. Filamenta tria, laxa, alba; antheris didymis, linearibus, luteis, ex rima valvulae exterioris corollae prodeuntibus. Germen ovato-oblongum, suffultum nectarium squamulis duabus lanceolatis, minimis, membranaceis: Styli duo, pallide virides. Stigmata penicilliformia, alba. Semen lineari-oblongum, glabrum.

Die Samen dieser Pflanze erhielt der hiesige Universitätsgarten 1811, zuerst aus dem Botanischen Garten in Turin, unter der Aufschrift *Aristida pallens*. Die Untersuchung lehrte in der Folge, dass es jene mexikanische Art sey, welche der selige Willdenow (a. a. O.) unter dem Nahmen *Aristida divaricata* beschrieben hat, und die

Herren Baron VON HUMBOLDT und BONPLAND zuerst nach Europa brachten. Sie wird bey uns im Topfe gezogen und bey warmen Wetter ins Freye gestellt, wo sie blühet und reife Samen hervor bringt.

Die Abbildung stellt vor: eine ganze blühende Pflanze und eine grössere Rispe besonders, in natürlicher Grösse; eine ganze ungeöffnete Blüthe samt dem Kelch; eine Blume mit den Staubfäden und Griffel, den hervorgezogener zweyten Spelze; einen Fruchtknoten mit dem Griffel und der Nebenkrone; den Samen; endlich das Blattgelenke mit dem Blatthäutchen, vergrössert.

Note: = *Aristida adscensionis* L.

Through the courtesy of Dr. v. KESSLER, I received a copy of JACQUIN's description in *Eclogae gram. rar.*, a work I could not consult in my country, thus I have not seen JACQUIN's coloured plate. Unfortunately no specimens of *Aristida divaricata* were found in JACQUIN's herbarium at Vienna. WILLDENOW's description was copied literally by JACQUIN but a long description of his own was given too. This description was made from plants cultivated in the Botanical Garden at the University, received from the Botanical Garden at Turin under the name of *Aristida pallens*. I am informed by Prof. R. VON WETTSTEIN that JACQUIN's cultivated plants are not in the herbarium of the University at Vienna. No authentic specimens being present, we can only give a critical review of JACQUIN's description. He described his *Aristida divaricata* as an annual plant with naked mouth of the sheaths (*ad oras et ubique nudae!*), a character which does not apply to one of the members of the „divaricata group”. The panicle is given as lax and elongate but the branches are remote and appressed, the glumes are unequal, the lower shortest, acute, the upper longer with a toothed summit; nothing is said about a twisted column of the lemma, the awns are given as unequal, about as long as the lemma. From the rather long and apparently complete description it is evident that JACQUIN had not before him the species described by WILLDENOW and afterwards by HUMBOLDT, BONPLAND and KUNTH, nor an allied species belonging to the group of the „divaricatae”. All the striking characters given in the description point to a form of the common *A. adscensionis* with somewhat open panicle. In default of authentic specimens however, we never can identify JACQUIN's plant with absolute certainty. Because WILLDENOW's very short description was copied by JACQUIN, we are inclined to think that he had before

him cultivated specimens of the true *A. divaricata*, but the description gives us a very different idea, the description prevails as already stated in this revision, so much the more because there are no type specimens. For all these reasons we must accept the identification of JACQUIN's species as *A. adscensionis*. Cultivated specimens labeled: „Jardin botan. de Turin” (H. L. B. no. 908.83—1137) belong to *A. adscensionis*.

It is known that formerly some *Aristida*-species were cultivated in european botanical gardens under the name of *A. pallens*. Some of these cultivated plants we find in old herbaria (f. i. in the herbaria of PERSOON, SCHRADER and LAGASCA). These cultivated specimens, so far as I have seen them, have the habit of the true *A. divaricata*, but the characters of the spikelets are not the same and they are wholly different from those given in JACQUIN's description. The cultivated specimens are allied to the true *A. divaricata* and belong to two different species, *A. Jacquiniana* and *A. Lagascae*. See afterwards under those species.

***Aristida divaricata* Lagasca.**

MARIANUS LAGASCA; Genera et Species Plantarum, quae aut novae sunt, aut nondum recte cognoscuntur. Matritum [1816] p. 3 no. 30!

Panicula divaricata incurvata, ramulis inferne nudis: floribus adpressis alterne fasciculatis subsessilibus: arista intermedia longiore.
H. in N. H. unde semina communicavit D. SESSÉ.

Note: = *Aristida Lagascae* Henrard.

LAGASCA's plant was described from cultivated specimens, grown from seeds sent by SESSÉ from Nova Hispania (Mexico). The description is too short to recognize the plant, but the few characters given, point to a member of the „divaricata group”. Through the courtesy of Prof. H. ROSS I could examine all the *Aristidas* from the Munich Herbarium (Herbarium Regium Monacense). I was so fortunate to find in this herbarium an authentic specimen labeled: *Aristida divaricata* Lag. in LAGASCA's hand. The Munich label states that the plant was communicated by LAGASCA in the year 1810, „e Nova Hispania attulit Sessé.” At the head of the label is written in another hand: „*Aristida divaricata* Willd. enum. 99”, there below a point of exclamation by CARL MEZ. The plant is allied to the true *A. divaricata*, but the shape of the panicle is very different on

account of the densely crowded spikelets at the end of the branches. This character is accurately indicated by LAGASCA, (*floribus adpressis alterne fasciculatis subsessilibus*). In the characters of the spikelets there are other important differences. The glumes have an inverse position, the first glume being longer and broader than the second one, the lower glume is pubescent and 3-nerved in well-developed spikelets, both glumes are acute or very shortly awned, (in the true *A. divaricata* the glumes are equal, glabrous, both 1-nerved). LAGASCA's plant has lemmas scaberrulous upwards, with a very scabrous twisted column, the awns are very unequal, the central one is about thrice as long as the lateral ones and shorter than the total length of lemma and column. The specimen lacks the base and the top of the panicle is broken off, but the characters observed are so striking and the habit so different that we must consider the plant as a distinct species. It is noteworthy that LAGASCA's name was given independently of WILLDENOW's name and that the description of the latter was not copied. For a complete description of my new species, see afterwards under *Aristida Lagascae*.



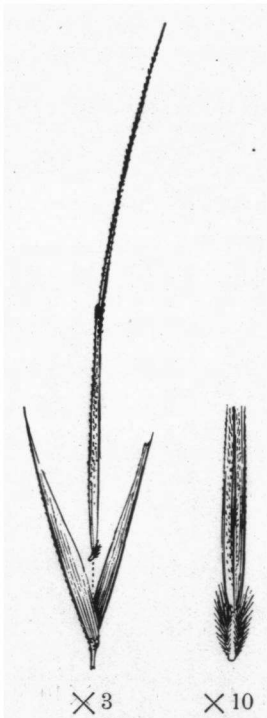
Aristida divergens Vasey.

GEORGE VASEY; Monograph of the Grasses of the United States and British America, in Contributions from the U. S. National Herbarium III. [1892] p. 48!

Culms 12—15 inches high, erect, simple; leaves involute, 6 to 10 inches long; panicle 5 to 7 inches long becoming pyramidal, sheathed at base by the uppermost leaf; branches at first erect spreading, becoming divergent, 1 to 3 inches long, solitary above, the lower

divided at the base into 3 or 4 nearly equal divisions (appearing verticillate) again divided above the middle; spikelets diverging; empty glumes 3 to 4 lines long; floral glume 5 lines, becoming somewhat twisted in age; the lateral awns wanting or nearly so; middle awn 5 to 6 lines long, straight. — Texas to Arizona.

Smaller and less robust than *A. Schiedeana*, not having the long naked branches of that species.



ARISTIDA
DIVERGENS Vasey.
From duplicate type
specimen.

Aristida divergens was a new name for the plant described by VASEY in Bulletin of the Torrey Botanical Club. Vol. XIII. [1886] p. 281, as *Aristida Schiedeana* var. *minor*. See afterwards the description of this variety in my revision under *Aristida Schiedeana* TRIN. et RUPRECHT. The latter is however to recognize by the well-developed, twisted column. VASEY mentioned two specimens, both collected in Arizona in the year 1884, one by PRINGLE, the other by JONES. The Pringle specimen, collected near Sierra Tucson and distributed as *Aristida Schiedeana* TRIN., is accepted as the type. VASEY recognized the plant afterwards as distinct from *A. Schiedeana* and changed the name. I have not seen the actual type, that is the specimen so named in VASEY'S hand, but I kindly received for study from Prof. A. S. HITCHCOCK the duplicate type specimen in the U. S. National Herbarium no. 820724, bearing a printed label with the data: „Flora of the Pacific Slope. Arizona. 1884. *Aristida Schiedeana*, Trin. Sierra Tucson. April 14. C. G. Pringle”, and the number 546 in lead-pencil. Prof. HITCHCOCK placed VASEY'S species in his work on the North American

Species of *Aristida* (l. c. p. 525) as a subspecies under *Aristida ternipes* CAV. (= *A. scabra* KUNTH). Indeed the spikelets much resemble those of the *Aristida ternipes*, although they are generally smaller. The glumes are glabrous, the upper but slightly shorter than the lower, with a truncate apex, the midnerve excurrent as a mucro or short awn; the body of the lemma is densely scabrous nearly all over, with a very short neck; the lateral awns are wanting but manifestly indicated and the central awn is about as long as the body of the lemma. The shape of the panicle is

however very different. The panicles are diffuse, but the branches much shorter and about 5 cm. long, they are not naked at the base but they bear one or more basal branches with a few spikelets. In *A. ternipes* the branches are very long and naked in the lower part without short basal branches. VASEY observed already in the year 1886 that the aspect of the plant is so different that it might be considered a different species. I am of the same opinion and have taken up this species in my work.

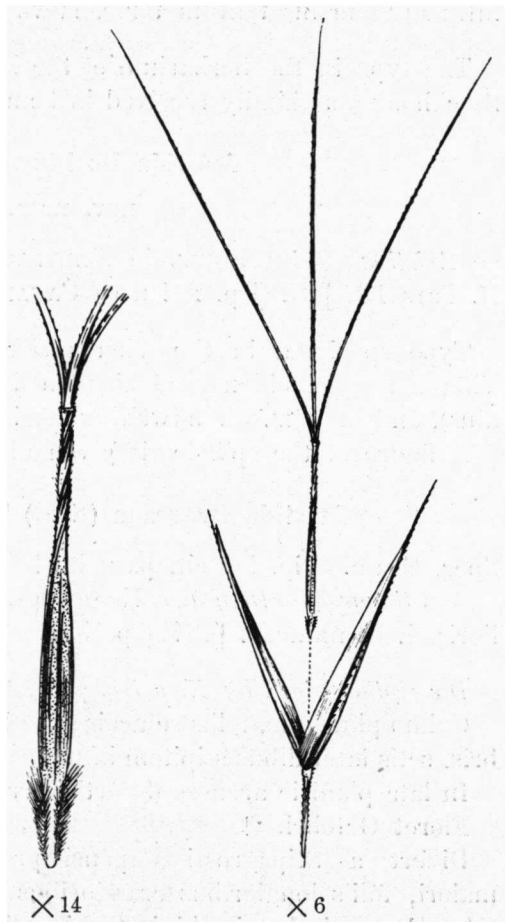
***Aristida divulsa* Andersson.**

NILS JOHAN ANDERSSON; Enumeratio plantarum in Insulis Galapagensibus hucusque observatarum, [1861] loc. cit. p. 49!

Panicula 4—6-pollicari, ramosa, pyramidalis, oblonga, ramis pluribus v. subsolitariis pluries divisis, longis; glumis cuspidato-aristatis subaequalibus; flosculo glabro, apice cum arista persistente articulato, infra articulum bis torto, setis nudis patentiarquatis subaequalibus, media subsempollicari. — *Ands.* l. c. p. 143.

Hab. locis maxime lapidosis reg. inf. ins. Chatham cum *Setaria* Antillarum aliisque (Ipse).

Radix fibrosa, fibris eburneis glabris. Culmi densissime caespitosi, 1—2-pedales, stricte erecti, teretes, glaberrimi, pallide virides, infra nodos vix geniculatos scabriusculi. Folia semipedalia laxepatentia, vulgo convolutofiliformia, 1 lin. lata, subtus glabra punctulata, supra dense et brevissime puberula, marginibus glabris;



ARISTIDA DIVULSA Andersson.

From type specimen.

vaginae ad basin fissae, clausae, nervosae, glabrae; ligulae loco pili longi argentei. Panicula pallide straminea, ovato-pyramidalis, junior basi vagina folii summi inclusa; rami subsolitarii vel 3—5 semiverticillati, longissimi, subpatentes, pluries divisi, ramuli breves subspicatos-stricti scaberrimi etiam divisi. Spicula cum aristas unciam longa, subalbida; glumae hyalinae uninerviae carinatae hispidae sensim mucronatae, inferior dimidia parte inferiore superiorem paullo longiorem fere amplectens; flosculis glumis 1—1½ lin. brevior, fulvo-fuscescens, apice infra aristam cum flosculo articulata bis tortus, viridis; setae patente-recurvatae, minutissime hispidulae, ½ unciam longae, aequales.

Ab ARISTIDA SUBSPICATA, cui certissime proprius, differt: panicula in ramis patentibus divulsa (unde nomen), flosculo demum infra aristam bis tantum torto, laevi, setisque minus scabris.

The type in the herbarium of the Naturhistoriska Riksmuseum at Stockholm was kindly received in loan from Prof. C. A. M. LINDMAN.

Aristida Doelliana Henrard

nov. nom.

= *Aristida elatior* DOELL in MARTIUS et EICHLER, Flora Bras., Vol. II. Pars III. [1878] p. 23! non CAVANILLES.

Type specimen in the Vienna Herbarium, labeled: „Brasilia, ad Villa Boa leg. Pohl no. 2502,” named *Chaetaria laevis* N. Es? (Trinius), and in DÖLL's handwriting „*Aristida elatior* Cav., arista torta.”

A figure of the spikelet is given under *A. elatior* DOELL.

Aristida Dregeana (Nees) Trin. et Ruprecht.

Spec. Gram. Stip. loc. cit. pag. 169!

= *Stipagrostis Dregeana* Nees ab Esenb.; Florae Africae australioris, I. Gramineae. [1841] p. 172!

Description given by Nees l. c. p. 172.

Culmo plurifolio, foliis setaceis strictis, vaginis ore nudis, glumis glabris, setis lateralibus stipitem implumen setae mediae subaequantibus.

In lata planitie arenosa deserti Karro ad ostia Garip fluvii, (Drège). Floret Octobri. ♀.

Differt a *Stipagrosti* Capensi praeter notas exhibitas statura maiori, foliis longioribus crassioribus plerumque rectis nec recurvis (½—1½ poll. longis, binis ternisve in culmo solito more alternis), panicula multo laxiore, spiculis maioribus.

Glumae aequales, basi purpurascentes, apice lutescentes, $5-5\frac{1}{3}$ lin. longae. Flosculus cum stipite suo hirsuto $1\frac{3}{4}-2$ lin. longus, valvula violacea. Stipes aristae longitudine flosculi cum stipite. Lacinia media 15 lin. longa, ad 9 lin. a basi nuda, hinc plumosa, scapo violaceo; laciniae laterales capillares, strictae, violaceae, 7-8 lin. longae. Reliqua omnino ut in *Stipagrostis* Capensi.

Description given by Trinius and Ruprecht l. c. p. 169.

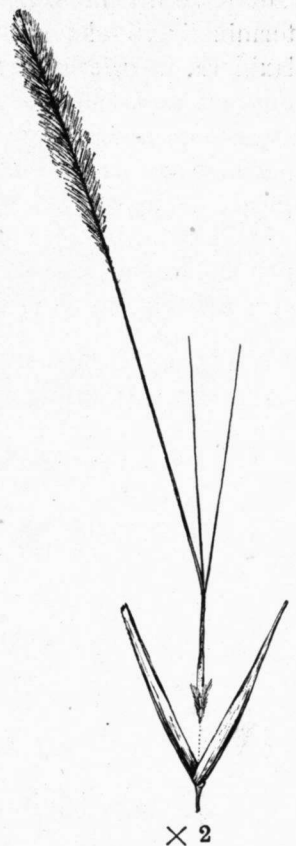
Culmo, nodis vaginisque *glabris*; ligulis brevissime ciliatis; paniculae subbipollicaris ovato-oblongae, laxiusculae, demum exsertae radiis solitariis geminisve patentibus, a medio circiter trifloris; glumis subaequalibus, glabriusculis, 5-6 *linealibus*, acutatis; flosculo $1\frac{3}{4}-2$ *lineali*, apice leviter emarginato pro stipite aristae deciduae bilineali, non torto, glabro; setis lateralibus patentibus, nudis, 7-8 *linealibus*, media divaricata 15 *lineali*, inferne ad $\frac{2}{3}$ *circiter nuda*, superne cum mucronulo apicali pennata.

In lata planitie arenosa deserti Karro ad ostia Gariiep fluvii m. Octobr. (Drège!) ♀.

Omnibus partibus crassior ac *A. obtusa*; *culmus* semipedalis, 2-3 nodis; *folia* minus curvula, culmea bipollicaria, basilaria breviora.

The type in the Nees Herbarium in the herbarium of the Botanischer Garten at Berlin—Dahlem was kindly sent for study by Prof. ROB. PILGER. The plant is labeled:

„ $\frac{4}{1080}$ grose sandige Carro fläche an der mündung des Garip. S. & L. I h. no. 2543. Drège,” and in NEES' hand „*Stipagrostis* Dregeana N. ab Es.”



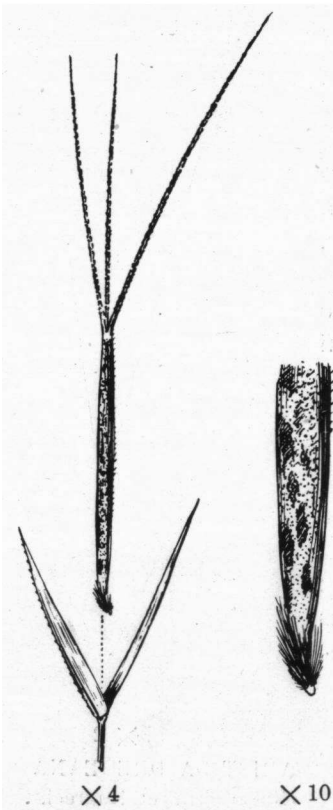
ARISTIDA DREGEANA
(Nees) Trin. et Ruprecht.
From type specimen.

Aristida effusa Henrard

nov. spec.

Annua, caespitosa. *Culmi* stricte erecti, graciles, ad 3,5 dm. (cum panicula) alti, teretes, glaberrimi, e nodis inferioribus ramosi. *Vagi-*

nae laxiusculae, saepe a culmo solutae, compressae, carinatae, striatae, glabrae; ligulae brevissimae, truncatae, ciliatae. *Laminae* lineares, sensim longe acutatae, ad 12 cm. longae, basi 2 mm. latae, planae vel carinatae, glauco-virides, rigidulae, subtus glaberrimae, laeves, supra puberulae, crassinerves, margine scaberulae. *Panicula* terminalis 15—18 cm. longa, (laterales minores), late ovata, patens, laxiflora, *rhachi* glabra, laevi, *ramis* scaberulis, binis vel ternis,



ARISTIDA EFFUSA Henrard.

From type specimen.

angulo recto patentibus tenui-filiformibus, in $\frac{1}{2}$ inferiore indivisis, superne ramulos secundarios procreantibus, in apice plus minus confertis. *Spiculae* lineares, purpurascens. *Glumae steriles* lineari-lanceolatae, acutissimae, carina serrulato-scaberrima, ceterum glabrae, I. 7 mm. longa, sensim in aristulam attenuata, II. 8 mm. longa apice integro breviter aristata. *Gluma fertilis* linearis, tubulosa, cum callo barbato vix 1 mm. longo, 9 mm. longa, dorso praesertim in $\frac{3}{4}$ superiore aculeolis scaberrima, flavo-viridula et saepe nigromaculata, apice haud articulata neque stipitata, non torta, aristas subpatulis, basi non tortis, scabris, intermedia maxima 12 mm. longa, lateralibus 10 mm. fere longis. *Palea* minuta.

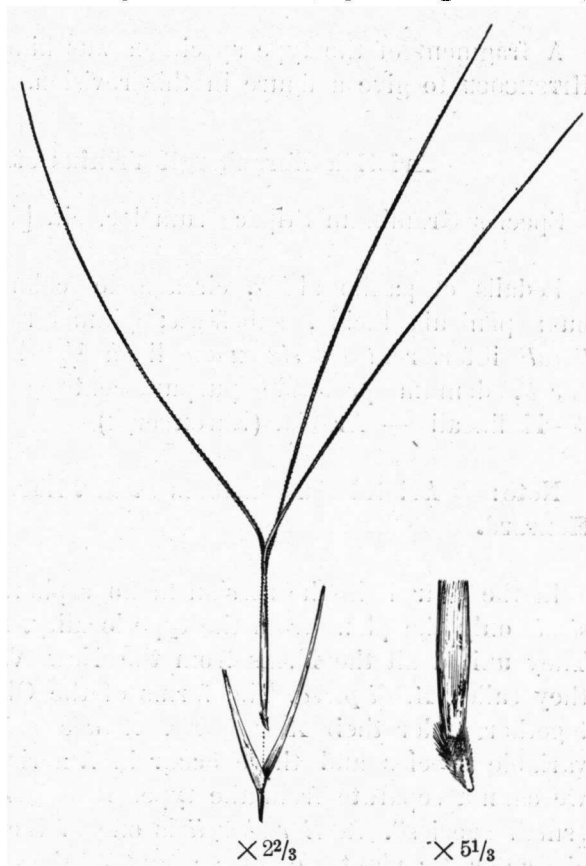
Africa austro-occidentalis; Damara, prope Karibib 1200 m. s. m. April 1913 leg. A. ENGLER, no. 6162 in Herb. Mus. Bot. Berolin.

This species is closely allied to *Aristida scabrivalvis* HACK., but can be distinguished from that species by the nearly equal acuminate glumes and the longer lemma. *A. scabrivalvis* has a bifid second glume with a long awn from the sinus, both glumes surpassing the lemma; in our species the second glume nearly regularly passes into the very short awn. Another species belonging to this group is *A. Waibeliana* HENR. with a broad unawned first, and a very narrow truncate unawned second glume. *Aristida Burkei* STAPF. and *Aristida bipartita* TRIN. et RUPR. are perennial plants with smooth lemmas.

***Aristida eggertii* Hitchcock.**

A. S. HITCHCOCK; The North American species of *Aristida*, in Contributions from the United States National Herbarium, Vol. XXII. [1924] p. 560!

Plants perennial; culms cespitose, slender, spreading or decumbent at base, glabrous, 20 to 40 cm. tall; sheaths glabrous or minutely scaberulous, minutely pilose around the throat and hispidulous in a line across the collar; ligule a very short ciliate membrane; blades involute, scaberulous on the upper surface, glabrous beneath, falcate or flexuous, mostly less than 10 cm. long, often much shorter, mostly less than 1 mm. wide when flattened out; panicle narrow, 3 to 10 cm. long, the branches distant, short and appressed, few-flowered; glumes unequal, the first 5 to 6 mm. long, about half as long as the second,



ARISTIDA EGGERTII Hitchcock.
From type specimen.

mucronate but scarcely awned, 1-nerved, scabrous on the keel, the second similar to the first but glabrous on the keel; lemma about 1 cm. long including the 1 mm. long, short-pilose callus, gradually narrowed and scaberulous above, but not distinctly beaked; awns about equal, 2 to 2.5 cm. long, all spreading or nearly horizontal, flat at base and scarcely contorted.

Type in the U. S. National Herbarium, no. 820940, collected in

calcariis", near the sea at La Caimanera, Cuba, May, 1889, by H. Eggers (no. 5389).

The only other specimen seen was collected on a coral limestone beach at Fishermans Point, Guantánamo Bay, Cuba, by N. L. Britton (no. 2177).

This species resembles *A. cognata* in habit, but the strongly unequal glumes place it in the group *Purpureae*.

A fragment of the type specimen was kindly received from Prof. HITCHCOCK to give a figure in this revision.

***Aristida Ehrenbergii* Trinius et Ruprecht.**

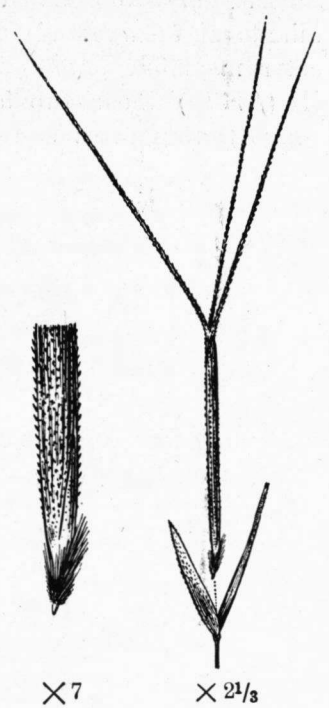
Species Graminum Stipaceorum loc. cit. [1842] p. 136!

Pedalis et paullo altior, circa nodos colorata; foliis viridescen-
tibus; panícula lucida, subeffusa; glumis roseis: superiore 3—3½
lineali inferiorem *obtusiusculam* lineâ ½—1 superante; flosculo 5
lineali, demum profunde purpurascen- te, scaberrimo; seta media
9—11 lineali. — Arabia. (Ehrenberg!)

Note: = *Aristida adscensionis* L. var. *Ehrenbergii* (Trin. et Rupr.)
Henrard.

In the year 1842 the russian monographers accepted as *A. adscen-
sionis* only the plant from the type locality, the island of Ascension.
They united all the forms from the New World under a species,
they called *A. dispersa*. The forms of the Old World were brought
together under their *A. vulgaris*. *A. adscensionis* is however a very
variable species and there occur in America and in Africa, forms
we cannot separate from the type. *A. vulgaris* consists of about 15
„small species”, *A. Ehrenbergii* is one of them. The type is a very
characteristic plant, not on account of the open, effuse panicle, but
the lemmas are very curious. They are extraordinary scabrous, by
short, thick, white, hyaline, fragile hairs, hooked or curved upwards,
with a broad base, placed in longitudinal rows over the whole
length of the lemma, the background of the lemma is dark-purplish.
Such antrorsely scabrous lemmas are rare in our genus, they
occur: f. i. in the african *A. rhiniochloa*, the latter is however a
totally different plant. *A. Ehrenbergii* is a rather rare plant and is
found hitherto only in Arabia and in Abyssinia. As to the other
characters of the spikelets we must observe that the lower glume

is minutely pubescent and not so acute as in *A. adscensionis*. The upper glume however exactly corresponds with the glume of *A. adscensionis*, having a slightly bifid obtuse apex with a mucro from the sinus. The lemma is longer than the glumes, a character found in different forms of the *A. adscensionis*. Pubescent or asperulous lemmas are also not rarely found in *A. adscensionis*, but the hairs are very different from the hairs as described by me above. The characters of *A. Ehrenbergii* are so striking, that one is inclined to accept the plant as a distinct species. On account of the form of the upper glume, I have placed *A. Ehrenbergii* under *A. adscensionis* as a very distinct variety. *A. Ehrenbergii* is allied to *A. abyssinica*, *A. aethiopica*, *A. pumila* and *A. spicigera*, all having asperulous, scabrous or glabrous lemmas, scabrous always on the keel. In *A. Ehrenbergii* the hyaline bristles are very fragile and easy break off, even in the type we find such damaged lemmas. *A. Ehrenbergii* is probably a constant form and worthy of subspecific rank.



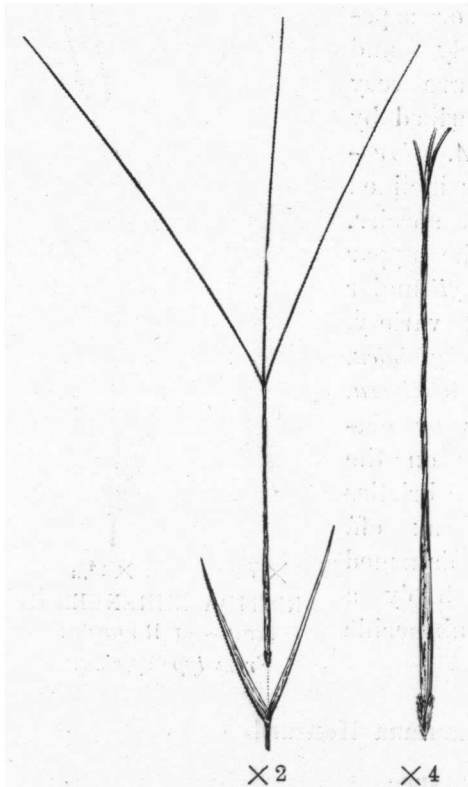
ARISTIDA EHRENBURGII
Trinius et Ruprecht.
From type specimen.

Aristida Ekmaniana Henrard

nov. spec.

Perennis, caespitosa, glauca, innovationibus intravaginalibus. Culmi stricte erecti, simplices, graciles, 40—80 cm. alti, teretes, glaberrimi, paucinodes, nodis incrassatis; vaginae arctae, glabrae, striatae, superne albo-marginatae, inferiores internodiis breviores, superiores eis aequilongae vel longiores; ligula obsoleta, auriculae bene evolutae, pubescentes; laminae e basi aequilata longissime lineares, planae vel convolutae, acutissimae, subcurvatae, infimae culmi circa 20 cm. longae, superiores decrescentes, summa circa 5 cm. longae, subtus glaberrimae, laeves, supra longe pilosae, praesertim in parte inferiore, multinerves, nervo marginali valde prominenti, crassissimo, cartilagineo, stramineo. Panicula lineari-lanceolata, subinterrupta, 15—20 cm. longa, vix 1½ cm. lata, rhachi glabra, laevi, ramis soli-

tariis, stricte erectis, cum rhachi scabris, inferioribus ad 6 cm. longis, spiculis subsessilibus vel brevissime pedicellatis, pedicellis scabris. *Spiculae* glabrae, glumae uninerves, lineari-lanceolatae, acuminatae, *gluma* I. $11\frac{1}{2}$ —12 mm. longa, carina serrulato-scabra, ceterum glabra, *gluma* II. circa 13 mm. longa, carina laevis, *gluma* III (*fertilis*) lineari-tubulosa, laevis, cum callo barbato acuto 1 mm. longo, 9 mm. longa, superne sensim in stipitem circa 10 mm. longum, spiraliter tortum, abiens, aristis scabris, erectis vel subpatulis, basi haud tortis, intermedia 25—30 mm. longa, lateralis 20—23 mm. longis.



ARISTIDA EKMANIANA Henrard.

From type specimen.

Brasilia: Paraná, in altiplanitie „Jaguariahyva”, in campo, 16. IV. 1910, leg. P. DUSÉN (Plantae Brasilienses e civitate Paraná reportatae, no. 9710). Typus speciei in Herb. Lugd. Batav. sub no. 923.213—114.

The plant is EKMAN'S *Aristida riparia* (Die Gräser des brasilianischen Staates Paraná in Arkiv för Botanik, Band XIII. No. 10. p. 37). Although agreeing somewhat in habit with the type of *A. riparia* TRIN., the plant is, as to the characters of the spikelet, very different; the differences were already

known to EKMAN (see pag. 38 l. c.), but the most striking character to recognize *A. riparia* is the very curious bifid callus, unique among the american *Aristidas* and mentioned here for the first time.

There is another allied species, described by Prof. HACKEL as *A. riparia* var. *oligospira*. The examination of this plant has shown that there are many distinct characters, one of them is the very obtuse callus, which is totally different from the callus of *A. riparia* and *A. Ekmaniana*. The variety, described by Prof. HACKEL, is recognized by me as a distinct species, I have named *A. oligospira* (Hack.) Henrard. See afterwards under the varieties of *A. riparia*.

***Aristida elatior* Cavanilles.**

ANT. JOSEPHUS CAVANILLES; Icones et Descriptiones Plantarum, quae aut sponte in Hispania crescunt, aut in hortis hospitantur. Matritum, Vol. VI. [1799] p. 65! Tab. 589. Fig. 1!

ARISTIDA caule ramoso altissimo: panicula elongata: calicibus violaceis: aristis aequalibus. Culmus glaber, ramosus, quattuor pedes altus: nodi incrassati, pallide rubentes. Folia vaginantia, vaginis folio brevioribus, apice solutis in folium lineare angustissimum, saepe convolutum, acutissimum, 6—12 lineas longum. Flores paniculati, panicula aliquando pedem longa, inferne interrupta: ramuli bini, ternive, inaequales, semipollicem aut sesquipollicem longi, erecti, in quibus flores alternant solitarii, pedicellati. Calicis valvulae violaceae, acutae, interiore longiore. Corolla calice duplo longior, glabra, apice triaristata; aristis subaequalibus, corolla duplo fere longioribus. Habitat in aridis et saxosis prope mare Malacitanum ditionis oppidi Benagalbón; tum etiam inter Albateram et Callosam oppida Orcellitana Regni Valentini. Augusto floridam invenit D. Marianus Lagasca.

Explic. tab. a Flos magnitudine naturali. b Idem auctus, calice orbatus.

Note: = *Aristida coerulescens* Desfontaines.

The type localities are accurately indicated by CAVANILLES. From these localities and from the plate, the species is to recognize as belonging to the perennial *A. coerulescens* DESF., accepted as a distinct species in my work. See my observations under *A. coerulescens* on pag. 101 of this revision.

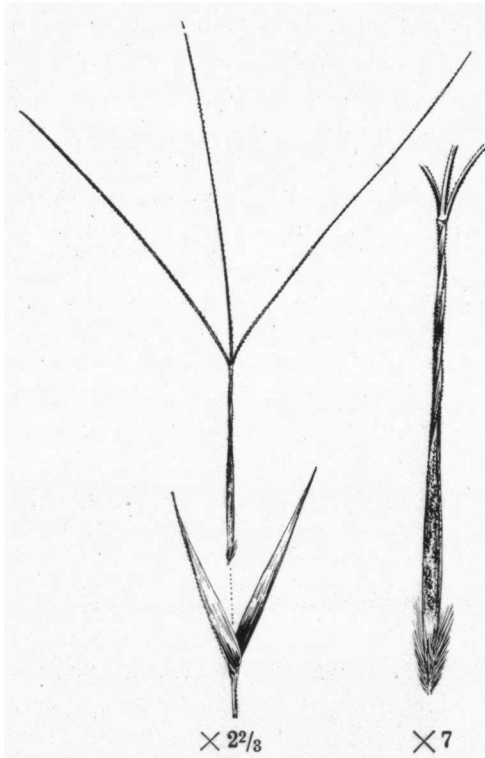
***Aristida elatior* Doell.**

J. C. DOELL; in MARTIUS et EICHLER, Flora Brasiliensis. Vol. II. Pars III. [1878]. p. 23!

Culmi caespitosi, erecti, erecto-ramosi, laeves, glabri, teretes, superne subcompressi. Foliorum vagina arcta, subcompressa, striata, nuda, internodiis brevior, apice parce pilosula; ligula tenui-papyracea, brevissima, ciliolata; lamina anguste linearis, tenui-acuminata, plus minus convoluta, supra nervosa, scabriuscula, basi pilis ad-

spersa, subtus striata, laevis. Panicula subcontracta, erectiuscula vel subnutans, inferne interrupta ($\frac{1}{2}$ —1-pedalis), axe communi glabro, inferne teretiusculo, laevi, superne subcompresso, scabriusculo; ramis erectis, densifloris, singulis binisque, compositis, prope basin divisis, scabriusculis, interstitia superantibus (1 — $1\frac{1}{2}$ -pollicaribus). Spiculae confertae, porrectae, subulato-lanceolatae, glabrae,

pedicellis incrassatis, brevibus brevissimisque. Glumae subpellucidae, cuspidatae, 1-nerves, inferior aristae divisionem non aequans, superior eandem subaequans vel aequans. Valvula inferior scabriuscula, basi brevopilosa, arista torta, ramis patulis, subaequalibus. ♀.



ARISTIDA DOELLIANA Henrard.

From type specimen of

A. ELATIOR Doell.

CULMI 3—4-pedales, nodis angustis, pallide rubentibus vel nigrescentibus FOLIORUM vagina laevis, collo saepe anulo hirtello strigoso cincta; ligula pallide badia, ciliolis albidis; lamina pallide viridulo-glauca, $\frac{1}{2}$ — $\frac{3}{4}$ -pedalis, 1 — $1\frac{1}{2}$ lineam lata. GLUMAE violascentes, fere $\frac{1}{2}$ -pollicares. VALVULAE inferioris pars inferior aristae ramis conspicuae brevior; pars indivisa quater vel quinques torta.

Habitat ad Villa Boa de Goyaz (Pohl n. 2502).

OBS. *Aristidae ripariae* affinis, imprimis vaginis internodia non aequantibus, paniculae ramis densifloris, largius spiculiferis, spiculis confertis brevioribus, arista brevior, minus torta ejusque ramis brevioribus ab ea recedens. — Ab *Aristida setifolia* imprimis culmo inferne tereti, axe communi paniculae minus scabro, inferne laevi atque paniculae ramis multifloris densifloris spiculisque fasciculatis confertis differt, ceteroquin huic speciei et ipsi maxime affinis. —

Aristida vulgaris Trinius (Acta Petrop. 1849. p. 33—36), *) permultas formas, inter alias *A. coerulescentem* Desfontaines, complectens, aristâ non tortâ differt.

Note: = *Aristida Doelliana* Henrard.

The type, in DOELL's handwriting, I have seen in the Vienna Herbarium. It is curious that DOELL identified Pohl's plant with the Old World *A. elatior*, because Pohl's plant is at once to recognize from the Spanish plant by the distinctly twisted column of the lemma, a character, observed by DOELL, but not mentioned by CAVANILLES and not given by him on the plate in the Icones. *Aristida riparia* is to recognize by the inverse position of the glumes and is the only species from the New World with the curious bifid callus. *Aristida Doelliana* is allied to *A. setifolia*, as already observed by DOELL, but the vegetative characters are very different, there is a nodule below the branching point of the awns, but there is no true articulation as in *A. setifolia*.

Aristida elegans Rudge.

EDUARD RUDGE; Plantarum Guianae rariorum icones et descriptiones hactenus ineditae. Lond., Vol. I. [1805] p. 22! Tab. XXX.

A. spicis longis tenuissimis sparsis, aristis longissimis crinitis.

RADIX fibrosa. CULMI plures, conferti quasi fasciculati, juxta basin parum flexuosi, graciles, laeves, foliis hinc inde circumsepti, sex ad octo uncias longi. FOLIA angustissima, dense approximata quasi fasciculata, erecta, striata, glabra. PANICULA ramosa: ramis laxis, erectis, patentibus; flosculis longe pedicellatis, angustis. PEDICELLI exquisite hirti. GLUMAE duae, subaequales, carinatae, carinis exquisite serrulatis. ARISTA medio trifida. SEMEN minutissimum, acuminatum.

Variat. α : Panicula albida.

β : Panicula rubra.

EXPLICATIO ICONIS.

Fig. 1. Planta magnitudine naturali.

2. Ramulus magnitudine aucta.

Fig. 3. Flosculus.

4. Glumae.

*) This citation is wrong, *A. vulgaris* was described in the year 1842 in Acta Petrop. Species Graminum Stipaceorum p. 131—136!

Note: = *Aristida capillacea* Lamark.

The actual type was not studied by me, but the description and the plate identify the species, which is common in Guyana.

Aristida Elliotiana Steudel.

E. G. STEUDEL; Synopsis Plantarum Glumacearum [1855] p. 133!

Culmis basi ramosis (2—3-pedalibus); vaginis internodiis longioribus breve pilosis; foliis glabris (subpedalibus, 1—2''' latis); spiculis racemosis ad radios 1—3''' longos coacervatis; gluma altera flosculo brevior altera illo longiore; arista flosculum duplo superante. *A. stricta* Ell. Fl. Car. 142. ♀ Carolina.

Note: = *Aristida purpurascens* Poiret.

ELLIOTT described MUHLENBERG's *Aristida racemosa* (which is *Aristida purpurascens* POIR.) as *Aristida stricta*, (misapplying MICHAUX' name). STEUDEL without having seen ELLIOTT's plant, changed the name on account of *Aristida stricta* MICHX.. In the Willdenow Herbarium there is an authentic specimen of *A. racemosa* received from MUHLENBERG, consisting of two flowering culms. They belong indeed to *A. purpurascens* as described by POIRET, they are easy to recognize by the inverse position of the glumes and the horizontally spreading central awns.

On the label KUNTH has written „*Aristida affinis*”. On the inside of the cover is written: „Non est *A. racemosa* Sprengel R. S.”. See also this revision pag. 21—22.

Aristida elliptica (Nees) Kunth.

CAROLUS SIGISMUNDUS KUNTH; Agrostographia Synoptica sive Enumeratio Graminearum omnium hucusque cognitarum, adjectis characteribus, differentiis et synonymis, Stutgardiae et Tubingae. Tom. I. [1833] p. 193!

= *Chaetaria elliptica* NEES ab ESENBECK; Agrostologia Brasiliensis seu Descriptio Graminum in imperio brasiliensi huc usque detectarum, Stuttgartiae et Tubingae. [1829] p. 389!

Description given by Nees:

Ch. culmis ramosis ascendentibus pubescenti-scabris, foliis linearibus planiusculis facie colloque vaginalium pilosis, panícula glome-

rato-spiciformi elliptica densa, glumis membranaceis subaequalibus mucronato-setigeris flosculum superantibus, setis subaequalibus flosculo longioribus.

Radix repens, fibris flexuosis pallidis stipata. Culmi plures ex una radice, semi-sesquipedales, graciles, tamen rigiduli, ascendentes, basi et apice subcompressi, in medio compresso-semiteretes, striati, pubescenti-scabri, trinodes ad nodos inflexi et ramosi. Vaginae internodiis breviores, infra ramos ut et infima dehiscentes, omnes compressae, striatae, carinatae, scabrae, margine membranaceae, collo villosulae. Ligula brevissima in cilia soluta. Folia pro culmi altitudine 2—7 pollices longa, lineae $\frac{3}{4}$ ad lineam $1\frac{1}{4}$ lata, strictiuscula, recurva, plana, siccitate convoluta, striata, subtus scabra, supra pilosa et vaginam versus fere lanata, laete viridia. Panicula saepe longe exserta, pollicaris vel sesquipollicaris, densa, spicaeformis, obtusa, rhachi angulata ramisque brevissimis alternatim approximatis fasciculato-6—15-floris scaberrimis. Spiculae imbricatae, subsessiles, compressae, lanceolatae. Glumae 3—4-lineares, lanceolatae, membranaceae, uninerves carina scabra, hyalino-albae, demum sordide purpurascens: inferior acuta, nervo ultra setaceo-excurrente; superior paulo longior, nervo ex apice attenuato bidentato in setulam brevioris exeunte. Flosculus 2—4 lineas longus, pedicellatus, valvula superiore oblongo-lanceolata convoluta trinervi, ad nervos scabra pallida. Setae ad basin divisae, subaequales, patentes, scabrae, media 4—5 lineas longa. Valvula superior minutissima, vix germine longior, lineari-subulata, acuta, plana, membranacea. Lodiculae generis. Stamina tria, antheris fulvis. Stigmata aspergilliformia, lutea.



ARISTIDA
ELLIPTICA (Nees) Kunth.
From type specimen.

Habitat in pascuis agrestibus provinciae Piauhianae, et in fluvii Itapicurú ripa ad Cachias provinciae Maragnanensis, passim. (Mart.) Floret Majo. ♀.

Observ. Praeter Chaetariam murinam, quae spiculis setisque praelongis gaudet, et Chaetariam strictam Michx., culmo

stricto, panicula spiciformi angusta, neque minus setarum longitudine diversam, vix speciem inter notas invenies, cui istam sis comparaturus.

The two plants indicated by NEES are in the Munich Herbarium, they were studied through the courtesy of Prof. L. RADLKOFER and Prof. H. ROSS. As the type I have selected the first specimen mentioned, which is the best-developed one, labeled: „Habitat in pascuis Provinciae Piauiensis, passim. Dr. Martius Iter Brasil. Maio,” named „*Chaetaria elliptica* N. ab Es.” in NEES' hand. The plant bears the Munich number 4767. On an accompanying label Prof. MEZ has written: „Diese afrikanische Pflanze ist nach Brasilien eingeschleppt und von hier zuerst beschrieben!” The african plant named by MEZ *A. elliptica* in some herbaria studied by him, is however a totally different species belonging to the section *Arthrochaetaria*, a section characterized by an articulation between the lemma and the awns. *A. elliptica* differs moreover in many other characters. *A. elliptica* is a very distinct, rather rare species, easy to recognize by the shape of the panicle and the characters of the spikelets. In the Berlin Herbarium I saw a duplicate of the type, which is however but a fragment.

***Aristida elymoides* Mez.**

CARL MEZ; in FEDDE, Rep. spec. nov. loc. cit. XVII. [1921] p. 148!

Perennis, ut videtur fruticosa, valida. Culmi praeter nodos glabros appresse cinereo-lanuginelli. Inflorescentiae submultiflorae, tenuiter cylindricae perfecte denseque spiciformes; ramulis simplicibus, strictissime erectis, vix ultra 10 mm longis. Pedicelli vix ultra 3 mm longi. Glumae lanceolatae, 1-nerviae, inferior anguste elliptica 11—12 mm longa, apice in aristulam brevem desinens; II. = 15—17 mm longa, apice truncatella vel juxta setulam brevissimam auriculata. Palea ventricosa, ungue recto, ad 1,5 mm longo, ad insertionem longius cet. breviter piloso; articulatio paullo super paleae medium (nec ad rostri basin) sita; rostrum crassum, ad 5 mm longum, haud tortum; setae 3 nudaе, valde inaequales media multo major. — Südwest-Afrika, Kalahari bei Severelela (Schultz).

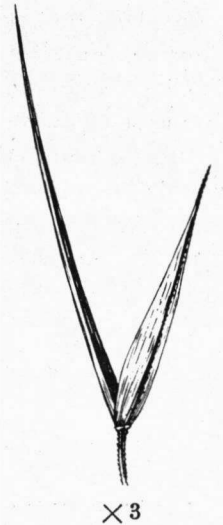
Note: = *Aristida mollissima* Pilger.

In the Berlin Herbarium, there are three sheets labeled by Prof.

MEZ: „*A. elymoides* n. sp.”. Only one plant from the Kalahari, collected by Dr. SCHULTZE, was published by him. Through the kindness of Prof. PILGER, I could compare all the plants with the description. They belong to two different species, but the description was made chiefly from the only specimen cited, and a few characters are taken from another plant collected by LÜDERITZ. Prof. MEZ has given revisions of the genus *Aristida* in different herbaria, and agrostologists may be happy that he has not published a work on the genus, it is already miserable enough that Prof. MEZ has described different well-known species, previously and accurately described by Prof. HACKEL and Prof. PILGER, as new ones.

If we compare the description with the plants named by MEZ *A. elymoides*, we find that the characters of the published specimen agree for the greater part with the description, only the characters of the lemma and the awns are taken from other plants, this is evident because in the plant collected by Dr. SCHULTZE all the lemmas are dehiscent, moreover the specimens, from which the characters of the lemma are taken, differ in many other characters from the Kalahari specimen and especially in the inverse position of the glumes, the lower being 3-nerved. If indeed Prof. MEZ had accurately studied all the plants he named *A. elymoides*, he would have seen that the specimens, although agreeing in habit, are very different and that they belong to two totally different species.

The selection of the type of *A. elymoides* is very important and according to the rule already given in this revision (see pag. 2), the plant collected by Dr. SCHULTZE in the Kalahari desert is accepted as the type of *A. elymoides*, because the plant is the only specimen mentioned and the description agrees with nearly all the characters of this plant (the characters of the lemma excepted). The type bears a label: „Museum botanicum Berolinense. Dr. Schultze S. W. Afrika, no. 241a.” On this label Prof. PILGER has written: *Aristida* n. sp.. The collector's slip in lead-pencil reads: „L. Schultze S-Afr. Kalahari. Severelela. Oct. 04. 241a.” This label of the collector is very important, because it proves that in October already all the lemmas are fallen off. In January of the following year Dr. SCHULTZE collected in the Kalahari desert flowering specimens under the



ARISTIDA
ELYMOIDES Mez.
From type specimen.

number 342i. These plants were described by Prof. PILGER as *A. mollissima* and if we compare the characters given by Prof. PILGER we find no differences between the numbers 241a and 342i. Both have lanate internodes, a dense spike-like panicle with lanate rachis, short, appressed branches with shortly pedicelled spikelets and unequal, 1-nerved glumes, both acute and shortly awned (in *A. mollissima* glume I. = 11—14 and glume II. = 20—24 mm. long). The localities are the same and the agreement is so striking, that the two plants must be accepted as identical.

The two other numbers named by Prof. MEZ *A. elymoides* were collected by LÜDERITZ in the years 1885—86 between Walfishbay and Okahandya in Hereroland under the numbers 43 and 72. These plants are unfortunately but fragmentary, the internodes, so far as they are present, are glabrous, the rachis of the panicle is smooth, the lower glume is 3-nerved and longer than the upper, the lemma is provided with an articulation, the central awn is firm, at least 5 cm. long and the lateral awns are thin. All the awns are however damaged and it may be that the part of the central awn that is broken off, was plumose. Although the plants are not in a good condition they are to recognize afterwards when better specimens are collected. With some hesitation I have based on the plants collected by LÜDERITZ a new species I have named *Aristida secalina* Henrard. See afterwards the complete description under that species.

Aristida elytrorphoroides Chiovenda.

E. CHIOVENDA; Contributo alla conoscenza della Flora del Paese dei Cunama (Eritrea); L'Agricoltura Coloniale di Firenze. Anno XVIII. No. 10. [1924] p. 350! (Estratto p. 11)

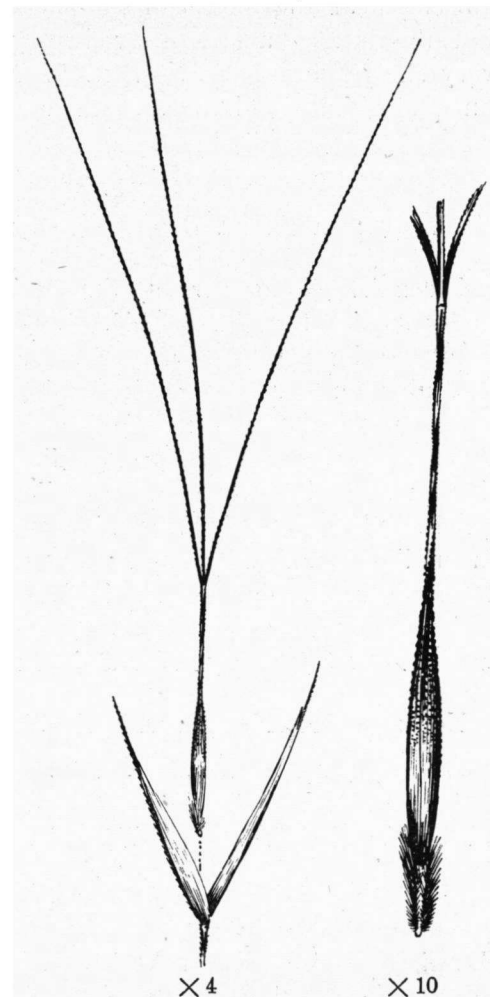
= *A. congesta* var. *pilifera* CHIOV. in Annuario dell' Inst. Bot. di Roma, VIII. [1899] p. 333!

Panicula angusta 3—7 cm. elongata, basi interdum interrupta; vaginae ore longe barbatae.

Cullucù, 30—1—1923; Um Ager, 17—3—1923. Camp. for. 1, 3.

This species was placed in my monograph under another name and was based on CHIOVENDA's *A. congesta* var. *pilifera*. Dr. CHIOVENDA was so kind to call my attention on his publication in L'Agricoltura Coloniale from the year 1924. *A. elytrorphoroides* is a new name for this var. *pilifera*, the plant collected by PAPPI no. 1709 is the type. My description reads:

A. (Sect. *Pseudarthratherum*). Perennis, caespitosa. *Culmi* erecti, 40—60 cm. longi, multinodes, e nodis fere omnibus ramosi; *vaginae* inferiores laxiusculae, pallidae; striatulae, superiores valde compressae, carinatae, striatae, internodiis breviores, scabrae, interdum superne pilis sparsis vestitae, prope collum pilosae; *ligula* brevissima, obsoleta, dense ciliolata, auriculae reflexo-barbatae; *laminae* in parte inferiore planae, circa 2 mm. latae, superne convolutae, anguste lineares, obtusae, 4—5 cm., vel interdum ad 9 cm. longae, subtus laeves, supra scabrae, tenuinerves; *panicula* longe exserta, densa, spiciformis, ad basin interrupta, 7—9 cm. longa, circa 1 cm. lata, rhachi glabri, ramis solitariis, vix 1 cm. longis, a basi valde ramulosis, interdum inferioribus basi nudis, superioribus a basi floriferis, ramulisque appressis; *spiculae* subsessiles vel brevissime pedicellatae, pedicellis pubescentibus, glabrae; *glumae* lineari-lanceolatae, subaequales vel leviter inaequales, uninerves, gluma I. 8½ mm. longa, acuta, aristata, carina scabra, gluma II. circa 10 mm. longa, 1-nervis, carina laevis, apice bidentata, ex emarginatura aristata, *gluma* III. *fertilis*, circa 4½ mm. longa, praesertim superne scabra, callo acuto dense piloso, apice in stipitem valde tortum circa 4 mm. longum abiens, *aristae* erectae vel erecto-patentes, subaequales, circa 20 mm. longae, scabrae, cum stipite articulatae.



ARISTIDA ELYTROPHOROIDES Chiovenda.
From type specimen.

Eritrea: Oculé Cusai; Deca-Merè, m. 2000 c. s. m. 6. IX. 1902

leg. A. PAPPI no. 1709 (Erbario coloniale, in herb. Florentini, typus).

A species with the habit of *A. congesta* R. et S., named by CHIOVENDA *A. congesta* var. *pilifera* but distinguished by the long bearded auricles near the mouth of the sheaths. Allied to *A. Pilgeri* HENR., but the latter has a 3-nerved very scabrous lower glume and a very short column of awns. *A. longicauda* HACK. differs in the very unequal glumes and the smooth lemma.

***Aristida endomelas* Mez.**

CARL MEZ; in FEDDE, Rep. spec. nov. loc. cit. XVII. [1921] p. 150!

Perennis, paullo ultra semimetralis, valida. Vaginae culmi internodia superantes, dorso pilis minutissimis lenti tantum reperiendis obtectae; ligulae breviter nec emergenter pilosae margineque pilis nonnullis crassis barbatae; laminae convolutae subspiraliterque retortae, subulatae. Culmi glabri. Inflorescentia 4-pinnata, junior tantum cognita fusiformis; ramulis tenuissimis, inflorescentiae mediis quoque ad 70 mm longis; pedicellis lateralibus vix ultra 3 mm longis. Glumae basi intus nigrescentes inferior spiculis quamvis juvenilibus omnibus delapsa; superior lanceolata, 3—5-nervia, ad 13 mm longa. Paleae unguis brevis; articulatio deest; rostrum insignius nullum; setae media ad 21, laterales ad 18 mm longae, nudaе. — Paraguay, Sierra de Amambay (Hassler).

Note: = *Aristida macrophylla* Hackel.

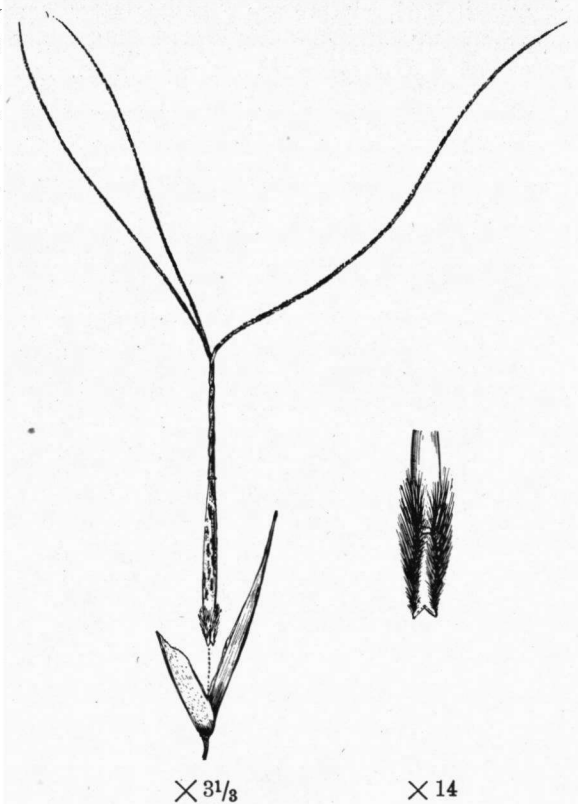
The type in the Berlin Herbarium, kindly received in loan from Prof. R. PILGER, is Hassler no. 11323, Plantae Paraguarienses 1812—13. The statement by Prof. MEZ „gluma inferior spiculis quamvis juvenilibus omnibus delapsa”, is an error. Prof. MEZ overlooked the inverse position of the glumes. What he took to be the upper glume (gluma superior ad 13 mm. longa) is indeed the first glume, the second glume is shorter and hidden by the much longer outer one. The plant perfectly agrees with Prof. HACKEL's type I kindly received in loan from Dr. K. VON KEISSLER.

***Aristida Engleri* Mez.**

CARL MEZ; in FEDDE, Rep. spec. nov. loc. cit. XVII. [1921] p. 147!

Perennis, gracilis. Vaginae culmi quam internodia multo brevior-

res, laeves; ligulae pilorum haud emergentium series; laminae convolutae, ad orem minutissime ciliolatae, dorso laeves. Nodi glabri. Inflorescentia multiflora, anguste 3—4-pinnatim panniculata, thyrsoides vel subpyramidalis; ramulis subfiliformibus, ad insertiones pulvinatis nec manifestius pilosis, vix ultra 50 mm longis. Spiculae pedicellis tenuissimis, lateralibus vix ultra 3 mm longis stipitatae, glaberrimae, laeves. Glumae 1-nerviae, ellipticae, inferior ad 4 mm longa apice late acuta vel grosse dentata nec ciliata, superior ad 7,5 mm metiens apice emarginata. Paleae unguis ad 0,75 mm longus, breviter pilosus; articulatio manifesta; rostrum ad 3,5 mm longum, valde tortum; setae nudaе, media ad 18, laterales ad 13 mm longae. — Südwest-Afrika, Kuibis (Engler).



× $3\frac{1}{8}$ × 14
ARISTIDA ENGLERI Mez.
From type specimen.

The type in the Berlin Herbarium in Prof. Mez' handwriting is labeled: Deutsch S. W. Afrika; Namabezirk:

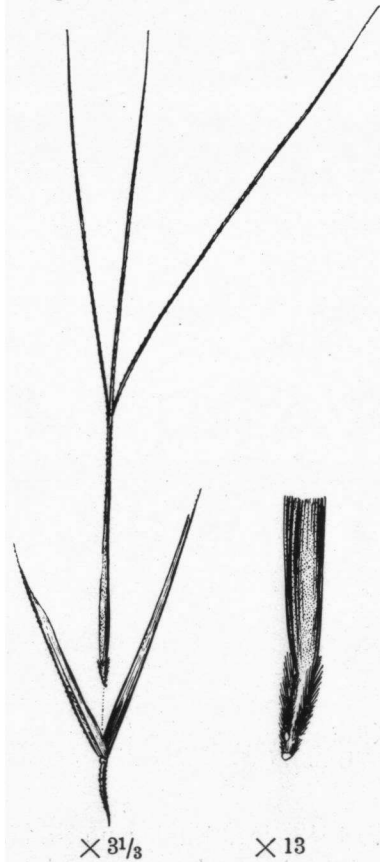
Kuibis-Steinsteppe, 1300. m. s. m., 4. V. 1913, leg. Engler no. 6717. In the same herbarium there are 3 other sheets determined by Prof. MEZ: Seidel no. 4 (anno 1897); Range no. 271 (anno 1907) and Range no. 1013 (anno 1911). All the numbers were kindly received in loan from Prof. ROB. PILGER.

***Aristida enodis* Hackel.**

E. HACKEL; Gramineae novae. IX. in F. FEDDE, Repertorium specierum novarum regni vegetabilis. XI. [1912] p. 21!

Perennis, dense caespitosa, innovationibus intravaginalibus. Culmi

erecti circ. 25 cm alti teretes scabri specie enodes, nodo nempe unico basilari occulto minime prominente, simplices, superne longe denudati. Folia in quovis culmo 3—4 basillares, vaginae 1—2 infimae innovationes fulciantes, reliquae culmum arcte amplectentes, teretes, summa vix ad medium culmum pertinens, omnes collo faucibusque circumcirca barbatae ceterum glaberrimae v. scaberulae. Ligula margo membranaceus angustus ciliolatus. Laminae anguste lineares



× 3 $\frac{1}{3}$ × 13
ARISTIDA ENODIS Hackel.
From type specimen.

convolutae subjunciformes versus apicem angustatae sed ipso apice obtusiusculae 12—20 cm longae (culmum saepe aequantes), diametro circ. 0,8 mm, erectae, rigidae extus scabrae intus nervis crassis subcontiguis minute puberulis percursae. Panicula lineari-oblonga contracta densissima versus apicem subdilata 8—10 cm longa apice 1 cm lata, rhachi ramisque scabris, his solitariis erectis, inferioribus ad 3 cm longis in $\frac{1}{4}$ — $\frac{1}{3}$ inferiore nudis, dein ramulos secundarios brevissimos 1—2-spiculatos dense confertos gignentibus. Spiculae imbricatae breviter v. brevissime pedicellatae lanceolato-lineares sine aristis circ. 10 mm longae atroviolaceae. Gluma I. lineari—lanceolata 9 mm lg. acuminata mucronulata 1-nervis, carina serrulato-scabra ceterum minute hispidula v. glabrescens; II. spiculam aequans (10 mm lg.) lineari-lanceolata minute obtuseque bidentata inter dentes mucronata. Gluma fertilis II. ^{dam} aequans, lineari-tubulosa superne sensim in stipitem haud tortum cum arista haud articu-

latum attenuata, callo brevissimo acuto brevissime barbata ceterum scaberula pallide viridula, aristae rami patuli 14—16 mm longi, intermedio lateralibus paullo longiore. Palea parvula hyalina enervis. Antherae (non satis evolutae) 1,5 mm longae.

Bolivia: Palca, Hacienda Huancapampo, alt. 3900 m, April 1910, leg. Dr. O. Buchtien no. 2540.

Verwandt mit *A. adscensionis* L., aber durch den scheinbar knoten-

losen einfachen Halm, stark eingerollte raue Blätter, fast gleichlange stachelspitzige Hüllspelzen und kürzere Grannen der Deckspelze verschieden. Auch *A. bromoides* H. B. K. weicht durch den ästigen, mehrknotigen Halm von unserer Art ab. Für diese ist auch der Haarkranz rings um den Hals (Spreitenansatz) der Scheide charakteristisch, der in dieser Form sonst nur bei *A. barbicollis* Trin., einer übrigens nicht näher verwandten Art vorkommt.

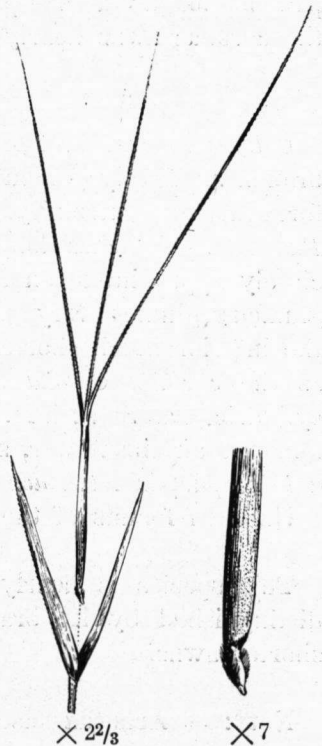
The type of this characteristic species in HACKEL's Herbarium, now at Vienna. The sheet is stamped with the number 38909.

Aristida erecta Hitchcock.

A. S. HITCHCOCK; Catalogue of the Grasses of Cuba, in Contributions from the United States National Herbarium, Washington, Vol. XII. [1909] p. 236!

Culms erect, rather stout, from a perennial root, about 1.5 meters high, glabrous; sheaths glabrous, longer than the internodes; blades glabrous beneath, scabrous on the nerves above, elongated, convolute, much attenuated at the tip, 3 to 5 mm. wide, as much as 1 meter long; panicles 50 cm. long, the numerous scabrous branches ascending below, spreading above, the lower as much as 20 cm. long, all spikelet-bearing to the base; spikelets crowded, the pedicels erect, stout, 2 to 3 mm. long, glumes glabrous, the first 12 to 15 mm. long, scabrous on the keel, abruptly cuspidate or awntipped, 3-nerved, one of the lateral nerves somewhat indistinct, second glume 2 to 3 mm. shorter, acuminate, 1-nerved, smooth on the keel, lemma 12 to 13 mm. long, glabrous, the callus about 1 mm. long, bearded, awns spreading, the central 2 to 3 cm. long, the lateral somewhat shorter.

The type specimen was collected by Wright in Cuba in 1865, no. 41161, in the U. S. National Herbarium. This specimen is numbered in pencil 2432, which is an error for 3432. The corresponding speci-



ARISTIDA
ERECTA Hitchcock.
From type specimen.

men in the Grisebach Herbarium was collected in western Cuba in 1863 and is numbered „928 = 3432". The only other specimen seen is: Herradura, *Tracy* 9076.

This species resembles *A. palustris* (Chapm.) Vasey, but differs in having taller culms, larger and more spreading panicles, and longer glumes and lemma. In *A. palustris* the panicle is narrow and strict, the glumes are about 10 mm. long and nearly equal, and the lemma is only 7 to 8 mm. long.

Aristida fasciculata Torrey.

JOHN TORREY; Descriptions of some new Grasses collected by Dr. E. James, in the expedition of Major Long to the Rocky Mountains, in 1819—1820, in *Annals of the Lyceum of Natural History of New-York*, Vol. I. Part 1. [1824] p. 154!

Culm filiform, erect, branched; leaves narrow, flat, smooth; panicle elongated, sub-spiked; flowers fasciculate; calyx shorter than the corolla; awns nearly equal, spreading, longer than the flower.

Description.

Culm two feet and more in height, smooth, terete, with short branches, slightly geniculate. *Leaves* long, very narrow, almost filiform at the extremity. *Sheaths* smooth. *Stipule* a bearded ring. *Panicle* 6—8 inches long, erect, many-flowered; flowers purplish, closely approximate on the extremity of the branches. *Calyx* two-glumed; glumes very unequal, linear-lanceolate, acute, carinate; the inferior much shorter than the corolla; superior about as long as the corolla. *Corolla* on a short bearded stipe, two-valved, sub-cylindric, scabrous; inferior valve involute, half an inch long; *awns* longer than the flower, spreading, filiform, scabrous. *Stamens* three; *anthers* purplish. *Germen* linear, elongated; *stigmas* plumose.

HAB. In forests of the Canadian river.

This species is nearly allied to *A. purpurascens* of Poiret, but is distinguished by its branched culm, its short calyx, and by its shorter awns.

Note: = *Aristida adscensionis* L..

The type specimen, in the Torrey Herbarium at the New York Botanical Garden is according to Prof. A. S. HITCHCOCK the some-

what open-panicked form of the common *Aristida adscensionis*. Such forms not infrequently occur in North America.

Aristida fastigiata Hackel

ap. H. SCHINZ; Beiträge zur Kenntnis der Afrikanischen Flora. (Neue Folge) XIII, in Bull. de l'Herb. Boissier. Tom. I. (2^{me} série) [1901] p. 768!

Laxius caespitosa, rhizomate crasso, lignescente, squamoso, innovationibus extravaginalibus. Culmi erecti, simplices, 4—5-nodes, nodis patentim barbatis, fere ad apicem usque foliati, ceterum glabri, scabriusculi, circ. 20 cm alti, graciles. Vaginae arctae, scabrae, internodiis 2—3-plo breviores, ad os longe patenti-villosae, ceterum glabrae, infimae squamiformes. Ligula brevis, ciliaris. Laminae lineares, sensim acutatae, siccae plus minus convolutae, curvatae, 2,5—7 cm lg, inferne ad 2 mm lt., subtus scaberulae, supra minute puberulae et canescentes. Panicula brevis, ovata, densa, pauciflora, propter aristas subfastigiatas in herbario flabelliformis, ramis brevibus (vix 0,5 cm lg.) basi parce ramulosis scabris, 2—6-spiculatis. Spiculae brevissime pedicellatae, lineari-lanceolatae, 16 mm (sine aristis) longae, albo-viridulae, basi fusco-maculatae. Glumae steriles tota superficie villosae, valde inaequales, I^{ma} circ. 11 mm lg., acutissima, 3-nervis, II^{da} 16 mm lg., acuminata, bimucronata, 2-nervis. Gluma fertilis oblonga, cum callo acuto 2 mm longo sericeo-barbato 5,5 mm longa, ceterum glabra, truncata, emarginata, e sinu aristam circ. 4 cm longam emittens, quae basi cum gluma articulata, stipite 5 mm longo, seta intermedia 3,5 cm longa a basi plumosa, setis lateralibus 1—2 cm longis tenuissimis glabris praedita est. Palea 1 mm longa. Antherae 5 mm longae.

Deutsch-Südwest-Afrika (Gross-Namaland): Inachab, Dinter 1102.

Nulli arctius affinis (nisi remote *A. uniplumi* Liecht.), paniculae forma, glumis longe villosis, rhizomate suffruticoso valde insignis.



× 2
ARISTIDA
FASTIGIATA Hackel.
From type specimen.

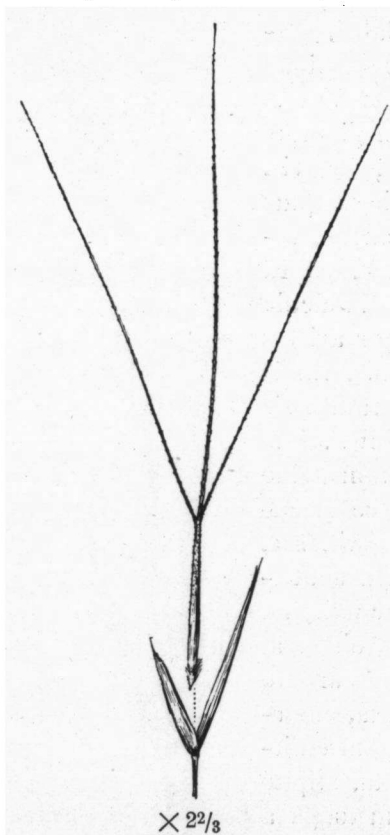
The type in the Herbarium of the Botanical Garden at Zürich was kindly loaned by Prof. Dr. H. SCHINZ. A duplicate type in HACKEL's herbarium at Vienna, stamped no. 22119. A specimen from Dinter no. 1102 is also in the Berlin Herbarium.

Aristida Fendleriana Steudel.

E. G. STEUDEL; Synopsis Plantarum Glumacearum [1855] p. 420! no. 30c.

Caespitosa glaucescens; culmis erectis rigidulis simplicibus glabris

(pedalibus et ultra); vaginis laevibus ore pilis aliquot tenuissimis minutis; ligula brevissima villosula vel nulla; foliis convoluto-teretibus rigidulis suberectis vel curvatis retrorsum scabriusculis caeterum glabris; panícula simplicissima racemosa (3—4-pollicari); radiis solitariis usque ternis uni-trifloris; glumis 2 valde inaequalibus acutis pallidis, inferiore duplo brevior, superiore apice bifida aequante vel parum superante flosculum fere 4-linealem basi glabrum sursum glabriusculum, brevi stipitatum, stipite albo-pilosulo; setis scabriusculis, intermedia brevior. Coll. *Fendler* nr. 973. N. Mexico.



ARISTIDA FENDLERIANA Steudel.
From type specimen.

The type in the herbarium of the Jardin des Plantes at Paris. Duplicate types in all the larger europaean herbaria, also in the Rijksherbarium at Leiden with the numbers 908.83—1404 and 908.23—65. (*Plantae Novo-Mexicanae* no. 973, A. Fendler coll. 1847.)

Aristida festucoides Poir.

J. L. M. POIRET; Encyclopédie Méthodique. Botanique par M. LAMARCK, de l'Institut de France; Supplément, Tome I. [1810] p. 453!

14. ARISTIDE festucoïde. *Aristida festucoides*.

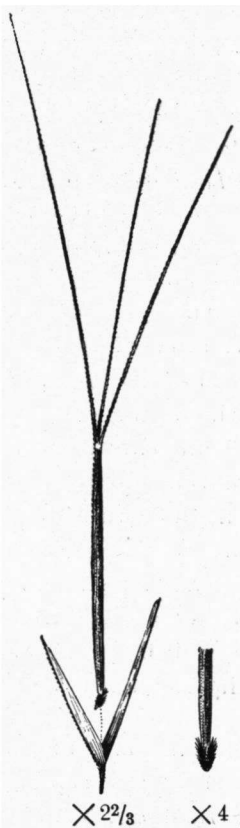
Aristida foliis angusto-subulatis; paniculâ spicatâ, subsecundâ; aristis subaequalibus. (N.)

Cette espèce ressemble, par sa panicule, au *festuca bromoides*. Ses tiges sont grêles, cylindriques, très-glabres; les feuilles courtes, étroites, aiguës, presque subulées, ouvertes; leur gaine glabre, fort longue. La panicule est peu étalée, ramifiée par verticilles presque unilatéraux, ayant l'aspect d'un épi incliné, long de cinq à six pouces et plus. Les fleurs sont toutes pédicellées, très-étroites, subulées; les valves calicinales inégales, uniflores, très-aiguës; celle de la corolle un peu plus longue, terminée par trois arêtes (ou une arête trifide) droites, presque égales, plus longues que la corolle.

Cette plante croît au Sénégal; elle m'a été communiquée par M. Dupuis. (V. s.)

Note: = *Aristida adscensionis* L. var. *festucoides* (Poir.) Henrard.

I was unable to locate the type, which is probably in the Cosson Herbarium. In the Vahl Herbarium at Copenhagen I found however a duplicate of the type labeled: „Sénégal, Dupuis.” The specimen lacks the base and agrees very well with POIRET's description. In the french description the glumes are given as „very acute”, but in the specimen they are as given in my figure, demonstrating that POIRET's species belongs to the very variable *A. adscensionis*. TRINIUS and RUPRECHT placed POIRET's species under their *A. senegalensis*, which has, according to the description, scabrous lemmas, they are smooth with a scabrous keel in *A. festucoides*. POIRET's plant is allied to *A. pumila*, which has still longer and somewhat scaberulous lemmas.



ARISTIDA
FESTUCOIDES Poir.
From duplicate type
specimen.

Aristida filipendula Buckley.

S. B. BUCKLEY; Descriptions of Plants N^o. 3. Gramineae, in Proceedings of the Academy of Natural Sciences of Philadelphia „1862” [1863] p. 93!

Culmo erecto glabro, firmo simplici tereti $1\frac{1}{2}$ —2 pedali; foliis paucis convolutis 3—8-policaribus vaginis glabris internodio brevioribus; ligulis breve pilosis; panícula interrupta 7—9-policari; radiis capillaribus inaequantibus flexuosis longissimis (1—2 policaribus); glumis inaequalibus mucronatis, inferiore flosculo $\frac{1}{3}$ brevior, superiore flosculum superante; flosculo scabro et albo-punctato apice torto ad basin piloso; setis 3 subaequalibus lato divaricatis circum $1\frac{3}{4}$ policaribus.

Western Texas. June.

Flowers purple and somewhat fascicled on short pedicels near the ends of the filiform branches.

This is a common species on dry hills, often being found in the vicinity of the dens of the stinging ant. It differs from the *A. purpurea* of Nutt. in its shorter bristles, scabrous and dotted florets, which are often more or less twisted at the top. It also flowers about two months later, the *A. purpurea* flowering the last of March and first of April, being then very common and conspicuous on the prairies of Northern Texas, with its purple panicles, with bristles 3—4 inches long, waving in the wind.

The *Aristida longiseta* of Steudel is apparently founded on dwarf specimens of *A. purpurea*, judging from specimens collected by Fendler in New Mexico which are in the Herbarium of the Academy.

ASA GRAY in the same volume of the Proceedings pag. 334 says: „*Aristida filipendula* is *A. purpurea*, Nutt., a form near the var. *Berlandieri*, Trin. The species is polymorphous.”

Note: = ***Aristida purpurea* Nuttall.**

See the observations under *Aristida aequiramea* in this revision pag. 20.

***Aristida flaccida* Trinius et Ruprecht.**

Spec. Gram. Stipac. loc. cit. pag. 117!

= *Aristida laxa* TRINIUS. Act. Petrop. (1829) p. 85! non CAVANILLES.

Description of Aristida laxa TRIN. loc. cit. pag. 85!

Panicula (demum) laxa; Glumis acutissimis: superiore duplo longiori, perianthio 5-lineali parum breviori; Aristae laciniis lateralibus brevissimis, media valvulae longitudinem paulo excedente. *Aristida laxa*. R. et S. II. p. 399.

V. spp. Bras.

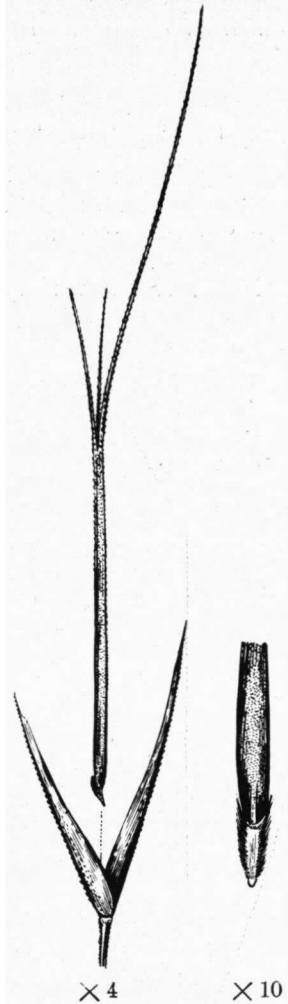
Culmus perbrevis sustinet paniculam compositam e radiis acquissimis, tenuissimis et subcapillaribus, erectis, levissimo impulsu vacillantibus.

Description of Aristida flaccida TRIN. et RUPR. l. c. p. 117!

Paniculae fere pedalis, basi vaginatae, tremulae radiis geminis longissimis, nudis, apice paucifloris: inferioribus semipedalibus, simplicissimis, flaccidis, superioribus brevioribus, erectis l. erecto-patentibus; glumis inaequalibus: superiore subquadrilineali inferiorem (mox caducam) lineâ superante; flosculo 5 lineali, spadiceo, versus apicem non tortum scabro; setis erectis, valde inaequalibus: media quadripollicari, lateralibus 3—4-plo longiore.

In montibus Carassae prope Capanéma. Januar. Febr. (Riedell!)

Rhizoma ♀, subrepens. *Culmus* cum panicula ultrapedalis, sine ea vix semipedalis. *Vaginae* glabrae, internodiis longiores. *Ligulae* loco callus membranaceus pilosulus. *Folia* convoluta, filiformi-setacea, fere pedalia, rigidiuscula, erecta, glabra. *Panicula* debilis, levissimo impulsu vacillans. *Aristida laxa* Cavan. differt: flosculo glumis brevior, arista infra divisuram torta, radiis solitariis etc.



ARISTIDA FLACCIDA
Trinius et Ruprecht.
From type specimen.

Aristida flaccida Trin. et Ruprecht.

var. uniglumis Doell.

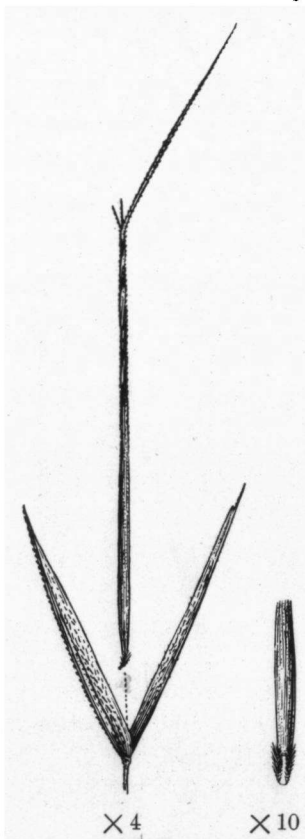
J. C. DOELL, in Flora Brasiliensis etc. ediderunt DE MARTIUS et EICHLER Vol. II. Pars III. Gramineae II. [1878] p. 131

Gluma inferiore nulla. — Etiam spiculae juniores nonnisi gluma superiore vel insuper inferiore brevissima tabescente instructae.

Habitat varietas $\beta.$, *formis biglumibus intermixta, prope Rio de Janeiro (Glaziou n. 7981).*

Obs. Cl. TRINIUS glumam inferiorem in forma $\beta.$ „mox caducam” esse putat, id quod non semper locum habere mihi videtur, quum eam etiam in spiculis juvenilibus desideraverim vel admodum tabescentem *) viderim. Neque vero minus, formam uniglumem valde constantem esse, quam maxime dubito.

Note: Not a variety at all but only a „morbid state.”



$\times 4$
ARISTIDA
FLEXUOSA Fournier.
From type specimen.

Aristida flexuosa Fournier.

EUG. FOURNIER; Mexic. Plant. etc. Pars II. Gramineae, Paris, [1881] p. 77!

Planta caespitosa, foliis brevibus planis basi pilis longis albis obsitis, culmis sesquipedalibus, in dimidia superiore parte paniculiferis, radiis alternis flexuosis recurvis longe nudis apice dense floriferis, glumis aequalibus acutis pubescentibus, flosculo maculato, setis lateralibus brevissimis, arista geniculata, parte superiore supra geniculum partem tortam pubescentem et glumas 5-lineales aequante.

Santa Fe, julio (BOURG. n. 677 part.).

Note: = *Aristida Schiedeana* Trin. et Ruprecht.

FOURNIER's specimens were kindly sent to me from the Paris Herbarium by Prof. H. LECOMTE. The plants are in very good condition, the glumes are equal or the lower but slightly shorter than the upper, the lower glume has an additional nerve, the upper

*) Ejusmodi valvulas inferiores tabescentes minutas etiam in *Aristidae pallentis* spiculis paucis nonnunquam offendi.

two short lateral setae, the twisted column exceeds the glumes, the lateral awns are minute, 1—2 mm. long. The plants agree with the specimen (Schiede no. 909) in the Leningrad Herbarium, the type of *Aristida Schiedeana* TRIN. et RUPR., but they differ in one character. BOURGÉAU's number has both glumes with a prominent pubescence, whereas SCHIEDE's number 909 has this pubescence



ARISTIDA FLOCCICULMIS Mez.

From type specimen.

only on the lower glume, the upper one is smooth. This is the only difference I could find and I have therefore united the two species. FOURNIER's species is at most a slight variety of *A. Schiedeana* TRIN. et RUPR.. See afterwards under that species.

***Aristida flocciculmis* Mez.**

CARL MEZ; in FEDDE, Rep. spec. nov. loc. cit. XVII. [1921] p. 147!

Perennis, valida. Vaginae dorso margineque appresse albo-flocculosae mox glabratae, quam internodia culmi satis breviores; ligulae lanugine molli prominente stipatae; laminae convolutae vel basin versus planae, dorso glabrae laevesque. Culmi praeter nodos glabros dense lanugine floccoso obtecti. Inflorescentia submultiflora, tenuissime effusae 3-pinnata, subpyramidalis; ramulis tenuissimis usque ad 40 mm longis, ad insertiones breviter pilosis nec pulvinatis, cum pedicellis dense quasi pilose scabridis. Spiculae pedicellis tenuissimis, lateralibus quoque ad 10 mm longis stipitatae, glaberimae. Glumae 1-nerviae, inferior ad 5,5 mm longa bene elliptica apice latiuscule rotundata integerrimaque et insigniter ciliata, II. 11—13 mm longa, inciso-emarginata. Paleae unguis ad 1 mm longus, breviter pilosus; articulatio permanifesta; rostrum ad 6,5 mm longum; valde tortum; setae nudaе, media 25—28, laterales ad 15 mm longae. — Kapland, Modderriver (O. Kuntze).

Note: = *Aristida vestita* Thunberg.

The courtesy of Prof. O. JUEL at Upsala enabled me to study the *Aristidas* in THUNBERG's Herbarium. The plants called *A. flocciculmis* by Prof. MEZ in the Berlin Herbarium I could examine through the kindness of Prof. R. PILGER, all have immature spikelets, but the plants agree perfectly in all characters with THUNBERG's type. The species is rather rare; what is called *A. vestita* in herbaria belongs to another species, described by TRINIUS as *Aristida diffusa*.

***Aristida floccosa* Cosson et Durieu.**

Nomen nudum in E. COSSON et DURIEU DE MAISONNEUVE; Exploration scientifique de l'Algérie, Sciences naturelles, Botanique, Flore d'Algérie, Groupe des glumacées, Paris, [1867] p. 82!

= *Arthratherum plumosum* NEES var. *floccosum* COSS. et DUR. loc. cit. p. 82!

Internodiis inferioribus et saepius vaginis foliorum inferiorum dense tomentoso-lanuginosis, tomento detersibili deciduo; aristarum lacinia media elongata, lateralibus tenuissime capillaribus, nudis, subtriplo brevioribus.

HAB. Haec varietas sola hucusque in Algeria obvia.

OBS. Par l'examen d'un assez grand nombre d'échantillons, nous avons pu nous convaincre du peu d'importance des caractères tirés de la villosité plus ou moins prononcée des tiges et des gaines, ainsi que de la longueur relative des divisions de l'arête; il n'est pas rare de rencontrer dans l'*A. plumosum* type des arêtes dont l'une des divisions latérales est plumeuse, tandis que l'autre est nue.

COSSON and DURIEU described their *Arthratherum plumosum*: „internodiis inferioribus saepius tomentellis vel dense tomentoso-lanuginosis; vaginis glabris vel inferioribus modo internodiorum tomentoso-lanuginosis, aristae parte indivisa longiuscula, lacinia media longe plumosa, inferne nuda, laciniis lateralibus bi-triplo rarius tantum triente brevioribus, tenuiter capillaribus, nudis, rarius eodem modo ac media plumosis; etc.

Aristida floccosa COSS., apud BATTANDIER et TRABUT; Flore de l'Algérie. Monocotylédones, Alger—Paris. [1895] p. 159!

Gaine et entre noeuds inférieurs recouverts d'un indumentum laineux, floconeux, caduque; glumes un peu plus courtes. C. C. C. Dans toute la région désertique de l'Algérie et de la Tunisie.

Note: = *Aristida plumosa* L. var. *floccosa* (Coss. et Dur.) Henrard.

The densely floccose internodes are very remarkable, but no other characters are present to distinguish the variety from the typical *A. plumosa*.

Aristida floridana (Chapman) Vasey.

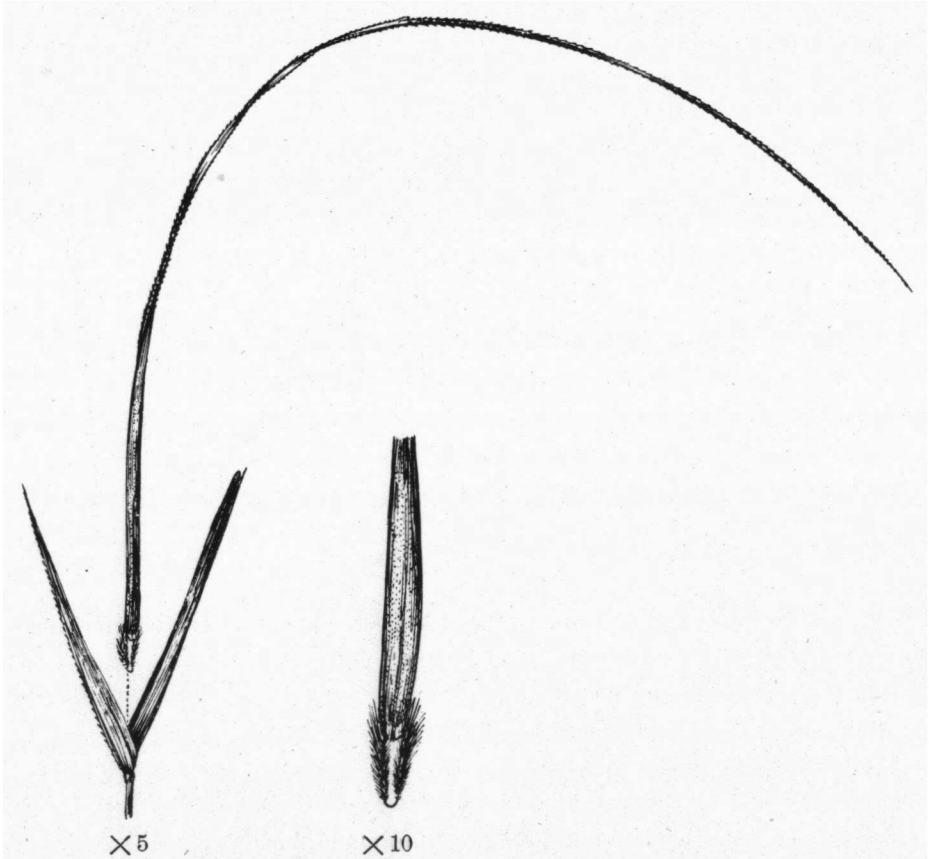
GEORGE VASEY; Monograph of the Grasses of the United States and British America, in Contributions from the U. S. National Herbarium, Vol. III. [1892] p. 48!

= *Streptachne Floridana* CHAPMAN, Flora of the Southern United States etc., New York, [1860] p. 554!

Description given by A. W. Chapman loc. cit. p. 554!

Culms (2° high) simple, slender, erect; leaves long, filiform, convolute, smooth; sheaths hairy at the throat; panicle (1° long) narrow, erect, the rough branches by pairs, scattered; spikelets short-

stalked; glumes equal, linear, purple, 1-nerved, the lower one awn-pointed, hispid-serrulate on the back, the upper smooth, truncated, mucronate-awned; paleae raised on a slender bearded stalk, smooth, shorter than the glumes; the lower one linear-subulate, gradually tapering into the long compressed curved awn, convolute, and enclosing the capillary inner one. — South Florida, *Dr. Blodgett*.



ARISTIDA FLORIDANA (Chapman) Vasey.
From type specimen.

Type in the U. S. National Herbarium at Washington. A fragment of the specimen, the only one hitherto known, labeled: „Key West, Florida, Dr. Blodgett collector”, was kindly received from Prof. A. S. HITCHCOCK. The species described by CHAPMAN was placed by HITCHCOCK under *A. ternipes* CAV. (*A. scabra* KUNTH), but the plant is so curious and the spikelets are so different from those of the common central american *A. scabra* that I have taken up VASEY'S species in my monograph.

***Aristida Forskohlii* Tausch.**

J. F. TAUSCH; Botanische Beobachtungen über einige Aristidae, in Flora oder allgemeine botanische Zeitung, Regensburg, Jahrgang XIX. Bd. II. [1836] p. 506!

Panicula oblonga, glumis acuminatis inaequalibus flore plus duplo longioribus, arista 3-fida, lacinia media patenti-plumosa basi nuda, lateralibus elongatis nudis aut medio plumosis media vix quarta parte brevioribus, vaginis glabris, culmis basi pubescentibus.

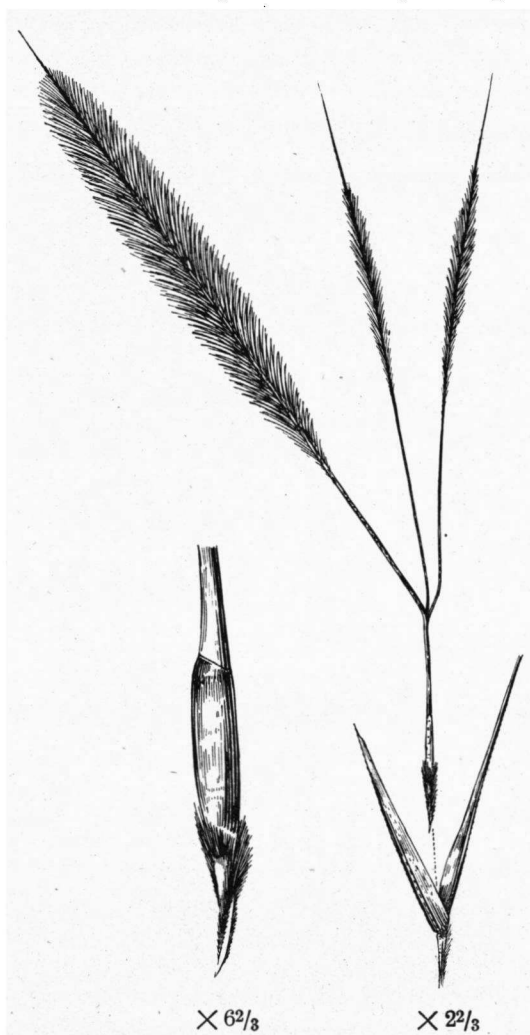
A. tomentosa Forsk. descr. 25 (partim). *)

A. ciliata: panicula oblonga, glumis obtusiusculis florem tertia parte excedentibus, arista 3-fida, lacinia media arrecto-plumosa basi nuda, parte nuda lateralibus brevioribus, easque ex toto duplo excedente, vaginis culmisque glabris, ligulis geniculisque longe barbatis.

A. ciliata Desf. Delil. aegypt. 31. t. 13. fig. 3. (opt.)

A. lanata Beauv. Agrost. t. 8. fig. 10.

So fein die Unterschiede dieser vier Arten für jeden, der selbe nicht selbst vergleichen kann, scheinen mögen, so leicht unterscheidet selbe gewiss jeder, der sie neben einander



ARISTIDA FORSKOHLII Tausch.
From type specimen.

*) *A. tomentosa* FORSK. is an error. See my note on pag. 57 of this revision.

liegen sieht, und die Natur scheint bei so einfachen Gewächsen den Unterschied derselben vorzüglich in der Frucht ausgedrückt zu haben. Nach den blossen Federn der Mittelgranne, wenn man auch das Verhältniss zu den Seitengrannen ausser Augen lässt, zeigt sich schon ein auffallender Unterschied, und zwar sind die einzelnen Federchen der Feder bei *A. plumosa* und *ciliata* mehr aufgerichtet, und bei letzterer doppelt länger als bei ersterer, und so sind dieselben bei *A. brachypoda* und *Forskohlii* mehr ausgebreitet und daher auch dichter scheinend, obwohl dieselben wieder bei *A. Forskohlii* doppelt länger sind, als bei *A. brachypoda*. So stehen auch die Seitengrannen in einem verschiedenen und bestimmten Verhältniss, und zwar sind dieselben bei *A. Forskohlii* und *ciliata* verlängert, und beinahe von gleicher Länge, während dieselben bei *A. plumosa* und *brachypoda* wieder gleichlang, aber beinahe doppelt so kurz sind als bei *A. Forskohlii* und *ciliata*. Uebrigens ist noch das verschiedene Längenverhältniss derselben zur Mittelgranne in den Diagnosen angegeben.

Note: = *Aristida lanata* Forskål.

From the short, but very accurate description of *A. lanata*, we can recognize the species very well. FORSKÅL stated f. i. „aristae laterales in medio villosae, media arista valde lanata, basi nuda.” This agrees perfectly with the figure given here.

TAUSCH described his species in the supposition that FORSKÅL's *A. lanata* was a mixed and uncertain species, because FORSKÅL in his short diagnosis preceding his description only mentioned the lanate central awn. This was however done to distinguish his species from the following species, the *A. paniculata*. *Aristida lanata* was distributed in SIEBER's Egyptian exsiccatae together with three other species of *Aristida*. See my observations under *A. brachypoda* on pag. 57 of this revision.

Aristida Friesii Hackel

nov. spec.

(Sect. *Chaetaria*). Perennis, caespitosa, glauca. Culmi stricte erecti, cum panicula circa 40—50 cm. alti, simplices, graciles, scaberrimi, praesertim infra paniculam, striati, pauci-nodes; vaginæ arctae, teretes, striatulae, scaberrimae, internodia longe superantes; ligula brevissima, ciliolata, auriculae pubescentes et longe ciliatae, collo piloso-barbato; laminae circa 3 mm. latae, planae vel superne con-

volutae, sensim tenui-acuminatae, circa 20—30 cm. longae, stricte erectae, supra ligulam pilis longiusculis barbatae, ceterum glabrae, utrinque praesertim supra marginibusque scabrae; *panicula* stricte erecta, contracta, plus minusve densa sed haud spiciformis, circa 15 cm. longa, 1—2 cm. lata, *rhachi* striata, angulata vel subtriquetra, scaberrima, *ramis* appressis, solitariis vel 2—3-nis, tenuibus, scaberrimis, in $\frac{1}{2}$ inferiore nudis; *spiculae* purpureae, brevipedicellatae, pedicellis triquetris vel angulosis, scaberrimis; *glumae* lineari-lanceolatae, subaequales, sensim acutatae, gluma I. 3-nervis, nervis carinaeque scabris, 7 mm. longa, gluma II. 1-nervis, 8 mm. longa, carina laevis, apice leviter bidentata, inter denticulos minute aristata, *gluma* III. *fertilis* lineari-tubulosa, $7\frac{1}{2}$ mm. circa longa, sensim angustata, leviter stipitata vix torta, leviter punctulata, callo brevissimo, obtuso, truncato, longiuscule barbato, aristae ramis subaequalibus, subpatulis, rectis, scabris, intermedio 9 mm. longo, lateralibus $7\frac{1}{2}$ —8 mm. longis.

Bolivia: Junaca prope Tarija, loco graminoso in regione subalpina, 28. 2. 1902 leg. ROB. E. FRIES no. 1301a. Exped. Suec. in reg. Chaco-Andinis. Herb. Brasil. Regnell. Musei bot. Stockholm. Typus speciei in Herb. Hackel nunc in Herb. Mus. Vindobon. sub no. 22175.

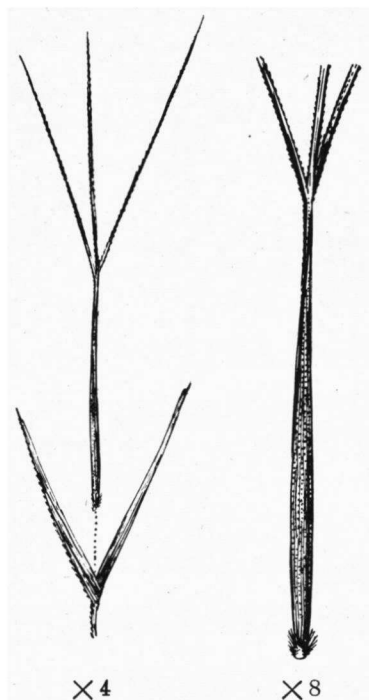
This is the plant mentioned by FRIES in *Arkiv för Botanik*, Bd. VIII.

[1908] no. 8. p. 37, as *Aristida torta* KUNTH, the latter is however a different species.

Aristida fugitiva Vasey

ap. SERENO WATSON, in *Proceedings of the American Academy of Arts and Sciences*, Boston, XXIV. [1889] p. 80.

Nomen nudum for Palmer no. 501 in 1887 in a list of plants collected by Palmer in northwestern Mexico.



ARISTIDA FRIESII Hackel

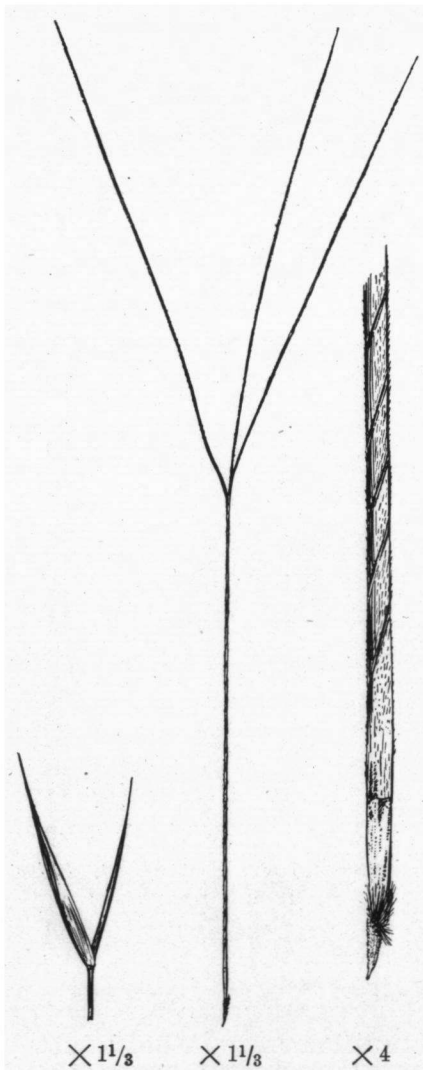
From type specimen.

This is not the same plant as *A. californica* var. *fugitiva* VASEY (type specimen ORCUTT, Colorado Desert).

Palmer 501 is the type of *Aristida peninsularis* HITCHC.; Revision of North American Species of *Aristida* p. 521!

***Aristida funiculata* Trin. et Ruprecht.**

Spec. Gram. Stipac. loc. cit. pag. 159!



ARISTIDA FUNICULATA

Trin. et Ruprecht.

From type specimen.

Paniculae 3—4 pollicaris, depauperatae, contractae, linearis, *rari-florae*, basi paullo exsertae radiis subgeminis: altero subsessili unifloro, altero brevipedunculato, erecto, 1—2 floro; glumis parum inaequalibus, longe acuminato-cuspidatis; *inferiore longiore sub 10 lineali*, superiorem lineis 1—3 superante; flosculo $2\frac{1}{2}$ —3 lineali, maculato, apice asperulo, non torto sed cum stipite aristae deciduae 17—21 lineali contorto articulatim conjuncto; setis subaequalibus, patentibus, $2-2\frac{1}{2}$ pollicaribus.

Aristida funicularis Steudel Nomencl. 1841.

Aristida (Arthratherum) Kotschyi Hochstetter!

Aristida stipacea Ehrenbg! et Hemprich. (stipite aristae tantum 8—15 lin., setis fere 3 pollicaribus.)

Senegalia: in sabulosis pr. Walo m. Septemb. (Leprieur in Hb. Kunth!); Nubia: ad pagum Cordofanum Abu-Gerard locis demissis arenosis siccis m. Sept. (Kotschy! Un. it. n. 31.) et in planitie arenosa Accabae (Kotschy! pl. Aeth. n. 98.); Arabia prope el Gidon. (Ehrenberg!)

Radix fibroso-fasciculata, annua. *Culmi* e caespite numerosissimi,

semipedales l. in speciminibus Senegalensibus et subinde quoque Aethiopicis pedales et longiores, simplices l. ramosi, uti tota planta pallescentes vel pl. min. glaucescentes. *Vaginae* internodiis breviores; ore loco ligulae sparse ciliatae. *Folia* tripollicaria et minora, rarius semipedalia, planiuscula, lineam dimidiam lata, erecta l. patentia, glabra. *Panicula* squarrosa, aristis quandoque inter se invicem contortis ut in *Stipa juncea*, quare etiam *A. stipiformem* Lamarckii hujus esse loci credideremus.

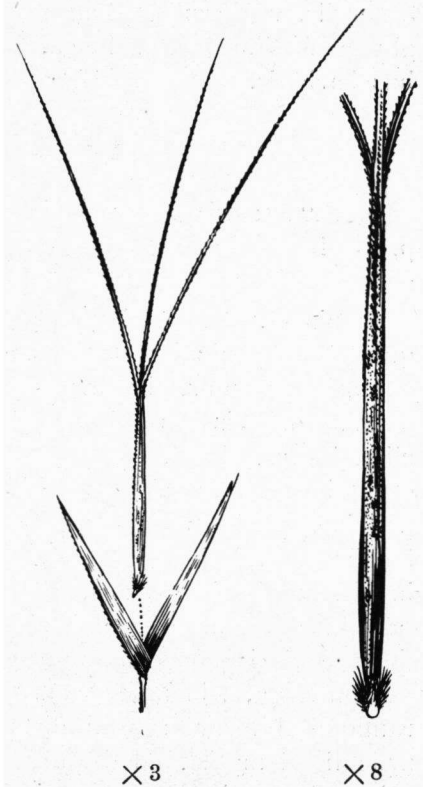
Chaetaria murina β . *villosa* N. E. in Wight hb. n. 73. B. e peninsula Indiae orientalis fortasse eadem ac *A. funiculata*, sed specimen tantum juvenile hucusque vidimus.

This annual species, belonging to the section *Arthratherum*, is distinguished by the inverse position of the glumes, the very long column and the characteristic shape of the lemma and the callus.

Aristida furfurosa Henrard

ap ROB. E. und TH. C. E. FRIES; Beiträge zur Kenntnis der Flora des Kenia, Mt. Aberdare und Mt. Elgon. VIII, in Notizblatt des Bot. Gart. u. Mus. Berlin—Dahlem. Bd. IX Nr. 87. Gramineae I von R. PILGER [25. Februar 1926] p. 508!

Perennis, caespitosa; innovationes intravaginales. Culmi erecti, graciles, circa 35 cm alti, simplices, glabri vel leviter scaberuli, teretes vel subcompressi, uninode, superne longe nudi, nodo in $\frac{1}{7}$ inferiore culmi sito; vaginae striatae, subcompressae, scaberulae; ligula brevis, truncata, ciliolata, auriculae pubescentes, vel innovationum barbatae; laminae anguste lineares, complicatae, 7—14 cm longae, statu complicato vix 1 mm latae, rigidulae, obtusae, subcurvatae, subtus virides, laeves, supra glaucae, scaberulae; panicula contracta, angusta, subinter-



ARISTIDA FURFUROSA Henrard.
From type specimen.

rupta, circa 12 cm longa, 1 cm lata, rhachi ramisque scaberulis, substriatis, his solitariis, brevibus, erectis, 3—4-spiculatis; rami ad insertionem pilis longis mollibus praediti; spiculae brevissime pedicellatae, lineari-lanceolatae, e rufescente et livido violaceo-variegatae vel pallide fuscescentes: glumae uninerves, glabrae, I. circa 8,5 mm longa, acuta, carina scabra, II. circa 10 mm longa, carina laevis, apice bidentata, inter dentes breviter aristata, gluma III. fertilis circa 8 mm longa, punctulata, praesertim superne carinaeque scabra, apice haud torta neque articulata, sine stipite in aristas abiens; callus 0,6 mm longus, obtusus; aristae rami subaequales, scaberrimi, 17—19 mm longi, suberecti vel subpatentes. Palea brevissima.

Kenia, Westseite: Bei Forest Station, sonniger Platz (26. Dez. 1921 — ROB. E. und TH. C. E. FRIES n. 371).

Affinis, sed remotius, *A. junciformi* TRIN. et RUPR., quae differt a nostra spiculis minoribus, gluma I. tantum 6,5 mm longa, glumis 3-nerviis, scaberulis, gluma II. acuta, aristata, haud bidenticulata, gluma fertile 6 mm longa, et ramis ad basin haud pilis mollibus barbatis.

Aristida Galpinii Stapf.

O. STAPF; Diagnoses Africanae XXXV. in Kew Bulletin [1910] p. 130!

Affinis *A. Burkei*, Stapf et *A. bipartitae*, Rupr. & Trin., ab utraque habitu paniculae et dimensionibus spicularum partium distincta.

Herba perennis, dense caespitosa, innovationibus numerosis cum culmis floriferis arcte fasciculatis; culmi circiter 25 cm. alti, graciles, laeves, glabri, 1-nodi, internodiis exsertis. *Folia* praeter ligulas et vaginarum ora glabra, pallide viridia; vaginae arctae, inferiores pallidae, paulo compressae, persistentes, ad ora pilis ad 4 mm. longis tenuissimis barbatae, summa saepe violascens, glabra; ligulae brevissimae, ciliolatae; laminae angustissimae, lineari-setaceae, acutae, 10—15 cm. longae, explanatae 1 mm. latae, rigidae vel subflexuosae, plicatae, subtus laeves, supra aspero-puberulae. *Panicula* subcontracta, oblonga, laxa, flexuosa, 2—2.5 cm. longa; rhachis ramisque filiformes; rami distantes, solitarii, infimi 3—4 cm. longi (spiculis demptis), ad 1 cm. indivisi, 4 vel uti caeteri tantum 2-spiculati; pedicelli scaberuli, inaequales, longiores circiter 6—10 mm. longi. *Spiculae* 10 mm. longae, stramineae et luride purpureo-variegatae. *Glumae* inaequales, lineari-lanceolatae, subito vel sensim acutatae et mucronulatae, inferior 6—8 mm. longa, superior

circiter 10 mm. longa. *Valva* lanceolata, vix rostrata, cum callo brevi barbato ad 9 mm. longa, laevis nisi in dorso subrotundo asperula, purpurascens, haud cum arista articulata; aristae setiformes, oblique divergentes, intermedia ad 2 cm. longa, laterales paullo breviores.

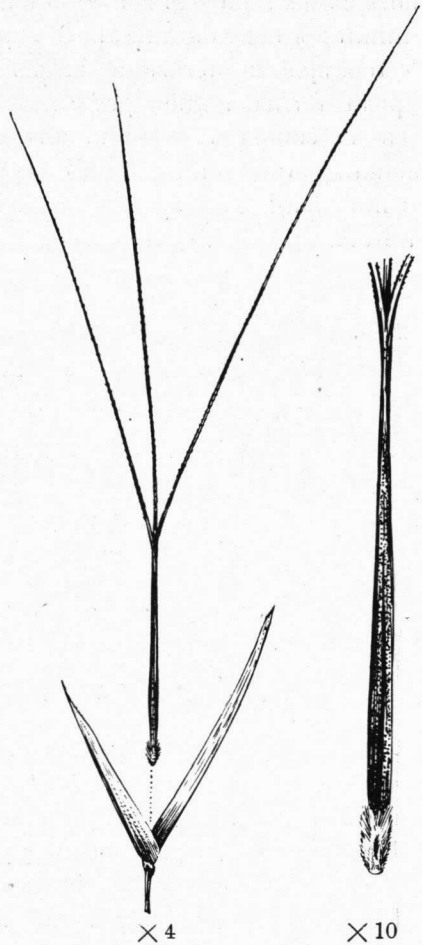
S. AFRICA. Cape Colony: Barkly East Division; Ben McDhui (Wittebergen), 2820 m., *Galpin*, 6900.

The type specimen in the Herbarium of the Royal Botanic Gardens at Kew, was kindly received in loan from the Director, Dr. A. W. HILL.

Aristida Gardneriana Steudel.

E. G. STEUDEL; *Synopsis Plantarum Glumacearum* [1855] p. 137!

Radice fibrosa caespitifera; culmis tenuibus ramosis strictis teretibus glabris (sine panicula 6–8-pollicaribus) glaberrimis; vaginis adpressis striatis glabris; ligula brevissima ciliari; foliis convolutosetaceis rigidulis strictis brevibus (pollicaribus et ultra) panicula contracta; radiis ternis, binis supremis solitariis erectis 1–3-spiculiferis; glumis inaequalibus flavido hyalinus praeter nervum carinalem nerviis 2–2½" longis; flosculo basi piloso, arista pars integra torta, setis subaequalibus 3–3½" longis. *Gardner* legit in Brasil.



ARISTIDA GALPINII Stapf.
From type specimen.

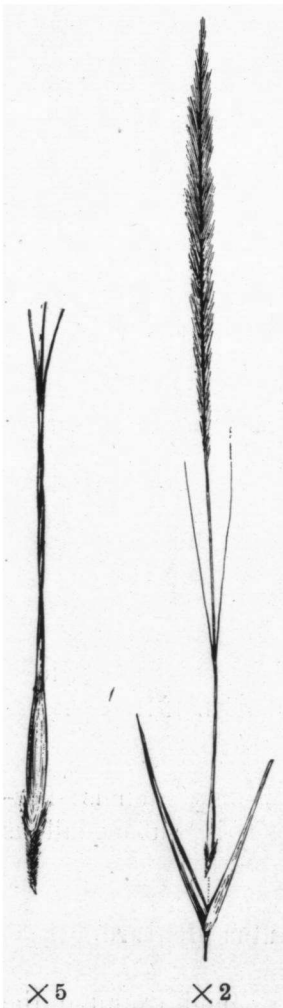
Note: = *Aristida setifolia* H. B. K. var. *genuina* Henrard.

Through the courtesy of Prof. H. LECOMTE I could examine the two plants from Piahy, collected by Gardner. The number 2371 agrees perfectly with the description given above and is therefore

accepted by me as a duplicate of the type. The glumes are 6 and $7\frac{1}{2}$ mm. long and the lemma including the column is 5—7 mm., the awns are 12—14 mm. long. There is an articulation at the summit of the column, the awns are deciduous. This plant belongs to the species described as *Aristida setifolia* H. B. K., and is the typical form of the species. The second plant (Gardner no. 2372) is more robust, the glumes are 10 and $12\frac{1}{2}$ mm. long, the lemma including the column is about 10 mm. and the awns are up to 25 mm. long. This specimen belongs to the variety *intermedia* TRIN. et RUPR..

***Aristida garubensis* Pilger.**

ROB. PILGER; Gramineae africanae. XI, in ENGLER, Botanische Jahrbücher für Systematik etc. XLVIII. [27 Aug. 1912] p. 344!



ARISTIDA.
GARUBENSIS Pilger.
From type specimen.

Suffruticosa, inferne valde diffuse ramosa, ramis lignescentibus, repentibus vel varie adscendentibus, vaginis squamiformibus stramineis obtectis, laminis valde redactis vel nullis. Culmi florentes tenues suberecti, vel adscendentes, inferne \pm geniculati, paucinodi, glaberrimi, vaginis quam internodia parum brevioribus, laminis superne in culmo non vel parum reductis; foliorum culmeorum lamina angustissima, involuta, valde acuta, \pm patens et curvata, glabra, laevis, vagina angustissima, glabra, laevis. Panicula parum exserta, gracilis, satis depauperata, rhachis tenuis laevis vel vix scaberula, rami a basi divisi erecti (et in paniculis defloratis parum vel vix patentes), scaberuli, paucispiculati; spiculae longius vel longe pedicellatae; glumae vacuae lanceolatae, 3-nerviae, apice breviter 2-dentatae, parum inaequilongae; gluma florifera callo elongato acuto, hirsuto instructa, arista media elongata, inferne glabrescens, superne albidoplumosa, aristae laterales tenues glabrae $\frac{1}{3}$ aristae mediae vel parum supra aequantes.

Die halbstrauchige Art hat einen locker verzweigten holzigen Grundstock; die dünnen blühenden Halme sind bis 40 cm mit der Rispe hoch, wobei auf die Rispe fast die Hälfte entfällt; die Internodien sind 3—7 cm lang; die Spreiten der Halmblätter sind 4—8 cm lang, steif, rundlich zusammengerollt, im Durchmesser nur $\frac{1}{2}$ mm; die längere Hüllspelze ist 14 mm lang, die Mittelgranne 4 cm.

Deutsch-Südwestafrika, Grosz-Namaqualand: Garub, Kiesboden und Felsen bei 900 m ü. M. (RANGE n. 508! — Blühend im Oktober 1907); desgl. bei 1300 m ü. M. (n. 536).

Aristida lutescens (Nees) Trin. und *A. namaquensis* (Nees) Trin., die im Habitus nahe kommen, unterscheiden sich durch kürzere Grannen und behaarte Seitengrannen; am nächsten dürfte vielleicht *A. brachypoda* Tausch kommen, doch ist unsere Art ganz kahl.

Through the courtesy of Prof. R. PILGER, I could study the types of this interesting species.

***Aristida geminiflora* Fournier.**

EUG. FOURNIER;
Mexic. Plant. etc.
Pars II. Gramineae,
Paris, [1881] p. 77!

.... Culmo plus quam pedali, angusto glabro; foliis amplexicaulibus convolutis fere pedalis, ligula brevi; panicula ovali, radiis patulis brevibus, infimis longioribus alternis, superioribus geminis, pedicellis unifloris geminis inaequalibus, 8-linealibus; glumis subaequalibus, acuminatis, flosculo maculato angusto basi piloso, arista basi



ARISTIDA GEMINIFLORA Fournier.

From type specimen.

torta geniculata post geniculum glumas aequante, setis lateralibus brevissimis.

Mirador, januarió (LIEBM. n. 646).

The type, in the herbarium of the Botanical Garden of the University at Copenhagen, was kindly lent by the Director Prof. C. CHRISTENSEN.

***Aristida geminifolia* (Nees) Trin. et Ruprecht.**

Spec. Gram. Stipac. loc. cit. pag. 169!



ARISTIDA GEMINIFOLIA (Nees)
Trin. et Ruprecht.
From type specimen.

= *Stipagrostis geminifolia* Nees
ab Esenb.; *Florae Africae australioris*, I. Gramineae. [1841] p. 173!

Description given by Nees, I. c. p. 173!

Culmo in medio bifolio, foliis brevissimis, glumis villosulis.

In collibus sabulosis saxosisque ad Kunkunuwub alt. 1000-1500' et ad ostia fluvii Garip prope Kuigunjels infra 200' alt. (Klein Namaqualand), Drège.

Floret Septembri. ♀.

Structura huius graminis singularis est. Fruticulus spithameus, basi ramosissimus. Rami inferne dense disticheque vaginati eoque incrassati, vaginis striatis glabris ore barbatis, foliis infimarum nullis, reliquis brevissimis vix lineam longis glabris dentiformibus. Dein culmus 2-3 pollicum spatio nudus, compressus, altero latere sulcatus. Sequuntur iam duo foliola $1\frac{1}{2}$ -2 lineas longa, approximata, vaginis brevibus, et denique semipollicari spatio inter-

iecto vagina maior ovalis brevi foliolo mucronata, quae inflorescentiam plerumque amplectitur. Panicula 4—6 lineas longa, subglobosa, densa, secunda, e spicularum subsessilium aliquot fasciculis compacta. Glumae lanceolatae, basi, maximeque apice, attenuatae, in medio albae basi et apice purpureae, puberulo-villosae; inferior 4 lin. longa, superior 5 lin. longa apiceque bidentata. Flosculus cum stipite fere aequilongo subbilinearis, oblongus, valvula inferiori tenui laevi obtuse biloba inter lobos aristata. Aristae stipes lin. $1\frac{1}{3}$ longus, tenuis, lacinia media 9—10 lin. longa, brevi spatio a basi plumosa; laterales 5 lin. longae, tenuissimae, nudaе. Reliqua omnino generis. Antherae griseae.

The type in the Nees Herbarium at Berlin is labeled: „^{12/930} Kl. Namaqual. Duinen. III h, 2561. Drège.” This specimen bears in NEES' hand, the name *Arthratherum geminifolium*, partly erased and written over in ink *Stipagrostis* by NEES himself.

***Aristida geniculata* Rafinesque.**

C. S. RAFINESQUE; Museum of Natural Sciences. American Montly Magazine 2: [Dec. 1817] p. 119!

14. *Aristida geniculata*. Chaff slender, upright, round, base geniculated, leaves filiform, convolute striated rough backwards, ligules ciliated; panicle racemose contracted elongated, glumes equal, keel and bristle rough, pedicel of the glumelles hairy, glumelles smooth convolute, bristle longer twisted rough, divisions very long, nearly equal.

Obs. Very common on the Hempstead plains, and on the seashore near Oyster Bay, Gravesend, etc. on Long-Island. Annual: next to *A. stricta* of Michaux, many stems often grow together, they rise about one foot. It blossoms in August and September.

„There is a specimen of this species from RAFINESQUE in the Elliott Herbarium. I have considered this the same as *Aristida gracilis*.” (A. S. HITCHCOCK, communication by letter 24 Oct. 1922).

Note: = *Aristida longespica* Poiret.

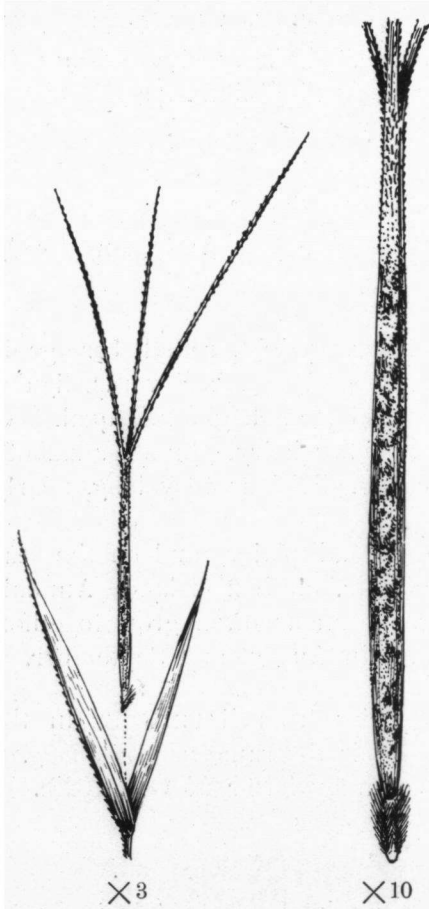
The examination of an authentic specimen of *Aristida longespica* has shown that this is the species that has commonly been called *A. gracilis* by american authors. See afterwards under *A. gracilis* and *A. longespica*.

***Aristida gentilis* Henrard**

nov. spec.

Species habitu *Aristidae divaricatae* HUMB. et BONPL. valde affinis, cujus crescendi modus, culmus simplex, paniculae forma etc. omnino eadem, sed differt glumis inaequalibus (gluma II. quam I. brevior!) et insuper gluma fertili apice haud rostrata neque torta.

Mexico: Provinc. Aguascalientes; prope Aguascalientes, 1890 m. s. m. 2 Oct. 1910, leg. A. S. HITCHCOCK no. 7448. (Typus speciei in Herb. Lugd. Batav. sub no. 922.342—255).



ARISTIDA GENTILIS Henrard.

From type specimen.

Although this species has exactly the same habit as the true *A. divaricata*, it differs in the characters given above. *A. pansa* WOOT. et STANDL. is to recognize by the shorter, very unequal glumes, the twisted beak of the lemma and the different habit. As already stated on pag. 146—147 of this revision, VASEY described and figured as *A. divaricata (Humboldtiana)* a different plant. I have not seen the specimen from which the description and the plate were made but VASEY's description and his plate agree well enough with *A. gentilis* and I suppose that VASEY's *A. divaricata* and my *A. gentilis* belong to the same species. VASEY described the spikelets as shortly pedicellated and appressed to the branches, the glumes are nearly

equal (the figure however gives the inverse position!); the lemma

is described as a slender cylindrical tube, scabrous above and scarcely twisted at the apex (the lemma is figured as smooth all over, without a trace of a beak). If we compare the type of *A. gentilis* with the statements given by VASEY, the differences are so slight, that I think that my supposition is right. For this reason I have not given a complete description of my new species in this revision.

The distribution of *A. gentilis* is not yet sufficiently known, because the plants belonging to it were generally united with *A. divaricata*. So far as I could find from the duplicates received from the U. S. Nat. Herbarium, the species is rather widely distributed. It was observed in Arizona (Oracle, Sierra Tucson and Santa Rita Mountains), in northern Mexico (Sonora), central Mexico (Aguascalientes) and southern Mexico (Oaxaca). Among the long list of specimens mentioned under *A. divaricata* in HITCHCOCK'S Revision there are undoubtedly other localities belonging to our species. We have to take care to look for undamaged and well-developed spikelets, the tips of the glumes with the awns easily break off and in nearly all the specimens examined a good deal of the spikelets is damaged, giving us a false idea of the position of the glumes.

***Aristida Geyeriana* Steudel.**

E. G. STEUDEL; Synopsis Plantarum Glumacearum [1855] p. 133!

Radice fibrosa; culmo erecto stricto simplici (2-pedali) tereti striato cum vaginis foliisque glaucescente glabro; vaginis arctis elongatis nodos obtegentibus, vix fauce pilis aliquot adpersis; ligula membranacea brevi brevissimeque ciliolata; foliis convolutis rigidulis laevibus culmum (sine panicula) aequantibus; panicula stricte elongata (pedali et ultra) contracta; radiis binis, sursum solitariis, inaequalibus subadpresso erectis, minoribus a basi, majoribus infra medium pauci-(2-4-)floris; glumis lanceolatis parum inaequalibus brevi subulatis flosculum aequantibus et superantibus, brevissime (sub lente valida) seriatim pilosulis (viridi-purpurascensibus); flosculo cylindraceo herbaceo seriatim scabrido (et an morbose? nigropunctato), terminato in setam asperam (fere pollicarem) cum lateralibus parum minoribus rectis patulis. *A. stricta* in Hrbo. *Ch. A. Geyer* sec. spec. a *Kampmannio* communicatum. ♀ Illinois.

Note: = *Aristida purpurascens* Poiret.

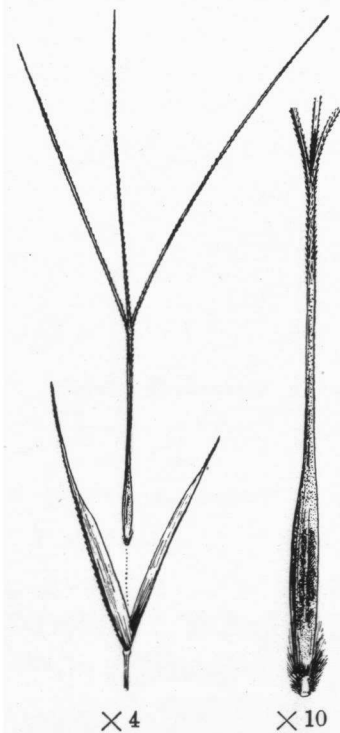
In the Vienna Herbarium there is a specimen labeled: „Aristida stricta, Mich. Sandy, Beardstown, Ill. Aug. 1842. Ch. A. Geyer”, which agrees with POIRET's *A. purpurascens*. There is a specimen of the same in JOH. LANGE's Herbarium at Copenhagen. I was unable to locate the type.

Aristida gibbosa (Nees) Kunth.

CAROLUS SIGISMUNDUS KUNTH; Agrostographia Synoptica sive Enumeratio Graminearum omnium hucusque cognitarum, adjectis characteribus, differentiis et synonymis, Stutgardiae et Tubingae, [1833] Tom. I. p. 189!

= *Chaetaria gibbosa* NEES ab ESENBECK; Agrostologia Brasiliensis l. c. [1829] p. 383!

Description given by Nees, l. c. p. 383!



× 4

× 10

ARISTIDA
GIBBOSA (Nees) Kunth.
From type specimen.

Ch. culmo ramoso stricto, foliis linearibus convolutis strictis facie pilosis, vaginarum collo ciliato, paniculae ramosae subsecundae contractae ramis fasciculato-divisis, glumis subaequalibus lanceolato-acutis setigeris flosculum (ad divisionem usque setarum) aequantibus, setis recta divergentibus inaequalibus flosculum (ab ortu singulae) subduplo superantibus.

Radix fasciculata, fibrosa, pallida. Culmi caespitosi, 2—3-pedales, crassitie pennae columbinae, erecti, stricti, compressiusculi, laevissimi, sexnodes, nodis hinc gibbosis, superne ramosi, ramis appressis. Folia fasciculorum filiformia, culmea inferiora ultrapedalia, superiora breviora, omnia angusta, vix lineam lata, complicato-convoluta, subtus convexa et laevia, supra canaliculata, striata, et praesertim basin versus, pilis longis rigidis adpressis inspersa, glaucescentia. Vaginae inferiores internodiis breviores, superiores longiores et imbricatae, compressae, striatae, glabrae, apice utrinque rotundato-auriculatae, auricula brevissime setoso-

ciliata. Ligula brevissima, ciliato-lacera. Panicula semipedalis—pedalis, erecta, contracta, subspiciformis. Rhachis atque rami scabri. Rami alterni, inferior basi integer, reliqui ad basin usque fasciculatim divisi similique modo decompositi, tripollicares, dense florigeri. Spiculae stramineae. Glumae $3\frac{1}{4}$ — $3\frac{3}{4}$ lineas longae, lineari-lanceolatae, acuminatae, carina serrulato-scabrae, nervo carinali in setulam amethystinam scabram glumâ $\frac{1}{5}$ — $\frac{1}{6}$ breviorē excedente: superiore paulo angustiore et breviorē. Flosculus subulatus, pallidus, basi barbatus, apice scaber, 3 lineas longus. Setae pallidae, rectae, divergentes, scabrae: laterales 5 lineas, media $6\frac{1}{4}$ — $6\frac{1}{2}$ lin. longae. Valvula superior brevissima, membranacea. Stigmata fulva.

A *Chaetaria setifolia* H. et K., cui proxima, differt culmo altiore, firmiore, panicula magis ramosa densiore, glumis aequalibus angustioribus, neque inferiore $\frac{1}{4}$ breviorē.

Habitat in campis agrestibus provinciae Piauhianae et Minarum generalium. Floret Majo. ♀.

The type specimen, collected by Dr. MARTIUS, in the Munich Herbarium was examined through the kindness of Prof. L. RADLKOEFER and Prof. H. ROSS. The label bears the number 14 and the name *Chaetaria gibbosa* Fl. Bras. in NEES' hand. On the label is written in another hand: „*Aristida gibbosa* Kth. Agrost. 1. 189", there below a! by CARL MEZ.

***Aristida gigantea* L. f.**

Supplementum Plantarum systematis vegetabilium Ed. XIII, Generum Plantarum Ed. VI, et Specierum Plantarum Ed. II. Editum a CAROLO A LINNÉ, Brunsvigae, [1781] p. 113!

ARISTIDA panicula elongata effusa secunda, calycibus unifloris, aristis corollinis subaequalibus rectis.

Habitat in Teneriffa. Franc. Masson.

Gramen altissimum, ramosum, glaberrimum.

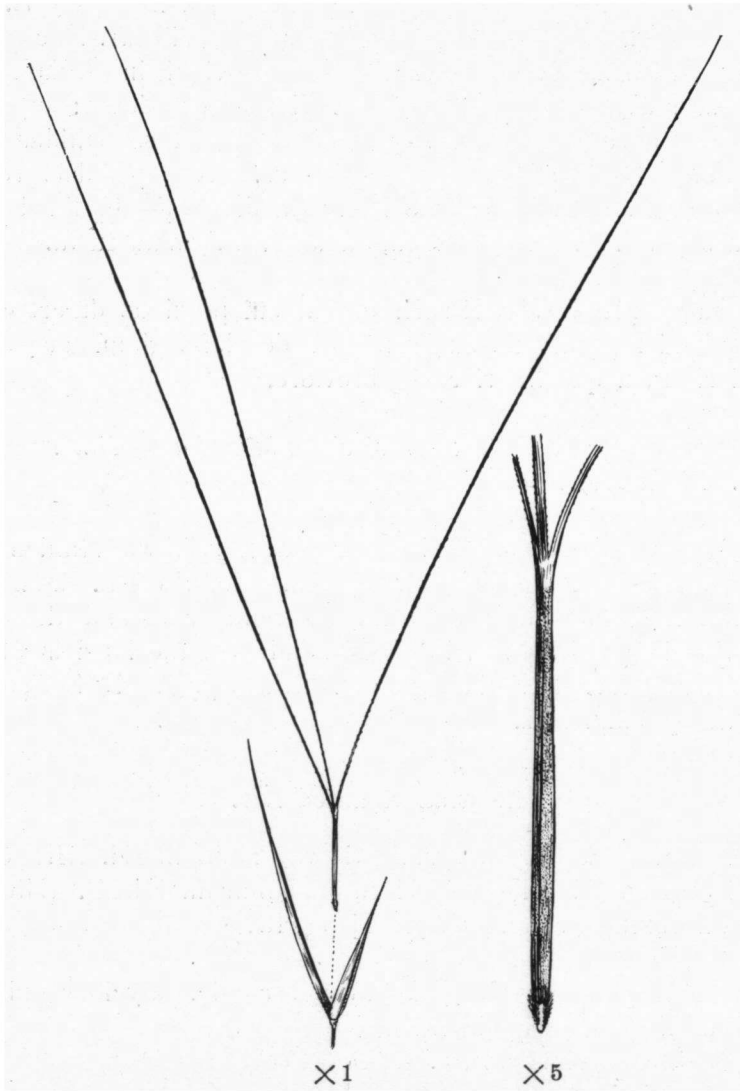
Paniculae terminales, dodrantaes, effusae, (non coarctatae ut in A. adscensionis,) secundae.

Calyces glaberrimi, inaequales, caerulescentes.

Corolla glabra: aristis tribus, aequalibus, brevioribus, nudiusculis.

I have not seen the type and the rather short description is in-

sufficient to recognize the species. From the type locality (Teneriffe) two species are known belonging to the section *Chaetaria*: *A. adscensionis* and *A. coerulescens*. It may be that *A. gigantea* is identical



ARISTIDA GLABERRIMA Steudel.

From type specimen.

with the perennial *A. coerulescens* and if this is indeed the case, the name *A. gigantea* given in the year 1781 has priority. We cannot take up this name before the type is studied accurately.

***Aristida glaberrima* Steudel.**

E. G. STEUDEL; Synopsis Plantarum Glumacearum [1855] p. 135!

Radice fibrosa caespitifera; culmo simplici erecto firmo (sine panícula 5—6-pollicari) cum foliis convoluto-setaceis eum subaequantibus glaucescentibus, vaginis arcte adpressis, ligula brevissima ciliari; panícula contracta laxa (3—4-pollicari) rufescenti glauca; radii simplicissimis erectis unifloris; glumis valde inaequalibus; inferiore acuminata (7—8-lineali), superiore in setam attenuata (12—14-lineali); flosculo laevi vel vix conspicue pubescente (4-lineali), setis aequalibus scabris (4-pollicaribus). An iterum *A. pallens* Cav. var? Conception.

Note: = *Aristida pallens* Cav. var. *genuina* Trin. et Ruprecht.

The type from STEUDEL's herbarium in the Museum d'Histoire Naturelle at Paris was kindly received for study through the courtesy of Prof. H. LECOMTE. This plant agrees with the description and the plate of *Aristida pallens* CAVANILLES. On the label STEUDEL has written: „*Aristida glaberrima* Steud. *pallens* Cav. var? Conception Hrbr. Urville com̄unic. Lenormand.” *Aristida pallens* is variable as to the length of the glumes and the awns. CAVANILLES described his species with awns „tres pollices et amplius longae.” In STEUDEL's specimen they are „4—4¹/₂ pollices” long. See afterwards my observations under *A. pallens*.

***Aristida glabrata* (Vasey) Hitchcock.**

A. S. HITCHCOCK; The North American species of *Aristida*, in Contributions from the United States National Herbarium. Vol. XXII. [1924] p. 522!

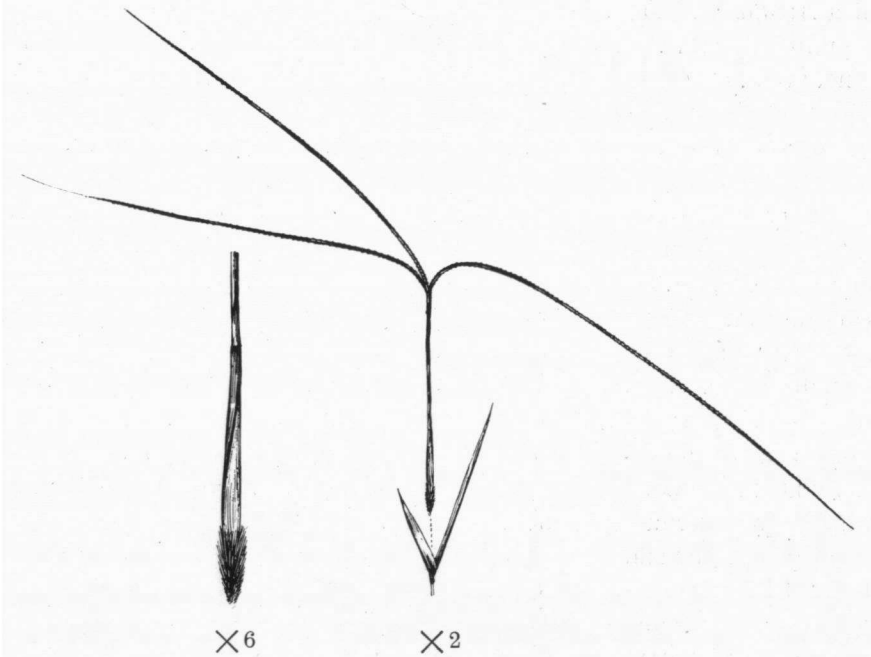
= *Aristida californica* var. *major* VASEY; Proc. Calif. Acad. II. 2. [1889] p. 212. Nomen nudum.

= *Aristida californica* var. *glabrata* VASEY, ap. T. S. BRANDEGEE; Flora of the Cape Region of Baja California, in Proc. Calif. Acad. II. 3. [July 1891] p. 178!

Differs from the type in its larger size, more spreading and branched habit and shorter awned flowering glumes, yet appears to be too near for a new species. It has the awn jointed to the glume. — San José del Cabo, Todos Santos.

HITCHCOCK; loc. cit. pag. 522 gives the following description:

Plant perennial; culms erect, branching, glabrous, 20 to 40 cm. tall; sheaths glabrous, the collar and throat glabrous; blades mostly involute, scaberulous beneath, puberulent on the upper surface, those of the culm mostly 1 to 3 cm. long; panicles narrow, 3 to 6 cm. long, few to several flowered, the spikelets single or in pairs; spikelets appressed, the pedicels 1 to 3 mm. long; glumes unequal, 1-nerved, smooth except the first slightly scabrous on the keel above, the first acute, 5 to 6 mm. long, the second narrowed into a slender point, not awned, 10 to 12 mm. long; fertile lemma



ARISTIDA GLABRATA (Vasey) Hitchcock.

From type specimen.

mottled at maturity, 5 to 7 mm. long, scaberulous toward summit, the callus densely pubescent, about 1.5 mm. long, the slender twisted scabrous column, 6 to 14 mm. long; awns about equal, diverging, 2 to 3 cm. long.

This species differs from *A. californica* in the glabrous culms, the shorter column, and the longer, more densely flowered panicles.

A fragment of the type, San José del Cabo, Lower California, collected by T. S. BRANDEGEE was kindly received from Prof. A. S. HITCHCOCK.

Aristida glauca (Nees) Walpers.

G. G. WALPERS; *Annales Botanices Systematicae*, Lipsiae, Tom. I. [1849] p. 925!

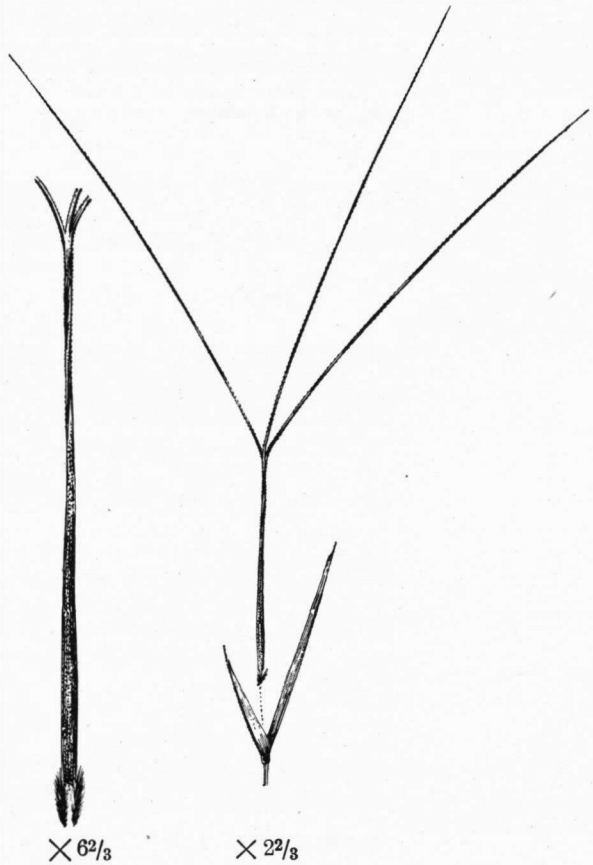
= *Chaetaria glauca* NEES apud D. F. L. VON SCHLECHTENDAL, in *Linnaea*. Vol. XIX. [1847] p. 688!

Description given by Nees l. c. p. 688!

Culmi basi fasciculatis simplicibus, foliis convoluto-setaceis recurvis extus laevibus glaucis, paniculae contractae ramis fasciculatis brevibus, glumis longe attenuatis setuligeris, superiori subduplo longiori perianthium cum subula acuminatae aequante (5-lineali), setis subaequalibus patulis rectis gluma superiore dimidio longioribus (8 lin. longis).

Mexico. ♀. *Aschenb. exs. n. 251.*

Similis *Ch. recurvatae*, a qua differt glumis valde inaequalibus majoribus. — Fibrae radicales crassae, simplices, albae, molles. Glumae pallide fuscae. Flosculus cyaneus asperulus, acumine longo partem vaginalem aequante.



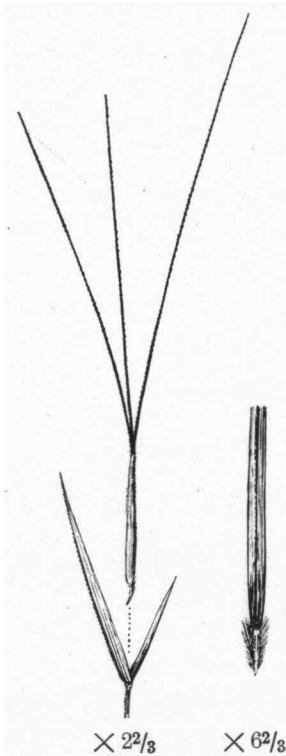
ARISTIDA GLAUCA (Nees) Walpers.

From type specimen.

The type in the Berlin Herbarium labeled as given above, in Nees' handwriting was examined through the courtesy of Prof. R. PILGER.

Aristida Glaziovii Hackel**nov. spec.**

(Sect. *Chaetaria*): Perennis; *culmi* robusti, stricte erecti multinodes, parce vel e nodis fere omnibus ramosi, nodis gibbosis, teretes, glaberrimi, 1 m. vel plus alti, internodia inferiora ad 20 cm. longa, 3 mm. diametro; *vaginae* internodiis plus duplo breviores, glabrae,



ARISTIDA
GLAZIOVII Hackel.

From type specimen.

striatae, laeves, subteretes, laxae, a culmo solutae; *ligula* brevissima, ciliolata, auriculae dense ciliolatae vel barbatae, prope collum interdum minute pubescentes; *laminae* circa 40 cm. longae, convolutae vel inferiores planae et 3 mm. latae, rigidulae, tenui-acuminatae, multinerves, subtus glabrescentes, supra scaberulae, margine incrassato scabrae; *panicula* stricte erecta, angusta, contracta sed haud spiciformis, a basi interrupta, 30—40 cm. longa, vel paniculae laterales breviores; rhachi tereti, laevi, ramis binis, elongatis, appressis, tenuibus, subflexuosis, basi minute barbatis, inaequalibus, longioribus circa 10 cm. lg. in $\frac{1}{2}$ inferiore indivisis, deinde ramulos secundarios paucispiculatos erectos procreantibus, brevioribus fere a basi spiculiferis, spiculis quam pedicelli apice subclavati longioribus; *spiculae* lineari-lanceolatae, pallidae; *glumae* valde inaequales, acuminatae, vix aristatae, uninerves, gluma I. circa 11 mm. longa, carina scabra, gluma II. angustior, vix 6 mm. longa, carina laevis; *gluma* III. *fertilis* glabra, carina scabra, haud stipitata neque torta, callo 1 mm. circa longo, barbato, acutissimo, 7—8 mm. longa;

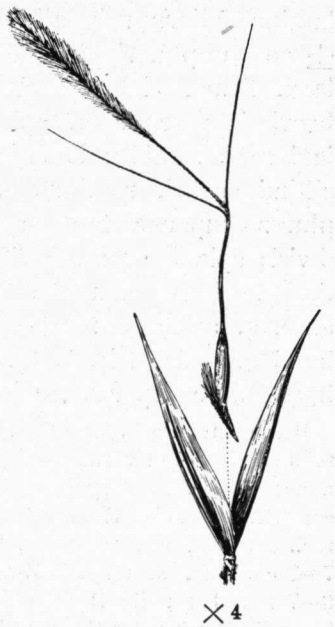
aristae scabrae, inaequales, suberectae, media circa 22—23 mm. longa, laterales 17—18 mm. longae.

Brasilia: Minas, leg. GLAZIOU no. 20107, anno 1892. Typus speciei in Herb. HACKEL nunc in Herb. Vindob. sub no. 15602.

Aristida gonatostachys Pilger.

ROB. PILGER; Gramineae africanae. XI, in ENGLER, Botanische Jahrbücher für Systematik etc. XLVIII. [27 Aug. 1912] p. 343!

Humilis, perennis, dense caespitosa, radicibus valde elongatis, sabulae tunica circumdatis. Folia parva, vaginae latae, margine \pm villosae, nervis crassis prominentibus, lamina angusta involuta, obtusa, sulcato-striata, glauca, curvata, pilis longis tenuibus albido-villosa; culmi e caespite longe exserti complures valde tenues, maxima pro parte nudi, erecti, scabri, versus apicem vagina brevi unica involuti (lamina folii illius vix evoluta), ad basin vaginae \pm geniculato-refracti, hirsuti. Inflorescentia depauperata spiciformis, inferne vagina involuta; spiculae paucis brevissime pedicellatae; glumae vacuae lanceolatae, 3-nerviae, angustatae, acutae, scaberulae; gluma florifera basi callo elongato, acuto, hirsuto instructa, arista media dense albido-plumosa, lateralibus valde tenuibus glabris $\frac{3}{4}$ media aequantibus.



ARISTIDA
GONATOSTACHYS Pilger.

From type specimen.

Das zierliche Gras bildet niedrige, nur 2—3 $\frac{1}{2}$ cm hohe, dichte Rasen aus; die Scheide der Blätter ist bis gegen 1 cm lang, die Spreite bis gegen

2 cm; aus dem Rasen erheben sich mehrere blühende Halme, die mit der Rispe nur bis 8—9 cm hoch werden; sie sind zum grössten Teile (bis 6 cm) nackt, aufrecht, sehr dünn, dann folgt eine zirka 1 $\frac{1}{2}$ cm lange Scheide mit ganz reduzierter Spreite, die die Basis des aus wenigen Ährchen zusammengesetzten, bis 3 cm langen Blütenstandes umhüllt; die Hüllspelzen sind 7—8 mm lang, die Deckspelze 5 mm, die besonders nach oben zu dicht seidige Mittelgranne 1 cm.

Deutsch-Südwestafrika, Grosz-Namaqualand: Felsige Namib, Rotekuppe, bei 400 m ü. M. (RANGE n. 188. — Blühend im Januar 1907); am selben Standort, im Sand der Felsspalten (DINTER no. 1022. — Blühend im Januar 1910).

Eine in der Sektion *Stipagrostis* durch ihre Merkmale sehr ausgezeichnete Art.

Aristida Gossweileri Pilger.

ROB. PILGER; Gramineae africanae. VI, in ENGLER, Botanische Jahrbücher XXXIX. [1907] p. 598!

Humilis perennis, dense caespitosa, innovationibus intravaginalibus; culmi graciles, erecti, apice longe exserti, basi tantum foliati; lamina foliorum basaliū et illorum innovationum in specim. igni \pm consumpta, rigida, linearis, secus medianum plicata, vagina satis laxa, firma, glabra, striata, demum \pm in fibros secedens, ligula brevissima truncata, apice minutissime ciliolulata; panícula parva, laxiuscula ambitu lanceolata vel ovata, rhachis tenuis et rami gracillimi scabri, rami suberecti vel curvati, a basi in ramulos complures superne tantum parum iterum ramulosos et spiculigeros divisi; spiculae parvae violascentes, glumae vacuae lanceolatae, acutissimae inaequilongae ad nervos scabrae, aristae basi haud e glumis exserta, arista cum gluma florifera scabrida continua, ut videtur haud articulata, haud torta, rami 3 breves, scabri, medius laterales longitudine superans, callus brevissimus obtusus.

Der dichte Rasen des zierlichen Grases ist im vorliegenden Exemplar groszenteils durch Brand vernichtet, so dasz die Länge der starren, in der Mitte zusammengefalteten Blattspreiten nicht angegeben werden kann; der ungefähr 15—20 cm hohe zierliche Halm trägt oberhalb des Rasens nur ein Blatt, dessen aufrechte starre, sehr schmale, gefaltete Spreite 2—3 cm lang ist; die Rispe ist 7—9 cm lang, die unteren Zweige bis 1—5 cm; die Hüllspelzen sind 4,5—5 resp. 6—7 mm lang; die Deckspelze ist bis zur Verzweigungsstelle der Granne 5 mm lang, die Zweige der Granne sind 4, resp. 6 bis 7 mm lang.

Angola: Malange (J. GOSSWEILER n. 805).

Die neue Art, zur *Chaetaria*-Gruppe gehörig, zeichnet sich neben ihrem Wuchs durch sehr kleine Ährchen mit kurzen Grannen aus, durch die sie sich an *A. delicatula* Hochst. u. a. annähert.

Note: = *Aristida recta* Franchet.

The type of *Aristida Gossweileri* in the Berlin Herbarium agrees perfectly with HACKEL'S *A. atrovioleacea* from Natal. HACKEL described his species with glumes 3 and 6 mm. long, but in the type they are generally 4 and 7 mm. long as given in my figure on pag. 45 of this revision. To the same species belongs *Aristida Hockii* DEWILDEMAN from the Belgian Congo, which has glumes 3—4 and 7 mm. long, being moreover a somewhat taller plant, agreeing for the rest with *A. atrovioleacea*. The type of *A. recta* in the Paris Herbarium I could study through the courtesy of Prof. Dr. H. LECOMTE,

it agrees in vegetative characters perfectly with *A. Hockii* but has comparatively shorter spikelets, the glumes are 3 and 5 mm. long. No other differences were found and I therefore united the four species. *Aristida recta* was published in the year 1896 and is the eldest name for the species. The distribution of the species is curious, but there are in our genus more examples of such a distribution in Tropical Africa.

Aristida gossypina Bosc

ex PAL. DE BEAUV.; Essai d'une nouvelle Agrostographie, [1812] p. 30! Nomen nudum. Descriptio sub nom. *Chaetaria gossypina* P. DE B. apud ROEMER et SCHULTES, Systema Vegetabilium [1817] Vol. II. p. 391!

Foliis longissimis scabris; vaginis lanatis; ramis paniculae elongatis subverticillatis; pedunculis basi pilosis, aristas subaequalibus. *ARISTIDA lanata* Poir. *Enc. meth. Suppl. I.* p. 453. *ARISTIDA gossypina* Bosc, quam P. de Beauv. huc ducit, eadem videtur cum *A. lanata* Poir., nullibi enim inter Boscianas plantas apud Poir. occurrit *gossypina*, et P. de Beauv. ob *lanatam* Forsk. nomen mutavit.

Culmi graciles elati, foliis rigidis patentibus; rami paniculae patentiusculae geminati in verticillis asperrimi. Flosculi angusti subulati, valvulis calycinis glabris acutissimis, exterior longior purpurascens; corollina angusta, calyce brevior, aristas divergentibus, glumâ duplo fere longioribus. Semen gracile elongatum. In *Carolina* Bosc.

Note: = *Aristida lanosa* Muhl., *Descript. Gram.* (Jun. 12 1817) p. 174!

= *A. lanata* POIR. in LAM. *Encycl. Suppl. I.* [1810] p. 453! non Forsk. [1775].

According to G. V. NASH, New or noteworthy American Grasses VIII, in Contributions from the Department of Botany of Columbia University N^o 133, Bulletin of the Torrey Botanical Club, Vol. XXV. [1898] p. 86, the date of the copyright of MUHLENBERG's work is June 12, while that of the preface of the second volume of ROEMER and SCHULTES' Systema is July 31, both in the same year. MUHLENBERG's name, therefore, takes precedence of that of BEAUVOIS.

Aristida gracilior Pilger.

Gramineae africanae. VII, in ENGLER, Botanische Jahrbücher XL.
[21 Mai 1907] p. 80!



ARISTIDA
GRACILIOR Pilger.
From type specimen.

Gramen (videtur) annuum, culmis compluribus fasciculatis, basi vaginis brevibus nonnullis laxis aggregatis, folia breviora gerentibus circumdatis et fasciculos breves foliorum ad basin edentibus, culmi graciles elati, tenues, erecti, 4–5-nodi, pro parte a vaginis nudi; foliorum lamina gracilis, erecta \pm curvata angustissima, plicato-involuta, subfiliformis, acutata, aspera, vagina glabra, adpressa, parum asperula, ore (imprimis in foliis inferioribus) pilis longis patentibus albido-barbata, ligula corona dense pilorum brevium albidorum formata; panícula elongata, laxa, ambitu ovali, ramis a basi vel fere a basi pluries divisus, erecto-patentibus, ramulis pertenuibus, scabris, spiculis longe pedicellatis; glumae vacuae breviter pilosae, tenuiter membranaceae, acutae, inferior parum brevior; gluma florens asperula, callus acutus, albido-barbatus, gluma articulata, infra ramos parum torta ibique plumosa, ramus medius plumosus, laterales multo breviores, nudi.

Die Halme, die ziemlich dünn und trocken strohgelb sind, werden bis 1 m. ungefähr (mit Rispe) hoch; sie sind am Grunde von einigen kurzen übereinander greifenden Scheiden mit kurzen (ungefähr 5–8 cm langen) Blättern umgeben und tragen einzelne kurze Basalzweige mit einigen zusammengedrängten Scheiden und Blättern; die Internodien des Halmes sind verlängert und teilweise nicht von den Scheiden bedeckt; die Halmblätter sind sehr schmal, von dünner Textur, trocken, leicht brüchig und ungefähr bis 20 cm lang; die Rispe ist 30 cm lang, locker, die aufsteigenden Seitenäste durchschnittlich 10 cm; die Hüllspelzen sind

10 und 11 mm lang; der Fusz der Granne, der im oberen Teil wie die Mittelgranne federig behaart ist, ist 6–8 mm lang, die Mittelgranne 2,5–4 cm; die kahlen, sehr dünnen Seitengrannen sind mehr als doppelt kürzer.

Südwestafrika: Bumbo, im „Walde“ (BERTHA FRITZSCHE n. 16. — Blühend im April 1903).

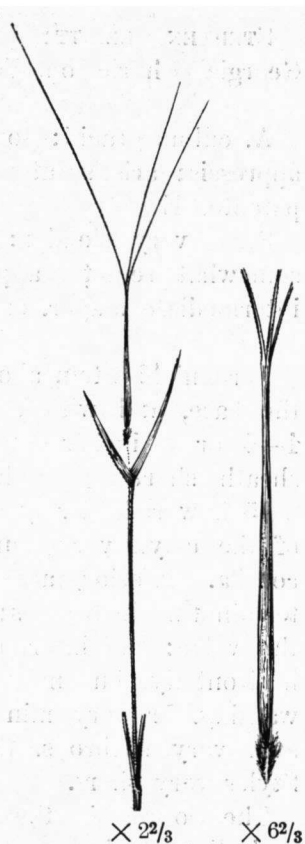
Eine ausgezeichnete Art der *Stipagrostis*-Gruppe, die in bezug auf ihre Granne *Aristida uniplumis* Licht. gleicht.

This very elegant, annual species was identified by Prof. C. Mez as *Aristida hirtigluma* STEUDEL and the plant is indeed allied to that species, but to my opinion a distinct species. It differs in the broad very effuse and open panicle with long erectly-divaricate branches, divided nearly from the base, bearing spikelets on long pedicels; the glumes are both sub-5-nerved, the first as broad as the second, the column of awns is not twisted, the central awn equally plumose all over, except the naked tip. *Aristida hirtigluma* has a narrow contracted panicle with short, few-flowered branches, bearing sessile spikelets, the lower glume is broader than the upper and 3-nerved, the column of awns is twisted, the central awn is sparingly hairy in the lower part, densely bearded upwards except the naked tip. See afterwards under *A. hirtigluma* STEUDEL.

***Aristida gracilipes* (Domin) Henrard.**

= *Aristida vagans* var. *gracillima* BENTHAM,
= *Aristida vagans* var. *gracilipes* DOMIN.

Pérennis, caespitosa, infra ramosa. Culmi erecti, graciles, cum panícula 60 cm. alti, teretes, glauci, glaberrimi, striati, paucinodes, nodis paulo incrassatis; vaginae striatae, minutissime scaberulae vel laeves, internodiis breviores; ligula obsoleta, brevissime ciliolata, auriculae glabrae, incrassatae, nigrescentes, nitentes; laminae angustae, filiformes, setaceo-involutae, acutatae, glabrae, laeves, ad 15 cm. longae; panícula exserta, gracilis, circa 15 cm. longa, laxissima, contracta, rhachi tenui, laevi, ramis solitariis vel subbinis, erecto-patulis, inferioribus usque ad 9 cm. longis, superioribus decrescentibus, ramulis capillaribus subflexuosis, spiculis longe pedicellatis, lateralibus brevipedicellatis, pedicellis scabris; spiculae lineari-lanceolatae, pallide rubro-virides, glabrae; glumae inaequales, lineares, acutae, uninerves, breviter bidenticulatae, inter dentes mucronulatae



ARISTIDA GRACILIPES
(Domin) Henrard.

From type specimen.

vel breviter aristatae; gluma I. 5—5½ mm. longa, carina scabra, gluma II. 7—7½ mm. longa, carina laevis, gluma III. *fertilis* exserta, linearis, tubulosa, callo obtuso ½ mm. longo, longiuscule barbato, 8 mm. longa, laevis, superne carina scaberula, apice haud articulata neque stipitata, aristis erecto-patulis, basi non tortis, scabris, intermedia maxima 13—14 mm. longa, lateralibus 10 mm. fere longis.

Australia: New South Wales; Cameroon Brush, coll. LEICHHARDT (Herb. v. MUELLER 1877). Typus speciei in Herb. Kew.

Aristida gracilis Elliott.

STEPHEN ELLIOTT; A sketch of the botany of South-Carolina and Georgia. Charleston. Vol. I. [1817] p. 142! tab. 8. fig. 3.

A. culmo gracili; floribus spicatis; spiculis paucifloris, subremotis, appressis; aristis lateralibus brevibus, erectis, intermedia longiore, patente. E.

Stem very slender; flowers in spikes; spikelets few flowered, somewhat remote, appressed; the lateral awns short, erect, the intermediate longer, expanding.

Perennial? Stem about a foot high, very slender, branching near the base, and with the whole plant glabrous. Leaves linear, flat, 1—4 or 5 inches long, scarcely a line wide, a little scabrous; sheaths shorter than the joints. Flowers in a long spike; spikelets 2—5 flowered, closely appressed, not crowded on the spike. Valves of the calyx very acute, a little unequal, about as long as the corolla. Exterior valve of the corolla involute, transversely banded, terminating in 3 awns; the two lateral erect, straight, shorter than the valve; the intermediate longer than the corolla, bent almost horizontally, but not contorted, hairy at the base; interior valve wanting, or very minute; keel of the calyx and corolla, and the awn very scabrous. Stamens 3. Anthers purple. Stigmas white. Styles very short.

The corolla in the plants I have seen, is so curiously banded with light and dark grey spots not unlike the body and legs of a mosquito, that if I had supposed them invariable, I should have called the species *fasciata*. From the preceding species,*) it differs by a longer corolla and awns, and the intermediate awn not con-

*) *Aristida dichotoma* MICHAUX; ELL. Sketch p. 141.

torted; from the succeeding, *) by a much more slender habit, and smaller flowers, and in the awns, which in the *A. stricta*, are all longer than the corolla, and expanding.

Grows in the vicinity of Charleston. Common.

Flowers September—October. Slender *Aristida*.

Note: = *Aristida longespica* Poiret.

ELLIOTT'S type is in the Charleston Museum, where it was studied by LAMSON—SCRIBNER and MERRILL. There is also a specimen labeled: „*Aristida geniculata* Rafinesque”, which is the same. For the date of publication of ELLIOTT'S Sketch see: F. LAMSON—SCRIBNER; The grasses in Elliott's „Sketch of the botany of South Carolina and Georgia”, in United States Department of Agriculture, Circular no. 29 [1901] p. 1.

Aristida graciliflora Pilger.

ROB. PILGER; Gramineae africanae. VI, in ENGLER, Botanische Jahrbücher für Systematik etc. XXXIII. [15 Jan. 1907] p. 599!

Perennis caespitosa culmi complures erecti hic inde e nodis ramificati ramis elongatis floriferis, culmi 3—4 nodi, graciles, glaberrimi, laeves, teretiusculi, internodia quam vaginae plerumque multo longiores; foliorum lamina angustissima filiformi involuta, erecta vel \pm patens, laevis glabra, acuta, foliorum culmeorum superiorum plerumque multo brevior quam inferiorum vel imprimis quam illa innovationum, vagina arcta, laevis, glabra, ligula brevissima truncata, brevissime dense lanulato-ciliolulata; inflorescentia angusta spiciformis, ramis erectis paucispiculatis; glumae vacuae valde inaequales angustae, acutissimae vel (imprimis secunda) breviter apiculata, gluma florifera cum arista facile articulata, aristae pars infra ramos bene spiraliter torta, rami tenues, subaequilongi, vel parum inaequilongi, scabri, callus elongatus, acutissimus, albido-sericeus.

Der Halm der neuen Art ist bis 50—55 cm hoch, die Länge der Rispe zu ca. 12—17 cm mit eingerechnet; während die Spreiten der Innovationsblätter bis 20 cm lang werden, fallen die Spreiten der oberen Halmbblätter bis ca. 8—7 cm zurück; die untere Hüllspelze ist ca. 1 cm lang oder etwas darüber oder darunter, die obere Hüllspelze 16—18 mm; die Granne ist unterhalb der Verzweigungsstelle

*) *Aristida stricta* ELL. non MICHX (= *A. purpurascens* POIRET); ELL. Sketch p. 142.

16—20 mm lang, die Äste ca. 5 cm, der mittlere manchmal bis 6 cm, die Deckspelze ist bis zur Abbruchstelle $7\frac{1}{2}$ —8 mm lang, der Callus 2 mm.

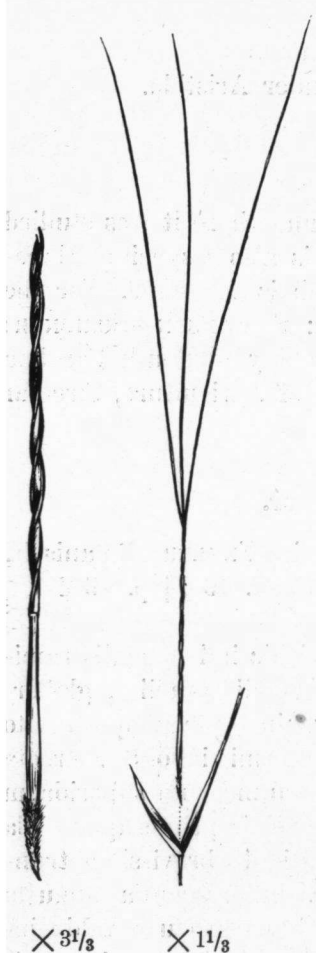
Mossambik: Delagoa-Bay, Dünen 10' u. M. (SCHLECHTER n. 41984. — Blühend im Januar 1898),

Verwandt mit der folgenden Art (*A. ramifera* Pilg.) und in den wichtigsten Merkmalen übereinstimmend, aber unterschieden durch mehr rasenförmigen Wuchs, zierlichere, niedrigere Halme, kürzere Blätter (besonders oben am Halm), längere Hüllspelzen und Deckspelzen.

The type specimen in the herbarium of the „Botanischer Garten“ at Berlin—Dahlem was kindly lent by Dr. R. PILGER.

Aristida gracillima Oliver.

The Botany of the Speke and Grant Expedition, an Enumeration of the Plants collected during the Journey of the late Captain J. H. SPEKE and Captain (now Lieut.-Col.) J. A. GRANT from Zanzibar to Egypt. The Determinations and Descriptions by Professor OLIVER and others connected with the Herbarium, Royal Gardens, Kew; with an Introductory Preface, Alphabetical List of Native Names, and Notes by Colonel GRANT, in the Transactions of the Linnean Society of London. Vol. XXIX. Part III. [1875] p. 173! Plate CXIV.



× $3\frac{1}{8}$

× $1\frac{1}{8}$

ARISTIDA

GRACILIFLORA Pilger.

From type specimen.

Caespitosa; culmis 2—3 ped. altis, teretibus, glabris; foliis anguste linearibus, apice longe attenuatis, vaginisque, ore albido-piloso barbato excepto, glabris; panícula pedali, subpatula, radiis gracilibus laevibus adscendentibus ramosis; glumis flosculo longioribus, inaequalibus, 1-nerviis, inferiore fusco-purpurascente, $\frac{1}{4}$ poll. longa, oblongo-lanceolata, secunda $\frac{1}{2}$ -pollicari, lineari, longe acuminata; gluma floris subhyalina, 3-nervia; arista profunde 3-fida, elongata, 2—3-pollicari.

Hab. Mininga, May 1861 (*Aristida*, nov. sp., App. Speke's Journ. 653).

[A very elegant grass, 3 feet high, ripe and found near cultivation in May 1861, at 4° 18' S. lat. — J. A. G.]

Plate CXIV. fig. 1. Spikelet, enlarged; fig. 2. Floret, laid open.

Note: = *Aristida stipoides* Lamark.

The type in the Kew Herbarium is a robust plant with a large diffuse panicle, but the spikelets are immature, the lower glume is 6 mm., the upper 12 mm. long and the foot of the awn 20 mm. long. The plant agrees perfectly with the plant described by TRINIUS and RUPRECHT as *A. amplissima*, especially as to the hairs surrounding the collar of the sheaths like a flake of wool and the curious character of the bifid callus. See this revision p. 25.

Aristida Griffithii Henrard

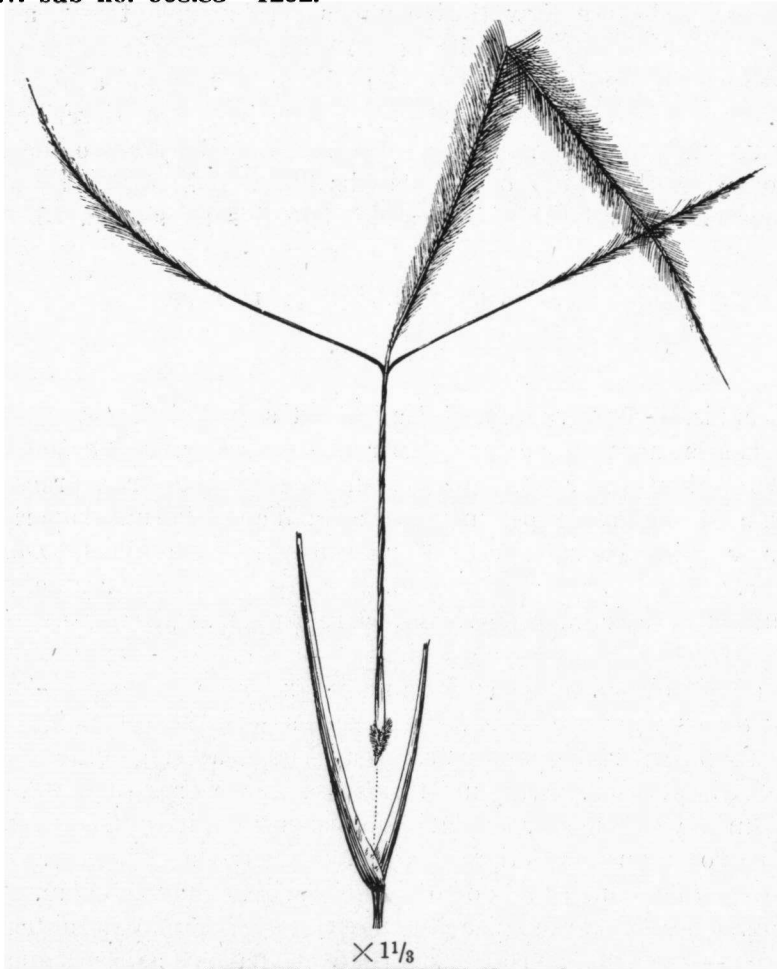
nov. spec.

Perennis, caespitosa. *Culmi* elati, teretes, striati. *Internodia* inferiora dense lanato-tomentosa, superiora glabrescentia. *Vaginae* foliorum inferiorum striatae, arctae, internodiis breviores, praesertim inferne dense floccoso-tomentosae; vaginae foliorum superiorum glabrescentes, nodis pubescentibus mox glabrescentibus. *Laminae* rigidae, striatae, subplanae vel complicatae, in sicco curvatae, supra et subtus praesertim in parte inferiore lanatae, apicem versus glabrescentes. *Panicula* erecta, sublaxa, vel parum contracta, *rhachi* pilis paucis obsita, *ramis* subsingulis in axillis dense floccoso-lanatis. *Spiculae* breviter pedicellatae, pedicellis glabris vel pilis paucis obsitis, apice parum incrassatis, lineari-lanceolatae, glabrae. *Gluma* I. e basi lata sensim angustata, obtusa, apice eroso-dentata, circa 3½ cm. longa, nervoso-striata, multinervis, gluma II. ut in I. sed paulo angustior, etiam glabra, multistriata, 2½ cm. longa, *gluma fertilis* cum anthopodio dense barbato acuto, 3 mm. longo, 10 mm. longa, glabra, apice articulata et in stipitem spiraliter tortum 2.8—3 cm. longam abiens. *Arista* media fere a basi aequaliter plumosa, apice breviter arrecte pennata, quasi nuda, 7—7½ cm. longa, lateralibus minoribus 4—4½ cm. longis, in parte inferiore glabris, ceterum breviter plumosis, apice nudis.

Species valde peculiaris, habitu ad *Aristidam arachnoideam* Litw. accedens, quae differt a nostra: pedicellis et glumis valde lanuginosis, spiculis majoribus (gluma I. 5 cm. et plus longa), arista

media inferne nuda, circa 10 cm. longa, lateralibus sparsim plumosis, 7 cm. longis, apice longiter nudis.

Afghanistan: sine loco, Herbarium of the late East India Company, Herb. GRIFFITH, distributed at the Royal Gardens Kew 1863—64 (sub nom. *A. plumosa* L.). Typus speciei in Herb. Lugd. Batav. sub no. 908.83—1202.



ARISTIDA GRIFFITHII Henrard.

From type specimen.

Aristida Grisebachiana Fournier.

EUG. FOURNIER; Mexic. Plant. etc. Pars II. Gramineae, Paris, [1881] p. 78!

= *A. stricta* var. Griseb. in sched.

Culmis caespitosus, cum panicula semipedalibus, gracilibus, striatis, cum vaginis et foliis glabris; foliis rectis brevibus linearibus convolutis; ligula inconspicua; panicula brevi 2—4-pollicari, stricta, angusta, invaginata, radiis 4 fasciculatis inaequalibus a basi flori-feris appressis; glumis violaceis acutis inaequalibus, superiore infe-riorem tertia parte superante et flosculum viridem vix tortum; setis gracilibus erecto-appressis, media paulo longiore 4-pollicari.

Mirador (SCHAFFN. pl. ed. HOHEN. n. 175 part.); *Chapultepec* (SCHAFFN. n. 53 in herb. FRANQ.).

var. β . *decolorata*. — Glumis et flosculis decoloratis.

Ejulla, octobri (LIEBM. n. 663); *Ocotlan*, octobri (LIEBM. n. 664).

Note: = *Aristida adscensionis* L.

Duplicates of Schaffner ed. Hohenacker n. 175 and Schaffner n. 53 were examined in the Vienna Herbarium. The two types of var. *decolorata* in the Copenhagen Herbarium I could study through the courtesy of Prof. Dr. C. CHRISTENSEN. Schaffner n. 175 has a rather dense compact panicle, Schaffner n. 53 is the somewhat open-panicled form. All the plants agree perfectly with the common *A. adscensionis*.

Aristida guineënsis Trinius et Ruprecht.

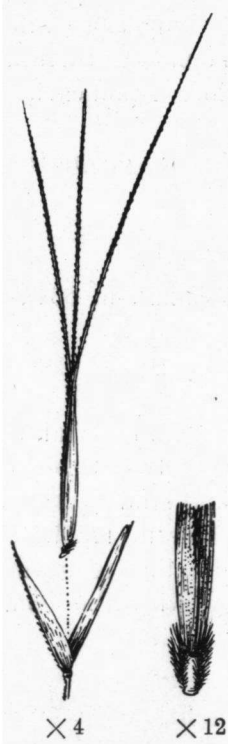
Spec. Gram. Stipac. loc. cit. pag. 137!

Paniculae 8 pollicaris, angustae, subsecundae, apice nutantis, densiusculae, coloratae, basi longe exsertae radiis tenuissimis, pluribus l. solitariis, ad basin usque multifidis, erecto-patentibus: longioribus sesquipollicaribus, paullo supra basin dense floriferis, inferioribus quandoque nutantibus; glumis paullo inaequalibus, acuminatis superiore $2\frac{1}{2}$ lineali inferiorem lineam dimidiâ superante; flosculo $1\frac{3}{4}$ — $2\frac{1}{2}$ (raro 3) lineali, carina dorsali et nervo laterali versus apicem scabro, ceterum glabro et (maturo) maculato, apice non torto neque articulado; setis parum inaequalibus, patentibus, media 5—7 lineali.

Guinea. (Thonning in Hb. Schumacher! nunc Hort. Imp. Petrop.)

Rhizoma subrepens? *Culmus* fere tripedalis, simplex, ad nodos (3) tumidos vix geniculatus, glaber, teres, inferne lineam fere cras-sus. *Vaginae* internodiis breviores, glabrae. *Ligula* in ciliis brevis-simas et densissimas soluta. *Folia* pleraque pedem circiter longa,

plana, $\frac{3}{4}$ lineae lata, flaccida, glabra, viridula. Valde similis *A. vulgari* et fors ejus tantum varietas. gluma superior enim apicē obtusiusculo interdum breve mucronata; at spiculis parvis, plerumque bilinealibus in panicula longa pluri- et tenuiradiosa semper dignoscenda.



ARISTIDA
GUINEËNSIS
Trinius et Ruprecht.
From type specimen.

Note: = *Aristida adscensionis* L. subsp. *guineensis* (Trin. et Rupr.) Henrard.

The type of this very remarkable plant in the Herbarium of the Botanical Garden at Leningrad I could study through the courtesy of Prof. BORIS FEDTSCHENKO. It is a plant with a tall simple culm and a long somewhat loosely contracted, many-flowered panicle, about 20 cm. long. The spikelets have the same shape as those of the *A. adscensionis*, but the glumes are less unequal and very small, the lower glume is only 5 mm. long, the upper is \pm 6 mm. long and the lemma is about as long or slightly longer than the upper glume. Such small spikelets do not occur in other forms of the variable *A. adscensionis* and I have therefore taken up the plant in my work as a subspecies, although it may be that we have here before us a distinct species. Plants agreeing with the type are rarely found in herbaria, I saw the plant only in the herbarium at Brussels (Herbier du Congo) through the courtesy of Prof. DE WILDEMAN.

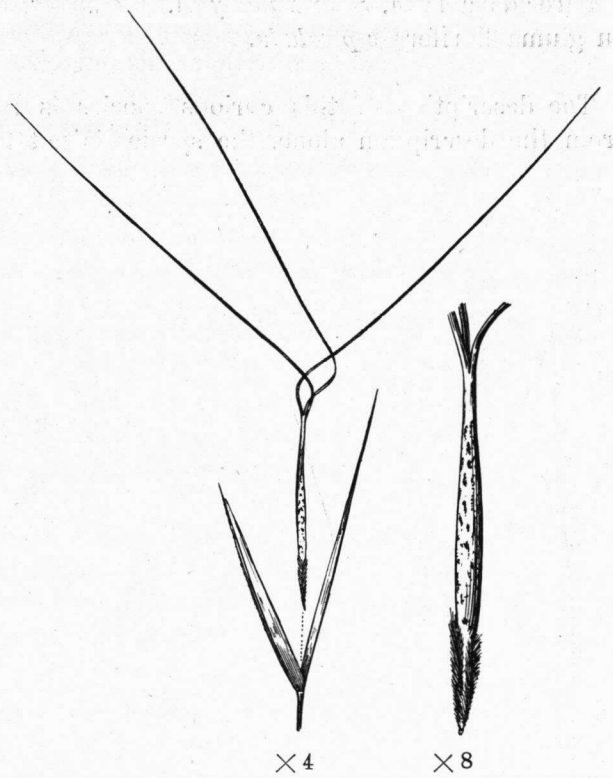
Aristida gyrans Chapman.

ALVAN WENTWORTH CHAPMAN; An Enumeration of some Plants chiefly from the semitropical Regions of Florida, which are either new or which have hitherto not been recorded as belonging to the Flora of the Southern States. in COULTER; Botanical Gazette, Vol. III. [1878] p. 18!

Caespitose, glabrous; culms simple, filiform (1 foot high), purple; leaves convolute-filiform, shorter than the culm; panicle simple, few-flowered, the branches short, appressed; glumes very unequal,

the lower as long as the palea, truncate, short-awned, roughish; the upper $\frac{1}{3}$ longer, attenuate, smooth; paleae long-stipitate; awns nearly equal, straight, gyrate at base, $\frac{1}{3}$ longer than the paleae. — Robert's Key in Caximbas Bay, South Florida. — In wet weather the awns are straight, but immediately assume their curved form when dry, as do some other awned grasses.

A duplicate type, sent by CHAPMAN to Prof. E. HACKEL, is in Hackel's Herb. at Vienna no. 15937, labeled: „85 *Aristida gyrans* Chapm. Suppl., Florida, 1881 misit Chapman.”



ARISTIDA GYRANS Chapman.
From duplicate type specimen.

Aristida Hackeli Arechavaleta.

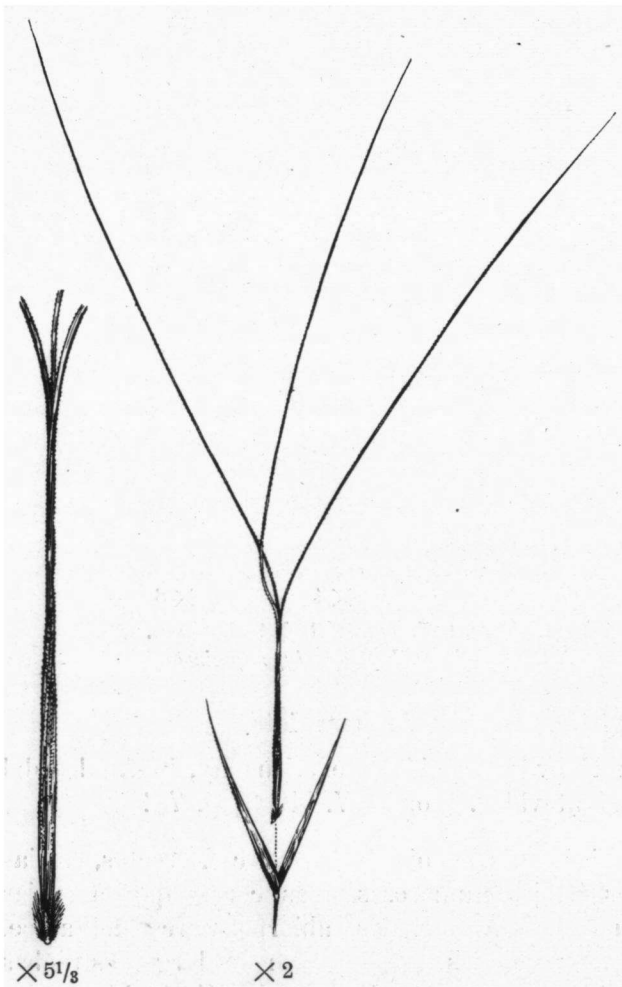
J. ARECHAVALETA; Nuevas Aristidas del Uruguay, in *Anales del Museo Nacional de Montevideo*. Tomo IV. [1903] p. 79!

Rizomas breves. Pajas de la panoja de 15—20 cm, erectas, estriadas, cilíndricas, finas. Hojas numerosas, más cortas que las pajas floríferas. Vainas fuertemente estriadas, abiertas cerca del ápice, lígula mínima, pestañosa. Panojas de 8—10 cm de largo, estrechas subespiciiformes, ramificaciones aplicadas al eje. Espiguillas rojo-violadas. Glumas poco desiguales: I^{ra} de 13 mm \pm y II^{da} de 14—15, 1-nerviada, nervio medio escabroso en la parte superior, alesnado; III^{ra} de 15 mm \pm , violada, escabrosa, retorcida en su ápice y en la base de las ramas de la arista, que miden de 4—5 cm, y son subiguales, capilares, poco abiertas.

Vive en campos gramínicos, terrenos pedregosos. Florece en noviembre y diciembre.

Parecida á la *A. Spegazzinii* y *A. intermedia*, difiere de ambas por su gluma florífera *espiralada*.

The description of this curious species is rather complete, but from the description alone, the species is not to recognize at once.



ARISTIDA HACKELI Arechavaleta.

From type specimen.

ARECHAVALETA has given in the same paper (l.c. p. 71) a synopsis of the uruguayan species of *Aristida*. On pag. 73 he compared *A. Hackeli* with his *Aristida Spegazzinii*, which has a pronounced inverse position of the glumes and a lemma without a column. ARECHAVALETA says on pag. 73 sub no. 8. A. Hackeli: „Espiguillas de gluma inferior menor que la superior. Gluma III^{ra} retorcida en su ápice.” He cited no specimens and no locality.

Through the courtesy of Dr. L. R. PARODI, I

received a portion of the type from Arechavaleta's herbarium. Dr. PARODI already observed in a letter that in the type the lower glume is somewhat longer than the upper, which is in contradiction

with ARECHA VALETA's statement. The very scabrous lemma has indeed a manifestly twisted column and the true position of the glumes is overlooked by ARECHA VALETA, apparently because this position is not so striking as in *A. Spegazzinii*.

If we compare the characters of *A. Hackeli* (contracted panicle, inverse position of the glumes and the distinctly twisted column) with other species, having about the same characters, we find that there are 2 New World species somewhat allied to it. At first *A. arizonica* VASEY, which is however a different north-american species with longer and broader glumes, longer lemmas (15 mm. long including the callus and the column) and unequal awns. *Aristida arizonica* is moreover limited to southern North America and Mexico, what is called *A. arizonica* in Prof. HITCHCOCK's Revision, is according to the localities and the cited specimens, so far as I could examine them, a mixture of at least four species.

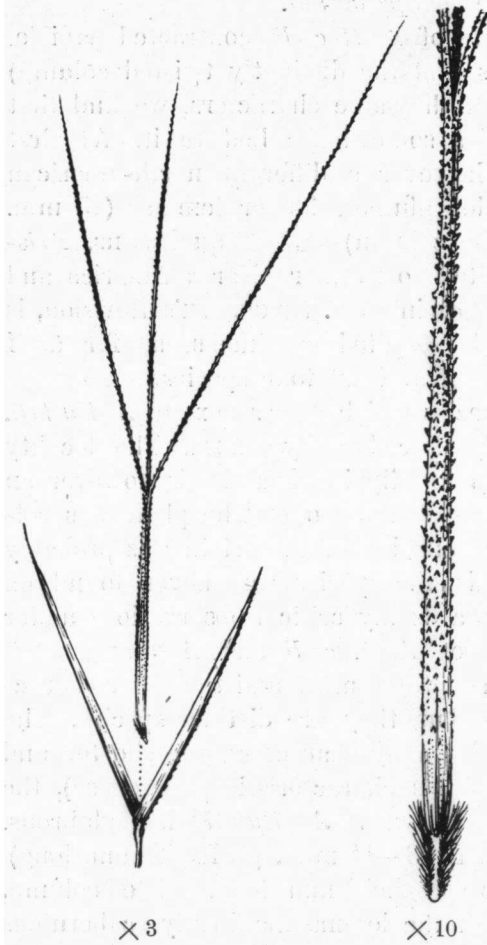
There is however another species which comes next to *A. Hackeli*, the *A. sorzogonensis*, accurately described by PRESL. The locality given by the author as Luzon (Philippine Islands) is however an error. PRESL's species is a south american one. The plant was collected by HAENKE and the false citation of the origin was probably caused by commutation of labels, the species was never found on the island of Luzon. See afterwards my critical observations under *A. sorzogonensis*. The two species *A. Hackeli* and *A. sorzogonensis* have the same inverse position of the glumes and the other characters already mentioned above, but they are distinct species. The elegant *A. sorzogonensis* differs in many characters, the shorter and narrower glumes (the lower with a characteristic pubescence), the smooth lemma and the shorter awns. *A. Hackeli* has glabrous, broader and longer glumes (gl. I, 13—14 mm., gl. II. 12 mm. long), the lemma, including the callus and the 4 mm. long, twisted column, 12½—13 mm. long, the body of the lemma manifestly scaberulous all over. Both species have moreover a very different geographical distribution.

***Aristida hamulosa* Henrard**

nov. spec.

(Sect. *Chaetaria*). Perennis, caespitosa, innovationibus intravaginalibus. Culmi 3 dm. vel plus alti, erecti, striati vel leviter sulcati, teretiusculi, glaberrimi. Folia glauco-viridia; vaginae subcompressae, striato-sulcatae, scabriusculae vel hirtellae, marginibus subhyalinis, internodia superantes; laminae suberectae vel subpatentes, subplanae vel siccando convolutae, sensim angustatae, acuminatae,

15–20. cm. longae, explanatae circa 1,5 mm. latae, utrinque puberulae vel hirtellae vel subtus laeves, eae innovationum breviores, ad 5–6 cm. longae, omnes in basi paginae superioris sparse longeque pilosae; *ligula* brevissima, dense ciliolata, auriculae longe barbatae, collo pubescente; *panicula* effusa, circa 20 cm. vel plus longa, rhachi inferne teretiuscula, laevi, superne angulata vel triquetra, scaberula, ramis binis, divaricatis, scabris, circa 10 cm. longis, superne decrescentibus, in axillis incrasatis nitentibus, in $\frac{1}{3}$ – $\frac{1}{2}$ inferiore nudis, spiculis in apice ramorum confertis, brevissime pedicellatis vel terminalibus et subterminalibus longe pedicellatis. *Spiculae* viridi- vel flavo-fuscescentes, *glumae* subaequales, inferior paulo brevior, uninerves, *gluma* I. 12–13 mm. longa, carina scabra, *gluma* II. 14–15 mm. longa, carina laevis, ambae anguste lineari-lanceolatae, acutatae, breviter aristatae, *gluma* III. *fertilis* griseofusca, tubulosa cum callo subobtusato dense barbato, vix 1 mm. longo, 10–11 mm. longa, superne angustata sed haud stipitata neque torta,



ARISTIDA HAMULOSA Henrard.

From type specimen.

toto superficie fere, aculeolis albidis valde prominentibus conspersa; *aristae* erectae vel subpatentes, media ad 23 mm. longa, laterales circa 17–18 mm. longae.

. America borealis: Arizona; Tucson, leg. J. W. TOUMEX, 30 Septemb. 1894. Typus speciei in Herb. Lugd. Batav. sub no. 923.156–861.

(Published 15 June 1926).