

THE IDENTIFICATION OF ALOES IN EAST AFRICA

By

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INTRODUCTION

Many readers of the *Journal of the East African Natural History Society* must, no doubt, be already acquainted with Dr. G. W. Reynolds' splendid book "The Aloes of Tropical Africa and Madagascar" which was published in 1966. Those who have tried to use it to identify Aloes in East Africa will probably have found Dr. Reynolds' key to the groups into which he divides the genus difficult to follow and will have regretted the absence of any quick means of ascertaining which species have been found in any given area.

The present paper is an attempt to supply the latter desideratum and to provide a key, which, it is hoped, will be easier to use. It is in no sense an original work and is not based on any detailed study of the genus. It is merely an attempt to reorganize some of the information supplied by Dr. Reynolds so as to make it easier to use. Nobody should try to use the present paper by itself to name Aloes. It should be used simply as an adjunct to Dr. Reynolds' book and if it helps the reader to arrive more quickly at Dr. Reynolds' descriptions and illustrations, by reference to which alone can the naming of Aloes be carried out with any approach to confidence, the aim of the author will have been achieved.

In the table of geographical distribution the following areas are recognized.

WA is Tropical Africa west of the eastern boundary of the former British Cameroons.

CA, Central Africa, is the former French Equatorial Africa and former Belgian territory with Spanish and Portuguese enclaves. It is divided into X, the whole area except Rwanda-Burundi and R, Rwanda-Burundi.

NE, the North Eastern Area, is divided into SU, the Sudan Republic; ER, Eritrea; AR, Arabia; SC, Socotra; SM, Somalia and ET, Ethiopia apart from Eritrea.

EA, East Africa, consists of Uganda, Kenya and Tanzania, U 1-4, K 1-7 and T 1-9 are the provinces of these countries, as recognized in "The Flora of Tropical East Africa" T9 being the islands of Zanzibar and Pemba.

STA, South tropical Africa is divided into AN, Angola; ZA, Zambia; MA, Malawi, PE, Portuguese East Africa; RH, Rhodesia (Zimbabwe) and BO, Botswana (Bechuanaland protectorate).

SA is South Africa, together with South West Africa, Lesotho and Swaziland. In this column only those species are included which are known also to occur in one or more of the other areas.

In the final column a K indicates that the species is dealt with in the key.

Empty horizontal lines in the geographical table are used to separate the groups into which Dr. Reynolds divides the genus. These groups are *not* the same as those used in the present key to East African species.

The Key to East African species deals with all species known to occur in Rwanda-Burundi, Uganda, Kenya and Tanzania, together with additional species recorded from adjacent parts of neighbouring countries. The numbers of the species in the key are those used by Dr. Reynolds and can thus be used for quick reference to his work without the need to consult the index.

**TABLE OF GEOGRAPHICAL DISTRIBUTION OF THE
TROPICAL AFRICAN SPECIES OF ALOE**

	WA	CA	NE		U	EA			T	STA			SA		
			S	E		K	1	2		3	4	5			6	7	8	9	10	11
		XR	UR	RC	MT	1234	1234	567	123456789		AZ	MFRB	NAAEHO		
1 myriacantha	.	.X	.....		.X..		..XX.X.		XX...XX..		.X.X.		X	1	K
2 balliiX.		.	2	
3 torreiX.		.	3	
4 plowesiiXX.		.	4	
5 howmaniiX.		.	5	
6 wildiiXX.		.	6	
7 musapanaX.		.	7	
8 inyangensisX.		.	8	
9 hazelianaXX.		.	9	
10 rhodesianaXX.		.	10	
11 buchanahiiX.		.	11	
12 nuttii	.	X.	.....		....		.....		..X.X..		xxx...		.	12	K

"The Aloes of Tropical Africa and Madagascar" by G. W. Reynolds (1966). *Obtainable from:* The Aloes Book Fund, Box 234, Mbabane, Swaziland. Price Shs. 98/-.

		WA	CA	NE		U	EA		T					STA	SA		
				SE	AS		SE	U	EA	1	2	3	4				5	6	7	8	9
		XR	XR	UR	RR	CM	1234	1234567	123456789								
13	richardsiae	.	..	.....			....	.....	.....X..							13	K
14	bullockii	.	..	.....			....	.....	...X.....							14	K
15	buettneri	X	X.	.....			....	.....	.....				XXX..			15	
16	jucunda	.	..	...X.			....	.....	.....				.....			16	
17	hemmingii	.	..	...X.			....	.....	.....				.....			17	
18	jacksonii	.	..	...X			....	.....	.....				.....			18	K
19	somaliensis	.	..	...X.			....	.....	.....				.....			19	
20	erensii	.	..	X.....			....	.X.....	.....				.....			20	K
21	peckii	.	..	...X.			....	.....	.....				.....			21	
22	mccloughlinii	.	..	...X			....	.....	.....				.....			22	
23	pirottae	.	..	...XX			....	X.X.X	.....				.....			23	K
24	dorotheae	.	..	.....			....	.....	..X.....				.....			24	K
25	morogoroensis	.	..	.....			....	.....	...X..				.....			25	K
26	greenwayi	.	..	.....			....	.....	..X.....				.....			26	K
27	amudatensis	.	..	.....			X...	XX.....	.....				.....			27	K
28	graminicola	.	..	...X			....	..XX..	.....				.....			28	K
29	kilifiensis	.	..	.....			....	...X	.....				.....			29	K
30	greatheadii	.	X.	.....			....	.....	.....				.X.XXX			30	
31	swynnertonii	.	..	.....			....	.....	.....				..XXX.			31	
32	duckeri	.	..	.....			....	.....	.....X..				..XX..			32	K
33	saponaria	.	..	.....			....	.....	.....				...X.		X	33	
34	zebrina	.	..	.....			....	.....	.....				XXXXXX		X	34	
35	macrocarpa	X	..	XX..X			....	.....	.....				.....			35	
36	lateritia	.	XX	.....			...X	..XX.XX	..XX..XX.				.....			36	K
37	hereroensis	.	..	.....			....	.....	.....				X.....		X	37	
38	chabaudii	.	X.	.....			....	.....	.....XX.				..XXXX.		X	38	K
39	bukobana	.	..	.....			....	.....	X..X.....				.....			39	K
40	milne-redheadii	.	..	.....			....	.....	.....				XX.....			40	
41	mzimbana	.	X.	.....			....	.....	..X.....				..XX..			41	K
42	rivae	.	..	...X			....	X.....	.....				.....			42	K
43	grata	.	..	.....			....	.....	.....				X.....			43	
44	niebuhriana	.	..	..X..			....	.....	.....				.....			44	
45	rigens	.	..	...X.			....	.....	.....				.....			45	
46	tomentosa	.	..	..X.X			....	.....	.....				.....			46	
47	doei	.	..	..X..			....	.....	.....				.....			47	
48	trichosantha	.	..	..X..X			....	.....	.....				.....			48	
49	menachensis	.	..	...X.			....	.....	.....				.....			49	
50	pubescens	.	..	...X			....	.....	.....				.....			50	
51	eremophila	.	..	...X.			....	.....	.....				.....			51	
52	serriyensis	.	..	..X..			....	.....	.....				.....			52	
53	dhalensis	.	..	..X..			....	.....	.....				.....			53	
54	audhalica	.	..	..X..			....	.....	.....				.....			54	
55	barbadensis	.	..	..X..			....	.....	.....				.....			55	
56	metallica	.	..	.....			....	.....	.....				X.....			56	
57	massawana	.	..	..X..			....	.....	.....?				.....			57	K
58	vacillans	.	..	...X.			....	.....	.....				.....			58	
59	officinalis	.	..	..X..			....	.....	.....				.....			59	
60	otallensis	.	..	...X			....	X.....	.....				.....			60	K
61	splendens	.	..	..X..			....	.....	.....				.....			61	
62	cremnophila	.	..	...X.			....	.....	.....				.....			62	
63	pendens	.	..	...X.			....	.....	.....				.....			63	
64	confusa	.	..	.....			....	.....	..X.....				.....			64	K
65	veseyi	.	..	.....			....	.....	..X.....				..X.....			65	K
66	mendesii	.	..	.....			....	.....	.....				X.....			66	K
67	penduliflora	.	..	.....			....	.....	.....?				.....			67	K

	WA	CA	NE	U	EA	T	STA	SA		
			S E A S S E	1234	1234567	123456789	AZMPRB			
			XR URRCMT				NAAEHO			
68	venusta	.	..	.....	.....	...X.....	.....	.	68	K
69	macrosiphon	.	.X	.....	.X..	.....	X.....	.....	69	K
70	compacta	.	..	.....	.....	.....	...X.....	.....	70	K
71	cryptopoda	.	..	.....	.....	.....	..XXXXX	X	71	
72	crassipes	.	X.	X.....	.....	.....	.X.....	.	72	K
73	christianii	.	.X	.....	.....	.....	X.X.XX.	XXXXX.	73	K
74	pretoriensis	.	..	.....	.....	.....	...X.	X	74	
75	forbesii	.	..	...X..	.....	.....	.....	.....	75	
76	perryi	.	..	...X.	.....	.....	.....	.....	76	
77	scobinifolia	.	..	...X.	.....	.....	.....	.....	77	
78	sinkatana	.	..	X.....	.....	.....	.....	.....	78	
79	elegans	.	..	.X...X	.....	.....	.....	.....	79	
80	wrefordii	.	..	...X	X..	.....	.....	.....	80	K
81	sinana	.	..	...X	.....	.....	.....	.....	81	
82	camperi	.	..	.X...X	.....	.....	.....	.....	82	
83	adigratana	.	..	...X	.....	.....	.....	.....	83	
84	calidophila	.	..	...X	.....	X.....	.....	.....	84	K
85	inermis	.	..	...X.X.	.....	.....	.....	.....	85	
86	globuligemma	.	..	.....	.....	.....	...XX	X	86	
87	turkanensis	.	..	.....	X..	XX.	.....	.....	87	K
88	leachii	.	..	.....	.....	.....	...X..	.....	88	K
89	guerrai	.	..	.....	.....	.....	X.....	.....	89	
90	secundiflora	.	..	X...X	.....	X.XX.XX	XXXXX.X.	.....	90	K
91	ortholopha	.	..	.....	.....	.....	...X.	.....	91	
92	mawii	.	..	.....	.....	.....	...X.	..XX.	92	K
93	aculeata	.	..	.....	.....	.....	...X.	X	93	
94	rubroviolacea	.	..	...X..	.....	.....	.....	.....	94	
95	decurva	.	..	.....	.....	.....	...X.	.....	95	
96	lavranosii	.	..	...X..	.....	.....	.....	.....	96	
97	ruspoliana	.	..	...XX	.....	X...X	.....	.....	97	K
98	classenii	.	..	.....	.....	...X	.....	.....	98	K
99	sereti	.	X.	.....	.....	.....	.....	.....	99	K
100	mubendiensis	.	..	.....	...X	.....	.....	.....	100	K
101	wilsonii	.	..	.....	X.X.	.....	.....	.....	101	K
102	ukambensis	.	..	.....	.....	...X.	.....	.....	102	K
103	breviscapa	.	..	...X.	.....	.....	.....	.....	103	
104	tweediae	.	..	...X	.....	X.....	.....	.....	104	K
105	percrassa	.	..	.X...X	.....	.....	.....	.....	105	
106	harlana	.	..	...X	.....	.....	.....	.....	106	
107	stuedneri	.	..	.X...X	.....	.....	.....	.....	107	
108	berhana	.	..	...X	.....	.....	.....	.....	108	
109	monticola	.	..	...X	.....	.....	.....	.....	109	
110	schelpei	.	..	...X	.....	.....	.....	.....	110	
111	keyi	X	..	.....	.....	.....	.....	.....	111	
112	schweinfurthii	X	X.	X...X	X..	.....	.....	.....	112	K
113	megalacantha	.	..	...XX	.....	.....	.....	.....	113	
114	macleayi	.	..	X.....	.....	.....	.....	.....	114	K
115	microdonta	.	..	...X.	.....	.....	.....	.....	115	K
116	marsabitensis	.	..	X.....	X..	X.....	.....	.....	116	K
117	medishiana	.	..	...X.	.....	.....	.....	.....	117	
118	gracilicaulis	.	..	...X.	.....	.....	.....	.....	118	
119	angolensis	.	..	.....	.....	.....	X.....	.....	119	
120	gillilandii	.	..	...X.	.....	.....	.....	.....	120	
121	excelsa	.	..	.....	.....	.....	..XXXX.	.....	121	
122	littoralis	.	..	.....	.....	.....	XX.XXX	X	122	

		WA	CA	NE		U	EA			T	STA	SA
		XR	UR	SE	AS	SE	1234	1234567	123456789	AZMFRB	NAAEHO	
123	munchii	.	..	.....	....	.....	.....	.....	.....	.....XX.	.	123
124	rupicola	.	..	.....	....	.....	.....	.....	.....	X.....	.	124
125	ballyi	.	..	.....	....	.....	..X..X	..XX	.....	.....	.	125 K
126	volkensii	.	.X	.....	.X..	.....	..X..	XXX	.....?	.....	.	126 K
127	squarrosa	.	..	..X..	....	.....	.....	.....	.....	.....	.	127
128	zanzibarica	.	..	.....	....	.....	.....	.....	.....?	.....	.	128 K
129	tororoana	.	..	.....	..X.	.....	.....	.....	.....	.....	.	129 K
130	hendrickxii	.	X.	.....	....	.....	.....	.....	.....	.....	.	130 K
131	deserti	.	..	.....	....	.....	..X..X	..X.	.....	.....	.	131 K
132	hildebrandtii	.	..	.....X.	....	.....	.....	.....	.....	.....	.	132
133	yavellana	.	..	.....X	....	.....	.....	.....	.....	.....	.	133 K
134	andongensis	.	..	.....	....	.....	.....	.....	.....	X.....	.	134
135	cameronii	.	..	.....	....	.....	.....	.....	.....	.XXXX.	.	135
136	palmiformis	.	..	.....	....	.....	.....	.....	.....	X.....	.	136
137	retrospiciens	.	..	.....X.	....	.....	.....	.....	.....	.....	.	137
138	babatiensis	.	..	.....	....	.....	.....	..X.	.....	.....	.	138 K
139	elgonica	.	..	.....	....	.....	..X.	.....	.....	.....	.	139 K
140	flexifolia	.	..	.....	....	.....	.....	..X.	.....	.....	.	140 K
141	boscawenii	.	..	.....	....	.....	.....	..X.	.....	.....	.	141 K
142	rabaiensis	.	..	.....X.	....	.....	..X.XX	.....	.....	.....	.	142 K
143	dawei	.	XX	.....	.X.X	.....	..X..	.....	.....	.....	.	143 K
144	gossweileri	.	..	.....	....	.....	.....	.....	.....	X.....	.	144
145	catengiana	.	..	.....	....	.....	.....	.....	.....	X.....	.	145
146	kedongensis	.	..	.....	....	.....	..X..X.	..X.	.....	.....	.	146 K
147	ngobitensis	.	..	.....	....	.....	..XX.	.....	.....	.....	.	147 K
148	nyiriensis	.	..	.....	....	.....	..X..	.....	.....	.....	.	148 K
149	arborescens	.	..	.....	....	.....	.....	.....	.....	..XXX.	x	149
150	sebaea	.	..	..X..	....	.....	.....	.....	.....	.....	.	150
151	eminens	.	..	.....X.	....	.....	.....	.....	.....	.....	.	151

THE NUMBER OF ALOE SPECIES IN EACH AREA

West tropical Africa 4, of which 1 endemic

Central tropical Africa excluding Rwanda-Burundi 12

Rwanda-Burundi 5

Central tropical Africa including Rwanda-Burundi 15, of which 2 are confined to the area

Sudan Republic 8

Eritrea 7

Arabia 18, of which 2 also in Africa

Socotra 3, all endemic

Somalia 20

Ethiopia (excluding Eritrea) 25

North Eastern Africa and Arabia as a whole 68, of which 53 are confined to the area

Uganda 1 (Northern Province) 9

U 2 (Western Province) 4

U 3 (Eastern Province) 2

U 4 (Buganda) 3

Uganda as a whole 14, of which 3 endemic

Kenya 1 (North Eastern Province) 9

K 2 (Turkana) 4

K 3 (Rift Valley Province) 7

K 4 (Central Province) 12

K 5 (Lake Province) 1

K 6 (Masai Province) 5

K 7 (Coast Province) 9

Kenya as a whole 26, of which 6 endemic

- Tanzania 1 (Lake Province) 6
- T 2 (Northern Province) 8
- T 3 (Tanga Province) 9
- T 4 (Western Province) 9
- T 5 (Central Province) 1
- T 6 (Eastern Province) 3 and 1 doubtful
- T 7 (Southern Highland Province) 8
- T 8 (Southern Province) 4
- T 9 (Zanzibar and Pemba) 3 all doubtful
- Tanzania as a whole 30 and 1 doubtful, of which 14 endemic

East Africa (Uganda, Kenya and Tanzania) as a whole 54 and 1 doubtful, of which 32 are confined to the area

- Angola 17
- Zambia 15
- Malawi 15
- Portuguese East Africa 18
- Rhodesia 25
- Botswana 5
- South Tropical Africa as a whole 47, of which 27 are confined to the area

South Africa 133, of which 11 occur also in Tropical Africa

Key to the species of Aloe occurring in Rwanda-Burundi, Uganda, Kenya and Tanzania and adjacent parts of neighbouring countries. Based on the account of these species given in G. W. Reynolds "The Aloes of Tropical Africa and Madagascar" (1966).

Key to groups (these are artificial groups for the purpose of the key and not the more or less natural groups recognized by Dr. Reynolds in his book).

Branches of inflorescence 1-4:

- Acaulescent, or the stems under 50 cm. long:
 - Teeth on leaves under 5 mm. apart; leaves under 5 cm. wide at the base Group 1
 - Teeth on leaves over 5 mm. apart, leaves often more than 5 cm. wide at the base Group 2
- Stems over 50 cm. long; teeth on leaves over 5 mm. apart:
 - Bracts more than half as long as pedicel Group 3
 - Bracts less than half as long as pedicel Group 4

Branches of inflorescence 5 or more:

- Acaulescent, or stems under 50 cm. long:
 - Bracts more than half as long as pedicel:
 - Outer perianth segments united for more than 60% of their length Group 5
 - Outer perianth segments united for less than 60% of their length Group 6
 - Bracts less than half as long as pedicel:
 - Outer perianth segments united for 60% or more of their length Group 7
 - Outer perianth segments united for less than 60% of their length Group 8
- Stems over 50 cm. long:
 - Bracts more than half as long as pedicel Group 9
 - Bracts less than half as long as pedicel:
 - Outer perianth segments united for 60% or more of their length Group 10
 - Outer perianth segments united for less than 60% of their length Group 11

Group 1

- Rootstock not a bulb; leaves with a few spots at the base:
 - Bracts up to 15 mm. long, pedicels over 10 mm. long:
 - Bracts as long as pedicels; perianth 15-20 mm. long, the outer tepals free to the base 1 *myriacantha* (Haw.) R. & S.
 - Bracts $\frac{1}{2}$ - $\frac{2}{3}$ as long as pedicels; perianth 38-42 mm. long, the outer tepals 10-75% united 12 *nuttii* Bak.
 - Bracts up to 4 mm. long; pedicels 5-7 mm. long; perianth 27 mm. long, the outer tepals 75% united 18 *jacksonii* Reynolds
- Rootstock a bulb; leaves without spots; outer tepals 60-70% united:
 - Bracts 25-30 mm., pedicels 5-7 mm., perianth up to 48 mm. long 13 *richardsiae* Reynolds
 - Bracts 8-10 mm., pedicels 4-5 mm., perianth 30 mm. long 14 *bullockii* Reynolds

Group 2

Bracts under 7 mm. long; pedicels under 12 mm. long:	
Leaves under 5 cm. wide; perianth under 28 mm. long:	
Leaves under 2 cm. wide	18 <i>jacksonii</i> Reynolds
Leaves over 2 cm. wide:	
Bracts more than $\frac{1}{2}$ as long as pedicels	128 <i>zanzibarica</i> Milne-Redhead
Bracts less than $\frac{1}{2}$ as long as pedicels	129 <i>tororoana</i> Reynolds
Leaves 5 cm. or more wide:	
Perianth under 25 mm. long	129 <i>tororoana</i> Reynolds
Perianth over 30 mm. long:	
Bracts shorter than pedicels:	
Pedicels under 12 mm. long:	
Bracts 3 mm. long; stamens exerted	24 <i>dorotheae</i> Berger
Bracts 6 mm. long; stamens not exerted	25 <i>morogoroensis</i> Christian
Pedicels over 15 mm. long; bracts 5 mm. long	102 <i>ukambensis</i> Reynolds
Bracts longer than pedicels	57 <i>massawana</i> Reynolds
Bracts over 7 mm. long:	
Pedicels under 11 mm. long:	
Teeth on leaves about 8 mm. apart	26 <i>greenwayi</i> Reynolds
Teeth on leaves over 10 mm. apart:	
Bracts about 7 mm. long	57 <i>massawana</i> Reynolds
Bracts about 12 mm. long	131 <i>deserti</i> Engl.
Pedicels 14 mm. long, or more:	
Perianth under 25 mm. long	27 <i>amudatensis</i> Reynolds
Perianth over 27 mm. long:	
Bract $\frac{1}{2}$ as long as pedicel; leaves 3 times as long as wide	41 <i>mzimhana</i> Christian
Bract more than $\frac{1}{2}$ as long as pedicel; leaves 6-9 times as long as wide:	
Perianth 35 mm. long	70 <i>compacta</i> Reynolds
Perianth 28-33 mm. long	99 <i>sereti</i> De Wild.

Group 3

Bracts shorter than the pedicels:	
Pedicels 15-20 mm. long; leaves without, or with few dots:	
Leaves 2.5-4 cm. wide:	
Inflorescence not pendent; bracts 7 mm. long	64 <i>confusa</i> Engl.
Inflorescence pendent; bracts 10 mm. long	67 <i>penduliflora</i> Bak.
Leaves 7-8 cm. wide; bracts 13 mm. long	70 <i>compacta</i> Reynolds
Pedicels under 10 mm. long:	
Pedicels c. 7 mm. long; leaves with many dots	128 <i>zanzibarica</i> Milne-Redhead
Pedicels 1-2 mm., bracts 1 mm. long	92 <i>mawii</i> Christian
Bracts longer than the pedicels:	
Bracts 12, pedicels 7-8, perianth 32-35 mm. long	131 <i>deserti</i> Engl.
Bracts up to 30, pedicels 20-25, perianth 38-40 mm. long	139 <i>babatiensis</i> Christian

Group 4

Stems hanging; leaves 2.5-4 cm. wide; bracts 6-10 mm. long:	
Perianth 25 mm. long	65 <i>veseyi</i> Reynolds
Perianth 30 mm. long	64 <i>confusa</i> Engl.
Stems not hanging; perianth 33 mm. long, or more:	
Pedicels 1-2 mm. long; leaves up to 10 cm. wide	92 <i>mawii</i> Christian
Pedicels over 12 mm. long:	
Perianth 40 mm. long; leaves 9 cm. wide; pedicels 20-25 mm. long	139 <i>elgonica</i> Bullock
Perianth 33-36 mm. long:	
Pedicels 14 mm. long; leaves 6-9 cm. wide	143 <i>dawei</i> Berger
Pedicels 20-25 mm. long:	
Leaves about 3.5 cm. wide	146 <i>kedongensis</i> Reynolds
Leaves about 5 cm. wide	147 <i>ngobitensis</i> Reynolds

Group 5

Bracts not above 7 mm. long; pedicels under 11 mm. long:

Perianth over 25 mm. long:

Perianth 29–30 mm. long; leaves with many spots:

Teeth on leaves 4–6 mm. apart 20 *erensii* Christian

Teeth on leaves 10 mm. or more apart 23 *pirotae* Berger

Perianth 40–45 mm. long, leaves without spots 73 *christianii* Reynolds

Perianth 16–20 mm. long; leaves without, or with few spots 97 *ruspoliana* Bak.

Bracts over 9 mm. long; pedicels usually over 11 mm. long:

Bracts shorter than the pedicel:

Leaves with many dots:

Perianth with a pronounced basal swelling, markedly constricted above this:

Bracts 2–3 mm. broad; pedicels 20 mm. or more long:

Perianth 33 mm. long 28 *graminicola* Reynolds

Perianth 35–38 mm. long 36 *lateritia* Engl.

Bracts 6 mm. broad; pedicels 16 mm. long 29 *kilifiensis* Christian

Perianth not constricted above the base; bracts 10 mm. broad; pedicels 13 mm. long 68 *venusta* Reynolds

Leaves with few or no dots:

Bracts 10, pedicels 14, perianth 38 mm. long 72 *crassipes* Bak.

Bracts 5–6, pedicels 8–10, perianth 40–45 mm. long 73 *christianii* Reynolds

Bracts longer than the pedicel:

Leaves spotted, 8 cm. wide 69 *macrosiphon* Bak.

Leaves not spotted, 4 cm. wide 130 *hendrickxii* Reynolds

Group 6

Bracts over 7 mm. long:

Leaves up to 9 cm. wide, with many spots:

Perianth sharply constricted above the ovary 29 *kilifiensis* Christian

Perianth not sharply constricted above the ovary:

Bracts deflexed, twice as long as the 6–7 mm. long pedicels 60 *otallensis* Bak.
var. *elongata* Berger

Bracts erect, shorter than or less than 50% longer than the pedicels:

Bracts c. 11 mm. long, 10 mm. broad, as long as the pedicels 68 *venusta* Reynolds

Bracts 15 mm. long, 8 mm. broad, 50% longer than the pedicels 69 *macrosiphon* Bak.

Leaves up to 15 cm. wide, not, or hardly, spotted 80 *wrefordii* Reynolds

Bracts under 7 mm. long:

Flowers all turned to one side of the inflorescence rhachis ("secund"); teeth on leaves 2 mm. or more long, 10 mm. or more apart:

Perianth c. 25 mm. long; leaves with few-many spots 87 *turkanensis* Christian

Perianth over 29 mm. long; leaves without spots:

Leaves c. 6 cm. wide; perianth 30 mm. long 88 *leachii* Reynolds

Leaves 12–24 cm. wide; perianth 35 mm. long 90 *secundiflora* Engl.

Flowers not "secund"; perianth under 35 mm. long; teeth on leaves small (up to 1 mm. long); 5–8 mm. apart in lower part of leaf:

Perianth 16–20 mm. long, the outer segments united for 60% of their length 97 *ruspoliana* Bak.

Perianth c. 23 mm. long, the outer segments united for 45% of their length 115 *microdonta* Chiov.

Group 7

Bracts 10 mm. long or more; perianth 35 mm. long or more, sharply contracted just above the ovary:

Bracts less than half as long as pedicels:

Pedicels c. 30 mm. long, leaves 10–12 cm. wide 32 *duckeri* Christian

Pedicels c. 35 mm. long, leaves 8–9 cm. wide 36 *a lateritia* Engl.
var. *lateritia*

Group 7 (Continued)

Bracts 16 mm. long, equalling the pedicels	36 b <i>lateritia</i> Engl. var. <i>kitaliensis</i> (Reynol.) Reynolds
Bracts under 7 mm. long; perianth not sharply contracted just above the ovary, though sometimes trigonously indented:	
Perianth markedly trigonously indented above the ovary:	
Pedicels 20–25 mm. long; perianth 35–40 mm. long; teeth on leaves usually under 10 mm. apart	38 <i>chabaudii</i> Schönl.
Pedicels under 15 mm. long; perianth not over 35 mm. long; teeth on leaves 10 mm. or more apart:	
Leaves about 8 cm. wide	39 <i>bukobana</i> Reynolds
Leaves up to 17 cm. wide	42 <i>rivae</i> Bak.
Perianth not markedly trigonously indented above the ovary:	
Leaves 6–8 cm. wide:	
Perianth 20–25 mm. long; leaves not spotted	98 <i>classenii</i> Reynolds
Perianth 28–30 mm. long:	
Spots on leaves few or none; perianth 30 mm. long	100 <i>mubendiensis</i> Christian
Spots on leaves many; perianth 28 mm. long	112 b <i>schweinfurthi</i> Bak. var. <i>labworana</i> Reynolds
Leaves 16–18 cm. wide, not spotted	116 <i>marsabitensis</i> Verdoorn & Christian

Group 8

Perianth over 32 mm. long:	
Perianth markedly trigonously indented above the ovary the outer segments united for 60% of their length	42 <i>rivae</i> Bak.
Perianth not markedly trigonously indented above the ovary, the outer segments free to the base	114 <i>macleayi</i> Reynolds
Perianth under 30 mm. long:	
Pedicels 15 mm., perianth 28 mm. long	101 <i>wilsonii</i> Reynolds
Pedicels under 11 mm. perianth under 26 mm. long:	
Leaves about 16 cm. wide, the teeth 20–25 mm. apart	84 <i>calidophila</i> Reynolds
Leaves under 14 cm. wide, the teeth up to 16 mm. apart:	
Leaves many-spotted, c. 13 cm. wide	104 <i>tweediae</i> Christian
Leaves with few or no spots, under 12 cm. wide:	
Leaves 7–8 cm. wide; pedicels 8–10 mm. long	98 <i>classenii</i> Reynolds
Leaves 9–11 cm. wide; pedicels 5–6 mm. long	115 <i>microdonta</i> Chiov.

Group 9

Bracts over 10 mm. long:	
Perianth 27–28 mm. long, the outer segments free for half their length	60 <i>otallensis</i> Bak.
Perianth 35 mm. long, the outer segments united for 70% of their length	70 <i>compacta</i> Reynolds
Bracts under 7 mm. long:	
Pedicels 8 or more mm. long:	
Perianth 40–45 mm. long	73 <i>christianii</i> Reynolds
Perianth 33–35 mm. long:	
Stems slender, up to 6 m. tall, free from dead leaves; outer perianth segments united for 1/3 of their length	125 <i>ballyi</i> Reynolds
Stems up to 1 m. tall, leafy; outer perianth segments united for 2/3 of their length	140 <i>flexifolia</i> Christian
Pedicels under 7 mm. long; perianth under 26 mm. long:	
Perianth over 21 mm. long:	
Leaves with few or many spots all over them	87 <i>turkanensis</i> Christian
Leaves unspotted, or with a few spots at the base only	115 <i>microdonta</i> Chiov.
Perianth 16–20 mm. long	97 <i>ruspolaina</i> Bak.

Group 10

Perianth under 30 mm. long; bracts under 4 mm. long:

Leaves under 9 cm. wide:

- Perianth 20–25 mm. long, 7 mm. wide across the ovary 98 *classenii* Reynolds
- Perianth 27 mm. long, 5–6 mm. wide across the ovary 133 *yavellana* Reynolds

Leaves 16–18 cm. wide 116 *marsabitensis* Verdoorn & Christian

Perianth over 30 mm. long:

Leaves up to 17 cm. wide 42 *rivae* Bak.

Leaves under 11 cm. wide:

Teeth on leaves 1–2 mm. long 140 *flexifolia* Christian

Teeth on leaves 3 mm. or more long:

Leaves 5 cm. wide 147 *ngobitensis* Reynolds

Leaves 6 or more cm. wide:

Perianth 40 mm. long 148 *nyeriensis* Christian

Perianth under 36 mm. long:

Pedicels 18 mm., bracts 7 mm. long 142 *rabaiensis* Rendle

Pedicels 14–15 mm., bracts 4–5 mm. long:

Stems stiffly erect, simple, or with 1 or 2 branches from the base, up to 4 mm. tall 126 *volkensii* Engl.

Stems erect or spreading, forming clumps 1–2 m. tall 143 *dawei* Berger

Group 11

Pedicels under 13 mm. long:

Perianth over 30 mm. long 42 *rivae* Bak.

Perianth under 28 mm. long:

Leaves over 12 cm. wide:

Teeth on leaves 20–25 mm. apart, leaves unspotted 84 *calidophila* Reynolds

Teeth on leaves 10–15 mm. apart; leaves spotted near the base 104 *tweediae* Christian

Leaves under 12 cm. wide:

Teeth on leaves up to 5 mm. long 98 *classenii* Reynolds

Teeth on leaves 1–2 mm. long 115 *microdonta* Chiov.

Pedicels over 14 mm. long:

Leaves over 7 cm. wide:

Perianth c. 35 mm. long 126 *volkensii* Engl.

Perianth 28–30 mm. long:

Bracts 1-nerved 101 *wilsonii* Reynolds

Bracts 3-nerved 141 *boscawenii* Christian

Leaves under 7 cm. wide 147 *ngobitensis* Reynolds

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NOTE: Since this paper was received for publication we have heard with deep regret of the death of Dr. G.W. Reynolds.