



# The botanical exploration of Angola by Germans during the 19th and 20th centuries, with biographical sketches and notes on collections and herbaria

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## Key words

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**Abstract** A catalogue of 29 German individuals who were active in the botanical exploration of Angola during the 19th and 20th centuries is presented. One of these is likely of Swiss nationality but with significant links to German settlers in Angola. The catalogue includes information on the places of collecting activity, dates on which locations were visited, the whereabouts of preserved exsiccata, maps with itineraries, and biographical information on the collectors. Initial botanical exploration in Angola by Germans was linked to efforts to establish and expand Germany's colonies in Africa. Later exploration followed after some Germans had settled in the country. However, Angola was never under German control. The most intense period of German collecting activity in this south-tropical African country took place from the early-1870s to 1900. Twenty-four Germans collected plant specimens in Angola for deposition in herbaria in continental Europe, mostly in Germany. Five other naturalists or explorers were active in Angola but collections have not been located under their names or were made by someone else. A further three collectors, who are sometimes cited as having collected material in Angola but did not do so, are also briefly discussed.

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## INTRODUCTION

“Those interested in botanical matters know how difficult it is to trace the history of the notable people who have contributed to our subject [...]” Shurley (1954: ix).

Historically and presently, preserved and living plant collections serve multiple very important research purposes for plant scientists. Among other things they enable the study of plant morphology and variation in character expression, as well as provide a permanent record of historical and current plant occurrences and raw data for proposing or testing phytogeographical patterns, and additionally serve as reference collections for plant identification. Obviously, the more comprehensive the collections, the better they can be used in scientific endeavours at any scale, be it global, continental, regional, or subregional/national. Herbaria additionally serve as the repositories for type specimens and voucher specimens for a range of botanical studies, including in anatomy, ethnobotany, cytology, chemistry, conservation biology, and vegetation surveys.

Knowledge about the botanical exploration of a region of any size provides important information about the whereabouts of preserved herbarium collections (often of both primary and duplicate sets), who collected the specimens and (often exactly) where, and whether the specimens are extant. Albeit varying in quantity and quality, notes included in collecting labels often provide an idea of the abundance of a species at

a given locality – information useful in conservation biology investigations. All these data in turn greatly facilitate taxonomic studies, for example the compilation of national/regional floristic checklists, and the writing of Flora treatments and monographs. Additionally, collections made early during the exploration of a country are almost invariably rich in type material that fixes the application of plant names. Although therefore of critical importance in taxonomy and floristics, complete information on collections is often lacking or is difficult to interpret by users who are not acquainted with a particular region, a collector, or a period in history, which can result in errors being introduced in the geographical distribution of taxa, for example.

The historical botanical exploration of some parts of Africa has received considerable attention and catalogues are available of collectors and collecting activity in southern Africa, essentially the *Flora of Southern Africa (FSA)* project through the work of Gunn & Codd (1981), and East Africa, through the work of Polhill & Polhill (2015). The *FSA* project covers Namibia, Botswana, Eswatini (formerly Swaziland), Lesotho, and South Africa, while East Africa encompasses Uganda, Kenya, and Tanzania. However, little is known of early plant collecting in Angola, a country that was not included in the *FSA* or adjacent *Flora Zambesiaca (FZ)* (Botswana, Zambia, Zimbabwe, Malawi, Mozambique) projects (note that Botswana is common to the *FSA* and *FZ* regions). Rather, Angola had its ‘own’ Flora project, the *Conspectus Florae Angolensis (CFA)* (Carrisso 1937). Although attracting sporadic attention, the *CFA* was never completed, which inevitably hampers the study of the history of the botanical exploration of the country. In addition, for several reasons, including a civil war that raged for some 25 years (c. 1975–2000), Angola has suffered some neglect from a fundamental floristic perspective, with a first comprehensive

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plant checklist only being produced in 2008 (Figueiredo & Smith 2008, Smith & Figueiredo 2010).

Botanical exploration activities in Angola in general have been dominated by the work of two remarkable, pioneer collector-botanists: the Austrian-born Friedrich Martin Joseph Welwitsch (5 February 1806, Maria Saal, Austria–20 October 1872, London, United Kingdom) and the Swiss-born John Gossweiler (26 December 1873, Regensdorf, near Zürich, Switzerland–19 February 1952, Lisboa, Portugal), who were active in Angola in the 1850s–early-1860s and the first half of the 20th century, respectively. For example, Welwitsch, on behalf of the Portuguese government, made collections of c. 5 000 species, and Gossweiler, also as an employee of Portugal, collected about 14 000 specimens. Remarkably, about 1 000 new species were described based on Welwitsch's collections (Albuquerque et al. 2009). According to IPNI (2020) there are about 720 species and 60 genera that Welwitsch identified as being new and that he named. He described and validly published some of these names, while others were validated by other authors. Since 1872, when Welwitsch died and his collections became accessible, and as part of the eventual production of African Floras, many other names were published based on his Angolan material. JSTOR Global Plants (2020) includes over 12 000 specimens collected by Welwitsch in Angola that are recorded as types. Currently, there are over 450 names accepted in the flora of Angola that are associated with Welwitsch.

Angola is a large, biodiversity-rich country in western south-tropical Africa, with the flora of the country as a whole consisting of just more than 7 000 species (Figueiredo & Smith 2008, 2017).

During the 19th and 20th centuries Germans played an important role in the botanical exploration of Angola, a country that was never a German colony, as Portugal ruled over the territories that form present-day Angola, which began in the mid-17th century. In preparation and during the 'Scramble for Africa', the colonization of African territories by European powers, a number of expeditions were sent out from Germany, often to the Congo basin, which touched present-day Angola. Germany did, however, establish a foothold in southern Africa, south of Angola, as Namibia, then as German South West Africa (Deutsch-Südwestafrika in German), was a German colony from 1884 until after World War I (WWI). Some German settlers moved northwards to Angola after Germany lost its power there. The Portuguese government was not averse to appointing citizens of other European nations to conduct work in the colonies of Portugal – Welwitsch and Gossweiler are examples (see above) – but they did not appoint the Germans discussed in this paper to positions in Angola apart from Ludwig Brühl.

Information on the German explorers and collectors in Angola during the 19th and 20th centuries is scattered among numerous sources, some of which are little-known or difficult to access. The aim of the present work is to present as complete as possible a catalogue of, and biographical and collecting information on, the German nationals who actively collected plants in Angola during the 19th and 20th centuries, up to the year 2000.

## MATERIAL AND METHODS

All collectors of German nationality, who collected in Angola during the 19th and 20th centuries, and of which collections exist or are known to have existed, were studied. Additional collectors recorded in the literature as having collected in Angola but for whom no collections were located were also investigated. Data on each collector were sourced from institutional and private archives, from the databases of several herbaria, as well as from pertinent but often obscure literature references.

In a few instances the entries provided here benefitted from consultation with former and current herbarium curators, who have knowledge of the activities of the collectors and/or their collections (see Acknowledgements). For each collector, the sources from which information was obtained are referenced at the end of their respective entries.

An initial list of collectors was compiled based on the literature (Gossweiler 1939, Bossard 1993, Romeiras 1999, Figueiredo et al. 2008) and during 2019 each name was investigated against available online databases and other literature sources. Several online herbarium databases were searched for Angolan specimens collected by Germans. Specimens for which a barcode is given were examined at JSTOR Global Plants (2020) or at the websites of the respective herbaria.

For some collectors, information provided on specimen labels was particularly relevant for determining itineraries or collecting areas. This label information was compiled from herbarium databases and literature sources and captured in a spreadsheet that is provided as supplementary material. Itineraries of localities where, and dates on which, three collectors, M. Buchner, R. Büttner, and P. Pogge, collected plant specimens in Angola were reconstructed. Maps are provided of the routes travelled by H. Baum, M. Buchner, R. Büttner, O. Jessen, K. Jordan, A. von Mechow, and P. Pogge. For other collectors, collecting localities are provided based on herbarium specimens and literature sources.

A compilation of maps and gazetteers used during the study is provided at the end of the paper.

Gunn & Codd (1981) is used as the primary reference on the history of the botanical exploration of southern Africa (Namibia, Botswana, Eswatini (formerly Swaziland), Lesotho, South Africa, i.e., excluding Angola), which coincides with the region covered by the *FSA* project. Where the revised edition of Gunn & Codd (1981) contains additional entries, that publication (Glen & Germishuizen 2010) is also cited.

Herbarium codes follow Thiers (2020, continuously updated); coordinates follow Office of Geography (1956).

## HISTORICAL BACKGROUND

The early European explorers (mid-1400s+) who travelled by ship along the coast of Africa towards the southern tip of Africa, and beyond, were understandably intrigued by the fascinating new plants they encountered when making landfall on their often perilous sea journeys. The earliest interest in the flora of Africa was therefore inevitably driven by curiosity, but soon efforts were made to gain a better understanding of the uses (ethno-medicinal, agriculture, construction materials, horticulture, etc.) to which indigenous African plants can be put (see Victor et al. 2016 on the phases of botanical exploration of southern Africa). This interest also extended to the fauna and minerals of especially the more easily accessible coastal African countries where ships dropped anchor to replenish fresh water reserves and to secure whatever fresh produce could be bartered or traded with local populations (see, e.g., Kipple 2007 for a discussion on the globalisation of food over several centuries).

During the Renaissance, especially the 15th and 16th centuries, sea routes to other, especially southern and oriental, continents were increasingly established, with several European nations, initially especially Portugal and Spain, gradually establishing contact with and reconnoitring foreign shores for opportunities to access and trade in highly prized, and priced, foreign goods including herbs, spices, medicines, fabrics, colourants, and more. Fruits, seeds, and other propagules of plants from foreign lands were also increasingly accessed, transported back

to, and often cultivated in European scientific institutions – essentially the forerunners of present-day institutional botanical gardens – that had access to rudimentary but nonetheless somewhat climate-controlled greenhouses. Such plants were not only those of obvious and proven economic value; among them were also those that had bizarre (or at least unidentified) appearances, or horticultural appeal. Soon, an appreciation developed, particularly among the wealthy aristocracy and more scientifically inclined public, that having knowledge of all, or at least as many of, the plants from these newly explored countries, some of which were subjected to European (socio-)political control, will be of value. Scientific methodologies, including the importance of natural and experimental observations and induction, as advocated by Francis Bacon (1561–1626), were also increasingly becoming known and followed in Great Britain and continental Europe, and to apply these, access to study material, including plants, from foreign shores was increasingly required. Preserved herbarium collections and living specimens kept in private gardens or institutional botanical gardens soon became the mainstay for such investigations.

By the mid- and late-1800s, imperialistic institutions such as the Royal Botanic Gardens, Kew, in the United Kingdom, realised the importance of having catalogues (essentially what we know today as Floras) produced of the plants that occurred in their colonies, with floristic work in India, Tropical Africa, and South Africa (principally the then Cape Colony and Natal), being initiated. In Portugal, at the University of Coimbra, plants collected in West Africa, São Tomé and Príncipe, Angola, and Mozambique were studied to produce floristic catalogues of the regions that were under the rule of the country (Henriques 1887, Fernandes 1993). After Germany entered the race for colonies late, Adolf Engler (1844–1930) at the Botanischer Garten und Botanisches Museum (BGBM) in Berlin, focused on the flora of (then) German East Africa (later Tanganyika, now Tanzania) (Engler 1895). Simultaneously, as was often the case during what has become known as the ‘Scramble for Africa’ from the early-1880s onwards until hostilities broke out in WWI in 1914, colonial powers were even more eager to gain a better understanding of the natural wealth of their colonies and beyond to enable the economic exploitation of these resources. Initiatives for the botanical (and zoological) exploration of sub-Saharan Africa were launched in several countries during the 19th century, by governments of the European countries that controlled the regions, but also by geographical societies. One of the earliest German initiatives to commercially distribute natural history specimens collected on foreign shores was through the *Unio Itineraria*, which offered sets of herbarium specimens for sale. They, for example, distributed material collected by Christian Frederick Ecklon (1795–1868) in South Africa (Gunn & Codd 1981: 144, 383). Later, in Germany, the *Deutsche Gesellschaft zur Erforschung Äquatorial-Afrikas* (*German Society for the Study of Equatorial Africa*; founded in 1873 and after 1878 named *Afrikanische Gesellschaft in Deutschland* (*African Society in Germany*)) sent out a number of expeditions: the Loango expedition (1873–1875), the Cassange expedition (1875–1876), the Pogge-Wissmann expedition (1881–1884), the Buchner expedition (1879–1881), the Congo expedition (1884–1886) and several others to east and northeastern Africa. The newly founded German Reich funded the Cuango expedition (1879–1881) and Rohlf’s-Stecker expedition (1880–1881) to Abyssinia (see Urban 1916).

Floristic work in general carried on unabated during the late-19th and early-20th centuries as the botanists of colonial powers worked on describing and making classificatory sense of the large volumes of preserved material that arrived at their institutions.

### **The study of the flora of southern African in Germany**

Several important preserved plant collections were established in Germany during the 18th and 19th centuries, with some, at least initially, being standalone research establishments and others being associated with universities. The Botanical Garden and Botanical Museum in Berlin, Germany, was established in 1815 and is today one of the most important collections in the country, with Adolf Engler, who spent considerable time working on the flora of the African colonies of Germany, being widely regarded as an important architect of the institution as known today (Hiepko 1987). Plant exploration, especially of the riches gathered from the German colonial empire, was and remains one of the Garden and Museum’s strengths. Soon after Germany had acquired several colonies on the African continent a *Botanische Zentralstelle für die deutschen Kolonien* (*Botanical Centre for the Colonies*) was established at the Berlin Botanical Garden in 1891 (Zepernick 2002). Through the *Botanische Zentralstelle* research plantations were organised, botanical gardens established, for example in Limbe (Cameroon), in Sokodé (Togo), and in Amani (Tanzania), and extensive collecting activities of the indigenous floras of those countries were initiated.

German expeditions were not limited to the colonies under their control. Several Germans also explored other parts of the world, including Angola. Additionally, by the early-20th century, especially after WWI came to an end, interest in the floras of colonies expanded to include making more in-depth studies of specific plant groups. For example, during this period, several German researchers, academics, horticulturalists, and amateur naturalists developed a strong interest in selected representatives of the *FSA* region, which abuts the *CFA* region in the northwest along the Cunene (also spelled Kunene) River. Especially the succulent flora of the *FSA*, more specifically the near-endemic *Aizoaceae* (mesembs), piqued the interest of successive generations of German researchers. Germans who researched the southern African flora and in some instances conducted fieldwork and collected in the *FSA* include Martin Heinrich Gustav Schwantes (1881–1960) (Schwantes 1954, 1957; see Shurley 1954: x–xiv for a partial bibliography of the botanical publications of Schwantes), Hermann Johannes Heinrich Jacobsen (1898–1978), best known for his influential lexica and handbooks on succulent plants that were also translated into English (Jacobsen 1935, 1939, 1977, 1986), Arthur Tischer (1895–2000) and Herbert Straka (1920–2009) in Kiel; Friedrich Wilhelm Kesselring (1876–1966) and Josef Anton Huber (1899–1974) in Darmstadt; Otto Heinrich Volk (1903–2000) (Glen & Perold 2000, 2001) in Würzburg; Heinz Diedrich Wulff (1910–1983) in Saarbrücken; and Hans-Dieter Ihlenfeldt (1932–), who was inspired by Straka to work on the *Aizoaceae*, and many of Ihlenfeldt’s students in Hamburg (Ihlenfeldt 2004, Smith 2004).

Several German-born researchers who emigrated to and lived in southern Africa, or at least spent long periods of time on the African continent, also had a significant interest in the regional flora, again with a strong focus on the *Aizoaceae*, among several other succulent plant groups. These include Moritz Kurt Dinter (1868–1945), a prolific author and the ‘Father of Namibian Botany’ (see for example Dinter 1923), Rudolf Marloth (1855–1931), best known for his multi-volume, illustrated *Flora of South Africa* and after whom the Marloth Medal of the Botanical Society of South Africa is named, and Adolar Gottlieb Julius ‘Hans’ Herre (1895–1979) (Herre 1971, Gunn & Codd 1981). After South West Africa (now Namibia) became a German colony, settlement as well as the botanical exploration of that part of Africa by Germans increased considerably. The explorers included Adolf Lüderitz (1834–1886), Eduard Fleck (fl. 1888–1890), Hans Schinz (1858–1941, a Swiss national

who participated in a German expedition), Moritz Kurt Dinter (1868–1945), and Fritz Schäfer (1881–1931) (for details see Gunn & Codd 1981). During this period a small number of Germans crossed the Cunene River and settled in Angola. This northerly movement increased after Germany lost colonial power in Namibia after WWI, with many German settlers moving to Angola after 1920/21, especially to the area of Libolo following an invitation from José Inácio da Silva who was then the interim Governor of Angola (Figueiredo 2016: 84). In December 1957 Hermann Merxmüller (1920–1988) was instrumental in initiating the *Prodromus einer Flora von Südwestafrika*, which served as a preliminary *Flora for Namibia*. He visited southern Africa on five occasions between 1957 and 1977 and made extensive collections in Namibia as well as in other parts of the subcontinent (Gunn & Codd 1981: 251). From 1955 Merxmüller was Director of the Botanische Staatssammlung München, and also Professor of Systematic Botany, Director of the Institute of Systematic Botany of the University of München from 1958. Today the Munich Herbarium (M) houses the most important collection of plants from Namibia outside that country. Giess (1989: 115) provides a list of his publications on the flora of Namibia.

### Overview of the botanical exploration of Angola from 1800 to 2000

The most intense period of German collecting activity in Angola occurred from the early-1870s to 1900, which coincided with the publication of some of the early volumes of the *Flora of Tropical Africa (FTA)*. The region referred to as ‘Lower Guinea’, region 4 in the *FTA*, was defined as ‘Western tropical Africa, from Cape Lopez southward to the tropic of Capricorn, including Congo, Angola, Benguella, and Mossamedes’ (Oliver 1868: vii; see

p. vii–viii for the full geographical coverage of the project that comprised six principal regions). During the first few decades of the 1900s until the mid-1900s, collecting activity in Angola in general remained intense, with a large group of collectors from a range of nationalities operating independently in the country. From the 1960s until the end of the 20th century collecting activity was negatively impacted by civil war in Angola and was, at best, sporadic. During the early 21st century, following the cessation of hostilities in Angola’s civil war, collecting in the country has been resumed (see Goyder & Gonçalves 2019 for recent collectors).

#### 1800–1850

During the first half of the 19th century, three individuals are known to have collected plant material in the territory that now forms part of Angola: the Portuguese colonial administrator Joaquim José da Silva (dates unknown, died between 1808 and 1817), the Norwegian physician Christen Smith (1785–1816), and the British naval surgeon Andrew Beveridge Curror (1811–1844) (Figueiredo & Smith 2020). One German botanist by the name of Wrede was active in Angola at that time but none of his collections (if any were made) has been located.

#### 1851–1872

In 1853, under contract to the Portuguese government, the Austrian Friedrich Martin Joseph Welwitsch (1806–1872) started an eight-year sojourn in Angola that would result in over 10 000 collections (Dolezal 1974, Albuquerque et al. 2009). Shortly after Welwitsch left Angola, José Alberto de Oliveira Anchieta (1832–1897) disembarked in the region in 1864. He undertook an exploration that lasted until his death on Angolan soil more than 30 years later (Figueiredo et al. 2019). At that time, the

**Table 1** German expeditions to Angola from 1873 to 1900 during which plant collections were made. The names of the collectors are given in **bold** (\* = doubtfully).

Main participants	Dates of expedition	Sponsor
<b>A. Bastian</b>	1873	
<b>P. Güssfeldt</b> von Görschen H. von Hattorf J. Falkenstein O. Lindner <b>H. Soyaux</b> <b>M.E. Pechuël-Loesche</b> <b>A. von Mechow</b>	1873–1876	Deutsche Gesellschaft zur Erforschung Äquatorial-Afrikas
A. von Homeyer <b>H. Soyaux</b> <b>A.E. Lux*</b> <b>P. Pogge</b>	1874–1876	Deutsche Gesellschaft zur Erforschung Äquatorial-Afrikas
<b>B.L.H.O. Schütt</b> P. Gierow	1877–1879	Afrikanische Gesellschaft in Deutschland
<b>M. Buchner</b>	1878–1882	Afrikanische Gesellschaft in Deutschland
<b>A. von Mechow</b> <b>J.E. Teusz</b> Bugslag	1879–1881	Deutsches Reich (German Reich)
<b>P. Pogge</b> <b>H. von Wissmann*</b>	1880–1884	Afrikanische Gesellschaft in Deutschland
<b>H. von Wissmann*</b> L. Wolf C. von François F. Müller H. Müller Bugslag Schneider Meyer	1883–1887	King Leopold II of Belgium
E. Schulze W. Wolff <b>O.A.R. Büttner</b> R. Kunth H. Tappenbeck	1884–1886	Afrikanische Gesellschaft in Deutschland
P. van der Kellen <b>H. Baum</b>	1899–1900	Kolonial-Wirtschaftliches Komitee, Companhia de Mossamedes, and the South West-Africa Company

couple Joaquim John Monteiro (1833–1878) and Rose Monteiro (1840–1897), were also living in Angola and collecting plant specimens (Gossweiler 1939). One German botanist, G. Wilhelm Ackermann (c. 1837–1862) was recorded as having been active in Angola during this period but none of his collections (if made) has been located.

#### 1873–1880

From 1873 to 1880 numerous expeditions took place to Angola. In 1873 Germans initiated their first collecting activities in the country that resulted in material being sent to Europe. From then to the end of the century, exploration and collecting activity flourished in Angola, with these being undertaken by individuals from different nationalities. Expeditions that mostly had underlying political, expansionist, or commercial agendas, were purportedly aimed at facilitating geographical and scientific discoveries and inevitably often resulted in plant material being collected. Several German expeditions were made between 1873 and 1885 (Table 1). These expeditions additionally resulted in the production of an extensive body of literature, and their purposes, conditions, and outcomes have been the subject of exhaustive research by Heintze (1999a–c, 2007, 2010, 2011, 2018). Not to be outdone by the collecting activities of other countries, the Portuguese followed with their own initiatives, with Alexandre Alberto da Rocha de Serpa Pinto (1846–1900), Hermenegildo Carlos de Brito Capello (1839–1926), and Roberto Ivens (1850–1898) initiating their first expedition to Angola in July 1877.

#### 1881–1900

During the final two decades of the 19th century, while further expeditions were undertaken by the Germans (see Table 1), the Portuguese continued their exploration of the country. Capello and Ivens undertook a further expedition in 1884, and in the same year Henrique Augusto Dias de Carvalho (1843–1909) and Agostinho Sizenando (or Sesinando) Marques (1847–1923) embarked on an expedition that lasted until 1888. Individuals such as Francisco Newton (1864–1909), Henry ('Harry') Hamilton Johnston (1858–1827), and Hans Schinz (1858–1941) also collected in Angola at the time, as did several missionaries such as Benedictus Marius Bonnefoux (1861–1937), José Maria Antunes (1856–1928), and Charles Victor Aubert Duparquet (1830–1888) (Figueiredo et al. 2019). During the 1890s further independent collectors were active, among them the German missionary August Wulfhorst (1861–1936) (Figueiredo et al. 2013). At the turn of the century, the last major German collecting expedition, undertaken by Hugo Baum (1866–1950), took place in Angola.

#### 1901–1950

The first half of the 20th century was a period of intense activity in Angola with a large group of several dozen collectors being known to have operated independently in the country. In 1927 and 1937 two Portuguese expeditions were undertaken by the University of Coimbra (Paiva 2005). These would be the basis for the *CFA* project (Carriso 1937). However, as a result of the death of its leader, Luiz Wittnich Carriso (1886–1937), during the second expedition, the project did not flourish as expected. Two years later, World War II (WWII) also put the project on hold for several years. The second fascicle of the first volume of the *Conspectus* was only published 14 years after the first fascicle appeared in print (Exell & Mendonça 1951). Other projects, such as geological, agronomical, and anthropological surveys, known as *Missões*, were then developed in Angola, and several colonial services were established. This resulted in an increase in the number of collections, which were often made in association with those activities. During the period 1901–1950, an outstanding collector, for the number and quality of his collections as well as his scientific productivity, was the

Swiss John Gossweiler (1873–1952). He was active in Angola from 1899 until his death, collecting over 14 600 numbers in all the provinces of the country (Exell 1952, Martins 1994).

Many collectors from diverse nationalities operated in Angola at the time. They were participants in projects developed by foreign governments and institutions or were curious travellers or settlers. Among these collectors were nine Germans (Table 2). One of them, Bertha Fritzsche (1863–unknown), was the first woman collector recorded for Angola. An earlier woman collector, the Portuguese Maria Chaves (fl. 1886–1889), was active in the Congo River area but may have only collected material in what is now D.R. Congo (Figueiredo et al. 2019).

#### 1951–2000

In the second half of the 20th century collecting in the context of the *CFA* resumed with two expeditions undertaken by Eduardo José dos Santos Moreira Mendes (1924–2011) from 1955 to 1956 and from 1959 to 1960 (Smith & Figueiredo 2011, Smith et al. 2012). The period was one of intense collecting by colonial institutions with the intention being to create new and enrich existing collections in local herbaria. Among the numerous collectors, the agronomist Joaquim Martinho Lopes de Brito Teixeira (1917–1969) implemented broadbased collecting activities in Angola and played a pivotal role in expanding the herbarium in Huambo (LUA) (Garcia 1970). During his relatively short career he amassed a total of over 13 000 numbers, a figure that includes many specimens collected by other participants in group expeditions. With the start of the Angolan War of Independence in 1961, collecting activities

**Table 2** Chronology according to the period (3rd column) during which 29 German nationals (one, G. Forst, was likely Swiss) actively collected botanical specimens in Angola during the 19th and 20th centuries, up to the year 2000. The numbers in the 1st column are non-sequential and refer to the numbers under which the collectors are treated in this paper. In the text the collectors are discussed in alphabetical sequence according to their surnames.

#	Name (birth–death)	Fl. in Angola
19th century		
28	Wrede (unknown–1842)	1841, possibly
1	Ackermann, G.W. (c.1837–1862)	1862, possibly
2	Bastian, A. (1826–1905)	1873
11	Güssfeldt, P. (1840–1920)	1873–1875
24	Soyaux, H. (1852–1928?)	1874–1876
21	Pechuël-Loesche, M.E. (1840–1913)	1874–1876
19	Naumann, F.C. (1841–1902)	1874, possibly
17	Lux, A.E. (1847–1908)	1875, doubtfully
22	Pogge, P. (1839–1884)	1875–1876; 1881–1884
23	Schütt, B.L.H.O. (1843–1888)	1877–1879
18	von Mechow, F.W.A. (1831–1890)	1878–1881
26	Teusz, J.E. (1845–1912)	1878–1881
6	Buchner, M. (1846–1921)	1878–1881
27	von Wissmann, H. (1853–1905)	1881–1884, doubtfully
13	Hoepfner, K. (1857–1900)	1882–1883
7	Büttner, O.A.R. (1858–1927)	1884–1885
29	Wulfhorst, A. (1861–1936)	1894–1898
3	Baum, H. (1866–1950)	1899–1900
20th century		
10	Fritzsche, B. (1863–unknown)	1902–1905
5	Brühl, L.J. (1870–unknown)	1922
14	Hundt, O. (1878–unknown)	1930–1935
15	Jessen, O. (1891–1951)	1931
20	von Nolde, I. (1889–1970)	1932–1938
4	Boss, G. (1903–1972)	1932–1937; 1954–1955
16	Jordan, H.E.K. (1861–1959)	1934
12	Hauser, W. (unknown)	1935
8	Estermann, C. (1895–1976)	1940
25	Stopp, K.D. (1926–2006)	1959–1960
9	Forst, G. (unknown)	1966–1974

became difficult but continued until c. 1973 under the auspices of colonial services. By 1975, when Angola became independent, most colonial employees had left the country. From then on until the end of the century a civil war raged in Angola and collecting was sporadic. Two German collectors, Georg Boss (1903–1972) and Klaus Dieter Stopp (1926–2006), are known with certainty to have been active in Angola between 1951 and the mid-1970s.

## CATALOGUE OF GERMAN PLANT COLLECTORS IN ANGOLA WITH BIOGRAPHICAL AND ASSOCIATED INFORMATION

We catalogued a total of 24 individuals who definitely collected plants in Angola during the 19th and 20th centuries, up to the year 2000 (Table 2). Additionally, five collectors who were active in Angola but for which collections have not been located or were made by someone else, and a further three collectors, who are sometimes cited as having collected material in Angola but did not do so, are also briefly discussed. The catalogue is presented in alphabetical order according to the collectors' surname.

Biographical and collecting information (dates, provinces, localities, collections, and herbaria holding exsiccata) on these collectors is provided. Itineraries of localities where, and dates on which, three collectors, M. Buchner (Table 3), R. Büttner (Table 4), and P. Pogge (Table 5) collected plant specimens in Angola and, if applicable, slightly beyond, for example in the D.R. Congo, are provided.

### 1. G. Wilhelm Ackermann (c. 1837–1862)

#### *Biographical sketch*

Born Breslau, Germany (now Wrocław, Poland), c. 1837 – Died Luanda (?), Angola, 19 April 1862. After studying horticulture at the *Ecole d'Horticulture de Gendbrugge* in Belgium he travelled to Africa as an employee by the renowned nurseryman Louis Benoît van Houtte (1810–1876). Ackermann embarked on this journey in Ghent, Belgium, in May 1860. On the island of São Tomé (São Tomé e Príncipe, in the Gulf of Guinea) he met his fellow countryman Gustav Mann (1836–1916), a gardener and collector employed by the Royal Botanic Gardens, Kew. Mann explored the Gulf of Guinea region from 1859 to 1862, amassing magnificent collections for Kew. He was the first European to climb Mt Cameroon (in Cameroon) and Clarence Peak (in Bioko, Equatorial Africa) and the first to collect at the Pico de São Tomé (Exell 1944). Ackermann was hosted by the Governor of São Tomé and stayed on the island for ten months. He sent material of horticultural interest to Europe, such as the plant that would be known as *Musa vittata* G.W.Ackermann ex Rodigas. In December 1860 Ackermann also met Friedrich Welwitsch (see Introduction) in São Tomé. Welwitsch was on his way back to Portugal after his seven-year sojourn in Angola. During his brief stay in São Tomé, the indefatigable Welwitsch made several collections and was accompanied in the field by Ackermann. Afterwards, the young gardener wrote a letter to the 54-year-old Welwitsch commenting how surprised he had been to see Welwitsch “with such a wound, climb the branches of a tree” (letter quoted in Dolezal 1974: 147). On 11 October 1861 Ackermann left São Tomé and sailed for Luanda, Angola. As a means of introduction to the local Governor he carried a handwritten letter from the King of Portugal D. Pedro V (1837–1861). Support was guaranteed, and furthermore he became acquainted with the influential merchant and slave trader Francisco António Flores (dates of birth/death unknown) who could facilitate the exploration of the interior. However, six months later, on 16 April 1862 Ackermann suddenly fell ill with

fever, dying three days later. The Flores family administered the last rites. It is not known if Ackermann died in Luanda or in Ambriz (in Bengo), where Flores also had business interests and lived part time. Ackermann's name appeared in association with '*Musa vittata* W.Ackm. ex Rodigas', IPNI ([www.ipni.org](http://www.ipni.org)), without any details for that author abbreviation until it was corrected in July 2020. G. Wilhelm Ackermann is not to be confused with George Ackermann who actively collected plants in South America during 1826–1831 and is commemorated in the names of some succulents.

#### *Collecting activity in Angola*

It is likely that Ackermann collected living material in Angola for sending to Van Houtte in Belgium. It is not known if he prepared any herbarium specimens; none could be located.

#### *References*

Koch 1862, Rodigas 1862, Exell 1944, Dolezal 1974, Ferreira 2015.

### 2. Adolf Bastian (1826–1905) — Fig. 1

#### *Biographical sketch*

Born Bremen, Germany, 26 June 1826 – Died Port-of-Spain, Trinidad, Trinidad and Tobago, while travelling, 3 February 1905. Bastian, the son of a Bremen merchant, studied law, natural history, and medicine at five universities: law in Heidelberg, biology in Berlin, Jena, and Würzburg, and obtained a doctor's degree in medicine in Prague in 1850. In the same year he started his first overseas travels as a naval surgeon on a voyage to Australia. This voyage lasted eight years, from 1851 to 1859. During that time he visited Australia and the Pacific, South and Central America, and Asia, and on the return journey, West Africa, including Angola in 1857. During the rest of his life he travelled extensively world-wide, amassing a large collection



**Fig. 1** Adolf Bastian. 1892. Author Benque & Kindermann, Hamburg. Public domain. [https://commons.wikimedia.org/wiki/File:Adolf\\_Bastian\\_1892\\_Benque\\_%26\\_\(...\)\\_Benque\\_%26\\_btv1b10500763h.jpg](https://commons.wikimedia.org/wiki/File:Adolf_Bastian_1892_Benque_%26_(...)_Benque_%26_btv1b10500763h.jpg).

of ethnographical objects and authoring voluminous documents. Nevertheless, of this first journey only one publication is known, *Ein Besuch in San Salvador*, on the capital of the kingdom of Kongo (now Mbanza Congo, Angola). In 1867 Bastian obtained his habilitation in ethnology at Berlin University and a year later he was appointed to curate the ethnological and prehistoric collections of the Royal Museum of Berlin. In 1873 he succeeded in establishing the *Königliches Museum für Völkerkunde* (now the *Ethnologisches Museum*) in Berlin and became its first director. In the same year he was among the founders of the *Deutsche Gesellschaft zur Erforschung Äquatorial-Afrikas* (later the *German Afrikanische Gesellschaft*) that also financed his third voyage, in 1873, an expedition to Loango in West Africa. This third trip aimed at advancing further into the interior of the continent from the Loango coast, but this aim was not achieved. From July 1873 to 12 October 1873, Bastian visited several local Dutch factories (a factory – in Portuguese, *feitoria* – was the term then used for a trading post) and made a few excursions inland, to the Loango and Congo Rivers up to Boma (D.R. Congo) and collected a few specimens of medicinal plants. He became known as one of the ‘founding fathers’ of ethnology in Germany (Heintze 1999b: 108).

#### Collecting activity in Angola

Dates: July 1873–12 October 1873; possibly also in 1857.

Provinces visited: Bengo, Zaire (1857); Cabinda (1873).

Localities: Unknown.

Herbaria: B (c. 30 numbers of medicinal plants, from 1873).

Collections: In 1857 Bastian travelled from Ambriz to Mbanza Congo (Zaire province) but no collections are recorded. In 1873 he travelled in Cabinda, from Loango to Boma (D.R. Congo) (fide Heintze 1999b: 460, 2007: 461), collections from this trip were recorded by Urban (1916). It is unknown whether any of these have survived; no records were found in databases.

#### References

Bastian 1859, Tylor 1905, Urban 1916: 327, Plischke 1953, Henze 1978 vol. 1: 191–193, Heintze 1999b: 108–124, 2007: 104–120.

### 3. Hugo Baum (1867–1950) — Fig. 2, 3

#### Biographical sketch

Born Forst, Niederlehmsitz, Germany, 17 January 1867 – Died Rostock, Germany, 15 April 1950. Baum was educated in Guben on the Neisse River (then in Brandenburg, Germany; now partly in Germany and in Poland) and afterwards trained as a gardener in Nettkow and in Proskau (Silesia; then in Germany; now Poland). After doing military service he became a gardener at the Berlin Botanical Garden, remaining there for 10 years, before he was appointed as head gardener at the Botanical Garden of Rostock University in 1901. In 1926 he was promoted to *Gartenoberinspektor* (head inspector of the garden) and retired in 1933. Baum undertook two expeditions: from 1899 to 1900 to Angola (see below) and in 1925 to Mexico. In 1899 he was invited to participate as botanist in the *Kunene-Sambesi-Expedition* under the leadership of Pieter van der Kellen. This expedition was arranged under the auspices of the *Kolonial-Wirtschaftliches Komitee* (Berlin, Germany), the *Companhia de Mossamedes* (Paris, France), and the *South West-Africa Company* (London, Great Britain) to evaluate the economic potential of southern Angola. One of the stated aims of the expedition was the zoological and botanical exploration of the region. On 11 August 1899, with three ox-wagons, the expedition left Moçâmedes (Namibe) from where it headed to the Cunene, Cubango, Cuito, and Cuando Rivers. After reaching the region beyond the Cuito River the expedition embarked on the return journey on 4 April 1900 and arrived back at Moçâmedes on 26 June 1900. Afterwards Baum worked on his collections and authored the travel report of the expedition that was published in Warburg (1903). A list of extant Baum specimens, a detailed itinerary and a list of collecting localities including coordinates were included in Figueiredo et al. (2009). Baum is commemorated in over 70 scientific names, including two genera: *Baumiella* Henn. (Pyrenomycetes; *Baumiella* H.Wolff, nom. illeg., is a synonym of *Berula* W.D.J.Koch, *Apiaceae*) and *Baumia* Engl. & Gilg (*Orobanchaceae*), the latter being endemic to Angola.

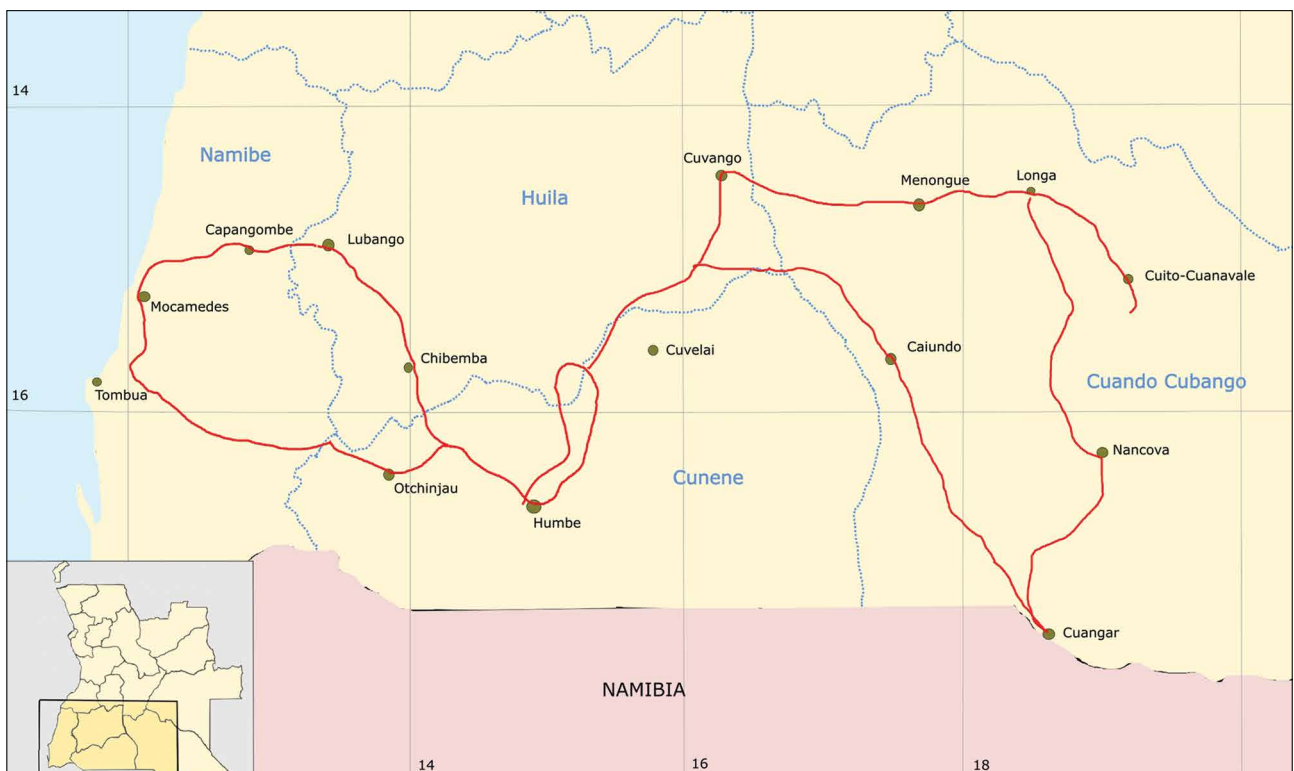
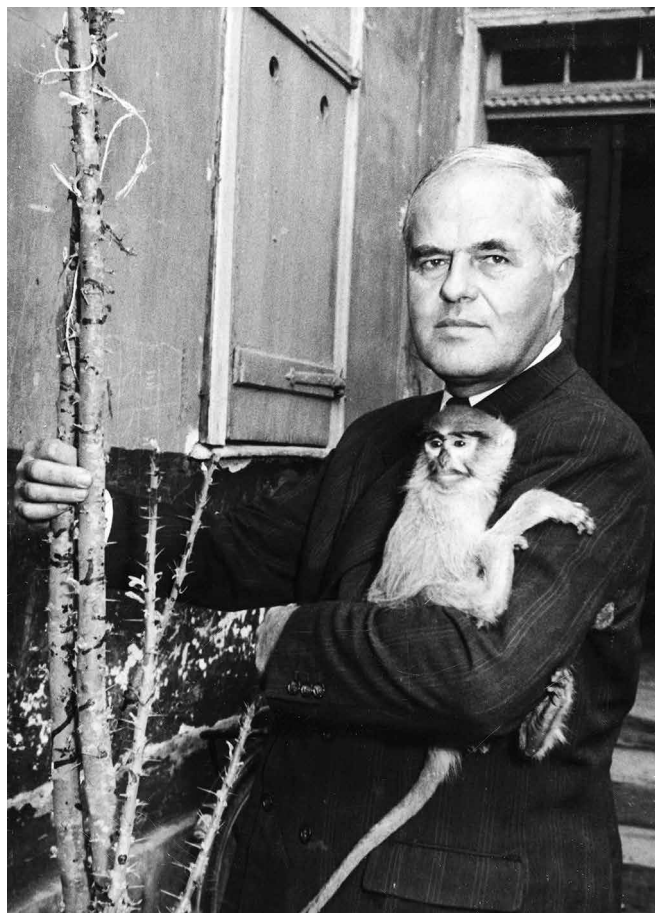


Fig. 2 Itinerary of the expedition of Hugo Baum in Angola from 11 August 1899 to June 1900.



**Fig. 3** Hugo Baum. 1926. Photographer unknown. Property of the Baum family, reproduced by Peter A. Mansfeld – <http://www.level6.de>. CC BY-SA 3.0 de. <https://commons.wikimedia.org/w/index.php?curid=21289576>.



**Fig. 4** Georg Boss with the monkey Lola, c. 1956. Photographer unknown. Property of the Boss family. Reproduced with permission.

#### Collecting activity in Angola

Dates: 11 August 1899–June 1900.

Provinces visited: Cuando Cubango, Cunene, Huíla, Namibe.

Localities: Numerous localities along the route from Moçâmedes to the Cuito Cuanavale via Humbe and Caiundo, and on the return journey via Menongue and Lubango.

Herbaria: B (1 016 numbers, first set, partly destroyed), BM, BR, COL, E, G, K, M, NY, P, S, W, Z.

#### References

Baum 1903, Warburg 1903, Urban 1916: 327, Gossweiler 1939, Bossard 1993, Heintze 1999b: 125–128 (name given as 'Hermann' instead of Hugo), 2007: 121–124, Romeiras 1999, Figueiredo et al. 2008, 2009, Mansfeld 2012.

#### 4. Georg Boss (1903–1972) — Fig. 4

##### Biographical sketch

Born Biebrich (at present Wiesbaden), Germany, 31 October 1903 – Died Wiesbaden, Germany, 13 May 1972. From 1922 he studied natural science at Frankfurt University and graduated with a PhD on the cytology of *Ustilaginales* in 1927. From 1931 to 1937 he worked as a teacher at the German high school in Swakopmund, Namibia. During his stay in Namibia he undertook several trips to Angola and made plant collections in both countries. He returned to Germany and served as an officer in the German Luftwaffe during WWII. After the War he lived in Wiesbaden and had various occupations: farmer, copywriter for the German Weather Service, organist, wine dealer, and cultivator of medicinal plants. He returned to Angola in February 1954 with an expedition of the *Deutsche Forschungsgemeinschaft* which included the ethnologist Hermann Baumann (1902–1972;

Braun 1995) and a geography student, Manfred Topp. They travelled mostly in southwestern Angola. In Lubango (Huíla) they met the missionary and fellow ethnologist and plant collector, Estermann (see there), who arranged for them to visit Chitundo-Hulu, c. 12 km east of Capolopopo (Namibe), which is known for its pre-historic rock art. They also visited Caluquembe (Huíla) and Quibala (Cuanza Sul). Ten years earlier, Boss and Baumann had published a paper on the prehistoric stone graveyards of Quibala. Plant collections from this expedition were sent to Munich. In Wiesbaden he always lived at the same address in his parent's house and remained unmarried. Boss published some articles on the Namibian flora and indigenous stone buildings in Angola. He is commemorated in names such as *Blepharis bossii* Oberm. (*Acanthaceae*), presently treated as a synonym of *B. obmitrata* C.B. Clarke and *Hydrodea bossiana* Dinter, which is treated as a synonym of *Mesembryanthemum cryptanthum* Hook.f.; *Aizoaceae*. The designation '*Aizoanthemum bossii* Dinter ex Friedrich', nom. nud. (*Aizoaceae*) was not validly published (Hartmann 2017: 41).

##### Collecting activity in Angola

Dates: During the periods 1932–1937 and 1954–1955.

Provinces visited: Benguela, Cuanza Norte, Cuanza Sul, Cunene, Huíla, Namibe.

Localities: Cuanza River, Libolo (S10° E15°) (Cuanza Sul), Moçâmedes (S15°11' E12°09') (Namibe), Xangongo (S16°45' E14°59') (then Roçadas, Cunene).

Herbaria: B, BM, K, M, PRE.

Collections: Hertel & Schreiber (1988) indicate 600 numbers collected by Boss in Angola 1954/55. Notes on locality and plant use plus a determination list exist in M. Thirty collections of *Poaceae* and *Fabaceae* that were made in July 1936 and August 1937 are recorded in the Plants of Southern Africa



database (POSA 2020). Two further herbarium records that are dated July 1936 are databased and imaged at Kew Herbarium Catalogue (2020). A third record from December 1936 may also refer to Georg Boss, but the collector is recorded as F. Boss.

#### References

Boss 1927, Gossweiler 1939, Gunn & Codd 1981, Bossard 1993, Romeiras 1999, Figueiredo et al. 2008, Heintze 2010, Brandstetter & Hierholzer 2017, University Archive Frankfurt/M. (UAF Abt. 604, Nr. 6390, Abt. 146 Nr. 423).

### 5. Ludwig Julius Brühl (1870–unknown)

#### Biographical sketch

Born Breslau, Germany, 17 August 1870 – Date and place of death unknown. From 1889 to 1895 Brühl studied zoology and medicine at the University of Berlin. He became a medical doctor in 1898. After an assistantship at the physiology institute Brühl entered the *Institut für Meereskunde* of the University of Berlin in 1903, where he became curator in 1906 and where his speciality became ichthyology. He collected material for the *Museum für Meereskunde*, as well as for the Zoological and Botanical Museum Berlin, during several expeditions, such as in 1898 on the steam boat *Helgoland* to Svalbard and Bear Island, and from 1911 to 1912 while on the Dead Sea Expedition. In October 1922 he travelled to Angola to study the maritime resources of Namibe, after having been commissioned as a fisheries expert by the holding company *Companhia do Fomento Geral of Angola*. He made a small collection of 45 numbers of plants of the coastal deserts, including *Welwitschia* Hook.f. (*Welwitschiaceae*) that was deposited at the herbarium of the Botanic Garden and Botanical Museum Berlin-Dahlem (B), in Germany. Being of Jewish descent, he emigrated with his wife to Tanga, in Tanganyika Territory (now Tanzania) in 1934. He died in Tanzania on an unknown date (before 1953) and left his widow but no children.

#### Collecting activity in Angola

Dates: October 1922–June 1923.

Provinces visited: Namibe.

Localities: Moçâmedes (S15°11' E12°09').

Herbaria: B (first set; 45 numbers), PRE.

Collections: Most likely destroyed; a specimen of *Welwitschia* is extant in B.

#### References

Urban 1916: 333, Gossweiler 1939, Lanjou & Stafleu 1954, Bossard 1993, Romeiras 1999, Figueiredo et al. 2008, Archive of Museum für Naturkunde Berlin (Sign: ZM\_S\_III\_Bruehl), Archive of the Humboldt Universität Berlin (Sign: HUB, UA, Pers. B 457).

### 6. Maximilian Buchner (1846–1921) — Fig. 5–8; Table 3

#### Biographical sketch

Born Munich, Germany, 26 April 1846 – Died Munich, Germany, 7 May 1921. Max Buchner was a medical doctor who graduated from the University of Munich in 1870 and became a naval surgeon and explorer. He served as a voluntary medical doctor in the Franco-Prussian War (1870–1871). From 1872 he was a naval surgeon for the *Norddeutscher Lloyd* in service on the route to either New York or Baltimore, USA, and in the following year he became a 1st class assistant doctor with the merchant navy. As a consequence of getting involved in a duel he was arrested in 1874, and given a one-year sentence. While in prison he met von Wissmann (see there) who had been arrested for the same reason. After Buchner's release he worked on a British vessel, and travelled to New Zealand, Fiji, and Hawai'i. His interest in travelling prompted him to contact the *Afrikanische Gesellschaft in Deutschland* (German African

Society 1876–1887) to join one of their African expeditions. He studied geology in Munich and astronomy in Berlin, and thus prepared and undertook a four-year expedition to Angola. The purpose was to follow Pogge's (see there) itinerary and to meet the Mwat Yamv (in Portuguese *Muatiamvo*, *Muatiãnvua*, the King) in the Kingdom of Lunda. Buchner arrived in Luanda, Angola, on 5 December 1878 and continued along the usual route to the interior, up the River Cuanza to Dondo, where he met von Mechow (see there) on 23 December. Buchner then proceeded on foot and on 26 January 1879 again met von Mechow, this time at Pungo Andongo. They arrived together at Malanje on 30 January 1879. Preparations for the expedition to the Mwat Yamv took several months. While Buchner was stationed at Pungo Andongo he met Schütt (see there) who was on his way back from Lunda. Schütt gave him valuable advice and an itinerary map of his own journey. On 19 March 1879 Buchner also met Hermenegildo Capello (1841–1917) and Roberto Ivens (1850–1898). These two Portuguese explorers were camped north of Malanje, when Buchner arrived mounted on a *boi-cavalo* (an ox) accompanied by three or four Africans (Fig. 5). News had reached Buchner of the arrival of Capello and Ivens and he had wanted to meet them. Buchner additionally wanted to explore the Bango hill (behind the huts in Fig. 5). After having had lunch together, Buchner went up Bango hill following a path that was previously opened by Capello and Ivens. During his time in Malanje, Buchner collected several hundred numbers, some of which originated from Bango. On 22 July 1879, Buchner's expedition (that aimed to follow in Pogge's footsteps) departed with a party of 160 men. However, they followed a different route and itinerary to Pogge's, and rather headed north from a locality west of Mona Quimbundo. Buchner explored Lunda and the Cuango Valley reaching the *Musumb* (in Katanga, D.R. Congo), the capital of the Kingdom of Lunda, on 11 December 1879. Not being granted permission to continue further north, they returned six months later, in June 1880, using a more northern route. After entering present-day Angolan territory, they proceeded in a northwesterly direction. They passed the Cuango River near Cassanje in December 1880, and while proceeding slowly, arrived at Malanje on 28 February 1881. By then the expedition had been reduced to eight men. Buchner met Pogge, von Wissmann, von Mechow (see there), and Teusz (see there) in Malanje. After some rest,



Fig. 5 Maximilian Buchner meeting Hermenegildo Capello and Roberto Ivens at Bango, Malanje. By Severini. Reproduced from H. Capello & R. Ivens (1881) *De Benguella às terras de Yacca*.



Fig. 6 Painting of *Blepharis buchneri* Lindau (Acanthaceae) by Gisela Forst. Private collection of Reiner Mannhardt. Reproduced with permission.

he proceeded on foot towards the coast and arrived in Luanda in August 1881. On 1 September 1881, while in Luanda, he gave a presentation on the expedition. Henrique Dias de Carvalho (1843–1909), who would later also lead an expedition to the Mwat Yamv, was in the audience, as he was the secretary of the society that organised the presentation. On his way back to Europe, Buchner undertook an excursion on the Congo River, from Banana, where he landed on 6 October 1881, to the stations at Vivi and Isangila (D.R. Congo). He was back in



Fig. 7 Maximilian Buchner. Artist unknown. Public domain.

Berlin in January 1882. From July 1884–April 1885 Buchner was acting *Reichskommissar* in Cameroon, where he was met by Büttner (see there). In 1889 Buchner became director of the Museum of Ethnology in Munich, retiring in 1907. He published several reports on the expedition to Lunda but unlike the other German explorers, not a book. His writings have been compiled by Heintze (1999a). Buchner's carefully taken photographs numbered at least 60 and include the first photograph taken in the Kingdom of Lunda. This photograph is reproduced in Heintze (1999c). Most of these photographs have apparently not been preserved. Buchner is commemorated in numerous names of which he collected the types, for example *Blepharis buchneri* Lindau (Acanthaceae; Fig. 6).

#### Collecting activity in Angola

Dates: Collected during the period 5 December 1878 (arrival) to September/October 1881 (departure).

Provinces visited: Bengo, Cuanza Norte, Luanda, Lunda Norte, Lunda Sul, Malanje.

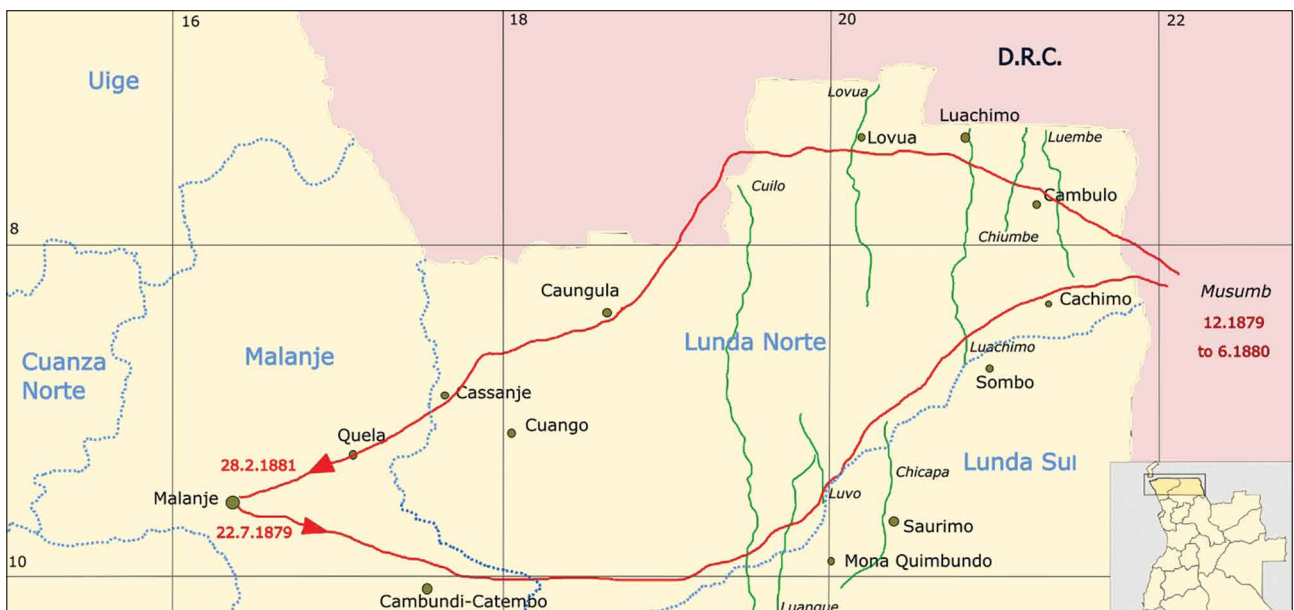


Fig. 8 Itinerary of the expedition of Maximilian Buchner in Angola from 22 July 1879 to 28 February 1881.

**Table 3** Localities and dates on which Buchner collected plant specimens in Angola, and in the D.R. Congo, based on collected material databased (with barcode indicated) or cited in the literature, and on Buchner's itinerary in Heintze (1999a: 38–39).

Number (specimen barcode)	Locality as originally recorded (translation)	Date(s) of collections (inferred)	Present-day name and locality. Notes
19 October 1878 – Left Hamburg, Germany 5 November 1878 – Left Lisbon, Portugal November 1878 – In São Tomé and Príncipe 5–20 December 1878 – In Luanda, Angola 23 December 1878 to 20 January 1879 – In Dondo 25–28 January 1879 – In Pungo Andongo Arrived at Malanje on 30 January 1879			
3	Malanje	Between March 1879 and June 1879	Angola, Malanje
81	Moorige Wiese unterhalb Moma, 1 1/2 Stunden nördlich von Malandsche (boggy meadow below Moma, 1.5 hours north of Malanje)	April 1879	Angola, Malanje. It cannot be the same place today known as Moma, which is east of Malanje. It could be a locality at S8°16' E15°53'
43	Cula Muchito	(1879)	Angola, Malanje, Culamuxito (S9°34' E16°16')
159	Malanje, Kanambue	June (1879)	Angola, Malanje, likely Canambua (S9°33' E16°21')
Left Malanje on 22 July 1879 22 July to 19 August 1879 – In the Songo area 26/27–29 July 1879 – In Sanza 28 August to 10 September 1879 – In Minungo area 27 August 1879 – Crossed the Cuango River 6 September 1879 – Crossed the Cucumbi River 11 September to 7 October 1879 – In Chokwe (Kioko, Quioco) area 14 September 1879 – Crossed the Cuilo River and proceeded in a NE direction to avoid Quimbundo 16 September 1879 – Crossed the Luangue River 19–22 September 1879 – Went along the Luvo River. and crossed it 27 September 1879 – Crossed the Luele River 1 October 1879 – Crossed the Chicapa River 6/7 October 1879 – Crossed the Luachimo River 22 October 1879 – Crossed the Chiumbe River c. 25 October 1879 – At the Luembe River Reached the <i>Musumb</i> on 11 December 1879. Left the <i>Musumb</i> in June 1880			
574	Kassambo	12 June 1880	Angola, Lunda Norte or D.R. Congo
501	Lunda, Kahungula	August 1880	Angola, Lunda Norte. According to the map of the Pogge & Wissmann Expedition, there was a locality by the Lovua River, at c. S7°25' E20°10'. Caungula as known today is at c. S7°48' E19°26'. Caungula is an ethnic group
512	Lunda, Tschimbang	18 August 1880	Likely Angola, Lunda Norte
543	Zwischen Ruemb und Tshidumbo häufig in der kleinblumigen Savanne (between Ruemb and Tshidumbo often in the small-flowered savanna)	August 1880	Angola, Lunda Norte, between the Luembe and Chiumbe Rivers (c. S7°23' E20°40')
618	Luatschimm	August 1880	Angola, Lunda Norte, Luachimo River
1 September 1880 – between Cassai (Kassei) and Luembe (“ungefähr 8° S. Br., zwischen 21° u. 22° O L.” fide letter in Museum f. Naturkunde Berlin, Zool. Mus. Mappe B III, Sign. SII Buchner)			
560	Am Luschiko-Ufer (on the banks of the Luschiko)	29 September 1880	Angola, Lunda Norte, Luxico River
525	Flusse Ruidu (Ruidu River)	October 1880	Angola, Lunda Norte or D.R. Congo, possibly Cuilo River
627	Kabuinia	1 November 1880	Likely Angola, Lunda Norte
699	Ohamba flumen (Ohamba River)	November 1880	Angola, Lunda Norte, Uamba River
694	Kitamba, Koango	8 December 1880	Angola, Lunda Norte, likely Quitamba (S9°15' E17°44')
611	Lundagebiet in der Hunger Savanne Kongolo (Lunda region in the Kongolo savanna)	–	Angola, Lunda
681	Lunda, Kamissamba	–	Angola? Lunda. Likely Kamissombe as appears in the map of Pogge & Wissmann's Expedition, near the Chicapa River, north of Saurimo
689	Lunda, at Muschi brook	–	D.R. Congo? Lunda
Passed the Cuango near Cassanje in December 1880. Arrived at Malanje on 28 February 1881			
572	Feira	12 April 1881	Likely Feira de Cassanje, Angola, Lunda Norte, that Buchner passed on his return (c. S9°00' E17°44'). However, on that date he was already at Malanje. Feira means market
571 (K000405705)	Felsen der Bango, savane (Bango rock, savanna)	April 1881	Angola, Malanje, Bango. A hill just north of Malanje as shown in Capello & Ivens (1881: vol. 2 opposite p. 41)

**Table 3** (cont.)

Number (specimen barcode)	Locality as originally recorded (translation)	Date(s) of collections (inferred)	Present-day name and locality. Notes
542	Vor dem Ostthor vom Malandsche (off the East Gate of Malandsche/Malanje)	May 1881	Angola, Malanje
550	Soba Bango	June 1881	Angola, likely Malanje. Soba means chief
631	Kibinde	12 June 1881	Angola, Malanje, likely Quibinda (c. S9°43' E16°08')
Left Malanje to Luanda in July 1881. In July and August 1881 marched towards Luanda via coffee plantations of Cazengo and Golungo			
630	Katete berg (Katete hill)	June 1881 (July?)	Angola, Bengo, Catete (S9°06' E13°41')
600	Ambaca	July 1881	Angola, Cuanza Norte
570	Lutete savane (Lutete savanna)	6 July 1881	Angola, Cuanza Norte, Lutete (S9°26' E15°58')
553	Kisolle	(1881)	Angola, Malanje, Quissol (S9°35' E16°27')
558	Caculo	(1881)	Angola, Malanje, likely Cacolo (S9°29' E16°02')
Arrived at Luanda in end of August 1881			
532	Loanda	(1881)	Angola, Luanda
Left Luanda in September/October 1881 6–14 October 1881 – In Banana (D.R. Congo) 25–16 (sic; erroneous for 26?) October 1881 – At Vivi (D.R. Congo) 31 October 1881 – Arrived in Isangila (D.R. Congo) End 1881 – Spent some weeks at Banana (D.R. Congo)			
506 (B 10 0159667)	Banana	(October 1881)	D.R. Congo, Banana
588 (K000379704)	Modeng	3 October 1881	Likely D.R. Congo
13 January 1882 – Arrived in Berlin			
<b>Date or locality may be wrong</b>			
338	Malanje	November	Angola, Malanje. He was not in Malanje during any month of November
s.n. (B 18 0004522)	Malanje	14 August 1879	Angola, Malanje. Date may be wrong; he left Malanje on 22 July 1879
113 (B 18 0008842)	Malanje, gr. Batanga	21 October 1889	Angola, Malanje. Date or locality is wrong in the B database

Localities: See Table 3.

Herbaria: B (first set; 396 numbers according to Urban 1916: 334, see below), BM, BR, COI, GH, K, L, P.

Collections: Buchner dispatched his collections to Berlin in at least three different consignments (Urban 1892). The first consignment included numbers up to 167. Of these, the numbers up to 159 (with a few exceptions) are from Malanje, and were collected up to July 1879. The second consignment consisted of numbers 168 to 500, and was also shipped to Germany before Buchner returned to that country in 1881. These numbers were lost in the English Channel where the ship carrying them was wrecked. As Buchner was stationed at the *Musumb* (now in territory of the D.R. Congo), for six months it is likely that he collected there; however, no records of material from that area were located, likely because most were included in the second consignment that was lost at sea. Buchner's third consignment of material consisted of 224 'species of phanerogams'. Urban (1916) recorded a total of 396 extant numbers at Herb. B. However, many specimens were subsequently destroyed during WWII bombing of Berlin and most do not have any duplicates. Twenty records are online (JSTOR Global Plants (2020) and Curators Herbarium B (2000+)) as being extant, of which 12 are imaged. Some of the numbering of the specimens does not appear to be chronological.

#### References

Buchner 1881, Capello & Ivens 1881, Urban 1892, 1916, Schnee 1920: 248, Gossweiler 1939, Maull 1955, Mendonça 1962, Henze 1978 vol. 1: 387–388, Essner 1985: 187, Bossard 1993, Romeiras 1999, Heintze 1999a–c, 2010, Figueiredo et al. 2008.

#### 7. Oskar Alexander Richard Büttner (1858–1927) — Fig. 9; Table 4

##### Biographical sketch

Born Brandenburg/Havel, Germany, 28 September 1858 – Died Berlin-Karlshorst, Germany, 11 September 1927. A naturalist and explorer. After graduating from the University of Berlin in 1883 in Chemistry and Natural Sciences and receiving his doctorate (Dr. phil.), Büttner was contracted by the *Deutsche Afrikanische Gesellschaft* to join the expedition to the Congo led by Eduard Schulze (1852–1885), with Willy Wolff (1852–unknown), Richard Kunth, and Hans Tappenbeck. The expedition left Hamburg on 1 August 1884. Among the ports of call were Cameroon, where Büttner met Buchner (see there), who was there as acting *Reichskommissar*, and Gabon where he made several collections with Soyaux (see there), who was then managing a local coffee plantation. Büttner arrived at Banana (D.R. Congo) on 13 November 1884. The expedition started at Tondoa (Tunduwa, or Underhill), an English mission station across from Vivi (both localities now in D.R. Congo), a few kilometres upriver from Nôqui (Zaire province, Angola). Schulze and Büttner set off for the capital of the Kingdom of Congo, then called San Salvador (now Mbanza Congo, Angola) on 12 December 1884. They arrived six days later, on the 18th, and remained there until the end of February 1885 while exploring the surrounding area. Büttner took a trip to Quedas do Mebridege, a three-day journey east of Mbanza Congo, where he collected some specimens in January 1885. On 15 February 1885 Schulze died of malaria and the remaining team split, with Büttner and Wolff travelling separately and following different routes. On 12 April 1885 Büttner attempted to reach the Cuango

River with a few local porters, but only managed to proceed as far as Quisulo (Uíge province, Angola). He eventually returned to Mbanza Congo. On 27 June 1885 Büttner initiated a second attempt to reach the Cuango River, this time with a group of 80 porters from Loango. By July 1885, after passing Quisulo and Maquela do Zombo, Büttner crossed the Cuango River near its confluence with the Cuilo River (at c. S5°50' E16°20'), so leaving the territory of present-day Angola. He proceeded on the right bank of the Cuango and reached Mwene Mputo Casongo (in Portuguese, Muene Puto Cassongo), the residence of the chief of the Yaka, in the region of Kasongo-Lunda (Kwango, D.R. Congo) on 27 July 1885. Büttner remained there until 12 August and then returned, following the left bank of the Kwango River in a northerly direction, towards the Congo River, which he then followed downriver, on the left bank, to Stanley Pool (Malebo Pool), arriving at Leopoldville (Kinshasa, D.R. Congo) on 20 September 1885. He was stationed there for a while and conducted some excursions up- and downriver, and

in Leopoldville he also met von Wissmann (see there). Büttner returned to Europe on 3 April 1886. He wrote an account of the expedition and published several new species based on his collections (Büttner 1890b, 1891). In 1890 he went to Togo to direct a research station in Bismarckburg and – after the end of his contract in 1891 – returned to Berlin to take up a teaching position until September 1923. His personal file as a teacher is deposited at *Bibliothek für Bildungsgeschichtliche Forschung* ([archivdatenbank.bbf.dipf.de](http://archivdatenbank.bbf.dipf.de)). He never married. Büttner is commemorated in numerous names, including *Aloe buettneri* A. Berger (*Asphodelaceae*), of which he had collected the types. Many of his specimens were destroyed during the WWII bombing of Berlin.

#### Collecting activity in Angola

Dates: According to Mendonça (1962), Büttner's itinerary from November 1884 to September 1885 was restricted to present-day Angolan territory. However, it is clear from Büttner's accounts that he crossed the Cuango River to what is now D.R.

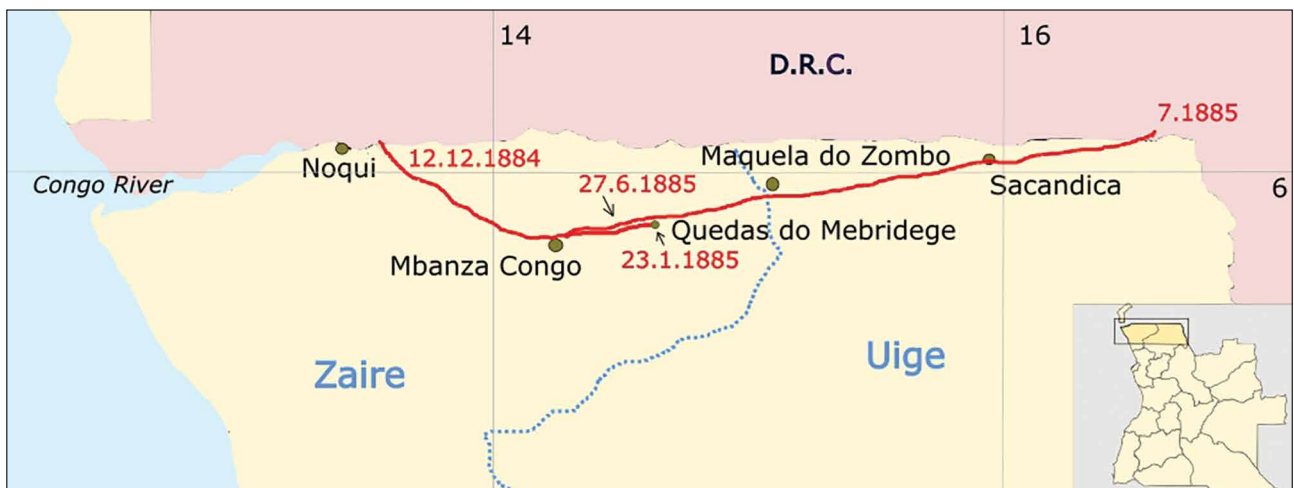


Fig. 9 Itinerary of the expedition of Richard Büttner in Angola from 13 November 1884 to July 1885.

Table 4 Dates on which and localities from where Büttner collected plant specimens in Angola, and in the D.R. Congo, based on material databased or cited in the literature.

Number (specimen code)	Locality as originally recorded (translation)	Date(s) of collections (inferred)	Present-day name and locality. Notes
Disembarked at Banana on 13 November 1884 and continued upriver to Tunduwa (D.R. Congo).			
341 (GOET009252428)	Tondoa (Underhill) am unteren Kongo (Tondoa (Underhill) on the lower Congo)	Between 20 November 1884 and 1 December 1884	D.R. Congo, across the Congo River from Vivi
Left Tunduwa on 12 December 1884. Arrived at Mbanza Congo (Angola) on 18 December 1884			
455 (K000263126)	San Salvador	Between 24 December 1884 and 6 January 1885	Angola, Zaire, Mbanza Congo (S6°16' E14°14')
Excursion to Quedas do Mebridege on 23 January 1885			
610 (B 20 0089185)	Arthingtonfällen (Arthington Falls)	23 January 1885	Angola, Zaire, Quedas do Mebridege (c. S6°10' E14°40')
Left Mbanza Congo on 27 June 1885. Crossed the Cuango on July, leaving Angola. Reached Mwene Mputo Casongo on 27 July 1885			
460 (K000394729)	Muene Puto Kassongos Stadt (Town of Muene Puto Kassongo)	Between 31 July 1885 and 2 September 1885	D.R. Congo, region of Kasongo-Lunda
Left Muene Puto Kassongo on 12 December 1885 along the Kwango River to the Congo River			
356 (K000419178)	Quango, Mayakkalande	12 August 1885	D.R. Congo, Kwango River
25 (BR0000006494377)	Congo ad Bolobo et Lukolela (Congo at Bolobo and Lukolela)	8 (October) 1885	D.R. Congo, Congo River, Lukolela and Bolobo
Arrived at Kinshasa on 20 September 1885			
559 (B 10 0167297)	Stanley Pool	28 October 1885	D.R. Congo/Rep. Congo, Malebo Pool
449 (K000405656)	Leopoldville	5 January 1886	D.R. Congo, Kinshasa

Congo in July 1885; therefore his stay in Angola was shorter. He collected during the period December 1884 (after the 12th) to July 1885 (before the 27th).

Provinces visited: Uíge, Zaire.

Localities: See Table 4.

Herbaria: B (first set), BM, G, GOET, H, LE, M, P, W.

Collections: Urban (1916) stated that 615 numbers collected by Büttner from 1884 to 1886 were received at Herb. B. This corresponds to material from Gabon, Angola, and D.R. Congo. As Büttner's numbering is not chronological, the date is important to establish the locality. Fourteen specimens are imaged online (JSTOR Global Plants 2020). Many of his Berlin specimens were destroyed in 1943 during the WWII bombing.

#### References

Büttner 1890a, b, 1891, Urban 1916, Schnee 1920: 262, Gossweiler 1939, Mendonça 1962, Henze 1978 vol. 1: 436–437, Essner 1985: 187, Bossard 1993, Stafleu & Mennega 1995: 210, Romeiras 1999, Heintze 1999b: 180–191, 2010, Frahm & Eggers 2001: 62, Figueiredo et al. 2008, Wagenitz 2009, Grace et al. 2011.

### 8. Carlos Estermann (1895–1976)

#### Biographical sketch

Born Illfurth, Alsace (then Germany), France, 26 October 1895 – Died Lubango, Angola, 21 June 1976. Estermann studied at the missionary schools of Saverne, France, and Knechtsteden, Germany. He served with the German Army during WWI, was wounded and captured by the British Army, and taken to England as a prisoner of war. After the Armistice, in 1919, he studied at the Seminary at Neufgrange, France, and took vows on 29 September 1920. Two years later he finished his missionary studies at Chevilly, near Paris, and was ordained as a priest. He was sent to Angola with the missionaries of the Congregation of the Holy Spirit (Spiritains 2020). He arrived in Angola in 1924 and was initially stationed at Mupa (Cunene), but was later appointed to Omupanda, near Ondjiva (Cunene) to initiate and head a new mission. The Omupanda mission was established in 1928. In 1932 he was transferred to Huíla as the superior of the mission based there (*Missão da Huíla*), as well as superior for the district and general vicar of Huíla. He remained in the region for the rest of his life: at Lubango as vicar until 1961 and thereafter, until his death, at the Munhino mission. Estermann became well-known for his numerous papers and monographs on ethnological subjects of the peoples of south-western Angola. His magnum opus on the ethnography of the region (Estermann 1956–1961) remains a basic reference in this field. In 1974 he received an honorary doctorate from the University of Lisbon, Portugal.

#### Collecting activity in Angola

Dates: In Angola from 1924 to 1976; recorded as collecting in 1940 (Bossard 1993).

Provinces: Cunene, Huíla.

Localities: Huíla (S15°05' E13°33') (Huíla); Cuanhama (S16°30' E16°20') and Humbe (S16°41' E14°54') (Cunene).

Herbaria: LUA.

Collections: According to Bossard (1993) there are some collections deposited at LUA.

#### References

Estermann 1956–1961, Bossard 1993, Figueiredo et al. 2008.

### 9. Gisela Forst (fl. 1966–1974)

#### Biographical sketch

Up to now it was not known whether Gisela Forst was of German or Swiss nationality. Although it now appears that she was Swiss (C. Lind, pers. comm.), for the sake of completeness

and to foster future biographical investigations we here provide what information we were able to gather about her. Gisela Forst arrived in Angola before WWII and provided private tuition at a farm near Ganda. Up to 1971 she lived partly at Calulo in the province of Cuanza Sul, on a farm that belonged to Johannes Hopfner Mannhardt (1880–1973), a German farmer and settler in Angola. She was an accomplished graphic artist (painter) and exhibited at Lubango in 1966 during the festivities of 'Nossa Senhora do Monte'. After 1971 she was based at Ganda in the province of Benguela, a region where there was a large German community at the time. She taught at the *Deutsche Schule Benguela* and likely also at Chicuma. She left Angola for Germany before the Angolan civil war broke out in 1975. According to Bossard (1993), Forst collected plants and sent c. 200 collections to LUA. She prepared watercolours of most of these plants, with these plates also having been deposited at LUA. Eurico S. Martins, who worked at LUA at the time, recalls seeing the specimens. However, neither him nor M. Fernanda Pinto Basto, who also worked there, can recall the existence of those watercolours. It is not known if these specimens and paintings are extant. Other artwork produced by Forst exists in private collections (Fig. 6). During the civil war, Herb. LUA was transferred to Luanda. The collections were kept in boxes until recently, when they were returned to Huambo. Although a project of databasing was initiated at LUA, access to information is still difficult and we could not determine the existence of this material.

#### Collecting activity in Angola

Dates: 1966–1974 (Bossard 1993).

Provinces: Benguela, Cuanza Sul.

Localities: Cubal (S13°10' E14°20'), Ganda (S13°01' E14°38') (Benguela); Calulo (S10°00' E14°54'), Libolo (S10° E15°), Bungo (S9°41' E14°40'), Luati River (Cuanza Sul).

Herbaria: LUA.

Collections: According to Bossard (1993) Forst made c. 200 collections.

#### References

Bossard 1993, Romeiras 1999, Mannhardt 2007, Figueiredo et al. 2008, M. Fernanda Pinto Basto, Eurico S. Martins, Sabine Spiesser, Conny Lind, Ines Mannhardt, Amilcar Salumbo (pers. comm., March and April 2020).

### 10. Bertha Fritzsche (1863–unknown)

#### Biographical sketch

Born Toddin near Hagenow, Mecklenburg-Schwerin, Germany, 4 April 1863 – Date and place of death unknown. Bertha Caroline Marie Fritzsche née Bolle was the daughter of a forester. On 15 April 1886 she married the medical doctor Hermann Richard Fritzsche in Ludwigslust, Germany. In 1887 they both went to Moçâmedes, Angola, where the couple had two sons, in 1889 and 1892. Shortly after the birth of her second son her husband died at the age of 45. She then remained in Angola for several years. Later, in 1929, she was reported as living in Portugal and as having remarried. From 1902 to 1905 she collected a few hundred plant specimens in Humpata that she sent to the herbarium of the Botanic Garden and Botanical Museum Berlin-Dahlem (B), in Germany. The first Fritzsche collections were received at Herb. B through the mediation of Hugo Baum (see there). She is commemorated in *Hibiscus fritzscheae* Exell & Mendonça (*Malvaceae*), a species endemic to Angola, and also in *Cleome fritzscheae* Gilg & Gilg-Ben. (*Capparaceae*; a synonym of *Cleome iberidella* Welw. ex Oliv.) and *Hybanthus fritzscheanus* Engl. (*Violaceae*; a synonym of *Hybanthus enneaspermus* (L.) F. Muell.). A number of her collections became types for new names (see for example Hamet (1913: 5) on *Kalanchoe lindmanii* Raym.-Hamet, *Crassulaceae*).

### Collecting activity in Angola

Dates: Collected during the period 1902–1905.

Provinces visited: Huíla, Namibe.

Localities: Bumbo River, Humpata (S15°19' E13°28'), Jau (S15°14' E13°31'), and Munhino (S15°01' E13°33') (Huíla).

Herbaria: AMB, B (first set), G, GB, M, NY, S, W.

Collections: The collections are labelled with the heading 'Reise nach Angola. Mossamedes-Humpata'. Urban (1916) recorded 302 numbers received at B. The numbering is chronological and the collection dates of the specimens examined range from 18 April 1903 to 3 November 1905. Twenty-three specimens are imaged and accessible online at JSTOR Global Plants (2020). Additionally, 64 are databased (not imaged) at the Swedish Museum of Natural History (2020). Many of her collections were likely destroyed at Berlin during WWII.

### References

Engler 1907: 239, Urban 1916, Willgeroth 1929: 133–134, Gossweiler 1939, Bossard 1993, Romeiras 1999, Figueiredo et al. 2008, Glen & Germishuizen 2010.

## 11. Paul Güssfeldt (1840–1920) — Fig. 10

### Biographical sketch

Born Berlin, Germany, 14 October 1840 – Died Berlin, Germany, 17 January 1920. Although his career started in the field of science, Güssfeldt became best known as an explorer and mountaineer. From 1859 to 1865 he studied natural sciences and mathematics in Heidelberg, Berlin, Gießen, and Bonn, and then obtained his habilitation at Bonn in 1868. From 1870 to 1871 he was active in the Franco-Prussian War as a volunteer. Afterwards he was appointed by the *Deutsche Gesellschaft zur Erforschung Äquatorial-Afrikas* to lead an expedition to the Kingdom of Loango (Rep. Congo and Cabinda, Angola). Among his team were Pechuël-Loesche (see there), von Mechow (see there), and Soyaux (see there). Güssfeldt was in charge of geographical and topographical observations and logistics. The

purpose of the expedition, on which he embarked on 30 May 1873, was ultimately to extend the exploration of the African interior. His equipment, for which he had paid significantly, was lost near Freetown (Sierra Leone) when the ship was wrecked on 14 June 1873. He only arrived in Banana (D.R. Congo) on 25 July. During his stay in Africa, he explored the Loango coast, and the Kouilou (Rep. of Congo), Nyanga (Rep. of Congo, Gabon), and Chiloango (Cabinda) Rivers. In March 1874 he travelled to Luanda, and from there to Quicombo and Novo Redondo (now Sumbe) in Cuanza Sul, to obtain the services of porters. The Loango expedition eventually failed for several reasons. Not only did the lack of rain and subsequent drought and famine, and the onset of a measles epidemic create difficulties, of the 100 porters that were brought from Novo Redondo, only 20 were fit to travel, the others were ill, had absconded, or died. When finally a date was set to start the expedition, most of the remaining porters escaped, together with their guards. Güssfeldt then travelled to Berlin where he arrived on 24 August 1875 and recommended to the sponsors that the expedition should be cancelled. The expedition was indeed terminated and the other members recalled. His opinionated companion Pechuël-Loesche noted in his diaries (Heintze 2011: 84) that Güssfeldt was an hypochondriac, melancholic, lacked warmth and tended to brood ("G(üßfeldt) ist ganz hypochondrisch und melancholisch geworden, er spricht nicht mit uns, er brütet vor sich hin. Feine Lebensart; Liebenswürdigkeit; Höflichkeit, die echte des Herzens; (sic) hat er nie besessen"), characteristics that are disadvantageous in the leader of an expedition. Afterwards Güssfeldt travelled to Egypt and Arabia with Georg Schweinfurth (1836–1925). In 1882 he travelled to the Andes and Bolivia. He became known as a pioneer of mountaineering in the Chilean and Argentinian Andes. He climbed the Maipo Vulcan and was the first European to climb the Aconcagua, tracing the route up to an elevation of 6 500 m above sea level. He also explored mountains in Europe such as Mont Blanc. Some mountain features bear his name. From 1883 to 1885, he was



**Fig. 10** Paul Güssfeldt. Left: Steel engraving. Stich u. Druck v.A. Weger, Leipzig. Verlag der Dürr'schen Buchhandl. Heidelberg University Library. Creative Commons license cc-BY-NC-SA. <http://www.portraitindex.de/documents/obj/36005294>. Right: Reproduced from Die Gartenlaube (1874). Public Domain. [https://commons.wikimedia.org/wiki/File:Die\\_Gartenlaube\\_\(1874\)\\_b\\_615.jpg](https://commons.wikimedia.org/wiki/File:Die_Gartenlaube_(1874)_b_615.jpg).

secretary-general of the *Gesellschaft für Erdkunde zu Berlin*. In 1892 he was appointed professor and lectured in Berlin, retiring shortly before the onset of WWI. He is commemorated in *Dianthus guessfeldtianus* Muschl. (*Caryophyllaceae*), *Oxalis guessfeldtii* R.Knuth (*Oxalidaceae*), and *lcacina guessfeldtii* Asch. (*lcacinaceae*).

#### Collecting activity in Angola

Date: 25 July 1873–July 1875.

Provinces visited: Cabinda.

Localities: Unknown.

Herbaria: B.

Collections: Urban (1916) listed some specimens, referred to as “Einiges von der Loango-Küste (a. 1874–75)”, that were collected by Güssfeldt during the Loango Expedition; these are deposited at B. No specimens have been located in databases.

#### References

Güssfeldt et al. 1888, Gossweiler 1939, Ronge 1966, Henze 1983 vol. 2: 415–417, Bossard 1993, Romeiras 1999, Figueiredo et al. 2008, Heintze 2010, 2011.

## 12. Walter Hauser (fl. 1935)

#### Note

In 1935 Hauser collected the material on which the name *Kalanchoe hauseri* Werderm. (*Crassulaceae*) is based near the town of Ganda, Benguela highlands, Angola, in a grassland surrounded by dry forest. He sent or took living material to the Botanical Garden of Berlin in Germany, where a plant flowered one year later, in 1936. The species was then described by Prof. Dr. Erich Werdermann (1892–1959) who later, from 1955 to March 1958, was Director of the BGBM. Shortly before his death, Werdermann himself collected in South Africa and Namibia, but apparently not in Angola. Nothing else is known about the collecting activities of Walter Hauser in Angola.

#### Collecting activity in Angola

Date: 1935.

Provinces visited: Benguela.

Localities: Ganda (S13°01' E14°38').

Herbaria: probably B.

Collections: One specimen recorded, likely destroyed.

#### References

Werdermann 1937: 1–2, Gunn & Codd 1981: 374.

## 13. Karl (or Carl) Hoepfner (1857–1900)

#### Biographical sketch

Born Friedrichslohra near Nordhausen, Germany, 8 February 1857 – Died Denver, Colorado, USA, 14 December 1900. Geologist and electrochemical engineer. He first studied medicine, then physics, chemistry, mineralogy, and geology at the University of Berlin and graduated in 1881. From 1882 to 1883 he did some prospecting in Namibe (Angola) and Hereroland (Namibia). He travelled from Moçâmedes to Humpata, then in a southerly direction crossing the Cunene River to the region then known as Damaraland, Namibia, and from there to Walvis Bay, Namibia. At the time, and up to 1910, Walvis Bay was a British colony. In 1910 it became part of the then newly constituted Union of South Africa. Hoepfner returned to Africa the following year and from 1884 to 1885 undertook an expedition in Namibia. In 1884 he registered a patent for extracting metals from ore and went on to pioneer several techniques for manufacturing various products and the extraction of metals, mainly by electrolysis. In 1899 he established the Hoepfner Refining Company in Canada but did not work for long on that venture as he died of typhoid fever the following year, while investigating the extraction of silver in Denver, Colorado. He is commemorated in several names, such as *Sida hoepfneri* Gürke (a synonym of

*S. ovata* Forssk., *Malvaceae*) and *Justicia hoepfneri* Lindau (a synonym of *J. natalensis* (Nees) T.Anderson, *Acanthaceae*), both published as ‘*höpfneri*’.

#### Collecting activity in Angola

Dates: Collected during the period 1882–1883.

Provinces visited: Namibe.

Localities: Moçâmedes (S15°11' E12°09').

Herbaria: B (first set), CORD, HT, PRE.

Collections: According to Urban (1916) a total of 142 numbers were received at Herb. B, with these referring to collections made by Hoepfner from 1882 to 1883 in southwestern Africa (‘Damara und Owambo’, Namibia). However, some of these were collected in Angola. Two of the syntypes of *Sida hoepfneri* were collected by him and according to the protologue of the species name, one syntype with the number 20 dates from April to May 1882 and was collected in Moçâmedes; the other syntype with number 93 is from Hereroland (Namibia) and dates from March 1893. This may be a mistake for 1883. There is no evidence that Hoepfner was still in Africa by the year 1893. Most of his collections were likely destroyed at Berlin during WWII.

#### References

Armand 1884, Belck 1901, Urban 1916, Gossweiler 1939, Fischer 1972, Gunn & Codd 1981, Bossard 1993, Romeiras 1999, Figueiredo et al. 2008.

## 14. Otto Hundt (1878–unknown)

#### Biographical sketch

Born Köthen (Anhalt), Germany, 21 April 1878 – Date and place of death unknown. There is not much information available on Otto Hundt. He is recorded as a merchant living in the 1920s in Berlin-Charlottenburg and the ‘Hamburger Passagierlisten’ list him as departing on 14 January 1928 from Hamburg towards Lobito Bay, in Angola, where he obviously settled as a farmer in Benguela. He sent specimens to the herbarium of the Botanic Garden and Botanical Museum Berlin-Dahlem (B) in Germany. His collecting numbers amount to at least 1019 and included several type specimens, many of which were destroyed during the WWII bombing of Berlin. He is commemorated in several species names including *Hibiscus ottoi* Exell, *H. hundtii* Exell & Mendonça (both *Malvaceae*), *Alectra hundtii* Melch. (*Orobanchaceae*), and *Vigna hundtii* Rossberg (*Fabaceae*).

#### Collecting activity in Angola

Dates: During the period 1930–1935.

Provinces visited: Benguela, Huíla.

Localities: In the area between Ganda (Benguela) and Caconda (Huíla) (between S13°01' E14°38' and S13°46' E15°05').

Herbaria: B (first set), BM, COI, G, LISC, MO, P, PRE.

Collections: Hundt’s collections bear printed labels with the text ‘Benguela: Hochland zwischen Ganda und Caconda c. 1700 , u. M.’; some also have ‘Facensa Xangorolo’, i.e., a reference to a Fazenda (farm) called Xangorolo (also spelled ‘Xongorola’ or ‘Chongorollo’; see Jessen (1936: 162), viz., ‘Farm Chongorollo, am Fuße des Mejo, 1730 m, zwischen Ganda und Posten Chicuma Richtung Caconda, Tagestemperaturen Juni–August 1930’). This farm is listed as Hundt’s place of residence in the 1937/38 accession list to the Botanical Museum Berlin (Anonymous 1938: 215) and roughly described in Jessen (1936: 162) as a coffee plantation where cattle was also herded. According to Curators Herbarium B (2000+) 289 specimens are databased.

#### References

Anonymous 1938: 215, Gossweiler 1939, Bossard 1993, Romeiras 1999, Figueiredo et al. 2008, Staatsarchiv Hamburg s.d.



### 15. Otto Jessen (1891–1951) — Fig. 11, 12

#### *Biographical sketch*

Born Kronprinzenkoog, Schleswig-Holstein, Germany, 18 February 1891 – Died Munich, Germany, 9 June 1951. Jessen studied at the University of Munich, and obtained his doctorate in geography in 1914. He served as an army officer in WWI, and after being severely injured at Somme, then served as a war geologist in Alsace-Lorraine. After the war he was with the University of Tübingen where he obtained his habilitation in 1921. There he became a professor in 1924 and moved to the University of Cologne in 1929. In 1931 he travelled to Angola where he arrived at Lobito (Benguela) on 30 April. From 4 June 1931 to 16 December 1931, accompanied by his wife, a driver, and two African helpers, he travelled in the country, exploring the area between Luanda and Tombua. He took eleven different

routes, mostly from the coast inland, travelling a total of c. 8000 km, while recording observations on geomorphology, phytogeography, and human geography. He left Lobito on 6 January 1932 and published the results of his study in 1936. In 1933 he became a professor at the University of Rostock. He served during WWII and in 1946 moved to the University of Würzburg. A few years later, in 1949, he took a chair at the University of Munich. He died in Munich a couple of years later. During his Angolan expedition he made plant, mineral, and ethnographic collections and took 1250 photographs.

#### *Collecting activity in Angola*

Date: 1931.

Provinces visited: Bengo, Benguela, Bié, Cuanza Norte, Cuanza Sul, Huambo, Huíla, Luanda, Namibe.

Localities: Unknown.

Herbaria: B (first set), COI.



Fig. 11 Itinerary of the expedition of Otto Jessen in Angola from 30 April 1931 to 16 December 1931.



**Fig. 12** Otto Jessen. In the early 1930s (left) and during WWII (right). Left: Photographer unknown. © Deutsches Museum, München. Reproduced under cc-BY-SA-licence. Right: Photographer unknown. © Universitätsarchiv Rostock. Reproduced with permission.

**Collections:** According to Gossweiler (1939) a few hundred plant specimens collected by Jessen were kept at the herbarium of the Botanic Garden and Botanical Museum Berlin-Dahlem (B). It is not known how many of these remained intact following the WWII bombing of Berlin. We could not locate any specimens.

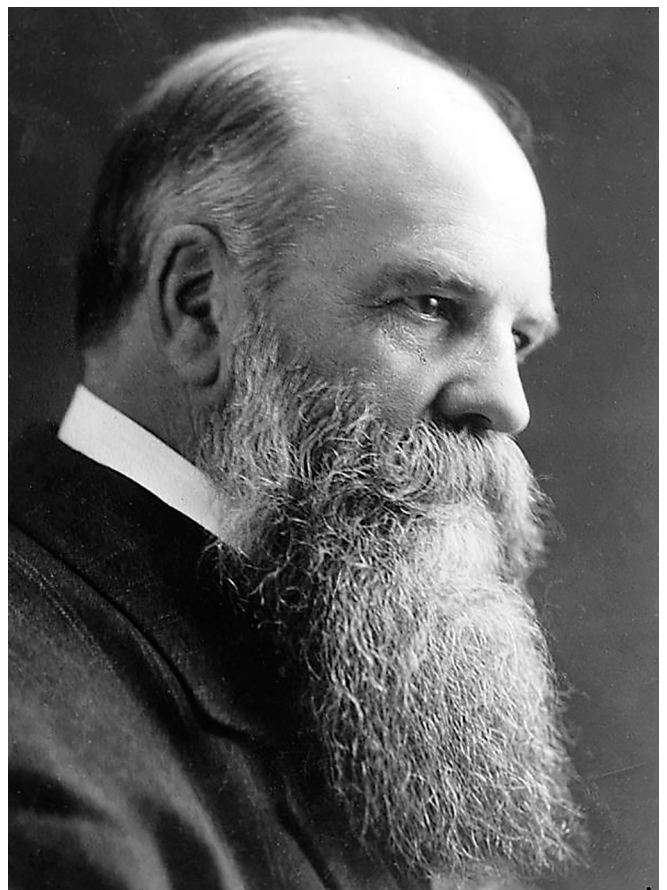
#### References

Jessen 1936, Jaeger 1937, Gossweiler 1939, Louis 1974, Bossard 1993, Romeiras 1999, Figueiredo et al. 2008, Heintze 2010.

### 16. Heinrich Ernst Karl Jordan (1861–1959) — Fig. 13, 14

#### Biographical sketch

Born Almstedt, near Hildesheim, Hannover, Germany, 7 December 1861 – Died Hemel Hempstead, Hertfordshire, England, 12 January 1959. Born on a farm and schooled at Hildesheim Andreanum, Jordan went to Göttingen University where he graduated in botany and zoology in 1886 with a PhD. In 1893, after military service and five years as a grammar school teacher in Hannoversch Münden and Hildesheim, he was invited to join the staff of Walter Rothschild's (1868–1937) Zoological Museum at Tring (Hertfordshire, England) as entomologist. After Rothschild's death, this Museum became part of the Natural History Museum, London. Jordan emigrated to England and in 1911 became a naturalised British citizen. He specialised in Lepidoptera and Siphonaptera (fleas), published extensively, over 400 papers, and described over 3000 new species. He was still scientifically active well into his nineties. He is commemorated in a renowned award for entomologists, the Karl Jordan Medal of The Lepidopterists' Society. In 1934, Jordan undertook an expedition to Namibia and Angola. He was based at the farm Hoffnung near Windhoek while exploring Namibia.



**Fig. 13** Heinrich Ernst Karl Jordan. Photographer unknown. George Grantham Bain Collection (Library of Congress). Public domain. [https://commons.wikimedia.org/wiki/File:Karl\\_Jordan.jpg](https://commons.wikimedia.org/wiki/File:Karl_Jordan.jpg).



Fig. 14 Itinerary of the expedition of Karl Jordan in Angola from March to May 1934.

Afterwards he sailed from Walvis Bay to Lobito in Angola. After preparations, a party of five, consisting of Jordan, Rudolf Braun, who was an amateur ornithologist living in Angola, two chauffeurs and a cook ('so-called', in Jordan's words), set off from Lobito in March 1934 in a car and a van. They undertook two separate trips through the provinces of Benguela, Huambo, and Cuanza Sul. On Whit-Sunday (20 May 1934) they were back at Bocoio and, shortly thereafter, at Lobito. The expedition is described in an account published in 1936, which includes maps and itineraries, many observations of animals and habitats and some mention of plant species. His little-known botanical collections are at the herbarium of the Natural History Museum in London (BM).

#### Collecting activity in Angola

Dates: March to May 1934.

Provinces visited: Benguela, Cuanza Sul, Huambo

Localities: Unknown.

Herbaria: BM (first set), MO.

Collections: As far as we know there are no collections databased and no information available on the total number of Jordan specimens, nor of the dates of these collections.

#### References

Jordan 1936, Hering 1959, Riley 1960, Johnson 2003, 2012, Figueiredo et al. 2008.

### 17. Anton Erwin Lux (1847–1908)

#### Biographical sketch

Born Venice, Italy, 23 December 1847 – Died Stockerau, Austria, 31 May 1908. Lux was an army officer and geographer. He studied at the military academy of Weisskirchen, Mähren (now Hranice, Czech Republic) and joined the Austrian Army in 1868 as an artillery officer. Having published a few geographical studies, he was contracted as topographer in the third expedition to Angola of the *Deutsche Afrika-Gesellschaft*, from 1875 to 1876. The botanist Soyaux (see there) and the hunter-explorer

Pogge (see there) were also on this expedition that was led by Alexander von Homeyer (1834–1903). Lux arrived in Luanda on 2 May 1875, after the others who by then had been in the country for about two months. In Luanda, Lux met Soyaux who had travelled from Pungo Andongo back to the coast to get money. Both left Luanda on 12 May, up the Cuanza River to Dondo, then by foot to Pungo Andongo to join the others. At Pungo Andongo, both Soyaux and von Homeyer took ill with malaria and had to return to the coast on 27 August while Lux and Pogge continued to Malanje. From there the expedition set off on 14 June with 114 men. By 26 August they had passed the Cuango, reaching Mona Quimbundo. Lux also fell ill and had to turn back on 14 September 1875, leaving Pogge to continue alone with the expedition. On his return, Lux took a different route, through the country of the Shinje and Mbangala people. He arrived at Luanda on 2 November and returned to Europe with von Mechow (see there). In 1880 he published a book on the journey. He also travelled to the Balkans and wrote a book on the region. He became a geography teacher at the *Militär-Unterrealschule* (military secondary school) at Güns and Eisenstadt and was later stationed in Vienna and Peterwardein, and in 1900 in Przemysł. He retired from the military service in 1903 when he was promoted to Colonel (*Oberst*).

#### Collecting activity in Angola

Based on the list compiled by Bossard (1993), Lux has been cited in the literature as having collected with Pogge during the 1875–1876 expedition. He only accompanied Pogge up to Mona Quimbundo and then returned to Malanje. Out of the 547 numbers reported as having been collected during that expedition, the c. 90 that can be examined online do not reference Lux, and none was collected on a date earlier than when Pogge and Lux arrived in Mona Quimbundo. It is thus unlikely that Lux collected any specimens by himself.

#### References

Lux 1880, Henze 1993 vol. 3: 311–312, Bossard 1993, Roméiras 1999, Figueiredo et al. 2008, Heintze 2010.

## 18. Friedrich Wilhelm Alexander von Mechow (1831–1904)

— Fig. 15, 16

### Biographical sketch

Born Lauban, Silesia (then a province of Prussia), Poland, 9 December 1831 – Died Jugenheim/Bergstraße, Germany, 14 March 1904. Following a family tradition, von Mechow embarked on a military career. In 1861, he and his brother received a nobility title, taking then the nobiliary particle 'von'. He was active in the Prussian Campaign of 1866 and in 1870 he was wounded in action in the Franco-Prussian war, being shot in a shoulder and lung. He retired at the rank of major and settled in Berlin. In 1874 he was contracted by the *Deutsche Gesellschaft zur Erforschung Äquatorial-Afrikas* to provide support to Güssfeldt's (see there) expedition to the Kingdom of Loango (Rep. Congo and Cabinda, Angola). He was in Cabinda from January to November 1875 but left the expedition apparently as a result of conflict with the rest of the team. Being a qualified topographer, von Mechow was soon selected to lead an expedition to Cuango. This would take place from 1878 to 1881, with Teusz (see there) and the naval carpenter Bugslag in the team. The expedition included a steam boat that could be disassembled into several parts for ease of transportation. Thus equipped, von Mechow left Germany on 19 September 1878 arriving in Angola two months later and proceeding to the interior along the usual route, via Dondo. On 23 December he met Buchner (see there) in Dondo. On 26 January 1879 they met again in Pungo Andongo where von Mechow was stationed for several months. Von Mechow only arrived in Malanje on 25 June and it was only about a year later, on 12 June 1880 that the expedition started off with 115 porters. After many difficulties, including with transporting the steam boat, they arrived at the Cuango, south of its confluence with the Cambo River, on 19 July 1880. On 25 August they started exploring the Cuango River and on 7 September they landed on the right bank (D.R. Congo). Von Mechow travelled to the *Musumb* (capital), near Ganga River and was received by the Mwat Yamv (in Portuguese *Muatiãmvu*, *Muatiãnvua*, the King), called Muene Puto Kassongo. Von Mechow proposed to the Mwat Yamv that he



Fig. 15 Alexander von Mechow in Malanje, 1880/1. Photographer unknown. © Frobenius Institute, Frankfurt. Ref: FoA vi-VP150622-01.

would leave some members of the expedition at the *Musumb* as a guarantee that he would return. With this having been agreed von Mechow returned to get Teusz to introduce him to the Mwat Yamv. A third trip to the *Musumb* was made to leave Teusz there and finally on 20 September 1880 the expedition proceeded with von Mechow, Bugslag, and 19 porters, by boat and one canoe downstream the Cuango River. They went as far north as c. S5°5' and then turned back taking a route overland along the banks of the Cuango and the Cambo Rivers, eventually being reunited with Teusz. They returned to Malanje on foot, along the banks of the Cambo and Cuango Rivers on a more easterly route than the one taken on the outbound journey. At the end of February 1881 von Mechow was back at Malanje where he met Pogge (see there), von Wissmann (see there), and Buchner. He returned to Luanda in April and from there

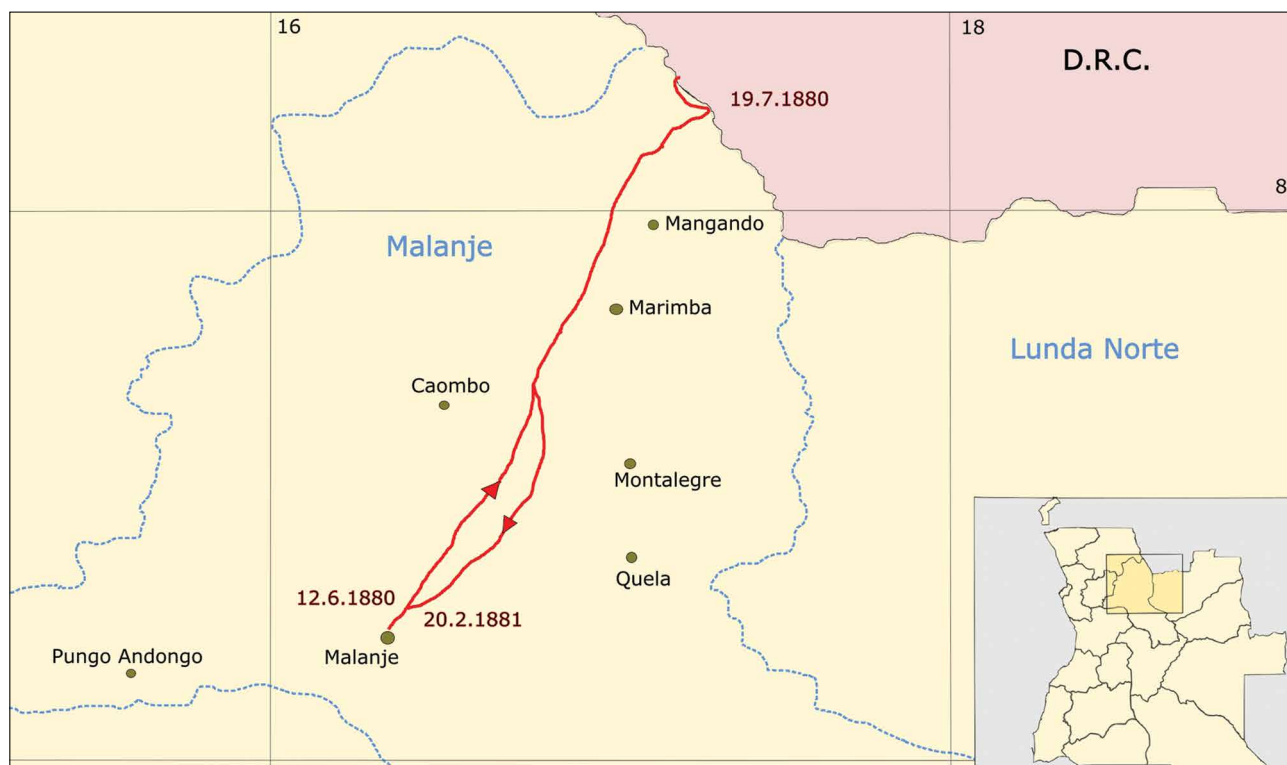


Fig. 16 Itinerary of the expedition of Alexander von Mechow in Angola from 12 June 1880 to 20 February 1881.

embarked on the return trip to Germany, travelling with Lux (see there). He arrived back in Germany in August 1881. His detailed map was published in 25 parts and his meteorological observations were the most complete at the time. Afterwards he lived in Marksburg, by the Rhine, and later in Jugenheim where he died. He is commemorated in numerous plant names of which the types were collected during his expedition, likely by Teusz.

#### Collecting activity in Angola

Date: 6 November 1878–April 1881.

Provinces visited: Bengo, Cuanza Norte, Luanda, Malanje.

Localities: Pungo Andongo (S9°40' E15°35'), Malanje (S9°58' E14°56'), Tembo-Aluma (Mangango; S8°03' E17°08') and Calala Canginga (near Sunginge; S8°49' E16°48'), in Malanje province.

Herbaria: B, BR, C, G, GH, GOET, JE, K, L, M, P, S, W, WU.

Collections: It appears that von Mechow did not collect in Cabinda in 1875. Most material recorded as having been collected by von Mechow from 1878 to 1881 may have been collected by Teusz who was the natural history collector of the expedition. In his lists of specimens deposited at B, Urban (1916) stated under von Mechow “Angola und Belgisch Kongo (Loanda, Malanje, Kuango, a. 1879–81) 583 Nr. (leg. Teusz)”. The collecting numbers of the expedition go up to at least number 579. Collections from Pungo Andongo and Malanje, where the expedition was stationed until 12 June 1880, go up to around the number 500. Number 579 is also from Malanje, and dated February 1881, i.e., when the expedition returned. Collecting localities along the route from Malanje to the Cuango River include the territories of Tembo-Aluma (Mangango) and

Calala Canginga (near Sunginge), in Malanje province. The numbering only partially follows a chronological order. Many specimens were likely destroyed at B but duplicates exist in several herbaria.

#### References

Kiepert 1882, von Mechow 1882, 1884, Urban 1916, Mendonça 1962, Henze 1993 vol. 3: 416–417, Bossard 1993, Romeiras 1999, Figueiredo et al. 2008, Heintze 2010, 2018.

### 19. Ferdinand Christian Naumann (1841–1902) — Fig. 17

#### Biographical sketch

Born Ehrenbreitstein, Germany, 6 February 1841 – Died Klosterlausnitz, Germany, 26 July 1902. A naval surgeon who is sometimes erroneously referred to in the literature as “Friedrich Carl” but according to Frahm & Eggers (2001), based on the obituary (Prahl 1904), was named “Ferdinand Christian”. He grew up in Wetzlar and studied natural sciences and medicine in Berlin and Heidelberg, graduating with a Dr. med. degree in 1865. In 1867 he became a military surgeon. From 1868 to 1871 he participated in the ‘Medusa’ expedition to South America and the Pacific, and from 1874 to 1876 he was on HMS *Gazelle* on a trip around the world. On this world tour, under the command of Capt. Georg von Schleinitz, he was accompanied by the biologist Théophile Rudolphe Studer (1845–1922). The trip was strenuous due to the work load, the many changes of climate, overexertion, a shortage of provisions, and other deprivations. Many illnesses had to be treated and 16 deaths occurred. The two surgeons were overloaded but still managed to conduct research. Naumann’s own health suffered and after this trip, back in Germany, he settled in Gera, where he lived with his mother, had a medical practice, and botanised. He married after the death of his mother in 1881. During his tour around the world he collected numerous specimens. His collections were sent to Herb. B and many were destroyed during WWII. His private herbarium that was deposited at JE included some likely duplicates. Duplicates are also found in other herbaria (BM, E, F, FH, G-BOIS, HBG, K, KIEL, LE, M, MO). Several species described from his collections commemorate him, including the genus *Naumannia* Warb. (*Zingiberaceae*) and, for example, *Solanum naumannii* Engl. (*Solanaceae*), of which the type was destroyed.

#### Collecting activity in Angola

Naumann collected in the Congo (Urban 1916), more exactly on the estuary, on the northern bank, at Ponta da Lenha and Boma (D.R. Congo) in September 1874. He landed at least in one location on the southern bank of the river, in Angola, at Pedra do Feitiço (Zaire province, Angola) but it is not known if he made any collections there.

#### References

Anonymous 1889, Prahl 1904, Urban 1916, Bossard 1993, Romeiras 1999, Figueiredo et al. 2008, Glen & Germishuizen 2010, Frahm & Eggers 2001, Pusch et al. 2015 (portr.), J. Müller, pers. comm., November 2019.

### 20. Ilse (Baronin) von Nolde (1889–1970) — Fig. 18

#### Biographical sketch

Born Groß-Schwülper, Niedersachsen, Germany, 22 May 1889 – Died Reinbek, near Hamburg, Germany, 27 September 1970. A natural historian and artist, she was the daughter of landowner and ‘Freiherr’ Gebhard von Marenholtz and Margarete, born Gräfin von der Schulenburg-Wolfsburg. During her childhood and youth Ilse von Nolde became interested in the plant world, a development further stimulated by an extended period of convalescence in Switzerland – it is not known from what. She later also had an opportunity to spend an internship in



Fig. 17 Ferdinand Christian Naumann. By Rudolph Hoffman. Eigenes Foto einer Originallithographie der ÖNB (Wien), Public domain. <https://commons.wikimedia.org/w/index.php?curid=16709052>.

Florence, Italy, where she was exposed to the Italian language and art, which later manifested in her botanical illustrations. On 27 September 1918 she married Harald Baron von Nolde, and in 1928 moved to Quela, Malanje province, north-central Angola, with her husband, where they ran a coffee plantation. Before moving to Angola, she was mentored, guided, and encouraged by the German botanist Professor Gottfried Wilhelm Johannes Mildbraed (1879–1954) who at the time was Keeper at the Berlin Herbarium. Active in Angola during the late-1920s and 1930s, von Nolde was an accomplished plant collector and exceptional botanical artist. In 1938, after the death of her husband, she returned to Germany, where she was appointed to the *Reichsinstitut für ausländische und koloniale Forstwirtschaft* at Reinbek near Hamburg, working there for several years. Her botanical estate (field notebooks and illustrations, but excluding specimens) is held at the Herbarium of the University of Hamburg (HBG) (Poppendieck 2004: 229). The estate includes numerous well-executed botanical drawings and handwritten descriptions. She is commemorated in several names, such as that of the genus *Noldeanthus* Knobl. (*Oleaceae*). She also collected the types of the species *Ritchiea noldeae* Exell & Mendonça (*Capparaceae*) and *Cochlospermum noldei* Poppend. (*Bixaceae*) that were named for her. *Cochlospermum noldei* is endemic to the Quela highlands where Nolde focussed her collecting activities. She was also a keen natural historian and her publications, which were only produced from her late-40s onwards, mostly focussing on ecology, inter alia of the Quela highlands (see Esdorn 1972: 417 for a bibliography). A centre of her research was the Fazenda Camacol at 1219 m above sea level, in the Quela-Malanje area. The whereabouts and fate of a 477-page manuscript entitled 'Angola – Land, Menschen



**Fig. 18** The Baronin Ilse von Nolde. Photographer unknown. Reproduced with the permission of the Botanischer Garten und Botanisches Museum Berlin, Freie Universität Berlin.

und Schicksal einer afrikanischen Kolonie' (in English: 'Angola – Land, People and Fate of an African Colony') unfortunately remains unknown.

#### *Collecting activity in Angola*

Date: 1932–1938.

Provinces visited: Malanje.

Localities: Quela (S9°20' E17°10').

Herbaria: B (first set), BM, COI, LISC, MO.

Collections: Von Nolde's original set of 887 numbers that was held at B was mostly destroyed during the bombing of Berlin in WWII; duplicates are held elsewhere. Twenty-four sheets are imaged at JSTOR Global Plants (2020). Thirteen further sheets are databased, and some imaged, at Curators Herbarium B (2000+). The numbering is not chronological. The dates of the specimens examined range from January 1932 to December 1938, but from the accompanying literature it is clear that von Nolde had already started her observations in 1929.

#### *References*

Gossweiler 1939, Esdorn 1972, Bossard 1993, Romeiras 1999, Poppendieck 2004, Figueiredo et al. 2008.

### **21. Moritz Eduard Pechuël-Loesche (1840–1913) — Fig. 19**

#### *Biographical sketch*

Born Zöschen near Merseburg, Germany, 26 July 1840 – Died Munich, Germany, 29 May 1913. Pechuël-Loesche was a traveller and geographer. He studied at Halle and then joined the merchant navy, travelling widely in the 1860s, including to the West Indies, North America, the coast and islands of the Atlantic and Pacific oceans, and the Southern and Northern Arctic Oceans. Once back in Germany he studied natural sciences at Leipzig, from where he graduated with a doctorate in 1872. From 19 August 1874 to 5 May 1876 he joined the expedition of the *Deutsche Gesellschaft zur Erforschung Äquatorial-Afrikas* to the Kingdom of Loango (now Rep. of Congo and Cabinda, Angola). He was in charge of the meteorological surveys but also conducted ethnographic studies, and studies on the fauna and flora. Güssfeldt (see there) was the leader of the expedition and the team included, among others, Soyaux (see there) as botanist, and for a short period, von Mechow (see there). Pechuël-Loesche travelled to the Kouilou River (Rep. of Congo) in 1875 and to Mayumba Bay (Gabon) in 1876, but otherwise he was mostly based at Chinchoxo (Cabinda) until the expedition was cancelled and the team recalled to Germany. He then left with Soyaux and arrived in Berlin on 30 June 1876. In 1881, with others such as Teusz (see there), Pechuël-Loesche was appointed by Leopold II of Belgium to join the Congo venture with the purpose of opening a route from Stanley Pool (now Malebo Pool, D.R. Congo) to the Indian Ocean and to establish stations along the way. Nevertheless, the main objective of the venture was not scientific but rather commercial, especially to sign contracts with the chiefs of the peoples encountered to grant the rights of commerce to Leopold II. Realising this, Pechuël-Loesche did not remain long with the project, departing in 1883. In 1884 he travelled to South West Africa (now Namibia) with his wife and made collections there. In 1886 he worked as a lecturer at the University of Jena, Germany, and obtained his habilitation. He was invited to join the University of Erlangen in 1895, retiring a few years later in 1902, due to a heart condition. He then moved to Munich where he died in 1913. Pechuël-Loesche published numerous journal articles and several books. His diaries, which recently have been edited and published (Heintze 2011) together with his watercolours, reveal the quotidian aspects of the expeditions, the relationship between Europeans and Africans, and also his strong opinions on the way German expeditions were organised. The observations he made of the Loango coast were rigorous, detailed, and sound. The book with the results of the expedition includes

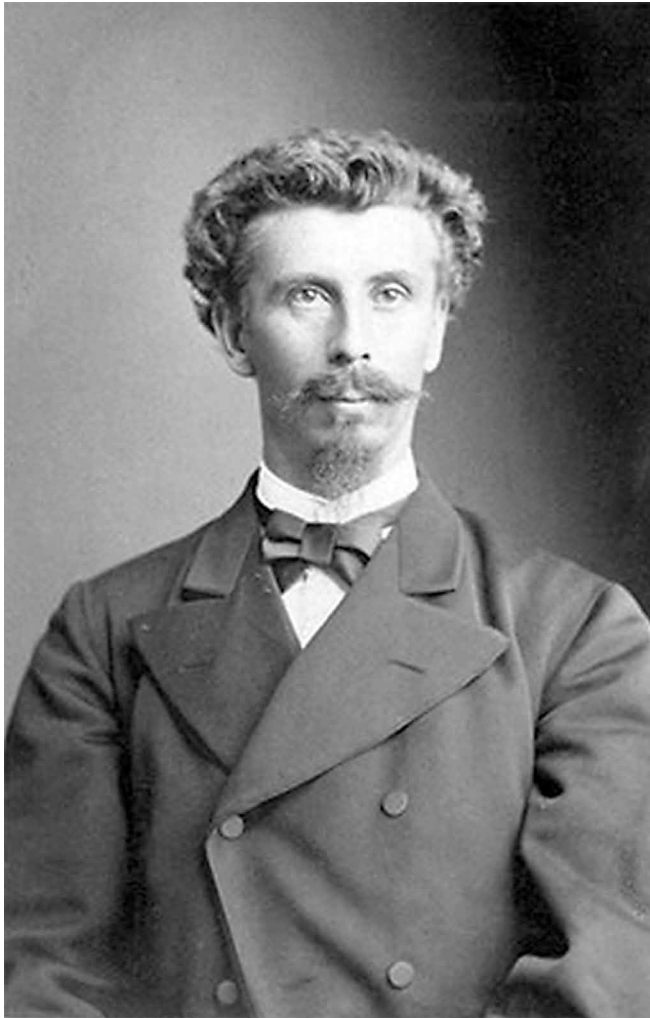


Fig. 19 Moritz Eduard Pechuël-Loesche c. 1882. Photographer unknown. Public domain. [https://www.wikidata.org/wiki/Q111780#/media/File:Eduard\\_Pechu%C3%AB-Loesche,\\_1882.jpg](https://www.wikidata.org/wiki/Q111780#/media/File:Eduard_Pechu%C3%AB-Loesche,_1882.jpg).

his observations on botany. According to Heintze (2010) he was the only one of the 19th century Germans explorers of Angola to establish a deeper relationship with, and have a better understanding of, the Africans. He acquired much of his knowledge of African culture and languages from women, which he acknowledged in his diaries, and during his stay in Chinchoxo he had an African *Zeitfrau* (temporary wife). He is commemorated in a few species names and also in the genus *Pechuel-loeschea* O.Hoffm. (*Asteraceae*). One species in that genus, *Pechuel-loeschea leubnitziae* (Kuntze) O.Hoffm., commemorates both Pechuël-Loesche and his wife Elsbeth whose maiden name was von Leubnitz.

#### Collecting activity in Angola

Date: 19 August 1874–5 May 1876.

Provinces visited: Cabinda.

Localities: Unknown.

Herbaria: B.

Collections: Urban (1916) recorded 75 numbers of 'Siphonogamen' from Hereroland (Namibia) that were collected by Pechuël-Loesche in 1884, but he did not record any collections from Angola. However, he cited mosses from 'Westafrika (a. 1876, 1882, 1884)'. According to Baker (1903: 517) Pechuël-Loesche collected in Lower Congo but we could not locate any specimens nor references to collections he made in Angola.

#### References

Güssfeldt et al. 1888, Pechuël-Loesche 1887, 1907, Baker 1903, Urban 1916, Gunn & Codd 1981, Romeiras 1999, Henze 2000 vol. 4: 65–66, Figueiredo et al. 2008, Heintze 2010, 2011.

## 22. Paul Pogge (1839–1884) — Fig. 20–23; Table 5

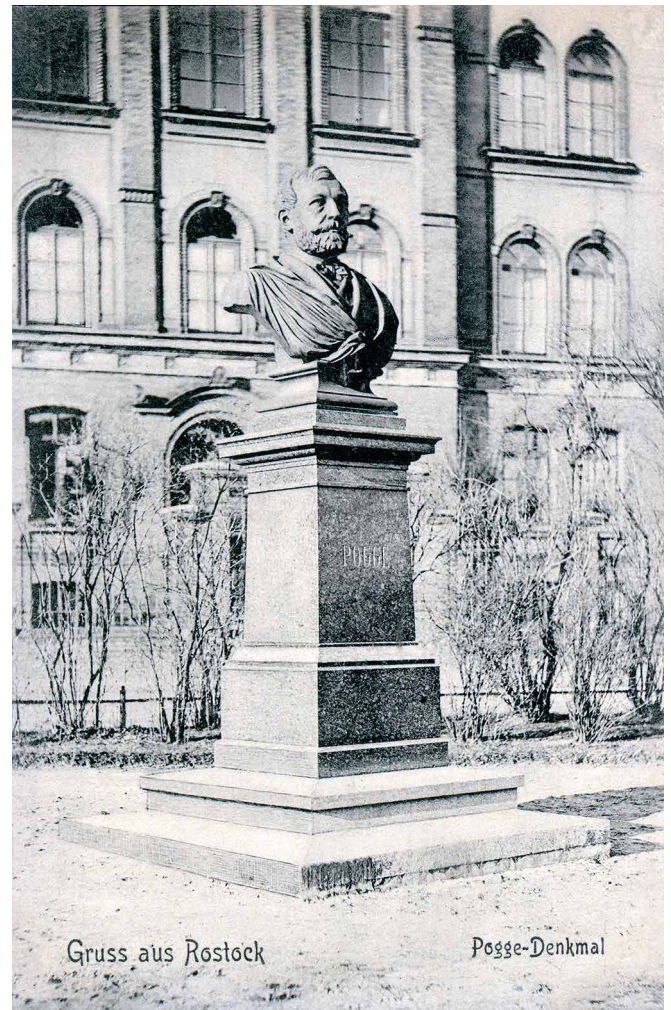
### Biographical sketch

Born Ziersdorf, Mecklenburg, Germany, 27 December 1839 – Died Luanda, Angola, 17 March 1884. From 1858 to 1860 Pogge studied at Berlin, Heidelberg, and Munich, graduating as a lawyer. After working for a while running his father's estate, he undertook a hunting trip to South Africa in 1865 which piqued his interest in the exploration of the continent. Afterwards he offered his services to the *Deutsche Gesellschaft zur Erforschung Äquatorial-Afrikas*, as a self-employed hunter. He was accepted as a member of an expedition to Angola led by Alexander von Homeyer (1834–1903). With four companions, Pogge arrived at Luanda in February 1875, and proceeded inland. At Pungo Andongo, the leader of the expedition, von Homeyer, the botanist Soyaux (see there), and a third member of the expedition took ill and had to return to Germany. Pogge and Lux (see there) left Pungo Andongo on 11 June 1875 and arrived at Malanje on 13 June. The following day they continued towards the interior, in an easterly direction. By the time that they reached Mona Quimundo, on 26 August, Lux had also taken ill. Pogge continued alone, setting off on 15 September 1875 towards the Cassai River. He was on the banks of the Cassai, north of Dilolo, on 30 October and after heading in a northeasterly direction finally arrived at the capital (the *Musumb*) of the Lunda Kingdom. The *Musumb* was the locality where the Mwat Yamv resided; the location changed whenever a new king was on the throne. The *Musumb*, where Pogge arrived on 5 December 1875, was beyond the Lulua and Luisa Rivers. Pogge was not authorised to go further north or east, so when he ran out of provisions and gifts, he headed back to Luanda on 17 April 1876. On 27 June 1876 he crossed the Cassai back to what is now Angolan territory. By 21 July he camped between the Chicapa and Chiumbe Rivers, reaching Mona Quimundo on 30 July 1876. He was in Malanje in October 1876, and later at the coast. He made several collections, mostly of biological specimens, and his narrative of the expedition was published as a book in 1880. Afterwards Pogge approached the *Afrikanische Gesellschaft in Deutschland* with his own project: the establishment of a station in Lunda, following the model of Leopold II's *Association Internationale Africaine*. This being approved, Pogge, with Lt von Wissmann (see there) acting as geographer, left Hamburg in November 1880, disembarking at Luanda on 7 January 1881. From there they proceeded to Malanje, where they arrived on 25 January 1882. On 8 February they met Buchner (see there) who was returning from Lunda, and later, on 20 February they met von Mechow and Teusz (see there) who were on their way back from Cuango. On 22 March they jointly celebrated the birthday of the German emperor Wilhelm I. After this meeting Pogge and von Wissmann changed their plans and decided to follow a northeasterly route to the country of the Luluwa (now D.R. Congo). With the German flag in front of the caravan, and with Buchner guiding them for a day, they left Malanje on 3 June 1881. After passing Sanza they headed in a southeasterly direction, reaching Mona Quimundo on 20 July. On 1 August 1881, with 69 porters, they travelled north from there along the Luele and Chicapa Rivers. They eventually reached the Cassai River on 2 October 1881. Crossing the river they proceeded to what is now territory of the D.R. Congo. On 23 October they parted ways for a while but reunited shortly afterwards. By mid-April 1882 they were at the Lualaba River near Nyangwe (D.R. Congo). From there they took different routes. Pogge turned back on 5 May 1882, heading to the Lulua River where he arrived on 21 July 1882, and settled in order to establish a station. More than a year later, no replacement had been sent, and his means were exhausted and on 9 November 1883 he began the journey to return home. He crossed the Cassai back into present-day

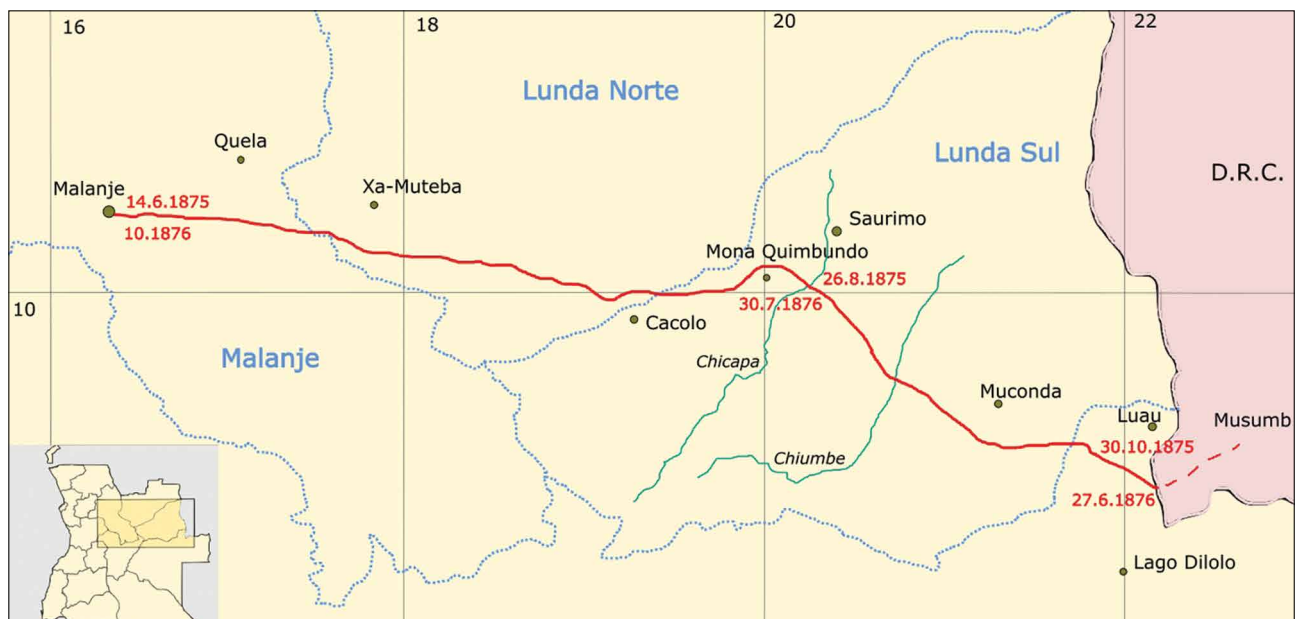


**Fig. 20** Paul Pogge, 1878. Artist unknown. [https://commons.wikimedia.org/wiki/Paul\\_Pogge#/media/File:Dr.\\_Paul\\_Pogge,\\_Afrikareisender.jpg](https://commons.wikimedia.org/wiki/Paul_Pogge#/media/File:Dr._Paul_Pogge,_Afrikareisender.jpg).

Angola on 16 December 1883. When he reached Malanje he met his companion von Wissmann, who was by then on his second expedition in Angola. Pogge was almost unrecognisable due to illness and von Wissmann made efforts to help him return to the coast. Finally Pogge arrived at Luanda on 28 February 1884, but two weeks later he died of pneumonia. He was buried at the protestant cemetery. His diaries (that survived in spite of his wish to have them destroyed), letters, and an account by von Wissmann (1889), provide information on this second expedition. He is commemorated with a statue in Rostock, as well as several plant names of which he collected the type specimens. His collections were mostly destroyed in



**Fig. 21** Statue of Paul Pogge at Rostock. "Denkmal für den Forschungsreisenden Paul Pogge in Rostock, im Rosengarten vor dem Ständehaus; geschaffen 1885 von Bildhauer Ludwig Brunow; 1901 zum Leibnizplatz transloziert, dort 1945 abgebaut und später zerstört" (Monument to the explorer Paul Pogge in Rostock, in the rose garden in front of the Ständehaus; created in 1885 by sculptor Ludwig Brunow; translocated to Leibnizplatz in 1901, dismantled there in 1945 and later destroyed). [https://commons.wikimedia.org/wiki/Paul\\_Pogge#/media/File:Rostock-pogge01.jpg](https://commons.wikimedia.org/wiki/Paul_Pogge#/media/File:Rostock-pogge01.jpg).



**Fig. 22** Itinerary of the first expedition of Paul Pogge in Angola from 14 June 1875 to October 1876.



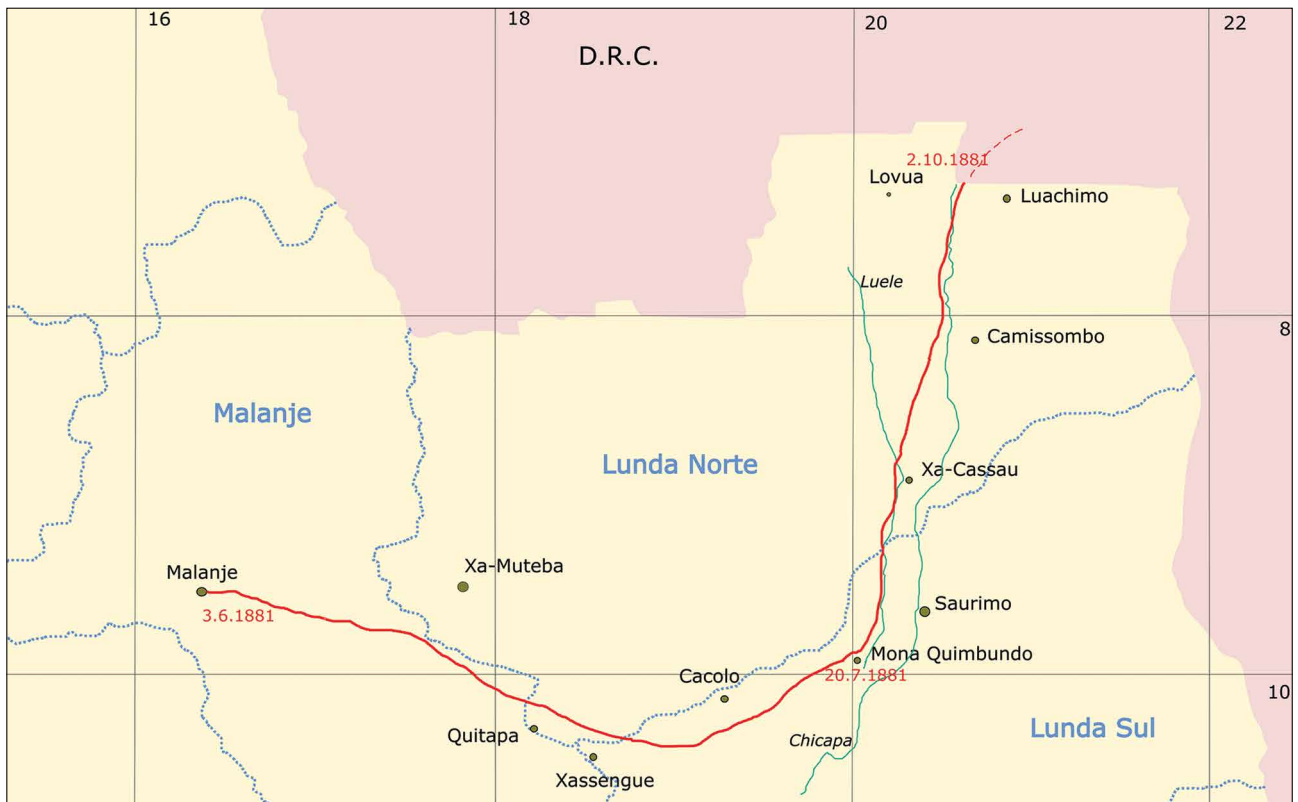


Fig. 23 Itinerary of the second expedition of Paul Pogge in Angola from 3 June 1881 to February 1884.

Berlin during the bombing of the Herbarium in WWII, but some duplicates, mostly fragments, exist at other herbaria.

#### Collecting activity in Angola

Date: February 1875–end of 1876; January 1881–March 1884.

Provinces visited: Bengo, Cuanza Norte, Luanda, Lunda Norte, Lunda Sul, Malanje, Moxico.

Localities: See Table 5.

Herbaria: B (first set), BM, BR, GOET, HBG, K, P.

Collections: According to Urban (1916) collection numbers 1–547 from Pogge's first expedition (1875–1876) were deposited at B. Numbers 548–1648 were received from the second expedition (1881–1884), with 70 numbers missing. There are 89 specimens imaged at JSTOR Global Plants (2020), some of which are only drawings, others small fragments of type material. The numbering of the collections does not follow a chronological sequence. All numbers we have recorded from the second expedition, i.e., above number 548, refer to localities in D.R. Congo.

#### References

Pogge 1880, von Wissmann 1889, Urban 1916, Gossweiler 1939, Mendonça 1962, Bossard 1993, Romeiras 1999, Henze 2000 vol. 4: 157–159, Lindgren 2001, Figueiredo et al. 2008, Heintze 2010.

### 23. Benedictus Ludwig Heinrich Otto Schütt (1843–1888)

— Fig. 24

#### Biographical sketch

Born Husum, Germany, 6 January 1843 – Died Istanbul, Turkey (then Constantinople, Ottoman Empire), 1888. A topographer and explorer, Schütt first studied in Görlitz, and later graduated in engineering from the Polytechnic Institute of Berlin. After graduating he accepted an appointment as a topographer in the construction of railways in the Ottoman Empire. His career was interrupted by the Franco-Prussian War (1870–1871) but afterwards he continued his topographical work in Syria and Mesopotamia (a region including parts of

Iraq, Syria, Kuwait, and Turkey) until 1877. The quality of his work as a topographer made him known to the *Afrikanische Gesellschaft in Deutschland* and he was invited to lead an expedition to continue Pogge's (see there) exploration of Angola. In this expedition Schütt was accompanied by the



Fig. 24 Otto Schütt. 1878. Artist unknown. Public domain. [https://commons.wikimedia.org/wiki/File:Otto\\_Schütt,\\_Ingenieur,\\_Afrikareisender.jpg](https://commons.wikimedia.org/wiki/File:Otto_Schütt,_Ingenieur,_Afrikareisender.jpg).

**Table 5** Localities and dates on which Pogge collected plant specimens on his two expeditions to Lunda, based on material databased.

Number (e.g.)	Locality as originally recorded (translation)	Date(s) of collections (inferred)	Present-day name and locality. Notes
<b>First expedition (1875–1876)</b>			
Left Pungo Andongo on 11 June 1875. Arrived at the <i>Musumb</i> on 5 December 1875			
254	Muata Yamvo's Reich oder Lunda S8°1/2 (Muata Yamvo's realm or Lunda S8°30')	December 1875	D.R. Congo, east of Lulua River
		December 1875	D.R. Congo, east of Lulua River
482	Mussumba des Muata lamvo (Mussumba of the Muata lamvo)	January 1876	D.R. Congo, east of Lulua River
Left the <i>Musumb</i> on 17 April 1876			
342, 454	Lulua-Fluss S9°1/2 (Lulua River S9°30')	May 1876	D.R. Congo, Lulua River
Crossed the Cassai River on 27 June 1876, entering present-day Angola			
412, 457	Kimbundo S10°	August 1876	Angola, Lunda Sul, Mona Quimbundo (c. S9°55' E20°01')
442	zwischen Kimbundu und dem Quango S10° (between Kimbundu and the Quango S10°)	September 1876	Angola, Lunda Sul, between Mona Quimbundo and Cuango River
381, 426, 294	Quango S10°1/2 (S10°30')	September 1876	Angola, Cuango River
431	zwischen Sanza und Malanje	October 1876	Angola, Malanje, between Sanza and Malanje (between c. S9°35' E16°50' and S9°32' E16°21')
Returned to Malanje in October 1876			
<b>Second expedition (1881–1884)</b>			
Left Hamburg in November 1880			
1322	Bolama, Guinea	20 December 1880	Guinea-Bissau, Bolama
Left Malanje on 3 June 1881. Reached the Cassai River on 2 October 1881			
649	Muena Mukesela S6°1/2 (S6°30')	12 October 1881	D.R. Congo, unplaced
618, 636	Lulua	21 October 1881 to 29 August 1883	D.R. Congo, Lulua River
962, 1413	Mukenge S6°	November 1881 to 24 April 1883	D.R. Congo, unplaced
1074	zwischen Lufuba u. Nyangwe (between Lufuba and Nyangwe)	16 April 1882	D.R. Congo, between Lufuba (unplaced) and Nyangwe
978	Nyangwe	27 April 1882	D.R. Congo, Nyangwe
1434	Lomami	30 May 1882	D.R. Congo, Lomami River
1019	between Nyangwe and Kimbundu	15 June 1882	D.R. Congo, between Nyangwe and (likely) Mona Quimbundo, Angola
977, 981	Kassai	September 1882	D.R. Congo, Kassai River
Crossed the Cassai River back to present-day Angola on 16 December 1883			

architect Paul Gierow. They arrived at Luanda on 10 or 12 December 1877 and on 4 January 1878 they took the usual route, up River Cuanza to Dondo, then overland to Malanje, where they arrived on 22 February 1878. After the necessary preparations, the expedition departed in a northwesterly direction on 4 July 1878. They crossed the Lui River and passed Cassanje towards the Cuango River. However, in the country of the Mbangala they were not allowed to cross the river and had to return to the country of the Mbondo, on the other bank of the Lui. They then followed a more southerly route, more or less the same one that Lux and Pogge (see there) had taken, to Mona Quimbundo. From there they travelled north, first along the Luele River, then along the Chicapa River, towards Lunda near the Luachimo River, reaching as far north as 10–11 km from the confluence of the Cassai and Luachimo rivers. Then they had to turn back. From the right bank of the Luachimo they went northwest, crossing the Chicapa, Lovua, and Luxico Rivers, then in a southwesterly direction towards the Cuango River that they crossed on 14 April 1879. On 12 May they were back in Malanje where they met Buchner (see there) and gave him advice on traveling itineraries. On their return journey to the Angolan coast they met von Mechow (see there), in Pungo Andongo; von Mechow was on his way to the Cuango. Schütt

and Gierow arrived in Luanda on 21 June and left on 24 June 1879. Afterwards Schütt was commissioned to do some topographical work in Japan, until 1882. He died in Constantinople (now Istanbul, Turkey) in 1888. Information on his expedition was left as a report and travel diaries. The diaries were edited into a book published by P. Lindenberg in 1881. Schütt made ethnographical, ornithological, and mineralogical collections that were sent to Berlin. His name appears in publications as Otto H. Schütt but is given by Heintze (2010) as Benedictus Ludwig Heinrich Otto Schütt.

#### *Collecting activity in Angola*

Dates: 12 December 1877–24 June 1879.

Provinces visited: Bengo, Cuanza Norte, Luanda, Lunda Norte, Malanje.

Localities: Unknown.

Herbaria: B.

Collections: According to Bossard (1993) Schütt made collections from Malanje to Cassai. The database of collectors of the Natural History Museum (at JSTOR Global Plants 2020) also indicates Schütt as a plant collector in Angola. Urban (1892, 1916) did not list him among the collectors that sent specimens to B. No plant collections have been located in databases, nor were references to such found in the literature.

## References

Schütt 1881, Bossard 1993, Romeiras 1999, Henze 2004 vol. 5: 95–97, Figueiredo et al. 2008, Heintze 2010.

## 24. Herman Soyaux (1852–unknown (1928?)) — Fig. 25

### Biographical sketch

Born Breslau, Silesia (then Prussia), Wrocław, Poland, 4 January 1852 – Date and place of death unknown (1928?). Soyaux studied botany in Berlin and in 1873, following the advice of the botanist Georg Schweinfurth (1836–1925), joined an expedition of the *Deutsche Gesellschaft zur Erforschung Äquatorial-Afrikas* to the Kingdom of Loango (now Rep. of Congo and Cabinda, Angola). On 24 January 1874 he arrived at Landana (Cabinda), after having left Berlin two months earlier on 24 November 1873. From there he proceeded to Chinchoxo (a station north of Landana, beyond the Chiloango River) where he was mostly stationed. He took a trip to the Chiloango, and up the Kouilou River (Rep. of Congo), reaching the forests of Mayombe. The following year, in 1875, he was appointed by the *Deutsche Gesellschaft zur Erforschung Äquatorial-Afrikas* to join the expedition lead by Alexander von Homeyer (1834–1903) to Angola. Soyaux left Loango and after passing through Landana, Banana, and Ambriz, he arrived at Luanda on 21 January 1875. There he met von Homeyer and Pogge (see there) and in February 1875 they together proceeded inland, up the Cuanza River to Dondo, and then overland to Pungo Andongo. Soon, in April 1875, Soyaux had to return to Luanda to get money, staying in the city for a few weeks. At that time Lux (see there) arrived to join the expedition and on 12 May 1875 they together left



**Fig. 25** Hermann Soyaux. Photographer unknown. Ethnologisches Museum, Staatliche Museen zu Berlin. Namensnennung - Nicht kommerziell - Weitergabe unter gleichen Bedingungen 3.0 Deutschland. <https://www.deutsche-digitale-bibliothek.de/item/EC3WZO4L76RLLJ2ZY5W44RTCSPA6T73S>.

Luanda to travel to Pungo Andongo. Once there, both Soyaux and von Homeyer eventually contracted malaria and had to leave the expedition. They returned to Luanda on 27 August 1875. Soyaux finally made it back to Loango, arriving very ill at Landana on 3 October 1875. He recovered and on 5 May 1876 he returned to Berlin. His collections consisted of 1 038 specimens. Three years later, in 1879, he returned to Africa to run a coffee plantation in Gabon for the C. Woermann Co. of Hamburg, Germany. In 1884, while based in Gabon, Soyaux was visited by Büttner (see there); at the time Büttner was en route to Angola. Soyaux returned to Germany and in 1885 joined the *Deutschen Kolonialverein*. He visited Brazil in 1886 and returned to and settled in that country in 1888 as the leader of a colony of Germans called Bom Retiro in Rio Grande do Sul. In 1904 he was secretary-general of the *Centro Econômico do Rio Grande do Sul*, living in Porto Alegre, and from 1913 to 1928 he was president of the *Verband Deutscher Vereine* (Silva 2005). He wrote several articles and published two books on his experiences in Africa. He is commemorated in several plant and animal names, including the genus *Soyauxia* Oliv. (*Peridiscaceae*) and *Mussaenda soyauxii* Büttner (*Rubiaceae*).

### Collecting activity in Angola

Date: 24 January 1874–5 May 1876.

Provinces visited: Cabinda, Cuanza Norte, Luanda, Malanje.

Localities: Loango, Chinchoxo (Cabinda); Pungo Andongo (S9°40' E15°35'; Malanje).

Herbaria: B, BM, COI, E, G, JE, K, M, P, S, W.

Collections: Soyaux collected in the Cabinda enclave from 24 January 1874 to January 1875 and then in Angola (at least in Malanje) until 6 May 1876. Urban (1916) recorded 270 numbers from Angola received at Herb. B. The collection numbers are chronological, those from Cabinda reaching number 223, while those from Malanje range from 226–249. By the time that he returned to Europe he had amassed 1 038 specimens, a figure that includes duplicates. When he later returned to Africa in 1879, he started a new numbering series, which goes up to at least number 457 (specimen B 10 0154232) for material collected in Gabon.

### References

Soyaux 1879, 1888, Urban 1916, Gossweiler 1939, Mendonça 1962, Bossard 1993, Romeiras 1999, Henze 2004 vol. 5: 190–191, Silva 2005, Figueiredo et al. 2008, Heintze 2010.

## 25. Klaus Dieter Stopp (1926–2006) — Fig. 26

### Biographical sketch

Born Kötzschenbroda (today part of Radebeul, near Dresden), Germany, 11 July 1926 – Died Mainz, Germany, 6 June 2006. Stopp was a botanist, pharmacologist, and historian. He became a soldier in WWII directly after school. He was taken prisoner by the Soviet Army and deported to an uranium mine in the Urals. He escaped and made his way back home on foot. Afterwards he studied at the Johannes Gutenberg University in Mainz and obtained his PhD in botany in 1949. He specialised in ethnobotany and undertook several expeditions, e.g., to South Africa (1950–1951, with Stefan Vogel), Congo (1954), Angola (1959–1960), New Guinea (1961), and Zambia and Kenya (1967, 1973, with Ulrich Hecker), and published on fruit morphology. While employed as scientific assistant (1949–1954) at the Johannes Gutenberg University he was curator of the Botanic Garden. From 1962 until his retirement in 1988, he was a professor of pharmacology at the *Institut für Spezielle Botanik und Pharmakognosie* also at Mainz University. He was also a cartographical historian and collector of maps and antiquarian ephemera, and published several catalogues, including a six-volume catalogue of the birth certificates of German emigrants to the USA, which is now a standard reference for genealogical



**Fig. 26** Klaus Stopp. Photographer unknown. Reproduced from *Der Kurier* 24 (3): 9 with permission from the Mid-Atlantic Germanic Society.

studies. In 1964 and 1971 he described some new taxa of *Apo-cynaceae* subfam. *Asclepiadoideae*, some of which are endemic to Angola (Stopp 1964, 1967, 1971; see Lebrun & Stork 1997: 103–109). These included *Ceropegia chipiaensis* Stopp and *C. mendesii* Stopp. Although Stopp undertook journeys to South Africa in 1950 and 1951 and collected in that country he was not included in Gunn & Codd (1981), but his East African collecting activities are described in Polhill & Polhill (2015: 441). Stopp also deposited a collection of Father João Baptista Damann in the herbarium (MJG) of the *Johannes Gutenberg-Universität*, Mainz, Germany, which contained specimens of a number of new taxa. Damann (fl. 1951–1964) was a Swiss missionary, one of the first eight La Salette missionaries in Angola. Initially stationed at Missão da Ganda (Benguela), he was later based at *Missão Nossa Senhora de La Salette* that was created in 1947 in Quingenge (Huambo). Damann also collected over 3000 numbers that were deposited at the herbarium (LUA) of the *Instituto de Investigação Agronómica*, in Huambo, Angola, and the herbarium (ZT) of the *Eidgenössische Technische Hochschule*, Zürich, Switzerland. In 1991, ZT and Z (Herbarium of the Institut für Systematische Botanik, Universität Zürich) were combined and work together as Z+ZT (Thiers 2020, continuously updated). Damann died of schistosomiasis. Stopp (1964: 122) commemorated Damann in *Ceropegia damannii* Stopp.

#### Collecting activity in Angola

Dates: November 1959–February 1960.

Provinces visited: Huambo, Huíla, Namibe.

Localities: Água Clara (S12°56' E14°50'), Canjangué (S12°38' E15°14'), Chipipa (S12°33' E15°44'), Huambo (S13°00' E15°50') (Huambo); Moçâmedes (S15°11' E12°09') (Namibe).

Herbaria: BM, COI, K, LISC, M, MJG (first set).

Collections: The plant specimens Stopp collected in Angola are labelled "Itinera africana. IV Angola centralis & austro-

occidentalis 1959–60 (Dist. Huambo, Huíla et Moçâmedes)" and have a sketched map indicating the collecting locality attached to them. Fourteen of his specimens are imaged at Kew Herbarium Catalogue (2020). The numbers of the specimens seen range from 105 to 231, from dates between November 1959 and February 1960. The numbering is not chronological. Herb. M (Botanische Staatssammlung München) has 29 Stopp specimens, a set received from MJG (H.-J. Esser, pers. comm. 2020).

#### References

Stopp 1958, 1964, 1967, 1971, Schunack et al. 2006, Earnest & Earnest 2006, Meurer 2007, Figueiredo et al. 2008, Polhill & Polhill 2015: 441.

## 26. Julius Eduard Teusz (1845–1912) — Fig. 16

### Biographical sketch

Born Złotów, Poland, 8 January 1845 – Died Lübben, Germany, 21 March 1912. After probably studying in an agricultural school, Teusz was working as an *Obergehilfe* at the Botanic Garden of Berlin (Botanical Garden and Botanical Museum Berlin-Dahlem), Germany, when he was invited to join the expedition of von Mechow (see there) to the Cuango River in Angola. Teusz, von Mechow, and a naval carpenter named Bugslag, left Hamburg on 19 September 1878 and arrived at Luanda on 6 November 1878. They proceeded to Dondo arriving there on 14 November. In January 1879, after leaving Bugslag in Dondo, Teusz and von Mechow continued to Pungo Andongo where they were stationed until 21 June. Malanje was reached on 25 June. Once there the preparations for the expedition took about a year, as a result of difficulties in securing the services of porters that were willing to venture into the interior. It was only on 12 June 1880 that the expedition eventually departed, with 110 porters. They reached Cuango south of its confluence with the Cambo on 19 July 1880. On 25 August they started exploring the Cuango River and on 7 September landed on the right bank (D.R. Congo). Von Mechow travelled to the *Musumb* (capital), about three hours distant, and was received by the Mwat Yamv (in Portuguese *Muatiamvo*, *Muatianvua*, the king), called Muene Puto Kassongo. After negotiating with the King, von Mechow left some members of the expedition at the *Musumb* as a guarantee that he would return. On 20 September 1880, while Teusz stayed behind as a guarantee, the expedition proceeded by boat downstream the Cuango River with von Mechow, Bugslag, and 19 porters part of the expeditionary force. On their return they rejoined Teusz and proceeded to the coast. They crossed the Cuango on 6 January 1881 and were back in Malanje on 20 February 1881. There they met von Wissmann (see there), Pogge (see there), and Buchner (see there) and returned to Luanda the following month, in April 1881. After this expedition, and along with Pechüel-Loesche (see there), Teusz was contracted by the *Comité d'Études du Haut-Congo* to work as an agronomist. In March 1882 he arrived at Vivi, on the right bank of the Congo River, opposite Matadi (D.R. Congo). From there he continued to Kinshasa where, two years later, in 1884, he established the first coffee plantation. It was at Kinshasa that Henry Hamilton Johnston (1858–1827) met him while travelling on the Congo River. Even though Johnston (1895) mentioned only "a surly German gardener attached to the expedition, who spent his spare time in collecting birds for certain museums", Johnston's private notes reveal that he was referring to "that odious Teusz" (Teusz 2018) who was in possession of a bird he had shot and (understandably) refused to sell or even allow it to be drawn, in fear that someone else might be the first to describe it. Teusz, who was born in Poland, was often mistaken for a German and his name was (and still is) misspelled. In November 1884, he

returned to Europe but was soon back in Africa. From 1885, he worked in Cameroon as director of the company *Kamerun-Land-und Plantagengesellschaft*, establishing a plantation near Limbe. He is commemorated in several names with the epithet 'teucszi'.

#### *Collecting activity in Angola*

Date: 6 November 1878–April 1881.

Provinces visited: Bengo, Cuanza Norte, Luanda, Lunda Norte?, Malanje.

Localities: Pungo Andongo (S9°40' E15°35'), Malanje (S9°58' E14°56'), Tembo-Aluma (Mangango; S8°03' E17°08'), and Calala Canginga (near Sunginge; S8°49' E16°48'), in Malanje province.

Herbaria: B, BR, C, G, GH, GOET, JE, K, L, M, P, S, W, WU.

Collections: Although Teusz was the natural history collector during von Mechow's expedition, his name is generally not given on the labels. As a result most material is databased as having been collected by von Mechow. At JSTOR Global Plants (2020), for example, only seven sheets are attributed to Teusz, while over 200 are listed for von Mechow. The collecting numbers go up to at least number 579. In his lists of specimens deposited at Herb. B, Urban (1916) stated under von Mechow "Angola und Belgisch Kongo (Loanda, Malange, Kuango, a. 1879–81) 583 Nr. (leg. Teusz)". Collections from Pungo Andongo and Malanje, where Teusz was stationed until 12 June 1880, go up to around number 500. Number 579 is also from Malanje, and the specimen is dated February 1881, i.e., when the expedition returned. Collecting localities along the route from Malanje to the Cuango River include the territories of Tembo-Aluma (Mangango) and Calala Canginga (near Sunginge), in Malanje province. The numbering only partially follows a chronological order. Most specimens were likely destroyed at Herb. B but duplicates exist in several herbaria.

#### *References*

Von Mechow 1882, 1884, Johnston 1895, Urban 1916, Gossweiler 1939, Coosemans 1951, Mendonça 1962, Bossard 1993, Romeiras 1999, Figueiredo et al. 2008, Teusz 2018.

## **27. Hermann Wilhelm Leopold Ludwig von Wissmann (1853–1905) — Fig. 27**

### *Biographical sketch*

Born Frankfurt an der Oder, Germany, 4 September 1853 – Died Weißenbach, near Liezen, Austria, 16 June 1905. He studied in the school for cadets in Berlin, and after joining the fusiliers and attending the military academy at Anklam, he was commissioned as officer in 1874. He became a lieutenant in the infantry at Mecklenburg, Germany. That year he was arrested for duelling and while in prison at Magdeburg he met Buchner (see there) who had been arrested for the same reason. In 1879 von Wissmann was stationed at Rostock, where he met Pogge (see there), who enthralled him for African exploration. Pogge recommended him to the *Afrikanische Gesellschaft in Deutschland* and von Wissmann consequently joined Pogge's second expedition to Africa as a geographer. He prepared for the expedition by studying at the Seemannsschule (naval school) and at the University of Rostock. The expedition aimed at reaching the Lunda Kingdom, establishing a research station, and proceeding north. With this purpose, von Wissmann and Pogge left Hamburg in November 1880 and seven weeks later disembarked at Luanda, Angola, on 7 January 1881. On 25 January 1881 they were already at Malanje. There they met von Mechow (see there) on his way back from Cuango, and Buchner who was returning from Lunda. After this meeting they changed their plans and decided to head northeast to the country of the Luluwa (now D.R. Congo). They left Malanje at the end of May or beginning of June 1881 and reached Mona



**Fig. 27** Hermann von Wissmann. 1898. Photographer J.C. Schaarwächter. Public domain. [https://commons.wikimedia.org/wiki/File:Hermann\\_von\\_Wissmann\\_1898\\_Phographie\\_von\\_J.\\_C.\\_Schaarw%C3%A4chter.png](https://commons.wikimedia.org/wiki/File:Hermann_von_Wissmann_1898_Phographie_von_J._C._Schaarw%C3%A4chter.png).

Quimbundo on 20 July. On 1 August, with 69 porters, they left Mona Quimbundo in a northerly direction along the Luele and Chicapa rivers. They eventually reached the Cassai River on 2 October 1881. Crossing the river they proceeded to what is now territory of the D.R. Congo. On 23 October 1881 they parted ways for a while but reunited shortly after. By mid-April 1882 they were at the Lualaba River near Nyangwe (D.R. Congo) and there they took different routes. About one month after Pogge headed to the Lulua River, von Wissmann went east on 1 June 1882 and reached the east coast of Africa on 14 November 1882. Von Wissmann returned to Germany in 1883. In 1889 he published a narrative of this first expedition. His second expedition was a venture of Leopold II of Belgium and the *Association Internationale Africaine*. On 13 November 1883, von Wissmann left Germany with the meteorologist and photographer Franz Müller (who died during the expedition), Müller's brother the zoologist, botanist and (later) photographer Hans Müller, the medical doctor and anthropologist Ludwig Wolf, the geographer Curt von François, as well as a carpenter and two armourers. The objective of the allegedly scientific expedition was in fact the subjugation of territories along the Cassai River to Leopold II. The expedition arrived at Luanda on 17 January 1884 and from there took the regular route to Malanje where they met Pogge who was returning to the coast at great cost to his health (Pogge died shortly afterwards). Von Wissmann left Malanje on 16 July with 320 porters, heading east. He crossed the Cuango River on 17 August and by 18 October 1884 he had reached the Cassai River, and from there proceeded to what is now D.R. Congo. The return was by boat, which had been carried disassembled, and 28 canoes down the Cassai River on 5 June and then the Congo River on 9 July, ending in Leopoldville (now Kinshasa, D.R. Congo) on 17 July 1885. The narrative of the expedition was published in 1891.

From 1886 to 1887 von Wissmann undertook another expedition, crossing the continent from Kananga (D.R. Congo) to near Quelimane (Mozambique). From 1888 to 1893, he visited German East Africa (now Tanzania) several times. In 1889 he was appointed Imperial Commissioner with the task of subduing Arab uprisings in the region. His success in recovering possession of territory for Germany resulted in several decorations, an honorary doctorate from the University of Rostock and a nobility title in 1890, after which he added 'von' to his surname. He was also involved in initiatives to deter slave traffic in 1892, clearing a region of slave-hunters. He was governor of German East Africa from August 1895 to December 1896. In 1897, he became president of the *Deutsche Gesellschaft für Geographie*. He returned to Africa in 1898, for a hunting safari in German South West Africa, now Namibia, and from 1899, he settled at Weißenbach, near Liezen in Austria, where he died after a hunting accident.

#### *Collecting activity in Angola*

Von Wissmann has been listed in the literature as having collected in Angola during the period 1880–1885. If any collections were made during his expeditions, they would have been sent to Herb. B. However, none is mentioned in the account of the collections received at Herb. B during the period 1878–1891 (Urban 1892). Furthermore, no specimens have been traced in other herbaria. On the first expedition collections were made by Pogge. Von Wissmann's second expedition, from 1883 to 1885, as noted by Heintze (2010), had as purpose the subjugation of territories; any scientific endeavour was authorised only if it was compatible with that main objective. Insect collections are listed by von Wissmann et al. (1891) but they do not list any plant collections.

#### *References*

Armand 1884, von Wissmann 1889, von Wissmann et al. 1891, EGR 1905, Schnee 1920: 721, Bossard 1993, Romeiras 1999, Henze 2004 vol. 5: 522–529, Figueiredo et al. 2008, Heintze 2010, Deutsche Biographie 2020.

## **28. Wrede (unknown–1842)**

#### *Biographical sketch*

Place and date of birth unknown – Died Benguela, Angola, January 1842. Wrede was a German botanist from Hannover who, in 1841, joined a commercial expedition to Angola. He went to Angola on the brig *Camões*, one of several vessels in an expedition to the Angolan coast led by José Ribeira dos Santos (1798–1842). Santos was the Portuguese Consul-General at Altona, Germany, and also a partner in the commercial company Santos & Monteiro that was based in Hamburg. Six vessels, full of merchandise, were fitted out for the expedition and sailed from Altona in July 1841. In addition to Wrede and Santos, the expeditionary team consisted of a medical doctor named Georg Tams, a German naturalist from Hamburg named Grossbendtner ('Grossbendner' in Tams 1845), and a Portuguese linguist-secretary in charge of facilitating transactions. During the voyage the team was entertained by a band of six musicians and an Italian chef, and had access to a library. They arrived at the coast of Benguela in October 1841. The trip proved fatal for most of them. Santos died in Benguela in January 1842. By then Wrede, Grossbendtner, and the secretary had already died. An account of the expedition was written by the surviving doctor, Tams, and became a well-known book, especially for the description of the slave traffic, which Tams especially opposed, as well as of the treatment of the slaves in the country. It was translated into English and Portuguese. The expedition was purportedly destined to trade merchandise for local products, but there were suspicions that it was a cover for participating in the illegal slave trade. After concerns were raised in the British

Parliament, a statement from the Hamburg authorities to the British Foreign Secretary Lord Aberdeen, dated November 1841, declared that "it clearly appears that again Mr dos Santos's Altonian expedition has been converted into slave-ships". Recent literature (e.g., Wissenbach 2011) indicates that the intention of Santos was to trade in *urzela* (*Roccella tinctoria* DC., a lichen used for making a royal purple dye). However, his dealings with notorious slave traffickers and his long stays at slave trafficking ports created suspicion and the matter remains unresolved. During the expedition they came across one of the warships of the West Africa Squadron that was chasing a slave ship. To escape, the captain of the slave ship wrecked it on the Ambriz coast of Angola. The slaves could not be saved and the captain escaped from the British by hiding in the brig *Camões*, unbeknownst to Santos, according to Tams. During the expedition Tams collected artefacts that were deposited at the Museum of Ethnology of Leipzig, in Germany.

#### *Collecting activity in Angola*

Bossard (1993) listed Wrede as a collector in Angola specifying Ambriz, Benguela, Luanda, Namibe, and Sumbe as collecting localities. However, Wrede is not cited as a collector in the literature. As artefacts collected by Tams were deposited at the Museum of Ethnology of Leipzig, Germany, if plant collections were also made, they might have been given to an institution in Leipzig. The herbarium of the University of Leipzig (LZ), including all its specimens, literature and documents, was completely destroyed during the WWII bombing in 1943. We could not trace any collection made by Wrede.

#### *References*

British Foreign Office 1842, Tams 1845, Bossard 1993, Romeiras 1999, Figueiredo et al. 2008, Heintze 2010, Wissenbach 2011, Otto 2018.

## **29. August Wulfhorst (1861–1936) — Fig. 28**

#### *Biographical sketch*

Born Gütersloh, Germany, 12 March 1861 – Died Gütersloh, Germany, 28 September 1936. In 1890, after becoming a missionary of the *Rheinische Missionsgesellschaft*, Wulfhorst travelled to Namibia (then German South West Africa) to establish a Rhenish mission. The following year, in 1891, along with another Rhenish missionary, Friedrich Meisenholz, he established a mission station at Ondjiva in Cunene, Angola. He married Thusnelda Härlin in 1892 and after her death in 1922, he wedded her sister, Johanna. Afterwards another mission was established at Omupanda, south of Ondjiva, and Wulfhorst was stationed there from 1899 to 1907, with a break of two years, from 1900 to 1902, when he was in Germany. In 1915, during WWI, the German Omupanda mission had to be closed and he moved to Omaruru and later to Karibib where he was stationed from 1919 to 1927. Later he was sent to Swakopmund and in 1931 he returned to Germany where he died in his hometown. During his stay in Africa, Wulfhorst collected ethnographical objects and plant specimens. The latter were sent to the botanist Hans Schinz at the University of Zürich, Switzerland. Wulfhorst also took photographs, a few of which were published by Tönjes (1911). According to Vilhunen (1995), these photographs did not survive the destruction of the archives of the *Rheinische Missionsgesellschaft* during WWII. However, the Archives and Museum Foundation of the *Vereinte Evangelische Mission (VEM)*, where the *Rheinische Missionsgesellschaft* archives are kept, list in its holdings 'Bilder aus d. Missionsarbeit in Ovamboland, ca. 1910' as part of Wulfhorst's bequest to the society. His extensive correspondence, reports, and diaries, as well as his wife's travelogue, are also extant at the *VEM* archives.



**Fig. 28** August Wulfhorst. Photographer unknown. © Archiv- und Museumsstiftung der VEM, Wuppertal.

#### Collecting activity in Angola

Dates: 1894–1898.

Provinces visited: Cunene.

Localities: Omupanda (S17°08' E15°46').

Herbaria: BM, K, Z (first set).

Collections: In 1898 Schinz received a total of 172 numbers from Wulfhorst. The database of the Zürich herbaria (2020) lists 135 specimens, most of which are imaged. Collecting details of 55 of these sheets were listed by Figueiredo et al. (2013). The highest collection number encountered was 191. Numbering is not chronological and the date given on the label is often the date on which the material was received at Zürich.

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Tönjes 1911, Olpp 1937, Gunn & Codd 1981, Vilhunen 1995, Dierks 2003–2004, Figueiredo et al. 2013.

#### NAMES EXCLUDED

##### Johann Anton Schmidt (1823–1905)

Born Hamburg, Germany, 6 May 1823 – Died, Elberfeld, Germany, 21 January 1905. Schmidt studied at the Universities of Heidelberg and Göttingen and obtained his doctorate in botany in 1850. After an expedition to the Cape Verde Islands from 1851 to 1852 he became a lecturer at Heidelberg, until 1863, when he moved to Hamburg as a private scholar. He died in Elberfeld in 1905. Although Schmidt was listed by Romeiras (1999) as having collected in Angola in 1851, there is no indication that his expedition to Cape Verde extended to Angola.

#### References

Romeiras 1999, Frahm & Eggers 2001.

##### Karl Moritz Schumann (1851–1904)

Born Görlitz, Germany, 17 June 1851 – Died Berlin, Germany, 22 March 1904. Schumann was a botanist who became the curator of the Botanisches Museum in Berlin-Dahlem. He is listed in the literature (Figueiredo et al. 2008) as collector based on a record in the Kew Herbarium database. The record consists of a specimen that was sent by Karl Schumann to Kew in 1900, of a species that he later described as *Triumfetta macrocoma* K.Schum. (*Malvaceae*). The species is endemic to Angola, and Schumann cited only two collections: *Dekindt* 74 and 233, from Huíla (Schumann 1903). During WWII these specimens were likely destroyed in the Berlin Herbarium. The fragment that Schumann had sent to Herb. K was wrongly databased as having been collected by Schumann himself, and this error was perpetuated in the literature.

#### References

Schumann 1903, Figueiredo et al. 2008.

##### Georg Carl Wilhelm Vatke (1849–1889)

Born Berlin, Germany, 12 August 1849 – Died Berlin, Germany, 6 April 1889. Vatke was a botanist who studied at the University of Berlin, Germany, and was an assistant at the Botanic Garden of Berlin from 1876 to 1879, and later a private scholar. He collected in Central and Eastern Europe from 1868 to 1876 and had a private herbarium that was acquired by the Haussknecht Herbarium, Jena (JE). Vatke co-founded (together with Carl Rensch) the *Berliner Botanischer Tauschverein*, and distributed also material from Africa collected by others. This material included the collections of von Mechow and Teusz (Angola, see above), Johann Maria Hildebrandt (1846–1881; Madagascar), and Hoepfner (Namibia) (J. Müller, curator at JE, pers. comm.). Widespread information (e.g., JSTOR Global Plants 2020) indicates that Vatke collected in Angola and Madagascar. The reference for this seems to be Jackson (1901), a list of collectors with material held at Kew in 1899. In this list Vatke appears as: 'Vatke, Wilhelm, (per). Angola, Madagascar'. The term 'per' indicates that the material was received through Vatke, not collected by him. As far as is known, Vatke never visited Angola.

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Hoffmann 1889, Zepernick & Timler 1979: 111, Stafleu & Cowan 1986: 679, Wagenitz 2009: 518, J. Müller pers. comm. November 2018.

#### CONCLUSION

Botanical collecting in Angola by German nationals was particularly prolific during the 19th century, with the majority of these activities associated with expeditions aimed at the exploration of the region. During the 20th century German collectors mostly operated independently with these activities lasting up to the independence of Angola in 1975. During the two-century period analysed in this paper, the contribution of Germans towards the knowledge of the flora of Angola was especially pertinent because of the number of specimens that became the types of plant names.

A synopsis of the collecting activity of these individuals indicates that the majority had their collections deposited in the herbarium of the Botanic Garden and Botanical Museum Berlin-Dahlem (B), in Germany (Table 6). Although most of these collections held at B were destroyed during WWII, duplicates are extant in several herbaria. With the exception of Moxico, these German collectors visited most Angolan provinces, but they may not have collected specimens in all the provinces visited. For some collectors (e.g., H.E.K. Jordan and G. Forst), collecting data are unavailable because of the lack (or insufficiency) of databases in

**Table 6** German nationals (one, G. Forst, was likely Swiss) who collected botanical specimens in Angola up to the year 2000, herbaria where the collections are deposited, provinces visited, and collecting localities.

Name (birth–death)	Fl. in Angola	Herbaria (main in <b>bold</b> ) and number of collections	Angolan provinces* visited and collecting localities	Itinerary
Ackermann, G.W. (c.1837–1862)	1862, possibly	Unknown		
Bastian, A. (1826–1905)	1873	<b>B</b> (c. 30 numbers)	CA	
Baum, H. (1866–1950)	1899–1900	<b>B, BM, BR, COL, E, G, K, M, NY, P, S, W, Z</b> (1016 numbers)	CC, CU, HI, NA	See Fig. 2
Boss, G. (1903–1972)	1932–1937; 1954–1955	<b>B, BM, K, M, PRE</b> (600 numbers in 1954/55)	BO, CN, CS (Cuanza River, Libolo), CU (Xangongo), HI, NA (Moçâmedes)	
Brühl, L.J. (1870–unknown)	1922	<b>B, PRE</b> (45 numbers)	NA (Moçâmedes)	
Buchner, M. (1846–1921)	1878–1881	<b>B, BM, BR, COI, GH, K, L, P</b> (396 numbers)	BO, CN, LA, LN, LS, MA	See Table 3, Fig. 7
Büttner, O.A.R. (1858–1927)	1884–1885	<b>B, BM, G, GOET, H, LE, M, P, W</b>	UI, ZA	See Table 4, Fig. 8
Estermann, C. (1895–1976)	1940	<b>LUA</b>	CU (Cuanhama, Humbe), HI (Huíla)	
Forst, G. (unknown)	1966–1974	<b>LUA</b> (c. 200 collections)	BE (Cubal, Ganda), CS (Calulo, Libolo, Bungo, Luati River)	
Fritzsche, B. (1863–unknown)	1902–1905	<b>AMB, B, G, GB, M, NY, S, W</b> (302 numbers)	HI (Bumbo River, Humpata, Jau, Munhino), NA	
Güssfeldt, P. (1840–1920)	1873–1875	<b>B</b>	CA	
Hauser, W. (unknown)	1935	Likely <b>B</b>	BE (Ganda)	
Hoepfner, K. (1857–1900)	1882–1883	<b>B, CORD, HT, PRE</b>	NA (Moçâmedes)	
Hundt, O. (1878–unknown)	1930–1935	<b>B, BM, COI, G, LISC, MO, P, PRE</b>	BE, HI (between Ganda (BE) and Caconda (HI))	
Jessen, O. (1891–1951)	1931	<b>B, COI</b>	BO, BE, BI, CN, CS, HA, HI, LA, NA	See Fig. 12
Jordan, H.E.K. (1861–1959)	1934	<b>BM, MO</b>	BE, CN, HA	See Fig. 14
Lux, A.E. (1847–1908)	1875, doubtfully	Unknown		
Von Mechow, F.W.A. (1831–1890)	1878–1881	<b>B, BR, C, G, GH, GOET, JE, K, L, M, P, S, W, WU</b>	BO, CN, LA, MA (Pungo Andongo, Malanje, Tembo-Aluma, Calala Canginga)	See Fig. 16
Naumann, F.C. (1841–1902)	1874, possibly	Unknown	ZA	
Von Nolde, I. (1889–1970)	1932–1938	<b>B, BM, COI, LISC, MO</b> (887 numbers)	MA (Quela)	
Pechuël-Loesche, M.E. (1840–1913)	1874–1876	<b>B</b>	CA	
Pogge, P. (1839–1884)	1875–1876; 1881–1884	<b>B, BM, BR, GOET, HBG, K, P</b> (547 numbers)	BO, CN, LA, LN, LS (Mona Quimundo), MA	See Table 5, Fig. 22 and 23
Schütt, B.L.H.O. (1843–1888)	1877–1879	<b>B</b>	BO, CN, LA, LN, MA	
Soyaux, H. (1852–1928?)	1874–1876	<b>B, BM, COI, E, G, JE, K, M, P, S, W</b> (270 numbers)	CA (Loango, Chinchoxo), CN, LA, MA (Pungo Andongo)	
Stopp, K.D. (1926–2006)	1959–1960	<b>BM, COI, K, LISC, M, MJG</b>	HA (Água Clara, Canjangué, Chipipa, Huambo), HI, NA (Moçâmedes)	
Teusz, J.E. (1845–1912)	1878–1881	<b>B, BR, C, G, GH, GOET, JE, K, L, M, P, S, W, WU</b>	BO, CN, LA, LN?, MA (Pungo Andongo, Malanje, Tembo-Aluma, Calala Canginga)	
von Wissmann, H. (1853–1905)	1881–1884, doubtfully			
Wrede (unknown–1842)	1841, possibly	Unknown		
Wulfforst, A. (1861–1936)	1894–1898	<b>BM, K, Z</b> (at least 191 numbers)	CU (Omupanda)	

\* Provinces: BE: Benguela; BI: Bié; BO: Bengo; CA: Cabinda; CC: Cuanza Norte; CN: Cuanza Sul; CU: Cunene; HA: Huambo; HI: Huíla; LA: Luanda; LN: Lunda Norte; LS: Lunda Sul; MA: Malanje; NA: Namibe

herbaria where their collections were deposited. Comprehensive and searchable databases and digital images of labels associated with specimens are essential tools for the study of botanical exploration of any country or region. Developing such resources for herbaria remains of paramount importance.

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