Sansevieria Online
Online Journal
ISSN 2197-7895
Article 1
Vol. 11 (1)
3. Febrary 2023

Sansevieria richardsii, a new species from Zimbabwe

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Keywords

Monocotyledon, Asparagaceae, Nolinoideae, Ruscaceae, Sansevieria

Abstract

The authors describe a new species from Zimbabwe which was found first in 1982 by Dave Richards, well-known author of plant names, expert and collector from Harare. Later collections from 1993 confirmed the existence of the population at the original location. Since this site is located in an area that is characterized by intense mining and since the population consists of only few individuals we have to assume that the population at the type location has meanwhile been entirely extinguished because of the excessive expansion of industrial mining. Any attempts to discover other locations unfortunately failed even to date. With the new name of the species we mean to honour in particular the merits of its discoverer and untiring fighter for the conservation of his country's environment. *S. richardsii* is probably Zimbabwe's only endemic species of this genus after *Sansevieria humiflora* which had been described by Richards in 2004 has been found also in Mozambique.

Introduction

To date 12 species of *Sansevieria* are known to exist in the young landlocked state in southern Africa now known as Zimbabwe, formerly the British crown colony of Southern Rhodesia (Wilkins-Ellert 2022). We can assume that more species exist. The three botanical societies that are active in Zimbabwe focussed for a long time mainly on the approximately 750 known species of woody plants, on succulents and the non-native cacti, aloe and euphorbia species but less on *Sansevieria*. The main reason for this was that there was no clear taxonomy for *Sansevieria*. In December 1971 the "Aloe, Cactus and Succulent Society of Zimbabwe" published in its journal "Excelsa" a list of the Rhodesian succulents including four *Sansevieria*-species (Drummond 1971).

In October 1982 Richards discovered during one of his countless excursions in Zimbabwe a new species on the ridges of the Great Dyke. In his field book he described it under number "*R* 63" as follows: "very robust, conspicua-type". Since he found the population on a number of narrow ridges only, he collected a few plants which he then cultivated in the *Sansevieria*-collection in his private garden. He found that this plant grew particularly slow but developed leaves with a very beautiful glaucous surface. Only in May 1993, when Juan Chahinian visited Richards and the two of them went together to the Mpinge Pass on the ridges of the Great Dyke they were able to find the population again at the original location. In his field book Dave Richards noted: „"*R* 2263" = "*R* 63" - „*S.* sp. nov. 'Dyke', The Dyke, Mpinge Pass, southern end".

First notes by Chahinian (2005) on this new species can be found under the name of *Sansevieria* 'The Dyke', where he describes it as follows:

> „*A stemless plant, with a thick, grayish, rhizome to 25 mm thick. Leaves lanceolate 1–2 to a growth, often solitary, to 60 cm long, 8 in (=20 cm) wide, 5 mm thick at the middle, stiff and with a texture of sole-leather, slightly rough both on the adaxial and abaxial side. Leaves strongly curved inward and backwards, sometimes tapering from the middle down into a narrow petiole, or sometimes narrowing down to embrace the newer leaf. Light yellowish green with darker green with, mostly narrow, cross-banding closely spaced, with very numerous longitudinal lines of the same darker green on front and back oft the leaves. Edges reddish with withered borders detaching into fibers. The tips are cuspidate. Inflorescence a spike-like raceme. This unusual sansevieria comes from a limited area. It is found growing on the narrow series of ridges of the Great Dyke in Central Zimbabwe.*" (Chahinian 2005).

Somewhat deviating information about *Sansevieria* sp. 'The Dyke' is provided by A. Butler (2019) in the description of his collection in Spain. He highlights in particular the cultivated plants' dark blue, bluish-green leaves which seem to embrace the inflorescences (Butler 2019). The image provided is not very instructive but it does show clearly the glaucous layer on the leaves which was found in all cultivated plants of *R* 63.

Fig. 1–4 – *Sansevieria richardsii* flowering in the garden of the Richards family in Harare, Zimbabwe, cultivated since 1982 and 1993.

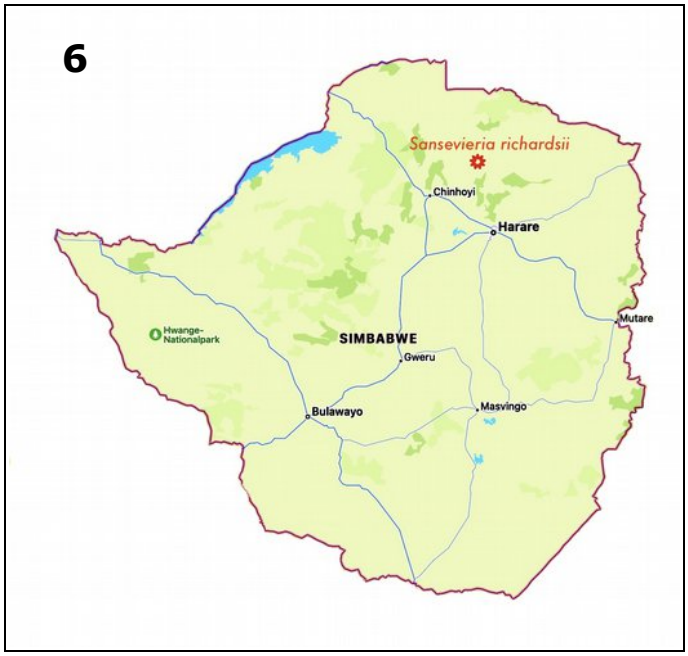
Fig. 5 – *Sansevieria richardsii* rhizome with few fibrous roots.

Taxonomic treatment

Sansevieria richardsii P.A.MANSF. & M.J.SPINDL. **sp**. **nov**. (fig. 1–5, 7–12, 15–16)

Diagnosis

The taxon differs from all other species of *Sansevieria* known to date by its leaves. They are up to 5 mm thick, in cross-section they show a shallow u-shape and they are very glaucous, standing upright - almost vertical - and form a cone around the inflorescences.



Type

Zimbabwe, Mashonaland Central, at the Mpinge Pass on the ridges of the Great Dyke, (16.86807° S, 30.79377° E), 31.10.1982, *D. Richards* (*R* 63)*, sub Sansevieria* sp. 'The Dyke', *ex cult* 09.01.2023 (Holotype: SRGH).

The species grows mainly on very poor, chromium-rich soils; it grows very slowly and sometimes in places fully exposed to sunshine together with *Aloe ortholopha* (*R* 2264) and a *Scilla* sp. (*R* 2265).

Etymology

The species is named after its discoverer David ("Dave") John Richards (1925-2012) from Harare in Zimbabwe who has been a leading member and later honorary member of the Aloe, Cactus and Succulent Society of Zimbabwe for more than 40 years and whose greatest passion were the plants of his home country. Richards loved nothing more than expeditions into the bush to search for succulent plants. On these trips he accompanied many foreign visitors from all over the world and made them acquainted with his home country's vegetation. He especially loved Sansevieria and gained worldwide attention as author of new descriptions of these plants (Richards 2002, 2004, 2009). He always focussed especially on reproducing and propagating particularly rare species. In his home country Zimbabwe he was often referred to as "Mr Sansevieria". Connecting his name with such a phantastic new species of *Sansevieria* has long been overdue, especially since it was probably him who prevented its total extinction.

Description

Plant: Perennial, acaulescent, growing very slowly, with underground rhizome; rhizome with a diameter of 2–3 cm, colour of rhizome cortex brownish, much lighter when young, with only few fibrous roots.

Leaves: 2–5, lanceolate to elongate lanceolate, straight upright, u-shaped cross-section, surrounding each other conically, without petiole or with very short petiole, 35–65 cm long, 9–20 cm wide, up to 5 mm thick; leaf apex non-uniformly hard, round, up to 5 mm long; leaf border with narrow red-brown line, whitish frayed; leaf colour on both sides bottle green to bluish-green with much lighter, irregularly speckled transversal bands, markedly glaucous; adaxial side glabrous, abaxial side rough as if covered with fine sand; leaves of juvenile plants uniformly green, adaxial side glabrous, abaxial side glabrous with whitish specks, leaf apex subulate, leaf margin with red-brown, narrow line.
Inflorescence: Elongated thyrse with acyclic cluster-like partial inflorescences with 3–4 densely arranged flowers per cluster, 50–60 cm long, flowering part 30 cm, inflorescence axis diameter 11 mm at the bae with 4–5 triangular, 4 cm long bracts, light-green with whitish specks, drying while flowering.
Flower: In acylically arranged, cymose partial inflorescences; peduncles apically articulate, 4 mm long; petals on the outside white with mauve longitudinal stripes, inside white; flowers 50–60 mm long, perianth tube 22–25 mm long, lobes 28–35 mm long, recurved, filaments as long as the lobes or shorter, anthers open 4–5 mm long, greenish to greenish-yellow, style 50 mm protruding.
Fruit: berry-like, single- to tri-lobed, round, orange, diameter 8–15 mm.
Seeds: size 6–8 mm, rotund, hard.

[sub-section *Sansevieria*]

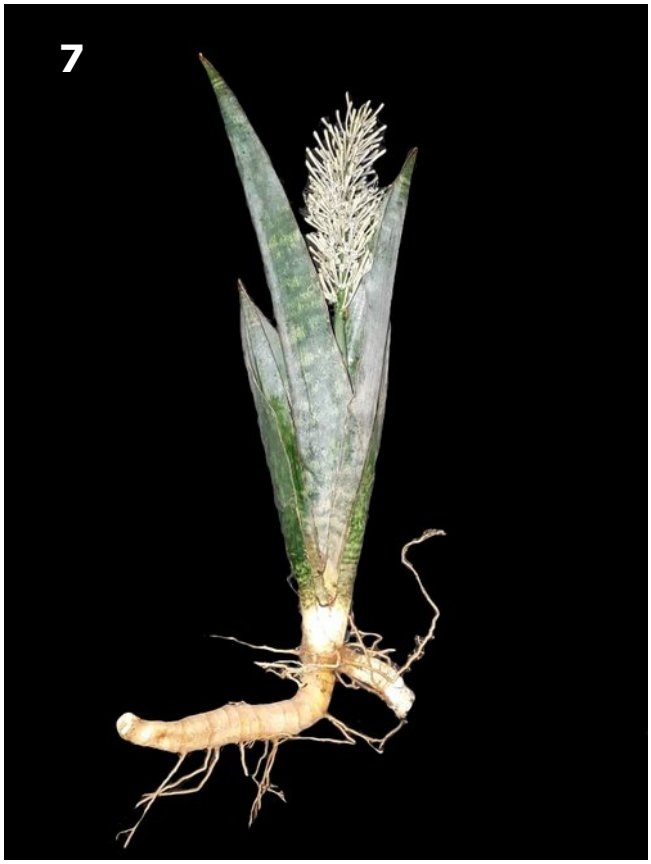


Fig. 7–10 – *Sansevieria richardsii*, typical growth, inflorescence, individual flowers.
Fig. 11–12 – *Sansevieria richardsii*, typical arrangement of the up to 20 cm wide leaves with ripe and unripe berries.

Distribution and Conservation Status

To date no other location is known apart from the type location. Several plants from the collection in May 1993 were brought to the USA and later also to Europe. Since *Sansevieria richardsii* grows extremely slow and needs at least 12 years to grow from the juvenile to the adult status, reproduction numbers remained very small for a long time. Some attention it got only after Chahinian published a short description (2005; see above).

Fig. 13 – View of the original habitat of *Sansevieria richardsii* at the Mpinge Pass of the Great Dyke. In 1982 and in 1993 the first plants were collected at the southern slopes of this kind of small hills.

Fig. 14 – The same place as in fig. 13 but the photo was taken in December 2022 and shows a larger area. On an immense area as shown in this view up to the horizon mining waste was spread. Small hills were even entirely covered. (the car indicates the dimensions.)

Butler (2012) reported more extensively when publishing Richards' field numbers - later also with photographs (Butler 2019) - and also Mansfeld and Spindler (2022) provided more information. This is the reason why this upright. slender looking species with its glaucous leaves cannot or only rarely be found in private and public collections.

The type location is an area in the Great Dyke. The Great Dyke is more than 500 km long and 5–12 km wide and stretches across Zimbabwe in north-south direction. In addition to nickel, gold, silver, platinum, tin, mica and asbestos mainly chromium is being mined. The chrome ore (chromite) deposits are among the world's biggest. Since the mining works pay hardly any attention to the local flora and fauna in the area, we must assume that the original population does not exist anymore. In recent years several excursions to the area did not find a single plant of this species. This means that probably the plants collected by Richards in 1982 and in 1993 are the last of this species, thus deserving our full attention.

On the basis of the criteria of small numbers of seeds, small number of individual plants (small population) if still existent at all, and the very limited area, but in particular because even in repeated searches not a single plant was found at the original site since 1993 we classify *Sansevieria richardsii* as extinct in the wild, (EW) according to IUCN.

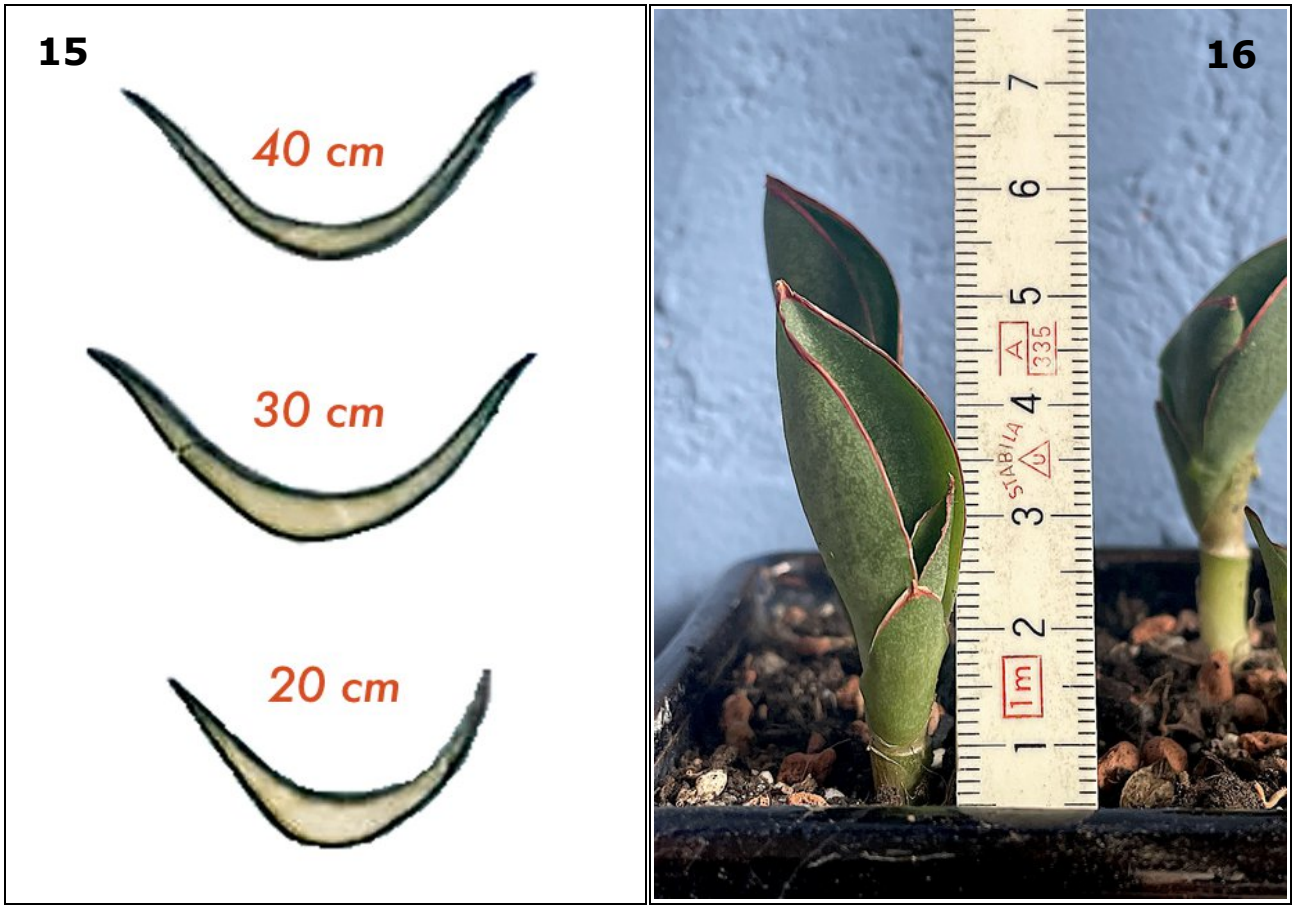


Fig. 15 – *Sansevieria richardsii,* leaf cross-section - view at the leaf height shown.
Fig. 16 – *Sansevieria richardsii,* successful first reproduction from seeds from secure pollination.

Discussion

Sansevieria richardsii grows in the private garden of the Richards family in Harare, Zimbabwe, to date. With two collections from the original site and reproduction by means of stolons it was possible to take samples for identifying the species.
Since plants were eventually recultivated from seeds from secured pollination (fig. 16) and juvenile plants were distributed, we can now hope that we will be able to conserve this beautiful species. Vegetative reproduction should be preferred for maintaining *S. richardsii* since we cannot be absolutely certain even where plants are cultivated that there is no other species of *Sansevieria* close by flowering at the same time thus leading to hybridisation.

When Richards discovered the species he found that it is similar to *S. conspicua* which does not occur in Zimbabwe, however. When having a look at the plants bred by Richards by means of generative reproduction, however, one might share Butler's (2019) opinion that it is a close relative of *Sansevieria hyacinthoides* unless it is a hybrid already. Juvenile plants of different *Sansevieria* species often look quite similar but develop the appearance typical for their species as they grow older. Currently 30 homo- and heterotypical synonyms are classified under *S. hyacinthoides* whose representatives sometimes show marked differences. We think that this unclear taxonomy alone is sufficient to make any comparison of the two species obsolete.

After *S. humiflora* which had been described by Richards in 2004 has been found also in Mozambique (Richards 2004), (Mansfeld 2013) *S. richardsii* is probably Zimbabwe's only endemic species of this genus.

Table 1: Comparison of features of *Sansevieria richardsii* and representatives of the sub-section *Sansevieria*.

Species	*S. richardsii*	*S. conspicua*	*S. hyacinthoides*
Feature according to	this publication	Brown (1913)	Mansfeld (2022)
rhizome diameter [mm]	20–30	17–20	12
colour of rhizome inner cortex	brownish	NA	NA
colour of rhizome from the outside	brownish	reddish to purple-reddish	yellow-whitish
leaves per shoot	2–5	3–5	2–4 (8)
leaf length [mm]	350–650	220–600	150–450 (700)
leaf width [mm]	90–200	50–80	30–120
adaxial leaf surface	glabrous	glabrous	glabrous
abaxial leaf surface	rough as if covered with fine sand	glabrous	glabrous
adaxial leaf main colour	bottle-green, bluish-green, glaucous	dull green	matt green
abaxial leaf main colour	bottle-green, bluish-green, glaucous	dull green	matt green

Species	*S. richardsii*	*S. conspicua*	*S. hyacinthoides*
leaf pattern top (adaxial)	markedly lighter, irregularly speckled	light specks and dark longitudinal lines	lighter specks or transverse bands
leaf pattern underside (abaxial)	markedly lighter, irregularly speckled	lighter specks	lighter specks or transverse bands
leaf border colour	red-brown line, whitish frayed	reddish brown - dark brown	whitish with red-brown line
inflorescence	elongated thyrse, with acyclic cluster-like partial inflorescences	elongated thyrse, with acyclic cluster-like partial inflorescences	elongated thyrse, with acyclic cluster-like partial inflorescences
inflorescence total length [mm]	500–600	450–500	450–820
peduncle diameter [mm]	11	8	NA
peduncle bracts	4–5	4–5	NA
bracts length	40	30–90	NA
length of flowering part [mm]	300	250–300	220–300
flowers per bundle	3–4	2–3	2–6
odour	grass-like	NA	NA
pedicel articulation	apical	apical	NA
pedicel total length [mm]	4	4–6	NA
corolla outer colour	mauve	greenish-white, dull white	greenish-white, white, light yellow with brown tint
corolla total length [mm]	50–60	63-73	30–40
tube length [mm]	22–25	38–42	14–20
lobe length [mm]	28–35	25–31	16–20
anther length [mm]	4–5	NA	NA

Acknowledgements

We thank especially Dave Richards' family and all his friends, acquaintances and members and supporters of the Aloe, Cactus and Succulent Society of Zimbabwe (ACSSZ), in particular his wife Doreen Richards for the care and maintenance of her husband's expansive collection and for generously providing plant material. We thank Christopher Chapano, manager of the National Herbarium in Harare, for his support in establishing the type sample. Our thanks go especially to Dr. Michael Burkart for lots of expert information. Without his valuable help we would not have been able to create this publication so quickly. We also thank Dr. Detlev Metzing for valuable corrections and expert advice. Last but not least we thank Dr. Heinz-Günter Budweg for his support in text editing and Regina Baumert for translating the text into English.

References

BUTLER, A. (2012): *Dave Richards Sansevieria collection*. – Sansevieria 28: 13–16.
BUTLER, A. (2019): *Flowering the Sansevieria in Spain*. – Sansevieria 39: 18–24.
BROWN, N. E. (1913): 1469 *Sansevieria conspicua*. – Bulletin of Miscellaneous Information. p. 306.
CHAHINIAN, B. J. (2005): *The splendid Sansevieria - an account of the species*. Published by the author, Buenos Aires, 178 pp.
DRUMMOND, R. B. (1971): *Notes on Rhodesian Succulents*. – Excelsa 1: 45–50.
MANSFELD, P. A. (2013): *Die Gattung Sansevieria – Alle Arten und ihre Pflege*. 1st edition, Norderstedt/Hamburg, 144 pp.
MANSFELD, P. A. (2022): *Trendpflanze Sansevieria - (m)eine Auswahl*. Ed. Deutsche Kakteen-Gesellschaft (DKG), Adelsdorf, 148 pp.
MANSFELD, P. A. & SPINDLER, M. J. (2022): *Simbabwe im südlichen Afrika und einige Sansevierien*. – Sansevieria Online Vol. 10 (2): 42–49.
RICHARDS, D. (2002): *Sansevieria scimitariformis a new species from Zimbabwe*. – Sansevieria 5: 8–9.
RICHARDS, D. (2004): *Sansevieria humiflora a new Zimbabwe species*. – Sansevieria 10: 3–6.
RICHARDS, D. (2009): *Sansevieria pfisteri a new species from southern Angola*. – Sansevieria 19: 2–7.
WILKINS-ELLERT, M. (2022): *Einige Beobachtungen zu Sansevierien in Simbabwe*. – Sansevieria Online Vol. 10 (2): 50–59.

