

# A new subspecies of *Lithops* from Namibia

Roy A Earlé & Ronald R J Uijs

Photographs by Roy A Earlé & Andrew J Young

In 2009 the presence of a potted *Lithops* plant of unknown identity on the veranda of a farmhouse alerted Tok Schoeman and Ronald Uijs to the fact that there might be *Lithops* on the farm that they were visiting at the time. The farm owner pointed out the location from where the potted plant had been taken from habitat. This was in the road reserve of a district road through the farm and several plants were subsequently found in the road reserve as well as the adjacent farm land (Fig. 1). The discovery of this new *Lithops pseudotruncatella* taxon by the late Tok (C J) Schoeman and Ronald R J Uijs near the Naukluft Mountains in southern Namibia was reported earlier (Uijs, 2019).

Although the first specimens of this new taxon were discovered in 2009, follow-up visits to the habitat in 2016 and 2017, during a period of drought, were

unsuccessful in finding the plants again. However, after adequate rainfall in the area early in 2018, a visit to the habitat revealed a population of at least 29 plants (Uijs, 2019) (Fig. 2), widely spread in the habitat at a low density of 0.0036 plants/square metre in the 7,900 square metre habitat sampled.

Due to the small population and concerns about the conservation of *Lithops* plants in Namibia in general, no specimens of these unique plants were collected when they were first discovered. However, with the permission of the farm owner, Tok Schoeman collected a single seed capsule from one of the plants during the initial discovery in 2009. The capsule only contained a few seeds, and these were sown in his *Lithops* collection in Windhoek soon after their collection. The cultivated plants flowered for the first time in December 2014 and following their careful

hand pollination by Tok Schoeman, dried seed capsules with viable seeds were harvested six months later. Some of these seeds were sown at the Lithoparium of the Lithops Research & Conservation Foundation at Alte Kalköfen Lodge near Bethanie in southern Namibia in 2016. A second batch of seeds was sown in the greenhouses of the Lithops Research & Conservation Foundation in the United Kingdom in June 2016. The nine adult plants which were grown from the originally collected field seeds were also transferred to the Lithoparium at Alte Kalköfen Lodge a few



Fig. 1 An area near the habitat of *L. pseudotruncatella* subsp. *schoemanii* where the first plants were found in 2009



Fig. 2 *L. pseudotruncatella* subsp. *schoemanii* plant in habitat in 2018. The white measure is 10×30mm



Fig. 3 A cultivated plant showing the rubrication markings radiating from the inner margin of some of the *L. pseudotruncatella* subsp. *schoemanii* plants

months after Tok Schoeman's untimely death in May 2017. Furthermore, one of the originally cultivated plants was deposited in the National Herbarium of Namibia in Windhoek.

These plants belong to the species *Lithops pseudotruncatella*. After studying them over a period of 10 years since their discovery, it is our opinion that the plants are phenotypically different enough from all the other *L. pseudotruncatella* taxa to warrant subspecies status. Furthermore, the habitat of calcrete plates and rubble is unique amongst *L. pseudotruncatella* taxa as are the seeds. We propose that these plants should be called *Lithops pseudotruncatella* subsp. *schoemanii* in recognition of C J (Tok) Schoeman who first discovered them in habitat and was the first to grow the plants in cultivation.

### ***Lithops pseudotruncatella* subsp. *schoemanii***

R.A. Earlé & R.R.J. Uijs **subsp. nov.** has affinities with *L. pseudotruncatella* subsp. *groendrayensis* and *L. pseudotruncatella* subsp. *dendritica* and superficially resembles the former being largely monocephalic plants with an overall greyish-white colour. However, subsp. *schoemanii* is consistently larger than these two subspecies and shows a pattern of radiating rubrications from the inner margins of the leaves in most of the plants. In subsp. *groendrayensis* the rubrications are mostly absent while in subsp. *dendritica* the rubrications form a network of connected lines. The yellow flowers differ from those of the other subspecies in having a narrow white centre. The seeds also differ from those of the other two subspecies in that the surface of the testa of the seed is much less rugose than in those subspecies. TYPE: Namibia, Büllsport Area, south of Naukluft Mountain, May 2009, Schoeman & Uijs seed coll. (Holotype: WIND 000101857, ex cult. Cole Lithoparium, Alte Kalkofen Lodge, Bethanie District, Namibia).

## **Description**

**Leaves:** These are predominantly monocephalic plants in habitat and only two plants were observed with one additional unequally sized smaller second head (Uijs, 2019). The plants are greyish-white, occasionally with a pinkish tinge, with a flat to slightly convex top and truncate in shape. The face surface area has a slightly rugose surface texture with a fine network of thin rubrications often radiating from the inner margin (Fig. 3). In addition, some areas on the face surface are dimpled. The fissure is shallow, 4–6mm in depth, and the leaves are conjunct and pressed together. The mean size of individual heads is 39.4×24.7mm (n=25, range: 30.3–52.2×20.6–31.4mm) giving a mean face surface area of 910 square mm. The first and largest plant discovered in habitat was 52.2×31.4mm (see Uijs, 2019).

**Flowers:** The flowers are yellow with a small white centre due to the narrow white proximal part of each of the petals (Fig. 4). The flowers are identical to those of the closely related subsp. *dendritica* and subsp. *groendrayensis*. In habitat, the flowers are produced during late summer (February–April) after adequate rain has fallen and in cultivation after adequate watering. The flowers open in the late afternoon until dusk. The mean diameter of flowers of cultivated plants is 29.6mm when fully open (n=18, range: 25.5–34.8).





Fig. 4 A four-year-old *L. pseudotruncatella* subsp. *schoemanii* plant in cultivation flowering in March 2019



Fig. 5 The seed capsule of *L. pseudotruncatella* subsp. *schoemanii* showing the distribution of tanniferous idioblast dots

**Seed capsule:** The seed capsules are broadly elliptical to near-round. All capsules seen in habitat were 6-sided with some 7-sided capsules seen in cultivation. The capsules measured 8.1–10.4 mm at the widest point (n=11). In side view, the seed capsules are a deep boat-shaped to rotund with a small hinge-rim. Fine tanniferous idioblast dots occur on the lids of the capsule and larger dots on the side of the capsule concentrated just below the rim (Fig. 5).

**Seeds:** The seeds are yellowish-brown and rounded with the tip a slightly darker brown colour and with a mean measurement of 0.85mm across the widest point. The surface of the seeds is slightly wrinkled on the rounded part of the seed and more intensely rugose towards the tip (Fig. 6). The seeds are much less rugose than any of the other *L. pseudotruncatella* subspecies.

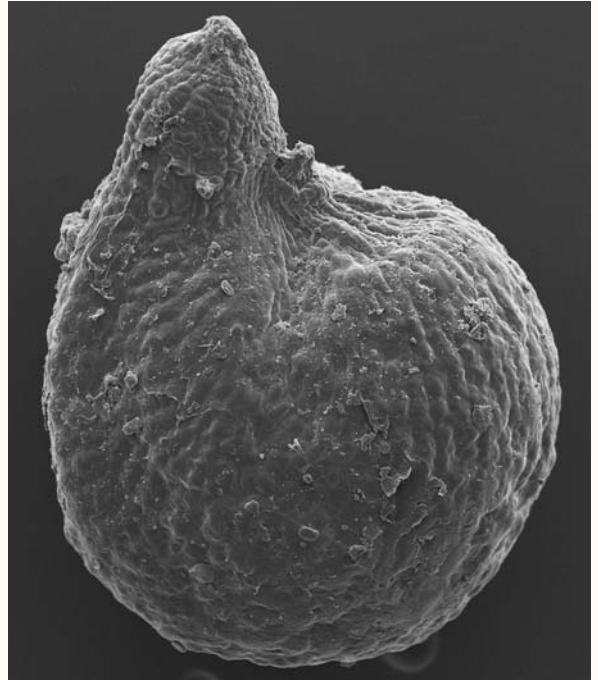


Fig. 6 An SEM photo of the seed of *L. pseudotruncatella* subsp. *schoemanii*

The habitat is a gentle slope consisting of calcrete banks and calcrete rubble. (See Uijs, 2019). Other prominent succulents in this habitat are *Aloe hereroensis* and *Larryleachia marlothii* which grow in the grassland and low shrub field at the foot of the Naukluft Mountains.

The closest known population of *Lithops* from this colony is a population of *Lithops pseudotruncatella* subsp. *archerae* which is 18km away in the Namib-Naukluft National Park whilst its type locality is 28km away, also within the Park. The nearest closely related *L. pseudotruncatella* subspecies, subsp. *groendrayensis* and subsp. *dendritica* colonies are both about 90km to the north-east. The nearest non-related *Lithops* species colony is the type locality of *Lithops schwantesii* subsp. *schwantesii* var. *urikosensis* about 25km away (Uijs, 2019).

#### ACKNOWLEDGEMENTS:

We are grateful to the farm owner for allowing us unrestricted access to the farmland where *L. pseudotruncatella* subsp. *schoemanii* grows and to Hilde Mouton for tending the plants in cultivation at the Lithoparium in Namibia. Professor Andrew Young kindly provided the SEM photo of the seed.

#### LITERATURE:

Uijs, R (2019) Reporting on a striking *Lithops* find. *Mesemb Study Group Bulletin* 34(1): 14–16.