Lithops gulielmi L. Bol. and *Lithops fossulifera* nom. nud.: 35 years of confusion resolved

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CONTENTS:

I. BACKGROUND: ANOMALY AND CONFUSION

Lithops gulielmi was originally described by Dr H. M. L. Bolus in *Notes on Mesembryanthemum and allied genera,* Part III, August 1937, p. 100 f. Her Latin diagnosis translates as follows: ". . . On the sides deep olive, on the top red-brown, rugose, between the ridges translucent and marked with small red dots, on the inner margin marked with isolated red dots, . . . flowers yellow." (See map, p. 38). The type locality is cited as "South West Africa; Klein Karasbergen, in quartz gravel on the farm, Florida." The plants were collected by Wilhelm Triebner (Bolus Herb., no. 21976). Dr Bolus indicated in conclusion that this species is closely related to *L. schwantesii* Dint., and is perhaps no more than a variety thereof.

In his monograph, *Lithops,* p. 88 f., Professor G. C. Nel quoted Dr Bolus's Latin diagnosis, but provided a very different description in the English and Afrikaans texts, which agree closely. The English version reads thus:

> ". . . top surface convex; sides light grey with a narrow deeper grey band near the top; top surface rugulose, light grey-white, in the depressions with many prominent blood-red dots or lines, the dots forming the prominent feature, lines and dots isolated and not connected with one another; window opaque; flowers yellow."

It is noteworthy also that this description does not satisfactorily fit Nel's coloured illustration on Plate 16, in which the top surface can hardly be termed "light grey-white", nor is there a "narrow deeper grey band near the top". The coloured illustration obviously depicts the same plant as in the photograph, fig. 47. On p. 176 Nel gives "Aisis [presumably Aiais], Fish River", as well as "farm Florida", as a locality for this species.

In *Flowering stones and midday flowers,* p. 204, Dr G. Schwantes described *L. guilielmi* [*sic*] L. Bol. as "reddish brown, marked with numerous sunken lines ending in deep pits which give the surface a honeycomb texture. On the inner edge of the tops of the leaves a few separate red dots occur." The reference to reddish brown suggests Bolus's diagnosis, but the rest of the description seems to be based mainly on Nel's illustrations!

H. Jacobsen, in *Handbuch der sukkulenten Pflanzen,* vol. III, p. 1472, gave a German translation of Nel's English version; and in his *Handbook of succulent plants,* vol. III, p. 1231, we find an English translation back from the German version!

In *Succulenta* 1961 (4) 41 and 1961 (7) 76, H. W. de Boer and B. K. Boom discussed the discrepancies between Bolus's and Nel's descriptions, and Nel's coloured illustration, and concluded by reducing *L. gulielmi* to synonymy under two different varieties, *L. schwantesii* var. *triebneri* (L. Bol.) De Boer et Boom, and *L. schwantesii* var. *urikosensis* (Dint.) De Boer et Boom.

The most recent contribution on the subject is a short article by H. W. de Boer and B. Fearn in the *National Cactus and Succulent Journal*, 20 (4) 66: "*Lithops gulielmi* L. Bol. — a myth?" In this note several of the points outlined above are referred to briefly, and an important new point is brought to light: "Another plant has recently been collected from this farm [Florida], which agrees with the Latin description (red brown, wrinkled surface) but has white flowers . . . This may be the same as the original *L. gulielmi*, the reference to yellow flowers being an error."

II. SOLUTION IN SIGHT

Early in 1970 I was privileged to receive from Mrs M. Muller, daughter of the late Dr A. L. Geyer, a file of his notes and correspondence on *Lithops*, and among these I have discovered the solution to the problem of *L. gulielmi* L. Bol. The file contains two letters to Dr Geyer from Mr Wilhelm Triebner, and an undated list which was most probably also produced by Triebner, all of which give information about localities of various species of *Lithops* and other succulents in South West Africa. In the first letter, dated 17 June 1949, there are very precise directions leading to the type locality of *L. gulielmi* — in the district of Helmeringhausen, which is over 150 miles by crowflight from farm Florida!

There follows a note: "Nels Angaben auf Seite 176 seines Buches sind leider absolut falsch und ich verstehe nicht, wie Herre, der doch die ganze Korrespondenz mit mir führte, dies durchgehen lassen konnte. Bei Ai-Ais steht nur *L. opalina* und auf Farm Florida steht *L. fossulifera*." [Nel's statement on page 176 of his book is unfortunately completely incorrect and I do not understand how Herre, who actually conducted the whole correspondence with me, could allow this to go through. At Aiais there occurs only *L. opalina* and on Farm Florida there occurs *L. fossulifera*].

In the undated list there are brief references to both *L. fossulifera* and ". . . die neue [the new] *L. gulielmi*", which suggests that this was written shortly after the latter species was named (in 1937), and thus before the first letter of 17 June 1949. Here the approach to the site of *L. gulielmi* is described from a different direction, along an old road now closed by fences and long disused, but it almost certainly refers to the same locality as that given in the letter. The reference to *L. fossulifera* places it to the north of Grünau, thus in the direction of the farm Florida.

A third reference to *L. fossulifera* occurs in the second letter, dated 18 April 1957: "Lithops fossulifera ist bisher nicht veröffentlicht, Dr. Tischer hatte als m/s. diesen Namen vorgeschlagen, als ich ihm die ersten Pflanzen schickte." [*L. fossulifera* has not yet been published, Dr Tischer proposed this name in manuscript when I sent him the first plants].

III. RESEARCH AND CONFIRMATION

Concerning *L. fossulifera* Tisch. nom. nud. there is very little to be found in the literature on *Lithops*. In Jacobsen's *Handbuch*, vol. III, the only reference is on p. 1484, in the caption to fig. 1222, a poor photograph from which one cannot gain a satisfactory impression of the appearance of the plant. In his *Handbook*, vol. III, p. 1229, it is listed as "an undescribed species", and the same photograph is reproduced as fig. 1472 on p. 1240. In "The genus *Lithops*", Part 2, *ASPS* 1 (3) August 1966, p. 60, Brian Fearn has "*L. fossulifera* Tisch. nomen nudum = *L. schwantesii* var. *triebneri* (L. Bol.) De Boer et Boom", but there does not appear to be any precedent for this, and if it be one of Fearn's own reductions, he gives neither reason nor explanation for it.

In response to my inquiry, Dr A. Tischer has informed me (Heidelberg, W. Germany, 3 Oct. 1970, 6 Jan. 1971) that he has no record of having proposed the name *L. fossulifera*, nor has he any recollection at all concerning this taxon. Most of his earlier records were destroyed by fire during World War II, and he assumes that the plants must have been sent to him during the last two or three years before the war, i.e. during the period 1937 to 1939.

Dr Hermann Jacobsen has confirmed (Kiel, W. Germany, 15 Nov. 1971) that, more than 30 years ago, Dr A. Tischer sent him a plant with the designation *L. fossulifera*, which however, was identical with *L. schwantesii* Dint. No further information seems to be available as to when *L. fossulifera* was discovered, where, or by whom. It is reasonable to infer however, from his letters of 17 June 1949 and 18 April 1957 to Dr A. L. Geyer, that *L. fossulifera* was discovered by W. Triebner, on the farm Florida, at about the same time (perhaps on the same expedition) as he first collected *L. gulielmi* L. Bol., and that, somehow, the two collections of plants and/or the records of their type localities became confused.

During July 1970, we were able to visit both localities. Following Triebner's very clear directions to Dr Geyer, we had no difficulty in finding the site of *L. gulielmi* L. Bol. near Helmeringhausen, and, despite the very severe state of drought, we managed to find a few very shrivelled plants, which provided the confirmation of locality which we desired. In April 1971 we visited the site again, after fairly good rains had fallen, and we were able to take some good photographs and to collect plants (Cole 184) and soil. The colony is located on a quartz outcrop where the reddish soil has a pH of 6,4, whereas most other colonies of *L. schwantesii* Dint. in the district occur in more limy soil with a higher pH.

Our specimens of *L. gulielmi* L. Bol. manifest the full range of colours and patterns which occur in *L. schwantesii* Dint. var. *schwantesii*, and including the yellowish-brown forms attributed to the var. *triebneri* (L. Bol.) De Boer et Boom, and the greyer, more opaque forms attributed to the var. *kunjasensis* (Dint.) De Boer et Boom. Despite this range of variation, these plants are, as a group, remarkably uniform in appearance — predominantly RHS Greyed-orange 166 B and C, 165 B and C, and 177 C, with

a network of dark red (RHS Greyed-purple 183 A) dots and lines in the channels.

Fairly good rains had fallen in some of the southern districts of South West Africa, and our search in July 1970 for *L. fossulifera* was ultimately rewarded with a number of specimens in good condition (Cole 182). These also were found among white quartz stones in reddish-brown soil with a pH of 6,4. In general appearance these plants are similar to *L. gulielmi*, and, on superficial acquaintance, collections of these two taxa could be confused if they were not carefully labelled and kept separate.

However, *L. fossulifera* is very much more rugose, with deep channels between the ridges on the top surfaces — the name, based on the Latin *fossula*, diminutive of *fossa* "ditch, trench, channel, furrow", and *-fer* "bearing, carrying", is most appropriate. It has a larger range of greyed-orange and greyed-red colours, and the dark red lines in the channels are generally wider and bolder. Whereas *L. gulielmi*, like *L. schwantesii* var. *schwantesii*, commonly has a blue-green tinge in the windows, this feature is almost entirely absent in *L. fossulifera*. The small pellucid blue-green dots which are a feature of *L. schwantesii* var. *schwantesii* and *L. gulielmi* also occur in *L. fossulifera*, but much less frequently. Finally, *L. fossulifera* has white flowers, whereas those of *L. gulielmi* are yellow.

IV. CONCLUSION

From the evidence before us it seems reasonable to conclude as follows:

a) The type locality, "farm Florida", cited for *L. gulielmi* L. Bol. in *Notes on Mesembryanthemum and allied genera*, III, 1937, p. 100, is incorrect. This taxon originates from a locality near Helmeringhausen, S.W.A.

b) The citation of "farm Florida" as the type locality for *L. gulielmi* L. Bol. arose out of a confusion of this taxon with *L. fossulifera* Tisch. nom. nud., which is superficially similar in appearance. The latter was first collected by W. Triebner at about the same time as he discovered *L. gulielmi* L. Bol., i.e. in 1936 or thereabouts.

c) The confusion mentioned under b) also resulted in some specimens of *L. gulielmi* L. Bol. being distributed under the name *L. fossulifera*.

d) The English and Afrikaans descriptions given by G. C. Nel in *Lithops*, p. 88 f., do not represent *L. gulielmi* L. Bol., nor do his illustrations in Fig. 47 and Plate 16. The locality cited by Nel on p. 176, "Aisis [*sic*], Fish River, 110 miles S. of Klein Karas", is likewise incorrect. Aiais is, incidentally, less than 50 miles (80 km) southwest of Klein Karas.

e) The descriptions of *L. gulielmi* L. Bol. in H. Jacobsen's *Handbuch der sukkulenten Pflanzen*, vol. III, p. 1472, and *Handbook of succulent plants*, vol. III, p. 1231, and in G. Schwantes, *Flowering stones and midday flowers*, p. 204, are also incorrect since they were based on Nel's description and illustrations.

f) In the original publication of *L. gulielmi* L. Bol. the reference to yellow flowers was no error, as suggested by H. W. de Boer and B. Fearn in the *National Cactus and Succulent Journal* 20 (4) 66. Dr Bolus had no doubt examined the flowers herself in order to produce her description, but the information concerning the locality of origin of the plants, which reached her at second or third hand, was incorrect.

L. gulielmi L. Bol. is not a myth—myths are created by men, not by nature. However, *L. gulielmi* L. Bol. is not effectively distinguishable from *L. schwantesii* Dint. var. *schwantesii*, and it is accordingly relegated to the synonymy thereof, and thus laid to rest:

Lithops schwantesii Dint., *Südwestafrikanische Lithopsarten*, 1928, p. 14.

Lithops schwantesii Dint. var. **schwantesii.**

Lithops gulielmi L. Bol., *Notes on Mesembryanthemum and allied genera*, III, 1937, p. 100.

L. fossulifera Tisch. nom. nud. belongs with *L. karasmontana* (Dint. et Schwant.) N.E. Br., a large, complex and confused group on which much research remains to be done. Having no desire to rush in and create more myths, we consider that *L. fossulifera* Tisch. nom. nud. is best left, for the present, exactly where it is.

V. SUMMARY

Since the publication of *Lithops gulielmi* L. Bol. in 1937, with type locality given as "farm Florida", there has been considerable doubt and uncertainty about this taxon. Descriptions and illustrations appearing in subsequent publications differ substantially from the original diagnosis, and plants collected at the type locality did not conform to any of the published descriptions.

Correspondence between Mr W. Triebner and Dr A. L. Geyer which has recently been made available to us, reveals quite clearly that the type locality of *L. gulielmi* L. Bol. was confused with that of *L. fossulifera* Tisch. nom. nud., and there is evidence also that plants from the two localities were distributed under interchanged labels.

L. gulielmi L. Bol., whose correct type locality is near Helmeringhausen, S.W.A., is indistinguishable from *L. schwantesii* Dint. var. *schwantesii*, and is accordingly placed in the synonymy thereof. Further research is needed to determine the precise status of *L. fossulifera* Tisch. nom. nud.

VI. ACKNOWLEDGEMENTS

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Plate 1. *Lithops gulielmi* L. Bol. (Cole 184) — with few exceptions, the adult plants, like this one, have two heads.

Plate 2. *Lithops fossulifera* Tisch. nom. nud. (Cole 182) — most adult plants have two heads, but 3- and 4-headed specimens are not uncommon.