

reddish grey-green. Markings mostly rather dull blood-red to purplish red. Pellucid dots dull dark grey-green. Shoulders as for margins or more greyish.

Size: Small, up to 27 x 20 mm, mostly about 20 x 15 mm. Number of heads up to 10, mostly 2-3.

FLOWERS white, medium to large, up to 45 mm \emptyset , mostly 25-35 mm \emptyset . **Seed capsules** usually 5-merous (89%), otherwise (11%) mostly 6-merous. Profile boat-shaped, top \pm flat; face elliptic, up to 9,0 x 6,5 mm, mostly about 8,0 x 6,0 mm.

13.4 *Lithops karasamontana* var. *tischeri* Cole (1973) (W). Plate 7/5-6.

COLLECTED by D.T. & N.A. Cole on 20 July 1970, and named for Dr Arthur Tischer of Heidelberg, West Germany. This taxon is presumed to be identical with *L. fossulifera* Tisch. nom. nud. (See Cole 1973b).

DISTRIBUTION: SWA/Namibia, at only one known locality, about 65 km NW of Karasburg. Grows in red-brown soil with some brown granite and white quartz.

DESCRIPTION: Relatively uniform and easy to identify by its colour which gives an overall impression of reddish brown or brick-red. **Profile** truncate, flat to slightly convex; fissure 4-8 mm deep, lobes conjunct, sometimes slightly divergent. **Face** flush; elliptic to slightly reniform; lobes equal to slightly unequal; opaque to obscurely translucent; usually distinctly rugose. **Margins** absent or obscure, irregularly indented. **Windows** rarely open, usually occluded by islands and peninsulas, therefore reduced to a number of **channels**, sometimes absent or obscure, but otherwise set in a narrow to broad network of shallow valleys which usually divide the face up into a number of humps and make it distinctly rugose. **Islands** mostly rather obscure and not well-defined, often manifest simply as a number of humps surrounded by valleys and markings. **Markings** set in the valleys and/or channels, sometimes very indistinct and not visible without a lens, but usually consisting of a number of branched lines, hooks and/or dots, which may be linked to form an irregular broken network. **Pellucid dots** often absent, otherwise rather sparsely scattered over the whole face; usually very obscure and visible only with a lens.

Colours: Face sometimes obscurely translucent in one or other shade of bluish pink or red, a window then being indistinctly discernible; otherwise, the margins and islands in various shades of opaque beige, yellow-brown or pink, the margins sometimes banded in a slightly deeper hue. Channels usually obscure dull greenish grey. Markings blood-red to dull purplish red. Pellucid dots dark greenish grey. Shoulders opaque bluish, greenish or pinkish grey.

Size: Medium to large, up to 35 x 25 mm, mostly about 30 x 20 mm. Number of heads up to 5, mostly 1-2.

FLOWERS white, medium to large, up to 45 mm \emptyset , mostly 25-35 mm \emptyset . **Seed capsules** usually 5-merous

(96%), otherwise (4%) mostly 6-merous. Profile boat-shaped, top \pm flat; face elliptic, up to 9,0 x 6,5 mm, mostly about 8,0 x 6,0 mm.

14 *Lithops optica* (Marl.) N.E. Br. (1910) (W). Plate 11/5, 12/1-2.

COLLECTED by Dr H.W. Rudolf Marloth in April 1909. Latin *optica* "eye-like".

DISTRIBUTION: SWA/Namibia, in a narrow strip some 200 km long but only about 25 km wide, extending southwards along the coast from a point about 20 km north of Lüderitz. All of this is in the Diamond Area. Type locality near Prince of Wales Bay (Prinzenbucht), at an altitude of 50 m and "growing in sand-covered fissures of gneiss-rocks."

DESCRIPTION: Rather variable. Plants occurring some distance inland from the coast and above the 150 m contour line tend to be somewhat larger than the coastal form and are very often quite strongly maculate. **Profile** truncate to cordate, usually somewhat convex, often strongly convex and keeled; fissure 6-13 mm deep, lobes conjunct to divergent. **Face** slightly elevated; reniform; lobes unequal; translucent + opaque; smooth. **Margins** distinct, regular to slightly irregular, with small indentations, but in the maculate form often very irregular with peninsular projections into the window area; inner margins are usually very even. **Windows** usually open but sometimes with a few small islands; in the maculate form often reduced to small irregular channels, the face then largely opaque; especially in strongly convex and keeled plants, the windows are often extended sharply down to long fine points at each end of the inner margins. **Channels** mainly in the maculate form, usually broad but irregular, sometimes narrow and very irregular and ragged. **Islands** often absent; when present, usually superficial, small and sparse, sometimes rather obscure; in the maculate form, often larger, more numerous and irregular in shape. **Markings** absent.

Colours: Margins, islands, peninsulas, opaque whitish grey, sometimes tinged with green, pink, blue or yellow; margins occasionally have a slightly deeper tinge at the edges of the windows. Windows or channels, various shades of translucent greenish grey, grey or bluish grey. Shoulders as for margins, or slightly duller.

Size: Small to medium, up to 30 x 20 mm, mostly about 20 x 15 mm. Number of heads up to 20 or more, mostly 2-5.

FLOWERS white, often with pink tips; very small to small, up to 20 mm \emptyset , mostly 12-15 mm \emptyset . **Seed capsules** usually 5-merous (96%), otherwise (4%) 4- or 6-merous. Profile boat-shaped, top \pm flat, sometimes slightly convex or concave, usually with a dark line, about 1,0 mm wide, just below the edge; face broadly elliptic, up to 10,0 x 7,0 mm, mostly about 7,0 x 6,0 mm.

GENERAL NOTE: For a detailed discussion, see Cole 1979.

14.1 *Lithops optica* cv. *Rubra* (1925) (W). Plate 11/6.

COLLECTOR of type plants not recorded, but Dinter reported having received specimens from Friedrich G. Eberlanz in 1923, so it is very likely that he was the first to collect them. This most attractive mutation was originally published as *Mesem. opticum* var. *rubrum* Tisch. in 1925. Latin *rubra* "red".

DISTRIBUTION: *L. optica* cv. *Rubra* occurs only extremely rarely in colonies of the normal grey-green plants to the W, SW and S of Lüderitz.

DESCRIPTION: Essentially as for the type, except in colour. **Profile** usually cordate, distinctly convex and keeled. **Windows** usually open, seldom with islands; often extended sharply down to fine points at the ends of the inner margins; in colour translucent light to dark ruby red, sometimes slightly greyed. **Margins**, islands (if any) and shoulders opaque milky ruby-pink.

Flowers white, very often with pink tips; occasionally the whole corolla may be suffused with pink or ruby red. **Seed capsules** usually 5-merous (86%), but with an unusually high proportion 4-merous (6%), the remainder (8%) 6-merous. Profile boat-shaped, top slightly convex, the line below the edge usually even darker than in the type; face broadly elliptic, up to 8,5 x 7,0 mm, mostly about 7,0 x 6,0 mm.

GENERAL NOTE: Among collectors cv. *Rubra* is probably the most popular and most sought-after of all *Lithops*. Thanks very largely to the efforts of the late Dr H.W. de Boer (Haren, Holland), it is well established in cultivation and seed and plants are relatively readily available, whereas they are very rare indeed in habitat.

15 *Lithops pseudotruncatella* (Berg.) N.E. Br. (1908) (Y).

Eight varieties are recognized in this widespread and variable species, namely var. *pseudotruncatella*, var. *archerae* (De Boer) Cole, var. *brandbergensis* De Boer, var. *dendritica* (Nel) De Boer & Boom, var. *elisabethiae* (Dint.) De Boer & Boom, var. *groendrayensis* Jacobs., var. *riehmerae* Cole, and var. *volkii* Schwant. ex De Boer & Boom.

15.1 *Lithops pseudotruncatella* (Berg.) N.E. Br. var. *pseudotruncatella* (Y). Plate 8/4-6, 9/1-3.

COLLECTED by Professor Kurt Dinter in 1897. Latin *pseudo*- "false or resembling", *truncatella* "somewhat truncate", so named because of its similarity in shape to *Mesem. truncatellum* (see Cole 1973a: 67).

DISTRIBUTION: SWA/Namibia, in an area centred at Windhoek with a radius of about 40 km, but with

a large extension projecting some 160 km (beyond Steinhausen) to the NE.

DESCRIPTION: Somewhat variable in size and colour, but otherwise relatively uniform and rather distinctive in appearance, therefore relatively easy to identify. **Profile** truncate, flat to slightly convex, occasionally slightly concave; fissure shallow, 4-8 mm deep, lobes conjunct. **Face** flush; reniform; lobes mostly unequal; mostly opaque; smooth to very slightly rugose. **Margins** not clearly defined, very irregularly indented. **Windows** and **channels** absent or very obscure, the latter reduced to an extensive system of very slightly impressed **furrows** which accommodate the markings.

Islands usually numerous, very irregular in shape, manifest as opaque areas surrounded by furrows and markings. **Markings** usually very irregularly and very extensively branched, the ends very finely ramose and tapering off digitately into the outer margins, but often ending in a prominent line along the inner margin; sometimes the markings are reduced to a number of short branched lines, hooks and/or dots. **Pellucid dots** superficial, usually very numerous, scattered irregularly over the whole face, including the margins and occasionally extending over onto the shoulders; usually quite obvious, sometimes rather obscure and visible only with a lens; occasionally so numerous as to flow together and produce the semblance of an obscure window; often concentrated along the edges of the markings, then producing a semblance of connected channels.

Colours: Face, margins, islands, opaque pale grey tinted with various shades of beige, yellow-brown, orange-brown, brown, pink, greenish yellow, mauve or blue, the margins sometimes obscurely banded in a slightly lighter colour. Markings various shades of brown, orange-brown, red-brown, red, purplish brown. Pellucid dots dull greenish or bluish grey. Shoulders as for the face or a little duller.

Size: Medium to very large, up to 50 x 35 mm, mostly 25-40 x 20-30 mm. Number of heads up to 20, mostly 2-4.

FLOWERS yellow, medium to very large, up to 50 mm Ø, mostly 25-40 mm Ø. **Seed capsules** mostly 6-merous (73%) or 7-merous (22%), the remainder (5%) 8-, 5- or 9-merous. Profile rotund, top ± peaked, occasionally flat; face round, up to 13,0 x 11,0 mm, mostly about 8,0 x 7,5 mm.

15.2 *Lithops pseudotruncatella* var. *archerae* (De Boer) Cole (1967) (Y). Plate 11/1.

COLLECTED by Mrs Jacoba (Kowie) M.N. Archer in 1966, and named for her.

DISTRIBUTION: SWA/Namibia, in a very restricted area high in the Naukluft Mountains, some 120 km NW of Maltahöhe.