

143. *Crassula smithii*



FIGURE 143a. Cliffs at Ozwatini on Noodsberg, the habitat of *Crassula smithii*.
Photograph: David Styles.



FIGURE 143b. A closer look at *Crassula smithii* on cliffs at Ozwatini on Noodsberg. Photograph: David Styles.

144. *Crassula socialis*



FIGURE 144a. *Crassula socialis* growing on shale cliffs along the Great Fish River north of Grahamstown in the Eastern Cape.



FIGURE 144b. *Crassula socialis* growing on the sandstone cliffs of Aasvoëlberg near Willowmore in the Eastern Cape.



FIGURE 144c. Aasvoëlberg near Willowmore in the Eastern Cape. The upper south-facing sandstone cliffs are the habitat of *Crassula socialis*.



FIGURE 144d. *Crassula socialis* growing in Kirstenbosch cliff house nursery (material from the Great Fish River, north of Grahamstown, Eastern Cape).

145. *Crassula streyi*



FIGURE 145a *Crassula streyi* grown at Kirstenbosch (material from Mtamvuna, southern KwaZulu-Natal).



FIGURE 145b. Cliffs of the Mtamvuna River Gorge in southern KwaZulu-Natal, habitat of *Crassula streyi*.



FIGURE 145c. *Crassula streyi* in flower at Kirstenbosch (material from Mtamvuna, southern KwaZulu-Natal).



FIGURE 145d. *Crassula streyi* on a sheer cliff in habitat at the Mazmba River in the Eastern Cape.

146. *Crassula tabularis*



FIGURE 146a. *Crassula tabularis* on the Auasberg in southern Namibia.



FIGURE 146b. South-facing cliffs on the Auasberg in southern Namibia, the habitat of *Crassula tabularis*.



FIGURE 146c. Plants of *Crassula tabularis* proliferating and forming small clusters on the Auasberg in southern Namibia.

147. *Crassula tomentosa* var. *glabrifolia*



FIGURE 147a. *Crassula tomentosa* var. *glabrifolia* growing on cliff ledges on the Gifberg on the farm Waterval in the Western Cape.



FIGURE 147b. South-facing cliffs of the Gifberg on the farm Waterval in the Western Cape, habitat of *Crassula tomentosa* var. *glabrifolia*.



FIGURE 147c. *Crassula tomentosa* var. *glabrifolia* on cliff ledges on the Gifberg on the farm Waterval in the Western Cape.



FIGURE 147d. South-facing cliffs of the Gifberg in the Western Cape, the habitat of *Crassula tomentosa* var. *glabrifolia*.

149. *Tylecodon bleckiae*



FIGURE 149a. *Tylecodon bleckiae* growing at Spitskloof in the Northern Cape.



FIGURE 149b. Cliffs in the southern Hunsberg in southern Namibia, habitat of the type plant of *Tylecodon bleckiae*.



FIGURE 149c. *Tylecodon bleckiae* flowering in the cliff-plant collection at Kirstenbosch.

150. *Tylecodon bodleyae*



FIGURE 150a. *Tylecodon bodleyae* at Gemsbokvlei. The habitat is sheer south-facing sandstone cliffs.



FIGURE 150b. *Tylecodon bodleyae* growing on sheer south-facing sandstone cliffs at Gemsbokvlei. The lichens on the rocks are the result of the regular fog.



FIGURE 150c. *Tylecodon bodleyae* in its habitat of sheer south-facing sandstone cliffs at Gemsbokvlei.



FIGURE 150d. *Tylecodon bodleyae* flowering in cultivation at Kirstenbosch.



FIGURE 150e. Gemsbokvlei, where many succulent species grow, the south-facing cliffs the habitat of *Tylecodon bodleyae*.

151. *Tylecodon bruynsii*



FIGURE 151a. *Tylecodon bruynsii*, on an upper south-facing cliff on Kuamsibberg in the Hunsberg in southern Namibia, here sharing its habitat with *Aloe pavelkae* and *Conophytum ricardianum*.



FIGURE 151b. *Tylecodon bruynsii*, on an upper south-facing cliff on Kuamsibberg in the Hunsberg in southern Namibia.



FIGURE 151c. *Tylecodon bruynsii* grows on the cliffs in the distance, where a cloud and fog are settling on Kuamsibberg in the Hunsberg in southern Namibia.

152. *Tylecodon buchholzianus* var. *fasciculatus*



FIGURE 152a. *Tylecodon buchholzianus* var. *fasciculatus* on the shady south-facing cliffs of Vyftienmyl se Berge at Oograbies Mountain in the Richtersveld.



FIGURE 152b. *Tylecodon buchholzianus* var. *fasciculatus* flowering at Kirstenbosch (material from shady south-facing cliffs of Vyftienmyl se Berge, Oograbies Mountain, Richtersveld).



FIGURE 152c. Vyftienmyl se Berge at Oograbies Mountain in the Richtersveld, the habitat of *Tylecodon buchholzianus* var. *fasciculatus* on the shady south-facing cliffs.



FIGURE 152d. *Tylecodon buchholzianus* var. *fasciculatus* on the shady south-facing cliffs of Vyftienmyl se Berge at Oograbies Mountain in the Richtersveld.

153. *Tylecodon cordiformis*



FIGURE 153a. *Tylecodon cordiformis* growing on shady south-facing cliffs of the Harasberg in northern Namaqualand.



FIGURE 153b. The shady south-facing cliffs of the Harasberg in northern Namaqualand where *Tylecodon cordiformis* grows.



FIGURE 153c. South-facing cliffs of the Harasberg, the habitat of *Tylecodon cordiformis* in northern Namaqualand.



FIGURE 153d. *Tylecodon cordiformis* on shady south-facing cliffs of the Harasberg, here sharing its habitat with another cremnophyte, *Crassula pseudohemisphaerica*.



FIGURE 153e. *Tylecodon cordiformis* in flower at Kirstenbosch.



154. *Tylecodon decipiens*



FIGURE 154a. Cliff hugger *Tylecodon decipiens* growing on cliffs in the Buffelsrivier at Grootmis near Kleinsee.



FIGURE 154b. *Tylecodon decipiens* on cliffs in the Buffelsrivier at Grootmis near Kleinsee.

155. *Tylecodon ellaphieae*



FIGURE 155a. Cliff hugger *Tylecodon ellaphieae* growing in crevices on cliffs of the Rosyntjieberg in the Richtersveld in the Northern Cape.



FIGURE 155b. *Tylecodon ellaphieae* hugging the sheer south-facing cliffs of the Rosyntjieberg in the Richtersveld in the Northern Cape.



FIGURE 155c. Sheer south-facing cliffs of the Rosyntjieberg in the Richtersveld in the Northern Cape, habitat of *Tylecodon ellaphieae*.



FIGURE 155d. *Tylecodon ellaphieae*, a cliff hugger, in flower at Kirstenbosch (material from Rosyntjieberg, Richtersveld).

156. *Tylecodon longipes*



FIGURE 156a. *Tylecodon longipes* growing on a south-facing cliff at Spitskloof in the Richtersveld in the Northern Cape.



FIGURE 156b. Spitskloof in the Richtersveld in the Northern Cape where *Tylecodon longipes* grows.



FIGURE 156c. A close look at a plant of *Tylecodon longipes* at Kirstenbosch.



FIGURE 156d. *Tylecodon longipes* in flower at Kirstenbosch.

157. *Tylecodon petrophilus*

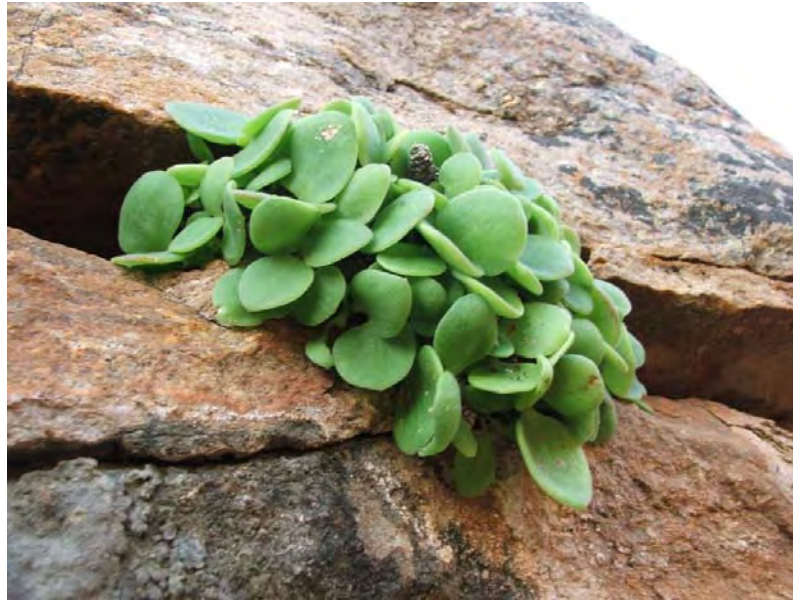


FIGURE 157a. *Tylecodon petrophilus* on a sheer south-facing cliff face in the Skaaprivierspoort in Namaqualand in the Northern Cape.



FIGURE 157b. A sheer south-facing cliff face in the Skaaprivierspoort in Namaqualand in the Northern Cape, habitat of *Tylecodon petrophilus*.

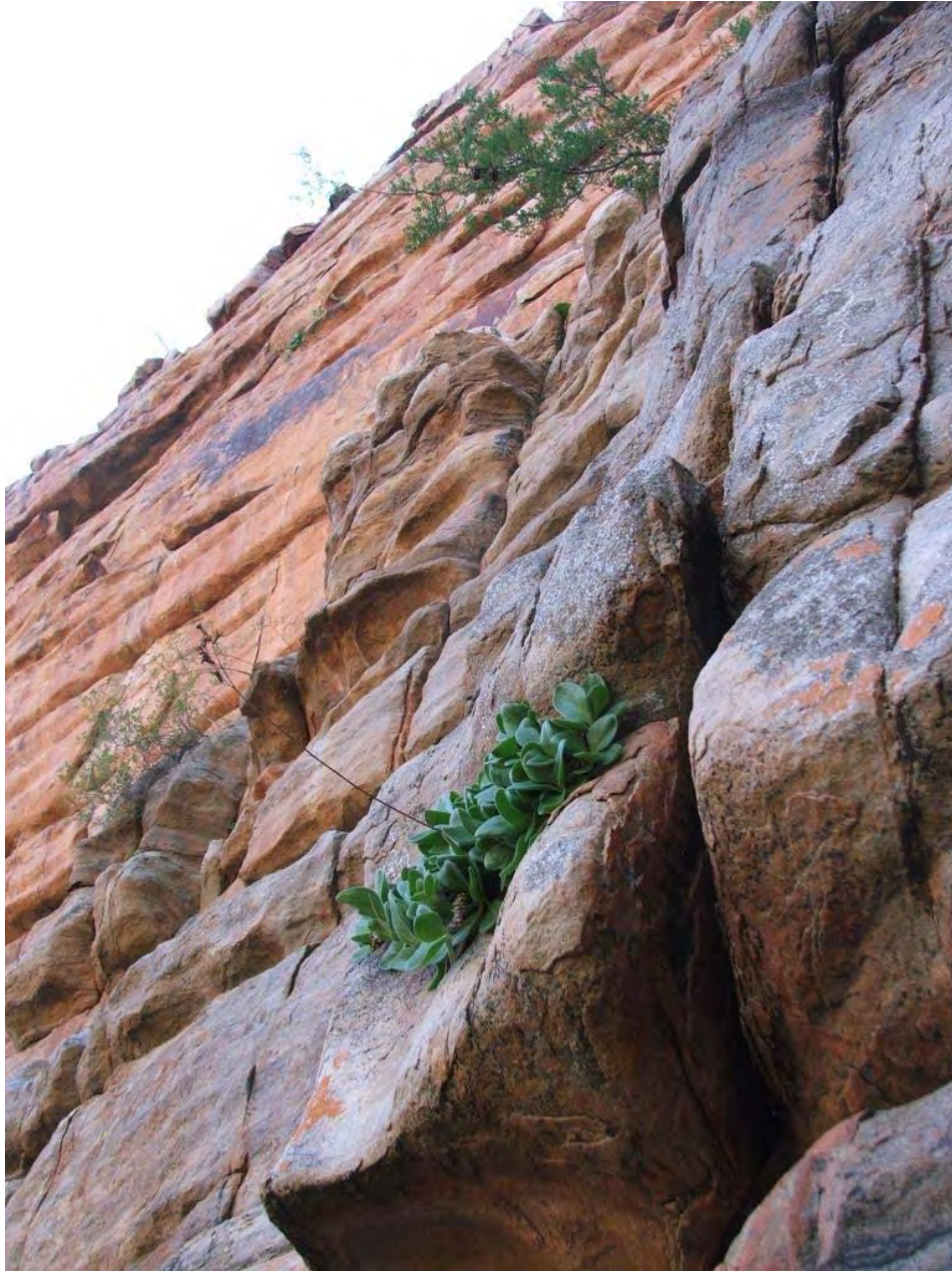


FIGURE 157c. *Tylecodon petrophilus* on a sheer south-facing cliff face in the Skaaprivierspoort in Namaqualand.

158. *Tylecodon singularis*



FIGURE 158a. *Tylecodon singularis* in cultivation at Kirstenbosch. The hairy leaves and channelled petioles guide moisture to the base of the plants, in nature growing in the fog zone of the lower Orange River Valley.



FIGURE 158b. *Tylecodon singularis* on a cliff in the Sonberg in the Hunsberg in southern Namibia.



FIGURE 158c. Konsertinaberg in southern Namibia, habitat of *Tylecodon singularis*.



FIGURE 158d & 158e. *Tylecodon singularis* on a cliff on Konsertinaberg in the Hunsberg in southern Namibia.

159. *Tylecodon sulphureus* var. *armianus*



FIGURE 159a & 159b. *Tylecodon sulphureus* var. *armianus* on a sheer south-facing cliff face at Pellaberg.



FIGURE 159c. The Dabenorisberg, south-facing cliffs, habitat of *Tylecodon sulphureus* var. *armianus*.



FIGURE 159d & 159e. *Tylecodon sulphureus* var. *armianus* during a good rainy season (May 2011) on south-facing cliffs of the Dabenorisberg. Note the old inflorescence in Figure 159e.

160. *Tylecodon torulosus*



FIGURE 160a. *Tylecodon torulosus* in its winter phase on a sheer, lichen-covered, south-facing cliff face at Karrachabpoort at Lekkersing in the Richtersveld in the Northern Cape.



FIGURE 160b. Winter phase of *Tylecodon torulosus* on a sheer south-facing cliff face at Karrachabpoort at Lekkersing in the Richtersveld.



FIGURE 160c. *Tylecodon torulosus* in the cliff-plant collection at Kirstenbosch (material from Lekkersing, Richtersveld). The torulose stems are in their summer phase.

161. *Tylecodon viridiflorus*



FIGURE 161a. *Tylecodon viridiflorus* flowering at Kirstenbosch.



FIGURE 161b. *Tylecodon viridiflorus* at Skouerfontein in the Richtersveld, the plant here sharing its habitat with *Crassula sericea* var. *sericea* and *Adromischus alstonii*.

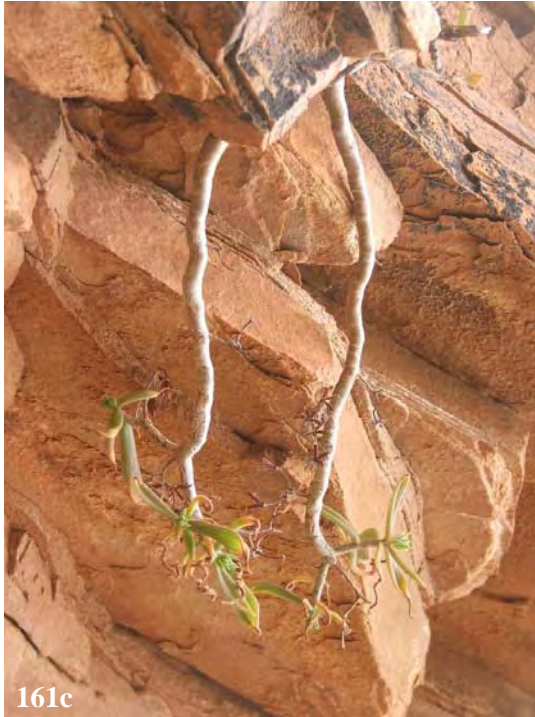


FIGURE 161c & 161d. *Tylecodon viridiflorus* and its cliff habitat at Skouerfontein in the Richtersveld.



FIGURE 161e & 161f. *Tylecodon viridiflorus* in habitat at Skouerfontein in the Richtersveld.

162. *Pelargonium mutans*



FIGURE 162a. *Pelargonium mutans* at Kirstenbosch (material from cliff face at Pongola River, Klipwal Gold Mine, Mpumalanga).



FIGURE 162b. *Pelargonium mutans* in flower at Kirstenbosch (material from cliff face at Pongola River, Klipwal Gold Mine, Mpumalanga).



FIGURE 162c. *Pelargonium mutans* at Kirstenbosch (material from cliff face at Pongola River, Klipwal Gold Mine, Mpumalanga).



FIGURE 162d. Sheer cliffs at Kranskop in KwaZulu-Natal, the habitat of *Pelargonium mutans*.

163. *Pelargonium vanderwaltii*



FIGURE 163a. *Pelargonium vanderwaltii* on a cliff face on the upper south-facing slope of Otjihipa Peak in the Kaokoveld east of Otjihungwa in Namibia.



FIGURE 163b. Otjihipa Peak in the Kaokoveld east of Otjihungwa in Namibia, the habitat of *Pelargonium vanderwaltii*.

164. *Streptocarpus kentaniensis*



FIGURE 164a. *Streptocarpus kentaniensis* growing on sandstone cliffs in the lower Kei River Valley in the Eastern Cape, here together with *Stenoglottis fimbriatus*.

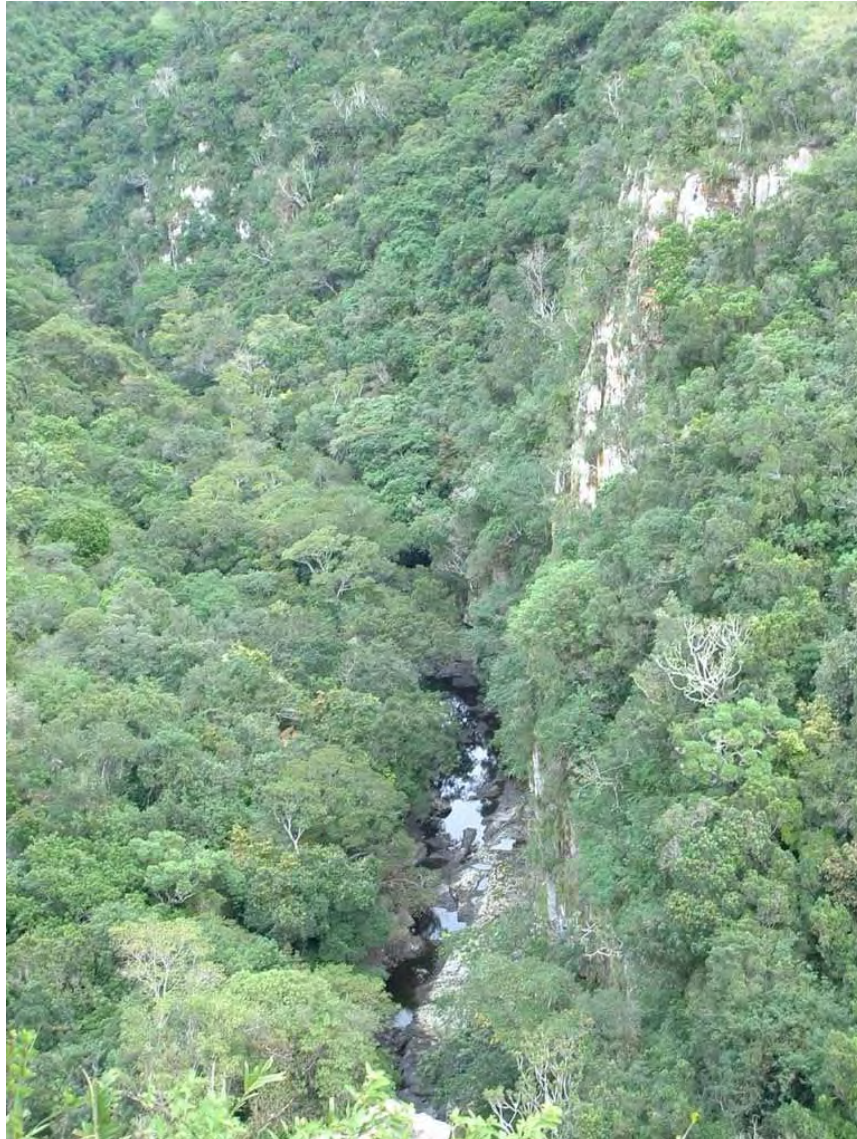


FIGURE 164b. Lower Kei River Valley in the Eastern Cape, a tributary with sheer sandstone cliffs, the habitat of *Streptocarpus kentaniensis*.

165. *Aeollanthus haumannii*



FIGURE 165a. *Aeollanthus haumannii* on a sheer cliff face at Otjihipa in the Kaokoveld in Namibia.

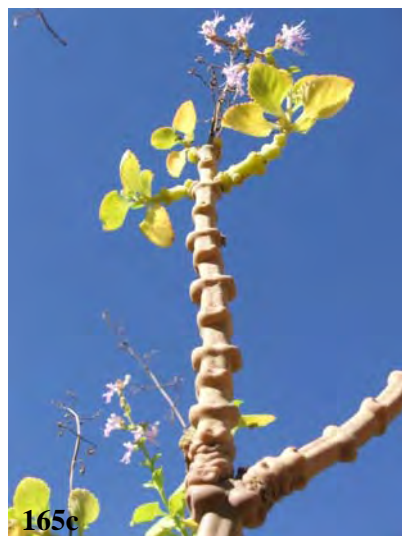
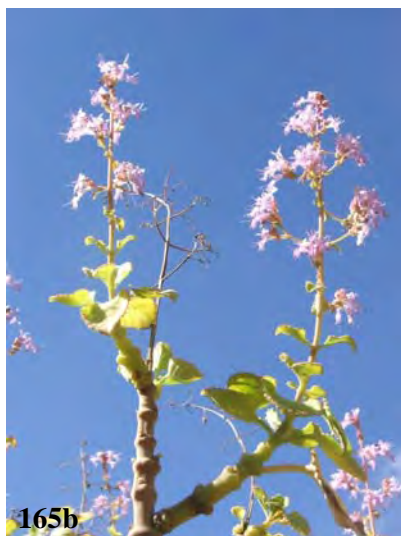


FIGURE 165b & 165c. *Aeollanthus haumannii* flowering at Kirstenbosch.

166. *Aeollanthus rydingianus*



FIGURE 166a. *Aeollanthus rydingianus* in flower on a sheer south-facing cliff at Omavanda on the Baynes Mountains in the Kaokoveld in Namibia.



FIGURE 166b. *Aeollanthus rydingianus* at Omavanda on the Baynes Mountains in the Kaokoveld in Namibia, here growing with an *Adiantum* fern.



FIGURE 166c. *Aeollanthus rydingianus* habitat, sheer south-facing cliff at Omavanda on the Baynes Mountains in the Kaokoveld in Namibia.



FIGURE 166d. Plant of *Aeollanthus rydingianus* in flower at Kirstenbosch (material from Omavanda, Baynes Mountains, Kaokoveld, Namibia).

167. *Plectranthus dolomiticus*



FIGURE 167a. *Plectranthus dolomiticus* in flower at Kirstenbosch.



FIGURE 167b. *Plectranthus dolomiticus* on a dolomite cliff at Penge in Limpopo Province.



FIGURE 167c. Olifants River near Penge in Limpopo Province, habitat of *Plectranthus dolomiticus*.

168. *Plectranthus ernstii*



FIGURE 168a. *Plectranthus ernstii* on a cliff at Mtamvuna in southern KwaZulu-Natal, here growing with the lithophytic orchid *Rangaeris muscicola*.



FIGURE 168b. Oribi Gorge in southern KwaZulu-Natal, the habitat of *Plectranthus ernstii*.



FIGURE 168c. *Plectranthus ernstii* planted on a vertical rock crevice in cultivation at Kirstenbosch.



FIGURE 168d. *Plectranthus ernstii* in habitat on a south-facing sandstone cliff at Oribi Gorge in southern KwaZulu-Natal.



FIGURE 168e. *Plectranthus ernstii* on a cliff at Mtamvuna in southern KwaZulu-Natal, growing with the epiphytic orchid *Rangaeris muscicola* (bottom).

169. *Plectranthus mutabilis*



FIGURE 169a. *Plectranthus mutabilis* on a dolomite cliff at the Sudwala Caves in Mpumalanga.



FIGURE 169b. *Plectranthus mutabilis* on a dry stone wall in cultivation at Kirstenbosch.



FIGURE 169c. Dolomite cliffs above Pilgrim's Rest in Mpumalanga, habitat of *Plectranthus mutabilis* and here growing together with *Aloe spicata*.



FIGURE 169d. *Plectranthus mutabilis* on a dolomite cliff above Pilgrim's Rest in Mpumalanga.

170. *Plectranthus mzimvubuensis*



FIGURE 170a. *Plectranthus mzimvubuensis* in flower at Kirstenbosch.



FIGURE 170b. *Plectranthus mzimvubuensis* on a shale cliff above the Mzimvubu River in the Eastern Cape. Note the thickened stem base.



FIGURE 170c. The habitat of *Plectranthus mzimvubuensis*, cliffs above the Mzimvubu River in the Eastern Cape.



FIGURE 170d. *Plectranthus mzimvubuensis* in cultivation at Kirstenbosch.

171. *Plectranthus purpuratus* subsp. *purpuratus*



FIGURE 171a. *Plectranthus purpuratus* subsp. *purpuratus* here in cultivation at Kirstenbosch. Note the compact, imbricate leaves (material from Shongweni Dam, KwaZulu-Natal).



FIGURE 171b. *Plectranthus purpuratus* subsp. *purpuratus* in habitat on a south-facing cliff at Molweni, Durban. Note the compact, imbricate leaves.



FIGURE 171c. South-facing cliff face at Molweni near Durban in KwaZulu-Natal, the habitat of *Plectranthus purpuratus* subsp. *purpuratus*.



FIGURE 171d. *Plectranthus purpuratus* subsp. *purpuratus* growing in the cliff-plant collection at Kirstenbosch.



FIGURE 171e. Habitat of *Plectranthus purpuratus* subsp. *purpuratus*, a south-facing cliff face at Tafelberg near Pietermaritzburg in KwaZulu-Natal.

172. *Plectranthus saccatus* subsp. *pondoensis*



FIGURE 172a. *Plectranthus saccatus* subsp. *pondoensis* on a south-facing cliff face at Isikuba in the Eastern Cape.



FIGURE 172b. Habitat of *Plectranthus saccatus* subsp. *pondoensis* at Isikuba in the Eastern Cape.

173. *Tetradenia kaokoensis*



FIGURE 173a. Male plant of *Tetradenia kaokoensis* (Lamiaceae) in flower on a sandstone cliff in its habitat at Omavanda.



FIGURE 173b. A close look at *Tetradenia kaokoensis* at Omavanda.



FIGURE 173c. Omavanda cliffs, habitat of *Tetradenia kaokoensis*.

174. *Carruanthus peersii*



FIGURE 174a. *Carruanthus peersii* on a cliff face at Toorwaterspoort in the Western Cape.



FIGURE 174b. *Carruanthus peersii* on a cliff face at Toorwaterspoort in the Western Cape.



FIGURE 174c. *Carruanthus peersii* in flower in the cliff house at Kirstenbosch.

175. *Conophytum auriflorum* subsp. *turbiniforme*



FIGURE 175a. *Conophytum auriflorum* subsp. *turbiniforme* in its sandstone cliff-face habitat at the Spektakelpas in Namaqualand in the Northern Cape.



FIGURE 175b. Spektakelpas in Namaqualand in the Northern Cape, cliff-face habitat of *Conophytum auriflorum* subsp. *turbiniforme*.

176. *Conophytum bolusiae* subsp. *bolusiae*



FIGURE 176a & 176b. The sheer cliffs of Vyftienmyl se Berge on Oograbiesberg at Gemsbokvlei where *Conophytum bolusiae* subsp. *bolusiae* grows.



FIGURE 176c & 176d. *Conophytum bolusiae* subsp. *bolusiae* in habitat and in flower at Vyftienmyl se Berge on Oograbiesberg at Gemsbokvlei.

177. *Conophytum carpianum*



FIGURE 177a. *Conophytum carpianum* growing on a west-facing granite cliff on the upper western slope of the Ploegberg.



FIGURE 177b. *Conophytum carpianum* growing among numerous lichens on a west-facing granite cliff on the upper western slope of the Ploegberg.



FIGURE 177c. West-facing granite cliffs on the upper slopes of the Ploegberg in the Northern Cape, habitat of *Conophytum carpianum*.

179. *Conophytum ernstii*



FIGURE 179a. *Conophytum ernstii* in flower in the succulent nursery at Kirstenbosch (material from Sandrivier, Richtersveld, Northern Cape).



FIGURE 179b. *Conophytum ernstii* in the succulent nursery at Kirstenbosch (material from Sandrivier, Richtersveld, Northern Cape).



FIGURE 179c & 179d. *Conophytum ernstii* on Sandberg in the AiAis-Richtersveld Transfrontier National Park in the Northern Cape.



FIGURE 179e. Habitat of *Conophytum ernstii* at Sandberg in the AiAis-Richtersveld Transfrontier National Park in the Northern Cape.

180. *Conophytum francoiseae*



FIGURE 180a. Oograbies Wes, habitat of *Conophytum francoiseae*.



FIGURE 180b *Conophytum francoiseae* growing on a ledge in its native habitat at Oograbies Wes in the Richtersveld.



FIGURE 180c & 180d. Getting close to *Conophytum francoiseae* on a ledge in the Richtersveld.

181. *Conophytum fulleri*



FIGURE 181a. *Conophytum fulleri* on a quartz cliff at Aggeneys in Bushmanland in the Western Cape.



FIGURE 181b. *Conophytum fulleri* on a quartz cliff at Gamsberg in Bushmanland in the Western Cape.



FIGURE 181c. *Conophytum fulleri* on a quartz cliff at Aggeneys in Bushmanland.

182. *Conophytum hanae*



FIGURE 182a. *Conophytum hanae* on a granite cliff in southern Namaqualand in the Western Cape.

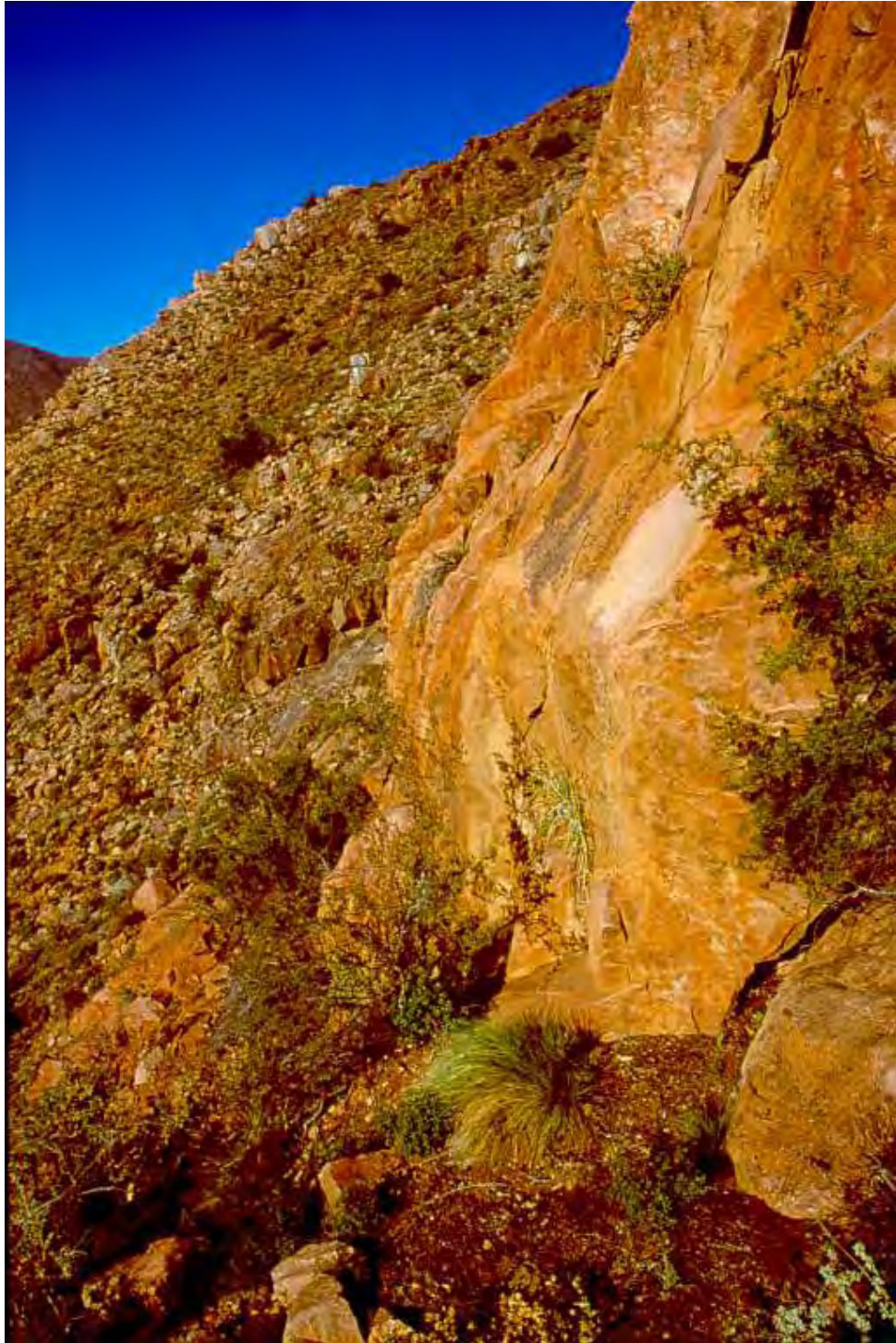


FIGURE 182b. Granite cliffs in southern Namaqualand in the Western Cape, the habitat of *Conophytum hanae*.



FIGURE 182c. *Conophytum hanae* on a granite cliff in southern Namaqualand in the Western Cape.



FIGURE 182d. *Conophytum hanae* on a granite cliff in southern Namaqualand.

183. *Conophytum luckhoffii*



FIGURE 183a. *Conophytum luckhoffii* on a sandstone cliff at the Piekenierskloof Pass in the Western Cape.



FIGURE 183b. Getting close to a plant of *Conophytum luckhoffii* on a sandstone cliff at the Piekenierskloof Pass, here growing with *Crassula montana* subsp. *montana* and *C. rupestris*.



FIGURE 183c & 183d. *Conophytum luckhoffii* flowering in the Piekenierskloof Pass in May.



FIGURE 183e. *Conophytum luckhoffii* here flowering among lichens in the Piekenierskloof Pass in May.

184. *Conophytum marginatum* subsp. *haramoepense*



FIGURE 184a. *Conophytum marginatum* subsp. *haramoepense* in flower in the Kirstenbosch succulent nursery (material from Naip se Berg, Northern Cape).



FIGURE 184b. Winter-active growth of *Conophytum marginatum* subsp. *haramoepense* in the Kirstenbosch succulent nursery (material from Naip se Berg, Northern Cape).



FIGURE 184c. Winter-active growth of *Conophytum marginatum* subsp. *haramoepense* in its native habitat at Dabenorisberg in the Northern Cape.

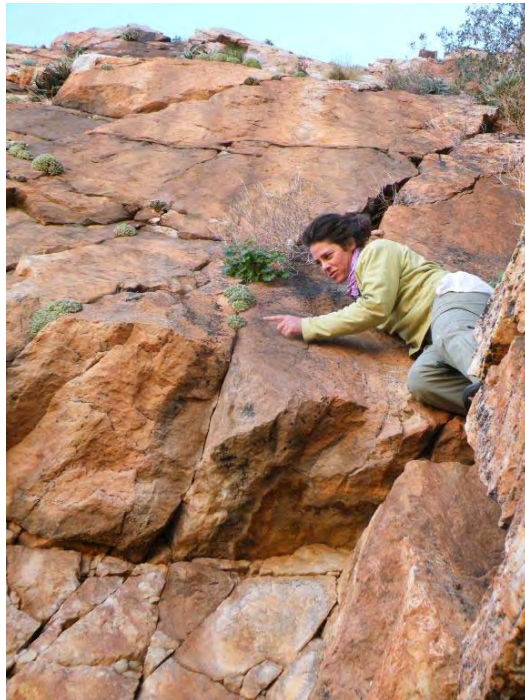


FIGURE 184d. *Conophytum marginatum* subsp. *haramoepense* where it grows at Dabenorisberg. Natanya Mulholland looking at the plant on the cliff face.

188. *Conophytum quaesitum* subsp. *quaesitum* var. *rostratum*



FIGURE 188a. *Conophytum quaesitum* subsp. *quaesitum* var. *rostratum* in habitat on Rooiberg in the AiAis-Richtersveld Transfrontier National Park.



FIGURE 188b. *Conophytum quaesitum* subsp. *quaesitum* var. *rostratum* in habitat on Rooiberg in the AiAis-Richtersveld Transfrontier National Park.

189. *Conophytum ricardianum* subsp. *ricardianum*



FIGURE 189a. *Conophytum ricardianum* subsp. *ricardianum* in its cliff-face habitat on the Sonberg on the Hunsberge in southern Namibia, here together with *Tylecodon bruynsii*.



FIGURE 189b. *Conophytum ricardianum* subsp. *ricardianum* growing on Kuamsibberg, Hunsberge, in southern Namibia in summer, the young leaves covered with remains of the present year's leaves.



FIGURE 189c. *Conophytum ricardianum* subsp. *ricardianum* in its cliff-face habitat on the Sonberg on the Hunsberge in southern Namibia.

190. *Conophytum stephanii*



FIGURE 190a. *Conophytum stephanii* in its cliff habitat at Gemsbokvlei at Oograbiesberg in Namaqualand in the Northern Cape.



FIGURE 190b. *Conophytum stephanii* in its cliff habitat at Gemsbokvlei at Oograbiesberg in Namaqualand in the Northern Cape.



FIGURE 190c. Gemsbokvlei at Oograbiesberg, the habitat of *Conophytum stephanii* in Namaqualand in the Northern Cape.



FIGURE 190d & 190e. *Conophytum stephanii* in flower at Kirstenbosch (material from Gemsbokvlei, Namaqualand, Northern Cape).

191. *Conophytum tantillum* subsp. *amicorum*



FIGURE 191a & 191b. *Conophytum tantillum* subsp. *amicorum* in its south-facing quartz cliff habitat south of Steinkopf in the Northern Cape. Photographs: Andy Young.

192. *Conophytum taylorianum* subsp. *ernianum*



FIGURE 192a & 192b. *Conophytum taylorianum* subsp. *ernianum* in its cliff habitat at Hohenzollern on the Hunsberg in southern Namibia.



FIGURE 192c. Hohenzollern on the Hunsberg where the upper cliff face is the habitat of *Conophytum taylorianum* subsp. *ernianum*.



FIGURE 192d. *Conophytum taylorianum* subsp. *ernianum* in cultivation at Kirstenbosch (material from Hohenzollern, Hunsberg, southern Namibia).

193. *Conophytum taylorianum* subsp. *rosynense*



FIGURE 193a. *Conophytum taylorianum* subsp. *rosynense* here in its quartz cliff habitat on the Rosyntjieberg in the Richtersveld in the Northern Cape.



FIGURE 193b. *Conophytum taylorianum* subsp. *rosynense* in its sandstone cliff habitat on the Rosyntjieberg in the Richtersveld in the Northern Cape.



FIGURE 193c. *Conophytum taylorianum* subsp. *rosynense* in its sandstone cliff habitat on the Rosyntjieberg in the Richtersveld in the Northern Cape.



FIGURE 193d. Rosyntjieberg quartz cliff habitat of *Conophytum taylorianum* subsp. *rosynense* in the Richtersveld in the Northern Cape. The plants here share the habitat with other cremnophytes such as *Aloe meyeri*, *Bulbine pendens*, *Conophytum stephanii*, *Othonna cremnophila* and *Tylecodon ellaphieae*.



FIGURE 193e. *Conophytum taylorianum* subsp. *rosynense* in cultivation at Kirstenbosch (material from Richtersveld, Northern Cape).

194. *Delosperma* sp. A



FIGURE 194a. *Delosperma* sp. A at Banana Point, Mtamvuna in KwaZulu-Natal.



FIGURE 194b. *Delosperma* sp. A here growing on cliffs at Banana Point, Mtamvuna in KwaZulu-Natal.



FIGURE 194c. Banana Point cliffs at Mtamvuna, habitat of *Delosperma* sp. A in KwaZulu-Natal.

195. *Delosperma* sp. B



FIGURE 195a. *Delosperma* sp. B on a sandstone cliff face at Waterfall Bluff on the Eastern Cape coast.



FIGURE 195b. *Delosperma* sp. B on a sandstone cliff face at Waterfall Bluff on the Eastern Cape coast.



FIGURE 195c. *Delosperma* sp. **B** on a sandstone cliff face at Waterfall Bluff on the Eastern Cape coast.



FIGURE 195d. Cliff face at Waterfall Bluff on the Eastern Cape coast where *Delosperma* sp. **B** grows.

196. *Delosperma esterhuyseniae*



FIGURE 196a. *Delosperma esterhuyseniae* on a sandstone cliff on the Cockscomb Mountain in the Eastern Cape.



FIGURE 196b. Cliffs of the Cockscomb Mountain in the Eastern Cape, habitat of *Delosperma esterhuyseniae*. Werner Voigt standing in the foreground.



FIGURE 196c & 196d. *Delosperma esterhuyseniae* on sandstone cliffs in Gertsmitzkloof in the Baviaanskloof Mountains in the Eastern Cape, sharing its habitat with *Bulbine cremnophila*.

197. *Delosperma knox-daviesii*



FIGURE 197a. *Delosperma knox-daviesii* flowering on a sandstone cliff face at Blyderivierspoort in Mpumalanga.



FIGURE 197b. Cliff face at Blyderivierspoort in Mpumalanga, habitat of *Delosperma knox-daviesii*.

198. *Delosperma laxipetalum*



FIGURE 198a. *Delosperma laxipetalum* hanging down a sandstone cliff face at Swartwaterspoort in the Eastern Cape.



FIGURE 198b. *Delosperma laxipetalum* growing on a sandstone cliff face at Swartwaterspoort in the Eastern Cape.



FIGURE 198c. Cliff face at Swartwaterspoort in the Eastern Cape, habitat of *Delosperma laxipetalum*.

199. *Delosperma nubigenum*



FIGURE 199a. *Delosperma nubigenum* in cultivation at the Denver Botanical Garden in Denver, Colorado, USA.



FIGURE 199b. *Delosperma nubigenum* in its habitat at Mont-aux-Sources in the Drakensberg in KwaZulu-Natal.



FIGURE 199c. *Delosperma nubigenum* in cultivation at Denver Botanical Garden in Denver, Colorado, USA.



FIGURE 199d. *Delosperma nubigenum* in habitat near Sani, drooping from a cliff face.



FIGURE 199e. Drakensberg habitat of *Delosperma nubigenum* in KwaZulu-Natal, with Mont-aux-Sources in the background.

200. *Delosperma saxicola*



FIGURE 200a. *Delosperma saxicola* in habitat in the Tsitsikamma National Park in the Western Cape.



FIGURE 200b. *Delosperma saxicola* in the Tsitsikamma National Park.



FIGURE 200c. The habitat of *Delosperma saxicola* in the Tsitsikamma National Park in the Western Cape.



FIGURE 200d. *Delosperma saxicola* in habitat in the Tsitsikamma National Park in the Western Cape.

201. *Delosperma subpetiolatum*



FIGURE 201a. *Delosperma subpetiolatum* growing on a sandstone cliff near Maclear in the Eastern Cape.



FIGURE 201b. *Delosperma subpetiolatum* in flower on a sandstone cliff near Maclear in the Eastern Cape.



FIGURE 201c. Sandstone cliff near Maclear in the Eastern Cape, habitat of *Delosperma subpetiolatum*.

202. *Delosperma tradescantioides*



FIGURE 202a. *Delosperma tradescantioides* flowering at Kirstenbosch (material from a cliff in the Kei River, Eastern Cape, collected by Cameron and Rhoda Macmaster).

203. *Delosperma velutinum*



FIGURE 203a. *Delosperma velutinum* flowering on the cliffs of Die Kop at Kranskop in the Thukela region in KwaZulu-Natal, here sharing its habitat with *Aeollanthus parvifolius*, *Crassula lanceolata* and *C. perfoliata*.



FIGURE 203b. Cliff habitat of *Delosperma velutinum* at Die Kop, Kranskop in KwaZulu-Natal, the Thukela River in the background.



FIGURE 203c. *Delosperma velutinum* on cliffs at Die Kop, here growing with *Aeollanthus parvifolius*, *Crassula lanceolata* and *C. perfoliata*.

204. *Delosperma waterbergense*



FIGURE 204a. *Delosperma waterbergense* on a sandstone cliff on the Kransberg in the Marakele National Park where the plants grow in a shady kloof.



FIGURE 204b. Sandstone cliff faces on the Kransberg in the Marakele National Park, habitat of *Delosperma waterbergense* and *Crassula cymbiformis*, both endemic to the Kransberg in Limpopo Province.



FIGURE 204c. Flower of *Delosperma waterbergense* at Kirstenbosch.

205. *Delosperma zoutpansbergense*



FIGURE 205a. *Delosperma zoutpansbergense* in habitat on upper south-facing cliffs at Hanglip in Limpopo Province, growing together with *Plectranthus mutabilis*.



FIGURE 205b. A close look at *Delosperma zoutpansbergense* on cliffs at Hanglip in Limpopo Province.



FIGURE 205c. Upper south-facing cliffs, the habitat of *Delosperma zoutpansbergense* at Hanglip in Limpopo Province.



FIGURE 205d. Pink-flowering *Delosperma zoutpansbergense* on cliffs at Hanglip, Limpopo Province.

206. *Drosanthemum anemophilum*



FIGURE 206a. *Drosanthemum anemophilum* in flower in the Kirstenbosch Conservatory.



FIGURE 206b. *Drosanthemum anemophilum* in habitat on a cliff at Rooinek Pass.



FIGURE 206c. *Drosanthemum anemophilum* in flower in habitat. Note the pollinator (Rooinek Pass).



FIGURE 206d. Habitat of *Drosanthemum anemophilum* at Rooinek Pass.

207. *Drosanthemum expersum*



FIGURE 207a. *Drosanthemum expersum* on a sandstone cliff on the Waboomsberg near Ceres in the Western Cape.



FIGURE 207b. *Drosanthemum expersum* on a sandstone cliff at Conical Peak of the Matroosberg near Ceres in November 2009.



FIGURE 207c & 207d. *Drosanthemum expersum* on a shale cliff at Conical Peak on the Matroosberg near Ceres in the Western Cape in November 2009.



FIGURE 207e. *Drosanthemum expersum* on a sandstone cliff on Tafelberg north of Ceres in the Western Cape.



FIGURE 207f. *Drosanthemum expersum* on a sandstone cliff on Waboomsberg north of Ceres in the Western Cape.



FIGURE 207g. *Drosanthemum expersum* in flower on a sandstone cliff on Rooiberg on the Matroosberg in the Western Cape.



FIGURE 207h. South-facing sandstone cliff on Waboomsberg north of Ceres, the habitat of *Drosanthemum expersum*.



FIGURE 207i. *Drosanthemum expersum* on a sandstone cliff on Baviaansberg northeast of Ceres in the Western Cape.

208. *Drosanthemum inornatum*



FIGURE 208a. *Drosanthemum inornatum* growing on a south-facing dolomite cliff face at Konsertinaberg on the Hunsberg in southern Namibia.



FIGURE 208b. South-facing dolomite cliff face at Konsertinaberg on the Hunsberg in southern Namibia, habitat of *Drosanthemum inornatum*.

209. *Erepsia heteropetala*



FIGURE 209a. *Erepsia heteropetala* on a south-facing sandstone cliff on the Witteberg at Du Toitskloof in the Western Cape.



FIGURE 209b. South-facing sandstone cliffs on the Witteberg, Du Toitskloof, habitat of *Erepsia heteropetala* and *Esterhuyseniae stokoei*.



FIGURE 209c. Young plant of *Erepsia heteropetala* on a south-facing sandstone cliff on the Witteberg at Du Toitskloof in the Western Cape.



FIGURE 209d & 209e. *Erepsia heteropetala* hanging from a south-facing sandstone cliff on the Witteberg at Du Toitskloof in the Western Cape. The plant on the right here in flower in November 2009.

210. *Esterhuysenia stokoei*



FIGURE 210a. *Esterhuysenia stokoei* on a south-facing sandstone cliff on the Witteberg at Du Toitskloof in the Western Cape.



FIGURE 210b & 210c. *Esterhuysenia stokoei* on the Witteberg at Du Toitskloof in the Western Cape. The plant on the left was in fruit in March and the one on the right in flower in December 2009.



FIGURE 210d. *Esterhuysenia stokoei* growing sympatrically with *Erepsia heteropetala* on a south-facing sandstone cliff on the Witteberg at Du Toitskloof in the Western Cape.



FIGURE 210e. South-facing sandstone cliffs on the Witteberg at Du Toitskloof in the Western Cape, habitat of *Esterhuysenia stokoei* and *Erepsia heteropetala*.



FIGURE 210f. *Esterhuysenia stokoei* flowering on a south-facing sandstone cliff on the Witteberg at Du Toitskloof in the Western Cape in November 2009.

211. *Jensenobotrya lossowiana*



FIGURE 211a. *Jensenobotrya lossowiana* growing in the Namib Desert on a south-facing sandstone cliff at Dolphin Head on the coast in southern Namibia.



FIGURE 211b. Namib Desert habitat of *Jensenobotrya lossowiana*. It grows on a south-facing sandstone cliff at Dolphin Head in the background.



FIGURE 211c & 211d. *Jensenobotrya lossowiana* growing on a south-facing sandstone cliff at Dolphin Head on the southern Namibian coast. The plant on the left was photographed in 2007. On the right is the same plant photographed by Willi Giess in 1974.



FIGURE 211e. *Jensenobotrya lossowiana* growing in the Namib Desert on a south-facing sandstone cliff at Dolphin Head on the southern Namibian coast. Note the condensation of fog on the leaves.



FIGURE 211f. *Jensenobotrya lossowiana* in flower in the Namib Desert where it grows on a sheer south-facing sandstone cliff at Dolphin Head on the southern Namibian coast.

212. *Lampranthus affinis*



FIGURE 112a. *Lampranthus affinis* in flower in cultivation (material from Baviaanskloof, Eastern Cape).



FIGURE 212b. *Lampranthus affinis* in flower on a dry stone wall (material from Baviaanskloof, Eastern Cape).



FIGURE 212c. *Lampranthus affinis* in flower, growing on a sandstone cliff at the Seweweekspoort near Ladismith in the Western Cape.



FIGURE 212d. A white-flowering form of *Lampranthus affinis* from the Kouga Dam in the Eastern Cape.

213. *Machairophyllum brevifolium*



FIGURE 213a. A close look at *Machairophyllum brevifolium* in flower at Skuinsklip in the Western Cape.



FIGURE 213b. *Machairophyllum brevifolium* in habitat at Skuinsklip in the Western Cape.

214. *Oscularia cremnophila*



FIGURE 214a & 214b. *Oscularia cremnophila* on a south-facing sandstone cliff at Steenbokfontein near Elands Bay in the Western Cape.



FIGURE 214c. Getting close to *Oscularia cremnophila* in flower on a south-facing sandstone cliff at Steenbokfontein near Elands Bay in the Western Cape.



FIGURE 214d. Lower stem of *Oscularia cremnophila* on a south-facing sandstone cliff at Steenbokfontein near Elands Bay. Note the fissured bark.



FIGURE 214e. Young plant of *Oscularia cremnophila* in a fissure of a south-facing quartzitic sandstone cliff at Steenbokfontein near Elands Bay in the Western Cape.

215. *Ruschia knysnana*



FIGURE 215a. *Ruschia knysnana* in flower on a south-facing conglomerate cliff north of the Lake at Knysna. Growing with it are a young *Aloe ferox*, *Crassula biplanata*, *C. perforata* subsp. *perforata* and *Senecio crassulaefolius*.



FIGURE 215b. A young plant of *Ruschia knysnana* growing on a cliff north of the Lake at Knysna. Note the extended flowering stalks. Associated cliff dwellers in the background (non-obligatory) are *Crassula rubricaulis* and *Senecio crassulaefolius*.

216. *Ruschia promontorii*



FIGURE 216a. A close look at *Ruschia promontorii* in flower on a sandstone cliff face near the lighthouse at Cape Point Nature Reserve in the Western Cape.



FIGURE 216b. *Ruschia promontorii* growing on a sandstone cliff face in the Cape Point Nature Reserve.



FIGURE 216c. *Ruschia promontorii* growing on a sandstone cliff face near the lighthouse in the Cape Point Nature Reserve in the Western Cape.

217. *Scopelogenia bruynsii*



FIGURE 217a. *Scopelogenia bruynsii* in flower on a cliff face on Rooiberg on the Knersvlakte in the Western Cape.

218. *Scopelogenia verruculata*



FIGURE 218a. *Scopelogenia verruculata* hanging from a cliff face near Riviersonderend.



FIGURE 218b. *Scopelogenia verruculata* in flower on a cliff face near Riviersonderend.



FIGURE 218c. *Scopelogenia verruculata* on a cliff on the southern face of Lion's Head at Cape Town in the Western Cape.



FIGURE 218d. Southern cliff faces of Lion's Head where *Scopelogenia verruculata* grows near Cape Town in the Western Cape.

219. *Oxalis pocockiae*



FIGURE 219a. *Oxalis pocockiae* in its sandstone cliff-face habitat at Keurkloof in the Hex River Valley in the Western Cape. Note the infructescence bending towards the cliff face.



FIGURE 219b. *Oxalis pocockiae* on a cliff face at Keurkloof in the Hex River Valley near De Doorns in the Western Cape. Note the winged vegetative bulbils at the stem tip.



FIGURE 219c. *Oxalis pocockiae* taken from a crevice in a cliff face at Keurkloof in the Hex River Valley near De Doorns in the Western Cape, showing the production of winged bulbils, which are dispersed by wind to other crevices on the cliff (cloning).



FIGURE 219d. *Oxalis pocockiae* in a crevice at Keurkloof near De Doorns.

220. *Anacampseros scopata*



FIGURE 220a. *Anacampseros scopata* on a quartz cliff face at Gemsbokvlei in the Richtersveld in Namaqualand in the Northern Cape. The white hairs on the plant heads act as a fog trap. Low fog clouds are characteristic of this region.



FIGURE 220b. Oograbiesberg at Gemsbokvlei in the Richtersveld, habitat of *Anacampseros scopata*. Low fog clouds are characteristic of this region.



FIGURE 220c. *Anacampteros scopata* on a quartz cliff face at Gemsbokvlei in the Richtersveld in Namaqualand in the Northern Cape.

221. *Dewinteria petrophila*



FIGURE 221a. *Dewinteria petrophila* hanging from an ledge on the Otjihipa Mountains above the Cunene River.



FIGURE 221b. *Dewinteria petrophila* hanging from the Otjihipa Mountains above the Cunene River. Note the filiform basal branches entering crevices where they produce capsules and cloned seed.



FIGURE 221c. Young plant of *Dewinteria petrophila* on the Otjihipa Mountains in northern Namibia.



FIGURE 221d. *Dewinteria petrophila* growing on a steep south-facing cliff in northern Namibia.



FIGURE 221e. *Dewinteria petrophila* in flower on the Otjihipa Mountains, a pollinator visiting a flower early in the morning.

222. *Stemodiopsis rivae*



FIGURE 222a. *Stemodiopsis rivae* in flower on a sandstone cliff face on a southern slope of a cliff on the farm Little Leigh in the Soutpansberg. Plants grow in crevices, the inflorescence growing into the crevices after flowering. The lower plant is *Crassula expansa* subsp. *fragilis*.



FIGURE 222b. *Stemodiopsis rivae* in flower on a sandstone cliff face on a southern slope on the farm Little Leigh in the Soutpansberg. The plants grow in crevices, the inflorescence growing into the crevices after flowering.



FIGURE 222c. *Stemodiopsis rivae* growing below an overhang on a southern slope of a sandstone cliff face on the farm Little Leigh in the Soutpansberg.