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Supplementary Material

Is leaf pubescence of Cape Proteaceae a xeromorphic or radiation-protective trait?

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Fig. S1: Relationship between stomatal density and mean annual rainfall for 19 Proteaceae species. Data are mean \pm s.e.



Fig. S2: Light response of a) CO₂ assimilation and b) φ_{PSII} for pubescent and glabrous leaves of *L. conocarpodendron* (n = 5). Data are mean ± s.e.

Table SI: Mean climate variables for several sites along the Cape Peninsula occupied by pubescent and glabrous individuals. Data were obtained from the South African Weather Service (SAWS). Summer was defined as December to February and winter as June to August. A single value for humidity and wind speed for the Cape Peninsula is reported due to a lack of replicate stations in pubescent sites.

Variable	Summer		Winter		Annual	
	Pubescent	Glabrous	Pubescent	Glabrous	Pubescent	Glabrous
Mean monthly rainfall (mm)	23 ± 3	20 ± 2	139 ± 15	105 ± 10	848 ± 177	669 ± 107
Mean daily max. temp. (°C)	26.7 ± 0.4	22.4 ± 0.3	18.2 ± 0.2	16.7 ± 0.3	22.6 ± 0.0	19.5 ± 0.4
Mean daily min. temp. (°C)	17.0 ± 0.3	15.3 ± 0.2	9.8 ± 0.1	11.1 ± 0.2	13.5 ± 0.0	13.2 ± 0.0
Relative humidity (%)	66.4 ± 9.7		72.3 ± 5.8		69.5 ± 8.0	
Wind speed (m s^{-1})	6.8 ± 0.0		5.4 ± 0.2		6.0 ± 0.2	

Table SII: Mean percentage reflectance from glabrous and pubescent leaves averaged into categories of UV-C, UV-B, UV-A and PAR wavelength ranges. Data are mean \pm s.e. (n = 3 sites per leaf type). Asterisks denote significant differences (p < 0.05) in reflectance for a wavelength range between leaf types found using an independent sample t-test.

Wavelength range (nm)	Reflectance (%)		
	Pubescent	Glabrous	
UV-C (250-280)	$15.7 \pm 1.83*$	3.4 ± 0.5	
UV-B (280-320)	$17.9 \pm 1.7 *$	3.9 ± 0.5	
UV-A (320-400)	$20.5\pm1.7*$	4.6 ± 0.6	
PAR (400-700)	$31.1\pm2.8*$	11.3 ± 1.1	

Variable	Co-efficient estimate	t	р
MAR	-0.3 ± 0.48	-0.63	0.536
MAT	290.7 ± 147.4	1.97	0.066
Intercept	-3381.1 ± 2430.6	-1.39	0.183

 Table SIII: Results of a multiple regression analysis done to determine the

 relationship between mean hair density and mean annual temperature and rainfall.

Table SIV: Calculated leaf temperature (relevant to ambient) of two morphotypes and a "glabrous" pubescent leaf. Leaf temperature was calculated using observed values of absorptance, transpiration rate and boundary layer conductance for glabrous and pubescent leaves in combination with standard energy balance parameters.

Morphotype	α (%)	E (mols m-2 s-1)	g_{bl}	ΔT (°C)
Glabrous	0.48	0.006	1.59	0.97
Pubescent	0.27	0.008	1.15	-2.13
"Glabrous" pubescent	0.48	0.008	1.15	0.01