Table S1. Collection records used for modelling climatic suitability for *Leptocybe* species.

Genetic grouping	Population	Longitude	Latitude
Lineage A	African	34.160	0.452
Lineage A	African	34.172	0.363
Lineage A	African	34.999	-0.080
Lineage A	African	38.156	-3.616
Lineage A	African	35.099	-1.284
Lineage A	African	36.820	-1.000
Lineage A	African	37.000	-6.789
Lineage A	African	34.715	-8.600
Lineage A	African	31.937	-5.116
Lineage A	African	27.744	-25.753
Lineage A	African	34.208	0.657
Lineage A	African	32.030	-25.959
Lineage A	African	21.287	-28.465
Lineage A	African	27.795	-25.615
Lineage A	African	30.570	-30.572
Lineage A	African	32.084	-28.606
Lineage A	African	38.000	1.000
Lineage A	African	35.000	-18.250
Lineage A	African	26.000	-30.000
Lineage A	African	35.000	-6.000
Lineage A	African	33.000	2.000
Lineage A	African	29.000	-19.000
Lineage A	African	39.331	10.148
Lineage A	African	38.000	8.000
Lineage A	American	-51.999	-23.506
Lineage A	American	-79.855	26.129
Lineage A	American	-99.176	19.323
Lineage A	American	-99.072	19.463
Lineage A	American	-99.120	19.405
Lineage A	American	-99.089	19.354
Lineage A	American	-99.114	19.453
Lineage A	American	-99.108	19.254
Lineage A	American	-103.336	20.649
Lineage A	American	-98.961	18.863
Lineage A	American	-99.058	19.479
Lineage A	American	-98.876	19.333
Lineage A	American	-99.051	23.709
Lineage A	American	-46.522	-21.463
Lineage A	American	-42.000	-12.000
Lineage A	American	-55.000	-10.000
Lineage A	American	-49.636	-15.581
Lineage A	American	-45.000	-5.000
Lineage A	American	-44.000	-18.000
Lineage A	American	-51.000	-24.000
Lineage A	American	-49.000	-22.000
Lineage A	American	-48.000	-10.500
Lineage A	American	-82.500	28.751
Lineage A	American	-98.500	39.760
Lineage A	American	-56.000	-33.000

Lineage A	Mediterranean	43.000	36.864
Lineage A	Mediterranean	43.000	36.864
Lineage A	Mediterranean	34.832	32.000
Lineage A	Mediterranean	36.067	36.133
Lineage A	Mediterranean	35.483	36.967
Lineage A	Mediterranean	35.633	36.950
Lineage A	Mediterranean	35.667	36.983
Lineage A	Mediterranean	35.733	37.017
Lineage A	Mediterranean	35.650	37.250
Lineage A	Mediterranean	35.850	37.367
Lineage A	Mediterranean	35.917	37.333
Lineage A	Mediterranean	36.050	37.350
Lineage A	Mediterranean	36.083	37.367
Lineage A	Mediterranean	36.200	37.117
Lineage A	Mediterranean	36.350	37.283
Lineage A	Mediterranean	35.833	33.033
Lineage A	Mediterranean	35.800	32.967
Lineage A	Mediterranean	35.400	32.767
Lineage A	Mediterranean	35.583	33.067
Lineage A	Mediterranean	35.450	32.500
Lineage A	Mediterranean	34.900	32.433
Lineage A	Mediterranean	34.867	32.083
Lineage A	Mediterranean	52.468	29.662
Lineage A	Mediterranean	3.000	28.000
Lineage A	Mediterranean	2.000	46.000
Lineage A	Mediterranean	22.000	39.000
Lineage A	Mediterranean	53.000	32.000
Lineage A	Mediterranean	34.750	31.500
Lineage A	Mediterranean	12.833	42.833
Lineage A	Mediterranean	36.000	31.000
Lineage A	Mediterranean	14.433	35.917
Lineage A	Mediterranean	-5.000	32.000
Lineage A	Mediterranean	-8.000	39.500
Lineage A	Mediterranean	-4.000	40.000
Lineage A	Mediterranean	38.000	35.000
Lineage A	Mediterranean	9.000	34.000
Lineage A	Mediterranean	35.000	39.000
Lineage B invasive	Asian	121.588	24.998
Lineage B invasive	Asian	121.510	25.031
Lineage B invasive	Asian	121.343	25.093
Lineage B invasive	Asian	121.487	25.183
Lineage B invasive	Asian	120.557	23.637
Lineage B invasive	Asian	120.557	23.636
Lineage B invasive	Asian	81.000	17.667
Lineage B invasive	Asian	105.724	21.341
Lineage B invasive	Asian	108.000	22.133
Lineage B invasive	Asian	80.377	7.640
Lineage B invasive	Asian	109.500	18.320
Lineage B invasive	Asian	109.563	19.499
Lineage B invasive	Asian	110.083	21.267
Lineage B invasive	Asian	74.982	15.491

Lineage B invasive	Asian	105.000	35.000
Lineage B invasive	Asian	113.000	23.000
Lineage B invasive	Asian	109.000	24.000
Lineage B invasive	Asian	109.600	19.200
Lineage B invasive	Asian	79.000	16.000
Lineage B invasive	Asian	77.000	20.000
Lineage B invasive	Asian	76.000	13.500
Lineage B invasive	Asian	76.500	10.000
Lineage B invasive	Asian	78.000	11.000
Lineage B invasive	Asian	105.000	18.000
Lineage B invasive	Asian	100.000	15.000
Lineage B invasive	Asian	107.833	16.167
Lineage B endemic	Australian	151.133	-25.333
Lineage B endemic	Australian	151.433	-26.083
Lineage B endemic	Australian	144.633	-17.367
Lineage B endemic	Australian	144.817	-17.417
Lineage B endemic	Australian	144.617	-16.950
Lineage B endemic	Australian	150.016	-26.689
Lineage B endemic	Australian	151.050	-27.500
Lineage B endemic	Australian	152.983	-27.467
Lineage B endemic	Australian	153.000	-27.533
Lineage B endemic	Australian	144.567	-17.567

Table S2. Key to Bioclim variables {from [36]}.

Environmental variable	Description
Bio01	Annual mean temperature (°C)
Bio02	Mean diurnal temperature range {mean (period max - min)} (°C)
Bio03	Isothermality (Bio02 / Bio07)
Bio04	Temperature seasonality (C of V)
Bio05	Max temperature of warmest week (°C)
Bio06	Min temperature of coldest week (°C)
Bio07	Temperature annual range (Bio05 - Bio06) (°C)
Bio08	Mean temperature of wettest quarter (°C)
Bio09	Mean temperature of driest quarter (°C)
Bio10	Mean temperature of warmest quarter (°C)
Bio11	Mean temperature of coldest quarter (°C)
Bio12	Annual precipitation (mm)
Bio13	Precipitation of wettest week (mm)
Bio14	Precipitation of driest week (mm)
Bio15	Precipitation seasonality (C of V)
Bio16	Precipitation of wettest quarter (mm)
Bio17	Precipitation of driest quarter (mm)
Bio18	Precipitation of warmest quarter (mm)
Bio19	Precipitation of coldest quarter (mm)
Bio20	Annual mean radiation (W m^{-2})
Bio21	Highest weekly radiation (W m^{-2})
Bio22	Lowest weekly radiation (W m^{-2})
Bio23	Radiation seasonality (C of V)
Bio24	Radiation of wettest quarter (W m^{-2})
Bio25	Radiation of driest quarter (W m^{-2})
Bio26	Radiation of warmest quarter (W m^{-2})
Bio27	Radiation of coldest quarter (W m^{-2})
Bio28	Annual mean moisture index
Bio29	Highest weekly moisture index
Bio30	Lowest weekly moisture index
Bio31	Moisture index seasonality (C of V)
Bio32	Mean moisture index of wettest quarter
Bio33	Mean moisture index of driest quarter
Bio34	Mean moisture index of warmest quarter
Bio35	Mean moisture index of coldest quarter

Table S3. Contributions of Bioclim variables in MaxEnt logistic prediction of *Leptocybe invasa* suitability models of different populations.

Genetic grouping	Population	Environ. variable	% contribution	Permutation sig.
Lineage A	African	Bio13	5.3	26.6
Lineage A	African	Bio34	3.4	16.1
Lineage A	African	Bio31	1.0	9.3
Lineage A	African	Bio32	2.7	9.2
Lineage A	African	Bio04	2.7	7.4
Lineage A	African	Bio07	6.4	5.4
Lineage A	African	Bio05	1.0	5.1
Lineage A	African	Bio21	3.6	4.2
Lineage A	African	Bio06	4.0	3.5
Lineage A	African	Bio17	2.9	2.7
Lineage A	African	Bio03	13.7	1.9
Lineage A	African	Bio11	7.2	1.7
Lineage A	African	Bio25	0.3	1.5
Lineage A	African	Bio27	2.3	1.1
Lineage A	African	Bio35	0.8	1.0
Lineage A	African	Bio24	0.3	0.8
Lineage A	African	Bio23	15.0	0.7
Lineage A	African	Bio14	22.9	0.6
Lineage A	African	Bio19	0.2	0.6
Lineage A	African	Bio16	0.0	0.3
Lineage A	African	Bio30	0.1	0.2
Lineage A	African	Bio08	0.0	0.2
Lineage A	American	Bio20	4.4	18.6
Lineage A	American	Bio19	1.5	18.2
Lineage A	American	Bio16	0.7	12.4
Lineage A	American	Bio34	3.6	11.7
Lineage A	American	Bio28	0.7	11.5
Lineage A	American	Bio09	1.9	10.3
Lineage A	American	Bio06	27.7	5.8
Lineage A	American	Bio14	5.6	5.6
Lineage A	American	Bio04	0.5	2.3
Lineage A	American	Bio30	0.1	1.9
Lineage A	American	Bio02	0.3	1.0
Lineage A	American	Bio23	5.3	0.4
Lineage A	American	Bio17	0.0	0.3
Lineage A	American	Bio31	29.4	0.0
Lineage A	Mediterranean	Bio19	40.9	25.4
Lineage A	Mediterranean	Bio01	1.4	20.3
Lineage A	Mediterranean	Bio34	0.7	15.7
Lineage A	Mediterranean	Bio24	2.5	10.4
Lineage A	Mediterranean	Bio03	5.7	6.1
Lineage A	Mediterranean	Bio26	3.5	4.7
Lineage A	Mediterranean	Bio18	0.5	4.1
Lineage A	Mediterranean	Bio30	5.0	3.3
Lineage A	Mediterranean	Bio25	0.1	2.7
Lineage A	Mediterranean	Bio08	2.2	2.2
Lineage A	Mediterranean	Bio14	2.1	2.2

Lineage A	Mediterranean	Bio32	2.7	1.0
Lineage A	Mediterranean	Bio09	4.0	0.6
Lineage A	Mediterranean	Bio23	0.1	0.6
Lineage A	Mediterranean	Bio29	1.2	0.4
Lineage A	Mediterranean	Bio31	9.3	0.2
Lineage A	Mediterranean	Bio02	0.0	0.2
Lineage A	Mediterranean	Bio05	0.1	0.1
Lineage B invasive	Asian	Bio34	0.2	0.1
Lineage B invasive	Asian	Bio13	0.0	0.1
Lineage B invasive	Asian	Bio18	0.1	0.2
Lineage B invasive	Asian	Bio01	0.1	0.2
Lineage B invasive	Asian	Bio09	0.0	0.2
Lineage B invasive	Asian	Bio23	0.3	0.6
Lineage B invasive	Asian	Bio19	0.3	0.7
Lineage B invasive	Asian	Bio03	0.1	0.7
Lineage B invasive	Asian	Bio21	5.9	1.1
Lineage B invasive	Asian	Bio17	0.5	1.2
Lineage B invasive	Asian	Bio10	0.5	1.9
Lineage B invasive	Asian	Bio26	0.2	2.2
Lineage B invasive	Asian	Bio04	1.0	2.5
Lineage B invasive	Asian	Bio25	0.4	2.8
Lineage B invasive	Asian	Bio22	0.5	5.1
Lineage B invasive	Asian	Bio14	4.1	6.1
Lineage B invasive	Asian	Bio06	1.1	12.3
Lineage B invasive	Asian	Bio07	26.8	20.4
Lineage B invasive	Asian	Bio24	19.2	41.5
Lineage B endemic	Australian	Bio30	55.8	53.7
Lineage B endemic	Australian	Bio08	31.5	11.9
Lineage B endemic	Australian	Bio20	3.9	26.9
Lineage B endemic	Australian	Bio25	3.5	7.5

Table S4. Principal components loadings for all the collection records divided into Lineages A, B invasive and B endemic (latter denoted as C in Figure 2).

PC	**1**	**2**	**3**	**4**	**5**	**6**
% variation	36.46	20.52	17.10	8.26	5.73	4.85
Bio01	0.13	0.25	0.18	0.11	-0.05	-0.26
Bio02	-0.11	0.16	-0.14	0.21	0.07	0.33
Bio03	0.09	0.24	-0.12	0.07	-0.22	0.31
Bio04	-0.17	-0.19	0.15	0.12	0.28	-0.1
Bio05	-0.06	0.16	0.26	0.25	0.13	-0.22
Bio06	0.18	0.20	0.11	-0.03	-0.24	-0.21
Bio07	-0.21	-0.08	0.08	0.20	0.30	0.04
Bio08	0.21	0.16	-0.03	0.16	0.12	-0.18
Bio09	-0.08	0.14	0.29	-0.01	-0.23	-0.17
Bio10	0.01	0.12	0.30	0.20	0.12	-0.34
Bio11	0.17	0.26	0.06	0.02	-0.18	-0.13
Bio12	0.25	-0.05	0.15	-0.04	0.06	0.09
Bio13	0.22	0.05	0.15	-0.17	0.15	0.10
Bio14	0.17	-0.20	0.06	0.26	-0.14	0.06
Bio15	-0.06	0.26	0.06	-0.23	0.25	0.08
Bio16	0.22	0.04	0.15	-0.17	0.18	0.10
Bio17	0.18	-0.19	0.06	0.26	-0.17	0.07
Bio18	0.24	-0.03	0	-0.01	0.31	-0.02
Bio19	0.05	-0.12	0.27	-0.02	-0.26	0.25
Bio20	-0.13	0.20	0.16	0.23	0.04	0.25
Bio21	-0.2	0.02	0.25	0.11	0.05	0.14
Bio22	0.09	0.30	-0.07	0.19	-0.04	0.17
Bio23	-0.18	-0.18	0.21	-0.01	0.08	0
Bio24	0.11	0.11	-0.13	0.35	0.24	0.19
Bio25	-0.20	0.07	0.24	0	-0.13	0.11
Bio26	-0.20	0.01	0.23	0.14	0.05	0.16
Bio27	0.08	0.33	-0.04	0.14	-0.05	0.13
Bio28	0.23	-0.11	0.16	-0.02	0.03	0.10
Bio29	0.19	0.04	0.22	-0.21	0.11	0.18
Bio30	0.21	-0.19	0.04	0.21	0	0.02
Bio31	-0.14	0.22	0.11	-0.25	0.09	0.12
Bio32	0.19	0.02	0.22	-0.22	0.12	0.19
Bio33	0.21	-0.19	0.04	0.21	-0.02	0.03
Bio34	0.25	-0.05	-0.02	0.02	0.26	-0.01
Bio35	0.01	-0.18	0.29	-0.01	-0.24	0.18

Table S5. Principal components loadings for the populations of Lineage A.

PC	**1**	**2**	**3**	**4**	**5**	**6**
% variation	39.30	19.51	17.24	8.65	6.00	1.61
Bio01	0.09	0.31	0.04	0.05	-0.29	0.14
Bio02	0.06	0.13	-0.14	0.35	0.29	0.02
Bio03	0.22	0.15	-0.08	0.08	0.06	-0.22
Bio04	-0.23	-0.03	0.12	0.17	0.05	0.21
Bio05	-0.09	0.26	0.10	0.26	-0.14	0.28
Bio06	0.17	0.20	0.02	-0.14	-0.34	-0.08
Bio07	-0.20	0.02	0.05	0.29	0.17	0.25
Bio08	0.22	0.13	-0.05	0.10	-0.12	0.17
Bio09	-0.12	0.25	0.14	0	-0.30	0.01
Bio10	-0.09	0.26	0.13	0.17	-0.25	0.28
Bio11	0.19	0.23	-0.03	-0.06	-0.23	-0.03
Bio12	0.21	0.05	0.21	-0.06	0.04	0.12
Bio13	0.20	0.14	0.13	-0.17	0.13	0.15
Bio14	0.15	-0.15	0.22	0.21	-0.09	-0.17
Bio15	-0.05	0.27	-0.17	-0.14	0.24	0.01
Bio16	0.20	0.13	0.13	-0.18	0.16	0.19
Bio17	0.16	-0.13	0.23	0.20	-0.11	-0.19
Bio18	0.24	-0.03	0	0.10	0.10	0.22
Bio19	-0.07	0.03	0.33	-0.09	-0.03	-0.30
Bio20	-0.11	0.28	0.05	0.21	0.13	-0.27
Bio21	-0.21	0.13	0.16	0.09	0.10	-0.07
Bio22	0.16	0.21	-0.15	0.17	0.03	-0.29
Bio23	-0.21	-0.03	0.21	0	0.07	0.15
Bio24	0.15	0.05	-0.11	0.35	0.20	-0.09
Bio25	-0.20	0.18	0.14	0	-0.01	-0.18
Bio26	-0.21	0.13	0.15	0.12	0.11	-0.10
Bio27	0.15	0.25	-0.14	0.08	0.03	-0.19
Bio28	0.17	0	0.29	-0.03	0.12	0.05
Bio29	0.13	0.15	0.23	-0.20	0.26	0.04
Bio30	0.17	-0.15	0.20	0.21	0.01	-0.04
Bio31	-0.13	0.26	-0.10	-0.16	0.22	-0.05
Bio32	0.12	0.14	0.24	-0.20	0.28	0.06
Bio33	0.18	-0.14	0.21	0.20	-0.01	-0.04
Bio34	0.24	-0.05	0.03	0.11	0.12	0.18
Bio35	-0.09	0.01	0.36	-0.07	0	-0.22

Table S6. Wilk's lambda criterion values of the environmental variables used to predict the variability in climatic conditions of the different lineages of *Leptocybe invasa*.

Environmental variable	Wilk's λ
Bio08	0.62
Bio03	0.34
Bio32	0.26
Bio24	0.22
Bio23	0.19
Bio20	0.16
Bio05	0.15
Bio16	0.13
Bio13	0.11
Bio26	0.11

Table S7. Wilk's lambda criterion values of the environmental variables used to predict the variability in climatic conditions of the different populations of *Leptocybe invasa*.

Environmental variable	Wilk's λ
Bio23	0.19
Bio08	0.09
Bio09	0.04
Bio03	0.02
Bio32	0.014
Bio20	0.01
Bio02	0.007
Bio05	0.004
Bio04	0.004
Bio26	0.0029