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Supplementary material

Phylogenetic placement and the timing of diversification in Australia's endemic *Vachellia* (Caesalpinioideae, Mimosoid Clade, Fabaceae) species

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Table S1. Voucher information (Queensland Herbarium) and GenBank accession numbers for the Australian *Vachellia* species included in this study

Taxon	Voucher	GenBank accession number			
		*mat*K	*trn*L–*trn*F	*trn*H–*psb*A	*rbc*L
Vachellia bidwillii	AQ906838	MK923591	MK923636	MK923608	MK923621
	AQ555372	MK923595	MK923635	MK923609	MK923622
Vachellia clarksoniana	AQ907745	MK923593	MK923634	MK923607	MK923620
Vachellia ditricha	AQ788189	MK923592	MK923633	MK923605	MK923619
	AQ612478	MK923591	MK923632	MK923606	MK923618
Vachellia douglasica	AQ825443	MK923590	MK923631	MK923604	–
Vachellia pachyphloia	AQ481803	–	MK923630	MK923603	MK923617
Vachellia valida	AQ817074	MK923583	MK923625	MK923598	MK923611
	AQ537185	MK923582	MK923624	MK923596	–
	AQ511469	MK923581	MK923623	MK923597	MK923610
Vachellia suberosa	AQ734737	MK923588	MK923629	MK734737	MK923615
Vachellia sutherlandii	AQ788374	MK923587	MK923628	–	–
	AQ648437	MK923586	–	MK923601	MK923613
	AQ855697	MK923584	MK923626	MK923599	MK923614
	AQ870418	MK923585	MK923627	MK923600	MK923612
Vachellia pallidifolia	AQ532377	–	–	–	MK923616

Table S2. GenBank accession numbers of the non-Australian *Vachellia* species used in this study

Taxon	GenBank accession number			
	matK	*trn*L–*trn*F	*trn*H–*psb*A	*rbc*L
Vachellia amythethophylla	JQ230136.1	JQ230294.1	JQ230187.1	JX572180.1
Vachellia anegadensis	JQ265931.1	JQ230254.1	–	–
Vachellia arenaria	JX517408.1	GQ872257.1	GQ872302.1	JX572181.1
Vachellia bellula	KP823583.1	KP823576.1	KP823573.1	–
Vachellia borleae	JF270601.1	GQ872258.1	GQ872303.1	JX572185.1
Vachellia campechiana	HM020710.1	HM020800.1	–	–
Vachellia caven	AF274131.1	AF522967.1	AF524987.1	Z70145.1
Vachellia choriophylla	–	EU440017.1	–	KX385997.1
Vachellia cochliacantha	AY574094.1	AF522968.1	AF524988.1	–
Vachellia collinsii	KX959482.1	DQ371869.1	HG963565.1	JQ592077.1
Vachellia constricta	HM020712.1	AF522969.1	AF524989.1	–
Vachellia cornigera	EU812045.1	DQ398004.1	EU811981.1	JQ592080.1
Vachellia davyi	JF270604.1	GQ872263.1	GQ872308.1	JF265247.1
Vachellia drepanolobium	HM020714.1	HM020804.1	KR735978.1	KR737493.1
Vachellia dyeri	JX517665.1	JQ230221.1	JQ230188.1	JX572189.1
Vachellia erioloba	JX517384.1	GQ872265.1	GQ872310.1	JX572192.1
Vachellia etbaica	JQ230140.1	KR737959.1	KR735954.1	KR736836.1
Vachellia exuvialis	JF270606.1	GQ872267.1	GQ872312.1	EU213436.1
Vachellia farnesiana	JX495663.1	HM020805.1	FJ808541.1	FJ716669.1
Vachellia gerrardii	JF270607.1	GQ872269.1	KR735927.1	JF265250.1
Vachellia grandicornuta	JX517869.1	EU440026.1	GQ872316.1	JF265251.1
Vachellia gummifera	–	JQ230311.1	HE602486.1	–
Vachellia haematoxylon	JQ230141.1	EU440024.1	JQ230192.1	JX572198.1
Vachellia hebeclada	GQ872229.1	GQ872273.1	GQ872318	JX572201.1
Vachellia hockii	JQ230144.1	EU440014.1	JQ230194.1	–
Vachellia karroo	AF274137.1	GQ872274.1	AF524992.1	JF265252.1
Vachellia kirkii	JX517387.1	GQ872275.1	GQ872319.1	JX572204.1
Vachellia kosiensis	JX518109.1	GQ872276.1	GQ872320.1	JX572205.1
Vachellia leucophloea	KX518639.1	–	JX195530.1	JX195515.1
Vachellia luederitzii	AF523186.1	GQ872278.1	GQ872322.1	JX572208.1
Vachellia macracantha	AY574100.1	AY574118.1	KJ426982.1	KJ082629.1
Vachellia melanoceras	GQ982124.1	–	GQ982400.1	GQ981912.1
Vachellia myrmecophila	KP823586.1	KP823579.1	–	–
Vachellia natalitia	JX850066.1	JQ230233.1	JQ278603.1	JX572214.1
Vachellia nebrownii	JX517304.1	GQ872281.1	GQ872325.1	JX572215.1
Vachellia nilotica	AF274139.1	AF522973.1	FJ808566.1	FJ716687.1
Vachellia ormocarpoides	JX517884.1	GQ872284.1	GQ872327.1	JX572218.1
Vachellia pennatula	AY574096.1	AY574111.1	HG963841.1	JQ592084.1
Vachellia permixta	–	GQ872285.1	GQ872328.1	–
Vachellia reficiens	JX518096.1	GQ872287.1	GQ872330.1	JX572220.1
Vachellia rehmanniana	JX517925.1	–	–	JX572221.1
Vachellia robbertsei	GQ872244.1	GQ872288.1	GQ872331.1	–
Vachellia robusta	JQ230146.1	GQ872289.1	GQ872332.1	JX572222.1
Vachellia schaffneri	AF274132.1	HM020818.1	–	–
Vachellia schottii	AF274136.1	AF522971.1	AF524991.1	–
Vachellia sekhukhuniensis	JX518234.1	GQ872291.1	GQ872334.1	JX572226.1
Vachellia seyal	AF274138.1	HM020820.1	KR735272.1	KR736481.1
Vachellia sieberiana	JF270616.1	KX268140.1	GQ872338.1	JF265259.1
Vachellia sphaerocephala	HM020729.1	HM020821.1	–	–
Vachellia stuhlmannii	JX517951.1	GQ872296.1	GQ872339.1	JX572230.1
Vachellia swazica	JF270617.1	GQ872297.1	GQ872340.1	JF265260.1
Vachellia torrei	JX518215.1	JQ230282.1	–	JX572232.1
Vachellia tortilis	JQ230152.1	AF522974.1	EU213787.1	KX015750.1
Vachellia tortuosa	KJ012817.1	HM020823.1	KJ426983.1	KJ082630.1
Vachellia vernicosa	–	EU440025.1	EU811984.1	–
Vachellia xanthophloea	JX517302.1	GQ872300.1	GQ872343.1	JF265263.1

Table S3. Sequences statistics and model parameters for each plastid region

Parameter	*trn*L–*trn*F	*trn*H–*psb*A	*mat*K	*rbc*L
Number of sites	1027	528	877	562
Variable sites (incl. outgroups)	134	130	67	32
Parsimony informative sites (incl. outgroups)	55	57	26	14
Variable sites (excl. outgroups)	104	107	42	13
Parsimony informative sites (excl. outgroups)	44	51	17	9
Number of sites excluded	129	131	0	0
Optimal substitution model	GTG+G+I	GTG+G+I	GTG+G+I	HKY+I

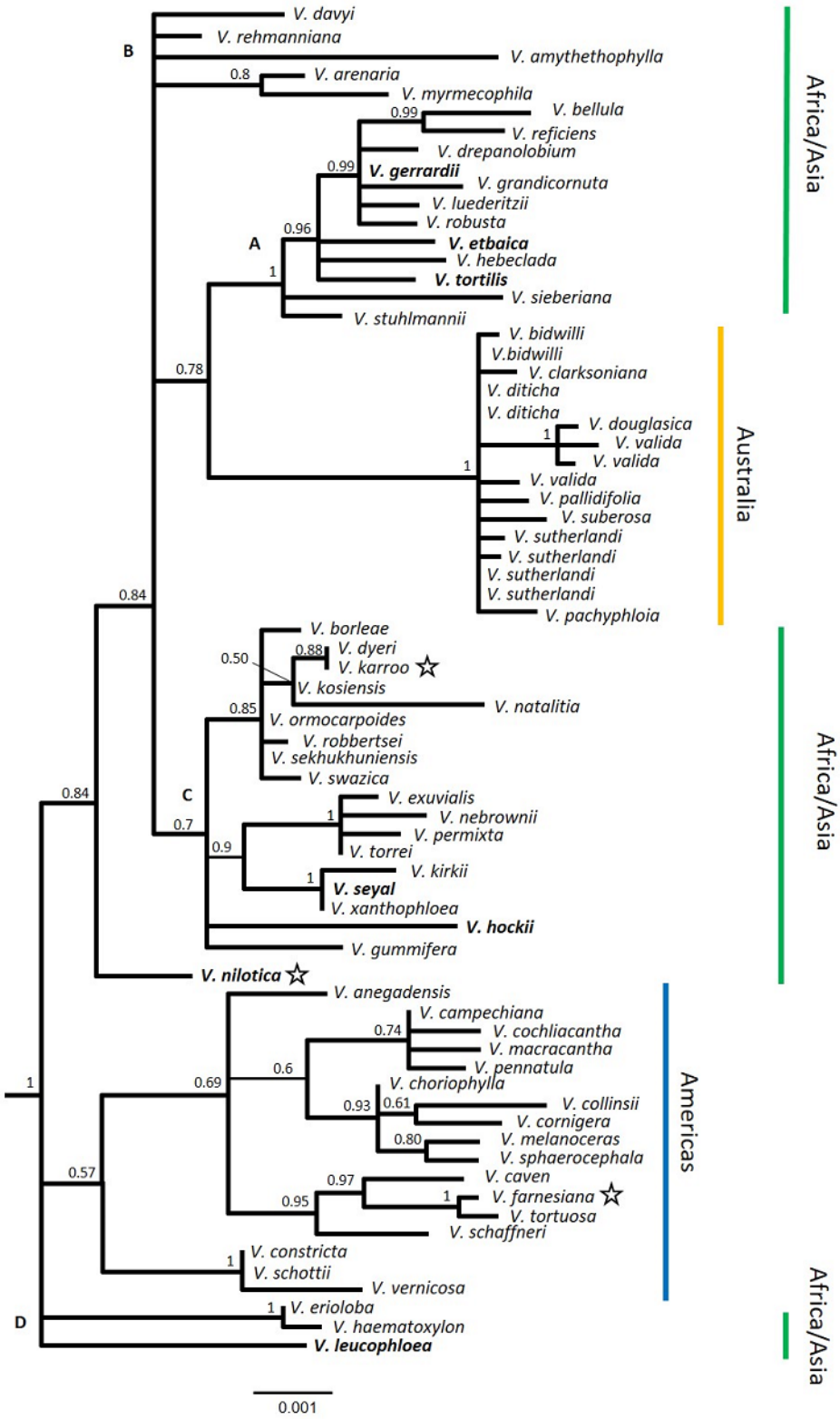

Fig. S1. Bayesian majority-rule consensus phylogeny of the relationships among *Vachellia* species, based on four plastid regions. Posterior probabilities are noted above each node. Outgroups are removed for diagrammatic clarity. The names of *Vachellia* species that are invasive in Australia are indicated with a star. Most species in the African–Asia clades are native only to Africa, apart from *V. gerrardii*, *V. etbaica*, *V. tortilis*, *V. seyel*, *V. hockii* and *V. nilotica* (all native to both Africa and Asia) and *V. leucophloea* (native to Asia). These species are indicated in bold. The four distinct African–Asian clades identified in Fig. 2 are labelled.

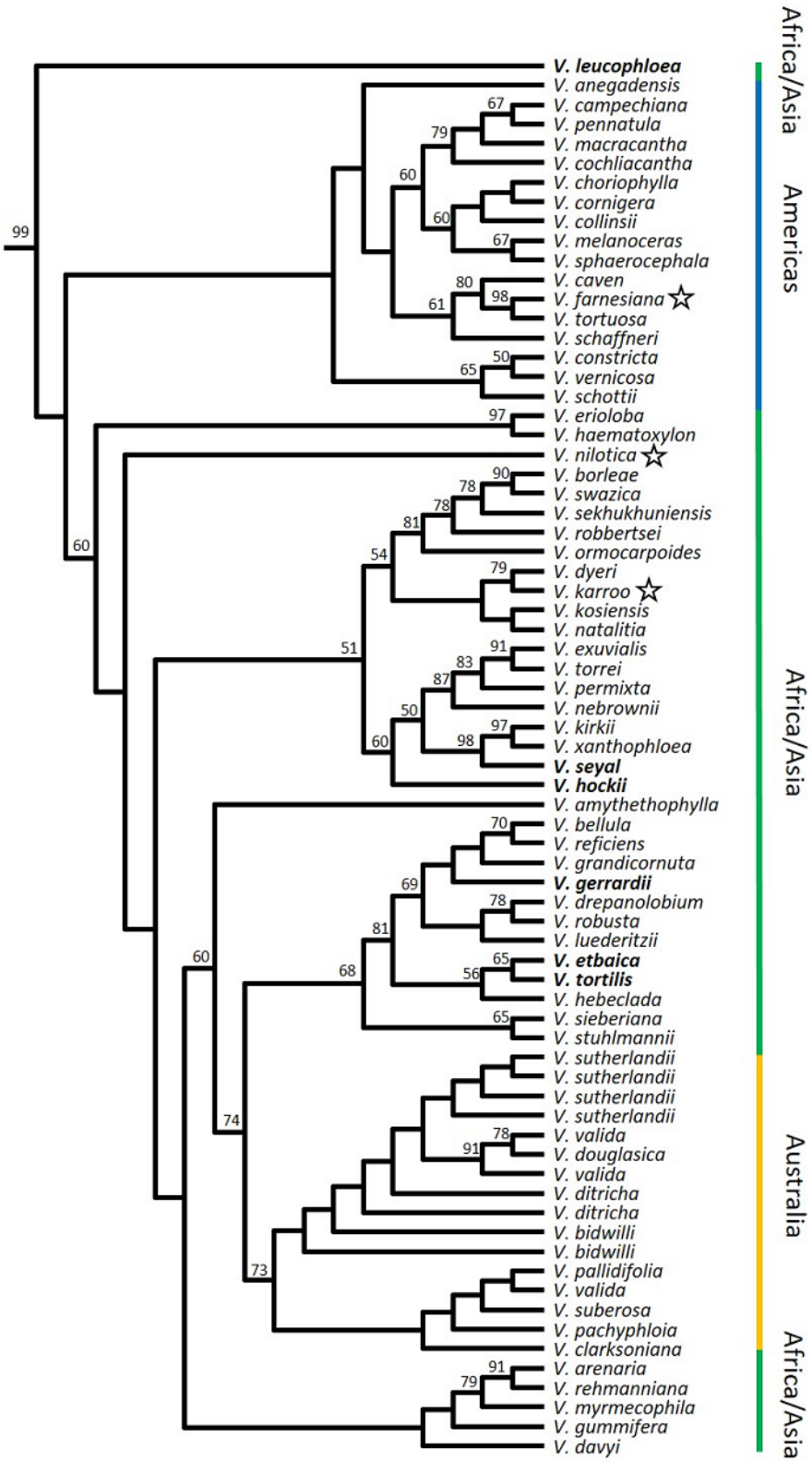

Fig. S2. Strict-consensus phylogeny of the most-parsimonious trees, based on four plastid regions. Bootstrap-support values of >50% are noted above each node. Outgroups are removed for diagrammatic clarity. The names of *Vachellia* species that are invasive in Australia are indicated with a star. Most species in the African–Asia clades are only native to Africa, apart from *V. gerrardii*, *V. etbaica*, *V. tortilis*, *V. seyel*, *V. hockii* and *V. nilotica* (all native to both Africa and Asia) and *V. leucophloea* (native to Asia). These species are indicated in bold.