

MUMMENHOFF, KLAUS, HOLGER BRÜGGEMANN, AND JOHN L. BOWMAN. 2001. CHLOROPLAST DNA PHYLOGENY AND BIOGEOGRAPHY OF *LEPIDIUM* (BRASSICACEAE). AM. J. BOT. 88: 2051-2063.

APPENDIX. Origin of *Lepidium* species in study.

Taxon / sort of material analyzed <sup>a</sup>	Provenance / source <sup>b</sup>	GenBank accession number <sup>c</sup>		
		<i>trnT/trnL</i> spacer <sup>d</sup>	<i>trnL</i> intron	<i>trnL/trnF</i> spacer <sup>e</sup>
<i>Cardaria draba</i> (L.) DESV. ssp. <i>chalepensis</i> (L.) O.E. SCHULZ	F Iran, Karadj / ETSIA, 168-3706-75	AY015695 AY015696	AY015832	AY015918
<i>C. draba</i> (L.) DESV. ssp. <i>draba</i>	F Turkey, Bornova Izmir / B.G. Izmir, Turkey		AY015830	AY015919
<i>C. pubescens</i> (C.A. MEY.) JARMOLENKO	H USA, Wyoming / MO, 4005756	AY015697 AY015698	AY015831	AY015920
<i>Lepidium africanum</i> (BURM.F.) DC.	H Südafrika, Cape Province / PRE, South Africa, 95056-102	AY015703 AY015704	AY015833	AY015921
<i>L. alluaudii</i> MAIRE	F Morocco, near Tazenakh / ETSIA, 418-1483-68	AY015705 AY015706	AY015834	AY015922
<i>L. apetalum</i> WILLD.	F China, Peking / B.G. Peking, China	AY015823	AY015835	AY015923
<i>L. arbuscula</i> HILLEBR.	F Hawaii, Oahu / National Tropical B.G. Lawai, Hawaii, 945176	AY015707 AY015708	AY015836	AY015924
<i>L. armoracia</i> FISCH. ET MEY.	H Arabian Republic Yemen, Shibam / K, MWC 2307	AY015709 AY015710	AY015837	AY015925
<i>L. aschersonii</i> THELL.	F Australia, Victoria / La Trobe Univ., Australia	AY015711 AY015712	AY015838	AY015926
<i>L. aucheri</i> BOISS.	H Jordania, Wadi Araba / Orient Herbarium, FU Berlin, Germany	AY015713 AY015714	AY015839	AY015927

## APPENDIX. Continued

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		<i>trnT/trnL</i> spacer <sup>d</sup>	<i>trnL</i> intron	<i>trnL/trnF</i> spacer <sup>e</sup>
<i>L. austrinum</i> SMALL	H USA, Texas / DAV, 17451	AY015715	AY015840	AY015928
		AY015716		
<i>L. banksii</i> KIRK	F New Zealand, / Dept. Conserv., Auckland Conservancy, New Zealand, AUCK 950769	AY015717	AY015841	AY015929
		AY015718		
<i>L. bidentatum</i> MONTIN	F Hawaii, Kauaii / National Tropical B.G. Lawai, Hawaii, 905054	AY015719	AY015842	AY015930
		AY015720		
<i>L. bipinnatifidum</i> DESV.	F Bolivia, La Paz / Univ. Osnabrück, Germany	AY015721	AY015843	AY015931
		AY015722		
<i>L. bonariense</i> L.	H Chile, Prov. Atacama / CETYBO, 3078	AY015723	AY015844	AY015932
		AY015724		
<i>L. campestre</i> (L.) R. BR.	F France, Meurthe-et-Moselle / B.G. Nancy, France	AY015725	AY015845	AY015906
		AY015726		AY015907
<i>L. capense</i> THUNB.	H South Africa, Cape Province / PRE, South Africa, 95056-49	AY015727	AY015846	AY015933
		AY015728		
<i>L. desertorum</i> ECKL. & ZEYH.	H South Africa, Cape Province / PRE, South Africa, 95056-68	AY015729	AY015847	AY015934
		AY015730		
<i>L. desvauxii</i> THELL.	F Australia, Victoria / La Trobe Univ., Australien	AY015731	AY015848	AY015935
		AY015732		
<i>L. dictyotum</i> A. GRAY	H USA, California / DAV, 32057	AY015733	AY015849	AY015936
		AY015734		

## APPENDIX. Continued

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		<i>trnT/trnL</i> spacer <sup>d</sup>	<i>trnL</i> intron	<i>trnL/trnF</i> spacer <sup>e</sup>
<i>L. echinatum</i> HEWSON	H Australia / Bentley Delivery Centre, Australia	AY015735 AY015736	AY015850	AY015937
<i>L. ferganense</i> KORSH.	F cultivated / B.G. Moscow, Russia	AY015737 AY015738	AY015851	AY015938
<i>L. flavum</i> TORR.	H USA, Nevada / MO	AY015739 AY015740	AY015852	AY015908 AY015909
<i>L. flexicaule</i> KIRK	F New Zealand, Open Bay / Garnock-Jones, New Zealand	AY015741 AY015742	AY015853	AY015939
<i>L. fremontii</i> S. WATS.	F USA, Mohave Desert / Univ. Osnabrück, Germany	AY015815	AY015854	AY015940
<i>L. heterophyllum</i> (DC.) BENTH.	F Germany, Lauferbacherhof/Ahr / Univ. Osnabrück, Germany	AY015816	AY015855	AY015941
<i>L. hirtum</i> (L.) SM. ssp. <i>calycotrichum</i> (KUNZE) THELL.	F Spain, North Almeria / ETSIA, 427-0926-66	AY015817	AY015856	AY015942
<i>L. hirtum</i> (L.) SM. ssp. <i>dhayense</i> (MANBY) THELL.	F Morocco, near Oukaimeden / ETSIA, 428-2178-72	AY015818	AY015857	AY015943
<i>L. hirtum</i> (L.) SM. ssp. <i>hirtum</i> (L.) SM.	F France, Aude / B.G. Univ. Liege, Belgium, 85-3863	AY015819	AY015858	AY015944
<i>L. hirtum</i> (L.) SM. ssp. <i>nebrodense</i> (RAFIN) THELLUNG	F Italy, Sizilia / ETSIA, 429-6201-83	AY015820	AY015859	AY015945

## APPENDIX. Continued

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		<i>trnT/trnL</i> spacer <sup>d</sup>	<i>trnL</i> intron	<i>trnL/trnF</i> spacer <sup>e</sup>
<i>L. hirtum</i> (L.) SM. ssp. <i>petrophilum</i> (COSSON) THELL.	F Spain, Sierra Nevada / B.G. Marburg, Germany, 83-80	AY015821	AY015860	AY015946
<i>L. hyssopifolium</i> DESV.	F Australia, Victoria / La Trobe Univ., Australia, 70-296-940	AY015743 AY015744	AY015861	AY015947
<i>L. lasiocarpum</i> NUTT.	F USA, California / ETSIA, 430-1738-69	AY015745 AY015746	AY015862	AY015948
<i>L. latifolium</i> L.	F Germany, Leipzig / B.G. Leipzig, Germany	AY015747 AY015748	AY015863	AY015949
<i>L. latipes</i> HOOK.	H USA, California / DAV, 37209	AY015749 AY015750	AY015864	AY015950
<i>L. leptopetalum</i> F. MUELL.	F Australia, Viktoria / La Trobe Univ., Australia	AY015751 AY015752	AY015865	AY015951
<i>L. linifolium</i> (DESV.) STEUD.	F Australien, Carnavon / Kings Park & B.G., Perth, Australia	AY015753 AY015754	AY015866	AY015952
<i>L. lyratum</i> L.	F Iran, Mountains near Abadeh / ETSIA, 433-3758-75	AY015755 AY015756	AY015867	AY015953
<i>L. meyenii</i> WALPERS	F Peru, Dpto. Junin / Intern. Potato Center, Quito, Ecuador, JTA-106	AY015757 AY015758	AY015868	AY015954
<i>L. montanum</i> NUTT.	F USA, Arizona / B.G. Univ. Liege, Belgium	AY015759 AY015760	AY015869	AY015955

## APPENDIX. Continued

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		<i>trnT/trnL</i> spacer <sup>d</sup>	<i>trnL</i> intron	<i>trnL/trnF</i> spacer <sup>e</sup>
<i>L. muelleri-ferdinandi</i> THELL.	F Australia, New South Wales / La Trobe Univ., Australia	AY015761	AY015870	AY015956
		AY015762		
<i>L. myriocarpum</i> SOND.	H South Africa, Cape Province / PRE, South Africa, 95056-53	AY015763	AY015871	AY015957
		AY015764		
<i>L. naufragorum</i> GARNOCK-JONES & D.A. NORTON	F Cultivated / Dept. Conserv., Auckland Conservancy, New Zealand, AUCK 950771	AY015765	AY015872	AY015958
		AY015766		
<i>L. nitidum</i> NUTT.	F USA, California / Univ. Osnabrück, Germany	AY015767	AY015873	AY015959
		AY015768		
<i>L. oblongum</i> SMALL	F Cultivated / B.G. Copenhagen, Denmark	AY015769	AY015874	AY015960
		AY015770		
<i>L. oleraceum</i> SPARRM.	F New Zealand, Port Waikato / Dept. Conserv., Auckland Conservancy, New Zealand AUCK 941265	AY015771	AY015875	AY015961
		AY015772		
<i>L. oxycarpum</i> TORREY & A.GRAY	H USA, California / DAV, 115743	AY015773	AY015876	AY015962
		AY015774		
<i>L. oxytrichum</i> SPRAGUE	F Australia, Northern Territory / National B.G. Canberra, Australia	AY015775	AY015877	AY015963
		AY015776		
<i>L. papillosum</i> F. MUELL.	F Australia, Victoria / T.H. Browne, Australia	AY015777	AY015878	AY015964
		AY015778		
<i>L. pedicellosum</i> F. MUELL.	H Australia / PERTH, Australia, PRP 641	AY015779	AY015879	AY015965
		AY015780		

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<i>L. perfoliatum</i> L.	F -- / B.G. Vácrátót, Hungary	AY015781	AY015880	AY015910
		AY015782		AY015911
<i>L. phlebopetalum</i> (F. MUELL.) F. MUELL.	F Australia / Kings Park & B.G., Perth, Australia, S 446-93	AY015783	AY015881	AY015966
		AY015784		
<i>L. pholidogynum</i> F. MUELL.	H Australia / PERTH, Australia, PRP 640	AY015785	AY015882	AY015967
		AY015786		
<i>L. pinnatifidum</i> LEDEB.	H USA, California / DAV, 96441	AY015787	AY015883	AY015968
		AY015788		
<i>L. pinnatum</i> THUNB.	H South Africa, Cape Province / PRE, South Africa, 95056-45	AY015827	AY015884	AY015969
<i>L. pseudo-hyssopifolium</i> HEWSON	F Australia, Victoria / La Trobe Univ., Australia	AY015789	AY015885	AY015970
		AY015790		
<i>L. pseudo-papillosum</i> THELL.	F Australia, Victoria / La Trobe Univ., Australia	AY015791	AY015886	AY015971
		AY015792		
<i>L. pseudo-tasmanicum</i> THELL.	F Australia, Victoria / La Trobe Univ., Australia	AY015826	AY015887	AY015972
<i>L. quitense</i> TURCZ.	H Ecuador, Prov. Tungurakua / MO	AY015793	AY015888	AY015973
		AY015794		
<i>L. rigidum</i> POMEL	H Algerien, Teniet-el-Haad / F. Hellwig, Göttingen, Germany	AY015828	AY015889	AY015974

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		<i>trnT/trnL</i> spacer <sup>d</sup>	<i>trnL</i> intron	<i>trnL/trnF</i> spacer <sup>e</sup>
<i>L. ruderale</i> L.	F Germany, Oldenburg / B.G. Oldenburg, Germany	AY015795 AY015796	AY015890	AY015975
<i>L. sativum</i> L.	F Denmark, Jersie / B.G. Copenhagen, Denmark	AY015828	AY015891	AY015912 AY015913
<i>L. schinzii</i> THELL.	H South Africa, Orange Free State / PRE, South Africa, 95056-6	AY015797 AY015798	AY015892	AY015976
<i>L. serra</i> H. MANN	F Hawaii, Kauai / National Tropical B.G. Lawai, Hawaii, 915398	AY015799 AY015800	AY015893	AY015977
<i>L. sisymbrioides</i> HOOK. F. ssp. <i>kawarau</i> (PETRIE) THELL.	F New Zealand, Central Otago / Dept. Conserv., Auckland Conservancy, New Zealand AUCK 950766	AY015801 AY015802	AY015894	AY015978
<i>L. sisymbrioides</i> HOOK. F. ssp. <i>matau</i> (PETRIE) THELL.	F New Zealand, Central Otago / Dept. Conserv., Auckland Conservancy, New Zealand AUCK 950767	AY015803 AY015804	AY015895	AY015979
<i>L. sisymbrioides</i> HOOK. F. ssp. <i>sisymbrioides</i>	F New Zealand, Central Otago / Dept. Conserv., Auckland Conservancy, New Zealand AUCK 950768	AY015805 AY015806	AY015896	AY015980
<i>L. spinescens</i> DC.	F Israel, Upper Galilee / B.G. Univ. Tel Aviv, Israel	AY015807 AY015808	AY015897	AY015981
<i>L. spinosum</i> ARD.	F Turkey, Central-Anatolia / ETSIA, 436-6229-83	AY015824	AY015898	AY015914 AY015915
<i>L. tenuicaule</i> KIRK	F New Zealand, Kakanui / Dept. Conserv., Auckland Conservancy, New Zealand AUCK 950191	AY015809 AY015810	AY015899	AY015982

## APPENDIX. Continued

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		<i>trnT/trnL</i> spacer <sup>d</sup>	<i>trnL</i> intron	<i>trnL/trnF</i> spacer <sup>e</sup>
<i>L. trifurcum</i> (SOND.) MARAIS	H South Africa, Cape Province / PRE, South Africa, 95056-111	AY015811 AY015812	AY015900	AY015983
<i>L. villarsii</i> GREIN. & GODRON ssp. <i>reverchonii</i> (DEB.) BREIST.	F Spain, Guadalajara / Ministerio de Agricultura Pesca y Alimentacion, Spain, 7015-86	AY015825	AY015901	AY015916 AY015917
<i>L. virginicum</i> L.	F Mexico, Carrizal Chico / Univ. Osnabrück, Germany	AY015813 AY015814	AY015902	AY015984
OUTGROUP				
<i>Hornungia petraea</i> (L.) REICHENBACH	F Italy, Alto Adige / Univ. Osnabrück, Germany	AY015699 AY015700	AY015905	AY015985
<i>Hymenolobus procumbens</i> (L.) NUTTALL	F Spain, Mallorca / B.G. Copenhagen, Denmark	AY015701 AY015702	AY015903	AY015986
<i>Pritzelago alpina</i> (L.) KUNTZE	F Italy, Veneto / Univ. Osnabrück, Germany	AY015822	AY015904	AY015987

<sup>a</sup> F = fresh material, H = Herbarium material.

<sup>b</sup> ETSIA = Escuela Tecnica Superior de Ingenieros Agronomos, Madrid, Spain; B.G. = Botanical Garden; CETYBO = Centro de Estudios Farmacologicos y Botanicos, Buenos

Aires, Argentina; DAV = Davis Herbarium, Department of Botany, University of California, Davis, USA; K = Kew Herbarium, Royal Botanic Gardens, Kew, UK; MO =

Herbarium, Missouri Botanical Garden, St. Louis, USA; PRE = National Herbarium, Botanical Research Institute, Pretoria, South Africa.



<sup>d</sup> Species with two GenBank accession numbers refer to sequences starting from the 5' and 3' end, respectively. In these species presence of poly-A/T tracts caused premature

termination of sequencing reactions. The sequence of the L/F spacer of *Cardaria draba* ssp. *draba* could not be achieved due to sequencing problems in poly A/T stretches.

<sup>e</sup> Species with two GenBank accession numbers refer to sequences starting from the 5' and 3' end, respectively. For these six species overlapping sequencing could not be

achieved due to extreme length of spacer regions.