

S1 Appendix. Alignment of some plastid sequences and minor sequences of *Lathraea*.

rbcL, *ndhA*, *ndhJ*, *ndhB*, *psaA*, *psaB* and *ycf2*

rbcL

	10	20	30	40	50	60	70	80	90	100	110	120
<i>L.squamaria</i> minor variant	ATGTCACCCACAAACAGAGACTAAAGCAAGTGTGGATTCAAAGCGGgTGTAAAGAGTACAAATTGACTTATTATACTCCTGAATACGAAACAAAAGATACTGATATCTTGGCAGCATT	M S P Q T E T K A S V G F K A G V K E Y K L T Y Y T P E Y E T K D T D I L A A F									
<i>Lathraea squamaria</i>	ATGTCACCCACAAACAGAGACTAAAGCAAGTGTGGATTCAAAGCGGATGTTAAAGAGTACAAATTGACTTATTATACTCCTGAATACGAAACAAAAGATACTGATATCTTGGCAGCATT	M S P Q T E T K A S V G F K A G V K E Y K L T Y Y T P E Y E T K D T D I L A A F										
<i>Bartsia inaequalis</i>	ATGTCACCCACAAACAGAGACTAAAGCAAGTGTGGATTCAAAGCGGgTGTAAAGAGTACAAATTGACTTATTATACTCCGGAATACGAAACAAAAGATACTGATATCTTGGCAGCATT	M S P Q T E T K A S V G F K A G V K E Y K L T Y Y T P E Y E T K D T D I L A A F										

	130	140	150	160	170	180	190	200	210	220	230	240
<i>L.squamaria</i> minor variant	cGAGTAACTCCTCAACCTGGAGTTCGCCCTGaaGAAGCaGGGGCTGCAGTCGCTGCCGAATCTTCGACTGGTACATGGACAACCTGTGTGGACCGATGGACTTACCAGCCTTGATCGTTAC	R V T P Q P G V P P E E A G A A V A A E S S T G T W T T V W T D G L T S L D R Y									
<i>Lathraea squamaria</i>	TGAGTAACTCCTCAACCTGGAGTTCGCCCTGAGGAAGCGGGCTGCAGTCGCTGCCGAATCTTCGACTGGTACATGGACAACCTGTGTGGACCGATGGACTTACTAGCCTTGATCGTTAC	* V T P Q P G V P P E E A G A A V A A E S S T G T W T T V W T D G L T S L D R Y										
<i>Bartsia inaequalis</i>	CGAGTAACTCCTCAACCTGGAGTTCGCCCTGAAGCAAGCGGGCTGCAGTCGCTGCCGAATCTTCTACTGGTACATGGACAACCTGTGTGGACCGATGGACTTACCAGCCTTGATCGTTAC	R V S P Q P G V P P E E A G A A V A A E S S T G T W T T V W T D G L T S L D R Y										

	250	260	270	280	290	300	310	320	330	340	350	360
<i>L.squamaria</i> minor variant	AAAGGACGATGCTACCACATcGAGCCTGTTCCTGGAGAAACAGATCAATATcTCTGTTATGTAGCTTACCCTTTAGACCTTTTTGAAGAAGGTTCTGTTACTAACATGTTTACTTCCATT	K G R C Y H I E P V P G E T D Q Y I C Y V A Y P L D L F E E G S V T N M F T S I									
<i>Lathraea squamaria</i>	AAAGGACGATGCTACCACATTTAGCCTGTTCCTGGAGAAACAGATCAATACATCTGTTATGTAGCTTACCCTTTAGACCTTTTTGAAGAAGGTTCTGTTACTAACATGTTTACTTCCATT	K G R C Y H I E P V P G E T D Q Y I C Y V A Y P L D L F E E G S V T N M F T S I										
<i>Bartsia inaequalis</i>	AAAGGACGATGCTACCACATCGAGCCTGTTCCTGGAGAAACAGATCAATATATCTGTTATGTAGCTTACCCTTTAGACCTTTTTGAAGAAGGTTCTGTTACTAACATGTTTACTTCCATT	K G R C Y H I E P V P G E T D Q Y I C Y V A Y P L D L F E E G S V T N M F T S I										

	370	380	390	400	410	420	430	440	450	460	470	480
<i>L.squamaria</i> minor variant	GTAGGAAACGTATTTGGATTCAAAGCCCTGCGTGCCTACGCTCTGGAAGATCTCGAATCCCCCTGCTTATATTTAAACTTTTCCAAGGACCCCTCACGGGATCCAAGTTGAGAGAGAT	V G N V F G F K A L R A L R L E D L R I P P A Y I K T F Q G P P H G I Q V E R D									
<i>Lathraea squamaria</i>	GTAGGAAACGTATTTGGATTCAAAGCCCTGCGTGCCTACGCTCTGGAAGATCTCGAATCCCCCTGCTTATATTTAAACTTTTCCAAGGACCCCTCACGGGATCCAAGTTGAGAGAGAT	V G N V F G F K A L R A L R L E D L R I S P A Y I K T F Q G P P H G I Q V E R D										
<i>Bartsia inaequalis</i>	GTAGGAAACGTATTTGGATTCAAAGCCCTGCGTGCCTACGCTCTGGAAGATCTCGAATCCCCCTGCTTATATTTAAACTTTTCCAAGGACCCCTCACGGGATCCAAGTTGAGAGAGAT	V G N V F G F K A L R A L R L E D L R I P P A Y I K T F Q G P P H G I Q V E R D										

	490	500	510	520	530	540	550	560	570	580	590	600
<i>L.squamaria</i> minor variant	AAATTGAACAAGTATGGTCGTCCTGTTGGGATGTACTATTAAACCTAAATTGGGGTTATCTGCTAAAAACTATGGTAGAGCAGTTTATGAATGCTTCGCGGTGGACTTGATTTTACC	K L N K Y G R P L L G C T I K P K L G L S A K N Y G R A V Y E C L R G G L D F T									
<i>Lathraea squamaria</i>	AAATTGAACAAGTATGGTCGTCCTGTTGGGATGTACTATTAAACCTAAATTGGGGTTATCTGCTAAAAACTATGGTAGAGCAGTTTATGAATGCTTCGCGGTGGACTTGATTTTACC	K L N K Y G R P L L G C T I K P K L G L S A K N Y G R A V Y E C L R G G L D F T										
<i>Bartsia inaequalis</i>	AAATTGAACAAGTATGGTCGTCCTGTTGGGATGTACTATTAAACCTAAATTGGGGTTATCTGCTAAAAACTATGGTAGAGCAGTTTATGAATGCTTCGCGGTGGACTTGATTTTACC	K L N K Y G R P L L G C T I K P K L G L S A K N Y G R A V Y E C L R G G L D F T										

	610	620	630	640	650	660	670	680	690	700	710	720
<i>L.squamaria</i> minor variant	AAAGATGATGAGAACGTGAACCTCCAGCCATTTATGCGTTGGAGAGATCGTTTCTTATTTTGTGCCGAAGCAATTTATAAAGCACAGGCTGAACAGGCGAAATAAAGGTCATTACTTG	K D D E N V N S Q P F M R W R D R F L F C A E A I Y K A Q A E T G E I K G H Y L									

ndhA

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10      20      30      40      50      60      70      80      90      100     110     120
Lindenbergia philippensis  ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
ATGATAATTGATACAACAGAAATACAAGCTATCAATTCTTTTTCTAGATTGGAATCCTTA-----AAAGAAGTTTACGGAAATGATGGATGCTTGGCCCTATTTTAACTCTTGATTAA
M I I D T T E I Q A I N S F S R L E S L K E V Y G M I W M L G P I L T L V L
Bartsia inaequalis        ATGATAATGGATACAATAGAAATACAAGCTATCAATTCTTTTTCCGGATTGGAATCCTTAAACTTAAAGAAGTCTATGGAATTATATGGCTTTTAGCCCCGATTTTAAACGCTTGATTAA
M I M D T I E I Q A I N S F S G L E S L N L K E V Y G I I W L F S P I L T L V L
Lathraea squamaria        ATGATAATGTATACAATAGAAATACAAGCTATCAATTCTTTTTCCGGATTGGAATCCTTA-----AAAGAAGTCTATGGTATTATATGGATGTTTATCCCTATTTTAAACGCTTGATTAA
M I M Y T I E I Q A I N S F S G L E S L K E V Y G I I W M F I P I L T L V L

130     140     150     160     170     180     190     200     210     220     230     240
Lindenbergia philippensis  ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
GGAATCACACTAGGTGTACTAGTAATTGTTTGGTTAGAAAGAGAAATATCTGCAGGGATACAACAACGTATTGGACCTGAATACGCCGGGCCCTTTGGGACTTCTGCAAGCTTAGCAGAT
G I T L G V L V I V W L E R E I S A G I Q Q R I G P E Y A G P L G L L Q A L A D
Bartsia inaequalis        GGAATTACACTAGGCGTATTAGTAATTGTTTGGTTAGAAAGAGAAATATCTGCAGGGATACAACAACGTATTGGACCCGAATACGCCGGGCCCTTTGGGAATTCTACAAGCTATAGCAGAC
G I T L G V L V I V W L E R E I S A A I Q Q R I G P E Y A G P L G I L Q A I A D
Lathraea squamaria        GGAATCACACTAGGCTTATTAGTAATTGTTTGGTTAGAAAGAGAAATATCTGCAGGGATACAACAACGTATTGGACCCGAATA-GCCGGGCCCTTTGGGAATTCTGCAAGCTATAGCAGAC
G I T L G L L V I V W L E R E I S A A I Q Q R I G P E * P G L W E F C K L * Q T

250     260     270     280     290     300     310     320     330     340     350     360
Lindenbergia philippensis  ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
GGTACAAAACACTTTTTC---AAAGAGAATCTTCTTCCATCTAGAGGAGATACTCGTTTATTAGTATCGGACCATCCATAGCAGTCATATCAATTTTACTAAGTTATTTCAGTAATTCCT
G T K L L F K E N L L P S R G D T R L F S I G P S I A V I S I L L S Y S V I P
Bartsia inaequalis        GGTACAAAACACTTTTTC---AAAGAAAATCTTCTTCCGTCTAGAGGGGATATTCGTTTATTAGCAGTATCGGACCATCCATAGCAGTCATATCAATTTTACTAATTTTATTAGTAATTCCT
G T K L L F K E N L L P S R G D I R L F S I G P S I A V I S I L L T Y L V I P
Lathraea squamaria        GGTACAAAACACTTTTAT---CAAAGAGAATCTTCTTCCGTCTAGAGGAGATAATTCGTTTATTAGTATCGGACCATCCATAGCAGTCATATCAATTTTACTAATTTTATTAGTAATTCCT
V Q N Y F I K E N L L P S R G D I R L F S I G P S I A V I S I L L T Y L V I P

370     380     390     400     410     420     430     440     450     460     470     480
Lindenbergia philippensis  ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
TTTAGCTATCGCTTTATTCTAGCTGATCTTAGTATTGGTATTTTTTATGGATTGCCGTTTCAAGCCCTTGCTCCCGTTGGACTTCTTATGTCGGGGTATGGATCAAAATAAATAAATTTCC
F S Y R F I L A D L S I G I F L W I A V S S L A P V G L L M S G Y G S N N K Y S
Bartsia inaequalis        TTTAGCCATCGCTTTATTCTAGCTGATCTTAGTATTGGTATTTTTTATGGATTGCCGTTTCCAGCCCTTGCTCCCGTTGGACTTCTTATGTCGGGATATGGCTCAAAATAAATAAATTTCC
F S H R F I L A D L S I G I F L W I A V S S L A P V G L L M S G Y G S N N K Y S
Lathraea squamaria        TTTAGCTATCGCTTTATTCTAGCTTATCTTAGTATTGGTATTTTTTATGGATTGCCGTTTCCAGTCTTGCTCCCGTTGGACTTCTTATGTCAGGATATGGCTCAAAATAAATAA-----
F S Y R F I L A Y L S I G I F I W I A V S S L A P V G L L M S G Y G S N N K

490     500     510     520     530     540     550     560     570     580     590     600
Lindenbergia philippensis  ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
TTTTAGGTGGATTAAGGGCTGCTCAATCAATTAGTTATGAAATACCATTAACTCTATGTGATTATCAATATCTCTACTATCTAACAGTTTAAGTACAGTTGATATAGTTGAAGTG
F T L G G L R A A Q S I S Y E I P L T L C V L S I S L L S N S L S T V D I V E V
Bartsia inaequalis        TTTTAGGTGGATTAAGGGCTGCTCAATCAATTAGTTATGAAATACCATTAACTCTATGTGATTATCAATATCTCTACTATCTAACAGTTTAAGTACAGTTGATATAGTTGAAGCG
F T L G G L R A A Q S I S Y E I P L T L C V L S I S L L S N S L S T V D I V E A
Lathraea squamaria        ---TTAGGTGGATTAAGGGCTGCTCAATCAATTAGTTATGAAATACCATTAACTCTATGTGATTATCAATATCTCTACTATCTAACAGTTTAAGTACAGTTGATATAGTTGAAGCG
L G G L R V A A Q S I S Y E I P L T L C V L S I S L L S N S L S T V D I V E A

610     620     630     640     650     660     670     680     690     700     710     720
Lindenbergia philippensis  ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
CAGTCAAAAATATGGTTTTATGGGGTGGAAATTTCTGGCTCAACCTATAGGGTTTATTGTTTTCTAATTTCTTCTAGCCGAGTGTGAGAGATTACCTTTTGTATTTACCAGAAGCAGAA
Q S K Y G L W G W N F W R Q P I G F I V F L I S S L A E C E R L P F D L P E A E
Bartsia inaequalis        CAGTCAAAAATATGGTTTTATGGGGTGGAAATTTATGGGCCCAACCCATAGGGTTTATCGTTTTTCTAATTTCTTCTAGCCGAGTGTGAGAGATTGCCTTTTGATTTACCAGAAGCAGAA
Q S K Y G F W G W N L W R Q P I G F I V F L I S S L A E C E R L P F D L P E A E
Lathraea squamaria        CAGTCAAAAATATGGTTTTATGGGGTGGAAATTTATGGGCCCAACCTGTAAGGTTTATCGTTTTTCTAATTTCTTCTAGCCGAGTGTGAGAGATTGCCTTTTGATTTACCAGAAGCAGAA
Q S K Y G F W G W N L W R Q P V R F I V F L I S S L A E C E R L P F D L P E A E
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E E P M I S F S G N F Q T N N F N E I F Q F L I L L C S T L C I P L S V E Y I E

370 380 390 400 410 420 430 440 450 460 470 480
L.squamaria minor_sequence TGTACAGAAATGGCTATAACAGAGTTTCTCTTATTCTGTTAATACAGCTACTCTAGGAGGAATGTTTTTATGCGGTGCTAACGATTTAATAACTATCTTTGTAGCTCCAGAATGTTTCAGT
V Q K W L * Q S F S Y S Y * Q L L * E E C F Y A V L T I * * L S L * L Q N V S V

Lathraea squamaria TGTACAGAAATGGCTATAACAGAGTTTCTCTTATTCTGTTAATACAGCTACTCTAGGAGGAATGTTTTTATGCGGTGCTAACGATTTAATAACTATCTTTGTAGCTCCAGAATGTTTCAGT
C T E M A I T E F L L F V L T A T L G G M F L C G A N D L I T I F V A P E C F S

Bartsia inaequalis TGTACAGAAATGGCTATAACAGAGTTTCTCTTATTCTGTTAATACAGCTACTCTAGGAGGAATGTTTTTATGCGGTGCTAACGATTTAATAACTATCTTTGTAGCTCCAGAATGTTTCAGT
C T E M A I T E F L L F V L T A T L G G M F L C G A N D L I T I F V A P E C F S

490 500 510 520 530 540 550 560 570 580 590 600
L.squamaria minor_sequence TTATGC---TCCTACCTATTATCTGGATATACCAAGAAAGATGTACGGTCTAATGAGGCTACTATGAAATATTTACTCATGGGTGGGGCAAGCTCTTCTATTCTGGTTCATGGTTCTCT
Y A P T Y Y L D I P R K M Y G L M R L L * N I Y S W V G Q A L L F W F M V S L

Lathraea squamaria TTATGG---TCCTACCTATTATCTGGATATACCAAGAAAGATGTACGGTCTAATGAGGCTACTATGAAATATTTACTCATGGGTGGGGCAAGCTCTTCTATTCTGGTTCATGGTTCTCT
L W L L P I I W I Y Q E R C T V * * G Y Y E I F T H G W G K L F Y S G S W F L

Bartsia inaequalis TTATGC---TCCTACCTATTATCTGGATATACCAAGAAAGATGTACGGTCTAATGAGGCTACTATGAAATATTTACTCATGGGTGGGGCAAGCTCTTCTATTCTGGTTCATGGTTCTCT
L C S Y L L S G Y T K K D V R S N E A T M K Y L L M G G A S S S I L V H G F S

610 620 630 640 650 660 670 680 690 700 710 720
L.squamaria minor_sequence TGGCTATATGGTTTATCCGGGGGAGAGATCGAGCTTCAAGAAATAGTGAATGGTCTTATCAATACCAAATGTATAACTCCCCAGGAATTTCAATTGCGCTCATATTCATCACTGTAGGA
G Y M V Y P G E R S S F K K * * M V L S I H K C I T P Q E F Q L R S Y S S L * E

Lathraea squamaria TGGCTATATGGTTTATCCGGGGGAGAGATCGAGCTTCAAGAAATAGTGAATGGTCTTATCAATACCAAATGTATAACTCCCCAGGAATTTCAATTGCGCTCATATTCATCACTGTAGGA
L A I W F I R G R D R A S R N S E W S Y Q Y T N V * L P R N F N C A H I H C R

Bartsia inaequalis TGGCTATATGGTTTATCCGGGGGAGAGATCGAGCTTCAAGAAATAGTGAATGGTCTTATCAATACCAAATGTATAACTCCCCAGGAATTTCAATTGCGCTCATATTCATCACTGTAGGA
W L Y G L S G G E I E L Q E I V N G L I N T Q M Y N S P G I S I A L I F I T V G

730 740 750 760 770 780 790 800 810 820 830 840
L.squamaria minor_sequence ATTGGGTTCAAGCTTTCCCGAGCCCTTCTCAT---GGACTCCTGACGTATACGAAGGAGTGCGGTTTCGTTTCGATAAATTCCTACCTCTCTATCTATCTCTGAGATGTTTGGATTTTTC
L G S S F P Q P L L M D S * R I R R

Lathraea squamaria ATTGGGTTCAAGCTTTCCCGAGCCCTTCTCATCAATGGACTCCTGACGTATACGAAGGAGTGCGGTTTCGTTTCGATAAATTCCTACCTCTCTATCTATCTCTGAGATGTTTGGATTTTTC
N W V Q A F P S P F S S M D S * R I R R

Bartsia inaequalis ATTGGGTTCAAGCTTTCCCGAGCCCTTCTCATCAATGGACTCCTGACGTATACGAAGGAGTGCGGTTTCGTTTCGAGAAATTCCTACCTCTCTATCTATCTCTGAGATGTTTGGATTTTTC
I G F K L S P A P S H Q W T P D V Y E G [intron sequence

850 860 870 880 890 900 910 920 930 940 950 960
L.squamaria minor_sequence AAAACTCCACGGACATGCAGAAGAGAAATGCTATCCCCACTCGGACCAAGACAGAACTTTTACTTTGTTCAAATAACAATTAAGGTGAAGCGGGTTCAGGAACGACGAATCTCTTTATGAT
AAAACCTCCACGGACATGCAGAAGAGAAATGCTATCCCCACTCGGACCAAGACAGAACTTTTACTTTGTTCAAATAACAATTAAGGTGAAGCGGGTTCAGGAACGACGAATCTCTTTATGAT
AAAACCTCCACGGACATGCAGAAGAGAAATGCTATCCCCACTCGGACCAAGACAGAACTTTTACTTTGTTCAAATAACAATTAAGGTGAAGCGGGTTCAGGAACGACGAATCTCTTTATGAT

Lathraea squamaria AAAACTCCACGGACATGCAGAAGAGAAATGCTATCCCCACTCGGACCAAGACAGAACTTTTACTTTGTTCAAATAACAATTAAGGTGAAGCGGGTTCAGGAACGACGAATCTCTTTATGAT
AAAACCTCCACGGACATGCAGAAGAGAAATGCTATCCCCACTCGGACCAAGACAGAACTTTTACTTTGTTCAAATAACAATTAAGGTGAAGCGGGTTCAGGAACGACGAATCTCTTTATGAT

Bartsia inaequalis AAAACTCCACGGACATGCAGAAGAGAAATGCTATCCCCACTCGGACCAAGACAGAACTTTTACTTTGTTCAAATAACAATTAAGGTGAAGCGGGTTCAGGAACGACGAATCTCTTTATGAT
AAAACCTCCACGGACATGCAGAAGAGAAATGCTATCCCCACTCGGACCAAGACAGAACTTTTACTTTGTTCAAATAACAATTAAGGTGAAGCGGGTTCAGGAACGACGAATCTCTTTATGAT

970 980 990 1000 1010 1020 1030 1040 1050 1060 1070 1080
L.squamaria minor_sequence AAACAGATCCATTTTTCGAAGTTCGGTTATTACGGGTAGTTCCCTACAAAGGATCGGACTAATGACGTATCCAAATCTTGAATTCCTCGATGTAGATGCTACATAGTTGGTTCTCATCCCTCAG
AAACAGATCCATTTTTCGAAGTTCGGTTATTACGGGTAGTTCCCTACAAAGGATCGGACTAATGACGTATCCAAATCTTGAATTCCTCGATGTAGATGCTACATAGTTGGTTCTCATCCCTCAG
AAACAGATCCATTTTTCGAAGTTCGGTTATTACGGGTAGTTCCCTACAAAGGATCGGACTAATGACGTATCCAAATCTTGAATTCCTCGATGTAGATGCTACATAGTTGGTTCTCATCCCTCAG

Lathraea squamaria AAACAGATCCATTTTTCGAAGTTCGGTTATTACGGGTAGTTCCCTACAAAGGATCGGACTAATGACGTATCCAAATCTTGAATTCCTCGATGTAGATGCTACATAGTTGGTTCTCATCCCTCAG
AAACAGATCCATTTTTCGAAGTTCGGTTATTACGGGTAGTTCCCTACAAAGGATCGGACTAATGACGTATCCAAATCTTGAATTCCTCGATGTAGATGCTACATAGTTGGTTCTCATCCCTCAG

Bartsia inaequalis AAACAGATCCATTTTTCGAAGTTCGGTTATTACGGGTAGTTCCCTACAAAGGATCGGACTAATGACGTATCCAAATCTTGAATTCCTCGATGTAGATGCTACATAGTTGGTTCTCATCCCTCAG
AAACAGATCCATTTTTCGAAGTTCGGTTATTACGGGTAGTTCCCTACAAAGGATCGGACTAATGACGTATCCAAATCTTGAATTCCTCGATGTAGATGCTACATAGTTGGTTCTCATCCCTCAG

1090 1100 1110 1120 1130 1140 1150 1160 1170 1180 1190 1200
L.squamaria minor_sequence AGACTACGAGTGTAAATAGGAGCATCCGTCGACAAAAGGATCACCCTAAGATGATCAATTTTATGGCTATTGAGAACGAATTAATCAGATGGTTCTATTTCTCAATCTTTCTGACTTGCTC
AGACTACGAGTGTAAATAGGAGCATCCGTCGACAAAAGGATCACCCTAAGATGATCAATTTTATGGCTATTGAGAACGAATTAATCAGATGGTTCTATTTCTCAATCTTTCTGACTTGCTC
AGACTACGAGTGTAAATAGGAGCATCCGTCGACAAAAGGATCACCCTAAGATGATCAATTTTATGGCTATTGAGAACGAATTAATCAGATGGTTCTATTTCTCAATCTTTCTGACTTGCTC

Lathraea squamaria AGACTACGAGTGTAAATAGGAGCATCCGTCGACAAAAGGATCACCCTAAGATGATCAATTTTATGGCTATTGAGAACGAATTAATCAGATGGTTCTATTTCTCAATCTTTCTGACTTGCTC
AGACTACGAGTGTAAATAGGAGCATCCGTCGACAAAAGGATCACCCTAAGATGATCAATTTTATGGCTATTGAGAACGAATTAATCAGATGGTTCTATTTCTCAATCTTTCTGACTTGCTC

Bartsia inaequalis AGACTACGAGTGTAAATAGGAGCATCCGTCGACAAAAGGATCACCCTAAGATGATCAATTTTATGGCTATTGAGAACGAATTAATCAGATGGTTCTATTTCTCAATCTTTCTGACTTGCTC
AGACTACGAGTGTAAATAGGAGCATCCGTCGACAAAAGGATCACCCTAAGATGATCAATTTTATGGCTATTGAGAACGAATTAATCAGATGGTTCTATTTCTCAATCTTTCTGACTTGCTC

1210 1220 1230 1240 1250 1260 1270 1280 1290 1300 1310 1320

L.squamaria minor_sequence CTACggaaccaagTTCGAAAAGATTGAAAAATCAGTCATTACCAACCCTGATGAAGGATTCCTCGAAAAGTTgAAGGATTAGTAATCTTTTTTAGAAATCGAATGGATTCCGTCCTTATA
Lathraea squamaria CTACCTCGAAAAGATTGAAAAATCAGTCATTACCAACCCTGATGAAGGATTCCTCGAAAAGTTAAGGATTAGTAATCTTTTTTAGAAATCGAATGGATTCCGTCCTTATA
Bartsia inaequalis CTACGGAACCAAGGTCGAAAAGATTGAAAAATCAGTCATTACCAACCCTGATGAAGGATTCCTCGAAAAGTTAAGGATTAGTAATCTTTTTTAGAAATCGAATGGATTCCGTCCTTATA

1330 1340 1350 1360 1370 1380 1390 1400 1410 1420 1430 1440
L.squamaria minor_sequence CATAACGCGAGGAAGGTAATCAAAAAAGAAAAGAGATGCGTTCTTCTGTCCTTTTATCAGTTAGGAGCCGTGTGAGATGAAAGTCTCATGCACGGTTTTGAATGAGAGAAAAGAGTGGAA
Lathraea squamaria CATAACGCGAGGAAGGTAATCAAAAAAGAAAAGAGATGCGTTCTTCTGTCCTTTTATCAGTTAGGAGCCGTGTGAGATGAAAGGCTCATGCACGGTTTTGAATGAGAGAAAAGAGTGGAA
Bartsia inaequalis CATAACGCGAGGAAGGTAATCAAAAAAGAAAAGAGATGCGTTCTTCTGTCCTTTTATCAGTTAGGAGCCGTGTGAGATGAAAGTCTCATGCACGGTTTTGAATGAGAGAAAAGAGTGGAA

1450 1460 1470 1480 1490 1500 1510 1520 1530 1540 1550 1560
L.squamaria minor_sequence TCCTCTTTTCGACTCTAAC~TCTCCCACTCCAGTCGTTGCTTTTCTTTCTGTTACTTCGAAAGTAGCTGCTCCAGCTTCAGCCACTCGAATTTTtGATATTCCTTTTATTTCTCATCA
L S H S S R C F S F C Y F E S S C S S F S H S N F R Y S F L F L I
Lathraea squamaria TCCTCTTTTCGACTCTAAC~TCTCCCACTCCAGTCGTTGCTTTTCTTTCTGTTACTTCGAAAGTAGCTGCTCCAGCTTCAGCCACTCGAATTTTtGATATTCCTTTTATTTCTCATCA
L S H S S R C F S F C Y F E S S C S S F S H S N F R Y S F L F L I
Bartsia inaequalis TCCTCTTTTCGACTCTGAC~TCTCCCACTCCAGTCGTTGCTTTTCTTTCTGTTACTTCGAAAGTAGCTGCTCCAGCTTCAGCCACTCGAATTTTtGATATTCCTTTTATTTCTCATCA
intron sequence] S P T P V V A F L S V T S K V A A P A S A T R I F D I P F Y F S S

1570 1580 1590 1600 1610 1620 1630 1640 1650 1660 1670 1680
L.squamaria minor_sequence AACGAATGGCATCTTCTTTCGAAAATCCTAGCTATTCTTAGCATGATATTCGAAAATATCATTGCTATTACTCAACAAGCATGAAACGTATGCTTGCATATTCCTCCATAGGTCAAATC
K R M A S S S G N P S Y S * H D I R K Y H C Y Y S N K H E T Y A C I F V H R S N
Lathraea squamaria AACGAATGGCATCTTCTTTCGAAAATCCTAGCTATTCTTAGCATGATATTCGAAAATATCATTGCTATTACTCAACAAGCATGAAACGTATGCTTGCATATTCCTCCATAGGTCAAATC
K R M A S S S G N P S Y S * H D I R K Y H C Y Y S N K H E T Y A C I F V H R S N
Bartsia inaequalis AACGAATGGCATCTTCTTTCGAAAATCCTAGCTATTCTTAGCATGATATTCGAAAATATCATTGCTATTACTCAACAAGCATGAAACGTATGCTTGCATATTCCTCCATAGGTCAAATA
N E W H L L L E I L A I L S M I F G N I I A I T Q T S M K R M L A Y S S I G Q I

1690 1700 1710 1720 1730 1740 1750 1760 1770 1780 1790 1800
L.squamaria minor_sequence GGATATGTAATTATTGGAATAATTGTTGGAGACTCAAAATGATGGATATGCAAGCATGATAACTTATATGCTGTTCTATATCTCCATGAATCTAGGAACCTTTTCTTGCATTGATTATTT
R I C N Y W N N C W R L K * W I C K H D N L Y A V L Y L H E S R N F C L H C I I
Lathraea squamaria GGATATGTAATTATTGGAATAATTGTTGGAGACTCAAAATGATGGATATGCAAGCATGATAACTTATATGCTGTTCTATATCTCCATGAATCTAGGAACCTTTTCTTGCATTGATTATTT
R I C N Y W N N C W R L K * W I C K H D N L Y A V L Y L H E S R N F C L H C I I
Bartsia inaequalis GGATATGTAATTATTGGAATAATTGTTGGAGACTCAAAATGATGGATATGCAAGCATGATAACTTATATGCTGTTCTATATCTCCATGAATCTAGGAACCTTTTCTTGCATTGATTATTT
G Y V I I G I I V G D S N D G Y A S M I T Y M L F Y I S M N L G T F A C I V L F

1810 1820 1830 1840 1850 1860 1870 1880 1890 1900 1910 1920
L.squamaria minor_sequence GGTCTACGTACCGAACTGATAACATTCGAGATTATGCAGGATTATACACGAAAGATCCTTTTTTGGCTCTCTCTTTAGCCCTATGTCCTTATCCCTAGGAGGCTTCTCCCTAGCA
W S T Y R N * * H S R L C R I I H E R S F F G S L F S P M S L I P R R S S S T S
Lathraea squamaria GGTCTACGTACCGAACTGATAACATTCGAGATTATGCAGGATTATACACGAAAGATCCTTTTTTGGCTCTCTCTTTAGCCCTATGTCCTTATCCCTAGGAGGCTTCTCCCTAGCA
W S T Y R N * * H S R L C R I I H E R S F F G S L F S P M S L I P R R S S S T S
Bartsia inaequalis GGTCTACGTACCGAACTGATAACATTCGAGATTATGCAGGATTATACACGAAAGATCCTTTTTTGGCTCTCTCTTTAGCCCTATGTCCTTATCCCTAGGAGGCTTCTCCCTAGCA
G L R T G T D N I R D Y A G L Y T K D P F L A L S L A L C L L S L G G L P P L A

1930 1940 1950 1960 1970 1980 1990 2000 2010 2020 2030 2040
L.squamaria minor_sequence GGTTTTTTCGAAAACCTATTTATTCTGGTGTGGATGGCGGGCAGGCGTATATTCCTTGGTTTTAATAGGACTCCTTACAGCGTCTTTCTATCTACTATTATCTAAAAATAATCAAG
R F F R K T L F I L V W M A G R R I F L G F N R T P Y K R S F Y L L L S K N N Q
Lathraea squamaria GGTTTTTTCGAAAACCTATTTATTCTGGTGTGGATGGCGGGCAGGCGTATATTCCTTGGTTTTAATAGGACTCCTTACAGCGTCTTTCTATCTACTATTATCTAAAAATAATCAAG
R F F R K T L F I L V W M A G R R I F L G F N R T P Y K R S F Y L L L S K N N Q
Bartsia inaequalis GGTTTTTTCGAAAACCTATTTATTCTGGTGTGGATGGCGGGCAGGCGTATATTCCTTGGTTTTAATAGGACTCCTTACAGCGTCTTTCTATCTACTATTATCTAAAAATAATCAAG
G F F G K L Y L F W C G W R A G V Y S L V L I G L L T S V L S I Y Y Y L K I I K

2050 2060 2070 2080 2090 2100 2110 2120 2130 2140 2150 2160
L.squamaria minor_sequence TTATTAATGACTGGACGAAACCAAGAAATCACCCCTCAGTCGCAATTTATAGAAGATCTCCTTTAAGATCAACAATTCATCGAATTGAGTATGATTGTATGTGATAGCATCTACT

L.squamaria minor sequence AACGAGCGGcCCGGCATTCAATGCGGGTCGAAGCATCTGGTTGcctggttgGTTAAATGCTATTAATGAAAATACATAATTCATTATTCTTAACAATAGGTCCTGGAGACTTTTTaGTTCA
T S G P A F N A G R S I W L P G W L N A I N E N T N S L F L T I G P G D F L V H
Lathraea squamaria AACGAGCGGGCCGGCATTCAATGCGGGTCGAAGCATCTGGTTG-----GTTAAATGCTATTAATGAAAATACATAATTCATTATTCTTAACAATAGGTCCTGGAGACTTTTTGGTTCA
T S G P A F N A G R S I W L V K C Y * * K Y * F I I L N N R S R R L F G S
Bartsia inaequalis AACGAGCGGcCCGGCATTCAATGCGGGTCGAAGCATCTGGTTGcctggttgGTTAAATGCTATTAATGAAAATACATAATTCATTATTCTTAACAATAGGTCCTGGAGACTTTTTAGTTCA
T S G P A F N A G R S I W L P G W L N A I N E N T N S L F L T I G P G D F L V H

1570 1580 1590 1600 1610 1620 1630 1640 1650 1660 1670 1680
L.squamaria minor sequence TCATGCTATTGCTCTGGGTTTACATACAACCTACATTGATCTTAGTAAAAGGTGCTTTAGATGCACCGGTTCAAAGTTAATGCCAGATAAAAAGGATTTGcgttatAGTTTTCCGTGCGA
H A I A L G L H T T T L I L V K G A L D A R G S K L M P D K K D F G Y S F P C D
Lathraea squamaria TCATGCTATTGCTCTGGGTTTACATACAACCTACATTGATCTTAGTAAAAGGTGCTTTAGATGCACCGGTTCAAAGTTAATGCCAGATAAAAAGGATTTG-----AGTTTTCCGTGCGA
S C Y C S G F T Y N Y I D L S K R C F F R C T R F K V N A R * K G F F Q F S V R
Bartsia inaequalis TCATGCTATTGCTCTGGGTTTACATACAACCTACATTGATCTTAGTAAAAGGTGCTTTAGATGCACCGGTTCAAAGTTAATGCCAGATAAAAAGGATTTGCGTTATAGTTTTCCGTGCGA
H A I A L G L H T T T L I L V K G A L D A R G S K L M P D K K D F G Y S F P C D

1690 1700 1710 1720 1730 1740 1750 1760 1770 1780 1790 1800
L.squamaria minor sequence TGGCCCGGGACGGGGG-GGTACTTTGTGATATTTCCGGCATGGGATGCATTTTATTTGGCAGTTTTTTGGATGTTAAATACTATTGGATGGGTTACTTTTTATTGGCATTGGAAGCACATCA
G P G R G G T C D I S A W D A F Y L A V F W M L N T I G W V T F Y W H W K H I
Lathraea squamaria TGGCCCGGGACGGGGGGGTACTTTGTGATATTTCCGGCATGGGATGCATTTTATTTGGCAGTTTTTTGGATGTTAAATACTATTGGATGGGTTACTTTTTATTGGCATTGGAAGCACATCA
W P G T G V L V I F R H G M H F I W Q F F G C * I L L D G L F I G I G S T S
Bartsia inaequalis TGGCCCGGGACGGGGG-GGTACTTTGTGATATTTCCGGCATGGGATGCATTTTATTTGGCAGTTTTTTGGATGTTAAATACTATTGGATGGGTTACTTTTTATTGGCATTGGAAGCACATCA
G P G R G G T C D I S A W D A F Y L A V F W M L N T I G W V T F Y W H W K H I

1810 1820 1830 1840 1850 1860 1870 1880 1890 1900 1910 1920
L.squamaria minor sequence CATTATGGCAGGGTAACGTTTACAGTTTAATGAATCCTCCACTTATTTGATGGGCTGGCTAAGAGATTATTTATgTTAAACTTTCACAACCTatcaatgGATATAACCCTTTTGGTA
T L W Q G N V S Q F N E S S T Y L M G W L R D Y L W L N S S Q L I N G Y N P F G
Lathraea squamaria CATTATGGCAGGGTAACGTTTACAGTTTAATGAATCCTCCACTTATTTGATGGGCTGGCTAAGAGATTATTTATAGTTAAACTTTCACAACCT-----GATATAACCCTTTTGGTA
H Y G R V T F H S L M N P P L I * W A G * E I I Y S * T L H N * Y N P F G
Bartsia inaequalis CATTATGGCAGGGTAACGTTTACAGTTTAATGAATCCTCCACTTATTTGATGGGCTGGCTCAGAGATTATTTATGGTTAAACTTTCACAACCTATCAATGGATATAACCCTTTTGGTA
T L W Q G N V S Q F N E S S T Y L M G W L R D Y L W L N S S Q L I N G Y N P F G

1930 1940 1950 1960 1970 1980 1990 2000 2010 2020 2030 2040
L.squamaria minor sequence TGAATAGTTTATCGGTCTGGGCGTGGATGTTTTTATTGGACATCTGTTTGGGCTACTGGATTTATGTTCTTAATCTCCTGGCGTGGATATTGGCagGAATTGATTGAAACTTTAGCAT
M N S L S W A W M F L F G H L V W A T G F M F L I S W R G Y W Q E L I E T L A
Lathraea squamaria TGAATAGTTTATCGGTCTGGGCGGGATGTTTTTATTGGACATCTGTTTGGGCTACTGGATTTATGTTCTTAATCTCCTGGCGGGATATTGGCAAGAATTGATTGAAACTTTAGCAT
M N S L S V W A R M F L F G H L V W A T G F M F L I S W R G Y W Q E L I E T L A
Bartsia inaequalis TGAATAGTTTATCGGTCTGGGCGTGGATGTTTTTATTGGACATCTGTTTGGGCTACTGGATTTATGTTCTTAATCTCCTGGCGTGGATATTGGCAGGAATTGATTGAAACTTTAGCAT
M N S L S V W A W M F L F G H L V W A T G F M F L I S W R G Y W Q E L I E T L A

2050 2060 2070 2080 2090 2100 2110 2120 2130 2140 2150 2160
L.squamaria minor sequence GGGCTCATGAACGCACACCTTTGGCCAATTTGATTCGATGGAGAGATAAAA-CCTGTGGCCCTTCCATTGTGCAAGCAAGATTGGTTgATTAGCCCACTTTTCTGTAGGTTATATATTC
W A H E R T P L A N L I R W R D K P V A L S I V Q A R L V G L A H F S V G Y I F
Lathraea squamaria GGGCTCATGAACGCACACCTTTGGCCAATTTGATTCGATGGAGAGATAAAA-CCTGTGGCCCTTCCATTGTGCAAGCAAGATTGGTTAGATTAGCCCACTTTTCTGTAGGTTATATATTC
W A H E R T P L A N L I R W R D K T C G P F H C A S K I G * I S P L F C R L Y I
Bartsia inaequalis GGGCTCATGAACGCACACCTTTGGCCAATTTGATTCGATGGAGAGATAAAA-CCTGTGGCTCTTCCATTGTGCAAGCAAGATTGGTTGGATTAGCTCACTTTTCTGTAGGTTATATATTC
W A H E R T P L A N L I R W R D K P V A L S I V Q A R L V G L A H F S V G Y I F

2170 2180 2190 2200
L.squamaria minor sequence ACTTATGCAGCTTTCTTGATTGCCTCgACATCGGGAAAATTTGGCTCA
T Y A A F L I A S T S G K F G S
Lathraea squamaria ACTTATGCAGCTTTCTTGATTGCCTCCACATCGGGAAAATTTGGCTAA
H L C S F L D C L H I G K I W L

Bartsia inaequalis

ACTTATGCAGCTTTCTTGATTGCCTCGACATCGGGAAAATTGGC
T Y A A F L I A S T S G K F G

ycf2

	10	20	30	40	50	60	70	80	90	100	110	120												
<i>L.squamaria</i> minor sequence	ATGA	AAGAACATCC	ATTCAAA	TCCTGG	ATTTTCGA	ATTGAGAG	ATCAAGA	ATTCTCA	TATTTCTT	AGATTTC	ATGGAC	TCAATTC	CAATTC	CCGTAG	GGTCTTT	CATTCAC	ATTTTTC							
<i>Lathraea squamaria</i>	M K E H P F K S W I F E L R E I K N S H Y F L D S W T Q F N S V G S F I H I F F																							
<i>Bartsia inaequalis</i>	M K E H P F K S W I F E L R E I K N S H Y F L D S W T Q F N S V G S F I H I F F																							
	130	140	150	160	170	180	190	200	210	220	230	240												
<i>L.squamaria</i> minor sequence	CACCA	AAGAAC	TTTTCT	AAACTC	CTTGAC	CCCGGA	ATTTT	GAGTAT	CCACTT	TTCATG	CAATTC	ACAGGG	TTCAACA	AGCAAT	CGATAT	TTTCAC	GATCA	AGGGT	TAATA	CTCTT	TGTGA			
<i>Lathraea squamaria</i>	H Q E R F L K L L D P R I L S I L L S C N S Q G S T S N R Y F T I K G V I L F V																							
<i>Bartsia inaequalis</i>	H Q E R F L K L L D P R I L S I L L S R N S Q G S T S N R Y F T I K G V I L F V																							
	250	260	270	280	290	300	310	320	330	340	350	360												
<i>L.squamaria</i> minor sequence	GTAG	CGTCC	TATATA	~~~~~	TATCG	TATTAA	CAATCG	AAATAT	GGTCG	AAAGAAA	AAATCT	CTATT	GGAGGG	GGGCTT	CTCCT	ATGAA	TTCCAT	TGGACC	CAGAA	TGATAC	TTGGAA			
<i>Lathraea squamaria</i>	V A V L I Y R I N N R N M V E R K N L Y W R G L L P M N S I G P R N D T L E																							
<i>Bartsia inaequalis</i>	V A V L I F I Y R I N N R N M V E R K N L Y W R G L L P M N S I G P R N D T L E																							
	370	380	390	400	410	420	430	440	450	460	470	480												
<i>L.squamaria</i> minor sequence	GAAT	CGTTGG	TCTTCC	AATAT	CAATAG	GTGATT	GTTTTC	GCTCCT	TATCTT	CCAAA	AGGAAA	AGATCT	CGGAG	AGTTG	TTTCT	GAA	TCCGAA	AGAG	TACTT	GGATT	CTCCCA			
<i>Lathraea squamaria</i>	E S V G S S N I N R L I V S L L Y L P K G K K I S E S C F L N P K E S T W I L P																							
<i>Bartsia inaequalis</i>	E S V G S S N I N R L I V S L L Y L P K G K K I S E S C F L N P K E S T W I L P																							
	490	500	510	520	530	540	550	560	570	580	590	600												
<i>L.squamaria</i> minor sequence	ATAA	CTCAA	AGTGT	AGCA	TGCCT	GAATC	TAACT	GGGGT	TTCG	CGGTGG	TGGAG	GAAC	TGGAG	CGGAAA	AGGAG	GATTCT	AGTTG	TAA	GATAT	CTAAT	GAA	CCGTC	GGAATT	GAG
<i>Lathraea squamaria</i>	I T Q K C S M P E S N W G S R W W R N W S G K R R D S S C K I S N E T V A G I E																							
<i>Bartsia inaequalis</i>	I T K K C S M P E S N W G S R W W R N W S G K K R D S S C K I S N E T V A G I E																							
	610	620	630	640	650	660	670	680	690	700	710	720												
<i>L.squamaria</i> minor sequence	ATCT	TATCA	ACGAG	AAAGAT	TCAAA	TATCT	GGAG	TTTCT	TTTTG	TATA	TATAT	GGATG	ATCCG	ATCCG	CAAGG	ACCGT	GATTGG	GAATT	GTTTG	GATTG	CTTTCT	CTGAG	GAAGG	
<i>Lathraea squamaria</i>	I L F N E K D I K Y L E F L F V Y Y M D D P I R K D R D W E L F D C L S L R K R																							
<i>Bartsia inaequalis</i>	I L F N E K D I K Y L E F L F V Y Y M D D P I R K D R D W E L F D C L S L R K R																							

Bartsia inaequalisA.....
I L F N E K D I K Y L E F I F V Y Y M D D P I R K D R D W E L F D C L S L R K R

730 740 750 760 770 780 790 800 810 820 830 840
L.squamaria minor sequence CGAAATAGAAATCAACTTGAATTCGGGATCGCTATTTCGAAATCTTAGTGAAACACTGGATTCTTATCTCATGCTCTGCTTTTCGTGAAAAAATACCAATTGAAGTGGAGGGTTTCTTCAA
R N R I N L N S G S L F E I L V K H W I S Y L M S A F R E K I P I E V E G F F K
Lathraea squamaria
R N R I N L N S G S L F E I L V K H W I S Y L M S A F R E K I P I E V E G F F K
Bartsia inaequalis
R N R I N L N S G S L F E I L V K H W I S Y L M S A F R E K I P I E V E G F F K

850 860 870 880 890 900 910 920 930 940 950 960
L.squamaria minor sequence CAACAAGGGCTGGGCAACTATTCAATCAATGATATTGAGCATGTTTCTCATCTTTCGAGAAACAAGTGGCTATTTCTTTGCAAAAATTGCTCAATTTTCATATGTTGGCAATTT
Q Q R A G S T I Q S N D I E H V S H L F S R N K W A I S L Q N C A Q F H M W Q F
Lathraea squamaria
Q Q R A G S T I Q S N D I E H V S H L F S R N K W A I S L Q N C A Q F H M W Q F
Bartsia inaequalis
Q Q R A G S T I Q S N D I E H V S H L F S R N K W A I S L Q N C A Q F H M W Q F

970 980 990 1000 1010 1020 1030 1040 1050 1060 1070 1080
L.squamaria minor sequence CGCCAGGATCTTTCGTTAGTTGGGGAAGAATCCGCACGAATCGGATTTTTGAGGAACATATCGAGAGAGATTGATTGTTAGACAATGTGTGGTTGGTAAACAAGGATCCGTTT
R Q D L F V S W G K N P H E S D F L R N I S R E N L I W L D N V W L V N K D P F
Lathraea squamaria
R Q D L F V S W G K N P H E S D F L R N I S R E N L I W L D N V W L V N K D P F
Bartsia inaequalis
R Q D L F V S W G K N P H E S D F L R N I S R E N L I W L D N V W L V N K D P F

1090 1100 1110 1120 1130 1140 1150 1160 1170 1180 1190 1200
L.squamaria minor sequence TTTAGAAAGGTACCGAATGTATCGTCAAAATATTCAATATGATTCCACAAGATCCAGTTTCGTTCAAGTAACGGATTCTAGCCAACCGAAAGGATCTTCTGATCAATCCAGAGATCATTG
F R K V R N V S S N I Q Y D S T R S S F V Q V T D S S Q P K G S S D Q S R D H L
Lathraea squamaria
F R K V R N V S S N I Q Y D S T R S S F V Q V T D S S Q P K G S S D Q S R D H L
Bartsia inaequalisT.....
F R K V R N V S S Y I Q Y D S T R S S F V Q V T D S S Q P K G S S D Q S R D H L

1210 1220 1230 1240 1250 1260 1270 1280 1290 1300 1310 1320
L.squamaria minor sequence GATTCCATTAGTAATGAGGATTCCGGAATATCACACATTGATCAATCAAAGAGAGATTCAACCCTAAAAGAAAGATCGATTCTTTGGGATCCTTCTTCTTCAAACCGAAGGAACAGAG
D S I S N E D S E Y H T L I N Q R E I Q P L K E R S I L W D P S F L Q T E G T E
Lathraea squamaria
D S I S N E D S E Y H T L I N Q R E I Q P L K E R S I L W D P S F L Q T E G T E
Bartsia inaequalisG.....
D S I S N E D S E Y H A L I N Q R E I Q P L K E R S I L W D P S F L Q T E G T E

1330 1340 1350 1360 1370 1380 1390 1400 1410 1420 1430 1440
L.squamaria minor sequence ATAGAAATCCGACCGAATCCCGAAATCCCTTTCTGGATATTCCCTCAATGTCCCGGCTATTCCAGGAACTGAGAAGCAGATGATTAATCATCTGCTTCCGGAAGAAATCGAAGAAATTTCTT
I E S D R F P K S L S G Y S S M S R L F T E R E K Q M I N H L L P E E I E E F L
Lathraea squamaria
I E S D R F P K S L S G Y S S M S R L F T E R E K Q M I N H L L P E E I E E F L
Bartsia inaequalis
I E S D R F P K S L S G Y S S M S R L F T E R E K Q M I N H L L P E E I E E F L

1450 1460 1470 1480 1490 1500 1510 1520 1530 1540 1550 1560

	3010	3020	3030	3040	3050	3060	3070	3080	3090	3100	3110	3120
<i>L.squamaria minor</i> sequence											
	CATAGAAGTTCATTGATATCTTCTTTTATAAAGCAAATCGACTTCGATTCCTTGAATAATCCACATCACCTTCGCTTCTATTGTAAACACAAGATCCCCCTTTCTGTGGAAAAGGCCCGT											
<i>Lathraea squamaria</i>											
	H R S S L I S S F Y K A N R L R F L N N P H H F C F Y C N T R F P F S V E K A R											
<i>Bartsia inaequalis</i>											
	H R S S L I S S F Y K A N R L R F L N N P H H F C F Y C N T R F P F S V E K A R											
	3130	3140	3150	3160	3170	3180	3190	3200	3210	3220	3230	3240
<i>L.squamaria minor</i> sequence											
	ATCAATAATTATGATTTACGTATCGACAATTCCTCAATATCTTGTTCATTCGCAACAAAATATTTTCTTTGTGCGTCGGTAAAAAAAACATGCCTTTGGGGGGAGATATACTATTCA											
<i>Lathraea squamaria</i>											
	I N N Y D F T Y R Q F L N I L F I R N K I F S L C V G K K K H A F G G R Y T I S											
<i>Bartsia inaequalis</i>											
	I N N Y D F T Y R Q F L N I L F I R N K I F S L C V G K K K H A F G G R Y T I S											
	3250	3260	3270	3280	3290	3300	3310	3320	3330	3340	3350	3360
<i>L.squamaria minor</i> sequence											
	CCAATCGAGTCACAGGTATCTAACATATTCATAACTAACGATTTTCCACAAGTGGTGACGAAACGTATAACTTGTCCAATCTTTCCATTTTCCAAGTCGATCGCATCCATTCCGTTTCGT											
<i>Lathraea squamaria</i>											
	P I E S Q V S N I F I T N D F P Q S G D E T Y N L S K S F H F P S R C D P F V R											
<i>Bartsia inaequalis</i>											
	P I E S Q V S N I F I T N D F P Q S G D E T Y N L S K S F H F P S R Y D P F V R											
	3370	3380	3390	3400	3410	3420	3430	3440	3450	3460	3470	3480
<i>L.squamaria minor</i> sequence											
	AGAACTATTTACTCGATCGCAGACATTTCTGGAACACCTCTAACAGAGGGACAATAGTCAATTTTGAAGAAGCTTATTGTCAACCTCTTTTCAAGATATGAATCTATCTGATTCAGAAGGG											
<i>Lathraea squamaria</i>											
	R T I Y S I A D I S G T P L T E G Q I V N F E R T Y C Q P L S D M N L S D S E G											
<i>Bartsia inaequalis</i>											
	R T I Y S I A D I S G T P L T E G Q I V N F E R T Y C Q P L S D M N L S D S E G											
	3490	3500	3510	3520	3530	3540	3550	3560	3570	3580	3590	3600
<i>L.squamaria minor</i> sequence											
	AAGAATTCATCAGTATCTCAATTCAAAACATGGGTTTGATTCCACTCCATGTTCTGAGAAATATTACCATCCtAAAAGAGCAAAAAACGGAGTCTTTGCTAAAGAAATCGCTTGAG											
<i>Lathraea squamaria</i>											
	K N L H Q Y L N S N M G L I H T P C S E K Y L P S * K R K K R S L C L K K C V E											
<i>Bartsia inaequalis</i>											
	K N L H Q Y L N S N M G L I H T P C S E K Y L P S E K R K K R S L C L K K C V E											
	3610	3620	3630	3640	3650	3660	3670	3680	3690	3700	3710	3720
<i>L.squamaria minor</i> sequence											
	AAAGGGCAGATGTATAGAACCTTTCAACGAGATAGTGCTTTTCAACTCTCTCAAAATGGAATCTATTCCAACATATATGCCATGGTTCCTTACTTCGACAGGGTACAAAATATCTAAAT											
<i>Lathraea squamaria</i>											
	K G Q M Y R T F Q R D S A F S T L S K W N L F Q T Y M P W F L T S T G Y K Y L N											
<i>Bartsia inaequalis</i>											
	K G Q M Y R T F Q R D S A F S T L S K W N L F Q T Y M P W F L T S T G Y K Y L N											
	3730	3740	3750	3760	3770	3780	3790	3800	3810	3820	3830	3840
<i>L.squamaria minor</i> sequence											
	TTGATATTTTAGATACTTTTTCAGAACTATTGCCGATACTAAGTAGCAGTCAAAAATTTgTATCCATTTTTTATGATATTATGCATGGATCAGGTATATCATGGCGAATTCCTCAGAAA											
	L I F L D T F S E L L P I L S S S Q K F V S I F H D I M H T G S G I S W R I L Q K											

Lathraea squamariaT.....
L I F L D T F S E L L P I L S S S Q K F L S I F H D I M H G S G I S W R I L Q K
Bartsia inaequalis
L I F L D T F S E L L P I L S S S Q K F V S I F H D I M H G S G I S W R I L Q K

3850 3860 3870 3880 3890 3900 3910 3920 3930 3940 3950 3960
L.squamaria minor sequence AAATGGTGTCTTCCACAATGGAATCTGATAAGTGAGATTTTCGAGTAAAGTGTTCACATAATCTTCTTCTGTCCGAAGAAATGATTCATCGAAATAATGAGTCACCATTTGATATCGACACAT
Lathraea squamaria
K W C L P Q W N L I S E I S S K C L H N L L L S E E M I H R N N E S P L I S T H
Bartsia inaequalis
K W C L P Q W N L I S E I S S K C L H N L L L S E E M I H R N N E S P L I S T H

3970 3980 3990 4000 4010 4020 4030 4040 4050 4060 4070 4080
L.squamaria minor sequence CTGAGATCGCCAAATGTTCCGGAGTTCCTCTATTCAATCCTTTTCTTCTTTGCTGGATATCTCGTTCTGACACATCTTCTCTTTGTTTCCCGGGCCTCTAGTGAGTTACAGACA
Lathraea squamaria
L R S P N V R E F L Y S I L F L L L V A G Y L V R T H L L F V S R A S S E L Q T
Bartsia inaequalisC.....
L R S P N V R E F L Y S I L F L L L V A G Y L V R T H L L F V S R A S S E L Q P

4090 4100 4110 4120 4130 4140 4150 4160 4170 4180 4190 4200
L.squamaria minor sequence GAGTTCGAAAGGGTCAAATCTTTGATGATTCCATCATCTATGACTGAGTTGCGAAACTTCTGGATAGGTATCCTACATCTGCACCGAATCTTTCTGGTTAAAGAATCTCTTCTAGTT
Lathraea squamaria
E F E R V K S L M I P S S M T E L R K L L D R Y P T S A P N S F W L K N L F L V
Bartsia inaequalis
E F E R V K S L M I P S S M T E L R K L L D R Y P T S A P N S F W L K N L F L V

4210 4220 4230 4240 4250 4260 4270 4280 4290 4300 4310 4320
L.squamaria minor sequence GCTCTGGAACAATTAGGAGATTCTTTAGAAGAAATACCGGCTTCTGGCGGCAACATGCTTGGTCCCGCTTATGGGGTCAAATCAATACGTTCTAAGAAAGAAATATTTGAATATCAATCTc
Lathraea squamariaA.....
A L E Q L G D S L E E I R A S G G N M L G P A Y G V K S I R S K K K Y L N I N L
Bartsia inaequalis
A L E Q L G D S L E E I R A S G G N M L G P A Y G V K S I R S K K K Y L N I N L

4330 4340 4350 4360 4370 4380 4390 4400 4410 4420 4430 4440
L.squamaria minor sequence atcgataTCATCGATCTCATACCAAAATCCCAcCAATCGAATCACTTTTTTCGAGAAATACGAGATATCTAAGTCATACAAGTAAAGAGATCTATTCAATTGATTAAGAAAAAGAAAAACGTG
Lathraea squamariaT.....
I D I I D L I P N P T N R I T F S R N T R Y L S H T S K E I Y S L I R K R K N V
Bartsia inaequalisT.....
I D L I P N P I N R I T F S R N T R Y L S H T S K E I Y S L I R K R K N V

4450 4460 4470 4480 4490 4500 4510 4520 4530 4540 4550 4560
L.squamaria minor sequence AATGGGGATTGGATTGATGATAAAATcGAATCCTGGGTCCGGAACAGTGATTGCGATTGATGATGAAGAAAGAGACTTCTTGGTTTCAGTTCTCGCC~GAAAAAGGGTTGAT
Lathraea squamariaA.....TTACCGACA.....
N G D W I D D K I E S W V A N S D S I D D E E R D F L V Q F S A L P T E K R V D
Bartsia inaequalisA.....TTAACGACA.....
N G D W I D D K I E S W V A N S D S I D D E E R D F L V Q F S A L T T E K R V D

Lathraea squamaria S T R N I L V I A S T H I P Q K V D P A L I A P N K L N T C I K I R R L L I P Q
Bartsia inaequalis S T R N I L V I A S T H I P Q K V D P A L I A P N K L N T C I K I R R L L I P Q
S T R N I L V I A S T H I P Q K V D P A L I A P N K L N T C I K I R R L L I P Q
5410 5420 5430 5440 5450 5460 5470 5480 5490 5500 5510 5520
L.squamaria minor sequence CAACGAAAGCACTTTTTCACCTTTTCATATACTAGGGGATTTTCACCTTGAAAAGAAAATGTTCCATACTAACCGATTCCGTTCCATAACCATGGGTTCCAAATGCAAGAGATCTTGTAGCA
Lathraea squamaria Q R K H F F T L S Y T R G F H L E K K M F H T N G F G S I T M G S N A R D L V A
Bartsia inaequalis Q R K H F F T L S Y T R G F H L E K K M F H T N G F G S I T M G S N A R D L V A
Q R K H F F T L S Y T R G F H L E K K M F H T N G F G S I T M G S N A R D L V A
5530 5540 5550 5560 5570 5580 5590 5600 5610 5620 5630 5640
L.squamaria minor sequence CTTACCAATGAGGCCCTATCGATTAGTATTACACAGAAGAAATCAAATCTAGACACTAATACAATAGATCCGCTTTCATAGACAAACTTGGGATTTGCGATCCAGGTAAAGATCGGTT
Lathraea squamaria L T N E A L S I S I T Q K K S I L D T N T I R S A L H R Q T W D L R S Q V R S V
Bartsia inaequalis L T N E A L S I S I T Q K K S I L D T N T I R S A L H R Q T W D L R S Q V R S V
L T N E A L S I S I T Q K K S I L D T N T I R S A L H R Q T W D L R S Q V R S V
L T N E A L S I S I T Q K K S I L D T N T I R S A L H R Q T W D L R S Q V R S V
5650 5660 5670 5680 5690 5700 5710 5720 5730 5740 5750 5760
L.squamaria minor sequence CAGGATCATGGGATCCTTTCATATCAGATAGGACGGGCTGTAGCACAAAATGTACTTCTAAGTAATTGCCCCATAGATCCATATCTATCTATATGAAGAAGAAATCATGTAACGAAAGGG
Lathraea squamaria Q D H G I L S Y Q I G R A V A Q N V L L S N C P I D P I S I Y M K K K S C N E G
Bartsia inaequalis Q D H G I L S Y Q I G R A V A Q N V L L S N C P I D P I S I Y M K K K S C N E G
Q D H G I L S Y Q I G R A V A Q N V L L S N C P I D P I S I Y M K K K S C N E G
Q D H G I L S Y Q I G R A V A Q N V L L S N C P I D P I S I Y M K K K S C N E G
5770 5780 5790 5800 5810 5820 5830 5840 5850 5860 5870 5880
L.squamaria minor sequence GATTCATTATTTGTACAAATGGTACTTCGAACCTTGGAACGAGCATGAAGAAATTAACGATACCTCTTTATCTTTAAGTTGTTCTGCCGATCGGTCGCTCAAGATCTTTGGTCTCTACCC
Lathraea squamaria D S Y L Y K W Y F E L G T S M K K L T I L L Y L L S C S A G S V A Q D L W S L P
Bartsia inaequalis D S Y L Y K W Y F E L G T S M K K L T I L L Y L L S C S A G S V A Q D L W S L P
D S Y L Y K W Y F E L G T S M K K L T I L L Y L L S C S A G S V A Q D L W S L P
D S Y L Y K W Y F E L G T S M K K L T I L L Y L L S C S A G S V A Q D L W S L P
5890 5900 5910 5920 5930 5940 5950 5960 5970 5980 5990 6000
L.squamaria minor sequence GGACCCGATGAAAAAATGGGATCACTTCTTATGGACTCGTTGAGAAATGATTCGGATCTAGTTTCATGGCCTATTAGAAGTAGAAGGCCGCTCTGGTGAGATCTTCACGGACAGAAAAGAT
Lathraea squamaria G P D E K N G I T S Y G L V E N D S D L V H G L L E V E G A L V R S S R T E K D
Bartsia inaequalis G P D E K N G I T S Y G L V E N D S D L V H G L L E V E G A L V R S S R T E K D
G P D E K N G I T S Y G L V E N D S D L V H G L L E V E G A L V R S S R T E K D
G P D E K N G I T S Y G L V E N D S D L V H G L L E V E G A L V R S S R T E K D
6010 6020 6030 6040 6050 6060 6070 6080 6090 6100 6110 6120
L.squamaria minor sequence TGCAGTCCGTTTGAAGATGATCGAGTTACATTGCTTCTCGGACCGAACCAGGAATCCCTTAGATATGATGCAAAATGGATCTTGTCTATCTTTGATCAGAGATTTCTCTATGAAAA
Lathraea squamaria C S P F E N D R V T L L L R T E P R N P L D M M Q N G S C S I F D Q R F L Y E K
Bartsia inaequalis C S P F E N D R V T L L L R T E P R N P L D M M Q N G S C S I F D Q R F L Y E K
C S P F E N D R V T L L L R T E P R N P L D M M Q N G S C S I F D Q R F L Y E K
C S P F E N D R V T L L L R T E P R N P L D M M Q N G S C S I F D Q R F L Y E K

C S P F E N D R V T L L L R P E P R N P L D M M Q N G S C S I F D Q R F L Y E K

6130 6140 6150 6160 6170 6180 6190 6200 6210 6220 6230 6240

L.squamaria minor sequence

TACGAATCGGAGTTTGAAGAAGGGGAGGGGAAGGAGCCCTTGACCCGCAACAGATCGAGGAGGATTTATTCAATCACATAGTTTGGGCTCCTAGAAATATGGCGCCCTTGGGCCTTTCTA
Y E S E F E E G E G E G A L D P Q Q I E E D L F N H I V W A P R I W R P W G F L

Lathraea squamaria

.....
Y E S E F E E G E G E G A L D P Q Q I E E D L F N H I V W A P R I W R P W G F L

Bartsia inaequalis

.....T.....
Y E S E F E E G E G E G A L D P Q Q I E E D L F N H I V W A P R I W R P W G F L

6250 6260 6270 6280 6290 6300 6310 6320 6330 6340 6350 6360

L.squamaria minor sequence

TTTGATGATTGTATCGAAAGGCCCAATTCAATTGGGATTTCCCTATGGGTCCAGGTCATTTCCGGGTAAGAGGATCATTACGATGAAGGCTATGAGCTTCAGAGAAATGATTCGGAGTTC
F D D C I E R P N S L G F P Y G S R S F R G K R I I Y D E G Y E L Q E N D S E F

Lathraea squamaria

.....
F D D C I E R P N S L G F P Y G S R S F R G K R I I Y D E G Y E L Q E N D S E F

Bartsia inaequalis

.....GA.....C.....G.....G.....C.....
F D D C I E N E L G F P Y G S R S F R G K R I I Y D E G D E L E E T D S E F

6370 6380 6390 6400 6410 6420 6430 6440 6450 6460 6470 6480

L.squamaria minor sequence

TTGCAGAGTGGAAACCATGCAGTACCAGACCGAGATAGATCTTCCAAAGAACCAAGGCCCTTTTTCGAAATAAGCCCAATTCATTTGGGACCCCTGCAGATCCGCTCTTTTTCCTATTCAAAGAT
L Q S G T M Q Y Q T R D R S S K E Q G L F R I S Q F I W D P A D P L F F L F K D

Lathraea squamaria

.....
L Q S G T M Q Y Q T R D R S S K E Q G L F R I S Q F I W D P A D P L F F L F K D

Bartsia inaequalis

.....
L Q S G T M Q Y Q T R D R S S K E Q G L F R I S Q F I W D P A D P L F F L F K D

6490 6500 6510 6520 6530 6540 6550 6560 6570 6580 6590 6600

L.squamaria minor sequence

CAGCCCCAGGCTCTGTGTTTTCACATCGAGAATTATTTCAGATGAAGAGATGTCAAAGGGGCTTCTTACTTCCCAACAGATCCTCCTACATCTATATATAAACGCTGGTTTATCAAG
Q P P G S V F S H R E L F A D E E M S K G L L T S Q T D P P T S I Y K R W F I K

Lathraea squamaria

.....
Q P P G S V F S H R E L F A D E E M S K G L L T S Q T D P P T S I Y K R W F I K

Bartsia inaequalis

.....
Q P P G S V F S H R E L F A D E E M S K G L L T S Q T D P P T S I Y K R W F I K

6610 6620 6630 6640 6650 6660 6670 6680 6690 6700 6710 6720

L.squamaria minor sequence

AAATACAAGAAAAGCACTTCGAGTTGTTGATTAATCGTCAGAGATGGCTT~~~~~AGTTCAATATCTAATGGATCTTCCGTTCTAATACTCTATCCGAGAGTTATCAGTATTA
N T Q E K H F E L L I N R Q R W L S S L S N G S F R S N T L S E S Y Q Y L

Lathraea squamaria

.....
N T Q E K H F E L L I N R Q R W L S S L S N G S F R S N T L S E S Y Q Y L

Bartsia inaequalis

.....AGAACCAAT.....
N T Q E K H F E L L I N R Q R W L R T N S S L S N G S F R S N T L S E S Y Q Y L

6730 6740 6750 6760 6770 6780 6790 6800 6810 6820

L.squamaria minor sequence

TCAACTCTGTTCCCTATCTAACGGAACGCTATTGGATCAAATGACAAAGACATTTGTTAAGAAAAGATGGCTTTTCCCGGATGAAATGCAAATGGATTCATG
S T L F L S N G T L L D Q M T K T L L R K R W L F P D E M Q I G F M

Lathraea squamaria

.....
S T L F L S N G T L L D Q M T K T L L R K R W L F P D E M Q I G F M

Bartsia inaequalis

.....
S T L F L S N G T L L D Q M T K T L L R K R W L F P D E M Q I G F M