

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

Faculty Publications in the Biological Sciences

Papers in the Biological Sciences

2006

Assembly of the eastern North American herpetofauna: New evidence from lizards and frogs

J. Robert Macy

Museum of Vertebrate Zoology, University of California, jrobertmacey@yahoo.com

James A. Schulte II

Clarkson University

Jared L. Strasburg

Indiana University

Jennifer A. Brisson

University of Nebraska - Lincoln, jennifer.brisson@rochester.edu

Allan Larson

Washington University, larson@wustl.edu

See next page for additional authors

Follow this and additional works at: <https://digitalcommons.unl.edu/bioscifacpub>

 Part of the [Life Sciences Commons](#)

Macy, J. Robert; Schulte, James A. II; Strasburg, Jared L.; Brisson, Jennifer A.; Larson, Allan; Ananjeva, Natalia B.; Wang, Yuezhao; Parham, James F.; and Papenfuss, Theodore J., "Assembly of the eastern North American herpetofauna: New evidence from lizards and frogs" (2006). *Faculty Publications in the Biological Sciences*. 78.

<https://digitalcommons.unl.edu/bioscifacpub/78>

This Article is brought to you for free and open access by the Papers in the Biological Sciences at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Faculty Publications in the Biological Sciences by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

Authors

J. Robert Macy, James A. Schulte II, Jared L. Strasburg, Jennifer A. Brisson, Allan Larson, Natalia B. Ananjeva, Yuezhao Wang, James F. Parham, and Theodore J. Papenfuss

Assembly of the eastern North American herpetofauna: New evidence from lizards and frogs

J. Robert Macey,^{1*} James A. Schulte, II,²
Jared L. Strasburg,³ Jennifer A. Brisson,⁴
Allan Larson,⁵ Natalia B. Ananjeva,⁶ Yuezhaio Wang,⁷
James F. Parham,^{1,8} and Theodore J. Papenfuss¹

¹ Museum of Vertebrate Zoology, University of California, 3101 Valley Life Science Building, Berkeley, CA 94720, USA

² Department of Biology, Clarkson University, 177 Clarkson Science Center, MRC 5805, 8 Clarkson Avenue, Potsdam, NY 13699-5805, USA

³ Department of Biology, Indiana University, 1001 E. 3rd Street, Jordan Hall 142, Bloomington, IN 47405, USA

⁴ Department of Ecology and Evolutionary Biology, Princeton University, Princeton, NJ 08544, USA

⁵ Department of Biology, Washington University, Box 1137, St Louis, MO 63130-4899, USA

⁶ Zoological Institute, Russian Academy of Sciences, St Petersburg 199034, Russia

⁷ Chengdu Institute of Biology, Chinese Academy of Sciences, Chengdu, Sichuan Province 610041, People's Republic of China

⁸ Museum of Paleontology, University of California, 1101 Valley Life Sciences Building, Berkeley, CA 94720, USA

Corresponding author — J. R. Macey, email jrobertmacey@yahoo.com

Abstract

Darwin first recognized the importance of episodic intercontinental dispersal in the establishment of worldwide biotic diversity. Faunal exchange across the Bering Land Bridge is a major example of such dispersal. Here, we demonstrate with mitochondrial DNA evidence that three independent dispersal events from Asia to North America are the source for almost all lizard taxa found in continental eastern North America. Two other dispersal events across Beringia account for observed diversity among North American ranid frogs, one of the most species-rich groups of frogs in eastern North America. The contribution of faunal elements from Asia via dispersal across Beringia is a dominant theme in the historical assembly of the eastern North American herpetofauna.

Keywords: Reptilia, Amphibia, North America, biogeography, phylogeny

1. Introduction

Episodes of intercontinental dispersal have had a dramatic impact on current large-scale floral and faunal distribution patterns. Intercontinental dispersal occurs primarily when tectonic plates collide (Macey *et al.* 2000; Bossuyt & Milinkovitch 2001), when decreasing sea-levels expose land bridges (Wallace 1876; Darwin 1883), or when climatic changes produce dispersal corridors in otherwise inhospitable areas.

A faunal exchange between Africa and Asia was induced by the plate-tectonic closing of the Tethys Sea, and a major exchange between North America and South America occurred following formation of a land bridge by the combined influence of plate tectonics and a decrease in sea-level (Brown & Lomolino 1998).

Climatic fluctuations producing episodic connections between Eurasian and North American faunal and floral elements have been invoked recently to explain disjunct distributions in bacteria (Maekawa *et al.* 2005), flowering plants (Wen 1999), aphids (von Dohlen *et al.* 2002), alligators and cryptobranchid salamanders (Pough *et al.* 2004), and even humans (Brown & Lomolino 1998). Particularly important for herpetofaunal exchanges was a Mid-Miocene connection of eastern Eurasia and eastern North America by a continuous temperate deciduous forest; this connection provided habitats for amphibian and reptilian groups otherwise excluded from the high latitudes at which Eurasia and North America are in close proximity.

Several eastern North American lizard and frog groups may have entered this region from Asia during the Miocene. We present molecular phylogenetic evidence of intercontinental faunal exchanges for ranid frogs and for two genera of scincid lizards, which share disjunct distributions in eastern North America and eastern Asia. The broader phylogenetic contexts of both groups place their origins in the Old World (Bossuyt & Milinkovitch 2001; Brandley *et al.* 2005), indicating that the eastern North American species descend from Eurasian ancestors.

2. Material And Methods

The scincid genera, *Scincella* and *Eumeces*, are placed in separate subfamilies, Lygosominae and Scincinae, respectively. No previous phylogenetic work has considered all Northern Hemisphere genera in this family. In the Lygosominae, we sample *Scincella lateralis* from eastern North America and compare it to three species of *Scincella* and *Sphenomorphus indicus* from eastern Asia. In the Scincinae, we sample each species of *Eumeces* (including *Neoseps reynoldsi*) occurring east of the Mississippi River, several western North American *Eumeces* and two eastern Asian species (*Eumeces capito* and *Eumeces quadrilineatus*). Central American *Eumeces* are not part of the North American radiation (Brandley *et al.* 2005). Based on morphological characters, Griffith *et al.* (2000) suggest that North American scincines form a monophyletic group. We sample all scincine genera occurring in western Asia and most from North Africa (*Chalcides*, *Eurylepis*, *Novoeumeces*, *Ophiomorus* and *Scincus*). To root the phylogenetic hypothesis of the Scincidae, members of two separate families are included, *Eremias grammica* from the Lacertidae and *Platysaurus capensis* from the Cordylidae.

Ranidae is one of the largest frog families. To investigate the affinities of North American taxa, members of all monophyletic North American species groups are sampled (*R. catesbeiana*, *R. sylvatica*, *R. warszewitschii*, *R. areolata*, *R. pipiens*, and all taxa in the *R. boylei* species group; Hillis & Davis 1986; Macey *et al.* 2001). These taxa are compared to a wide range of ranids occurring in Asia and Europe, and rooted with a pipid (*Xenopus laevis*), bufonid (*Bufo andrewsi*), and rhaophorid (*Polypedates leucomystax*).

We sequenced a segment of the mitochondrial genome containing part of *nad1*, *trnI*, *trnQ*, *trnM*, *nad2*, *trnW*, *trnA*, *trnN*, *trnC*, *trnY* and part of *cox1*. Sequencing primers for scincid lizards are from Macey *et al.* (1997) and primers for ranid frogs are from Macey *et al.* (2001).

DNA sequences were aligned manually. Positions encoding proteins were translated to amino acids using MACCLADE v. 4.03 (Maddison & Maddison 2001) for confirmation of alignment. Alignments of sequences encoding tRNAs were based on secondary structural mod-

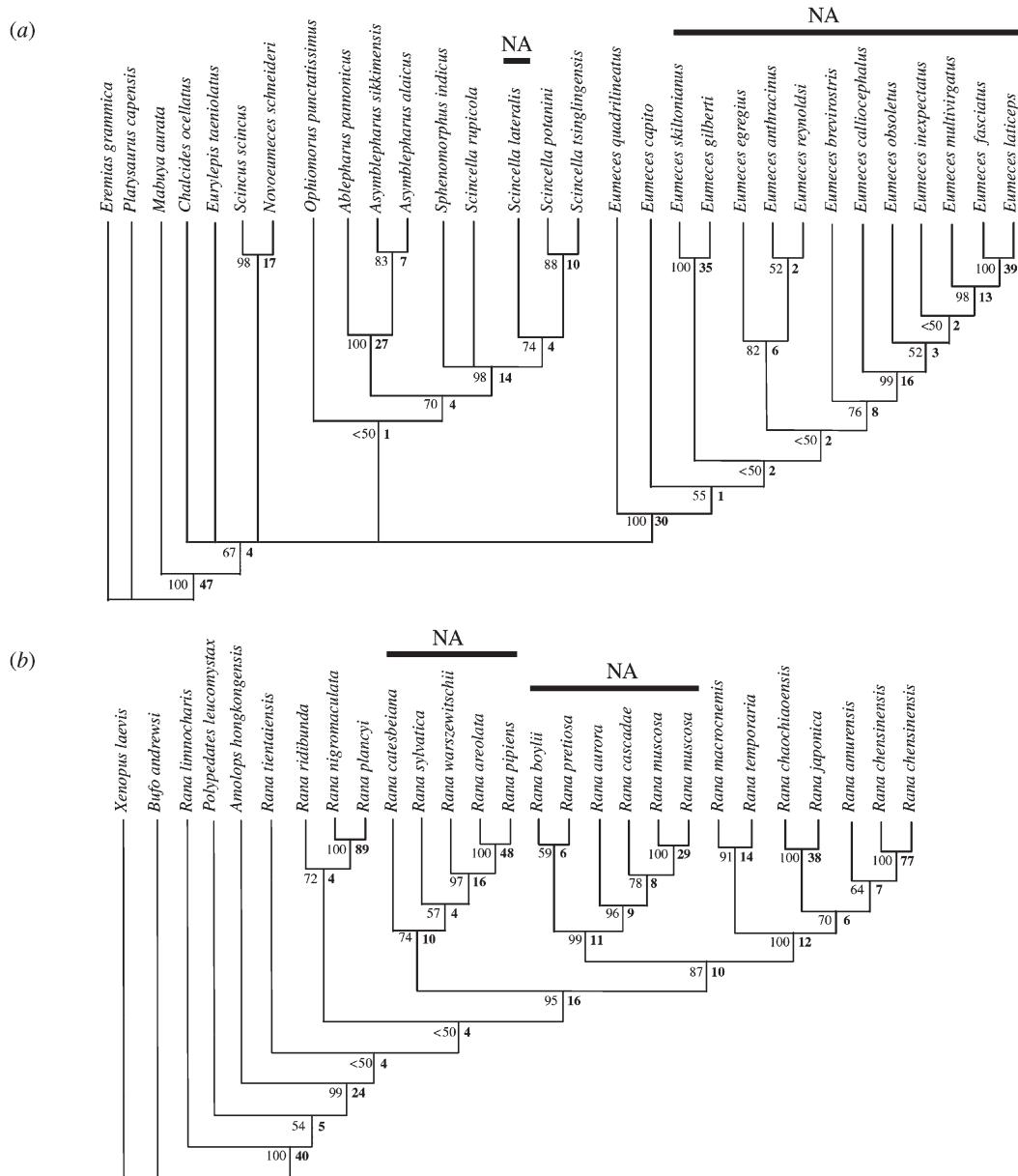


Figure 1. Phylogenetic relationships among (a) scincid lizards and (b) ranid frogs. Bars indicate taxa occurring in North America (NA); all other taxa are from Asia, Europe and Africa (see text). Bootstrap values are shown to the left of the branches, and decay indices to the right. The two *R. muscosa* samples represent the two major clades (Macey *et al.* 2001). (a) The strict consensus of three equally parsimonious trees with a length of 5788 steps resulting from analysis of 1832 positions (949 informative) from the *nad1-cox1* mtDNA region. (b) The single most parsimonious tree with a length of 5320 steps resulting from analysis of 2065 positions (951 informative) from the *nad1-cox1* mtDNA region.

els (reviewed in Macey & Verma 1997). Regions with extensive length variation were deemed unalignable and excluded from phylogenetic analyses.

The alignment for scincid lizards is 1933 positions of which 101 were excluded from analyses. Of the remaining 1832 positions, 949 are parsimony informative. The alignment for ranid frogs is 2126 positions of which 61 were excluded from analyses. Of the remaining 2065 positions, 951 are parsimony informative. These sequence alignments are presented in the "Supplementary Materials," appendices A and B.

Phylogenetic trees were inferred by parsimony using PAUP* beta v. 4.0b8 (Swofford 2001) using default settings. Bootstrap resampling (Felsenstein 1985) was applied to assess support for individual nodes using 500 replicates. Decay indices ("branch support" of Bremer 1994) were calculated for all internal branches using searches that retained suboptimal nodes. All searches were heuristic using 100 random additions per replicate or search (see appendix C in the "Supplementary Materials," for maximum-likelihood methods).

Museum voucher numbers and locality data for all newly reported sequences are deposited in GenBank files AY607272–AY607316, DQ005638, and DQ471440. A few of these sequences have been extended from other studies (Macey *et al.* 1997, 1998). Previously reported sequences used here are: *X. laevis*, M10217 (Roe *et al.* 1985); *R. catesbeiana*, *R. sylvatica*, *R. temporaria*, *R. boylei*, *R. pretiosa*, *R. aurora*, *R. cascadae*, and *R. muscosa*, AF314016–AF314023 and AF314029, respectively (Macey *et al.* 2001).

3. Results

Phylogenetic relationships among the Scincidae and Ranidae are presented in Figure 1 (Appendix C in "Supplementary Materials" shows maximum-likelihood results, which are similar). North American scincines do not form a monophyletic group. The lygosomine *Scincella lateralis*

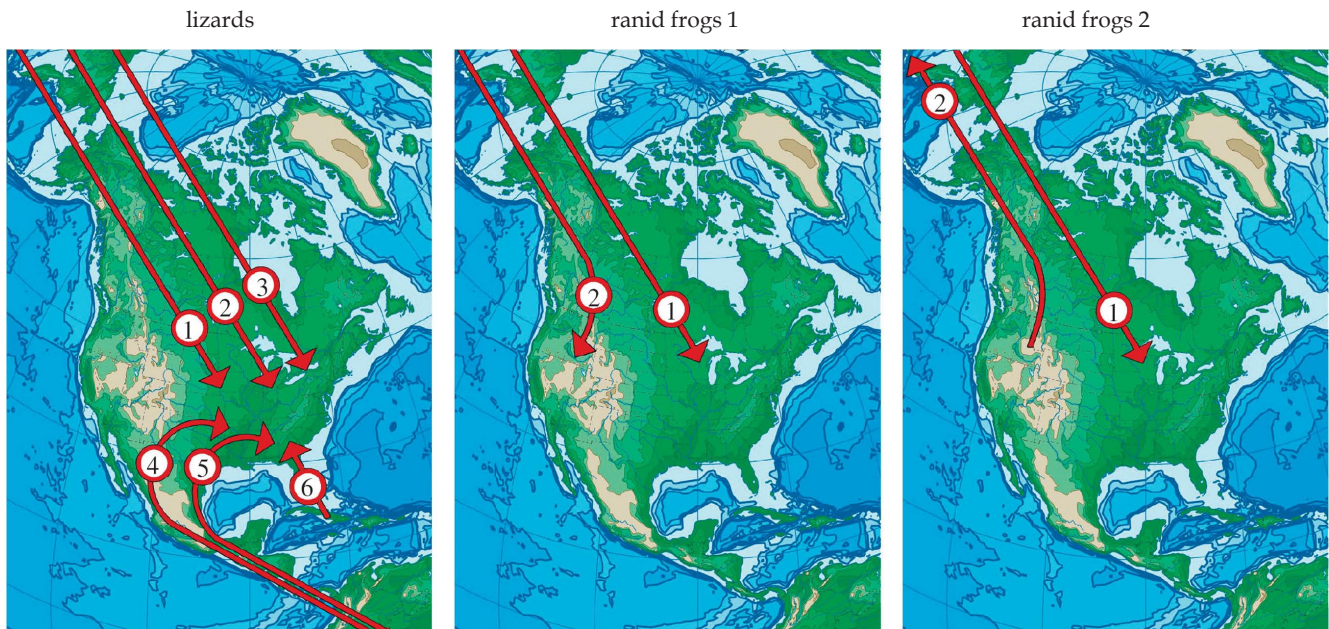


Figure 2. Dispersal of lizards and frogs into continental North America. Eleven of the 14 species of lizards found in eastern North America are derived from three dispersal events from Asia: (1) *Eumeces*, (2) *Scincella*, and (3) *Ophisaurus*. Three independent dispersal events from the neotropics explain distributions of three additional taxa: (4) *Sceloporus*, (5) *Cnemidophorus*, and (6) a West Indian lineage of *Anolis*. Two dispersal events across Beringia explain the occurrence of ranid frogs in North America. In one hypothesis, both lineages of North American ranids independently dispersed from Asia to (1) eastern and (2) western North America, respectively. Alternatively, there may have been (1) a single dispersal event from Asia to North America, then following divergence of eastern and western North American taxa (2) a subsequent dispersal back to Asia (see text).

Table 1. North American lizard and frog diversity east of the Mississippi River.

	Family	Origin	No. of species ^a	Reference
Lizards				
<i>Ophisaurus</i>	Anguidae	Asian	4	Macey et al. (1999)
<i>Eumeces</i>	Scincidae	Asian	6	this study
<i>Scincella</i>	Scincidae	Asian	1	this study and Honda et al. (2003)
<i>Anolis</i>	Iguanidae	neotropical	1	Jackman et al. (1999)
<i>Sceloporus</i>	Iguanidae	neotropical	1	Wiens & Reeder (1997)
<i>Cnemidophorus</i>	Teiidae	neotropical	1	Reeder et al. (2002)
Frogs				
<i>Rana</i>	Ranidae	Asian	14	this study
<i>Bufo</i>	Bufonidae	not determined	5	Graybeal (1997)
<i>Acris</i>	Hylidae	neotropical	2	Faivovich et al. (2005)
<i>Hyla</i>	Hylidae	neotropical	7 ^b	Faivovich et al. (2005)
<i>Pseudacris</i>	Hylidae	neotropical	8	Faivovich et al. (2005) and Moriarty & Cannatella (2004)
<i>Gastrophryne</i>	Microhylidae	not studied	1	—
<i>Scaphiopus</i>	Pelobatidae	not determined	1	Garcia-Paris et al. (2003)

^aNumber of species occurring east of the Mississippi River is after Conant & Collins (1998).

^bNot including polyploid taxa.

groups with East Asian *Scincella* and *Sphenomorphus* with strong support (bootstrap 98%, decay index 14) to the exclusion of West Asian *Ablepharus* and *Asymblespharus*, which form a monophyletic group (bootstrap 100%, decay index 27). North American members of the scincine genus *Eumeces* appear monophyletic with weak support (bootstrap less than 50, decay index 2), yet they are strongly grouped with East Asian *Eumeces* (*E. capito* and *E. quadrilineatus*, bootstrap 100, decay index 30).

North American ranid frogs also do not form a monophyletic group. Eastern North American ranids (*R. catesbeiana*, *R.*

sylvatica, *R. areolata*, and *R. pipiens*) and *R. warszewitschii* from Costa Rica together form a clade (bootstrap 74, decay index 10). Western North American ranids form a separate monophyletic group (bootstrap 99, decay index 11), the *R. boyllii* species group (Macey et al. 2001). Among Eurasian *R. temporaria* and *R. japonicus* species groups form a clade (bootstrap 100, decay index 12) that is the sister taxon to the western North American *R. boyllii* species group (bootstrap 87, decay index 10). All other ranids sampled are phylogenetically outside a group comprising eastern North America, western North America and the *R. temporaria*–*R. japonicus* clade.

4. Discussion

Our results identify several intercontinental dispersals that contributed to the current distributions of the lizards and frogs examined here. Among lizards, North American *Eumeces* group with East Asian *Eumeces* to the exclusion of all other Northern Hemisphere scincid lizards, indicating a dispersal event across Beringia from Asia (Figure 2). The North American species of *Scincella* is nested within Asian taxa indicating an additional dispersal event from Asia to North America.

Among ranid frogs, two clades of North American species are identified: one corresponding to the *R. boylii* group of western North America and another consisting of eastern North American taxa plus the single Neotropical species *R. warszewitschii*. The North American *Rana* do not form a monophyletic group. The *R. boylii* species group is the sister taxon to the *R. temporaria*-*R. japonicus* clade, and two equally parsimonious interpretations can explain dispersals across Beringia. One hypothesis is that separate dispersals across Beringia from Asia established the eastern and western North American clades, with the eastern North American dispersal preceding the one that established the *R. boylii* group in western North America. Alternatively, a single dispersal event from Asia to North America may have occurred followed by vicariant separation of eastern and western North American forms and a subsequent dispersal from western North America back to Asia to establish the *R. temporaria*-*R. japonicus* clade.

There are 14 native continental species of lizards in eastern North America (east of the Mississippi River; Conant & Collins 1998; Table 1). Here, we have determined that ancestral lineages of the six *Eumeces* species and of the single *Scincella* species are both of Asian origin. Macey *et al.* (1999) showed that the ancestral lineage of four eastern North American *Ophisaurus* species is of Asian origin. The three remaining lizard taxa occurring in continental eastern North America, from separate taxonomic groups, are derived from the neotropics: *Anolis* (West Indies; Jackman *et al.* 1999), *Cnemidophorus* (Reeder *et al.* 2002), and *Sceloporus* (Wiens & Reeder 1997). Hence, 11 of the 14 eastern North American lizard species descend from ancestral lineages representing three dispersal events across Beringia. The origins of the 38 frog taxa in eastern North America (Conant & Collins 1998) are less well understood than lizards. All 14 *Rana* species appear to descend from a single dispersal event from Asia because our sampling includes members of all eastern North American species groups. The 17 hylid frogs occurring east of the Mississippi River are descended from a neotropical ancestor, and the North American taxa gave rise to the Eurasian species through dispersal across Beringia (Faivovich *et al.* 2005). Phylogenetic data are not yet available to evaluate geographic origins of the other frog groups in eastern North America.

Eighty per cent of lizard species and at least a third of frog taxa occurring east of the Mississippi River are derived from four independent dispersal events across Beringia. The contribution of Asian faunal elements to

North America is a dominant theme in the assembly of the eastern North American fauna.

Acknowledgments

We thank the National Science Foundation (DEB-9726064; fellowships to J.A.S.), Ruth Rand for the *Eumeces laticeps* sample, and Steve Gotte for the *Eumeces multivirgatus* sample. We thank Jonathan J. Fong for assistance with handling DNA sequences and GenBank submissions.

Supplementary Materials: Aligned DNA Sequences and Maximum-Likelihood Results (following pages)

Appendix A. Aligned nucleotide data (1933 positions) for scincid lizards including museum and GenBank numbers.

Appendix B. Aligned nucleotide data (2126 positions) for ranid frogs including museum and GenBank numbers.

Appendix C. Maximum likelihood (ML) analyses

References

- Bossuyt F., Milinkovitch M. C. Amphibians as indicators of Early Tertiary 'out-of-India' dispersal of vertebrates. *Science*. 2001;292:93-95. doi:10.1126/science.1058875
- Brandley M. C., Schmitz A., Reeder T. W. Partitioned Bayesian analyses, partition choice, and the phylogenetic relationships of scincid lizards. *Syst. Biol.* 2005;54:373-390. doi:10.1080/10635150590946808
- Bremer K. Branch support and tree stability. *Cladistics*. 1994;10:295-304. doi:10.1111/j.1096-0031.1994.tb00179.x
- Brown J. H., Lomolino M. V. Biogeography. 2nd edn. Sinauer Associates, Inc; Sunderland, MA: 1998. p. 691.
- Conant R., Collins J. T. A field guide to reptiles & amphibians of eastern and central North America. 3rd edn expanded. Houghton Mifflin; New York, NY: 1998. p. 616.
- Darwin C. The origin of species. 6th edn. Appleton; New York, NY: 1883. p. 458.
- Faivovich J., Haddad C. F. B., Garcia P. C. A., Frost D. R., Campbell J. A., Wheeler W. C. Systematic review of the frog family Hylidae, with special reference to Hylinae: Phylogenetic analysis and taxonomic revision. *Bull. Am. Mus. Nat. Hist.* 2005;294:1-240. doi:10.1206/0003-0090(2005)294[0001:SR0TFF]2.0.CO;2
- Felsenstein J. Confidence limits on phylogenies: An approach using the bootstrap. *Evolution*. 1985;39:783-791.
- Garcia-Paris M., Buchholz D. R., Parra-Olea G. Phylogenetic relationships of Pelobatoidea re-examined using mtDNA. *Mol. Phylogenet. Evol.* 2003;28:12-23.
- Graybeal A. Phylogenetic relationships of bufonid frogs and tests of alternate macroevolutionary hypotheses characterizing their radiation. *Zool. J. Linn. Soc.* 1997;119:297-338. doi:10.1006/zjls.1996.0068
- Griffith H., Ngo A., Murphy R. W. A cladistic evaluation of the cosmopolitan genus *Eumeces* Wiegmann (Reptilia, Squamata, Scincidae). *Russ. J. Herpetol.* 2000;7:1-16.
- Hillis D. M., Davis S. K. Evolution of ribosomal DNA: Fifty million years of recorded history in the frog genus *Rana*. *Evolution*. 1986;40:1275-1288.
- Honda M., Ota H., Kohler G., Ineich I., Chirio L., Chen S.-L., Hikida T. Phylogeny of the lizard subfamily Lygosominae (Reptilia: Scincidae), with special reference to the ori-

- gin of the New World taxa. *Genes Genet. Syst.* 2003;78:71–80. doi:10.1266/ggs.78.71
- Jackman T. J., Larson A., de Queiroz K., Losos J. B. Phylogenetic relationships and tempo of early diversification in *Anolis* lizards. *Syst. Biol.* 1999;48:254–285. doi:10.1080/106351599260283
- Macey J. R., Verma A. Homology in phylogenetic analysis: Alignment of transfer RNA genes and the phylogenetic position of snakes. *Mol. Phylogenet. Evol.* 1997;4:272–279. doi:10.1006/mpev.1997.0379
- Macey J. R., Larson A., Ananjeva N. B., Fang Z., Papenfuss T. J. Two novel gene orders and the role of light-strand replication in rearrangement of the vertebrate mitochondrial genome. *Mol. Biol. Evol.* 1997;14:91–104.
- Macey J. R., Schulte J. A., II, Larson A., Fang Z., Wang Y., Tuniyev B. S., Papenfuss T. J. Phylogenetic relationships of toads in the *Bufo bufo* species group from the eastern escarpment of the Tibetan Plateau: A case of vicariance and dispersal. *Mol. Phylogenet. Evol.* 1998;9:80–87. doi:10.1006/mpev.1997.0440
- Macey J. R., Schulte J. A., II, Larson A., Tuniyev B. S., Orlov N., Papenfuss T. J. Molecular phylogenetics, tRNA evolution and historical biogeography in anguillid lizards and related taxonomic families. *Mol. Phylogenet. Evol.* 1999;12:250–272. doi:10.1006/mpev.1999.0615
- Macey J. R., Schulte J. A., II, Larson A., Ananjeva N. B., Wang Y., Pethiyagoda R., Rastegar-Pouyani N., Papenfuss T. J. Evaluating trans-Tethys migration: An example using acrodont lizard phylogenetics. *Syst. Biol.* 2000;49:233–256. doi:10.1080/10635159950173834
- Macey J. R., Strasburg J. L., Brisson J. A., Vredenburg V. T., Jennings M., Larson A. Molecular phylogenetics of western North American frogs of the *Rana boylei* species group. *Mol. Phylogenet. Evol.* 2001;19:131–143. doi:10.1006/mpev.2000.0908
- Maddison W. P., Maddison D. R. *MACCLADE*, analysis of phylogeny and character evolution, version 4.03. Sinauer; Sunderland, MA: 2001.
- Maekawa K., Park Y. C., Lo N. Phylogeny of endosymbiont bacteria harbored by the woodroach *Cryptocercus* spp. (Cryptocercidae: Blattaria): Molecular clock evidence for a Late Cretaceous–Early Tertiary split of Asian and American lineages. *Mol. Phylogenet. Evol.* 2005;36:728–733. doi:10.1016/j.ympev.2005.03.033
- Moriarty E. C., Cannatella D. C. Phylogenetic relationships of the North American chorus frogs (*Pseudacris*: Hylidae). *Mol. Phylogenet. Evol.* 2004;30:409–420. doi:10.1016/S1055-7903(03)00186-6
- Pough H. F., Andrews R. M., Cadle J. E., Crump M. L., Savitzky A. H., Wells K. D. *Herpetology*. 3rd edn. Pearson Education, Inc; Upper Saddle River, NJ: 2004. p. 726.
- Reeder, T. W., Cole, C. J. & Dessauer, H. C. 2002 Phylogenetic relationships of Whiptail Lizards of the genus *Cnemidophorus* (Squamata: Teiidae): A test of monophyly, reevaluation of karyotypic evolution, and review of hybrid origins. *Am. Mus. Novitates* **3365**, p. 61.
- Roe B. A., Ma D. P., Wilson R. K., Wong J. F. The complete nucleotide sequence of the *Xenopus laevis* mitochondrial genome. *J. Biol. Chem.* 1985;15:9759–9774.
- Swofford D. L. *PAUP** phylogenetic analysis using parsimony (*and other methods), Beta Version 4.0b8. Sinauer; Sunderland, MA: 2001.
- von Dohlen C. D., Kurosu U., Aoki S. Phylogenetics and evolution of the eastern Asian–eastern North American disjunct aphid tribe, Hormaphidini (Hemiptera: Aphididae). *Mol. Phylogenet. Evol.* 2002;23:257–267. doi:10.1016/S1055-7903(02)00025-8
- Wallace A. R. *The geographical distribution of animals*. 2 vols. Macmillan; London, UK: 1876.
- Wen J. Evolution of eastern Asian and eastern North American disjunct distributions in flowering plants. *Annu. Rev. Ecol. Syst.* 1999;30:421–455. doi:10.1146/annurev.ecolsys.30.1.421
- Wiens J. J., Reeder T. W. Phylogeny of the spiny lizards (*Sceloporus*) based on molecular and morphological evidence. *Herpetol. Monogr.* 1997;11:1–101.

Appendix A

Aligned nucleotide data (1933 positions) for scincid lizards:

Sequences are presented as light-strand sequence and tRNA secondary structure is designated above the sequence. Stems are indicated by arrows in the direction encoded: AA=amino acid-acceptor stem, D=dihydrouridine stem, AC=anticodon stem, T=TyC stem. The tRNA anticodons are designated COD. Asterisks indicate the unpaired 3' tRNA position 73. Periods represent bases located outside stem regions; 1 depicts the first codon position of protein-coding sequences. STP or ST represents stop codons. OL represents the replication origin for the light strand. All voucher specimens are deposited in the California Academy of Sciences (CAS) in San Francisco, the Museum of Vertebrate Zoology (MVZ), University of California at Berkeley, or the United States National Museum (USNM), Washington DC. The list of taxa first includes the voucher number followed by the GenBank number. Locality data are also included in GenBank files. Excluded positions are 238-242 256-263 316-319 1492-1500 1514-1523 1723-1751 1765-1773 1805-1807 1821-1831 1845-1852 1884-1888.

<i>Eremias grammica</i>	CAS179206, AY607272
<i>Platysaurus capensis</i>	CAS193465, AY607273
<i>Mabuya aurata</i>	CAS179697, AY607274
<i>Chalcides ocellatus</i>	MVZ-RM10474, AY607275
<i>Eurylepis taeniolatus</i>	CAS184460, AY607276
<i>Novoeumeces schneideri</i>	CAS184459, AY607277
<i>Scincus scincus</i>	MVZ-RM10473, AY607278
<i>Ophiomorus punctatissimus</i>	MVZ230221, AY607279
<i>Ablepharus pannonicus</i>	CAS185230, AY607280
<i>Asymblepharus alaicus</i>	CAS199525, AY607281
<i>Asymblepharus sikimensis</i>	CAS177484, AY607282
<i>Sphenomorphus indicus</i>	MVZ216618, AY607283
<i>Scincella rupicola</i>	MVZ-V-393, AY607284
<i>Scincella lateralis</i>	MVZ-RM10650, AY607285
<i>Scincella tsinlingensis</i>	MVZ216887, AY607286
<i>Scincella potanini</i>	CAS194923, AY607287
<i>Eumeces quadrilineatus</i>	MVZ230445, AY607288
<i>Eumeces capito</i>	MVZ208762, AY607289
<i>Eumeces gilberti</i>	MVZ228175, AY607290
<i>Eumeces skiltonianus</i>	MVZ228181, AY607291
<i>Eumeces egregius</i>	MVZ150131, AY607292
<i>Eumeces anthracinus</i>	MVZ-RM10668, AY607293
<i>Neoseps reynoldsi</i>	no voucher, AY607294
<i>Eumeces brevirostris</i>	MVZ164772, AY607295
<i>Eumeces callicephalus</i>	MVZ237353, AY607296
<i>Eumeces inexpectatus</i>	MVZ137529, AY607297
<i>Eumeces obsoletus</i>	MVZ137633, AY607298
<i>Eumeces multivirgatus</i>	USNM 561174, DQ005638
<i>Eumeces fasciatus</i>	MVZ-RM10649, AY607299
<i>Eumeces laticeps</i>	MVZ-RM10647, AY607300

1-50

Qualifiers1
Qualifiers2 1..1.
Eremias_grammica ATTTTATTTTTTTAGTCCTCCTGCAACTACAACAGAACTATTTTCCAT
Platysaurus_capensis CTAATATTTTTTAAACCCGGGCAAT---ATTCAACCAGACCTATTCTCAGC
Mabuya_aurata ATTCTATTTCCTAAACCCAGGAAACCTCTTACACCCCGACACATTCAAAAT
Chalcides_ocellatus ATTCTATTTATGAACCCAGGAACTGCCCTGCTACCAGACACATTCAAAAT
Eurylepis_taeiniolatus GTCCTGTTCTTAAACCCCTGGAACCTTTACACACCCGGACATATTTACCAT
Novoeumeces_schneideri GTCCTATTTCTAAATCCAGGAGCATAACCCACCCCGACCTGTTCCCAAT
Scincus_scincus ATCTTATTTATAAGCCAGAGAGCCCGCCAACCCAGACCTATTCCCTAT
Ophiomorus_punctatissimus ATTTTATTTTTTAAACCCAGGAAATCTGACACACACTGACATATTTCCAAT
Ablepharus_annonicus ATTATTTTCTTAAACCCCTGGGATATCGACTCACCTAATATTTTCCCAAT
Asymblepharus_alaicus ATCCTCTTCTTAAACCCAGGTAAGCCTACTCACCCAATATATTCCCGCT
Asymblepharus_sikimmensis ACCATCTTCTTAAACCCAAGTACATCTTTACACCCAGATATATTCTCAAT
Sphenomorphus_indicus ATCTTGTTCTTAAACCCAGGAAAC---GCCTCACCAAACATATTTCCAAT
Scincella_rupicola ATCCTGTTTATCAACCCAGGAAAC---ACAGATCCAAATATATTCTCAAG
Scincella_lateralis ATCTTATTCCTTAAACCCAGGAAAT---ACTCACCCAATATATTTTCATT
Scincella_tsinlingensis GTCTTATTTATTAACCCAGGAAAC---ACACACCCCTGATTTATTTCCCAAT
Scincella_potanini GTTTTGTTCTTAAACCCAGGGGGC---ACTCATCCCAGACATGTTCTCAAT
Eumeces_quadrilineatus ATTCTATTTATTAATCCCAGGAGTAACAACACACCCGGACACATTCCCCT
Eumeces_capito ACCCTATTTCTCAGCCCAGACACAACATTACAACCAGATATATTTCCAAT
Eumeces_gilberti ATCCTCTTTATTAACCCGGGAACAACGCTCCCCCTGATATATTTCCAAT
Eumeces_skiltonianus GTTCTCTTTATTAACCCCTGGAACAGCACTCCCCCTGACATATTTCCAAT
Eumeces_egregius ATTTTATTTATTAACCCCTGGGACCACAATTCAACCCAGACATGTTTCCGAT
Eumeces_anthracinus ATCTTATTTATCAACCCCTGGAATATAATGCCACAAGACATATTTCCAAT
Neoseps_reynoldsi ATTTTATTTATTAACCCAGGAAACACAATCCACCCAAACATATTTCCAAT
Eumeces_brevirostris ATCCTATTTATCAACCCAGGAAACAATTACACACCCGGACATATTTCCCGC
Eumeces_callicephalus ATCTTGTTCTGCAACCCCGGGACAACAGTCAGCCCAGACACATTCCAAT
Eumeces_inexpectatus ATCCTGTTCTATCAACCCCGGGCAGCAACCCCCCGACATCTTCCAAT
Eumeces_obsoletus ATTCTGTTCTATCAACCCAGGAGCAACAACCCAGCCCAGACATGTTCCAAT
Eumeces_multivirgatus ATTCTATTTATTAACCCCGGAATAACAACCCACCCAGACACATTCCAAT
Eumeces_fasciatus ATCCTATTTATCAACCCCGGAACAACAACCTCTCCCAGACACATTCCAAT
Eumeces_laticeps ATCCTATTTATCAACCCCGGAACAACAACCTCTCCCAGACACATTCCAAT

51-100

```
Qualifiers1 .....
Qualifiers2 .1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1
Eremias_grammica TAGCCTATTTACTAAAATTCTTCTATTAACACTTCTATTTCTTTGAGTCC
Platysaurus_capensis AAACATCATATATAAAAACCATACTTCTCTCAATACTATTCCTATGAATCC
Mabuya_aurata AAATCTTATATTTAAAAACAACAGCACTCACCACACTATTTTTATGAACTC
Chalcides_ocellatus TAACCTCATATTTAAAAACCTCCATGCTAACTATTTTATTCTTATGGGTTC
Eurylepis_taeniolatus TAACCTAATAACAGAAGCATCAACACTAACAATCCTATTTTTATGAGCCC
Novoeumeces_schneideri AAACCTAATACTAAAAACAATACTACTAACAATACTATTTCTGTGGGCC
Scincus_scincus CAACCTAATATTTAAAAACAATATTATTAACAATACTATTCCTTTGAACCC
Ophiomorus_punctatissimus TAACCTAATATTTAAAAACATCACTTCTAACAATCACATTTTTATGAACTC
Ablepharus_pannonicus AAATCTTATACTAAAAACAGTACTCTTGACCACCCTATTTTTATGAATCC
Asymblepharus_alaicus TAATCTTATACTTACAACAATACTACTGACTACCCTATTTTTATGAGTCC
Asymblepharus_sikimensis TAATCTTATACTTAAAACCATGCTATTAACTATCATATTTTTATGAGCCC
Sphenomorphus_indicus TAACCTTATACTTAAAACTATACTGCTAACAGGCCTTTTCTTATGAACCC
Scincella_rupicola TAATCTTATACTAAAAACAATAACTAACAACCCTGTTCTTATGAGCCC
Scincella_lateralis TAACCTAATCCTCAAATCAATGCTATTAACAACCCTATTTCTATGAACAC
Scincella_tsinlingensis TAACCTAATACTAAAAACAGTATTACTTACAATTCTATTTTTATGAACAC
Scincella_potanini TAACCTAATACTAAAAGACAATAGTATTAACCACCCTATTTTTATGAACAC
Eumeces_quadri-lineatus CAACCTTATATTTAAAAGCAACAGCCCTTACAATTATTTTTATGAGCCC
Eumeces_capito CAACCTCATACTAAAAGCATCTGTTCTCACAATTATATTCTTATGAACCC
Eumeces_gilberti TAACCTTATATCAAAGCCACAGCACTTACAATTCTGTTCTGTGAACCTC
Eumeces_skiltonianus CAACCTTATATTTAAAAGCCTCAGCACTCACAATTCTGTTCTTATGAACCTC
Eumeces_egregius TAACCTCATGCTAAAAGCATCGGCACTCACAGCCCTATTTTTATGGACCC
Eumeces_anthracinus CAACCTTATACTAAAAGCATCTACACTCACAATCCTATTTCTATGAACCC
Neoseps_reynoldsi CAACCTCATACTAAAAGCATCAGCACTCACAATCTTATTTTTATGAACCC
Eumeces_brevirostris CAACCTCATACTAAAAGCATCCGCACTCACAACCCTCTTCTTATGAGCCC
Eumeces_callicephalus GAATCTTATATTTAAAAGCATCAGCACTCACCATCTTATTCTGTGGACCC
Eumeces_inexpectatus AAACCTCATGTTAAAAGCATCTACACTTACAATCCTATTTTTATGGGCGC
Eumeces_obsoletus AAACCTCATATTTAAAAGGCAACGGCTCTCACAATCCTATTTCTATGAACTC
Eumeces_multivirgatus AAACCTCATATTTAAAAGCATCAGCACTTACAATCCTGTTTTATGAACCC
Eumeces_fasciatus AAACCTTATACTAAAAGCATCAGCACTCACAATCCTATTTTTATGGGCC
Eumeces_laticeps AAACCTTATACTTAAAAGCATCAGCACTCACAGCCCTATTTTTATGAGCCC
```

101-150

```
Qualifiers1 .....
Qualifiers2 ..1..1..1..1..1..1..1..1..1..1..1..1..1..1..1..1..
Eremias_grammica GAGCCTCTTACCCTCGATTTTCGCTACGACCAACTTATACACCTTCTATGA
Platysaurus_capensis GATCATCATACCCCGACTCCGATACGACCAACTAATACACCTCCTATGA
Mabuya_aurata GAGCATCATACCCACGATTCCGATACGATCAATTAATACATTTATTATGA
Chalcides_ocellatus GAGCTTCCTACCCACGATTTTCGTTATGATCAGCTAATACACCTTCTATGA
Eurylepis_taeniolatus GAGCCTCATACCCCGATTTTCGATACGACCAACTAATACACCTCCTATGA
Novoeumeces_schneideri GAGCCTCGTACCCACGTTTCCGATATGATCAGCTCATACACCTACTATGA
Scincus_scincus GCGCCTCCTATCCACGTTTCCGATACGACCAATTAATACACCTATTATGA
Ophiomorus_punctatissimus GAGCATCATACCCCTCGCTTTTCGATACGACCAACTAATACACCTATTATGA
Ablepharus_pannonicus GGGCAGCATACCCACGATTTTCGCTATGATCAACTAATACACCTCCTATGA
Asymblepharus_alaicus GAGCCGCATACCCCGATTTCCGCTACGACCAACTAATACACCTATTATGA
Asymblepharus_sikimmensis GAGCAGCATACCCCGATTTCCGCTATGACCAATTAATACATCTTTTATGA
Sphenomorphus_indicus GAGCATCATACCCCGCTTCCGATATGACCAACTAATACACCTTCTATGA
Scincella_rupicola GAGCATCCTACCCCGCTTTTCGATATGACCAACTAATACACCTCTTATGA
Scincella_lateralis GAGCATCATACCCACGATTCCGATACGATCAACTAATACACCTGCTATGA
Scincella_tsinlingensis GTGCATCATACCCCGATTTCCGGTATGACCAACTAATACACCTCTTATGA
Scincella_potanini GAGCATCATACCCCGTTTCCGATACGACCAATTAATGCACCTACTATGA
Eumeces_quadrilineatus GAGCCTCCTACCCCGTTTCCGATACGACCAACTCATGCACCTCTTATGA
Eumeces_capito GGGCCTCTTACCCGCGTTTCCGATATGACCAACTCATAACCTTTTGTGA
Eumeces_gilberti GAGCCTCCTACCCACGCTTCCGATACGACCAACTCATAACCTTTTATGA
Eumeces_skiltonianus GAGCCTCCTACCCACGCTTCCGATATGATCAACTCATAACCTTTTATGA
Eumeces_egregius GAGCCTCCTTACCCCGTTTTCGTTATGACCAACTAATACACCTCTTATGA
Eumeces_anthracinus GAGCCTCCTTATCCACGCTTTTCGATACGACCAGCTCATGCACCTCCTATGA
Neoseps_reynoldsi GAGCCTCCTACCCGCGCTTCCGATATGACCAATTAATACACCTTCTATGA
Eumeces_brevirostris GAGCCTCCTACCCACGCTTCCGATACGACCAGCTCATGCACCTCTTATGA
Eumeces_callicephalus GCGCCACCTACCCGCGCTTCCGATACGACCAACTCATAACCTACTATGA
Eumeces_inexpectatus GAGCCTCCTACCCCGCTTCCGATATGACCAACTCATGCACCTTTTATGA
Eumeces_obsoletus GAGCCTCCTACCCCGCTTCCGATACGATCAACTCATGCACCTATTATGA
Eumeces_multivirgatus GAGCCTCCTATCCCGCTTCCGATATGACCAACTCATAACCTATTATGA
Eumeces_fasciatus GAGCCTCCTACCCCGCTTCCGATATGACCAGCTCATAACCTATTATGA
Eumeces_laticeps GAGCCTCCTACCCCGCTTCCGATATGACCAGCTCATAACCTACTATGA
```


251-300

Qualifiers1	.....
Qualifiers2	.D>>>.....D>>>.AC>>>..COD..AC>>>.....T>>>.....
Eremias_grammica	GCCCCGAGTATTT-AAGGGTACTTTGATAGAGTAAATTACAGGGATTAAT
Platysaurus_capensis	GCCCCGAACGTAT-AAGGACTACTTTGATAGAGTAGAACATAGGGACTAAA
Mabuya_aurata	GCCCCGAATGGTCTAAGGATTACTTTGATAGAGTAAAAACAGAGGTAAAA
Chalcides_ocellatus	GCCTGAATTTT--AAGGGCTACTTTGATAGAGTATTCTACAGGGGTAAAA
Eurylepis_taeniolatus	GCCCCGAACACCC-AAGGGTACTTTGATAGAGTACAACACAGGGGTAAAA
Novoeumeces_schneideri	GCCCCGAGCTCCC-AAGGACTACTTTGATAGAGTAAACACACAGGGGTAAAA
Scincus_scincus	GCCCCGAACGATTTAAGGAATACTTTGATAGAGTAAACACACAGGGGTAAAA
Ophiomorus_punctatissimus	GCCCCGAAAATT--AAGGGTACTTTGATAGAGTACATTACAGGGGTAAAA
Ablepharus_annonicus	GCCCCGAAACAT--AAGGATTACTTTGATAGAGTAAAATACAGGGACTAA-
Asymblepharus_alaicus	GCCCCGAATGAC--AAGGATTACTTTGATAGAGTAAAATATAGGGATTAA-
Asymblepharus_sikimensis	GCCCCGAATTAC--AAGGATTACTTTGATAGAGTAAAATAGAGGGCTCA-
Sphenomorphus_indicus	GCCCCGAACTT---AAGGATTACTTTGATAGAGTAAACTATAGAGGTTTAA
Scincella_rupicola	GCCCCGAATTTT--AAGGACTACTTTGATAGAGTAAAACACAGAGGTAAAA
Scincella_lateralis	GCCCCGACTTC---AAGGATTACTTTGATAGAGTAAAACAAAGGGGTGAAA
Scincella_tsinlingensis	GCCTGAACTTC--AAGGATTACTTTGATAGAGTAAAACATAGAGGTAAAA
Scincella_potanini	GCCCCGAATTTT--AAGGGTACTTTGATAGAGTAAAACACAGAGGTAAAA
Eumeces_quadrilineatus	GCCCCGAAACT---AGGGGCTACTTTGATAGAGTAGAACACAGAGGTAAAA
Eumeces_capito	GCCCCGAAACT---AAGGGTACTTTGATAGAGTAAAACACAGAGGTAAAA
Eumeces_gilberti	GCCCCGAAAC----AAGGACTACTTTGATAGAGTAGAACACAGGGGTAAAA
Eumeces_skiltonianus	GCCCCGAAAC----AAGGACTACTTTGATAGAGTAGAACACAGGGGTAA-
Eumeces_egregius	GCCCCGAAGCCC--AAGGGCTACTTTGATAGAGTAAAACACAGAGGTAAAA
Eumeces_anthracinus	GCCCCGAAGTTT--AAGGATTACTTTGATAGAGTAAAATACAGAGGTAA-
Neoseps_reynoldsi	GCCCCGAAACTC--AAGGGCTACTTTGATAGAGTAAATTACAGAGGTCAA
Eumeces_brevirostris	GCCCCGAAACTT--AAGGGCCACTTTGATAGAGTAGAACACAGAGGTAAAA
Eumeces_callicephalus	GCCCCGAAACTTT-AAGGGCTACTTTGATAGAGTAAAACACAGAGGTAAAA
Eumeces_inexpectatus	GCCCCGAAGCTC--AAGGATTACTTTGATAGAGTAAAACACAGAGGTAAAA
Eumeces_obsoletus	GCCCCGAACTC---AAGGGCTACTTTGATAGAGTAGAACACAGAGGTAAAA
Eumeces_multivirgatus	GCCCCGAAGCCC--AAGGGTACTTTGATAGAGTAAAATACAGAGGTTTAA
Eumeces_fasciatus	GCCCCGAAACCT--AGGGGTTACTTTGATAGAGTAAAACATAGAGGTAAAA
Eumeces_laticeps	GCCCCGAAACCT--AGGGGTTACTTTGATAGAGTAAAACACAGAGGTAAAA

301-350

```
Qualifiers1      .....ILE....GLN.....
Qualifiers2      ..T>>>>AA>>>>*....*<<<<<AA<<<<T.....<<<<T....<<
Eremias_grammica TACCCCTCACCTCCT----TTAGAAGAATAGGAATTGAACCTACACCTGA
Platysaurus_capensis GCCCCCTCAGTTTC-----TAAAAAGATAGGAATTGAACCTATGCTTGA
Mabuya_aurata      CTCCTCTCACTCCCTA---CTAGAAAAATAGGACACGAGCCTATACTAA
Chalcides_ocellatus ATCCCCTTATTTCTTACA-CTAGAAAAACAGGACTTGAACCTGCACCAAA
Eurylepis_taeniolatus ATCCCCTCACTTCCTTCC-CTAGAAAAACAAGACTTGAACCTGCACCAAA
Novoeumeces_schneideri ATCCCCTCATTTCTCA--TTAGAAAAACAGGAACCGAACCTGCACCAAA
Scincus_scincus    ATCCCCTCATTTCTA---TTAGAAAAACAGGAACCTGAACCTGCACCAAG
Ophiomorus_punctatissimus ATCCCCTCATTTCTA---CTAGAAAAACAGGATACGAACCTGCACTAAA
Ablepharus_annonicus CCCCCCTCATTTCTTTTC-CTAGAAAAACAGGACACGAACCTGCACCAAA
Asymblepharus_alaicus CCTCCCTCATTTCTTATT-TTAGAAAAACAGGACACGAACCTGCACTAAA
Asymblepharus_sikimensis ACCCCCTCATCTCCTTA--TTAGAAAAACAGGATACGAACCTGTGCCAAA
Sphenomorphus_indicus ACCCTCTCCTTTCTA---TTAGAAAAACAGGACACGAACCTGCACATAA
Scincella_rupicola CTCCTCTCACTTCCCA---ATAGAAAAACAGGATACGAACCTGCACTAAA
Scincella_lateralis ATCCCCTCATTTTC-----TTAGAAAAACAGGACACGAACCTGCACCAAA
Scincella_tsinlingensis ACCCTCTCATTTCTCT---ATAGAAAAACAGGACACGAACCTGTGCCAAA
Scincella_potanini ATCCCCTCATTTCTCTG---TTAGAAAGACAGGACACGAACCTGCACCGAA
Eumeces_quadri-lineatus ATCCCCTCATTTCCACA-TTAGAAAAACAGGACCTGAACCTGCACCAAG
Eumeces_capito     ATCCTCTCATCTCCTA---TTAGAAAAACAGGGTCTGAGCCTGCACTTAA
Eumeces_gilberti  ACCCCCTCTTTTCTA---ATAGAAAAACAGGTCCCGAACCTGCACTAAA
Eumeces_skiltonianus ACCCCCTCATTTCTCT---ATAGAAAAACAGGATCCCGAACCTGCACTAAA
Eumeces_egregius  ATCCTCTCATTTCCATA-CTAGAAAAACAGGACCTGAACCTGCACCAAG
Eumeces_anthracinus ACCCTCTCCTTTCTATA-TTAGAAAAACAGGACCTGAACCTGCACCAAA
Neoseps_reynoldsi  GTCCTCTCATTTCTATA-CTAGAAAAACAGGACCTGAACCTGCACCAAA
Eumeces_brevirostris GCCCTCTCATTTCCCCGCACTAGAAAAACAGGACTCGAACCTGTACTAAG
Eumeces_callicephalus ATCCCCTCATTTCCACA-CTAGAAAAACAGGAACCGAACCTGCACTAAG
Eumeces_inexpectatus ACCCTCTCATTTCTCAA-TTAGAAAAACAGGGTCCCGAACCTGCACTAAG
Eumeces_obsoletus ACCCCCTCATTTCTAT--ATAGAAAAACAGGATCCCGAACCTGCACTAAA
Eumeces_multivirgatus ACCCTCTCATTTCTATA-CTAGAAAGACAGGACCCGAACCTGCACTAAG
Eumeces_fasciatus ACCCTCTCATTTCCACA-CTAGAAAGACAGGATCCCGAACCTGCACTAAA
Eumeces_laticeps  ATCCTCTCATTTTCCACACTAGAAAGACAGGACCCGAACCTGCACCAAA
```

351-400

```
Qualifiers1 .....GLNMET.....
Qualifiers2 <AC..COD..<<<AC.<<<D.....<<<D..<<<<<AAA>>>>..D>
Eremias_grammica GATCCCAAACACTCTCTGTACTACCTCTATACTACCTTCCAGTAAAGTCAG
Platysaurus_capensis GAACCCAAAATTCTCCGTACCTCCACTATACTACCCTTTAGTAAAGTCAG
Mabuya_aurata GGGCCCAAACCCCTCGTACTACCATTATACTATTTCTAGTAAAGTCAG
Chalcides_ocellatus GAGCTCAAACCCCTTTGTACTCCACTATACTATTCTCTAGTAAAGTCAG
Eurylepis_taeniolatus GAGCTCAAACCCCTTTGTACTCCACTATACTATTTCTAGTAAAGTCAG
Novoeumeces_schneideri GAGCTCAAACCCCTCGTACTTCCACTATACTATTTTCTAGTAAAGTCAG
Scincus_scincus GAGCCCAAACCCCCCGTACTTCCATTATACTATTTTCTAGTAAAGTCAG
Ophiomorus_punctatissimus GAGCTCAAACCCCTCTGTACTTCCACTATACTATTTTCTAGTAAAGTCAG
Ablepharus_annonicus GAGCTCAAACCCCTCTGTACTTCCCTCTATACTACTTTCTAGTAAAGTCAG
Asymblepharus_alaicus GAGCTCAAACCCCTTCGTACTTCCACTATACTACTTTCTAGTAAAGTCAG
Asymblepharus_sikimensis GAGCTCAAACCCCTTAGTACTTCCACTATACTATTCTCTAGTAAAGTCAG
Sphenomorphus_indicus GGGCTCAAACCCCTCCGTACTCCACTATACTATTTTCTAGTAAAGTCAG
Scincella_rupicola GGGCTCAAACCCCTCGTACTTC-ATTATACTACTTTCTAGTAAAGTCAG
Scincella_lateralis GGGCCCAAACCCCTATGTACTTC-TCTATACTATTTTCTAGTAAAGTCAG
Scincella_tsinlingensis AGGCCCAAACCCCTTTGTACTTC-ATTATACTACTTTCTAGTAAAGTCAG
Scincella_potanini AGGCCCAAACCCCTTCGTACTCC-ACTATACTACTCTCTAGTAAAGTCAG
Eumeces_quadrilineatus GGGCTCAAACCCCCCGTACTTCCACTATACTATTTTCTAGTAAAGTCAG
Eumeces_capito GGGCCCAAACCCCTTTGTACTTCCACTATACTATTTTCTAGTAAAGTCAG
Eumeces_gilberti GGGCCCAAACCCCTCTGTACTTCCACTATACTACTTTCTAGTAAAGTCAG
Eumeces_skiltonianus GGGCCCAAACCCCTCTGTACTCCACTATACTACTTTCTAGCAAAGTCAG
Eumeces_egregius AGGCTCAAACCCCTCGTACTTCCACTATACTATTTTCTAGTAAAGTCAG
Eumeces_anthracinus GAGCTCAAACCCCTCTGTACTTCCACTATACTATTTTCTAGTAAAGTCAG
Neoseps_reynoldsi GAGCTCAAACCCCTCTGTACTTCCACTATACTATTTTCTAGTAAAGTCAG
Eumeces_brevirostris GGGCTCAAACCCCGCGTACTTCCACTATACTATTCTCTAGTAAAGTCAG
Eumeces_callicephalus GGGCTCAAACCCCTTTGTACTTCCATTATACTATTCTCTAGTAAAGTCAG
Eumeces_inexpectatus GAGCCCAAACCCCTCGTACTTCCACTATACTATTTTCTAGTAAAGTCAG
Eumeces_obsoletus GGACTCAAACCTCTGTACTTCCACTATACTACTCTCTAGTAAAGTCAG
Eumeces_multivirgatus GGGCTCAAACCCCCGGTACTTCCACTATACTACTCTCTAGTAAAGTCAG
Eumeces_fasciatus GAGCTCAAACCCCTCTGTACTTCCACTATACTACTCTCTAGTAAAGTCAG
Eumeces_laticeps GAGCTCAAACCCCTCTGTACTTCCACTATACTACTCTCTAGTAAAGTCAG
```


401-450

Qualifiers1	.....
Qualifiers2	>>.....D>>>..AC>>>..COD..AC>>>.....T>>>>.....T>>>>
Eremias_grammica	CTAACTAAGCTCTTGGGCCCATAACCCGAAAATGTTGG-TCAAACCCCTC
Platysaurus_capensis	CTAATTAAGCTCTTGGGCCCATAACCCGAAAATGTTGGTTAAATCCCTC
Mabuya_aurata	CTAATTAAGCTTTTCGGGCCCATAACCCGAAAATGTTGGTTTAAACCCCTC
Chalcides_ocellatus	CTAATTAAGCTTTTCGGGCCCATAACCCGAAAATGTTGGTTTAAACCCCTC
Eurylepis_taeniolatus	CTAATTAAGCTTTTCGGGCCCATAACCCGAAAATGTTGGTTTAAACCCCTC
Novoeumeces_schneideri	CTAATCAAGCTCTCGGGCCCATAACCCGAAAATGTTGGTTTAAACCCCTC
Scincus_scincus	CTAATAAAGCTCTCGGGCCCATAACCCGAAAATGTTGGTTTAAATCCCTC
Ophiomorus_punctatissimus	CTAATTAAGCTTTTCGGGCCCATAACCCGAAAATGTTGGTTTAAACCCCTC
Ablepharus_annonicus	CTAATTAAGCTTTTCGGGCCCATAACCCGAAAATGTTGGTTTAAACCCCTC
Asymblepharus_alaicus	CTAATAAAGCTTTTCGGGCCCATAACCCGAAAATGTTGGTTTAAACCCCTC
Asymblepharus_sikimmensis	CTAATTAAGCTTTTCGGGCCCATAACCCGAAAATGTTGGTTTAAACCCCTC
Sphenomorphus_indicus	CTAATTAAGCTTTTCGGGCCCATAACCCGAAAATGTTGGTTTAAACCCCTC
Scincella_rupicola	CTAAATAAGCTTTTCGGGCCCATAACCCGAAAATGTTGGTTCAACTCCCTC
Scincella_lateralis	CTAACTAAGCTTTTCGGGCCCATAACCTCGAAAATGTTGGTTTAAACCCCTC
Scincella_tsinlingensis	CTAACTAAGCTTTTCGGGCCCATAACCCGAAAATGTTGGTTTAAACCCCTC
Scincella_potanini	CTAATTAAGCTTTTCGGGCCCATAACCCGAAAATGTTGGTTTAAACCCCTC
Eumeces_quadri-lineatus	CTAATTAAGCTTTTCGGGCCCATAACCCGAAAATGTTGGTTTAAACCCCTC
Eumeces_capito	CTAATTAAGCTTTTCGGGCCCATAACCCGAAAATGTTGGTTTAAACCCCTC
Eumeces_gilberti	CTAATTAAGCTTTTCGGGCCCATAACCCGAAAATGTTGGTTTAAACCCCTC
Eumeces_skiltonianus	CTAATTAAGCTCTCGGGCCCATAACCCGAAAATGTTGGTTTAAAGCCCTC
Eumeces_egregius	CTAATTAAGCTTTTCGGGCCCATAACCCGAAAATGTTGGTTTAAACCCCTC
Eumeces_anthracinus	CTAACTAAGCTTTTCGGGCCCATAACCCGAAAATGTTGGTTTAAATCCCTC
Neoseps_reynoldsi	CTAATTAAGCTTTTCGGGCCCATAACCCGAAAATGTTGGTTTAAATCCCTC
Eumeces_brevirostris	CTAATTAAGCTTTTCGGGCCCATAACCCGAAAATGTTGGTTCAAACCCCTC
Eumeces_callicephalus	CTAATTAAGCTTTTCGGGCCCATAACCCGAAAATGTTGGTTTAAACCCCGC
Eumeces_inexpectatus	CTAATTAAGCTTTTCGGGCCCATAACCCGAAAATGTTGGTTTAAACCCCGC
Eumeces_obsoletus	CTAATTAAGCTTTTCGGGCCCATAACCCGAAAATGTTGGTTTAAACCCCGC
Eumeces_multivirgatus	CTAATTAAGCTTTTCGGGCCCATAACCCGAAAATGTTGGTTTAAACCCCGC
Eumeces_fasciatus	CTAATTAAGCTTTTCGGGCCCATAACCCGAAAATGTTGGTTTAAACCCCGC
Eumeces_laticeps	CTAATTAAGCTTTTCGGGCCCATAACCCGAAAATGTTGGTTTAAACCCCGC

451-500

Qualifiers1	.....MET.ND2.....
Qualifiers2	AA>>>>*.1.
Eremias_grammica	CTTTACTA-ATGAACCCACTAATCTCATCCCTAATACTCTCCAACCTTAGC
Platysaurus_capensis	CTCTACTA-ATAAACCCCCACATCCTAACCCCTAATGCTCTCAAGCCTAGC
Mabuya_aurata	CTATACTA-ATGAACCCACTTATATATTCACTCATTCTATCAAGCATTGC
Chalcides_ocellatus	CTCTACTA-ATGAACCCAATCATAATAGCCATTATTATCTCAAGCCTAGC
Eurylepis_taeniolatus	CCCTACTA-ATGAACCCAATTATATCATCCATTATCTTGTCAGCCTGGC
Novoeumeces_schneideri	CTCTACTA-ATGAACCCCTTATATCATCAGTTATCCTATCAAGCCTAGC
Scincus_scincus	CTCTACTA-ATGAATCCCCTCATATTCTCAATCATTCTGTCCAGCCTAGC
Ophiomorus_punctatissimus	CTCTACTAAATGAATCCACTGATAACATCACTAATACTTTCAAGCCTAGC
Ablepharus_annonicus	CTCTACTA-ATGAGCCCGATTATAACTTCACTAATTATATCAAGCCTCGC
Asymblepharus_alaicus	CTCTACTA-ATGAATCCAATTATGACCTCACTAATTATCTCAAGCCTAGC
Asymblepharus_sikimmensis	CTTTACTA-ATGAACCCCTTAAATAACTTCTTTAATTATCTCTAGTTTAGC
Sphenomorphus_indicus	CTCTACTA-ATGAGCCCAATAATAACTTCCCTAATTGTATCAAGCATAGC
Scincella_rupicola	CTCTACTA-ATGAATCCTATTATAACCTCACTAATTATATCTAGCCTAGC
Scincella_lateralis	CTATACTA-ATGAACCCCTATAATATCTTTCAATTATTTTTATCGAGCCTGGC
Scincella_tsinlingensis	CCTTGCTA-ATGAACCCCTAATATCCTCATTGATCCTTTCAAGCCTCGC
Scincella_potanini	CCCTACTA-ATGAACCCCAATTATACTCTCACTAATCATCTCAAGCCTTGC
Eumeces_quadrilineatus	CTCTACTA-ATGAACCCAATTATAACGTCAATTATTCTTTCAAGCCTGGC
Eumeces_capito	CTCTACTA-ATGAACCCGGTAGTATTATCAATTATTCTCTCAAGCCTCGC
Eumeces_gilberti	CTCTACTA-ATGAACCCCTATTATATCCTCAATCATAGTTTCAAGCCTAGC
Eumeces_skiltonianus	CTCTGCTA-ATGAACCCCTATTATATCATCAATCATAATCTCAAGCTTAGC
Eumeces_egregius	CTCTACTA-ATGAGCCCGATCATATTATCAATTTTTATTTCAAGTTTAGC
Eumeces_anthracinus	CTCTACTA-ATGAGCCCCCTTATACTATCAATTATTATATCAAGCCTAGC
Neoseps_reynoldsi	CTCTACTA-ATGAATCCAATCATACTGTCAATTATTATCTCAAGTTTAGC
Eumeces_brevirostris	CCTTACTA-ATGAACCCAATCATATCTTCAATCCTTATCTCAAGCCTAGC
Eumeces_callicephalus	CTCTACTA-ATGAACCCAATCATATCATCAATTATTATTTCAAGCTTAGC
Eumeces_inexpectatus	CTTTACTA-ATGAACCCAATTATATTATCAGTCATTATTTCAAGCTTAGC
Eumeces_obsoletus	CTCTACTA-ATGAACCCAATCATAATATCAATCATTATTTCAAGCCTGGC
Eumeces_multivirgatus	CTCTACTA-ATGAACCCGATCATATCATCAATTATTATCTCAAGCCTGGC
Eumeces_fasciatus	CTCTACTA-ATGAACCCAATCATAACATCAATTATTATCTCAAACCTAGC
Eumeces_laticeps	CTCTACTA-ATGAACCCAATCATAACATCAATTATTATCTCAAGCCTAGC

501-550

Qualifiers1

Qualifiers2

Eremias grammica

Platysaurus capensis

Mabuya aurata

Chalcides ocellatus

Eurylepis taeniolatus

Novoeumeces schneideri

Scincus scincus

Ophiomorus punctatissimus

Ablepharus pannonicus

Asymblepharus alaicus

Asymblepharus sikimensis

Sphenomorphus indicus

Scincella rupicola

Scincella lateralis

Scincella tsinlingensis

Scincella potanini

Eumeces quadrilineatus

Eumeces capito

Eumeces gilberti

Eumeces skiltonianus

Eumeces egregius

Eumeces anthracinus

Neoseps reynoldsi

Eumeces brevirostris

Eumeces callicephalus

Eumeces inexpectatus

Eumeces obsoletus

Eumeces multivirgatus

Eumeces fasciatus

Eumeces laticeps

.....
.1
CCTAGGGGTAATCATTACCGCCACCAGCTTTCACTGATTCCTAGCATGAA
CATCGGAACCATCATTACAATATCTAGCACCCACTGACTAATCGCCTGAG
AACAGGAACAATTATTACAATATCAAGTTTCCACTGACTCATAGCATGAG
CTTGGGCACAGTCATTACAATATCGAGCTACCCACTGAATATTGGCCTGAA
ACTGGGCACAATCATTACAATAGCAAGCCACCATTGACTGCTAGCCTGAA
CCTAGGCACAGTCATTACAGCATCAAGCCACCATTGACTCCTAGCCTGAA
CCTAGGTACCGTCATTACAATATCAAGCCACCATTGACTTCTTGCCTGAA
CTTAGGCTCAATCATCACCATATCTAGCTTCCACTGACTAATTGCTTGAA
CCTAGGTACCATTATTACATTAGCCAGCTACCCACTGACTGCTGGCCTGAG
CCTAGGCACAATCATCAGCTATCAAGCTACCCACTGATTATTGGCCTGAA
CCTAGGCACAATCATTACATTATCTAGCCACCATTGATTATTAGCCTGAC
CCTCGGCACAATTATCACAATATCAAGCTACCATTGACTGCTCGCCTGAA
TTTAGGCACAGTAATCACCATAACAAGCTACCCACTGACTACTAGCCTGAG
CTTAGGAACAATAATTACAATATCTAGTTACCATTGACTACTAGCCTGAC
CCTAGGCACAGTCATCACAATATCAAGCTATCACTGACTATTAGCCTGAG
CTTAGGCACAGTTATCACCATATCCAGCTTTTCACTGACTACTCGCTTGAG
CTTTGGCACTATCATCACCATATCCAGCCACCATTGACTACTGGCTTGAA
CCTGGGCACCATCATTACTATATCCAGCCACCATTGACTATTAGCCTGAA
CCTAGGCACCATCATCACCATATCCAGCCATCATTGATTAATAGCCTGAA
CTTGGGCACCATTATCACCATATCCAGCCACCATTGACTTCTAGCCTGAA
CCTCGGCACACTATTATTACTATATCCAGCCACCATTGACTATTAGCCTGAA
CCTAGGCACCATCATCACCAGCAGCCAGCCACCATTGGCTTATAGCCTGAA
CCTGGGCACACTATCATCACCATAACCAGCCATCATTGACTTCTAGCCTGAA
CTTAGGCACACTATTATTACCATATCAAGCTACCATTGACTACTAGCCTGAA
CTTGGGCACCATCATCACCATGTCCAGCCACCATTGACTGCTAGCCTGAG
CCTAGGCACACTATCATTACTATATCCAGCCACCATTGACTGCTAGCCTGAG
CCTGGGCACCATCATCACTATGTCCAGCCACCATTGACTACTAGCCTGAG
CCTAGGCACCATCATTACCATATCTAGTCACCATTGATTAATGGCCTGAG
CCTGGGCACCATCATTACTATATCTGGACACCATTGACTCATGGCCTGGG
CCTGGGCACCATCATTACTATATCTGGGCACCATTGACTCATAGCCTGGG

551-600

Qualifiers1	.....
Qualifiers2	..1..
Eremias_grammica	TCCGGCTAGAACTAAACACCCTAGCCATTATTCCCATCCTAGCCAAACAA
Platysaurus_capensis	CAGGACTAGAAATTAACACCCTAGCTATCATCCCCCTAATCACCAAACCA
Mabuya_aurata	TCCGGACTAGAACTAAATACCCTCGCAATTATTCCAATTATCGCAAACAA
Chalcides_ocellatus	TTGGCCTAGAACTAAATACCCTGGCGATCATCCCCTATTATTGCAAACAA
Eurylepis_taeniolatus	TTGGACTAGAACTAAACACGCTAGCAATTATTCCAATTATCGCAAACAA
Novoeumeces_schneideri	TCCGGACTAGAAATAAATACACTAGCAATTATTCCAATCATCGCAAACCA
Scincus_scincus	TCCGGACTAGAACTAAATACACTAGCCATCATTCCAATTATCGCAAACAA
Ophiomorus_punctatissimus	TTGGATTAGAGTTAAACACACTAGCAATTATTCCAATTATCGCAAACAA
Ablepharus_annonicus	TTGGCCTAGAACTTAACACCCTAGCAATTATCCCCATCATCGCACAAACAA
Asymblepharus_alaicus	TAGGCCTAGAACTCAATGCCTTAGCAATTATTCCCATTATTGCCAAACAC
Asymblepharus_sikimmensis	TAGGTTTAGAACTTAATACACTCGCAATTATTCCCCTAATCGCAGAACAA
Sphenomorphus_indicus	TTGGATTAGAACTCAACACGCTAGCTATTATTCCAATTATCGCAAAGCCC
Scincella_rupicola	TTGGATTAGAACTAAACACACTAGCAATTATCCCAATTATCGCTAAACAA
Scincella_lateralis	TCCGGCTTAGAATTAATACGCTCGCTATTATTCCAATTATTGCTAAACAA
Scincella_tsinlingensis	TTGGGCTAGAACTAAATACCCTTGCCGTTATCCCTGTTATTGCAAACAC
Scincella_potanini	TGGGGTTAGAACTAAATACCCTTGCCATTATCCCACTTATTGCTAAACTT
Eumeces_quadri-lineatus	TTGGATTAGAACTAAACACACTAGCAATTATCCCAATTATTGCAAACAC
Eumeces_capito	TCCGGCCTAGAAATTAACACACTAGCAATCATCCCAATTATCGCAAACAA
Eumeces_gilberti	TTGGACTAGAACTAAACACACTAGCAATTATTCCCATCATTGCAAACAA
Eumeces_skiltonianus	TCCGGACTAGAACTAAACACACTAGCAATTATCCCCGTCATTGCAAACAA
Eumeces_egregius	TCCGGACTAGAACTAAACACATTAGCAATTATTCCCATTATCGCAAACAG
Eumeces_anthracinus	TCCGGACTAGAACTAAACACACTAGCAATCATCCCCTATTATTGCAAACAA
Neoseps_reynoldsi	TCCGGACTAGAAATAAACACACTAGCGATCATCCCCGTCATTGCAAACAA
Eumeces_brevirostris	TTGGACTAGAGCTAAACACACTAGCAATTATCCCCATCATCGCAAACAA
Eumeces_callicephalus	TCCGGACTAGAAATTAACACATTAGCAATTGTCCCAATTATCGCAAACAA
Eumeces_inexpectatus	TCCGGATTAGAGTTAAACACATTAGCAATCGTCCCAATCATTGCAAACAA
Eumeces_obsoletus	TCCGGCCTAGAAATTAACACACTAGCAATTATCCCCATCATCGCAAACAA
Eumeces_multivirgatus	TTGGATTAGAAATTAACACACTGGCTATTGTCCCAATTATCGCAAACAA
Eumeces_fasciatus	TCCGGACTAGAAATTAACACACTAGCAGTCATCCCAATTATCGCAAACAA
Eumeces_laticeps	TTGGGTTAGAAATTAACACACTAGCAATCGTCCCAATTATCGCAAACAA

651-700

Qualifiers1	.....
Qualifiers2	.1
Eremias_grammica	AACAGCATCCACCATCATCCTATTCTCAAGCACATTTAATGCTTGACACA
Platysaurus_capensis	AGCTGCCTCCTCAATAATCCTATTCTCAAGCACATTCAACGCATGGCATA
Mabuya_aurata	TACAGCCTCTGCTATAATTCTTTTCGCCAGCACAACAAATGCATGAACAA
Chalcides_ocellatus	TGCCGCCTCAGCCATAGTCTTATTCTCAAGCTCAACCAACGCCTGATCAA
Eurylepis_taniolatus	AGCAGCCTCAGCAATACTACTGTTCTCCAGCACCATCAACGCATGACATA
Novoeumeces_schneideri	TGCAGCCTCCGCCATACTCCTATTCTCCAGCACCATCAATGCATGATCAA
Scincus_scincus	CGCAGCCTCCGCTATACTCTTATTCTCCGCCACCACCAATGCATGAACAA
Ophiomorus_punctatissimus	CGCAGCCTCAGCTATAGTTTTTATTTGCTAGCACTACCAATGCCTGACACA
Ablepharus_annonicus	TGCGGCCTCAGCCATATTACTATTTGCAAGCACCACAAACGCCTGGGCCA
Asymblepharus_alaicus	AGCCGCATCAGCGTTGCTCCTATTTCGCAAGTATTATTAATGCTTGATCCA
Asymblepharus_sikimensis	AGCCGCATCAGCACTACTTCTATTTGCCAGCACCACAAACGCCTGACTTA
Sphenomorphus_indicus	AGCAGCCTCCGCCACACTACTATTTTCAAGCACAGTAAACGCCTGGGCCAA
Scincella_rupicola	AGCAGCCTCCGCTACAGTATTATTCTCTAGCATAATTAACGCCTGATCAA
Scincella_lateralis	AGCCGCCTCAGCCACAATCCTATTTTTCCAGCACAATCAACGCCTGACATA
Scincella_tsinlingensis	AGCTGCCTCAGCCACACTTCTATTCTCAAGCACAATTAATGCTTGATCAA
Scincella_potanini	TGCTGCCTCAGCCACCGTACTGTTTTCTAGTGTAATCAATGCCTGATCTA
Eumeces_quadri-lineatus	CGCCGCATCCGCTATAGTCTTATTCTCCAGCACCATCAATGCATGATCAA
Eumeces_capito	CGCTGCCTCCGCCACTGTGCTATTTTCTAGCACTATTAATGCGTGATCAA
Eumeces_gilberti	CGCTGCCTCCGCCACAGTTCTATTTCGCCAGCACCATCAATGCCTGATCAA
Eumeces_skiltonianus	CGCCGCCTCTGCCACAGTATTATTCTCCAGCACCATCAATGCCTGATCAA
Eumeces_egregius	TGCAGCCTCCGCCACTGTATTATTCTCCAGCACCATCAATGCCTGATCAA
Eumeces_anthracinus	TGCAGCCTCCGCCACAGTACTATTCTCCAGCACTATTAATGCTTGATCAA
Neoseps_reynoldsi	TGCAGCCTCCGCCACAGTGCTATTTTCCAGCACTATTAATGCCTGATCAA
Eumeces_brevirostris	GGCTGCCTCTGCTACAGTGTTATTCTCTAGCACCATCAACGCCTTGATCAA
Eumeces_callicephalus	CGCTGCCTCCGCCACGGTACTATTTCGCCAGCACCATTAATGCCTGAACAT
Eumeces_inexpectatus	CGCCGCTTCCGCCACAATCCTATTTCGCCAGCACAATTAATGCCTGAACAT
Eumeces_obsoletus	CGCTGCCTCCGCCACAATTCTATTTCGCCAGCACCATTAATGCCTGAACAT
Eumeces_multivirgatus	TGCTGCCTCCGCCACAATTTTATTTCGCCAGCACCATTAATGCCTGAACAA
Eumeces_fasciatus	TGCTGCCTCCGCCACAATTTTATTTCGCCAGCACCATTAATGCCTGAACCA
Eumeces_laticeps	TGCTGCCTCCGCCACAATTTTATTTCGCCAGCACCATTAATGCCTGAGCCA

701-750

Qualifiers1	.....
Qualifiers2	..1..1..1..1..1..1..1..1..1..1..1..1..1..1..1..1..
Eremias_grammica	CCGGAATCTGAGACATCACTCAACTATCCACATTTTCTACTACTGTGATA
Platysaurus_capensis	CTGGCCAATGAGACATTTTCACTAATAACAAACGAACCAGCCTGCACCCTA
Mabuya_aurata	CCGGAACATGAGACATCTCACAATAACAAACCAGCCATCTTGCATTCTA
Chalcides_ocellatus	CCGGCACATGAGACATTACACAATAACCAACCAAGAAGCCTGTATTATA
Eurylepis_taeniolatus	CCGGAACCTGAGACATTACCAACTTATATATCCGCCAGCATCCATTATA
Novoeumeces_schneideri	CCGGCACCTGAGACATCTACAGCTCACAAACCAACCAGCATGCATCATA
Scincus_scincus	CAGGCTCATGAGATATTCCCATCTCATAAATCAGCCAGCATCTATTATG
Ophiomorus_punctatissimus	CAGGAACATGAGACATTATGCAACTCACAAACCAACCCGCATGTATTATA
Ablepharus_annonicus	CCGGCACCTGAAACATCTTAGAACTCTCAAGTCAACCAGCCTCCATTATA
Asymblepharus_alaicus	CCGGAACCTGAAACATTTTGAATTTTCTGACCCGCAAGCCTCTATTATA
Asymblepharus_sikimensis	CAGGCACCTGAAATATTATCGAATTATCAAGTCAACCAGCGTCCATTATA
Sphenomorphus_indicus	CAGGAACCTGAGATATTACACAATAACAAACCAGCCAGCTTGCATTATA
Scincella_rupicola	CAGGAATCTGAGACATTATACAATAACCAACCTCCCGCCTGCATCATA
Scincella_lateralis	CAGGAACATGAGACATCTTACAGCTTACAACCAACCAGCCTGTATTATA
Scincella_tsinlingensis	CAGGCACCTGAGATATTATACAATAACCAACCAACCAGCCTGTATTATA
Scincella_potanini	CAGGAACCTGAGATATTTTACAGCTCACAAATCAACCAGCCTCTATTATA
Eumeces_quadri-lineatus	CAGGAACCTGGGACATCATACAACTGACAACCAAGCCCGCATGCGCCATA
Eumeces_capito	CCGGAGTCTGGGATATCACAGTTAACAAATCAGCCAGCATGTATCATA
Eumeces_gilberti	CAGGAACATGGGACATTTTACAGCTAACAAACCAACCCGCATGCATCATA
Eumeces_skiltonianus	CAGGAACATGGGACATCTCACAATAACAAACCAACCCGCATGCATCATA
Eumeces_egregius	CAGGGACCTGAGACATTTTACAGCTAACTAACCAGCCCGCATGCATCATA
Eumeces_anthracinus	CAGGAACATGAGACATCACCAATTAACCAACCAACCAGCATGTATCACA
Neoseps_reynoldsi	CAGGCACGTGAGACATCTCACAATAACCAATCAACCCGCATGCATCGTA
Eumeces_brevirostris	CGGGAGCCTGAGACATCTCACAATAACAAGCCCGCCCGCTTGCACCCTA
Eumeces_callicephalus	CCGGTTCCTGAGACATCTCACAATAACAAGCCCGCCTGCGTGCACCCTA
Eumeces_inexpectatus	CGGGTCTCTGAGACATTTTCACTAATAACAAGCCTACCCGCATGCACCCTT
Eumeces_obsoletus	CGGGTCTCTGAGACATTTTCACTAATAACAACCCCGCTTGCACCCTA
Eumeces_multivirgatus	CAGGCACCTGAGACATCTCACAATAACAACCCACCTGCTTGCACCCTA
Eumeces_fasciatus	CAGGCTCCTGAGACATTTTCACTAATAACAACCCGCCTGCTTGCACCCTG
Eumeces_laticeps	CAGGCTCCTGAGACATTTTCACTAATAACAACCCACCTGCTTGCACCCTG

751-800

Qualifiers1	.....
Qualifiers2	1..1.
<i>Eremias grammica</i>	CTAACAAATTGCACTAACCATAAAAGTAGGACTAGCACCCATACATTTCTG
<i>Platysaurus capensis</i>	CTAACCCCTTGCCCTAGCCATAAAAAGTTGGCCTAGCACCCTACACTTCTG
<i>Mabuya aurata</i>	CTAACAAATAGCACTCTCAATAAAAAGTAGGACTTGCCCCACTACACTTCTG
<i>Chalcides ocellatus</i>	TTAACAGTAGCTCTATCAATAAAAAGTAGGACTAGCCCCGCTACACTTCTG
<i>Eurylepis taeniolatus</i>	CTAACCAATAGCCCTTTCAATAAAAAGTAGGGCTGGCCCCCTTCTTCACTTCTG
<i>Novoeumeces schneideri</i>	CTAACCAATGGCCCTTATCAATAAAAGCTCGGACTTGCCCCACTACACTTCTG
<i>Scincus scincus</i>	CTAACCAATAGCACTAGCCATAAAAAGTAGGTCTTGCCCCACTACACTTCTG
<i>Ophiomorus punctatissimus</i>	CTAGCAATAGCACTATCAATAAAAAGTAGGATTAGCCCCACTCCACTTCTG
<i>Ablepharus pannonicus</i>	CTAACCATAGCCCTAGCAATAAAAAGTAGGACTCGCCCCACTACACTTCTG
<i>Asymblepharus alaicus</i>	TTAACGACTGCCCTCGCATTAAAATTAGGCCTTGCCCCACTACACTTCTG
<i>Asymblepharus sikimensis</i>	TTAACTATAGCACTGACAATAAAAATTGGGCCTTGCCCCACTCCACTTCTG
<i>Sphenomorphus indicus</i>	CTAACCATGGCCCTACTTATAAAGCTAGGCTTAGCCCCACTACACTTCTG
<i>Scincella rupicola</i>	CTAACCCCTCGCCCTATCAATAAAAAGTTGGCCTGGCCCCCATACACTTTTG
<i>Scincella lateralis</i>	TTAACCTTAGCCTTATCAATAAAAAGTAGGCCTTGCTCCACTACATTTTTG
<i>Scincella tsinlingensis</i>	CTAACTATGGCCCTCTCAATAAAAAGTAGGCCTCGCCCCATTACACTTCTG
<i>Scincella potanini</i>	TTAACCATAGCCCTATCAATAAAAAGTTGGCTTAGCCCCCTACACTTTTG
<i>Eumeces quadrilineatus</i>	CTAACCAATAGCCCTATCAATAAAAAGTAGGCCTTAGCCCCCTCCACTTCTG
<i>Eumeces capito</i>	TTAACAAATAGCCCTGTGATAAAAAGTAGGCCTCGCCCCCTCCACTTCTG
<i>Eumeces gilberti</i>	TTAACGATGGCACTATCAATAAAAAGTAGGACTCGCCCCATTACACTTCTG
<i>Eumeces skiltonianus</i>	TTAACCATAGCACTATCAATAAAAAGTAGGACTCGCCCCCTTCACTTCTG
<i>Eumeces egregius</i>	TTAACCAATAGCACTATCAATAAAAAGTAGGACTGGCCCCCTACACTTCTG
<i>Eumeces anthracinus</i>	CTAACCAATAGCACTGTCCATAAAAAGTAGGGCTCGCCCCACTTCACTTTTG
<i>Neoseps reynoldsi</i>	CTAACCAATGGCACTATCAATGAAAAGTAGGCCTAGCCCCACTTCACTTTTG
<i>Eumeces brevirostris</i>	TTAACGATGGCACTAGCAATAAAAAGTAGGCCTCGCCCCACTCCACTTCTG
<i>Eumeces callicephalus</i>	CTAACCAATAGCACTATCAATAAAAAGTAGGGTTGGCCCCCTCCACTTCTG
<i>Eumeces inexpectatus</i>	CTAACCAATAGCACTATCAATAAAAAGTAGGACTCGCCCCCTTCACTTCTG
<i>Eumeces obsoletus</i>	CTGACAATAGCACTATCAATAAAAAGTAGGATTAGCCCCGCTCCACTTCTG
<i>Eumeces multivirgatus</i>	CTAACCAATAGCACTAGCAATAAAAAGTAGGACTAGCCCCACTCCACTTCTG
<i>Eumeces fasciatus</i>	CTAACCAATAGCACTATCAATAAAAAGTAGGACTAGCCCCACTCCACTTCTG
<i>Eumeces laticeps</i>	CTAACCAATAGCACTATCAATAAAAAGTTGGACTAGCCCCACTCCACTTCTG

801-850

```
Qualifiers1 .....
Qualifiers2 .1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1
Eremias_grammica ACTTCCCGAAGTAATACAAGGTGTTACCCCTTTTCATCAGCCCTAATTATTA
Platysaurus_capensis ACTCCCAGAAGTAATACAAGGGACATCCATCAAAAACAACAATAATCATCA
Mabuya_aurata ATTACCAGAGGTTTTACAAGGGACCTCAATAAAAACAGCACTCATCATTG
Chalcides_ocellatus ATTACCAGAAGTACTCCAAGGATCAACCTTAAGCACAGCCCTGATTATTA
Eurylepis_taeniolatus ATTACCAGAAGTACTACAAGGCTCATCACTAAAAACAGCATTAAATTATCA
Novoeumeces_schneideri ACTGCCAGAGGTCTACAAGCATCCTCACTAAAAACAGCACTTATTATCA
Scincus_scincus ACTCCCAGAAGTACTACAAGCCTCCCCGCTAAAAACAGCACTAATTATCA
Ophiomorus_punctatissimus ATTGCCAGAAGTACTACAAGGCTCATCACTAAAAACAGCACTAATTATTA
Ablepharus_annonicus ACTACCAGAAGTCCTGCAAGGTTCCACCATCAAAAACAGCACTAATTATTA
Asymblepharus_alaicus ATTACCAGAAGTTTTACAGGGCACCCTATACAAACAGCACTAATTATTA
Asymblepharus_sikimensis ATTACCAGAAGTATTACAAGGCACCACCATGAAAACAGCACTAATCATT
Sphenomorphus_indicus ATTGCCAGAAGTCCTACAGGGCTCAACCCTAAAAACAGCACTAGTCATT
Scincella_rupicola ACTCCCAGAGGTCTACAAGGAACCCCTATAAAAACAGCACTTATTATTG
Scincella_lateralis ACTCCCAGAAGTCTTACAAGGATCAACCATAAAAACAGCACTTATTATTT
Scincella_tsinlingensis ACTGCCAGAGGTACTCCAAGGCACATCATTAAAAACAGCATTAAATTATTG
Scincella_potanini ACTCCCAGAAGTACTTCAGGGCACTTCCCTAAAAACAGCATTAAATTATCA
Eumeces_quadrilineatus ACTACCAGAAGTGCTCCAAGGCTCCCCACTAAAAACTGCCTAATTATTG
Eumeces_capito ATTACCAGAAGTCCTACAAGGCACCCCTATAAACACAGCACTAATCATTG
Eumeces_gilberti GCTGCCAGAAGTCCTACAAGGCACCCCTATAAAAACAGCACTAATTATTG
Eumeces_skiltonianus ATTACCAGAAGTCCTACAAGGCACCCCTATAAAAACAGCACTAATTATTG
Eumeces_egregius ATTACCAGAAGTACTACAAGGTACCCCTATAAAAACAGCACTCATTATTG
Eumeces_anthracinus GCTACCAGAAGTACTACAAGGTACGCCACTAAAAACAGCATTAAATTATTG
Neoseps_reynoldsi GCTGCCAGAAGTATTACAAGGCACACCATTAAGACAGCACTAATCATTG
Eumeces_brevirostris GCTCCCCGAGGTCTTCAAGGCACCCCTATAAAAACAGCACTAGTCATTG
Eumeces_callicephalus ATTACCCGAGGTCTACAAGGCACCACACTAAAAACAGCACTAATTATTG
Eumeces_inexpectatus ACTACCAGAGGTCTACAGGGCACCCCTATAACAACAGCACTAATCATTG
Eumeces_obsoletus ATTACCGGAGGTCTACAAGGCACCCCTATAAAAACAGCATTAAATTATTG
Eumeces_multivirgatus ACTCCCTGAAGTCCTACAAGGCACCCCTATAAAAACAGCACTTGTTCATCG
Eumeces_fasciatus ACTACCAGAGGTCTACAAGGCACCCCTCTAAAGACAGCACTTATCATCG
Eumeces_laticeps ACTACCAGAGGTCTACAAGGCACCCCTCTAAAGACAGCACTTATCATCG
```

851-900

Qualifiers1	.....
Qualifiers2	..1..
Eremias_grammica	CAACATGACAAAAACTACCCCCATAACTCTACTCTATTTAACTACTCCC
Platysaurus_capensis	CAACATGAATAAAACTGGCCCAATAAACCCTCCTCCTATTAATCCACAAC
Mabuya_aurata	CAACATGACAAAAACTAGCCCAATAAACCCTACTCTACCTGACATACAAC
Chalcides_ocellatus	CCACCTGACAAAAACTCGCCCCACTAGCCCTATTATACTTACACAAAAC
Eurylepis_taniolatus	CAACCTGACAAAAACTCGCCCCATTGCCCCTACTATATTTAACACAAAC
Novoeumeces_schneideri	CCACATGACAAAAACTAGCCCCATTAGCCCTACTGTTTCCTCACACAAAAC
Scincus_scincus	CCACATGACAAAAACTGGCCCCCCCTTGCCCCTCTTATACCTCGTACAAAAT
Ophiomorus_punctatissimus	CAACATGACAAAAACTAGCCCCAATCTCCCCTTCTATACCTCACACACAAC
Ablepharus_annonicus	CGACATGACAAAAACTTGCCCCACTAGCCCTTCTTTTACCTAACACACAAT
Asymblepharus_alaicus	CCACATGGCAAAAACACTAGCCCCACTAACCCTTTTTTTATTTAACATATAAC
Asymblepharus_sikimensis	CCACATGACAAAAACTAGCCCCATTAGCCCTATTATACTTAACATATAGT
Sphenomorphus_indicus	CTACATGACAAAAACTAGCCCCAATAGCCCTTCTATATCTAACCCACCAC
Scincella_rupicola	CAACTTGACAAAAACTAGCCCAATAGCCCTACTATTTCTAACTCATCAC
Scincella_lateralis	CAACCTGACAAAAATTAGCCCCAATGACTCTTCTATTCTTAACACACCCT
Scincella_tsinlingensis	CAACCTGACAGAAGCTAGCCCCTATAACCCTATTATTCTTAACACACAAC
Scincella_potanini	CAACCTGACAAAAACTGGCCCCCCCTAGCCCTTCTATTTTTAACCCACCAC
Eumeces_quadrilineatus	TAACATGACAAAAGATAGCCCCACTAGCCCTACTATATTTAACACAAAAC
Eumeces_capito	TTACATGACAAAAACTAGCCCCCCCTAGCCCTACTATACTTAACACAAAAT
Eumeces_gilberti	TAACCTGACAAAAACTTGCCCCATTAGCCCTACTATACTCACACAAAAC
Eumeces_skiltonianus	TAACCTGACAGAAACTTGCCCCATTAGCCCTACTATACTTAGCACAAAAC
Eumeces_egregius	TTACATGACAAAAGCTGGCCCCCTTAGCCCTACTATACTCACACAAAAT
Eumeces_anthracinus	TTACATGACAAAAACTAGCCCCCTAACATTACTGTACCTCACACAAAAT
Neoseps_reynoldsi	CCACCTGACAGAAGCTGGCCCCCTTAGCCCTACTATACTCACACAAAAC
Eumeces_brevirostris	TGACATGACAAAAACTGGCCCCCTAGCCCTACTCTATATAACACAAAAC
Eumeces_callicephalus	TAACATGACAAAAACTAGCCCCATTAGCCCTCCTATACCTCACACAAAAC
Eumeces_inexpectatus	TAACATGACAAAAACTAGCCCCCCCTCACACTACTATACTGACACAAAAC
Eumeces_obsoletus	TGACATGACAAAAGCTAGCTCCCCTAGCCCTACTGTACCTCACACAAAAC
Eumeces_multivirgatus	TAACATGACAAAATTGGCCCCCTAGCGCTTCTGTATCTTACACAAAAT
Eumeces_fasciatus	TAACATGACAAAAACTAGCCCCCCCTAGCCCTTCTTTACCTCACACAAAAC
Eumeces_laticeps	TAACATGACAAAAACTAGCCCCCCCTAGCCCTTCTTTACCTCACACAAAAC

951-1000

Qualifiers1	.....
Qualifiers2	.1
Eremias_grammica	TGGAGGTTGATCAGGGCTCAACCAACCCTAATACGCAAAATCATAGCCT
Platysaurus_capensis	TGGCGGGTGGGGCGGACTAAATCAAACACAACACTGCGAAAAATTATAGGAT
Mabuya_aurata	GGGCGGATGGGGCGGCCTAAACCAGACACAACACGAAAAATCATGGCAT
Chalcides_ocellatus	CGGAGGTTGAGGGGGCTTAAACCAAAACAATACGAAAAATTATAGCAT
Eurylepis_taeniolatus	AGGCGGCTGGGGGGTCTAAACCAAACTCAAACCCGAAAAATCATAGCAT
Novoeumeces_schneideri	GGGCGGATGAGGCGGCCTAAATCAAACACAACACGAAAAATTATAGCAT
Scincus_scincus	AGGGGGCTGAGGAGGCCTAAATCAAACACAACACTCGAAAAATTATAGCAT
Ophiomorus_punctatissimus	AGGCGGATGGGGTGGACTAAACCAAAACAACACGAAAAATTATGGCAT
Ablepharus_annonicus	CGGCGGCTGAGGAGGACTAAACCAGACACAACACGAAAAATTATAGCAT
Asymblepharus_alaicus	CGGCGGTTGAGGCGGCCTTAAACCAGACACAACACGCAAAATTATAGCAT
Asymblepharus_sikimensis	TGGTGGGTGAGGCGGCCTGAACCAAAACAACACGCAAAATCATAGCAT
Sphenomorphus_indicus	CGGCGGCTGAGGCGGATTAATCAAACACAGACACGAAAAATCATAGCAT
Scincella_rupicola	CGGAGGATGAGGCGGCCTTAAATCAAACACAATACGAAAAATCATAGCCT
Scincella_lateralis	CGGGGGCTGAGGTGGTTTTAAACCAAAACAACACGAAAAATCATAGCAT
Scincella_tsinlingensis	TGGTGGGTGAGGCGGCCTAAACCAAAACAACACGAAAAATTATAGCAT
Scincella_potanini	CGGGGGTTGAGGCGGCCTAAACCAGACACAACACGAAAAATCATAGCAT
Eumeces_quadri-lineatus	CGGGGGTTGAGGCGGACTAAATCAAACACAATACGAAAAATTATAGCAT
Eumeces_capito	CGGCGGTTGAGGCGGCCTAAATCAAACACAACACGAAAAATTATAGCAT
Eumeces_gilberti	TGGGGGTTGGGGCGGATTAATCAAACACAACACGAAAAATTATAGCAT
Eumeces_skiltonianus	TGGGGGCTGAGGAGGACTAAATCAAACACAACACGAAAAATCATAGCAT
Eumeces_egregius	CGGGGGCTGAGGGGGCTTGAACCAAAACAAGACACGAAAAATCATAGCAT
Eumeces_anthracinus	CGGGGGCTGAGGGGGTTAAATCAAACACAACACGAAAAATTATAGCAT
Neoseps_reynoldsi	CGGGGGTTGAGGGGGATTAATCAAACGCAACACGAAAGATCATAGCGT
Eumeces_brevirostris	AGGGGGTTGGGGGGGACTAAACCAAAACAACACGAAAGATCATAGCCT
Eumeces_callicephalus	TGGGGGCTGAGGCGGACTCAACCAAAACAACACGAAAGATCATAGCAT
Eumeces_inexpectatus	CGGGGGCTGAGGCGGACTTAAACCAAAACAACACGAAAAATCATAGCAT
Eumeces_obsoletus	TGGCGGCTGAGGCGGACTCAACCAAAACAACACGAAAAATCATAGCAT
Eumeces_multivirgatus	TGGAGGCTGAGGCGGGCTCAACCAAAACAAGCAGAAAAATCATAGCAT
Eumeces_fasciatus	CGGGGGCTGAGGCGGACTCAACCAAAACAAGCAGAAAAATCATAGCAT
Eumeces_laticeps	CGGGGGCTGAGGCGGGCTCAACCAAAACAAGCAGAAAAATCATAGCAT

1001-1050

Qualifiers1	.....
Qualifiers2	..1..1..1..1..1..1..1..1..1..1..1..1..1..1..1..1..
Eremias_grammica	ATTCATCAATTGCACACCTAGGATGGATAGTCGCAGTACTTTCCCTATCG
Platysaurus_capensis	TCTCTTCAATCTCCACCTAGGCTGAATAACAATAGTACTAATCATCGCC
Mabuya_aurata	TTTCATCAATCGCACACCTCGGATGAATAGCAAGCATTCTAACACTCAAC
Chalcides_ocellatus	TTTCATCCATTGCCACCTCGGCTGAATAGCAGCAATCCTAACAAATCAAC
Eurylepis_taeniolatus	TTTCATCAATTGCCACCTAGGGTGAATAATCTCCGTACTTACACTAGCC
Novoeumeces_schneideri	TTTCATCAATCGCTCACCTCGGCTGAATGACCGCAGTCGTCACACTAGCC
Scincus_scincus	TTTCATCAATCGCTCACCTGGGATGAATAACAGCAGTTATTTCCCTAGCC
Ophiomorus_punctatissimus	TTTCATCAATTGCACATCTAGGTTGAATAGCATCAATTCTAACATTAGCC
Ablepharus_annonicus	TTTCCTCAATTGCACACCTCGGCTGAATGGCTGCCATCCTTATATTATCC
Asymblepharus_alaicus	TTTCATCAATTGCCACTTGGGGTGGATGGCAGCAATCCTCCTGTAAAC
Asymblepharus_sikimensis	TTTCCTCCATCGCCACCTAGGATGAATAGCCTCAATCCTTACAATTTCC
Sphenomorphus_indicus	ACTCCTCAATCGCCACCTAGGATGAATGACATCAGTTCTAGTAATCTCC
Scincella_rupicola	ACTCATCAATCGCCACCTCGGCTGAATAGCAACAATTCTTACACTAAAC
Scincella_lateralis	ATTCTCAATTGCACATATCGGATGGATAGCCGCAATCCTCACACTCGCT
Scincella_tsinlingensis	ACTCATCAATCGCACATCTCGGATGAATAGCAACAATTCTTGTACTAGCC
Scincella_potanini	ATTCATCAATTGCCCATCTCGGATGAATAGCCACAATCCTTACAATAGCC
Eumeces_quadri-lineatus	TTTCATCAATCGCCACCTCGGCTGAATAGCATCAATCCTAACACTAGCC
Eumeces_capito	TCTCATCAATCGCCACCTGGGCTGAATAGCAGCAATTCTAACACTGTCC
Eumeces_gilberti	TTTCATCAATCGCACATCTCGGATGAATAGCAACAGTCCTAACCTTGCC
Eumeces_skiltonianus	TCTCATCAATCGCACACCTTGGCTGAATAGCAACAGTCCTAACCTCGCC
Eumeces_egregius	TTTCATCAATCGCCACCTAGGCTGAATAGCAGCAATCTTAACTAGCC
Eumeces_anthracinus	TTTCATCAATCGCCACCTAGGTTGAATAGCAACAATCTTAACTCGCC
Neoseps_reynoldsi	TTTCATCAATCGCCACCTAGGATGAATAGTATCGGTTCTAACCTGGCC
Eumeces_brevirostris	ATTCTTCAATCGCCACCTGGGCTGAATAGCAGCAATTCTAACACTCGCC
Eumeces_callicephalus	TCTCATCAATCGCCACCTGGGATGAATGGCAACAATCATAACTGGCC
Eumeces_inexpectatus	TCTCATCAATCGCCACCTAGGATGAATAGCAACAATCCTAACACTAGCC
Eumeces_obsoletus	TTTCATCCATCGCCACCTGGGATGAATAGCAACCATCCTAACACTAGCC
Eumeces_multivirgatus	TCTCATCAATCGCCACCTGGGGTGAATGGCTACAGTCCTAACCTGGCC
Eumeces_fasciatus	TCTCATCAATCGCCACCTAGGGTGAATAGCAACAATCCTAACCTTGCC
Eumeces_laticeps	TCTCATCAATCGCCACCTAGGATGAATAGCAACAATCTTAACTTGTC

1051-1100

Qualifiers1

Qualifiers2

Eremias grammica

Platysaurus capensis

Mabuya aurata

Chalcides ocellatus

Eurylepis taeniolatus

Novoeumeces schneideri

Scincus scincus

Ophiomorus punctatissimus

Ablepharus pannonicus

Asymblespharus alaicus

Asymblespharus sikimensis

Sphenomorphus indicus

Scincella rupicola

Scincella lateralis

Scincella tsinlingensis

Scincella potanini

Eumeces quadrilineatus

Eumeces capito

Eumeces gilberti

Eumeces skiltonianus

Eumeces egregius

Eumeces anthracinus

Neoseps reynoldsi

Eumeces brevirostris

Eumeces callicephalus

Eumeces inexpectatus

Eumeces obsoletus

Eumeces multivirgatus

Eumeces fasciatus

Eumeces laticeps

.....
1.
CAAACCTCCTATTATTTACATTACTTATTTATATCCTCATAACCTCTTC
CCAAACACTCTAATTCTAGCCCTACTAATCTACATCACTATAACCCTCGC
CCAAACATCCTTATTCTAAACCTACTACTATACATTATTATAACCACCCC
CCTGACATAATACTACTAAACCTAGCACTTTACATCTTAATAACAACCTC
CCAAACATCATACTACTAAACCTCGCCCTTTATATTCTAATGACCGCATC
CCAAAAATTATGCTCCTAAATTTAGCCATCTACGTCTTAATAACTATCGC
CCTAACATCATACTCTTAACCTAGGCATCTATCTACTAATAACCATTTTC
CCTAACATTATACTACTAATCTAATATTATACCTAATAATAACAATCTC
CCAAACCTCATACTACTCAACCTAGCACTTTACATCATCATAACAACCTCC
CCAAACATCATACTACTTAACTCTGATACTCTATATTCTCCTAACTGCACC
CCAAATATTATGCTACTAAACCTAATAATCTATATTCTAATAAACTCCC
CCAAATATTATAATCTTAAACCTTAGTACTTTATCTGTTAATAACAATTTTC
CCAGACCTTATAATCCTAAACTTAACTATTTATCTCCTTATAAACTCCC
CCTAATATCTTAACTCCTTAAATTTAATAATTTACCTAACAATAACTATTTTC
CCAAATCTTTTAACTTCTCAACCTAACGATTTACCTAATAATGACTATC
CCAGACATTATAGTCCTGAACCTAACTATTTACCTATTAATAAACTATC
CCGAACATCATGCTACTAAACCTTGACACTTTATATCCTAATAAACTACCTC
CCAAACATTATACTACTAAACCTCGCACTTTATATCCTTATAACCGCCTC
ACAAACATTATACTACTAAACCTAACACTTTACATCCTAATAAACAACCGC
ACAAATATTATACTACTAAACCTTACACTTTACATCCTAATAAACCGC
ACAAACATTATATTACTAAACCTAGCACTCTACATCCTAATAACAGCCTC
ACAAATATCCTGCTACTAAACCTAGCACTCTATATCCTAATGACCGCCTC
ACAAACATTATACTACTAAATTTAACACTCTACATTCTAATAAACTACCTC
ACAAACGTCTACTACTTAAACCTAGCACTCTACATCCTCATGACACCTC
CCAAACATCATACTACTAAACTTAAACATCTATATCCTAATAAACTGCCTC
CCAAACATTATACTGCTAAACTTAACTTTACATCATAATAACCACCTC
CCAAACATTATACTACTAAACCTGACACTCTATATCCTAATAAACACCCC
CCAAACATTATACTACTAAACCTTACTCTACATCCTAATAAACTACCCC
CCAAACATCATACTACTAAACCTAGTTCTTTACATCCTGATAACCACCTC
CCAAACATCATACTACTAAACTTAAACCTCTACATCCTGATAACCACCCC

1151-1200

Qualifiers1	.....
Qualifiers2	..1..1..1..1..1..1..1..1..1..1..1..1..1..1..1..1..
Eremias_grammica	GACAGCTTTGATCAACCTCCCCAACTATTACATCAATTTCCCTAATTACC
Platysaurus_capensis	TATTTACCTGAACAGTGTCCCCCACACTGTCAACTTTCACTATAATTATC
Mabuya_aurata	CAACATCATGAACCATCTCCCCACCATAAACC GCCACAATAATAGCTCTG
Chalcides_ocellatus	CAGCTTCATGAATAATTTCCACCAACAACAACAGTACTCATACTTATAGTC
Eurylepis_taniolatus	CAACCTCCTGAACGATCTCACCATAACCACCACGCTTATAATGATTTTA
Novoeumeces_schneideri	CAACATCCTGAGCAACTTCCCCAACAATAAACC GCACTAATACTGACCCTA
Scincus_scincus	CAACAACCTCAACGGTAACCCCAACAATAATTGCACTTATGCTAGTACTA
Ophiomorus_punctatissimus	CAACATCATGGACAATTTACCACCAACAACAGCCATCATATTAATCTTA
Ablepharus_annonicus	CAATATCATGAGTAATTTCTCCAACAACAACAGCCCTCATCCTAATATTA
Asymblepharus_alaicus	CAACCTTATGAGTAGTCTCCCCAACAACAACAGCACTTATTTTATTCTTA
Asymblepharus_sikimmensis	CAATAACATGACCAACCTCCCCAATAATAACCTCGCTTATCCTAGTACTA
Sphenomorphus_indicus	CAACAACCTGAACAGTTTCCCCAACTATCGCCACCTTAATATTAATCTTA
Scincella_rupicola	CAACAACCTGAACAACCTCCCCAACAACAACAACACTAATATTAATTTTA
Scincella_lateralis	CAACATCATGAGCAATTTCCCCCATACTAGCAGCTTTAATATTAATACTA
Scincella_tsinlingensis	CAACATCATGAGCAATCTCCCCAATAATAACCCTTTAATATTGGTATCA
Scincella_potanini	CAACATCATGAACCATCTCCCCCTACTAACC GCCTCAATACTAATTTTA
Eumeces_quadrilineatus	CAACCGCCTGAACAATTTACCACCAATATCAGCCTTTATACTCGCACTG
Eumeces_capito	CAACAACATGAATAAGTTTACCAGCCGTATCCGCCTTTATATTAATACTA
Eumeces_gilberti	CAACAACATGAACAATTTACCACCAGCAGCCCTTATACTCATATTA
Eumeces_skiltonianus	CAACAACATGAACAATTTACCACCACAGCAGCCCTTGTACTTACACTA
Eumeces_egregius	CAACAGTATGACCAGTTTACCCTATAATATCGGCCCTCATACTAATACTA
Eumeces_anthracinus	CAACAATGTGAATAGTCTCACCCACAATATCAGCCCTCATACTAATACTA
Neoseps_reynoldsi	CAACAGCATGATCAATCTCACCCACAATTT CAGCCCTTATGCTAGCACTA
Eumeces_brevirostris	CAACAATGTGAGCAGTCTCACCTACAATATCAGCCCTTATACTAATCCTC
Eumeces_callicephalus	CAACAATGTGGGCAATTTACCTACAATATCAGCCCTAACACTAACACTA
Eumeces_inexpectatus	CAACTCTGTGAGCGATCTCACCTACAATATCAGCCCTAGCCCTAACACTA
Eumeces_obsoletus	CAACTATGTGAGCAATCTCCCCGACAATATCAGCCTCAGCACTAACATTA
Eumeces_multivirgatus	CAACAATAACAGCAATCTCGCCACAATATCAGCCTTAACACTAACACTA
Eumeces_fasciatus	CAACAATGTGAGCAATCTCACCTACAATATCAGCCCTAACGCTAACACTA
Eumeces_laticeps	CAACAATGTGAGCAATCTCACCTACAATATCAGCCTTAACGCTAACACTA

1301-1350

Qualifiers1	.....
Qualifiers2	..1..1..1..1..1..1..1..1..1..1..1..1..1..1..1..1..
Eremias_grammica	TCCTCGCCCTATCCTCTCTCCTCAGCCTAATATTTTACATACGATTAACA
Platysaurus_capensis	CCTCAACAATCCTTACACTTCTAAGCCTATTCTTTTACCTACGACTATCA
Mabuya_aurata	TTATAGTATTATCCGCACTACTCAGCTTATTTTTTTACTTACGACTATCC
Chalcides_ocellatus	TTATAGCAATATCCGCATTACTTAGCTTATTCTTTTACCTACGACTCACA
Eurylepis_taeniolatus	TCCTAGCCCTTTCCGCTCTACTAAGCCTATTCTTTTACCTCCGTCTTTCC
Novoeumeces_schneideri	TACTAGCACTCTCCACACTCCTCAGCCTATTCTTCTACCTTCGCTTAGCC
Scincus_scincus	TCTTAGCCCTATCCGCATTACTTAGTTTATTTTTTTTACCTGCGCCTCTCA
Ophiomorus_punctatissimus	TCATAGCACTGTCCGCACTTCTAAGCCTTTTCTTCTACCTACGATTATCA
Ablepharus_annonicus	TAATAGCCTTAACAGCTCTACTCAGCCTATTCTTTTACCTACGACTCACC
Asymblepharus_alaicus	TTATAACAGCCGCCACACTGCTAAACCTATTTTTTTATCTACGACTAACA
Asymblepharus_sikimmensis	TCATAGCACTGTCCGCTCTTCTAAGCTTATTTTTTCTATTTACGATTAECT
Sphenomorphus_indicus	CAATAGCACTTTTCCGCTTACTAAGCCTATTTTTTCTATTTACGACTATCC
Scincella_rupicola	CTATAGCCCTATCAGCCCTACTAAGCCTATTCTTTTACCTACGAATTTCA
Scincella_lateralis	TAATAGCCCTGTTTACCCTATTAAGCCTATTTTTTTTATCTGCGACTATCA
Scincella_tsinlingensis	TATTAGCCCTCTCTGCTTTATTAAGCCTCTTCTTTTATCTACGACTGTCC
Scincella_potanini	CGCTAGCCCTCTCAGCCCTGCTCAGTTTATTCTTCTACCTACGACTATCG
Eumeces_quadrilineatus	TAATGGCGCTTTCCGCCCTGCTGAGCCTATTTTTTTACCTGCGACTATCA
Eumeces_capito	TATTAGCACTCTCCGCCCTACTAAGCCTATTCTTCTACCTACGACTATCG
Eumeces_gilberti	TACTGGCCTTGTCCGCCCTATTGAGCCTATTCTTCTACCTACGACTATCC
Eumeces_skiltonianus	TAATAGCGCTATCCGCCCTACTAAGCTTATTTTTTTTACCTGCGATTATCC
Eumeces_egregius	TAATAGCACTGTCCGCCCTACTAAGCTTGTTCTTTTATCTACGACTATCG
Eumeces_anthracinus	TACTAGCGCTATCCGCCCTACTAAGCCTATTCTTCTATCTACGACTATCA
Neoseps_reynoldsi	TAATAGCGCTTTCTGCTCTACTAAGCTTATTTTTTTTATCTCCGCCTATCA
Eumeces_brevirostris	TAATAGCGCTATCTGCTCTCTTAAGCCTTTTCTTTTACCTACGACTATCC
Eumeces_callicephalus	TACTAGCGCTGTCCACCCTATTAAGCCTATTCTTCTACCTCCGACTATCA
Eumeces_inexpectatus	TAATAGCACTATCCGCCCTACTAAGCCTATTCTTCTACCTACGACTATCA
Eumeces_obsoletus	TGCTAGCACTCTCCGCCCTATTAAGCCTGTTCTTCTACTTACGACTATCA
Eumeces_multivirgatus	TAATAGCACTGTCCGCCCTACTAAGCCTATTCTTCTACCTACGACTATCA
Eumeces_fasciatus	TAATAGCGCTGTCCGCACTACTAAGCCTATTTTTTCTACTTACGACTATCA
Eumeces_laticeps	TAATAGCGCTATCCGCACTACTAAGCCTATTTTTTCTACCTACGACTATCA

1501-1550

Qualifiers1	TRP.....
Qualifiers2	AA>>>>..D>>>.....D>>>.AC>>>..COD..AC>>>....T
Eremias_grammica	AGAAACTTAGGTTAGTCCTAA--AACCAGAAGCCTTCAAAGCCTCAAACA
Platysaurus_capensis	AGAAGCTTAGGATAACACATTTAAACCAAGAGCCTTCAAAGCCCTAAATA
Mabuya_aurata	AAAAGCTTAGGTTAAAACCTA---AACCAGGGGCCTTCAAAGCCCCAAATA
Chalcides_ocellatus	AGAAGCTTAGGTTAATATCA---AACCAGGGGCCTTCAAAGCCCCAAACA
Eurylepis_taniolatus	AGAAGCTTAGGTTAATAGACCTAAACCAAGAGCCTTCAAAGCCCCAAATA
Novoeumeces_schneideri	AGAAGCTTAGGTTAAAACACCA-AACCAAGGGCCTTCAAAGCCCCAAATA
Scincus_scincus	AGAGACTTAGGTTAACCTCA---AACCAGAGGCCTTCAAAGCCTCAAATA
Ophiomorus_punctatissimus	AGAAGCTTAGGTTAAATTA----AACCAGGAGCCTTCAAAGCCCCAAATA
Ablepharus_annonicus	AGATGCTTAGGTTAATTACTA--AACCAGTAGCCTTCAAAGCTACAAATA
Asymblepharus_alaicus	AGAAGTTTAGGTTAACTA----AACCAGTAGCCTTCAAAGCCACAACCA
Asymblepharus_sikimensis	AGAAGTTTAGGTTAACTCA----AACCAGTGGCCTTCAAAGCCACAATA
Sphenomorphus_indicus	AGAGACTTAGGTTAAACA-----AACCAGTAGCCTTCAAAGCTACAAACA
Scincella_rupicola	AGAGACTTAGGTTAATTA-----AACCAGCGGCCTTCAAAGCCACAACA
Scincella_lateralis	AGGGACTTAGGCTAATAATA---AACCAGCAGCCTTCAAAGTTGCAAACA
Scincella_tsinlingensis	AGGGGCTTAGGCTAACACA---AACCAGCAGCCTTCAAAGCTTCAACCA
Scincella_potanini	AGGGACTTAGGCTAAATAA---AACCAGTAACCTTCAAAGCTACAATCA
Eumeces_quadri-lineatus	AGAAGCTTAGGTTAACCTCA---AACCAGGGGCCTTCAAAGCCCCAAACA
Eumeces_capito	AGAAGCTTAGGTTAAACCTA---AACCAGGGGCCTTCAAAGCCTTAAACA
Eumeces_gilberti	AGGGGCTTAAGTTAAACTTA---AACTAGCGGCCTTCAAAGCCCCAAACA
Eumeces_skiltonianus	AGGGACTTAAGTTAACTTA----AACTAGGGGCCTTCAAAGCCCCAAACA
Eumeces_egregius	AGAAACTTAGGTTAATTTA----AACCAGGGGCCTTCAAAGCCCCAAACG
Eumeces_anthracinus	AGAAACTTAGGTTAATTTA----AACCAGGGGCCTTCAAAGCCTTAAACA
Neoseps_reynoldsi	AGAAACTTAGGTTAAATTA----AACCAGAGGCCTTCAAAGCCCCAAACA
Eumeces_brevirostris	AGAAGCTTAGGTTAAACA-----AACCAGGGGCCTTCAAAGCCCCAAACA
Eumeces_callicephalus	AGAAACTTAGGTTAAACTA----AACCAGGGGCCTTCAAAGCCCCAAACA
Eumeces_inexpectatus	AGAAACTTAGGTTAACCA-----AACCAGGGGCCTTCAAAGCCCCAAACA
Eumeces_obsoletus	AGAAACTTAGGTTAAACTA----AACCAGGGGCCTTCAAAGCCCCAAACA
Eumeces_multivirgatus	AGAAACTTAGGTTAACCA----AACCAGGGGCCTTCAAAGCCCCAAACA
Eumeces_fasciatus	AGAAACTTAGGTTAGACCA----AACCAGGGGCCTTCAAAGCCTTAAACA
Eumeces_laticeps	AGAAACTTAGGTTAGACCA----AACCAGGGGCCTTCAAAGCCTTAAACA

1551-1600

```
Qualifiers1 .....TRP...ALA.....
Qualifiers2 >>>>.....T>>>>AA>>>>*...*<<<<<AA<<<<T.....<<<
Eremias_grammica GGGTACACATATCCCTAGTTTCTGA--TAAGACCTGTATAACCTTGATAT
Platysaurus_capensis AGAGTGAAACCCTCTTAGTTTCTG---AAAGATTTGTAAAACCTTAATTT
Mabuya_aurata AGGACTAA-CCCCCTTAGCTTTTGAACCTAAGACCTGTAAAACCTTAATTT
Chalcides_ocellatus AGAGTTCAACCCTCTTAGCTCCTG----AAGGCCTGTAAAACCTTAATTT
Eurylepis_taeniolatus TGAGTTAAACCCTCCTAGCTTCTG----AAGGCATGTAAAACCTTAATTT
Novoeumeces_schneideri AGGGTTAAACCCCTTAGCCTCTG----AAGGTATGTAAAACCTTAATCT
Scincus_scincus AGGACTAAAACCCCTTAGCCTCTG----AAGGCCTGTAAAATTCTAATTT
Ophiomorus_punctatissimus AGAGCTAAA-CCCCTTAGCTTCTGT---AAAGCCTGTAAAACCTTTAATTT
Ablepharus_annonicus GGGCTTAAA-CTCCCTAGAATCTG---TAAAACCTGTAAAACCTTTAATTT
Asymblepharus_alaicus GGGGTTAAAAGCCCCTAACTTCTG----AAGACCTGTAAAACCTTTAATTT
Asymblepharus_sikimmensis GGGGCTAA-TCCCCCTCACTTCTG----AAGACTTGTAGAACTTTAATCT
Sphenomorphus_indicus AGAGCTGAAACCTCTTAGACTCTG---GAAGGCTTGTAACCTTTAATTT
Scincella_rupicola AGAGTTAAAATCTCCTAGCCTCTG----AAAGTTTGTAAAACCTTAATTT
Scincella_lateralis AGAGTTAAAATCTCTTAGTCCCTG----AAGGCCTGTAAACTCTAAATT
Scincella_tsinlingensis AGAGCTAAAATCTCTTAGCCCCTG----AAAGCCTGTAAAATTTTAATTT
Scincella_potanini AGAGTTTAAACCTCTTAGCCCCTG----AAAGCTTGTAACCTTAATTT
Eumeces_quadri-lineatus AGAGTTAGACTCTCTTAGCTCCTG----AAGGCCTGTAAAACCTTTAATTT
Eumeces_capito AGAGTTAAACCCTCTTAGCTTCTG----AAGGCCTGTGAAACTTTAATTC
Eumeces_gilberti AGAGTTAAACCCTCTTAGCCCCTG----AAAGCCTGTAAAACCTTAATTT
Eumeces_skiltonianus AGAGCTAAACCCTCTTAGCCCCTG----AAAGCCTGTAAAATTCTAATTT
Eumeces_egregius AGAGCTAGCCCCTCTTAGTTTCTG----AAGGCCTGTAGAGCTCTAATCT
Eumeces_anthracinus GGGGTTAAACCCCTAGTTTCTG----AAGGCCTGTAAAACCTTAATCT
Neoseps_reynoldsi AGAGTTAGACCCCTTAGTTTCTG----AAGGCCTGTGAAACTCTAATAC
Eumeces_brevirostris AGA ACTAAGCCCTCTTAGCTTCTG----AAGGCCTGTAAAACCTTAATCT
Eumeces_callicephalus AGA ACTACACCCTCTTAGTTTCTG----AAGGCCTGTAAAACCTTAATTT
Eumeces_inexpectatus AGAGCTAGACCCTCTTAGTTTCTG----AAGGCCTGTAAAACCTTAATTT
Eumeces_obsoletus AGAGCTAGACCCTCTTAGTCTCTG----AAGGCCTGTAAAACCTTAACTT
Eumeces_multivirgatus AGAGCCAAACCCTCTTAGTTTCTG----AAGGCCTGTAAAACCTTAATTT
Eumeces_fasciatus AGAGCCAAACCCTCTTAGTTTCTG----AAGGCCTGTAAAACCTTAATTT
Eumeces_laticeps AGAGCCAAACCCTCTTAGTTTCTG----AAGGCCTGTAAAACCTTAATTT
```


1601-1650

```
Qualifiers1 .....ALA..AS
Qualifiers2 <T....<<<AC..COD..<<<AC.<<<D.....<<<D..<<<<<AA..*<
Eremias_grammica ACATCTCTTGAATGCAACTCAAACACTTTAATTAAGCTAAGGCCTCTTCA
Platysaurus_capensis ACATCTTCTGACTGCAAATCAAACACTTTAATTAAGCTAAAACCTC--CT
Mabuya_aurata ACATCTCCTGAATGCAACCCAGACACTTTAATTAAGCTAAGGCCTC--CT
Chalcides_ocellatus ACATCTCCTGAATGCAACCCAGACACTTTAATTAAGCTAAAAGCCTC--CC
Eurylepis_taeniolatus ACATCTCCTGAATGCAACTCAGACACTTTAATTAAGCTAAAAGCCTC--CT
Novoeumeces_schneideri ACATCTTCTGACTGCAACCCAGACGCTTTAATTAAGCTAAAACCTC--CC
Scincus_scincus ACATCTCCTGATTGCAATTGCAACTTTAATTAAGCTAAAAGCCTC--CC
Ophiomorus_punctatissimus ACATCCGCTGACTGCAACTCAACCCTTTAATTAAGCTAAGGCCTC--CT
Ablepharus_annonicus ACATCTCCTGATTGCAACTCAGACACTTTTACTAAGCTAAGGCCTC--CT
Asymblepharus_alaicus ACATCACCTGATTGCAAATCAGACACTTTTACTAAGCTAAGGCCTC--CC
Asymblepharus_sikimensis ACATCACCTGATTGCAAATCAAGCACTTTTATTAAGCCAAAGCCTC--CT
Sphenomorphus_indicus ACATCTTCTGACTGCAAATCAGACACTTTAATTACGCTAAAACCTC--CT
Scincella_rupicola ACATCTCCTGATTGCAAATCAAACACTTTAATTAAGCTAAAACCTC--CT
Scincella_lateralis ACATCTTATGACTGCAAATCAAACACTTTTTATTAAGCTAAAACCTC--CT
Scincella_tsinlingensis ACATCTCCTGATTGCAAATCAAGCACTTTTATTAAGCTAAAACCTC--CT
Scincella_potanini ACATCTCCTGACTGCAAATCAAGCACTTTTATTAAGCTAAAACCTC--CT
Eumeces_quadri-lineatus ACATCTCCTGAATGCAACTCAAACACTTTAATTAAGCTAAAAGCCTC--CT
Eumeces_capito ACATCTCATGATTGCAACTCAAACGCTTTAATTAAGCCAAAGCCTC--CC
Eumeces_gilberti ACATCTCCTGAATGCAACTCAAGCACTTTAATTAAGCTAAAAGCCTC--CT
Eumeces_skiltonianus ACATCTCCTGAATGCAACTCAAGCGCTTTAATTAAGCTAAAAGCCTC--CT
Eumeces_egregius ACATCTCATGAATGCAACTCAAACACTTTAATTAAGCTAAAAGCCTC--CT
Eumeces_anthracinus ACATCTCCTGAATGCAACTCAAACACTTTAATTAAGCTAAAAGCCTC--CT
Neoseps_reynoldsi ACATCTCTTGAATGCAACTCAAACACTTTAATTAAGCTAAAAGCCTC--CT
Eumeces_brevirostris ACATCTCCTGAATGCAACTCAAGCGCTTTAATTAAGCTAAAACCTC--CT
Eumeces_callicephalus ACATCTCCTGAATGCAACTCAAACACTTTAATTAAGTTAAAAGCCTC--CT
Eumeces_inexpectatus ACATCTTCTGAATGCAACTCAAACACTTTAATTAAGCTAAAAGCCTC--CT
Eumeces_obsoletus ACATCTCCTGAATGCAACTCAAGCACTTTAATTAAGCTAAAAGCCTC--CT
Eumeces_multivirgatus ACATCTCCTGAATGCAACTCAAACACTTTAATTAAGTTAAAAGCCTC--CT
Eumeces_fasciatus ACATCTCCTGAATGCAACTCAAACACTTTAATTAAGCTAAAAGCCTC--CT
Eumeces_laticeps ACATCTCCTGAATGCAACTCAAACACTTTAATTAAGCTAAAAGCCTC--CT
```

1651-1700

Qualifiers1	N.....
Qualifiers2	<<<<AA<<<<T.....<<<<T.....<<<AC..COD..<<<AC.<<<D
Eremias_grammica	AGATGGACAGGCTTTGATCCTGCGAAACTCTAGTTAACAGCTAAAAACCC
Platysaurus_capensis	AGACAGGCAGGCCTCTATCCTACAAACAATTAGTTAACAACTAATCACCC
Mabuya_aurata	AGATAGACGGGCCTCGATCCCGTAAAACCTTAGTTAACAGCTAAACACCC
Chalcides_ocellatus	GAATAAACGGGCCTCGATCCCGCAAAAACCTAGTTAACAGCTAAGCGCCC
Eurylepis_taeniolatus	AGACAGACGGGCCTTGATCCCGTAACATCTTAATTAACAGCTAAGCACTC
Novoeumeces_schneideri	AGACAAACGGGCCTCGATCCCGTAAAACCTTAGTTAACAGCTAAGCACCC
Scincus_scincus	AGACAGACGGGCCTCGATCCCGTAAACTCTTAGTTAACAGCTAAGCACCC
Ophiomorus_punctatissimus	AGATAGACGGGCCTCGATCCCGTAAAACCTTAGTTAACAGCTAAGCACCC
Ablepharus_annonicus	AGATAGACGGGCCTCGATCCCGTAAACATTTAATTAACAGCTAAATACCC
Asymblepharus_alaicus	AGATAGACGGGCCTCGATCCCGTAAACATTTAATTAACAGCTAAACACCC
Asymblepharus_sikimensis	AGACAGACGGGCCTCGATCCCGTAAACGTTTAGTTAACAGCTAAACACCT
Sphenomorphus_indicus	AGACAGACGGGCCTCGATCCCGTAAAACCTTAGTTAACAGCTAAAAACCC
Scincella_rupicola	AGACAGACGGGCCTCGATCCCGTAAAACCTTAGTTAACAGCTAAACACCC
Scincella_lateralis	AGACAGACGGGCCTCGATCCCGTAAAATTTTAATTAACAGCTAAATACCC
Scincella_tsinlingensis	AGACAGACGGGCCTTGATCCCGTAAAATTTTAATTAACAGCTAAATACCC
Scincella_potanini	AGACAGACGGGCCTCGATCCCGTAAAATTTTAATTAACAGCTAAACACCC
Eumeces_quadri-lineatus	AGATAGACGGGCCTCGATCCCGTAAAATTTTAGTTAACAGCTAAACACCC
Eumeces_capito	AGACAGACGGGCCTCGATCCCGTAAACTTTTAGTTAACAGCTAAACACCC
Eumeces_gilberti	AGATAGACGGGCCTTGATCCCGTAAAATTTTAGTTAACAGCTAAACACCC
Eumeces_skiltonianus	AGATAGACGGGCCTTGATCCCGTAAAATTTTAGTTAACAGCTAAACACCC
Eumeces_egregius	AGATAGACGGGCCTTGATCCCGTAAAATTTTAGTTAACAGCTAAACACCC
Eumeces_anthracinus	AGATAGACGGGCCTCGATCCCGTAAAATTTTAGTTAACAGCTAAATACCC
Neoseps_reynoldsi	AGATAGACGGGCCTTGATCCCGTAAAATTTTAGTTAACAGCTAAACACCC
Eumeces_brevirostris	AGATAGACGGGCCTCGATCCCGTAAAATTTTAGTTAACAAACCAACACCC
Eumeces_callicephalus	AGATAGACGGGCCTCGATCCCGTAAAACCTTAGTTAACAGCTAAACACCC
Eumeces_inexpectatus	AGATAGACGGGCCTTGATCCCGTAAAATTTTAGTTAACAGCTAAACACCC
Eumeces_obsoletus	AGATAGACGGGCCTCGATCCCGTAAAATTTTAGTTAACAGCTAAATACCC
Eumeces_multivirgatus	AGATAGACGGGCCTCGATCCCGTAAAATTTTAGTTAACAGCTAAACACCC
Eumeces_fasciatus	AGATAGACGGGCCTCGATCCCGTAAAATTTTAGTTAACAGCTAAACACCC
Eumeces_laticeps	AGATAGACGGGCCTCGATCCCGTAAAATTTTAGTTAACAGCTAAACACCC

1701-1750

```
Qualifiers1 .....ASNOL.....O
Qualifiers2 .....<<<<D..<<<<<AA.....
Eremias_grammica -AACCCAGCGGGCTTCCATCTTCCCTTCCCCCG-TTATAAAAAAACGGGG
Platysaurus_capensis -AATCCAGCGGGCTTCTATCTA-CTTCTCCCGTTCTTAAA---AACGGGA
Mabuya_aurata -AATCCAGCGGGCTTCTATCCGT-----GGC-TTCAAAAAA-----
Chalcides_ocellatus -AATCCAGCGGGCTTCTATCCG---GGCAATAAAAA-----
Eurylepis_taeniolatus -AATCCAGCGGGCTTCTATCTA-----GGCTGAAAAGAAAG-----
Novoeumeces_schneideri -AACCCAGCGGGCTTCTGCCTG-----GGCTCTATTAAAA-----
Scincus_scincus -TATCCAGCGGGCTTCCACCTG---GGCTTTCTAAAAA-----
Ophiomorus_punctatissimus -AATCCAGCGGGCTTCTATCCG--TGCTTCTTAAAAAAG-----
Ablepharus_pannonicus -AATCCAGCGGGCTTCTATCCG--GCTTCTTTCAAAAAA-----
Asymblepharus_alaicus -AATCCAGCGGGCTTCTATCCG--GCTTTTTTGTTTTTTTTAAAAA--
Asymblepharus_sikimmensis TAATCCAGCGGGCTTCTGTCCG--GCTTTATTTCTAAAAA-----
Sphenomorphus_indicus -AATCCAGCGGGCTTCTGTCCG-----GGC-TTCTAAAAA-----
Scincella_rupicola -TACCCAGCGGGCTTCTGTCCG--GCTTTTATAAAAAA-----
Scincella_lateralis -TAACCCAGTGGGCTTCTGTCCG--GCTTTTTTCATTAAAAA-----
Scincella_tsinlingensis -AATCCAGCGGGCTTCTGTCCG--GCTTTTTTATTAAAAA-----
Scincella_potanini -AATCCAGCGGGCTTCTGTCCA--GTCTTTTTTTTTAAAAA-----
Eumeces_quadrilineatus -AATCCAGCGGGCCTCTATCCG--CGCTTCTTCTATAAGAAGAAG-----
Eumeces_capito -TATCCAGCGGGCCTCTGTCCG--CGCTTCTTCTTTCCGTAGAAGAAG--
Eumeces_gilberti -AATCCAGCGGGCCTCTATCCG--CGTCTTCTTCTATTTAGAAGAAG---
Eumeces_skiltonianus -AATCCAGCGGGCCTCTATCCG--CGTCTTCTTCTATTTAGAAGAAG---
Eumeces_egregius -AATCCAGCGGGCCTCTATCCG--CGCTTCTTCTGTTAGAAGAAG-----
Eumeces_anthracinus -AATCCAGCGGGCCTCTATCCG--CGCTTCTTCTATTTAGAAGAAG----
Neoseps_reynoldsi -CATCCAGCGGGCCTCTATCCG--CGCTTCTTCTATCAGTAGAAGAAG--
Eumeces_brevirostris -AATCCAGCGGGCTTCTATCCG--TGCTTCTTCTTATTCAAGAAGAAG--
Eumeces_callicephalus -CATCCAGCGGGCCTCTATCCG--CGCTTCTTCTGTTAGAAGAAG-----
Eumeces_inexpectatus -AATCCAGCGGGCCTCTATCCG--CGCTTCTTCTGTTAGAAGAAG-----
Eumeces_obsoletus -AAACCAGCGGGCCTCTATCCG--CGCTTCTTCTATTTAGAAGAAG----
Eumeces_multivirgatus -AAACCAGCGGGCCTCTATCCG--CGCTTCTTCTATTAGAAGAAG-----
Eumeces_fasciatus -CAGCCAGCGGGCCTCTATCCG--CGCTTCTTCTGTT-AGAAGAAG----
Eumeces_laticeps -CAGCCAGCGGGCCTCTATCCG--CGCTTCTTCTGTT-AGAAGAAG----
```

1751-1800

Qualifiers1	LCYS.....
Qualifiers2	. *<<<<<AA<<<<T.....<<<<T....<<<AC..COD..<<<AC.
Eremias_grammica	GAAGCCCCGGCACCTTAAT---GGTGCTTCTCCAAATTTGCATTTTGGC
Platysaurus_capensis	GAAGCCCCGGCACCTTCAA---GGTGCTTCTTCAAATTTGCAATTTGAC
Mabuya_aurata	-AAGCCCCGAAACGCCTTTAG--GGTTTATCTCTAGATTTGCACTCTAGC
Chalcides_ocellatus	-AAAGCCCCGGCATAACGTAAA---TACGCTTCTCCAGATTTGCACTCTGAC
Eurylepis_taeniolatus	-AAGCCTAGGTACACCCTCG---TGTACGTCTCTAGATTTGCACTCTAGC
Novoeumeces_schneideri	-AAGCCCAGGCACACCCTAG---TGTGCGTCTCTAGATTTGCAGTCTAGC
Scincus_scincus	-AAGCCCAGGTACACCTTAG---TGTGCGTCTTCCAGATTTGCAATCTGAC
Ophiomorus_punctatissimus	-AAGCCCTGGCACACGTAAG---TGTGCTTCTCTAGATTTGCATTCTAGC
Ablepharus_annonicus	-AAGCCGAGGCACACCTTTGGG-TGTGCGTCTCTAGATTTGCACTCTAGC
Asymblepharus_alaicus	-AAGCCGCGGCACACCTTTGGG-TGTGCGTCTCTAGATTTGCACTCTAGC
Asymblepharus_sikimensis	-AAGCCGAGGCACACCTTTTGGGTGTGCGTCTCTAGATTTGCACTCTAGT
Sphenomorphus_indicus	-AAGCCGCGGCACACCTTTG---TGTGCGTCTCTAGATTTGCATTCTAGT
Scincella_rupicola	-AAGCCGCGGCACACCTTTGGG-TGTGCTTCTCTAGATTTGCACTCTAAT
Scincella_lateralis	-AAGCCGCGGCACACCGGGGGGGTGTGCCTCTCTAGATTTGCACTCTAGC
Scincella_tsinlingensis	-AAGCCTCGGTACGCCGTTGG--GGTACGTCTCTAGATTTGCACTCTAGT
Scincella_potanini	-AAGCCTCGGTACGCCCTTTGGG-GGTACGTCTCTAGATTTGCACTCTAGT
Eumeces_quadri-lineatus	-AAGCCCAGGAACACCTTTAG--GGTTCGTCTCAAGATTTGCACTCTTGC
Eumeces_capito	-AAGCCCCGGAACACTTTTAG--GGTTCTTCTCAAGATTTGCATTCTTGC
Eumeces_gilberti	-AAGCCCAGGAACGTCTTTAG--GGTTCTTCTCAAGATTTGCACTCTTGC
Eumeces_skiltonianus	-AAGCCCAGGAACACCTTTAG--GGTTCTTCTCAAGATTTGCACTCTTGC
Eumeces_egregius	-AAGCCCAGGAGCACCTTTTGG-GGCTCTTCTCAAGATTTGCACTCTTGC
Eumeces_anthracinus	-AAGCCCAGGAACGCCTTTAG--GGTTCTTTTCAAGATTTGCACTCTTGC
Neoseps_reynoldsi	-AAGCCCAGGAACACCTTTAG--GGTTCTTCTCAAGATTTGCACTCTTGC
Eumeces_brevirostris	-AAGCCCAGGAACGCCTTTAG--GGTTCTTTTCAAGATTTGCACTCTTGT
Eumeces_callicephalus	-AAGCCCTGGAACGCCTTTGG--GGTTCTTCTCAAGATTTGCACTCTTGC
Eumeces_inexpectatus	-AAGCCCAGGAACGCCTTTTAG-GGTTCTTCTCAAGATTTGCACTCTTGC
Eumeces_obsoletus	-AAGCCCAGGAACGCCTTTTGG-GGTTCTTCTCAAGATTTGCACTCTTGC
Eumeces_multivirgatus	-AAGCCCAGGAACACCTTTAG--GGTTCTTCTCAAGATTTGCACTCTTGC
Eumeces_fasciatus	-AAGCCCTGGAACACCTTTAG--GGTTCTTCTCAAGATTTGCACTCTTGC
Eumeces_laticeps	-AAGCCCTGGAACGCCTTTAG--GGTTCTTCTCAAGATTTGCACTCTTGC

1801-1850

Qualifiers1	.....CYS.....TYR.....
Qualifiers2	<<<D...<<<D...<<<<<AA.....*<<<<<AA<<<<T.....
Eremias_grammica	GTAATTACCTCAGGGCTACT-----GATAGGGGGAGTAA----
Platysaurus_capensis	GTAA---ATACCTCGGAACT-----TGGTAAGAGTAGTCTC---
Mabuya_aurata	GTGAA--ACACCGCGGGACT-----TGATAAGGACGGGGCTCAA
Chalcides_ocellatus	GTGGGAACCACCACGGACTTATAACAA----TGACAAGAGTGGGACTAAA
Eurylepis_taeniolatus	GTGGA--TCACCGCAAGGCTG-----TGATAAGAGCGGGCTAGT
Novoeumeces_schneideri	GTGATA-TCACCACAGAGCT-----TGGTAAGAGTGGGGGCCAA
Scincus_scincus	GTGATA-ACACCACAGGGCT-----TGATAAGAACGGGGCTAGA
Ophiomorus_punctatissimus	GTGAA--TCACCACAAGGCT-----TGATAAGAGCGGGACTAAA
Ablepharus_annonicus	GTGTA--TCACCACCCGGCT-----TGGGAAGAGCGGGATTGCA
Asymblepharus_alaicus	GTAAT--ATACCCACGGCT-----TGGGAAGAGCGGGACTCGC
Asymblepharus_sikimensis	GTATA--ATACTACCCGACT-----TGGTAAGAGCGGGTCATTT
Sphenomorphus_indicus	GTGGA--ACACCACACGACT-----TGATAAGAGTGGGGATTTT
Scincella_rupicola	GTGGAT-TCACCTCGCAGCTATTTAAACT-TGGTAAAGGTGGGGCTAAA
Scincella_lateralis	GTGTAA-TCACCTCGCAGCTCTCTTAAACATGGTAAGGGTGGGGCAA--
Scincella_tsinlingensis	GTGAAA-TCACCTCGAGGCC-----TGATAAGAGCGGGGTAGAC
Scincella_potanini	GTGAAA-TCACCTCGAGGCT-----TGATAAGGGTGGGACAAC-
Eumeces_quadri-lineatus	GTGAAA-ACACCACAGGGCT-----TGATAGGGGCAGGATTTAA
Eumeces_capito	GTGGA--GCACCACGGGGCT-----TGGTAGGAGCGGGACTCGA
Eumeces_gilberti	GTGAA--ACACCACAGGGCT-----TGATAGGAGCGGAG-TGAA
Eumeces_skiltonianus	GTGGAAA-CACCACAGGGCT-----TGATAGGAGCAGGGTGAA-
Eumeces_egregius	GTGAAA--CACCTCTGGGCC-----TGATAGGGGCAGGGTTAAA
Eumeces_anthracinus	GTGAA--ACACCGCTGGGCT-----TGGTAGGGGCAGGATTTAA
Neoseps_reynoldsi	GTGAA--ACACCACTGGGCT-----TGATAGGAGCAGGTAACC-
Eumeces_brevirostris	GTGAAG--CACTACAGGGCT-----TGGTAGGGACGGGGTTTAA
Eumeces_callicephalus	GTGAA--ACACCACAGGGCT-----TGGTAAGGACGGGGTTGAG
Eumeces_inexpectatus	GTGGAA-ACACCACAGGGCT-----TGGTAGAGGCAGGGACTAAC
Eumeces_obsoletus	GTGG-AAACACCACAGGGCT-----TGATAGGGACGGGGTTGAG
Eumeces_multivirgatus	GTGGAAA-CACCACAGGGCT-----TGATAGGGACGGAGCTGAA
Eumeces_fasciatus	GTGGTA-ACACCACAGGGCT-----TGATAGGGACGGGGCTGAG
Eumeces_laticeps	GTGGAA-ACACCACAGGGCT-----TGATAGGGACGGGGCTGAG

1851-1900

```
Qualifiers1 .....T
Qualifiers2 ..<<<<T....<<<AC..COD..<<<AC.<<<D.....<<<D..<<<<<
Eremias_grammica --CCTCCGTATTGGGGTTTACAGCCCCACGCCTTAC--TCAGCCACCCTA
Platysaurus_capensis --TCTACGTATGCAAGGCTACAACCTGCCGCTTATCC--TCAGCCATCTTA
Mabuya_aurata --CCCGCCTATGCAGGGCTACAACCTGCCGCTTAC--TCAGCCACCCTA
Chalcides_ocellatus A-CCCACATATACAGGGCTACAACCTGCCGCCTATT--TCGGCCATCTTA
Eurylepis_taeniolatus G-CCCGCATATACAGGGCTACAACCTGCCGCTTAC--TCAGCCATCTTA
Novoeumeces_schneideri C-CCCACCTATACAGGGCTACAACCTGCCGCTTAC--TCAGCCATCTTA
Scincus_scincus --CCCGCATGCACAGGGCTACAACCTGCCACCCTA---TCGGCCATCTTA
Ophiomorus_punctatissimus A-CCCGCCTGAACAGGGCTACAACCTGCCACCCTACAC--TCGGCCATCTTA
Ablepharus_annonicus --CCCGCCTGTGCAGGACTACAGCCTGCCGCTGACC--TCGGCCATCTTA
Asymblepharus_alaicus A-CCCGCCTTTGCAGGGCTACAACCTGCCACCCTGTTACTCGGCCATCTTA
Asymblepharus_sikimensis A-CCCGCCTGCACAGGGCTACAACCTGCCACCCTACTACTCGGCCATCTTA
Sphenomorphus_indicus TACCCACCTGTACAGAGCTACAATCTGTGCGCTTC---TCGACCATCTTA
Scincella_rupicola --CCCACGTAAACAGGGCTACAACCTGCCGCTTCC---TCGGCCACCCTA
Scincella_lateralis --ACCACGTGCACAGGGCTACAACCTGTTGCCTGC---TCGGCCACCCTA
Scincella_tsinlingensis --CCCACGTGCACAGGGCTACAACCTGCTGCGCTTC---TCGGCCATCTTA
Scincella_potanini --TCCACGTGCACAGGGCTACAACCTGTGCGCTGC---TCGGCCACCCTA
Eumeces_quadrilineatus A-CCCGCCTAAACAGGGCTACAACCTGCCACCCTACTC--TCGGCCACCCTA
Eumeces_capito --CCCGCCTAGGCAGGGCTACAACCTGCCACCCTTTC--TCGGCCATCCTA
Eumeces_gilberti --CCCGCATGAGCAGGGCTACAACCTGCCACCCTTTTT--TCGGCCATCCTA
Eumeces_skiltonianus --CCCGCATGAGCAGGGCTACAACCTGCCACCCTTTTT--TCGGCCATCCTA
Eumeces_egregius --CCCGCCTATGCAGGGCTACAACCTGCCGCTAATTCTCGGCCACCCTA
Eumeces_anthracinus --CCCGCCTCTGCAGGGCTACAACCTGCCGCTAATTCTCGGCCACCCTA
Neoseps_reynoldsi --CCTGCCTGTGCAGGGCTACAACCTGCCGCTAATTCTCGGCCACCCTA
Eumeces_brevirostris --CCCGCCTACACAGGGCTACAACCTGCCGCTAATC--TCGGCCACCCTA
Eumeces_callicephalus --CCCGCATGAGCAGGGCTACAACCTGCCGCTTCTT--TCGGCCACCCTA
Eumeces_inexpectatus --CCCGCATAAGCAGGGCTACAACCTGCCACCCTGTT--TCGGCCACCCTA
Eumeces_obsoletus --CCCGCATGAACAGGGCTACAACCTGCCGCTGCTT--TCGGCCACCCTA
Eumeces_multivirgatus --CCCGCATGGGCAGGGCTACAACCTGCCGCTACTT--TCGGCCACCCTA
Eumeces_fasciatus --CCCGCATGAACAGGGCTACAACCTGCCGCTACTT--TCGGCCACCCTA
Eumeces_laticeps --CCCGCATGAACAGGGCTACAACCTGCCGCTACTT--TCGGCCACCCTA
```

1901-1933

Qualifiers1	YR.COI.....COI
Qualifiers2	AA.1..1..1..1..1..1..1..1..1..1..
Eremias_grammica	CCTGTGCTCTAATTCGTTGATTTTTTCAACT
Platysaurus_capensis	CCTGTGTTTATCTCCCGCTGATTTTTTCAACA
Mabuya_aurata	CCTGTGACCATTAATCGTTGATTCTTCTCAACC
Chalcides_ocellatus	CCCGTGACCATCAATCGTTGACTATTCTCAACC
Eurylepis_taniolatus	CCTGTGACTATCAATCGTTGATTCTTCTCAACC
Novoeumeces_schneideri	CCCGTGATAATTAACCGTTGATTCTTCTCAACC
Scincus_scincus	CCTGTGACCGTCAATCGTTGATTCTTCTCAACC
Ophiomorus_punctatissimus	CCTGTGATCATTAAATCGTTGATTTTTCTCAACT
Ablepharus_pannonicus	CCTGTGACCATTAACCGTTGATTCTTCTCAACT
Asymblepharus_alaicus	CCTGTGACTATCACCGTTGATTCTTCTCGACT
Asymblepharus_sikimensis	CCTGTGACTATTAACCGTTGATTCTTCTCAACA
Sphenomorphus_indicus	CCCGTGACCATCAACCGTTGATTCTTCTCAACC
Scincella_rupicola	CCTGTGACAATTAATCGTTGATTCTTCTCGACT
Scincella_lateralis	CCTGTGATAATTACTCGTTGATTTTTCTCAACT
Scincella_tsinlingensis	CCTGTGACAATTAATCGTTGACTTTTTCTCAACC
Scincella_potanini	CCTGTGACAATTAATCGTTGATTCTTCTCAACC
Eumeces_quadri-lineatus	CCTGTGACTATCAATCGTTGATTCTTCTCAACC
Eumeces_capito	CCTGTGACCATTAATCGTTGATTCTTCTCAACT
Eumeces_gilberti	CCTGTGACCATTAATCGTTGACTTTTTCTCAACC
Eumeces_skiltonianus	CCTGTGACTATTAATCGTTGACTTTTTCTCAACC
Eumeces_egregius	CCTGTGACTATTAATCGTTGATTCTTCTCAACC
Eumeces_anthracinus	CCTGTGACTATTAATCGTTGACTCTTCTCAACC
Neoseps_reynoldsi	CCTGTGACTATTAATCGTTGATTCTTCTCAACC
Eumeces_brevirostris	CCTGTGACTATTAATCGTTGATTCTTCTCAACC
Eumeces_callicephalus	CCTGTGACTATTAATCGTTGATTTTTCTCAACC
Eumeces_inexpectatus	CCTGTGACTATCAATCGTTGATTTTTCTCAACC
Eumeces_obsoletus	CCTGTGACTATTAATCGTTGATTTTTCTCAACC
Eumeces_multivirgatus	CCTGTGACTATTAATCGTTGATTTTTCTCAACC
Eumeces_fasciatus	CCTGTGACTATTAATCGTTGATTTTTCTCAACC
Eumeces_laticeps	CCTGTGACTATTAATCGTTGATTTTTCTCAACC

Appendix B

Aligned nucleotide data (2126 positions) for ranid frogs:

Sequences are presented as light-strand sequence and tRNA secondary structure is designated above the sequence. Stems are indicated by arrows in the direction encoded: AA=amino acid-acceptor stem, D=dihydrouridine stem, AC=anticodon stem, T=TyC stem. The tRNA anticodons are designated COD. Asterisks indicate the unpaired 3' tRNA position 73. Periods represent bases located outside stem regions; 1 depicts the first codon position of protein-coding sequences. STP or ST represents stop codons. OL represents the replication origin for the light strand. All voucher specimens are deposited in the California Academy of Sciences (CAS) in San Francisco, or the Museum of Vertebrate Zoology (MVZ), University of California at Berkeley. The list of taxa first includes the voucher number followed by the GenBank number. Locality data are also included in GenBank files. Excluded positions are 154-174 1690 1713-1718 1927-1949 1969-1975 2007-2009.

<i>Xenopus laevis</i>	no voucher, M10217
<i>Bufo andrewsi</i>	CAS194888, AY607301
<i>Rana limnocharis</i>	CAS194255, AY607302
<i>Polypedates leucomystax</i>	MVZ222058, AY607303
<i>Amolops hongkongensis</i>	MVZ217679, AY607304
<i>Rana tientaiensis</i>	CAS194335, AY607305
<i>Rana ridibunda</i>	MVZ218680, AY607306
<i>Rana nigromaculata</i>	CAS194407, AY607307
<i>Rana plancyi</i>	MVZ211349, AY607308
<i>Rana catesbeiana</i>	MVZ196171, AF314016
<i>Rana sylvatica</i>	MVZ-RM10421, AF314017
<i>Rana warschewitschii</i>	MVZ207333, AY607309
<i>Rana areolata</i>	MVZ145472, AY607310
<i>Rana pipiens</i>	MVZ227675, DQ471440
<i>Rana pretiosa</i>	MVZ137420, AF314020
<i>Rana boylii</i>	MVZ148941, AF314019
<i>Rana aurora</i>	MVZ227645, AF314021
<i>Rana cascadae</i>	MVZ230719, AF314022
<i>Rana muscosa</i> _1 (N. CA)	CAS209386, AF314023
<i>Rana muscosa</i> _2 (S. CA)	MVZ230142, AF314029
<i>Rana macronemis</i>	MVZ218729, AY607311
<i>Rana chaochiaoensis</i>	CAS194478, AY607312
<i>Rana japonicus</i>	MVZ208704, AY607313
<i>Rana_amurensis</i>	CAS194156, AY607314
<i>Rana chensinensis</i> _1 (Gansu)	CAS178022, AY607315
<i>Rana chensinensis</i> _2 (Shaanxi)	CAS178036, AY607316
<i>Rana temporaria</i>	MVZ218655, AF314018

401-450

```
Qualifiers1 .....ILE...GLN
Qualifiers2 ..COD..AC>>>...T>>>>.....T>>>>AA>>>>*...<<<
Xenopus_laevis TTGATAGAGTGAAATATATGGGGTTCAAACCCCATCATCTCCT-----TAG
Bufo_andrewsi TTGATAGGGAGAACAAATAGGAGTTCAAATCTCCTCGCTTCCT-----TAG
Rana_limnocharis TTGATAGGGAGGCTTATAGAGGTTCAAACCCCTCTCGCTTCTC----TAA
Polypedates_leucomystax TTGATAGGGAGGCTAATATGGGGTTCAAACCCCATCACTTCCT-----TAA
Amolops_hongkongensis TTGATAGGGAGGCAAATAGGGGTTCAAACCCCTTGCTTCCTCATCTTAA
Rana_tientaiensis TTGATAGGGAGTCTCATAGGGGTTCAAACCCCTCTCTTCCT-----TAA
Rana_ridibunda TTGATAGGGAGGCTAATAGGGGTTCAAACCCCTCACTTCCTC----TAA
Rana_nigromaculata TTGATAGGGAGGCTAATAGGGGTTCAAACCCCTCACTTCCTC----TAA
Rana_plancyi TTGATAGGGAGGCTAATAGGGGTTCAAACCCCTCACTTCCTC----TAA
Rana_catesbeiana TTGATAGGGAGGCTTATAGGGGTTCAAACCCCTCACTTCCTC----TAA
Rana_sylvatica TTGATAGGGAGGCTCATAGGGGTTCAAACCCCTCACTTCCTT----TAA
Rana_warschewitschii TTGATAGGGAGACTAATAGGAGTTCAAACCTCCTCACTTCCTC----TAA
Rana_areolata TTGATAGGGAGACCTATAGGGGTTCAAACCCCTCACTTCCTT----TAA
Rana_pipiens TTGATAGGGAGACCTATAGGGGTTCAAACCCCTCACTTCCTT----TAA
Rana_pretiosa TTGATAGGGAGGCTCATAGGGGTTCAAACCCCTCACTTCCTT----TAA
Rana_boylii TTGATAGGGAGGCTCATAGGGGTTCAAACCCCTCACTTCCTC----TAA
Rana_aurora TTGATAGGGAGGCTCATAGGGGTTCAAACCCCTCACTTCCTT----TAA
Rana_cascadae TTGATAGGGAGGCTCATAGGGGTTCAAACCCCTCACTTCCTT----TAA
Rana_muscosa_1 TTGATAGGGAGGCTCATAGGGGTTCAAACCCCTCATTTTCCTT----TAA
Rana_muscosa_2 TTGATAGGGAGGCTCATAGGGGTTCAAACCCCTCACTTCCTT----TAA
Rana_macronemis TTGATAGGGAGGCTAATAGGGGTTCAAACCCCTCACTTCCTT----TAA
Rana_chaochiaoensis TTGATAGGGAGGCTAATAGGGGTTCAAACCCCTCACTTCCTTT---TAA
Rana_japonicus TTGATAGGGAGGCTAATAGGGGTTCAAACCCCTCACTTCCTT----TAA
Rana_amurensis TTGATAGGGAGGCTGATAGGGGTTCAAACCCCTCACTTCCTC----TAA
Rana_chensinensis_1 TTGATAGGGAGGCTAATAGGGGTTCAAACCCCTCACTTCCTT----TAA
Rana_chensinensis_2 TTGATAGGGAGGCTAATAGGGGTTCAAACCCCTCACTTCCTT----TAA
Rana_temporaria TTGATAGGGAGGCCAATAGGGGTTCAAACCCCTCACTTCCTT----TAA
```

451-500

Qualifiers1	.....
Qualifiers2	<<AA<<<<T.....<<<<T....<<<AC..COD..<<<AC.<<<D...
Xenopus_laevis	AAAGACAGGAATTGAACCTGCACCTGAGAGATCAAACCCTCCGTAATTC
Bufo_andrewsi	AAAGATAGGAATTGAACCTATAACTGAGAGATCAAACCCTCCGTGTAATTC
Rana_limnocharis	AGAGATAGGAATTGAACCTACACCTAAGAGATCAAACCCTCTCGCACTCC
Polypedates_leucomystax	AGAGATAGGAGTTGAACCTACGTCTAAGGGATCAAACCCTTCGCTATTC
Amolops_hongkongensis	AGAGATAGGAATTGAACCTATATTAGAGAGATCAAACCCTCTGTACTTC
Rana_tientaiensis	AGAAATAGGAATTGAACCTACACTTAAGAGATCAAACCCTTTGTACTTC
Rana_ridibunda	AGAAATAGGAGTCGAACCTATACCTAAGAGATCAAACCCTTTGTACTTC
Rana_nigromaculata	AGAGATAGGAGTCGAACCTACACCTAAGAGATCAAACCCTTTGTACTTC
Rana_plancyi	AGAGATAGGAGTCGAACCTACACCTAAGAGATCAAACCCTTTGTACTTC
Rana_catesbeiana	AGAGATAGGAATTGAACCTATACTTAAGAGATCAAACCCTTTGTACTTC
Rana_sylvatica	AGAAATAGGAATCGAACCTATACCTAAGAGATCAAACCCTTTGTACTTC
Rana_warschewitschii	GCAAATAGGAATTGAACCTACACCTAAGGGATCAAACCCTTTGTACTTC
Rana_areolata	AGAAACAGGAATTGAACCTGTACCTGAGAGATCAAACCCTCTGTACTTC
Rana_pipiens	AGAGGCAGGAATTGAACCTGCACCTGAGAGATCAAACCCTCTGTACTCC
Rana_pretiosa	AGAGATAGGAATCGAACCTACACCTAAGAGATCAAACCCTTTGCACTTC
Rana_boylii	AGAGATAGGAGTCGAACCTACACCTAAGAGATCAAACCCTTTGTACTTC
Rana_aurora	AGAGGTAGGAATCGAACCTACACCTAAGAGATCAAACCCTTTGCACTTC
Rana_cascadae	AGAGATAGGAATCGAACCTACACCTAAGAGATCAAACCCTTTGCACTCC
Rana_muscosa_1	AGAGATAGGAATCGAACCTACACCTAAGAGATCAAACCCTTTGCACTTC
Rana_muscosa_2	AGAGATAGGAATCGAACCTACACCCAAGAGATCAAACCCTTTGCACTTC
Rana_macronemis	AGAGATAGGACTCGAACCTATACCTGAGAGATCAAACCCTCTGCACTCC
Rana_chaochiaoensis	AAAGATAGGAATCGAACCTACATCTGAGAGATCAAACCCTCTGTACTTC
Rana_japonicus	AAAAATAGGGATCGAACCTATATCTGAGAGATCAAACCCTCTGTACTTC
Rana_amurensis	AGAGATAGGAATTGAACCTATGCCTGAGAGATCAAACCCTCTGCACTTC
Rana_chensinensis_1	AGAAATAGGAATTGAACCTATACCTGAGAGATCAAACCCTCTGTACTCC
Rana_chensinensis_2	AGAAATAGGAATCGAACCTATACCTGAGAGATCAAACCCTCTGTACTCC
Rana_temporaria	AGAGATAGGAGTTGAACCTATACCTGAGAGATCAAACCCTCTGCACTTC

501-550

```
Qualifiers1 .....GLN.....
Qualifiers2 ....<<<D.<<<<AAA>>>>..D>>>.....D>>>.AC>>>..CO
Xenopus_laevis CACTATACTACTTCCTA-----
Bufo_andrewsi CTTTTACTACTTTCTA-----
Rana_limnocharis CTCTATGCTACTCTTTAGTAAGGTCAGCTAATTCTAAGCTTTTGGGCTCA
Polypedates_leucomystax CACCTTGCTTCTCTTTA-----
Amolops_hongkongensis CCTTGTA TACTACTCCTTA-----
Rana_tientaiensis CCTTATACTATTTCCTTA-----
Rana_ridibunda CTTTATACTACTCCTTA-----
Rana_nigromaculata CTTTATACTACTCCTTA-----
Rana_plancyi CTTTATACTACTCCTTA-----
Rana_catesbeiana CTTTATACTACTCCTTA-----
Rana_sylvatica CTTTATACTACTCCTTA-----
Rana_warschewitschii CCTTATACTATTTCCTTA-----
Rana_areolata CATTATACTTCTCCTTA-----
Rana_pipiens CCCTATACTACTCCTTA-----
Rana_pretiosa CCTTATACTACTCCTTA-----
Rana_boylii CTCTATACTACTCCTTA-----
Rana_aurora CTTTATACTACTCCTTA-----
Rana_cascadae CTTTATACTACTCCTTA-----
Rana_muscosa_1 CTTTGTACTACTCCTTA-----
Rana_muscosa_2 CTTTATACTACTCCTTA-----
Rana_macronemis CCTTATACTACTCCTTA-----
Rana_chaochiaoensis CTTTGTACTACTTCTTA-----
Rana_japonicus CTTTGTACTACTCCTTA-----
Rana_amurensis CCCTATGCTACTCCTTA-----
Rana_chensinensis_1 CCTTATACTACTCCTTA-----
Rana_chensinensis_2 CCTTATACTACTCCTTA-----
Rana_temporaria CATTATACTACTCCTTA-----
```

551-600

```
Qualifiers1 .....MET.....
Qualifiers2 D..AC>>>....T>>>>.....T>>>>AA>>>>*. ...A>>>>..D
Xenopus_laevis -----GTAAGTCA
Bufo_andrewsi -----GTAAGTCA
Rana_limnocharis TGCCCCAACCATGTTGGTTCAAATCCTCCCCTTACTACCCGGTAAAGTCG
Polypedates_leucomystax -----GTAAGATCA
Amolops_hongkongensis -----GTAAGTCA
Rana_tientaiensis -----GTAAGTAA
Rana_ridibunda -----GTAAGTCA
Rana_nigromaculata -----GTAAGTCA
Rana_plancyi -----GTAAGTCA
Rana_catesbeiana -----GTAAGGTAA
Rana_sylvatica -----GTAAGGTAA
Rana_warschewitschii -----GTAAGGTAA
Rana_areolata -----GTAAGGTAA
Rana_pipiens -----GTAAGGTAA
Rana_pretiosa -----GTAAGGTAA
Rana_boyllii -----GTAAGGTAA
Rana_aurora -----GTAAGGTAA
Rana_cascadae -----GTAAGGTAA
Rana_muscosa_1 -----GTAAGGTAA
Rana_muscosa_2 -----GTAAGGTAA
Rana_macronemis -----GTAAGGTAA
Rana_chaochiaoensis -----GTAAGGTAA
Rana_japonicus -----GTAAGGTAA
Rana_amurensis -----GTAAGGTAA
Rana_chensinensis_1 -----GTAAGGTAA
Rana_chensinensis_2 -----GTAAGGTAA
Rana_temporaria -----GTAAGGTAA
```

601-650

```
Qualifiers1 .....
Qualifiers2 >>>.....D>>>.AC>>>..COD..AC>>>....T>>>>.....T>>
Xenopus_laevis GCTAAA-AAAGCTTTTGGGCCCATACCCCAACAATGTTGGTTAAACCCCT
Bufo_andrewsi GCTAAA-CAAGCTTTTGGGCCCATACCCCAACAATGTTGGTTAAACCCCC
Rana_limnocharis GCTAAT-TAAGCTCTTGGGCCCATACCCCAACAATGTAGGTGAAATCCCT
Polypedates_leucomystax GCTAAA-AAAGCTTTTGGGCCCATACCCCAACAATGTTGGTTAAACTCCT
Amolops_hongkongensis GCTAACACAAGCTTTTGGGCCCATACCCCAACAATGTTCGGTTAAAATCCT
Rana_tientaiensis GCTAAA-TAAGCTTTTGGGCCCATACCCCAACAATGTTGGTTAAAATCCT
Rana_ridibunda GCTAAA-TAAGCTTTTGGGCCCATACCCCAACAATGTTGGTTAAAATCCT
Rana_nigromaculata GCTAAA-TAAGCTTTTGGGCCCATACCCCAACAATGTTGGTTAAAATCCT
Rana_plancyi GCTAAA-TAAGCTTTTGGGCCCATACCCCAACAATGTTGGTTAAAATCCT
Rana_catesbeiana GCTAAA-TAAGCTTTTGGGCCCATACCCCAACAATGTTGGTTAAAATCCT
Rana_sylvatica GCTAAA-TAAGCTCTTGGGCCCATACCCCAATAATGTTGGTTAAAATCCT
Rana_warschewitschii GCTAAA-TAAGCTCTTGGGCCCATACCCCAATCATGTTGGTTAAAATCCT
Rana_areolata GCTAAA-TAAGCTCTTGGGCCCATACCCCAATAATGTTGGTTAAAATCCT
Rana_pipiens GCTAAA-TAAGCTCTTGGGCCCATACCCCAATAATGTTGGTTAAAATCCT
Rana_pretiosa GCTAAA-TAAGCTTTTGGGCCCATACCCCAACAATGTTGGTTAAAATCCT
Rana_boylii GCTAAA-TAAGCTTTTGGGCCCATACCCCAACAATGTTGGTTAAAATCCT
Rana_aurora GCTAAA-TAAGCTTTTGGGCCCATACCCCAACAATGTTGGTTAAAATCCT
Rana_cascadae GCTAAA-TAAGCTTTTGGGCCCATACCCCAACAATGTTGGTTAAAATCCT
Rana_muscosa_1 GCTAAA-TAAGCTTTTGGGCCCATACCCCAACAATGTTGGTTAAAATCCT
Rana_muscosa_2 GCTAAA-TAAGCTTTTGGGCCCATACCCCAACAATGTTGGTTAAAATCCT
Rana_macronemis GCTAAA-TAAGCTTTTGGGCCCATACCCCAACAATGTTGGTTAAAATCCT
Rana_chaochiaoensis GCTAAA-TAAGCTTTTGGGCCCATACCCCAACAATGTTGGTTAGAATCCT
Rana_japonicus GCTAAA-TAAGCTTTTGGGCCCATACCCCAACAATGTTGGTTAAAATCCT
Rana_amurensis GCTAAA-TAAGCTTTTGGGCCCATACCCCAAAAATGTTGGTTAAAATCCT
Rana_chensinensis_1 GCTAAA-CAAGCTTTTGGGCCCATACCCCAACAATGTTCGGTTAAAATCCT
Rana_chensinensis_2 GCTAAA-CAAGCTTTTGGGCCCATACCCCAACAATGTTCGGTTAAAATCCT
Rana_temporaria GCTAAA-TAAGCTTTTGGGCCCATACCCCAACAATGTTGGTTAAAATCCT
```

651-700

```
Qualifiers1          .....METND2.....
Qualifiers2          >>AA>>>>*1..1..1..1..1..1..1..1..1..1..1..1..1..1..1..1
Xenopus_laevis       TCCTTTACTAATGAACCCAATCACATTTTCAGTTGTACTAACCAGCCTTG
Bufo_andrewsi        TCCTTTACTAATAAATCCCCTATGCTCTATCAATAATTGTCTCAAGCCTTG
Rana_limnocharis     TCCTTTACCTATCAACCCAGCAACACTTTCAGTCCTGATTATCAGTCTCA
Polypedates_leucomystax TCTCTTACTAATTAACCCCTAGCTTACTCTATATTTTTACTTAGCCTCG
Amolops_hongkongensis TCCTTTACTAATTAACCCCTCTTGCCCTAACAATATTCCTTATTAGCCTCG
Rana_tientaiensis    TCCTTACTAATTAACCCACTTGCCCTAACCATTTTTCTTCTTAGCCTCG
Rana_ridibunda       TCCTTTACTAATTAACCCCTTGCCCTGACAATTTTTTTACTAAGCCTCG
Rana_nigromaculata   TCCTTTACTAATTAATCCCCTCGCCCTGACAATTTTTTTATTTAGCCTCG
Rana_plancyi         TCCTTTACTAATTAATCCCCTCGCCCTGACAATTTTTTTATTTAGCCTCG
Rana_catesbeiana     TCCTTTACTAATTAATCCTCTTGCCCTAACAATTTTCCTACTAAGTTTGTAG
Rana_sylvatica       TCCTTTACTAATTAATCCTCTTGCCCTAACAATTTTTCTACTAAGCCTCG
Rana_warschewitschii TCCTTTGCTAATTAATCCCCTTGCCCTAACAATTTTATTATTAAGCCTTG
Rana_areolata        TCCTTTACTAATTAACCCCTCGCCCTAACAATTTTCCTTTTAAAGTCTTG
Rana_pipiens         TCCTTACTAATCAACCCCTCTCGCTTTAACAATTTTTCTCTTAAAGTCTCG
Rana_pretiosa        TCCTTTACTAATTAACCCCTCGCCCTAACAATCTTCCTATTAAGCCTCG
Rana_boylii          TCCTTTACTAATTAACCCCTCTTGCCCTAACAATTTTCCTGCTAAGTCTCG
Rana_aurora          TCCTTTACTAATTAACCCCTCGCCCTAACAATCTTCCTATTAAGCCTCG
Rana_cascadae        TCCTTTACTAATTAACCCCTTGCCCTAACGATTTTCCTTCTAAGCCTCG
Rana_muscosa_1       TCCTTTACTAATTAACCCCTCGCCCTAACAATCTTCCTATTAAGCCTCG
Rana_muscosa_2       TCCTTTACTAATTAATCCCCTCGCCCTAACAATCTTCCTATTAAGTCTCG
Rana_macronemis      TCCTTTACTAATTAATCCCCTTGCCCTAACGATTTTCCTATTAAGCCTTG
Rana_chaochiaoensis  TCCTTTACTAATGAACCCCCCGCTCTAACCATTTTCCTATTAAGCCTTG
Rana_japonicus       TCCTTTACTAATGAATCCCCCGCGCTAACGATCTTCCTACTAAGCCTTG
Rana_amurensis       TCCTTTACTAATTAATCCCCTCGCTCTGACAATTTTTTTACTAAGCCTTG
Rana_chensinensis_1  TCCTTTACTAATGAACCCCTCGCCCTTACGATCCTTTTATTAAGCCTCG
Rana_chensinensis_2  TCCTTTACTAATGAACCCCTCGCCCTTACGATCCTTTTATTAAGCCTCG
Rana_temporaria      TCCTTTACTAATTAATCCCCTCGCCCTTACAATTCTCCTATCAAGCCTCG
```


1701-1750

Qualifiers1	RP.....
Qualifiers2	A>>>>..D>>>.....D>>>.AC>>>..COD..AC>>>....T>>>>
Xenopus_laevis	GAGATTTAAGTTAACA--AGACTAAGAGCCTTCAAAGCCCTAAGCAGGAG
Bufo_andrewsi	GAAACTTAGGATAATTT-AGACCAGGAGCCTTCAAAGCCCAAGTAGAAG
Rana_limnocharis	GAGACTTAGGATAGAA--AGACCAAGGGCCTTCAAAGCCCTAAGCAGGAG
Polypedates_leucomystax	GAAATTTAGGGTAATGCCAGCCCGAAGGCCTTCAAAGCCTTAAGCAAGAG
Amolops_hongkongensis	GAAATTTAGGTTAATGCTAGACCAAAGGCCTTCAAAGCCTTAAACAAAGG
Rana_tientaiensis	GAAACTTAGGCTAATAC-AGACCAAAGACCTTCAAAGCCTTAAGCGAAGG
Rana_ridibunda	GAAACTTAGGCTAACAA-AGACCAAAGGCCTTCAAAGCCTTAAGCGGAGG
Rana_nigromaculata	GAAACTTAGGCTAGCAC-AGACCAAAGGCCTTCAAAGCCTTAAGCGAGGG
Rana_plancyi	GAAACTTAGGCTAGCAC-AGACCAAAGGCCTTCAAAGCCTTAAGCGAGGG
Rana_catesbeiana	GAAACTTAGGCTAGCAC-AGACCAAAGGCCTTCAAAGCCTTAAGCGGAGG
Rana_sylvatica	GAAACTTAGGCTAACAT-AGACCAAAGGCCTTCAAAGCCTTAAGCGAAGG
Rana_warschewitschii	GAGATTTAGGTTAATA--AGACCAAAGACCTTCAAAGTCTTCAGTGAAGG
Rana_areolata	GGAACTTAGGCTAATAA-AGACCAAAGGCCTTCAAAGCCTTAAGTGAAGG
Rana_pipiens	GAAACTTAGGTTAACAT-AGACCAAAGGCCTTCAAAGCCTTAAGCGAAGG
Rana_pretiosa	GAAACTTAGGCTAACAC-AGACCAAAGGCCTTCAAAGCCTTAAGCGAAGG
Rana_boylii	GAAACTTAGGCTAATAC-AGACCAAAGGCCTTCAAAGCCTTAAGTGAAGG
Rana_aurora	GAAACTTAGGCTAATAC-AGACCAAAGGCCTTCAAAGCCTTAAGTGAAGG
Rana_cascadae	GAAACTTAGGCTAACAC-AGACCAAAGGCCTTCAAAGCCTTAAGTGAAGG
Rana_muscosa_1	GAAACTTAGGCTAACAC-AGACCAAAGGCCTTCAAAGCCTTAAGTGAAGG
Rana_muscosa_2	GAAACTTAGGCTAACAC-AGACCAAAGGCCTTCAAAGCCTTAAGTGAAGG
Rana_macronemis	GAAACTTAGGCTAACAC-AGACCAAAGGCCTTCAAAGCCTTAAGTGAAGG
Rana_chaochiaoensis	GAAACTTAGGCTAATTT-AGACCAAAGGCCTTCAAAGCCTTAAGTGAAGG
Rana_japonicus	GAAACTTAGGCTAACTC-AGACCAAAGGCCTTCAAAGCCTTAAGTGAAGG
Rana_amurensis	GAAACTTAGGTTAACCT-AGACCAAAGGCCTTCAAAGCCTTAAGCGAAGG
Rana_chensinensis_1	GAAACTTAGGCTAAAAT-AGACCAAAGGCCTTCAAAGCCTTAAGTGAAGG
Rana_chensinensis_2	GAAACTTAGGCTAAAAT-AGACCAAAGGCCTTCAAAGCCTTAAGTGAAGG
Rana_temporaria	GAAACTTAGGCTAACAC-AGACCAAAGGCCTTCAAAGCCTTAAGTGAAGG

1751-1800

```
Qualifiers1 .....TRP..ALA.....
Qualifiers2 .....T>>>AA>>>>*..*<<<<AA<<<<T.....<<<<T...
Xenopus_laevis TTAGAATCTCCTAATCTCTGAATAAGGCTTGCAGGATTTTATCCAACATC
Bufo_andrewsi TTAAAATCTTCTAGTTTCTG--TAAGACTTGCGGGACATTAACCCGCATC
Rana_limnocharis TTAAAGCCTCCTAGTTTCTG--TAGGACTTGCGGG--TTCTACCCACATC
Polypedates_leucomystax TTTAAATCTCTTAATTTCTG--TAGGACTTGTAGGATATTAACCTACATT
Amolops_hongkongensis TTAGACCCCTTTAATTTCTG--TAGGACTTGCAGGATATTATCCTACATC
Rana_tientaiensis TTTAACTCCTTCAGTTTCTG--TAGGACTTGCAGGATATCAACCTACATC
Rana_ridibunda TTAAACCCCTTCAGTTTCTG--TAGGACTTGCAGAATATTAATCTACATC
Rana_nigromaculata TTAAACTCCTTCAGTTTCTG--TAGGACTTGCAGGATATCAACCTACATC
Rana_plancyi TTTAACTCCTTCAGTTTCTG--TAGGACTTGCAGGATATCAACCTACATC
Rana_catesbeiana TTTAACTCCTTCAGTTTCTG--TAGGACTTGCAGGATATTAACCTACATC
Rana_sylvatica TTTAAATTCCTTCAGTTTCTG--TAGGACTTGCAGGATATCAACCTACATC
Rana_warschewitschii TTAAACGCCATCAATTTCCG--TAGGACTTGCAGGATATTAACCTACATT
Rana_areolata TTTAACTCCTTCAGTTTCTG--TAGAACTTGCAAGATATTAACCTACATC
Rana_pipiens TTTAACTCCTTCAGTTTCTG--TAGAACTTGCAAGATATTAACCTACATC
Rana_pretiosa TTTAACTCCTTCAGTTTCTG--TAGGACTTGCAGGATATTAACCTACATC
Rana_boylii TTAAACCCCTTCAGTTTCTG--TAGGACTTGCAGGACATCAACCTACATC
Rana_aurora TTAAACCCCTTCAGTTTCTG--TAGAACTTGCAAGATATTAACCTACATC
Rana_cascadae TTAAATCCCTTCAGTTTCTG--TAGGACTTGCAGGATATTAACCTACATC
Rana_muscosa_1 TTAAACCCCTTCAGTTTCTG--TAGAACTTGCAAGATATTAACCCACATC
Rana_muscosa_2 TTAAACCCCTTCAGTTTCTG--TAGAACTTGCAAGATATTAACCCACATC
Rana_macronemis TTAAACCCCTTCAGTTTCTG--TAGGACTTGCAGGACATTAACCCACATT
Rana_chaochiaoensis TTAGACCCCTTCAGTTTCTG--TAGGACTTGCAGGATATTAACCTACATC
Rana_japonicus TTAAACCCCTTCAGTTTCTG--TAGGACTTGCAGGACATCAACCTACATC
Rana_amurensis TTAAAGCCCTTCAGTTTCTG--TAGAACTTGCAAGATTCTAACCTACATT
Rana_chensinensis_1 TTAAACCCCTTCAGTTTCTG--TAGGACTTGCAGGGTATTAACCTACATC
Rana_chensinensis_2 TTAAACCCCTTCAGTTTCTG--TAGGACTTGCAGGGTATTAACCTACATC
Rana_temporaria TTAAACCCCTTCAGTTTCTG--TAGGACTTGCAGGACATTAACCTACATT
```

1801-1850

```
Qualifiers1 .....ALA..ASN...
Qualifiers2 .<<<AC..COD..<<<AC.<<<D.....<<<D..<<<<<AA..*<<<<<
Xenopus_laevis AATTGAATGCAACTCAAACACTTTT-AATTAACGTAAAGCCTTT-CTAGAA
Bufo_andrewsi TTCTGGATGCAAACCAGACACTTT-AACTAAGCTAAAGCCTT--CTAGAA
Rana_limnocharis ATTTGAATGCAACTCAAAAACCTTTTAAATTAAGCTAAAGTCCTTTCTAGAA
Polypedates_leucomystax TACTGAATGCAACTCAACCTTTTTAAATTAATAAAGCCCTT-CTAGAA
Amolops_hongkongensis TTCTAAATGCAACTCAGACCCTTTTAAATTAAGATAAAGCCCT--CTAGAA
Rana_tientaiensis TCCTGAATGCAACTCAGACCCTTTTGATTAAGATAAAGCCCT--CTAGAA
Rana_ridibunda TCCTGAATGCAACTCAGGCCCTTT-AATTAAGATAAAGCCCT--CTAGAA
Rana_nigromaculata TCCTGAATGCAACTCAGGCCCTTTAGATTAAGATAAAGCCCT--CTAGAA
Rana_plancyi TCCTGAATGCAACTCAGGCCCTTTAGATTAAGATAAAGCCCT--CTAGAA
Rana_catesbeiana TCCTGAATGCAACTCAGGCCCTTTAAATTAAGATAAAGCCCT--CTAGAA
Rana_sylvatica TCCTGAATGCAACTCAGACTCTTTAAATTAAGATAAAGCCCT--CTAGAA
Rana_warschewitschii TTCTGAATGCAACTCAGACTCTTTGGCTTAAGATAAAGTCCT--CTAGAA
Rana_areolata TTCTGAATGCAACTCAGACCCTTTAAATTAAGATAAAGCTCT--CTAGAA
Rana_pipiens TTCTGAATGCAACTCAGACCCTTTCAATTAAGATAAAGTTCT--CTAGAA
Rana_pretiosa TCCTGAATGCAACTCAGGCCCTTTAAATTAAGATAAAGCCCTT-CTAGAA
Rana_boylii TCCTGAATGCAACTCAGGCCCTTTAAATTAAGATAAAATCCTG-CTAGAA
Rana_aurora TCCTGAATGCAACTCAGACCCTTTAAATTAAGATAAAGTCCTT-CTAGAA
Rana_cascadae TCCTGAATGCAACTCAGACCCTTTAAATTAAGATAAAGTCCTT-CTAGAA
Rana_muscosa_1 TCCTGAATGCAACTCAGACCCTTTAAATTAAGATAAAGTCCTT-CTAGAA
Rana_muscosa_2 TCCTGAATGCAACTCAGACCCTTTAAATTAAGATAAAGTCCTT-CTAGAA
Rana_macronemis TCCTGAATGCAACTCAGACTCTTTAGATTAAGATAAAGCCCT--CTAGAA
Rana_chaochiaoensis CCCTGAATGCAACTCAGATTCTTTAAATTAAGATAAAGTCCT--CTAGAA
Rana_japonicus TTCTGAATGCAACCCAGACTCTTTAAATTAAGGTAAAGTCCT--CTAGAA
Rana_amurensis TCCTGAATGCAACTCAGATTCTTTAAATTAAGATAAAGTTCT--CTAGAA
Rana_chensinensis_1 CCCTGAATGCAACTCAGATTCTTTAAATTAAGATAAAGTCCT--CTAGAA
Rana_chensinensis_2 CCCTGAATGCAACTCAGATTCTTTAAATTAAGATAAAGTCCT--CTAGAA
Rana_temporaria TCCTGAATGCAACTCAGGCTCTTTAAATTAAGATAAAGCCCT--CTAGAA
```

1851-1900

Qualifiers1	.....
Qualifiers2	AA<<<<T.....<<<<T.....<<<AC..COD..<<<AC.<<<D....
Xenopus_laevis	AGACGGGCCTCGATCCCGCAACATTTTGTAGTTAACAGCTAAACTCAA--TC
Bufo_andrewsi	AGACGGGCCTCGATCCCGCAAAATTTTGTAGTTAACAGCTAAACGCTCAATC
Rana_limnocharis	AGACGGGCCTTGATCCCGCAACAGTTTGTAGTTAACAGCTAAACGCTCTATC
Polypedates_leucomystax	AGACGGGCCTTGATCCCGTAATATTTTGTAGTTAACAGCTAAACACTCTATC
Amolops_hongkongensis	TGACGGGCCTCGATCCCGTAATATTTTGTAGTTAACAGCTAAATACTCTATC
Rana_tientaiensis	TGACGGGCCTCGATCCCGTAATATTTTGTAGTTAACAGCTAAGCACTCTATC
Rana_ridibunda	TGACGGGCCTCGATCCCGTAATATTTTGTAGTTAACAGCTAAACACTCTATC
Rana_nigromaculata	TGACGGGCCTCGATCCCGTAATATTTTGTAGTTAACAGCTAAACACTCTATC
Rana_plancyi	TGACGGGCCTCGATCCCGTAATATTTTGTAGTTAACAGCTAAACACTCTATC
Rana_catesbeiana	TGACGGGCCTCGATCCCGTAATATTTTGTAGTTAACAGCTAAACACTCTATC
Rana_sylvatica	TGACAGGCCTCGATCCTGTAATATTTTGTAGTTAACAGCTAAACACTCTATC
Rana_warschewitschii	TGACGGGCCTCGATCCCGTAATATTTTGTAGTTAACAGCTAAACACTCAATC
Rana_areolata	TGACGGGCCTTGATCCCGCAATAATTTTGTAGTTAACAGCTAAATACTCTATC
Rana_pipiens	TGACGGGCCTTGATCCCGTAATACTTTTGTAGTTAACAGCTAAATACTCAATC
Rana_pretiosa	TGACGGGCCTCGATCCCGTAATATTTTGTAGTTAACAGCTAAACACTCTATC
Rana_boylii	TGACGGGCCTCGATCCCGTAATATTTTGTAGTTAACAGCTAAACACTCTATC
Rana_aurora	TGACGGGCCTCGATCCCGCAATAATTTTGTAGTTAACAGCTAAATACTCTATC
Rana_cascadae	TGACGGGCCTTGATCCCGCAATAATTTTGTAGTTAACAGCTAAACACTCTATC
Rana_muscosa_1	TGACGGGCCTTGATCCCGCAATAATTTTGTAGTTAACAGCTAAACACTCTATC
Rana_muscosa_2	TGACGGGCCTTGATCCCGCAATAATTTTGTAGTTAACAGCTAAACACTCTATC
Rana_macronemis	TGACGGGCCTCGATCCCGTGATATTTTGTAGTTAACAGCTAAACACTCCATC
Rana_chaochiaoensis	TGACGGGCCTCGATCCCGTAATATTTTGTAGTTAACAGCTAAACACTCTATC
Rana_japonicus	TGACGGGCCTCGATCCCGTAATATTTTGTAGTTAACAGCTAAACACTCTATC
Rana_amurensis	TGACGGGCCTCGATCCCGTAATATTTTGTAGTTAACAGCTAAACACTCTATC
Rana_chensinensis_1	TGACGGGCCTCGATCCCGTAATGCTTTTGTAGTTAACAGCTAAATACTCTATC
Rana_chensinensis_2	TGACGGGCCTCGATCCCGTAATGCTTTTGTAGTTAACAGCTAAATACTCTATC
Rana_temporaria	TGACGGGCCTCGATCCCGTAATATTTTGTAGTTAACAGCTAAACACTCTATC

1901-1950

```
Qualifiers1 .....ASNOL.....
Qualifiers2 ....<<<D.<<<<AA>>>>>>>>.....>
Xenopus_laevis CAACGAGCTTCATTCTACTTCTCCCGTTTATTAAGCCAAAAAAC----C
Bufo_andrewsi CAGAGAGCTTCATTCTACTTCTCCCGTTTTTAAGAAA-----C
Rana_limnocharis CAGCGAGCTTCTTTCTACTTCTCCCGTTTTTGTAGGGGGGGGAAAAAAC
Polypedates_leucomystax CAGCGAGCTTCATTCTACTTCTCCCGTCTACAGCGAAA-----C
Amolops_hongkongensis CAGCGAGCTTCATTCTACTTCTCCCGCTTATAGAAA-----C
Rana_tientaiensis CAGCGAGCTTCATTCTACTTCTCCCGTTTAAGTAAG-----C
Rana_ridibunda CAGCGAGCTTCATTCTACTTCTCCCGCTTCTTTAAA-----C
Rana_nigromaculata CAGCGAGCTTCATTCTACTTCTCCCGCTTATTAATAAAA-----C
Rana_plancyi CAGCGAGCTTCATTCTACTTCTCCCGCTTATTAATAAAA-----C
Rana_catesbeiana CAGCGAGCTTCATTCTACTTCTCCCGCTTATAATAAAA-----C
Rana_sylvatica CAGCGAGCTTCATTCTACTTCTCCCGTCTATGAAAAAAA-----C
Rana_warschewitschii CAGCGAGCTTCACTCTACTTCTCCCGCTTATTTAAAAAAA-----C
Rana_areolata CAGCGAGCTTCATTCTACTTCTCCCGCTTATGGAAAAA-----C
Rana_pipiens CAGCGAGCTTCATTCTACTTCTCCCGCTTATAT--AAAA-----C
Rana_pretiosa CAGCGAGCTTCATTCTACTTCTCCCGCTTATTAATAAAA-----C
Rana_boylii CAGCGAGCTTCATTCTACTTCTCCCGCTTCAA-AAAAAA-----C
Rana_aurora CAGCGAGCTTCATTCTACTTCTCCCGCTTCTTAAAAAAA-----C
Rana_cascadae CAGCGAGCTTCATTCTACTTCTCCCGCTTCTTAAAAAAA-----C
Rana_muscosa_1 CAGCGAGCTTCATTCTACTTCTCCCGCTTCTTAAAAAAA-----C
Rana_muscosa_2 CAGCGAGCTTCATTCTACTTCTCCCGCTTCTTAAAAAAA-----C
Rana_macronemis CAGCGAGCTTCATTCTACTTCTCCCGTCTTAAAAAAA-----C
Rana_chaochiaoensis CAGCGAGCTTCATTCTACTTCTCCCGTCATGAAAAAA-----C
Rana_japonicus CAGCGAGCTTCATTCTACTTCTCCCGTCTGTGAAAAAAA-----C
Rana_amurensis CAGCGAGCTTCATTCTACTTCTCCCGTCTATGGGGGAAA-----C
Rana_chensinensis_1 CAGCGAGCTTCATTCTACTTCTCCCGTCTATAAAAAAAA-----C
Rana_chensinensis_2 CAGCGAGCTTCATTCTACTTCTCCCGTCTATGGAAAAAA-----C
Rana_temporaria CAGCGAGCTTCATTCTACTTCTCCCGTCTATGGAAAAAA-----C
```

1951-2000

```
Qualifiers1      ...OLCYS.....
Qualifiers2      >>>>*<<<<AA<<<<T.....<<<<T....<<<AC..COD..<<<A
Xenopus_laevis   GGGAGAAGCCC-GGCAAACCTTCG-TTTGCTTCTCGAGATTTGCAATCTG
Bufo_andrewsi    GGGAGAAGCCCCGGCAGAACTTCT-TCTGCGTCTCCGGACTTGCAATCTG
Rana_limnocharis GGGAGAAGCCCCGGCAGGAACTTATTCTGCTTCTTGGGGTTTGCAACCCC
Polypedates_leucomystax GGGAGAAGCCCCGGCAGAACTGCT-TCTGCTTCTTGC GGTTTGCAACCCGC
Amolops_hongkongensis GGGAGAAGCCCCGGCAGGTATTAA-CCTGCTTCTTGC GGTTTGCAACCCGC
Rana_tientaiensis GGGAGAAGCCCCGGCAGGCGTTAC-CCTGCATCTTGAGGTTTGCAACCTC
Rana_ridibunda   GGGAGAAGCCCCGGCAGGTATTAT-CCTGCGTTTTGCGGTTTGCAACCCGC
Rana_nigromaculata GGGAGAAGCCCCGGCAGGAATTAC-CCTGCATCTCGTGTTTGCAACCAC
Rana_plancyi     GGGAGAAGCCCCGGCAGGAATTAC-CCTGCATCTCGTGTTTGCAACCAC
Rana_catesbeiana GGGAGAAGCCCCGGCAGGTATTAT-ACTGCTTCTTGGGGTTTGCAACCCC
Rana_sylvatica   GGGAGAAGCCCCGGCAGGAATTAA-ACTGCGTTTCGAGGTTTGCAACCTC
Rana_warschewitschii GGGAGAAGCCCCGGCAGGTATTAT-TCTGCTTTTTGAGGTTTGCAACCCC
Rana_areolata   GGGAGAAGTCCCGGCAGGTCTTAT-CCTGCTTTTTGAGATTTGCAATCTC
Rana_pipiens     GGGAGAAGTCCCGGCAGGTTTTAC-CCTGCTTTTCGAGATTTGCAATCTC
Rana_pretiosa   GGGAGAAGCCCCGGCAGGTATTAT-CCTGCATCTTAAGGTTTGCAACCTC
Rana_boylii     GGGAGAAGCCCCGGCAGGAATTAT-CCTGCATCTTAAGGTTTGCAACCTC
Rana_aurora     GGGAGAAGCCCCGGCAGGTATCAA-CCTGCATTTTAAGGTTTGCAACCTC
Rana_cascadae   GGGAGAAGCCCCGGCAGGTATTAT-CCTGCATCTTGAGGTTTGCAACCTC
Rana_muscosa_1  GGGAGAAGCCCCGGCAGGAATTAT-CCTGCATCTTAAGGTTTGCAACCTC
Rana_muscosa_2  GGGAGAAGCCCCGGCAGGAATTAT-CCTGCATCTTAAGGTTTGCAACCTC
Rana_macronemis GGGAGAAGCCCCGGCAGGCGTTAA-CCTGCGTCTTGAGGTTTGCAACCCC
Rana_chaochiaoensis GGGAGAAGCCCCGGCAGGCGTTAA-CCTGCGTCTTGAGGTTTGCAACCCC
Rana_japonicus  GGGAGAAGCCCCGGCAGGCGTTAA-CCTGCGTTTTAAGGTTTGCAACCCT
Rana_amurensis  GGGAGAAGCCCCGGCAGGTATTAA-CCTGCGTCTTGAGGTTTGCAACCCC
Rana_chensinensis_1 GGGAGAAGCCCCGGCAGGCGTTAA-CCTGCGTCTTAGGGTTTGCAACCCC
Rana_chensinensis_2 GGGAGAAGCCCCGGCAGGCGTTAA-CCTGCGTCTTAGGGTTTGCAACCCC
Rana_temporaria GGGAGAAGCCCCGGCAGGCGTTAA-CCTGCGTCTTGAGGTTTGCAACCCC
```


2001-2050

```
Qualifiers1 .....CYSTYR.....
Qualifiers2 C.<<<D...<<<D...<<<<<AA*<<<<<AA<<<<T.....<<<<T.
Xenopus_laevis GCATGTCAAACACCGCA--GGCTTGATAAGAAGAGAGGA-CTTGAACCTCTG
Bufo_andrewsi GCGTGT--GACACCCCA-GGGCCTGATAAGAGAGAGGA-CTCTAACCTCCC
Rana_limnocharis ACGTGGT-AACACCCCA-GAGCCTGGTAAAGAGAGAGGA-CTTGAACCTCTG
Polypedates_leucomystax ACGTGT--AACACCCCGCGGGCCTGGTAAAGAGAGAGGG-TTTACACCTCTG
Amolops_hongkongensis ACATGT--AACACCCCA-GGGCCTGGTAGAGAGAGAGGA-CTCGCACCTCTG
Rana_tientaiensis ACGTGTT--ACACCCCA-GGGCCTGGTAAAGAGAGAGGA-CTTAAACCTCTG
Rana_ridibunda ACGTGTT-CACACTCCG-GAGCCTGGTAAAGAGAGAGGG-CTCAAACCTCTG
Rana_nigromaculata ACGTGCT-AACACCCCA-GGACCTGGTAAAGAGAGAGGG-CTTAAACCTCTG
Rana_plancyi ACGTGCT-GACACCCCA-GGACCTGGTAAAGAGAGAGGG-CTTAAACCTCTG
Rana_catesbeiana ACGTGTT-AACACCCCA-AGGCCTGGTAAAGAGAGAGGA-CTCAAACCTCTG
Rana_sylvatica ACGTGCT-GACACCCCA-GGGCCTGGTAAAGAGAGAGGA-CTTAAACCTCTG
Rana_warschewitschii ACGTGGT-AACACCCCA-AGGCCTGGTAAAGAGAGAGGA-CTCAAACCTCTG
Rana_areolata ACGTGTT-GACACCCCA-GAACCTGGTAAAGAGAGAGGG-CTCAAACCTCTG
Rana_pipiens ACGTGTT-AACACTCCA-GGACCTGGTAAAGAGAGAGGG-CTTAAACCTCTG
Rana_pretiosa ACGTGCT-AACACCCCA-AGGCCTGGTAAAGAGAGAGGG-CTCAAACCTCTG
Rana_boylii ACATGCT-AACACCCCA-GGGCCTGGTAAAGAGAGAGGG-CTCAAACCTCTG
Rana_aurora ACGTGCT-AACACCCCA-AGGCCTGGTAAAGAGAGAGGG-CTCAAACCTCTG
Rana_cascadae ACGTGCT-GACACCCCA-AGGCCTGGTAAAGAGAGAGGG-CTCAAACCTCTG
Rana_muscosa_1 ATGTGCT-GACACCCCA-AGGCCTGGTAAAGAGAGAGGG-CTCAAACCTCTG
Rana_muscosa_2 ATGTGCT-AACACCCCA-AGGCCTGGTAAAGAGAGAGGGGCTCAAACCTCTG
Rana_macronemis ACATGAT-AACACCACA-GAGCCTGGTAAAGAGAGAGGG-CTCAAACCTCTG
Rana_chaochiaoensis ACATGAT-AACACCCCA-AGGCCTGGTAAAGAGAGAGGG-CTCAAACCTCTG
Rana_japonicus ACGTGAT-AACACCCCA-AGGCCTGGTAAAGAGAGAGGG-CTTAAACCTCTG
Rana_amurensis ACGTGAT-AACACCCCA-GAGCCTGGTAAAGAGAGAGGA-TTCAAACCTCTG
Rana_chensinensis_1 ACGTGAT-AATACCCCA-GGGCCTGGTAAAGAGAGAGGG-CTCAAACCTCTG
Rana_chensinensis_2 ACGTGAT-AATACCCCA-GGGCCTGGTAAAGAGAGAGGG-CTCAAACCTCTG
Rana_temporaria ACATGAT-AACACCACA-AGGCCTGGTAAAGAGAGAGGA-CTTAAACCTCTG
```

2051-2100

```
Qualifiers1 .....TYR..COI.
Qualifiers2 ...<<<AC..COD..<<<AC.<<<D.....<<<D..<<<<<AA..1..1
Xenopus_laevis TACACGGAGCTACAATCCGCCGCCTATTACTCGGCCACCTTACCTGATGG
Bufo_andrewsi TAAGTGGAGCTACAAGCCACCGCCTTACCCTCGGCCATCTTACCC-GTGA
Rana_limnocharis TGATTGGGGCTACAACCCACCACCT---ACTCGGCCACTTTCACCT-GTGA
Polypedates_leucomystax TCCTTGGGGCTACAATCCACCACCT---ACTCGGCCACTTTACCT-GTGA
Amolops_hongkongensis TCTTCGGGGCTACAAACCCGCCACCT---GCTCGGCCACTCTACCT-GTGA
Rana_tientaiensis TCTTCGGGGCTACAACCCGCCGCCT---GCTCGGCCACTTTACCT-GTGA
Rana_ridibunda TCTTCGGGGCTACAACCCGCCGCCT---ACTCGGCCACTTTACCT-GTGA
Rana_nigromaculata TCTTCGGGGCTACAACCCGCCACCT---GCTCGGCCACTTTACCT-GTGA
Rana_plancyi TCTTCGGGGCTACAACCCGCCACCT---GCTCGGCCACTTTACCT-GTGA
Rana_catesbeiana TCTTCGAAGCTACAATTCGCCGCCT---GCTCGGCCACTTTACCT-GTGA
Rana_sylvatica TACTCGAAGCTACAATTCGCCACCT---ACTCGGCCACTTTACCT-GTGA
Rana_warschewitschii TGCTCGAAGCTACAATTCGCCGCCT---ACTCGGCCACTTTACCT-GTGA
Rana_areolata TCCTCGAAGCTACAATTCGCCACCT---GCTCGGCCACTTTACCT-GTGA
Rana_pipiens TCCTCGAAGCTACAATTCGCCACCT---ACTCGGCCACTTTACCT-GTGA
Rana_pretiosa TCCTCGGAGCTACAATCCGCCACCT---GCTCGGCCACTTTACCT-GTGA
Rana_boylii TCCTCGGAGCTACAATCCGCCGCCT---GCTCGGCCACTTTACCT-GTGA
Rana_aurora TCTTCGGAGCTACAATCCGCCGCCT---GCTCGGCCACTTTACCT-GTGA
Rana_cascadae TCCTCGGAGCTACAATCCGCCACCT---GCTCGGCCACTTTACCT-GTGA
Rana_muscosa_1 TCCTCGGAGCTACAATCCGCCGCCT---GCTCGGCCACTTTACCT-GTGA
Rana_muscosa_2 TCCTCGGAGCTACAATCCGCCACCT---GCTCGGCCACTTTACCT-GTGA
Rana_macronemis TCTTCGGAGCTACAATCCGCCGCCT---GCTCGGCCACTCTACCC-GTGA
Rana_chaochiaoensis TCTTCGGAGCTACAATCCGCCGCCT---GCTCGGCACTTTACCT-GTAA
Rana_japonicus TCTTCGGAGCTACAATCCGCCGCCT---GCTCGGCACTTTACCT-GTGA
Rana_amurensis TCTTCGGAGCTACAATCCGCCGCCT---GCTCGGCCACTTTACCT-GTGT
Rana_chensinensis_1 TCTTCGGAGCTACAATCCGCCGCCT---GCTCGGCCACTTTACCT-GTGA
Rana_chensinensis_2 TCTTCGGAGCTACAATCCGCCGCCT---GCTCGGCCACTTTACCT-GTGA
Rana_temporaria TCTTCGGAGCTACAATCCGCCGCCT---GCTCGGCCACTTTACCC-GTGA
```

2101-2126

```
Qualifiers1 .....COI
Qualifiers2 ..1..1..1..1..1..1..1..1..
Xenopus_laevis CAATTACTCGTTGATTATTCTCAACA
Bufo_andrewsi TAATCACCCGCTGACTATTTTCAACC
Rana_limnocharis TATTTTCTCGCTGACTCTTTTCTACC
Polypedates_leucomystax TATTAACCCGCTGATTTTTTCTCTACC
Amolops_hongkongensis TACTAACTCGTTGATTTTTTTCTACT
Rana_tientaiensis TACTTACACGTTGATTCTTTTCCACA
Rana_ridibunda TATTTACCCGCTGATTTTTTTCTACA
Rana_nigromaculata TATTTACCCGTTGATTCTTCTCTACT
Rana_plancyi TATTTACCCGTTGATTCTTCTCTACT
Rana_catesbeiana TATTCACCCGTTGATTTTTTCTCTACT
Rana_sylvatica TATTCACCCGTTGATTTTTTCTCTACC
Rana_warschewitschii TATTTACTCGCTGGGTTCTTTCTACA
Rana_areolata TATACACCCGCTGACTTTTTCTCTACC
Rana_pipiens TATATGCCCGCTGACTCTTTTCTACT
Rana_pretiosa TATTCACCCGCTGATTCTTCTCTACA
Rana_boylii TATTAACCCGCTGATTCTTCTCTACT
Rana_aurora TATTCACCCGCTGATTCTTTTCTACT
Rana_cascadae TATTCACCCGCTGATTCTTCTCTACT
Rana_muscosa_1 TATTCACCCGCTGATTCTTCTCTACT
Rana_muscosa_2 TATTCACCCGCTGATTCTTCTCTACT
Rana_macronemis TATTCACCCGCTGATTTTTTCTCTACT
Rana_chaochiaoensis TACTTGCCCGCTGATTCTTTTCTACT
Rana_japonicus TACTCACCCGCTGGTTTTTTTCTACT
Rana_amurensis TATTTACCCGCTGATTTTTTCTCAACC
Rana_chensinensis_1 TATTCACCCGCTGATTTTTTCTCTACC
Rana_chensinensis_2 TATTCACCCGCTGATTTTTTCTCTACC
Rana_temporaria TATTCACCCGCTGATTTTTTCTCTACT
```

Appendix C

Maximum-likelihood (ML) analyses also were performed (see the following two trees). Simultaneous optimization of ML parameters and phylogenetic hypotheses for these data sets was computationally impractical. To reduce computation time, ModelTest v3.6 (Posada and Crandall, 1998) was used to find the best fitting model of sequence evolution for the tree from unweighted parsimony analysis of these molecular data. The Akaike information criterion (AIC) was used as our model-selection criterion rather than hierarchical likelihood-ratio tests (hLRTs). Posada and Buckley (2004) and Diego (2004) recommend the former approach as it avoids the problem of comparing multiple nested or nonnested models simultaneously, can account for model selection uncertainty, and permits model-averaged inference. The best fitting model parameters were fixed and then used in 25 heuristic searches with random addition of taxa to find the overall best likelihood topology. Bootstrap resampling under these conditions was computationally impractical, and two alternative search conditions were applied for 100 bootstrap pseudoreplicates. Starting trees were obtained using neighbor joining and the reconnection limit was set to eight for TBR branch-swapping.

A single optimal likelihood tree for the Scincidae is found with a negative log likelihood of 25015.51 using a GTR+I+G nucleotide substitution model as selected by ModelTest. Model parameters are as follows: $a = 0.530$; proportion of invariant sites = 0.250; substitution rates $R(a) = 0.315$, $R(b) = 5.968$, $R(c) = 0.288$, $R(d) = 0.556$, and $R(e) = 2.877$; and estimated base frequencies $A = 0.370$, $C = 0.351$, $G = 0.063$, and $T = 0.217$. This topology is compatible with the strict consensus of the three overall most parsimonious trees (Fig. 1) except for the relative positions of *E. calliocephalus*, *E. inexpectatus*, and *E. obsoletus*. A single optimal likelihood tree for the Ranidae is found with a negative log likelihood of 22513.67 using a TrN+I+G nucleotide substitution model with the following parameters: $a = 0.545$; proportion of invariant sites = 0.298; substitution rates $R(a) = 1$, $R(b) = 14.191$, $R(c) = 1$, $R(d) = 1$, and $R(e) = 8.566$; and estimated base frequencies $A = 0.318$, $C = 0.305$, $G = 0.090$, and $T = 0.286$. This topology is compatible with the strict consensus of the three overall most parsimonious trees (Fig. 1 of main text) except for the relative positions of *Amolops hongkongensis*,

Rana tientaiensis, *R. boylei*, *R. pretiosa*, and *R. amurensis*. All nodes that differ between MP and ML analyses are poorly supported in each analysis.

REFERENCES

- Diego, P. 2004 Empirical problems of the hierarchical likelihood ratio test for model selection. *Syst. Biol.* **53**, 949-962.
- Posada, D., & Crandall, K. A. 1998 Modeltest: testing the model of DNA substitution. *Bioinformatics* **14**, 817-818.
- Posada, D. & Buckley, T. R. 2004 Model selection and model averaging in phylogenetics: advantages of the AIC and Bayesian approaches over likelihood ratio tests. *Syst. Biol.* **53**, 793-808.

