1. **Table S1a**: Dataset used in this study [taxonomy follows (Uetz & Hosek, 2015)]

**Table S1b**: Taxonomic coverage of turtle and squamate families used in this study

2. **Figure S1**

3. **Results using alternative SDM assignment for species with mixed or equivocal SDM as listed in Table S1:**
   - **Table S2**: MacroCAIC results using alternative SDM assignment
   - **Table S3**: BAMM estimation for the number of rate shifts in diversification. The number of rates shifts with the highest probability in each group is marked in bold.
   - **Table S4**: STRAPP results
   - **Table S5**: Summary of transition rate parameters estimates using the MK2 model with both Maximum Likelihood and Bayesian (MCMC) methodologies for the turtles, lizards, and squamate data sets using the alternative SDM assignment.
   - **Table S6**: Log likelihood differences (∆LL) obtained between the single (BM1) and two rate (BM2) Brownian motion models of evolution, and between the single (OU1) and two (OU2) optimaums, as estimated for life span in turtles, lizards, and squamates. \( \sigma^2_{\text{GSD}} \) and \( \sigma^2_{\text{TSD}} \), \( \text{Optimum}_{\text{GSD}} \), and \( \text{Optimum}_{\text{TSD}} \): estimated parameters for GSD and TSD lineages using the alternative SDM assignment.

4. **BiSSE ANALYSES**
### Table S1a: Dataset used in this study. Taxonomy follows Uetz and Hosek (2015)

| ID | Vernacular | Order | Family | NAME.Uetz.March.2016 | on.tree | SDM | SDMA | LIFESPAN | Source.GSD (karyotypic where available or incubation otherwise) | Source.TSD | NOTES (SDM data or taxon name on tree if different) |
|----|------------|-------|--------|-----------------------|---------|-----|------|----------|-----------------------------------------------|----------|-------------------------------------------------|
| 1  | Tuatara    | Rhynocepe | Sphenodontidae | Sphenodon punctatus | yes | TSD | TSD | 91 | Nelson et al. (2004) |
| 2  | Turtle     | Chelonia  | Geoemydidae | Mauremys annamensis | yes | TSD | TSD | 80 | Ewert et al. (2004) |
| 3  | Turtle     | Chelonia  | Geoemydidae | Mauremys japonica | yes | TSD | TSD | 40 | Okada Y. et al. (2010) |
| 4  | Turtle     | Chelonia  | Geoemydidae | Mauremys mutica | yes | TSD | TSD | 23.9 | Ewert and Nelson (1991) |
| 5  | Turtle     | Chelonia  | Geoemydidae | Mauremys nigricens | yes | TSD | TSD | 16.2 | Ewert et al. (2004) |
| 6  | Turtle     | Chelonia  | Geoemydidae | Mauremys reevesi | yes | TSD | TSD | 22.1 | Ling H. (1985) |
| 7  | Turtle     | Chelonia  | Geoemydidae | Melanochelys trijuga | yes | TSD | TSD | 18 | Ewert and Nelson (1991) |
| 8  | Turtle     | Chelonia  | Geoemydidae | Pangshura smithii | yes | GSD | GSD | 16.8 | Sharma et al. (1975) |
| 9  | Turtle     | Chelonia  | Geoemydidae | Rhinoclemmys areolata | yes | TSD | TSD | 30 | Ewert and Nelson (1991) |
| 10 | Turtle     | Chelonia  | Geoemydidae | Rhinoclemmys pulcherima | yes | TSD | TSD | 20.4 | Ewert and Nelson (1991) |
| 11 | Turtle     | Chelonia  | Geoemydidae | Siebenrockiella crassicollis | yes | GSD | GSD | 19.3 | Carr and Bickham (1981) |
| 12 | Turtle     | Chelonia  | Carettochelyidae | Carettochelys insculpta | yes | TSD | TSD | 33 | Webb et al. (1986) |
| 13 | Turtle     | Chelonia  | Chelidae | Acantochelys radiolata | yes | GSD | GSD | NA | McBee et al. (1985) |
| 14 | Turtle     | Chelonia  | Chelidae | Chelodina longicollis | yes | GSD | GSD | 38.4 | Ezaz et al. (2006) |
| 15 | Turtle     | Chelonia  | Chelidae | Eleusa novaeguineae | yes | GSD | GSD | 15.2 | Ewert et al. (2004) |
| 16 | Turtle     | Chelonia  | Chelidae | Elusor macrurus | yes | GSD | GSD | NA | Georges and McInnes. (1998) |
| 17 | Turtle     | Chelonia  | Chelidae | Emydura macquarii | yes | GSD | GSD | 20.9 | Martinez et al. (2008) |
| 18 | Turtle     | Chelonia  | Chelidae | Emydura subglobosa | yes | GSD | GSD | NA | Ewert and Nelson (1991) |
| 19 | Turtle     | Chelonia  | Chelidae | Mesollemmys gibba | yes | GSD | GSD | 24.2 | Ewert et al. (2004) |
| 20 | Turtle     | Chelonia  | Chelidae | Phrynops geoffroanus | yes | GSD | GSD | 20.1 | Ewert et al. (2004) |
| 21 | Turtle     | Chelonia  | Chelidae | Phrynops hiliarii | yes | GSD | GSD | 41 | Ewert et al. (2004) |
| 22 | Turtle     | Chelonia  | Cheloniidae | Caretta caretta | yes | TSD | TSD | 25.2 | Yntema and Mrosovsky (1979) |
| 23 | Turtle     | Chelonia  | Cheloniidae | Chelonia mydas | yes | TSD | TSD | 37 | Mrosovsky et al. (1984) |
| 24 | Turtle     | Chelonia  | Cheloniidae | Eretmochelys imbricata | yes | TSD | TSD | 45 | Mrosovsky et al. (1992) |
| 25 | Turtle     | Chelonia  | Cheloniidae | Lepidochelys kempi | yes | TSD | TSD | 40 | Shaver D.J. et al. (1988) |
| 26 | Turtle     | Chelonia  | Cheloniidae | Lepidochelys olivacea | yes | TSD | TSD | 40 | McCoy L. (1983) |
| 27 | Turtle     | Chelonia  | Cheloniidae | Natator depressus | yes | TSD | TSD | 40 | Hewawisenth and Parmenter (2000) |
| 28 | Turtle     | Chelydridae | Chelydra serpentina | yes | TSD | TSD | 50 | Yntema C.L. (1976) |
| 29 | Turtle     | Chelydridae | Macrochelys temminckii | yes | TSD | TSD | 18.2 | Ewert and Nelson (1991) |
| 30 | Turtle     | Chelydridae | Dermatemydididae | Dermatemys mawii | yes | TSD | TSD | 11.3 | Vogt and Flores-Villela (1992) |
| 31 | Turtle     | Chelydridae | Dermochelydidae | Dermochelys coriacea | yes | TSD | TSD | NA | Rimbloet al. (1985) |
| 32 | Turtle     | Emydidae | Emydidae | Actinemys marmorata | yes | TSD | TSD | 50 | Ewert et al. (1994) |
| 33 | Turtle     | Emydidae | Emydidae | Chrysemys picta | yes | TSD | TSD | 61 | Ewert and Nelson (1991) |
| 34 | Turtle     | Emydidae | Emydidae | Clemmys guttata | yes | TSD | TSD | 110 | Ewert and Nelson (1991) |
| 35 | Turtle     | Emydidae | Emydidae | Emetreia reticularia | yes | TSD | TSD | 24 | Ewert and Nelson (1991) |
| 36 | Turtle     | Emydidae | Emydidae | Emydoidae blandingi | yes | TSD | TSD | 77 | Ewert and Nelson (1991) |
| 37 | Turtle     | Emydidae | Emydidae | Emys orbicularis | yes | TSD | TSD | 120 | Pieau C. (1974) |
| 38 | Turtle     | Emydidae | Emydidae | Glyptemys insculpta | yes | GSD | GSD | 100 | Montiel et al. (2015) |
| 39 | Turtle     | Emydidae | Emydidae | Graptemys barbouri | yes | TSD | TSD | 62.8 | Ewert and Nelson (1991) |
| 40 | Turtle     | Emydidae | Emydidae | Graptemys geographica | yes | TSD | TSD | 60 | Ewert and Nelson (1991) |
| 41 | Turtle     | Emydidae | Emydidae | Graptemys nigrolinea | yes | TSD | TSD | 31.7 | Ewert and Nelson (1991) |
| 42 | Turtle     | Emydidae | Emydidae | Graptemys ouachitensis | yes | TSD | TSD | 20 | Ewert and Nelson (1991) |
| 43 | Turtle     | Emydidae | Emydidae | Graptemys pseudogeographica | yes | TSD | TSD | 20.3 | Ewert and Nelson (1991) |
| 44 | Turtle     | Emydidae | Emydidae | Graptemys pulchra | yes | TSD | TSD | 15 | Bull et al. (1982) |
| 45 | Turtle     | Emydidae | Emydidae | Graptemys versa | yes | TSD | TSD | 35.4 | Ewert et al. (1994) |
| 46 | Turtle     | Emydidae | Emydidae | Heosemys grandis | yes | TSD | TSD | 20 | Ewert et al. (1994) |
| 47 | Turtle     | Emydidae | Emydidae | Malaclemys terrapin | yes | TSD | TSD | 40 | Ewert and Nelson (1991) |
| 48 | Turtle     | Emydidae | Emydidae | Pseudemys concinna | yes | TSD | TSD | 14.1 | Ewert and Nelson (1991) |
| 49 | Turtle     | Emydidae | Emydidae | Pseudemys nelsoni | yes | TSD | TSD | 23.4 | Ewert et al. (2004) |
| 50 | Turtle     | Emydidae | Emydidae | Pseudemys pensylvanicus | yes | TSD | TSD | 44 | Ewert and Nelson (1991) |
| 51 | Turtle     | Emydidae | Emydidae | Pseudemys texana | yes | TSD | TSD | NA | Ewert et al. (2004) |
| 52 | Turtle     | Emydidae | Terrapene carolina | yes | TSD | TSD | 23.9 | Ewert and Nelson (1991) |
| 53 | Turtle     | Emydidae | Terrapene ornata | yes | TSD | TSD | 54.8 | Ewert and Nelson (1991) |
| 54 | Turtle     | Emydidae | Trachemys decorata | yes | TSD | TSD | 127 | Ewert et al. (2004) |
55 Turtle Chelonia Emydidae Trachemys scripta yes TSD TSD 13.9 Ewert and Nelson (1991)

56 Turtle Chelonia Kinosternidae Claudioius angustatus yes GSD GSD 16.1 Vogt and Flores-Villela (1992)

57 Turtle Chelonia Kinosternidae Kinosternon acutum yes TSD TSD NA Janzen and Paukstis (1991)

58 Turtle Chelonia Kinosternidae Kinosternon alamosae yes TSD TSD 29.6 Ewert et al. (2004)

59 Turtle Chelonia Kinosternidae Kinosternon arizonense yes TSD TSD 25 Ewert and Nelson (1991)

60 Turtle Chelonia Kinosternidae Kinosternon baurii yes TSD TSD 59.6 Ewert et al. (2004)

61 Turtle Chelonia Kinosternidae Kinosternon creaseri yes TSD TSD 25 Ewert et al. (2004)

62 Turtle Chelonia Kinosternidae Kinosternon flavescens yes TSD TSD 59.6 Ewert et al. (1994)

63 Turtle Chelonia Kinosternidae Kinosternon hirtipes yes TSD TSD NA Ewert et al. (1994)

64 Turtle Chelonia Kinosternidae Kinosternon leucostomum yes TSD TSD 40 Ewert and Nelson (1991)

65 Turtle Chelonia Kinosternidae Kinosternon scorpioides yes TSD TSD 44.7 Ewert and Nelson (1991)

66 Turtle Chelonia Kinosternidae Kinosternon sonoriense yes TSD TSD 44.7 Ewert et al. (2004)

67 Turtle Chelonia Kinosternidae Kinosternon subrubrum yes TSD TSD 40 Ewert et al. (2004)

68 Turtle Chelonia Kinosternidae Staurotypus salvini yes GSD GSD 20.4 Ewert and Nelson (1991)

69 Turtle Chelonia Kinosternidae Staurotypus triporcatus yes GSD GSD 16.7 Ewert and Nelson (1991)

70 Turtle Chelonia Kinosternidae Sternotherus carinatus yes TSD TSD 26.3 Ewert and Nelson (1991)

71 Turtle Chelonia Kinosternidae Sternotherus minor yes TSD TSD 33.5 Ewert and Nelson (1991)

72 Turtle Chelonia Kinosternidae Sternotherus odoratus yes TSD TSD 29.3 Ewert and Nelson (1991)

73 Turtle Chelonia Pelomedusidae Pelomedusa subrufa yes TSD TSD 13.8 Ewert and Nelson (1991)

74 Turtle Chelonia Pelomedusidae Pelsios castaneus yes TSD TSD 24 Ewert and Nelson (1991)

75 Turtle Chelonia Podocnemididae Podocnemis erythrocephala yes TSD TSD 37.5 Vogt R.C. (2000)

76 Turtle Chelonia Podocnemididae Podocnemis expansa yes TSD TSD 37.4 Valenzuela N. (2001)

77 Turtle Chelonia Podocnemididae Podocnemis lewyana yes TSD TSD 14.0 Peaz et al. (2009)

78 Turtle Chelonia Podocnemididae Podocnemis sextuberculata yes TSD TSD 25.3 Vogt R.C. (2008)

79 Turtle Chelonia Podocnemididae Podocnemis unifilis yes TSD TSD 23.4 de Souza and Vogt (1994)

80 Turtle Chelonia Testudinidae Aldabrachelys gigantea yes TSD TSD 152 Janzen and Paukstis (1991)

81 Turtle Chelonia Testudinidae Chelonoidis niger yes TSD TSD 33.5 Janzen and Paukstis (1991)

82 Turtle Chelonia Testudinidae Gopherus agassizii yes TSD TSD 177 Spotila et al. (1994)

83 Turtle Chelonia Testudinidae Gopherus polyphemus yes TSD TSD 60 Demuth J.P. (2001)

84 Turtle Chelonia Testudinidae Testudo graeca yes TSD TSD 138 Pleau C. (1971)

85 Turtle Chelonia Testudinidae Testudo hermanni yes TSD TSD 50 Eendebak B.T. (1995)

86 Turtle Chelonia Trionychidae Apalone mutica yes GSD GSD 20 Ewert and Nelson (1991)

87 Turtle Chelonia Trionychidae Apalone spinifera yes GSD GSD 25.2 Badenhorst et al. (2013)

88 Turtle Chelonia Trionychidae Pelodiscus sinensis yes GSD GSD 24 Kawai et al. (2007)

89 lizard Squamata Agamidae Agama agama yes TSD TSD 8 Charnier M. (1966)

90 lizard Squamata Agamidae Agama impalaenar yes TSD TSD 6 El Mouden et al. (2001)

91 lizard Squamata Agamidae Amphibolurus muricatus yes TSD TSD 4 Harlow (2004)

92 lizard Squamata Agamidae Amphibolurus norrisi yes GSD GSD 7 Harlow (2004)

93 lizard Squamata Agamidae Calotes versicolor yes TSD TSD 5 Inamdar et al. (2012)

94 lizard Squamata Agamidae Chamydosaurus kingii yes TSD TSD 15 Harlow (2004)

95 lizard Squamata Agamidae Chamaeleo decresii yes TSD TSD 9 Harlow (2004)

96 lizard Squamata Agamidae Chamaeleo fordi yes GSD GSD 2 Harlow (2004)

97 lizard Squamata Agamidae Chamaeleo ortsii yes TSD TSD 11 Harlow (2004)

98 lizard Squamata Agamidae Chamaeleo pictus yes TSD GSD NA Uller et al. (2006) Harlow (2004)

99 lizard Squamata Agamidae Diporipho albilabris yes GSD GSD NA Harlow (2004)

100 lizard Squamata Agamidae Diporipho bilineata yes GSD GSD NA Harlow (2004)

101 lizard Squamata Agamidae Diporipho nobbi yes GSD GSD 3.2 Harlow (2004)

102 lizard Squamata Agamidae Hylisaurus spinipes yes GSD GSD 10 Harlow (2004)

103 lizard Squamata Agamidae Intellagama lesueurii yes TSD TSD 28 Harlow (2004)

104 lizard Squamata Agamidae Lophognathus burnsi no TSD GSD NA Harlow (2004)

105 lizard Squamata Agamidae Lophognathus gilberti yes TSD TSD NA Harlow (2004)

106 lizard Squamata Agamidae Gowilot toxofloris yes TSD TSD NA Harlow (2004)

107 lizard Squamata Agamidae Paralaudakia caucasia yes TSD TSD 13 Harlow (2004)

108 lizard Squamata Agamidae Phrynocephalus valangali yes GSD GSD NA Zeng et al. (1997)

109 lizard Squamata Agamidae Pogona barbata yes GSD GSD 13 Harlow (2004)

110 lizard Squamata Agamidae Pogona minor yes GSD GSD 6 Harlow (2004)

111 lizard Squamata Agamidae Pogona vitticeps yes GSD TSD 12 Ezaz et al. (2005) Holleley et al. (2015) GSD+TSD

112 lizard Squamata Agamidae Rankinia diemensis yes GSD GSD 10 Harlow (2004)
| Lizard | Squanata | Agamidae | Steiglaima stellio | yes | TSD | TSD | 10.4 | Harlow (2004) |
|--------|----------|----------|-------------------|-----|-----|-----|------|-------------|
| Lizard | Squanata | Agamidae | Tymanopropys tetraporophora | yes | GSD | GSD | NA | Harlow (2004) |
| Lizard | Squanata | Anguidae | Elgaria multicarinata | yes | TSD | GSD | 15 | Telemeco RS. (2015) | Weak data for each SDM. |
| Lizard | Squanata | Carphodactylidae | Underwoodiaurus mili | yes | GSD | GSD | 18 | Pokorna et al. (2014) |
| Lizard | Squanata | Chamaeleonidae | Chamaeleo calyptratus | no | GSD | GSD | 5 | Andrews (2005) |
| Lizard | Squanata | Chamaeleonidae | Chamaeleo chamaeleon | yes | TSD | GSD | 6 | Andrews (2005) | Small sample size. |
| Lizard | Squanata | Chamaeleonidae | Furcifer lateralis | yes | TSD | GSD | 3 | Andrews (2005) | Small sample size. |
| Lizard | Squanata | Chamaeleonidae | Furcifer pardalis | yes | TSD | GSD | 6 | Viets et al. (1994) |
| Lizard | Squanata | Corytophanidae | Basiliscus plumifrons | yes | GSD | TSD | 13 | Viets et al. (1994) |
| Lizard | Squanata | Crotaphytidae | Crotaphythus insularis | yes | GSD | GSD | NA | Rovatsos et al. (2014) |
| Lizard | Squanata | Dibamidae | Dibanus novaeguineae | yes | GSD | GSD | NA | Cole and Gans (1997) |
| Lizard | Squanata | Diplodactylidae | Correlophus ciliatus | yes | GSD | TSD | 26 | Gamble et al. (2015) | Harlow (2004) | GSD+TSD |
| Lizard | Squanata | Diplodactylidae | Correlophus sarasinorum | yes | TSD | TSD | 3.6 | Gamble et al. (2015) |
| Lizard | Squanata | Diplodactylidae | Mniarogekko chahoua | yes | TSD | GSD | 5 | Harlow (2004) |
| Lizard | Squanata | Diplodactylidae | Rhacodactylus auriculatus | yes | TSD | TSD | 20 | Harlow (2004) |
| Lizard | Squanata | Diplodactylidae | Rhacodactylus leachianus | yes | TSD | GSD | 30 | Harlow (2004) |
| Lizard | Squanata | Eublepharidae | Coleonyx brevis | yes | GSD | GSD | 5 | Pokorná et al. (2010) |
| Lizard | Squanata | Eublepharidae | Coleonyx elegans | yes | GSD | GSD | 11 | Pokorná et al. (2010) |
| Lizard | Squanata | Eublepharidae | Coleonyx mitratus | yes | GSD | GSD | NA | Kratochvíl et al. (2008) |
| Lizard | Squanata | Eublepharidae | Coleonyx variegatus | yes | GSD | GSD | NA | Pokorná et al. (2010) |
| Lizard | Squanata | Eublepharidae | Eublepharis macularius | yes | TSD | TSD | 9.4 | Viets et al. (1994) |
| Lizard | Squanata | Eublepharidae | Goniurosaurus kuroiwaiae | yes | TSD | GSD | NA | Viets et al. (1994) |
| Lizard | Squanata | Eublepharidae | Goniurosaurus orientalis | no | TSD | GSD | NA | Gamble (2010) |
| Lizard | Squanata | Eublepharidae | Goniurosaurus splendens | no | TSD | GSD | NA | Gamble (2010) |
| Lizard | Squanata | Eublepharidae | Hemideinaeau cadicinctus | yes | TSD | TSD | 16.2 | Viets et al. (1994) |
| Lizard | Squanata | Gekkonidae | Chnistinus marmoratus | yes | GSD | GSD | 12.8 | King, M., Rofe R. (1976) |
| Lizard | Squanata | Gekkonidae | Dixoniun siamensis | yes | GSD | GSD | NA | Ota et al. (2001) |
| Lizard | Squanata | Gekkonidae | Gehrya australis | yes | GSD | GSD | 10 | King M. (1983) |
| Lizard | Squanata | Gekkonidae | Gehrya multitata | yes | GSD | GSD | 9.25 | Gamble et al. (2015) |
| Lizard | Squanata | Gekkonidae | Gehrya nana | yes | GSD | GSD | NA | Moritz, C. (1986) |
| Lizard | Squanata | Gekkonidae | Gehrya purpurascens | yes | GSD | GSD | NA | Moritz, C. (1984) |
| Lizard | Squanata | Gekkonidae | Gehyra gecko | yes | GSD | GSD | 23.5 | Moritz C. (1990) |
| Lizard | Squanata | Gekkonidae | Gehyra hokousensis | yes | GSD | GSD | NA | Shibaik Y. et al. (2009) |
| Lizard | Squanata | Gekkonidae | Gehyra japonicus | yes | GSD | TSD | NA | Yoshiha and Msahiro (1974) | Tokunaga, S. (1985) | GSD+TSD |
| Lizard | Squanata | Gekkonidae | Hemidactylus frenatus | yes | GSD | GSD | 7 | Gamble et al. (2015) |
| Lizard | Squanata | Gekkonidae | Hemidactylus mabouia | yes | GSD | GSD | 2.6 | Gamble et al. (2015) |
| Lizard | Squanata | Gekkonidae | Hemidactylus platyrurus | yes | GSD | GSD | NA | Trifonov et al. (2011) |
| Lizard | Squanata | Gekkonidae | Hemidactylus turgicus | yes | GSD | GSD | 9 | Gamble et al. (2015) |
| Lizard | Squanata | Gekkonidae | Hemidactylus vietnamicus | no | GSD | GSD | NA | Moritz C. (1990) |
| Lizard | Squanata | Gekkonidae | Heteronotia binoei | yes | GSD | GSD | 13.6 | Moritz C. (1990) |
| Lizard | Squanata | Gekkonidae | Lepidodactylus lugubris | yes | GSD | GSD | 2.75 | Volobouev and Pastour (1988) |
| Lizard | Squanata | Gekkonidae | Paroedura karstophila | yes | GSD | GSD | NA | Koubová et al. (2014) |
| Lizard | Squanata | Gekkonidae | Paroedura lohatara | yes | GSD | GSD | NA | Koubová et al. (2014) |
| Lizard | Squanata | Gekkonidae | Paroedura masobe | yes | GSD | GSD | NA | Koubová et al. (2014) |
| Lizard | Squanata | Gekkonidae | Paroedura omicops | yes | GSD | GSD | NA | Koubová et al. (2014) |
| Lizard | Squanata | Gekkonidae | Paroedura picta | yes | GSD | GSD | 5 | Koubová et al. (2014) |
| Lizard | Squanata | Gekkonidae | Paroedura stomphfi | yes | GSD | GSD | NA | Koubová et al. (2014) |
| Lizard | Squanata | Gekkonidae | Phelsuma abboti | yes | TSD | TSD | NA | Viets et al. (1994) |
| Lizard | Squanata | Gekkonidae | Phelsuma cepediana | yes | GSD | TSD | 9.3 | Viets et al. (1994) | Weak TSD data (Valenzuela 2004) |
| Lizard | Squanata | Gekkonidae | Phelsuma dubia | yes | GSD | GSD | 4.6 | Viets et al. (1994) | Weak TSD data (Valenzuela 2004) |
| Lizard | Squanata | Gekkonidae | Phelsuma grandis | no | TSD | TSD | 20 | Viets et al. (1994) |
| Lizard | Squanata | Gekkonidae | Phelsuma guentheri | yes | TSD | GSD | 17.9 | Viets et al. (1994) | Weak TSD data (Valenzuela 2004) |
| Lizard | Squanata | Gekkonidae | Phelsuma guimbeaux | yes | TSD | GSD | 8 | Viets et al. (1994) | Weak TSD data (Valenzuela 2004) |
| Lizard | Squanata | Gekkonidae | Phelsuma laticauda | yes | TSD | TSD | 8.7 | Viets et al. (1994) |
| Lizard | Squanata | Gekkonidae | Phelsuma lineata | yes | TSD | GSD | 10 | Viets et al. (1994) | Weak TSD data (Valenzuela 2004) |
| Lizard | Squanata | Gekkonidae | Phelsuma madagascariensis | yes | TSD | GSD | 13.6 | Viets et al. (1994) | Weak TSD data (Valenzuela 2004) |
| Lizard | Squanata | Gekkonidae | Phelsuma ornata | yes | GSD | GSD | NA | Viets et al. (1994) | Weak TSD data (Valenzuela 2004) |
| Family                  | Genus          | Species          | TSD | TSD | NA | Authors                     | Year |
|------------------------|----------------|------------------|-----|-----|----|----------------------------|------|
| Squamata               | Gekkonidae     | Phelsuma pusilla | yes | TSD | NA | Viets et al. (1994)         |      |
| Squamata               | Gekkonidae     | Phelsuma sundbergi | yes | GSD | 15.9 | Viets et al. (1994) | Weak TSD data (Valenzuela 2004) |
| Squamata               | Phylocladulidae | Tarentola angustimentalis | yes | TSD | NA | Viets et al. (1994) | Weak TSD data (Valenzuela 2004) |
| Squamata               | Phylocladulidae | Tarentola annularis | yes | TSD | 19.8 | Viets et al. (1994) | Weak TSD data (Valenzuela 2004) |
| Squamata               | Phylocladulidae | Tarentola boettigeri | yes | TSD | 6.1 | Viets et al. (1994) | |
| Squamata               | Phylocladulidae | Tarentola delalandii | yes | TSD | 7 | Viets et al. (1994) | Weak TSD data (Valenzuela 2004) |
| Squamata               | Phylocladulidae | Tarentola gomeresis | yes | TSD | NA | Viets et al. (1994) | Weak TSD data (Valenzuela 2004) |
| Squamata               | Phylocladulidae | Tarentola mauritania | yes | TSD | 14 | Viets et al. (1994) | |
| Squamata               | Gymnophthalmida | Calypommatomus leiolepisis | yes | GSD | GSD | NA | Yonenaga-Yassuda et al. (1998) | |
| Squamata               | Gymnophthalmida | Calypommatomus nicterus | yes | GSD | GSD | NA | Yonenaga-Yassuda et al. (1998) | |
| Squamata               | Gymnophthalmida | Calypommatomus sinebrachatus | yes | GSD | GSD | NA | Yonenaga-Yassuda et al. (1998) | |
| Squamata               | Gymnophthalmida | Gymnophthalmus pleei | yes | GSD | GSD | NA | Cole et al. (1990) | |
| Squamata               | Gymnophthalmida | Micralephasaurus nicolous | yes | GSD | GSD | NA | Yonenaga-Yassuda and Rodrigues (1999) | |
| Squamata               | Gymnophthalmida | Micralephasaurus maximilliani | yes | GSD | GSD | NA | Yonenaga-Yassuda and Rodrigues (1999) | |
| Squamata               | Nothobachia ablephara | yes | GSD | GSD | NA | Pellegrino et al. (1999) | |
| Squamata               | Helodermatidae | Heloderma suspectum | yes | GSD | 43 | Pokorn et al. (2014) | |
| Squamata               | Dactylolidae   | Anolis acutus | yes | GSD | GSD | NA | Gorman and Atkins (1969) | |
| Squamata               | Dactylolidae   | Anolis allisoni | yes | GSD | 1.67 | Rovatsos et al. (2014) | |
| Squamata               | Dactylolidae   | Anolis argenteolus | yes | GSD | GSD | NA | Rovatsos et al. (2014) | |
| Squamata               | Dactylolidae   | Anolis baracoae | yes | GSD | GSD | NA | Rovatsos et al. (2014) | |
| Squamata               | Dactylolidae   | Anolis barbarus | yes | GSD | GSD | NA | Rovatsos et al. (2014) | |
| Squamata               | Dactylolidae   | Anolis bartschi | yes | GSD | GSD | NA | Rovatsos et al. (2014) | |
| Squamata               | Dactylolidae   | Anolis bisaculatus | yes | GSD | GSD | 7 | Gorman (1965) | |
| Squamata               | Dactylolidae   | Anolis biporcutas | yes | GSD | GSD | 3.1 | Gorman (1973) | |
| Squamata               | Dactylolidae   | Anolis boulenegerianus | yes | GSD | GSD | NA | Gamble et al. (2014) | |
| Squamata               | Dactylolidae   | Anolis brevirostris | yes | GSD | GSD | NA | Gamble et al. (2014) | |
| Squamata               | Dactylolidae   | Anolis carolinensis | yes | GSD | GSD | 11 | Viets et al. (1994) | |
| Squamata               | Dactylolidae   | Anolis caudalis | yes | GSD | GSD | NA | Gamble et al. (2014) | |
| Squamata               | Dactylolidae   | Anolis coelestinus | yes | GSD | GSD | NA | Rovatsos et al. (2014) | |
| Squamata               | Dactylolidae   | Anolis conspersus | yes | GSD | GSD | NA | Gorman and Atkins (1968) | |
| Squamata               | Dactylolidae   | Anolis cooki | yes | GSD | GSD | NA | Gorman et al. (1968) | |
| Squamata               | Dactylolidae   | Anolis crassulus | yes | GSD | GSD | NA | Gorman and Atkins (2014) | |
| Squamata               | Dactylolidae   | Anolis cristatellus | yes | GSD | GSD | 6.9 | Gorman et al. (1968) | |
| Squamata               | Dactylolidae   | Anolis deschenisis | yes | GSD | GSD | NA | Gamble et al. (2014) | |
| Squamata               | Dactylolidae   | Anolis distichus | yes | GSD | GSD | NA | Gorman and Atkins (1969) | |
| Squamata               | Dactylolidae   | Anolis equestris | yes | GSD | GSD | 16.5 | Rovatsos et al. (2014) | |
| Squamata               | Dactylolidae   | Anolis evermanni | yes | GSD | GSD | NA | Gorman (1973) | |
| Squamata               | Dactylolidae   | Anolis ferreus | yes | GSD | GSD | NA | Gorman and Atkins (1969) | |
| Squamata               | Dactylolidae   | Anolis fuscauratus | yes | GSD | GSD | NA | Rovatsos et al. (2014) | |
| Squamata               | Dactylolidae   | Anolis garmani | yes | GSD | GSD | 10 | Rovatsos et al. (2014) | |
| Squamata               | Dactylolidae   | Anolis gingvinus | yes | GSD | GSD | NA | Gorman and Atkins (1969) | |
| Squamata               | Dactylolidae   | Anolis grahami | yes | GSD | GSD | NA | Gorman (1973) | |
| Squamata               | Dactylolidae   | Anolis gundlachi | yes | GSD | GSD | 3 | Gorman et al. (1968) | |
| Squamata               | Dactylolidae   | Anolis krugi | yes | GSD | GSD | NA | Gorman (1973) | |
| Squamata               | Dactylolidae   | Anolis leachii | yes | GSD | GSD | 7 | Gorman and Atkins (1969) | |
| Squamata               | Dactylolidae   | Anolis lineatopus | yes | GSD | GSD | 1 | Gamble et al. (2014) | |
| Squamata               | Dactylolidae   | Anolis lividus | yes | GSD | GSD | NA | Gamble et al. (2014) | |
| Squamata               | Dactylolidae   | Anolis luteohelebas | yes | GSD | GSD | 2.9 | Rovatsos et al. (2014) | |
| Squamata               | Dactylolidae   | Anolis marmoratus | yes | GSD | GSD | NA | Gorman and Atkins (1969) | |
| Squamata               | Dactylolidae   | Anolis monensis | yes | GSD | GSD | NA | Gorman and Stamm (1975) | |
| Squamata               | Dactylolidae   | Anolis nebuloides | no | GSD | GSD | NA | Gamble et al. (2014) | |
| Squamata               | Dactylolidae   | Anolis nebulosus | no | GSD | GSD | NA | Gorman (1973) | |
| Squamata               | Dactylolidae   | Anolis nubilus | yes | GSD | GSD | NA | Gamble et al. (2014) | |
| Squamata               | Dactylolidae   | Anolis oculatus | yes | GSD | GSD | NA | Gorman and Atkins (1967) | |
| Squamata               | Dactylolidae   | Anolis onca | yes | GSD | GSD | NA | Olmo and Signorino (2005) | |
| Squamata               | Dactylolidae   | Anolis opalinus | yes | GSD | GSD | NA | Gorman (1973) | |
| Squamata               | Dactylolidae   | Anolis ponceelius | yes | GSD | GSD | NA | Gorman (1973) | |
| Squamata               | Dactylolidae   | Anolis pulchellus | yes | GSD | GSD | NA | Gorman et al. (1968) | |
| lizard | Squamata | Dactyloidae | Anolis quercorum | yes | GSD | GSD | NA | Gamble et al. (2014) |
|--------|----------|-------------|-----------------|-----|-----|-----|----|---------------------|
| lizard | Squamata | Dactyloidae | Anolis roquet | yes | GSD | GSD | 6.7 | Rovatsos et al. (2014) |
| lizard | Squamata | Dactyloidae | Anolis sabanus | yes | GSD | GSD | NA | Gorman and Atkins (1969) |
| lizard | Squamata | Dactyloidae | Anolis sagrei | yes | GSD | GSD | 8 | de Smet (1978) |
| lizard | Squamata | Dactyloidae | Anolis scriptus | yes | GSD | GSD | NA | Gorman et al. (1968) |
| lizard | Squamata | Dactyloidae | Anolis stridulus | yes | GSD | GSD | 1.6 | Gorman and Atkins (1969) |
| lizard | Squamata | Dactyloidae | Anolis trachyderma | yes | GSD | GSD | NA | Rovatsos et al. (2014) |
| lizard | Squamata | Dactyloidae | Anolis wattsi | yes | GSD | GSD | NA | Gorman and Atkins (1969) |
| lizard | Squamata | Dactyloidae | Anolis websteri | yes | GSD | GSD | NA | Gamble et al. (2014) |
| lizard | Squamata | Corytophanidae | Basiliscus basiliscus | yes | GSD | GSD | 9 | Bohme W. (1975) |
| lizard | Squamata | Corytophanidae | Cryptophytoptus collaris | yes | GSD | GSD | 10 | de Smet (1978) |
| lizard | Squamata | Iguanidae | Cylcura nubila | yes | GSD | GSD | 54 | Rovatsos et al. (2014) |
| lizard | Squamata | Squamata | Dipsoaurus dorsalis | yes | GSD | TSD | 14.6 | Hall (1972) |
| lizard | Squamata | Tropiduridae | Eurolophosaurus amathites | yes | GSD | GSD | NA | Kasahara et al. (1987) |
| lizard | Squamata | Tropiduridae | Eurolophosaurus nanuzae | yes | GSD | GSD | NA | Kasahara et al. (1987) |
| lizard | Squamata | Iguanidae | Iguana iguana | yes | GSD | GSD | 28 | Rovatsos et al. (2014) |
| lizard | Squamata | Liolemidae | Phymaturus palluma | yes | GSD | GSD | 12 | Lamborot and Navarro-Suarez (1984) |
| lizard | Squamata | Polychrotidae | Polychrus acutirostris | yes | GSD | GSD | NA | Peccinini et al. (1971) |
| lizard | Squamata | Polychrotidae | Polychrus marmoratus | yes | GSD | GSD | NA | Gorman et al. (1967) |
| lizard | Squamata | Polychrotidae | Polychrus peruvianus | no | GSD | GSD | NA | Gorman et al. (1969) |
| lizard | Squamata | Leioosauridae | Pristidactylus achalensis | no | GSD | GSD | 11 | Gorman et al. (1967) |
| lizard | Squamata | Phrynosomatidae | Sceloporus aeneus | yes | GSD | GSD | NA | Hall (1971) |
| lizard | Squamata | Phrynosomatidae | Sceloporus anahuacensis | no | GSD | GSD | NA | Leach and Sites (2009) |
| lizard | Squamata | Phrynosomatidae | Sceloporus asper | no | GSD | GSD | NA | Hall (1972) |
| lizard | Squamata | Phrynosomatidae | Sceloporus bullieri | yes | GSD | GSD | NA | Hall (1972) |
| lizard | Squamata | Phrynosomatidae | Sceloporus caudatus | yes | GSD | GSD | NA | Hall (1972) |
| lizard | Squamata | Phrynosomatidae | Sceloporus chrysoptictus | yes | GSD | GSD | NA | Gorman (1973) |
| lizard | Squamata | Phrynosomatidae | Sceloporus clarkei | yes | GSD | GSD | NA | Cole (1970) |
| lizard | Squamata | Phrynosomatidae | Sceloporus couchii | yes | GSD | GSD | NA | Hall (1972) |
| lizard | Squamata | Phrynosomatidae | Sceloporus cozumelae | yes | GSD | GSD | NA | Cole (1978) |
| lizard | Squamata | Phrynosomatidae | Sceloporus dugesii | yes | GSD | GSD | NA | Hall (1972) |
| lizard | Squamata | Phrynosomatidae | Sceloporus gadowiae | yes | GSD | GSD | NA | Gorman (1973) |
| lizard | Squamata | Phrynosomatidae | Sceloporus goldmani | yes | GSD | GSD | NA | Hall (1972) |
| lizard | Squamata | Phrynosomatidae | Sceloporus gracilus | yes | GSD | GSD | 8 | Reed et al. (1990) |
| lizard | Squamata | Phrynosomatidae | Sceloporus graminicus | yes | GSD | GSD | 3 | Hall and Selander (1973) |
| lizard | Squamata | Phrynosomatidae | Sceloporus heterolepis | yes | GSD | GSD | NA | Hall (1972) |
| lizard | Squamata | Phrynosomatidae | Sceloporus hunsakeri | yes | GSD | GSD | NA | Hall and Smith (1979) |
| lizard | Squamata | Phrynosomatidae | Sceloporus jalapae | yes | GSD | GSD | NA | Hall (1972) |
| lizard | Squamata | Phrynosomatidae | Sceloporus jarrovi | yes | GSD | GSD | 2.8 | Lowe et al. (1966) |
| lizard | Squamata | Phrynosomatidae | Sceloporus lackii | yes | GSD | GSD | NA | Hall and Smith (1979) |
| lizard | Squamata | Phrynosomatidae | Sceloporus lundellii | yes | GSD | GSD | NA | Cole (1970) |
| lizard | Squamata | Phrynosomatidae | Sceloporus maculosus | yes | GSD | GSD | NA | Cole (1971) |
| lizard | Squamata | Phrynosomatidae | Sceloporus megacephalus | yes | GSD | GSD | NA | Hall (1972) |
| lizard | Squamata | Phrynosomatidae | Sceloporus melanorhinus | yes | GSD | GSD | NA | Cole (1970) |
| lizard | Squamata | Phrynosomatidae | Sceloporus merriami | yes | GSD | GSD | 6 | Cole (1971) |
| lizard | Squamata | Phrynosomatidae | Sceloporus mucronatus | yes | GSD | GSD | NA | Hall (1972) |
| lizard | Squamata | Phrynosomatidae | Sceloporus nelsoni | yes | GSD | GSD | NA | Cole (1971) |
| lizard | Squamata | Phrynosomatidae | Sceloporus occidentalis | yes | GSD | TSD | 5 | Viets et al. (1994) |
| lizard | Squamata | Phrynosomatidae | Sceloporus orbiculatus | yes | GSD | GSD | 16.25 | Hall and Smith (1979) |
| lizard | Squamata | Phrynosomatidae | Sceloporus ornatus | yes | GSD | GSD | NA | Hall (1972) |
| lizard | Squamata | Phrynosomatidae | Sceloporus palaciosi | yes | GSD | GSD | NA | Leach and Sites (2009) |
| lizard | Squamata | Phrynosomatidae | Sceloporus polinsettii | yes | GSD | GSD | 8 | Cole et al. (1967) |
| lizard | Squamata | Phrynosomatidae | Sceloporus pyrocephalus | yes | GSD | GSD | NA | Cole (1971) |
| lizard | Squamata | Phrynosomatidae | Sceloporus scalaris | yes | GSD | GSD | 5 | Cole (1978) |
| lizard | Squamata | Phrynosomatidae | Sceloporus serrifer | yes | GSD | GSD | 6.7 | Hall (1973) |
| lizard | Squamata | Phrynosomatidae | Sceloporus siniferus | yes | GSD | GSD | NA | Hall (1972) |
| lizard | Squamata | Phrynosomatidae | Sceloporus spinosus | yes | GSD | GSD | NA | Hall (1972) |
| lizard | Squamata | Phrynosomatidae | Sceloporus torquatus | yes | GSD | GSD | NA | Hall (1972) |
| Lizard | Squamata | Phrynosomatidae | Sceloporus undulatus | yes | GSD | 4 | Reed et al. (1990) |
|--------|----------|----------------|---------------------|-----|-----|---|------------------|
| Lizard | Squamata | Phrynosomatidae | Sceloporus uniformis | no  | GSD | NA| Gorman (1973)     |
| Lizard | Squamata | Phrynosomatidae | Sceloporus variabilis | yes | GSD | 1.5 | Hall (1972)       |
| Lizard | Squamata | Tropiduridae | Tropidurus hispidus | yes | GSD | 2 | Kasahara et al. (1987) |
| Lizard | Squamata | Tropiduridae | Tropidurus psammonastes | yes | GSD | NA| Rodrigues et al. (1988) |
| Lizard | Squamata | Tropiduridae | Tropidurus torquatus | yes | GSD | 3 | de Smet (1978)    |
| Lizard | Squamata | Phrynosomatidae | Uma inornata | yes | GSD | 5 | Kral B. (1969)    |
| Lizard | Squamata | Phrynosomatidae | Uta nolascensis | no  | GSD | NA| Pennock et al. (1969) |
| Lizard | Squamata | Phrynosomatidae | Uta palmeri | yes | GSD | NA| Pennock et al. (1969) |
| Lizard | Squamata | Phrynosomatidae | Uta squamata | yes | GSD | NA| Pennock et al. (1969) |
| Lizard | Squamata | Phrynosomatidae | Uta stansburiana | yes | GSD | 4.8| Pennock et al. (1969) |
| Lizard | Squamata | Lacertidae | Acanthodactylus erythrurus | yes | GSD | NA| Olmo et al. (1987) |
| Lizard | Squamata | Lacertidae | Algyroides morroensis | yes | GSD | 9.2 | Odierna et al. (1993) |
| Lizard | Squamata | Lacertidae | Algyroides nigropunctatus | yes | GSD | 2.25 | Odierna et al. (1993) |
| Lizard | Squamata | Lacertidae | Darevskia armeniaca | yes | GSD | 8 | Olmo et al. (1990) |
| Lizard | Squamata | Lacertidae | Darevskia dahli | no  | GSD | 6 | Kupriyanova (1992) |
| Lizard | Squamata | Lacertidae | Darevskia mixta | yes | GSD | NA| Kupriyanova (1992) |
| Lizard | Squamata | Lacertidae | Darevskia raddei | yes | GSD | 6 | Kupriyanova (1989) |
| Lizard | Squamata | Lacertidae | Darevskia rostombekowi | yes | GSD | 6 | Kupriyanova (1989) |
| Lizard | Squamata | Lacertidae | Darevskia unisexualis | no  | GSD | 7 | Kupriyanova (1989) |
| Lizard | Squamata | Lacertidae | Darevskia valentini | yes | GSD | 7 | Kupriyanova (1989) |
| Lizard | Squamata | Lacertidae | Ereemias arguta | yes | GSD | NA| Olmo et al. (1990) |
| Lizard | Squamata | Lacertidae | Ereemias gramnica | yes | GSD | NA| Olmo et al. (1990) |
| Lizard | Squamata | Lacertidae | Ereemias multiocellata | yes | GSD | TSD | NA| Tang et al. (2012) | Zhang et al. (2010) |
| Lizard | Squamata | Lacertidae | Ereemias velox | yes | GSD | NA| Olmo et al. (1990) |
| Lizard | Squamata | Lacertidae | Gallotia gallopit | yes | GSD | 15 | Olmo (1986) |
| Lizard | Squamata | Lacertidae | Helicolobus lugubris | yes | GSD | NA| Odierna et al. (1990) |
| Lizard | Squamata | Lacertidae | Hellenolacerta graeca | yes | GSD | NA| Olmo et al. (1987) |
| Lizard | Squamata | Lacertidae | Iberolacerta aranica | yes | GSD | NA| Odierna et al. (2001) |
| Lizard | Squamata | Lacertidae | Iberolacerta aurelioi | yes | GSD | 16 | Odierna et al. (1996) |
| Lizard | Squamata | Lacertidae | Iberolacerta cyreni | yes | GSD | NA| Odierna et al. (1996) |
| Lizard | Squamata | Lacertidae | Iberolacerta horvathi | yes | GSD | NA| Capula M. et al. (1989) |
| Lizard | Squamata | Lacertidae | Iberolacerta monticola | yes | GSD | 16 | Rojo et al. (2012) |
| Lizard | Squamata | Lacertidae | Lacerta agilis | yes | GSD | 12 | de Smet (1981) |
| Lizard | Squamata | Lacertidae | Lacerta bilineata | yes | GSD | 13 | Olmo et al. (1985) |
| Lizard | Squamata | Lacertidae | Lacerta brongersmai | yes | GSD | 4 | Ivanov and Fedorova (1970) |
| Lizard | Squamata | Lacertidae | Lacerta brunoae | yes | GSD | 7.75 | Gorman (1969) |
| Lizard | Squamata | Lacertidae | Lacerta viridis | yes | GSD | 10 | de Smet (1981) |
| Lizard | Squamata | Lacertidae | Meroles cuneoirstris | yes | GSD | NA| Olmo et al. (1987) |
| Lizard | Squamata | Lacertidae | Mesalina olivieri | yes | GSD | 5 | Gorman (1969) |
| Lizard | Squamata | Lacertidae | Omosaurusa jayakari | yes | GSD | 17 | Fritz B. et al. (1991) |
| Lizard | Squamata | Lacertidae | Ophiops elegans | yes | GSD | 6 | Bhatnagar and Yoniss (1976) |
| Lizard | Squamata | Lacertidae | Pedioplanis narnaquensis | yes | GSD | NA| Odierna et al. (2004) |
| Lizard | Squamata | Lacertidae | Phoenicolacerta kulzeri | yes | GSD | NA| Bosch et al. (2003) |
| Lizard | Squamata | Lacertidae | Phoenicolacerta laevis | yes | GSD | 4.55 | Bosch et al. (2003) |
| Lizard | Squamata | Lacertidae | Podarcis erhardii | yes | GSD | 5 | Olmo et al. (1990) |
| Lizard | Squamata | Lacertidae | Podarcis hispanicus | yes | GSD | 13 | Odierna et al. (1990) |
| Lizard | Squamata | Lacertidae | Podarcis mellissensis | yes | GSD | 3.9 | de Smet (1981) |
| Lizard | Squamata | Lacertidae | Podarcis muralis | yes | GSD | 10.1 | Viets et al. (1994) |
| Lizard | Squamata | Lacertidae | Podarcis pityusensis | yes | TSD | 18 | Harlow (2004) | Weak TSD data (Valenzuela 2004) |
| Lizard | Squamata | Lacertidae | Podarcis siculus | yes | GSD | 3.7 | Olmo et al. (1990) |
| Lizard | Squamata | Lacertidae | Podarcis tiliguerta | yes | GSD | 15 | Olmo et al. (1990) |
| Lizard | Squamata | Lacertidae | Podarcis wagleri | no  | GSD | NA| Capriglione et al. (1994) |
| Lizard | Squamata | Lacertidae | Psammodromus algirus | yes | GSD | 2.75 | de Smet (1981) |
| Lizard | Squamata | Phrynosomatidae | Sceloporus parvus | yes | GSD | Cole (1978) |
| Lizard | Squamata | Lacertidae | Takydromus sexlineatus | yes | GSD | 1.5 | Olmo et al. (1984) |
| Lizard | Squamata | Lacertidae | Teira dugesii | yes | GSD | 16 | Olmo and Signorino (2005) |
| Lizard | Squamata | Lacertidae | Timon lepidus | yes | GSD | 34 | Olmo et al. (1987) |
| 345 | lizard | Squamata | Lacertidae | Zoootoca vivipara | yes | GSD | 12 | Chevaller et al. (1979) |
| 346 | lizard | Squamata | Leiocephalidae | Leiocephalus carinatus | yes | GSD | 10.8 | Rovatsos et al. (2014) |
| 347 | lizard | Squamata | Opluridae | Chalarodon madagascariensis | yes | GSD | NA | Rovatsos et al. (2014) |
| 348 | lizard | Squamata | Opluridae | Oplurus fierinesis | yes | GSD | NA | Rovatsos et al. (2014) |
| 349 | lizard | Squamata | Phrynosomatidae | Petrodurus thalassinus | yes | GSD | 20 | Rovatsos et al. (2014) |
| 350 | lizard | Squamata | Phrynosomatidae | Sceloporus malachiticus | yes | GSD | NA | Rovatsos et al. (2014) |
| 351 | lizard | Squamata | Diplodactyloidea | Oedura marmorata | yes | GSD | 21.2 | Moritz C. (1990) |
| 352 | lizard | Squamata | Phyllodactyloidea | Phyllodactylus lanei | yes | GSD | NA | Moritz C. (1990) |
| 353 | lizard | Squamata | Phyllodactyloidea | Thecadactylus rapicauda | yes | GSD | 6.9 | Schmid et al. (2014) |
| 354 | lizard | Squamata | Pygopodidae | Aprasia parapulchella | yes | GSD | NA | Matsubara et al. (2013) |
| 355 | lizard | Squamata | Pygopodidae | Delma inornata | yes | GSD | NA | King M. (1990) |
| 356 | lizard | Squamata | Pygopodidae | Lialis burtonis | yes | GSD | NA | Gorman and Gress (1970) |
| 357 | lizard | Squamata | Scincidae | Bassiana duperreyi | yes | GSD+TSD | 7 | Quinn et al. (2009) |
| 358 | lizard | Squamata | Scincidae | Eulamprus heatwolei | yes | TSD | TSD | NA | Langkilde and Shine (2005) |
| 359 | lizard | Squamata | Scincidae | Eulamprus tympanum | yes | TSD | TSD | 15 | Valenzuela et al. (2003) |
| 360 | lizard | Squamata | Scincidae | Mabuya mabouya | yes | GSD | NA | Becak et al. (1972) |
| 361 | lizard | Squamata | Scincidae | Niveoscincus ocellatus | yes | TSD | 12 | Wapstra et al. (2004) |
| 362 | lizard | Squamata | Scincidae | Oligosoma maccanni | yes | GSD | NA | Hare et al. (2011) |
| 363 | lizard | Squamata | Scincidae | Oligosoma oliveri | yes | GSD | NA | Hardy G.S. (1979) |
| 364 | lizard | Squamata | Scincidae | Oligosoma suteri | yes | GSD | 12 | Hare et al. (2012) |
| 365 | lizard | Squamata | Scincidae | Pleistodon fasciatus | yes | GSD | 4.9 | Viets et al. (1994) |
| 366 | lizard | Squamata | Scincidae | Pleistodon obsoletus | yes | GSD | 7.33 | Viets et al. (1994) |
| 367 | lizard | Squamata | Scincidae | Pseudemoia bainini | no | GSD | NA | Hutchinson and Donnellan (1992) |
| 368 | lizard | Squamata | Scincidae | Pseudemoia cryodroma | no | GSD | NA | Hutchinson and Donnellan (1992) |
| 369 | lizard | Squamata | Scincidae | Pseudemoia extremita | yes | GSD | 5 | Hutchinson and Donnellan (1992) |
| 370 | lizard | Squamata | Scincidae | Pseudemoia pagenstecheri | yes | GSD | NA | Hutchinson and Donnellan (1992) |
| 371 | lizard | Squamata | Scincidae | Pseudemoia rawlinsoni | no | GSD | NA | Hutchinson and Donnellan (1992) |
| 372 | lizard | Squamata | Scincidae | Pseudemoia spenceri | no | GSD | NA | Hutchinson and Donnellan (1992) |
| 373 | lizard | Squamata | Scincidae | Saproscincus czechurai | yes | GSD | NA | Donnellan (1991) |
| 374 | lizard | Squamata | Scincidae | Scincella lateralis | yes | GSD | 4 | Olmo (1986) |
| 375 | lizard | Squamata | Scincidae | Sphenomorphus indicus | yes | TSD | TSD | 6 | Ji et al. (2006) |
| 376 | lizard | Squamata | Sphaerodactylidae | Aristelliger expectatus | no | GSD | NA | Gamble et al. (2015) |
| 377 | lizard | Squamata | Sphaerodactylidae | Gonatodes ceciliae | yes | GSD | NA | McBree et al. (1987) |
| 378 | lizard | Squamata | Sphaerodactylidae | Sphaerodactylus macrolepis | yes | GSD | NA | Gamble et al. (2015) |
| 379 | lizard | Squamata | Sphaerodactylidae | Sphaerodactylus nicholsi | yes | GSD | NA | Gamble et al. (2015) |
| 380 | lizard | Squamata | Teiidae | Aspidoscelis inornata | yes | GSD | NA | Viets et al. (1994) |
| 381 | lizard | Squamata | Teiidae | Aspidoscelis tigris | yes | GSD | 8 | Cole et al. (1969) |
| 382 | lizard | Squamata | Teiidae | Aspidoscelis uniparens | no | GSD | NA | Viets et al. (1994) |
| 383 | lizard | Squamata | Tropiduridae | Uranoscodon supercilius | yes | GSD | 4.8 | Rovatsos et al. (2014) |
| 384 | lizard | Squamata | Varanidae | Varanus acanthurus | yes | GSD | 10 | Olmo (1986) |
| 385 | lizard | Squamata | Varanidae | Varanus albigularis | yes | GSD | 16.7 | King and King (1975) |
| 386 | lizard | Squamata | Varanidae | Varanus exanthematicus | yes | GSD | 17 | King and King (1975) |
| 387 | lizard | Squamata | Varanidae | Varanus gouldii | yes | GSD | 18.3 | Matsubara et al. (2014) |
| 388 | lizard | Squamata | Varanidae | Varanus komodoensis | yes | GSD | 62 | Sulandari et al. (2014) |
| 389 | lizard | Squamata | Varanidae | Varanus niloticus | yes | GSD | 14.6 | King and King (1975) |
| 390 | lizard | Squamata | Varanidae | Varanus rosenbergi | yes | GSD | NA | Matsubara et al. (2014) |
| 391 | lizard | Squamata | Varanidae | Varanus salvator | yes | TSD | TSD | 15.7 | Harlow (2004) | Weak TSD data (Valenzuela 2004) |
| 392 | lizard | Squamata | Varanidae | Varanus varius | yes | GSD | 22 | King and King (1975) |
| 393 | snake | Squamata | Boidae | Acrantophis dumerili | yes | GSD | 26 | Mengden and Stock (1980) |
| 394 | snake | Squamata | Boidae | Boa constrictor | yes | GSD | 40.4 | Olmo (2005) |
| 395 | snake | Squamata | Pythonidae | Lialis olivaceus | yes | GSD | NA | Mengden and Stock (1980) |
| 396 | snake | Squamata | Pythonidae | Morelia spilota | yes | GSD | 19.6 | Mengden and Stock (1980) |
| 397 | snake | Squamata | Boidae | Sarchinia madagascariensis | yes | GSD | 21.8 | Mengden and Stock (1980) |
| 398 | snake | Squamata | Pythonidae | Similia boeleni | yes | GSD | 20.1 | Mengden and Stock (1980) |
| 399 | snake | Squamata | Colubridae | Ahaetulla nasuta | yes | GSD | NA | Sharma and Nakhasi (1979) |
| 400 | snake | Squamata | Natricidae | Amphlysa stolatum | yes | GSD | NA | Ray-Chaudhuri et al. (1971) |
| 401 | snake | Squamata | Colubridae | Argyroglena fasciata | no | GSD | NA | Ray-Chaudhuri et al. (1971) |
| 402 | snake | Squamata | Colubridae | Bogetophis subocularis | yes | GSD | 23.8 | Baker et al. (1971) |
| Snake Family | Genus | Species | Habitat | Taxonomic Rank | Notes |
|-------------|-------|---------|---------|----------------|-------|
| Boiga forsteni | Elaphe quadrivirgata | Yes | GSD | NA | Ray-Chaudhuri et al. (1971) |
| Boiga trigonata | Gerarda prevostiana | Yes | GSD | 8.2 | Ray-Chaudhuri et al. (1971) |
| Hamalopsidae | Cerberus rynchoch rudis | Yes | GSD | NA | Singh, L. (1972) |
| Chironius bicarinatus | Dipsadidae | Yes | GSD | NA | Bekac (1965) |
| Chironius quadricarinatus | Dipsadidae | Yes | GSD | NA | Bekac et al. (1966) |
| Chrysophea ornata | Dipsadidae | Yes | GSD | 4.3 | Sharma and Nakhasi (1979) |
| Clelia clelia | Dipsadidae | Yes | GSD | 11.5 | Bekac (1965) |
| Coelognathus radia | Dipsadidae | Yes | GSD | NA | Singh et al. (1979) |
| Dendrelaphis punctulatus | Dipsadidae | No | GSD | 18 | Mengden (1982) |
| Drymarchon corais | Dipsadidae | Yes | GSD | 25.9 | Bekac (1965) |
| Drymarchon couperi | Dipsadidae | No | GSD | 25.45 | Bekac et al. (1964) |
| Elaphe climacophora | Dipsadidae | Yes | GSD | 13.1 | Itoh et al. (1970) |
| Elaphe quadrivirgata | Dipsadidae | Yes | GSD | 16.8 | Itoh et al. (1970) |
| Erythrolamprus almadensis | Dipsadidae | Yes | GSD | NA | Bekac et al. (1975) |
| Erythrolamprus miliaris | Dipsadidae | Yes | GSD | NA | Bekac et al. (1966) |
| Eugrepiofis conspilicata | Dipsadidae | Yes | GSD | NA | Toriba (1990) |
| Geophis olmarusmanus | Dipsadidae | No | GSD | NA | Hardy (1976) |
| Gerarda prevostiana | Dipsadidae | Yes | GSD | NA | Singh et al. (1970) |
| Hebius pryeri | Dipsadidae | No | GSD | NA | Toriba (1990) |
| Hebius vibakari | Dipsadidae | No | GSD | NA | Toriba (1990) |
| Hydromorphus concolor | Dipsadidae | Yes | GSD | NA | Solzrano et al. (1989) |
| Lycodon aulicus | Dipsadidae | Yes | GSD | NA | Nakamura, K. (1935) |
| Lycodon semicarinatus | Dipsadidae | Yes | GSD | NA | Toriba (1990) |
| Macropisthodon rudis | Dipsadidae | Yes | GSD | NA | Nakamura, K. (1935) |
| Mastigodryas bifossatus | Dipsadidae | No | GSD | NA | Bekac (1965) |
| Mastigodryas bifossatus | Dipsadidae | Yes | GSD | NA | Bekac et al. (1975) |
| Natricidae | Tropidodryas serra | Yes | GSD | 9.2 | Kobel (1967) |
| Natricidae | Natricus tesselata | Yes | GSD | 14 | de Smet (1978) |
| Dipsadidae | Oxyrhopus petolarius | Yes | GSD | NA | Bekac (1969) |
| Pantherophis alleghaniensis | Dipsadidae | Yes | GSD | NA | Baker et al. (1971) |
| Pantherophis obsoletus | Dipsadidae | Yes | GSD | 33.9 | Mengden and Stock (1980) |
| Philodryas aestiva | Dipsadidae | Yes | GSD | NA | Bekac (1969) |
| Philodryas chamissonis | Dipsadidae | No | GSD | NA | Moreno et al. (1987) |
| Philodryas ocellata | Dipsadidae | Yes | GSD | NA | Bekac (1969) |
| Philodryas patagoniensis | Dipsadidae | Yes | GSD | NA | Bekac (1969) |
| Pseudobra nigra | Dipsadidae | Yes | GSD | NA | Bekac et al. (1975) |
| Ptyas mucosa | Dipsadidae | Yes | GSD | 11.3 | Ray-Chaudhuri et al. (1971) |
| Rhabdophis tigrinrus | Dipsadidae | Yes | GSD | NA | Itoh et al. (1970) |
| Rhabdophis tigrinus | Dipsadidae | Yes | GSD | NA | Bekac et al. (1975) |
| Pantherophis alleghaniensis | Dipsadidae | Yes | GSD | NA | Rossman and Eberle (1977) |
| Pantherophis percarinata | Dipsadidae | Yes | GSD | NA | Rossman and Eberle (1977) |
| Philodryas asthenes | Dipsadidae | Yes | GSD | 17.5 | Bekac (1965) |
| Philodryas asthenes | Dipsadidae | Yes | GSD | 2 | Baker et al. (1972) |
| Thamnodynastes hypoconia | Dipsadidae | Yes | GSD | NA | Bekac (1969) |
| Thamnodynastes strigatus | Dipsadidae | Yes | GSD | NA | Bekac (1969) |
| Thamnodynastes marcianus | Dipsadidae | Yes | GSD | 7 | Mengden and Stock (1980) |
| Tomodon dorsatum | Dipsadidae | Yes | GSD | NA | Bekac et al. (1966) |
| Tropidodryas serra | Dipsadidae | Yes | GSD | NA | Bekac (1969) |
| Tropidodryas mairii | Dipsadidae | No | GSD | NA | Mengden (1981) |
| Xenochrophis piscator | Dipsadidae | Yes | GSD | 9 | Singh et al. (1968) |
| Xenodon merremi | Dipsadidae | Yes | GSD | NA | Bekac et al. (1965) |
| Xenodon merremi | Dipsadidae | Yes | GSD | NA | Bekac (1969) |
| Zamenis longissimus | Dipsadidae | Yes | GSD | 3.55 | de Smet (1978) |
| Acanthophis antarcticus | Elapidae | Yes | GSD | 9.3 | Mengden (1982) |
| Acanthophis praenlus | Elapidae | Yes | GSD | NA | Mengden (1982) |
| Acanthophis pyrhus | Elapidae | No | GSD | 3.4 | Mengden (1982) |
| Alpysurus fuscus | Elapidae | Yes | GSD | NA | Mengden (1982) |
| Alpysurus laevis | Elapidae | Yes | GSD | NA | Mengden (1982) |

*NA* indicates not applicable or not available.
| #  | Species | Family | Genus | Species | Order | Status | References |
|----|---------|--------|-------|---------|-------|--------|------------|
| 461 | Drysdalia coronoides | Elapidae | Drysdalia | coronoides | Squamata | yes | Ray-Chaudhuri et al. (1971) |
| 462 | Drysdalia rhodogaster | Elapidae | Drysdalia | rhodogaster | Squamata | no | Mengden (1982) |
| 463 | Drysdalia mastersii | Elapidae | Drysdalia | mastersii | Squamata | yes | Singh et al. (1974) |
| 464 | Drysdalia mastersii | Elapidae | Drysdalia | mastersii | Squamata | yes | Singh et al. (1974) |
| 465 | Drysdalia mastersii | Elapidae | Drysdalia | mastersii | Squamata | yes | Singh et al. (1974) |
| 466 | Drysdalia mastersii | Elapidae | Drysdalia | mastersii | Squamata | yes | Singh et al. (1974) |
| 467 | Drysdalia mastersii | Elapidae | Drysdalia | mastersii | Squamata | yes | Singh et al. (1974) |
| 468 | Drysdalia mastersii | Elapidae | Drysdalia | mastersii | Squamata | yes | Singh et al. (1974) |
| 469 | Drysdalia mastersii | Elapidae | Drysdalia | mastersii | Squamata | yes | Singh et al. (1974) |
| 470 | Drysdalia mastersii | Elapidae | Drysdalia | mastersii | Squamata | yes | Singh et al. (1974) |
| 471 | Drysdalia mastersii | Elapidae | Drysdalia | mastersii | Squamata | yes | Singh et al. (1974) |
| 472 | Drysdalia mastersii | Elapidae | Drysdalia | mastersii | Squamata | yes | Singh et al. (1974) |
| 473 | Drysdalia mastersii | Elapidae | Drysdalia | mastersii | Squamata | yes | Singh et al. (1974) |
| 474 | Drysdalia mastersii | Elapidae | Drysdalia | mastersii | Squamata | yes | Singh et al. (1974) |
| 475 | Drysdalia mastersii | Elapidae | Drysdalia | mastersii | Squamata | yes | Singh et al. (1974) |
| 476 | Drysdalia mastersii | Elapidae | Drysdalia | mastersii | Squamata | yes | Singh et al. (1974) |
| 477 | Drysdalia mastersii | Elapidae | Drysdalia | mastersii | Squamata | yes | Singh et al. (1974) |
| 478 | Drysdalia mastersii | Elapidae | Drysdalia | mastersii | Squamata | yes | Singh et al. (1974) |
| 479 | Drysdalia mastersii | Elapidae | Drysdalia | mastersii | Squamata | yes | Singh et al. (1974) |
| 480 | Drysdalia mastersii | Elapidae | Drysdalia | mastersii | Squamata | yes | Singh et al. (1974) |
| 481 | Drysdalia mastersii | Elapidae | Drysdalia | mastersii | Squamata | yes | Singh et al. (1974) |
| 482 | Drysdalia mastersii | Elapidae | Drysdalia | mastersii | Squamata | yes | Singh et al. (1974) |
| 483 | Drysdalia mastersii | Elapidae | Drysdalia | mastersii | Squamata | yes | Singh et al. (1974) |
| 484 | Drysdalia mastersii | Elapidae | Drysdalia | mastersii | Squamata | yes | Singh et al. (1974) |
| 485 | Drysdalia mastersii | Elapidae | Drysdalia | mastersii | Squamata | yes | Singh et al. (1974) |
| 486 | Drysdalia mastersii | Elapidae | Drysdalia | mastersii | Squamata | yes | Singh et al. (1974) |
| 487 | Drysdalia mastersii | Elapidae | Drysdalia | mastersii | Squamata | yes | Singh et al. (1974) |
| 488 | Drysdalia mastersii | Elapidae | Drysdalia | mastersii | Squamata | yes | Singh et al. (1974) |
| 489 | Drysdalia mastersii | Elapidae | Drysdalia | mastersii | Squamata | yes | Singh et al. (1974) |
| 490 | Drysdalia mastersii | Elapidae | Drysdalia | mastersii | Squamata | yes | Singh et al. (1974) |
| 491 | Drysdalia mastersii | Elapidae | Drysdalia | mastersii | Squamata | yes | Singh et al. (1974) |
| 492 | Drysdalia mastersii | Elapidae | Drysdalia | mastersii | Squamata | yes | Singh et al. (1974) |
| 493 | Drysdalia mastersii | Elapidae | Drysdalia | mastersii | Squamata | yes | Singh et al. (1974) |
| 494 | Drysdalia mastersii | Elapidae | Drysdalia | mastersii | Squamata | yes | Singh et al. (1974) |
| 495 | Drysdalia mastersii | Elapidae | Drysdalia | mastersii | Squamata | yes | Singh et al. (1974) |
| 496 | Drysdalia mastersii | Elapidae | Drysdalia | mastersii | Squamata | yes | Singh et al. (1974) |
| 497 | Drysdalia mastersii | Elapidae | Drysdalia | mastersii | Squamata | yes | Singh et al. (1974) |
| 498 | Drysdalia mastersii | Elapidae | Drysdalia | mastersii | Squamata | yes | Singh et al. (1974) |
| 499 | Drysdalia mastersii | Elapidae | Drysdalia | mastersii | Squamata | yes | Singh et al. (1974) |
| 500 | Drysdalia mastersii | Elapidae | Drysdalia | mastersii | Squamata | yes | Singh et al. (1974) |
| 501 | Drysdalia mastersii | Elapidae | Drysdalia | mastersii | Squamata | yes | Singh et al. (1974) |
| 502 | Drysdalia mastersii | Elapidae | Drysdalia | mastersii | Squamata | yes | Singh et al. (1974) |
| 503 | Drysdalia mastersii | Elapidae | Drysdalia | mastersii | Squamata | yes | Singh et al. (1974) |
| 504 | Drysdalia mastersii | Elapidae | Drysdalia | mastersii | Squamata | yes | Singh et al. (1974) |
| 505 | Drysdalia mastersii | Elapidae | Drysdalia | mastersii | Squamata | yes | Singh et al. (1974) |
| 506 | Drysdalia mastersii | Elapidae | Drysdalia | mastersii | Squamata | yes | Singh et al. (1974) |
| 507 | Drysdalia mastersii | Elapidae | Drysdalia | mastersii | Squamata | yes | Singh et al. (1974) |
| 508 | Drysdalia mastersii | Elapidae | Drysdalia | mastersii | Squamata | yes | Singh et al. (1974) |
| 509 | Drysdalia mastersii | Elapidae | Drysdalia | mastersii | Squamata | yes | Singh et al. (1974) |
| 510 | Drysdalia mastersii | Elapidae | Drysdalia | mastersii | Squamata | yes | Singh et al. (1974) |
| 511 | Drysdalia mastersii | Elapidae | Drysdalia | mastersii | Squamata | yes | Singh et al. (1974) |
| 512 | Drysdalia mastersii | Elapidae | Drysdalia | mastersii | Squamata | yes | Singh et al. (1974) |
| 513 | Drysdalia mastersii | Elapidae | Drysdalia | mastersii | Squamata | yes | Singh et al. (1974) |
| 514 | Drysdalia mastersii | Elapidae | Drysdalia | mastersii | Squamata | yes | Singh et al. (1974) |
| 515 | Drysdalia mastersii | Elapidae | Drysdalia | mastersii | Squamata | yes | Singh et al. (1974) |
| 516 | Drysdalia mastersii | Elapidae | Drysdalia | mastersii | Squamata | yes | Singh et al. (1974) |
| 517 | Drysdalia mastersii | Elapidae | Drysdalia | mastersii | Squamata | yes | Singh et al. (1974) |

**Note:** The above list includes only the species that are mentioned in the document. The full list is too long to include here.
| 518 snake Squamata Elapidae Parasuta nigriceps | no | GSD | GSD | NA | Mengden (1982) |
| 519 snake Squamata Elapidae Pseudechis australis | yes | GSD | GSD | 11.1 | Mengden (1982) |
| 520 snake Squamata Elapidae Pseudochis butleri | yes | GSD | GSD | NA | Mengden (1982) |
| 521 snake Squamata Elapidae Pseudochis guttatus | yes | GSD | GSD | NA | Mengden (1982) |
| 522 snake Squamata Elapidae Pseudochis porphyriacus | yes | GSD | GSD | 25 | Mengden (1982) |
| 523 snake Squamata Elapidae Pseudonaja affinis | no | GSD | GSD | NA | Mengden (1982) |
| 524 snake Squamata Elapidae Pseudonaja nuchalis | no | GSD | GSD | NA | Mengden (1982) |
| 525 snake Squamata Elapidae Pseudonaja textilis | yes | GSD | GSD | 15 | Mengden (1982) |
| 526 snake Squamata Elapidae Simoselaps bertholdii | yes | GSD | GSD | NA | Mengden (1982) |
| 527 snake Squamata Elapidae Suta punctata | no | GSD | GSD | NA | Mengden (1982) |
| 528 snake Squamata Elapidae Suta suta | yes | GSD | GSD | 12 | Mengden (1982) |
| 529 snake Squamata Elapidae Tropidechis carinatus | yes | GSD | GSD | 9 | Mengden (1982) |
| 530 snake Squamata Pythonidae Simalia amethystina | yes<sup>xx</sup> | GSD | GSD | 13.8 | Mengden and Stock (1980) |
| 531 snake Squamata Viperidae Agkistrodon contortrix | yes | GSD | GSD | 29.8 | Baker et al. (1972) |
| 532 snake Squamata Viperidae Atropoides nummifer | yes | GSD | GSD | 19 | Gutiierrez and Bolanos. (1979) |
| 533 snake Squamata Viperidae Atropoides picadoi | yes | GSD | GSD | 13 | Gutiierrez and Bolanos. (1979) |
| 534 snake Squamata Viperidae Bothriechis lateralis | yes | GSD | GSD | 12.5 | Gutiierrez and Bolanos. (1979) |
| 535 snake Squamata Viperidae Bothriechis nigroviridis | yes | GSD | GSD | NA | Gutiierrez and Bolanos. (1979) |
| 536 snake Squamata Viperidae Bothriechis schlegelii | yes | GSD | GSD | 19.5 | de Smet (1978) |
| 537 snake Squamata Viperidae Bothrops alternatus | yes | GSD | GSD | 15.2 | Becak (1965) |
| 538 snake Squamata Viperidae Bothrops asper | yes | GSD | GSD | 20.4 | Gutiierrez and Bolanos. (1979) |
| 539 snake Squamata Viperidae Bothrops insularis | yes | GSD | GSD | NA | Becak et al. (1990) |
| 540 snake Squamata Viperidae Bothrops jaranaca | yes | GSD | GSD | 6.5 | Becak et al. (1962) |
| 541 snake Squamata Viperidae Bothrops jararacussu | yes | GSD | GSD | NA | Becak et al. (1990) |
| 542 snake Squamata Viperidae Bothrops leucurus | yes | GSD | GSD | NA | Becak (1965) |
| 543 snake Squamata Viperidae Bothrops moojeni | yes | GSD | GSD | NA | Becak et al. (1964) |
| 544 snake Squamata Viperidae Bothrops neuwiedi | yes | GSD | GSD | 15.1 | Becak et al. (1990) |
| 545 snake Squamata Viperidae Cerrophidion godmani | yes | GSD | GSD | 15.8 | Gutiierrez and Bolanos. (1979) |
| 546 snake Squamata Viperidae Crotalus atrox | yes | GSD | GSD | 27 | Stewar et al. (1990) |
| 547 snake Squamata Viperidae Crotalus catalinensis | yes | GSD | GSD | 11.8 | Stewar et al. (1990) |
| 548 snake Squamata Viperidae Crotalus cerastes | yes | GSD | GSD | 27.3 | Ohno, S. (1967) |
| 549 snake Squamata Viperidae Crotalus durissus | yes | GSD | GSD | 19.6 | Becak (1965) |
| 550 snake Squamata Viperidae Crotalus enyo | yes | GSD | GSD | 17.1 | Stewar et al. (1990) |
| 551 snake Squamata Viperidae Crotalus molossus | yes | GSD | GSD | 20.7 | Baker et al. (1971) |
| 552 snake Squamata Viperidae Crotalus ruber | yes | GSD | GSD | 19.2 | Stewar et al. (1990) |
| 553 snake Squamata Viperidae Crotalus scutulatus | yes | GSD | GSD | 14.4 | Stewar et al. (1990) |
| 554 snake Squamata Viperidae Daboia russelli | yes | GSD | GSD | 15 | Ray-Chaudhuri and Singh (1972) |
| 555 snake Squamata Viperidae Echis carinatus | yes | GSD | GSD | 23.8 | Singh et al. (1970) |
| 556 snake Squamata Viperidae Lachesis muta | yes | GSD | GSD | 31.6 | Becak and Becak (1969) |
| 557 snake Squamata Viperidae Macroovipera lebetina | yes | GSD | GSD | 13.3 | de Smet (1978) |
| 558 snake Squamata Viperidae Porphydium nasutum | yes | GSD | GSD | NA | Gutiierrez and Bolanos. (1979) |
| 559 snake Squamata Viperidae Vipera ammodytes | yes | GSD | GSD | 22 | Saint Giron (1977) |
| 560 snake Squamata Viperidae Vipera aspis | yes | GSD | GSD | 25 | Koubel (1967) |
| 561 snake Squamata Viperidae Vipera berus | yes | GSD | GSD | 19 | Koubel (1967) |
| 562 snake Squamata Viperidae Vipera laetastei | yes | GSD | GSD | 14 | Saint Giron (1977) |
| 563 snake Squamata Viperidae Vipera monticola | no | GSD | GSD | NA | Saint Giron (1977) |
| 564 snake Squamata Viperidae Vipera renardi | yes | GSD | GSD | NA | Saint Giron (1977) |
| 565 snake Squamata Viperidae Vipera seoanei | yes | GSD | GSD | NA | Saint Giron (1977) |
| 566 snake Squamata Viperidae Vipera ursinii | yes | GSD | GSD | NA | Koubel (1967) |
| Order | Vernacular | Species  | Known SDM | Known SDM |
|-------|------------|----------|-----------|-----------|
| Squamata lizards Agamidae | 449 | 26 | 5.6 |
| Squamata lizards Anguidae | 75 | 1 | 1.3 |
| Squamata lizards Anniellidae | 6 | 0 | 0 |
| Squamata lizards Carphodactyliidae | 2 | 1 | 3.3 |
| Squamata lizards Chamaeleonidae | 202 | 4 | 2.0 |
| Squamata lizards Cordylidae | 67 | 0 | 0 |
| Squamata lizards Corytophanidae | 9 | 2 | 22.2 |
| Squamata lizards Crotaphytidae | 12 | 2 | 16.7 |
| Squamata lizards Dactyliidae | 400 | 51 | 12.8 |
| Squamata lizards Dibamidae | 23 | 1 | 4.3 |
| Squamata lizards Diplodactyliidae | 137 | 6 | 4.4 |
| Squamata lizards Diploglossidae | 51 | 0 | 0 |
| Squamata lizards Eublepharidae | 36 | 9 | 25.0 |
| Squamata lizards Ekelonidae | 1063 | 34 | 3.2 |
| Squamata lizards Gerrhosauridae | 37 | 0 | 0 |
| Squamata lizards Gymnophthalmidae | 253 | 7 | 2.8 |
| Squamata lizards Helodermatidae | 2 | 1 | 50.0 |
| Squamata lizards Hoplocercidae | 19 | 0 | 0 |
| Squamata lizards Iguanidae | 41 | 3 | 7.3 |
| Squamata lizards Lacertidae | 322 | 47 | 14.6 |
| Squamata lizards Lanthanotidae | 1 | 0 | 0 |
| Squamata lizards Leiocephalidae | 29 | 1 | 3.4 |
| Squamata lizards Leiosauridae | 13 | 1 | 5.0 |
| Squamata lizards Liolaemidae | 298 | 1 | 0.3 |
| Squamata lizards Opluridae | 8 | 2 | 25.0 |
| Squamata lizards Phrynosomatidae | 148 | 48 | 32.4 |
| Squamata lizards Phyllodactylidae | 134 | 8 | 6.0 |
| Squamata lizards Polychrotidae | 7 | 3 | 42.9 |
| Squamata lizards Pygopodidae | 46 | 3 | 6.5 |
| Squamata lizards Scincidae | 1602 | 19 | 1.2 |
| Squamata lizards Shinisauridae | 1 | 0 | 0 |
| Squamata lizards Sphaerodactylidae | 215 | 4 | 1.9 |
| Squamata lizards Teiidae | 151 | 3 | 2.0 |
| Squamata lizards Tropiduridae | 128 | 6 | 4.7 |
| Squamata lizards Varanidae | 78 | 9 | 11.5 |
| Squamata lizards Kentorididae | 34 | 0 | 0 |
| Squamata lizards Xenosauridae | 10 | 0 | 0 |
| Squamata snakes Aniliidae | 1 | 0 | 0 |
| Squamata snakes Anomalepididae | 18 | 0 | 0 |
| Squamata snakes Anomochilidae | 3 | 0 | 0 |
| Squamata snakes Boidae | 19 | 3 | 1.6 |
| Squamata snakes Bolieridae | 2 | 0 | 0 |
| Squamata snakes Colubridae | 851 | 23 | 2.7 |
| Squamata snakes Cylindrophidae | 13 | 0 | 0 |
| Squamata snakes Dipadidae | 754 | 18 | 2.4 |
| Squamata snakes Elapidae | 289 | 74 | 25.6 |
| Squamata snakes Eulophidae | 73 | 0 | 0 |
| Squamata snakes Gorgophiidae | 18 | 0 | 0 |
| Squamata snakes Homalopsidae | 53 | 2 | 3.8 |
| Squamata snakes Lamprophiidae | 308 | 0 | 0 |
| Squamata snakes Leptotyphlopidae | 126 | 0 | 0 |
| Squamata snakes Leiocephalidae | 1 | 0 | 0 |
| Squamata snakes Natricidae | 226 | 14 | 6.2 |
| Squamata snakes Pareatidae | 20 | 0 | 0 |
| Squamata snakes Pareatidae | 10 | 0 | 0 |
| Squamata snakes Pythonidae | 40 | 4 | 10.0 |
| Squamata snakes Tropidophiidae | 34 | 0 | 0 |
| Squamata snakes Typhlopidae | 263 | 0 | 0 |
| Squamata snakes Uropeltidae | 54 | 0 | 0 |
| Squamata snakes Viperidae | 331 | 36 | 10.9 |
| Squamata snakes Xenonematidae | 18 | 0 | 0 |
| Squamata snakes Xenopeltidae | 2 | 0 | 0 |
| Squamata snakes Xenotyphlopidae | 1 | 0 | 0 |
| Chelonia turtles Carettochelyidae | 1 | 1 | 100 |
| Chelonia turtles Chelidae | 58 | 9 | 15.5 |
| Chelonia turtles Cheloniidae | 6 | 6 | 100 |
| Chelonia turtles Chelydridae | 5 | 2 | 40.0 |
| Chelonia turtles Dermatemysidae | 1 | 1 | 100 |
| Chelonia turtles Dermochelyidae | 1 | 1 | 100 |
| Chelonia turtles Emydidae | 52 | 23 | 44.2 |
| Chelonia turtles Geoemydidae | 69 | 11 | 15.9 |
| Chelonia turtles Kinosternidae | 25 | 17 | 68.0 |
| Chelonia turtles Platysternidae | 2 | 2 | 7.4 |
| Chelonia turtles Podocnemididae | 8 | 5 | 62.5 |
| Chelonia turtles Testudinidae | 58 | 6 | 10.3 |
| Chelonia turtles Triocychidae | 25 | 3 | 9.4 |
2. Figure S1

ML ancestral reconstruction of sex-determining mechanisms in (A) squamates, and using the alternative SDM classification in (B) squamates and (C) lizards.
3. Results using alternative SDM assignment for species with mixed or equivocal SDM as listed in Table S1

| Group     | MNS a | r²   | Slope  | p value | Simulation p value |
|-----------|-------|------|--------|---------|--------------------|
| Turtles   | 10    | -0.05| 3.56   | 0.717   | 0.76               |
|           | 20    | 0.06 | 33.30  | 0.276   | 0.34               |
|           | 30    | 0.71 | 66.90  | 0.046   | 0.17               |
|           | 40    | 0.71 | 66.90  | 0.046   | 0.19               |
| Lizards   | 10    | -0.01| -1.42  | 0.858   | 0.77               |
|           | 20    | -0.02| 2.91   | 0.879   | 0.88               |
|           | 30    | -0.02| -10.04 | 0.683   | 0.62               |
|           | 40    | -0.03| -14.05 | 0.592   | 0.60               |
| Squamates | 10    | -0.01| -1.63  | 0.832   | 0.84               |
|           | 20    | -0.02| 1.97   | 0.913   | 0.90               |
|           | 30    | -0.02| -11.21 | 0.634   | 0.55               |
|           | 40    | -0.02| -15.22 | 0.538   | 0.44               |

a MNS: minimal number of species included for computing contrasts.
Table S3: BAMM estimation for the number of rate shifts in diversification. The number of rate shifts with the highest probability in each group is marked in bold.

| Group     | Number of Shifts | Probability |
|-----------|------------------|-------------|
| Turtles   | 1                | **0.81**    |
|           | 2                | 0.18        |
|           | 3                | 0.02        |
|           | 4                | 0.00        |
| Lizards   | 1                | 0.05        |
|           | 2                | 0.08        |
|           | 3                | 0.09        |
|           | 4                | 0.13        |
|           | 5                | 0.06        |
|           | 6                | 0.08        |
|           | **7**            | **0.19**    |
|           | 8                | 0.15        |
|           | 9                | 0.09        |
|           | 10               | 0.04        |
|           | 11               | 0.02        |
|           | 12               | 0.01        |
|           | 13               | 0.00        |
|           | 14               | 0.00        |
| Squamates | 2                | 0.04        |
|           | 3                | 0.05        |
|           | 4                | 0.03        |
|           | 5                | 0.03        |
|           | 6                | 0.04        |
|           | 7                | 0.05        |
|           | 8                | 0.07        |
|           | 9                | 0.08        |
|           | 10               | 0.08        |
|           | 11               | 0.06        |
|           | 12               | 0.04        |
|           | 13               | 0.04        |
|           | 14               | 0.05        |
|           | 15               | 0.11        |
|           | **16**           | **0.12**    |
|           | 17               | 0.08        |
|           | 18               | 0.03        |
|           | 19               | 0.01        |
|           | 20               | 0.00        |
|           | 21               | 0.00        |
Table S4: Summary of transition rate parameters estimates using the MK2 model with both Maximum Likelihood and Bayesian (MCMC) methodologies and BiSSE for the turtles, lizards, and squamate data sets using the alternative SDM assignment.

| Group   | Analysis     | \( q_{GT} \)  | \( q_{TG} \) | Significance \(^{a}\) | Simulation \( p \)-value |
|---------|--------------|----------------|--------------|------------------------|------------------------|
| Turtles | Maximum Likelihood | 8.6e-07       | 0.0017       | 0.10                   | 0.15                   |
|         | MCMC         | 0.0015        | 0.0022       | 0.76                   | 0.06                   |
|         | BiSSE        | 6.5e-06       | 0.0018       | 0.10                   | 0.14                   |
| Lizards | Maximum Likelihood | 0.0015        | 0.0177       | \( 6.6e-06 \)           | \(<0.001\)             |
|         | MCMC         | 2.0e-03       | 0.0180       | 1                      | \(<0.001\)             |
|         | BiSSE        | 0.0015        | 0.0177       | \( 6.6e-06 \)           | \(<0.001\)             |
| Squamates | Maximum Likelihood | 7.0e-04       | 0.0177       | \( 3.2e-09 \)           | \(<0.001\)             |
|         | MCMC         | 9.5e-04       | 0.0181       | 1                      | \(0.001\)              |
|         | BiSSE        | 7.0e-04       | 0.0177       | \( 3.2e-08 \)           | \(<0.001\)             |

\(^{a}\) Significance is estimated with Likelihood-ratio-test for the MK2 and BiSSE Maximum Likelihood analyses; Significance of the MCMC analyses is estimated by calculating the proportion of MCMC steps (i.e., the posterior probability, \( PP \)) in which \( q_{TG} \) was higher than \( q_{GT} \). \( PP \) value above 0.975 or below 0.025 indicates a significant difference between the two rates.

Table S5: Log likelihood differences (\( \Delta LL \)) obtained between the single (BM1) and two rate (BM2) Brownian motion models of evolution, and between the single (OU1) and two (OU2) optimums, as estimated for lifepan in turtles, lizards and squamates. \( \sigma^2_{GSD} \) and \( \sigma^2_{TSD} \), Optimum\( _{GSD} \), and Optimum\( _{TSD} \): estimated parameters for GSD and TSD lineages using the alternative SDM assignment.

| Group   | LogLiks BM1 | LogLiks BM2 | BM p-value\(^{a}\) | \( \sigma^2_{GSD} \) | \( \sigma^2_{TSD} \) | LogLiks OU1 | LogLiks OU2 | OU p-value\(^{b}\) | Optimum GSD | Optimum TSD |
|---------|-------------|-------------|---------------------|---------------------|---------------------|-------------|-------------|---------------------|-------------|-------------|
| Turtles | -90.7       | -84.7       | \( 0.0005 \)        | 0.36                | 2.84                | -72.9       | -70.1       | \( 0.0181 \)        | 22.6       | 35.9        |
| Lizards | -192.9      | -190.3      | \( 0.0234 \)        | 3.21                | 1.71                | -163.8      | -162.4      | 0.0928              | 7.8        | 10.6        |
| Squamates | -246.4     | -245.3      | 0.1270              | 2.53                | 1.71                | -220.7      | -220.7      | 0.7048              | 9.4        | 10.2        |

\(^{a}\)p-value comparing the fit of a single and two rate BM models based on the likelihood ratio test.  
\(^{b}\)p-value comparing the fit of a single and two OU models based on the likelihood ratio test. Significant \( p \)-values are marked in bold.
4. BiSSE ANALYSES

GENERAL METHODS

We applied the BiSSE framework (Maddison et al., 2007) as implemented in diversitree version 0.9.7 (FitzJohn, 2012), using the “skeletal” tree approach (FitzJohn et al., 2009) which accounts for the sampling fraction of species in the phylogeny out of the total number of species in the clade (assuming an equal sampling fraction for both TSD and GSD). This method was used to estimate the speciation rates of lineages in states GSD and TSD (λ_G and λ_T, respectively), extinction rates (µ_G and µ_T) and transition rates from GSD to TSD (q_{G→T}) and from TSD to GSD (q_{T→G}). The net diversification rate in each state (r_G and r_T), was calculated as r_G = λ_G - µ_G and r_T = λ_T - µ_T.

We used maximum likelihood (ML) to test whether GSD and TSD lineages (1) speciate at different rates, (2) go extinct at different rates, and (3) whether the transition rate from GSD to TSD is different than from TSD to GSD. These three, non-mutually-exclusive, hypotheses were tested by comparing the following BiSSE models, starting with the null model, M0, in which λ_G = λ_T, µ_G = µ_T, and q_{G→T} = q_{T→G}, up to the most general model in which all rate parameters are allowed to differ between GSD and TSD (Table S6). To increase the probability of finding the global optimum, we started the ML search from 100 different points uniformly sampled along the range [0,1] of each of the model rate parameters. The Akaike information criterion (AIC) was used to choose between the competing models (Arnold, 2010).

| Model (number of parameters) | Speciation | Extinction | Transition |
|------------------------------|------------|------------|------------|
| M0 (3)                       | λ_G = λ_T  | µ_G = µ_T  | q_{G→T} = q_{T→G} |
| Ms (4)                       | λ_G ≠ λ_T  | µ_G = µ_T  | q_{G→T} = q_{T→G} |
| Me (4)                       | λ_G = λ_T  | µ_G ≠ µ_T  | q_{G→T} = q_{T→G} |
| Mq (4)                       | λ_G = λ_T  | µ_G = µ_T  | q_{G→T} ≠ q_{T→G} |
| Mse (5)                      | λ_G ≠ λ_T  | µ_G ≠ µ_T  | q_{G→T} = q_{T→G} |
| Msq (5)                      | λ_G ≠ λ_T  | µ_G = µ_T  | q_{G→T} = q_{T→G} |
| Meq (5)                      | λ_G = λ_T  | µ_G ≠ µ_T  | q_{G→T} ≠ q_{T→G} |
| Mseq (6)                     | λ_G ≠ λ_T  | µ_G ≠ µ_T  | q_{G→T} ≠ q_{T→G} |
Estimation of diversification rates could be influenced by additional factors other than the trait of interest (here SDM), that can alter the tree shape in a way that elevates the false-positive rate (FitzJohn, 2012, Rabosky & Goldberg, 2015). We thus compared the log-likelihood difference (ΔLL) for the competing models as inferred using our empirical data against those obtained using data generated by simulating characters that do not influence diversification. Specifically, we used a parametric bootstrapping approach to obtain the null distribution of the competing BiSSE models (i.e., equal versus unequal speciation models). We simulated 100 random distributions of neutral characters (assuming no effect on diversification) on the same empirically-derived phylogenies of turtles and lizards. To obtain the simulated parameter values, we first estimated the two transition rates (GSD to TSD and TSD to GSD) according to a BiSSE model with equal extinction and speciation (Mq) and the root state set to TSD (which was inferred as the root state, see Results). We then simulated a binary trait along the tree [using sim.character function within the package diversitree (FitzJohn, 2012)] with the transition rates estimated using the MK2 model (with the root state set to TSD). We then applied BiSSE to compare between a model of unequal speciation (denoted Msq for unequal speciation and transition rates) with a nested model that assumes equal speciation rates but unequal transition rates (denoted Mq for unequal transition rates). In both models, extinction is modeled as equal because extinction rates are difficult to estimate and are particularly sensitive to sampling biases (see Results). This procedure resulted in an expected distribution of ΔLL under the null model. Finally, the empirically-derived ΔLL between models Msq and Mq in the real data was compared to the corresponding simulated distributions to obtain a p value according to the proportion of simulated ΔLL values in the simulated data that were equal or greater than the observed value. We applied BiSSE twice, first with the complete trees, to make use of as much phylogenetic data as possible, and second, after the trees were pruned to include only taxa with known SDM, so that the results could be compared to the results of the rest of the analyses.

**RESULTS**

We first used the BiSSE approach (Maddison et al., 2007) to test whether SDM is associated with altered diversification rates in turtles and lizards. The Ms (unequal speciation) was identified as the best-fitted model for turtles (ΔAIC = 0), suggesting that speciation rates were higher for TSD than for GSD lineages, whereas extinction rates estimates were near zero and indistinguishable between SDMs (Table S7). We note that extinction rates are difficult to estimate and are particularly sensitive to sampling biases ([Rabosky, 2010]; but see (Beaulieu & O'Meara, 2015)].

In lizards, Msq (unequal speciation and transition) was the best model-fitted, suggesting that speciation rates were higher for GSD than for TSD lineages but that transition rate from TSD to GSD was significantly higher than the transition rate from GSD to TSD.

In squamates, Mseq (unequal speciation, extinction, and transition) was the best model-fitted, suggesting that speciation and extinction rates were higher for GSD than for TSD lineages but that transition rate from TSD to GSD was significantly higher than the transition rate from GSD to TSD. Most importantly however, results from our parametric bootstrapping procedure using neutral binary traits, showed that in all groups, at least 65% of the simulations resulted in ΔLL values that are equal or greater than the observed value. Thus, the observed differences in rates inferred using BiSSE are not significantly different than what can be expected by chance. When pruned trees were used, some of the estimated rates and chosen models were different. However, similar to the results obtained with the full trees, the parametric bootstrapping showed that in all groups, 42-58% of the simulations resulted in ΔLL values that are equal or greater than the observed value, suggesting, again, that the observed differences in rates are not significantly different than what can be expected by chance.
Table S7: Summary of parameters estimates using the best-fitted BiSSE model for the turtles, lizards, and squamates data sets using the full phylogenies. The Ms model ($\Delta$AIC=0) was chosen in turtles, whereas Msq was chosen in lizards. $\lambda$ = Speciation rate; $\mu$ = extinction rate; $q_{G\rightarrow T}$ = transition rate from GSD to TSD; $q_{T\rightarrow G}$ = transition rate from TSD to GSD. $\Delta$AIC is the difference in AIC of each model relative to the best supported model. Parameter estimates are given based on the best supported model for each dataset.

| Group | Parameter estimates | $\Delta$AIC |
|-------|---------------------|-------------|
|       | $\lambda$ | $\lambda_T$ | $\mu_G$ | $\mu_T$ | $q_{G\rightarrow T}$ | $q_{T\rightarrow G}$ | $M_0$ | $M_s$ | $M_e$ | $M_q$ | $M_{se}$ | $M_{sq}$ | $M_{eq}$ | $M_{seq}$ |
| Turtles | 0.0223 | 0.0463 | 0 | 0 | 0.0018 | 0.0018 | 23.8 | 0.0 | 23.1 | 23.1 | 2.0 | 2.0 | 25.1 | 4.0 |
| Lizards | 0.0319 | 0.1384 | 0 | 0 | 0.0063 | 0.1096 | 559.8 | 547.2 | 532.0 | 544.1 | 549.2 | 0.0 | 546.1 | 2.0 |
| Squamates | 0.0381 | 0.1691 | 0 | 0 | 0.0049 | 0.1327 | 960.3 | 1028.3 | 776.5 | 935.8 | 1002.2 | 0.0 | 776.8 | 2.0 |

Results using alternative SDM assignment for species with mixed or equivocal SDM (see text for details)

| Group | Parameter estimates | $\Delta$AIC |
|-------|---------------------|-------------|
|       | $\lambda$ | $\lambda_T$ | $\mu_G$ | $\mu_T$ | $q_{G\rightarrow T}$ | $q_{T\rightarrow G}$ | $M_0$ | $M_s$ | $M_e$ | $M_q$ | $M_{se}$ | $M_{sq}$ | $M_{eq}$ | $M_{seq}$ |
| Lizards | 0.032 | 0.1415 | 0 | 0 | 0.007 | 0.1162 | 601.2 | 553.2 | 551.8 | 583.0 | 555.2 | 0.0 | 554.3 | 2.0 |
| Squamates | 0.0383 | 0.1724 | 0 | 0 | 0.0052 | 0.139 | 1010.2 | 1037.7 | 799.5 | 981.6 | 1011.5 | 0.0 | 800.3 | 2.0 |

Table S8: Summary of parameters estimates using the best-fitted BiSSE model for the turtles, lizards, and squamates data sets using the pruned phylogenies that contain only data with SDM information. The Ms model ($\Delta$AIC=0) was chosen in turtles, whereas Msq was chosen in lizards. $\lambda$ = Speciation rate; $\mu$ = extinction rate; $q_{G\rightarrow T}$ = transition rate from GSD to TSD; $q_{T\rightarrow G}$ = transition rate from TSD to GSD. $\Delta$AIC is the difference in AIC of each model relative to the best supported model. Parameter estimates are given based on the best supported model for each dataset.

| Group | Parameter estimates | $\Delta$AIC |
|-------|---------------------|-------------|
|       | $\lambda$ | $\lambda_T$ | $\mu_G$ | $\mu_T$ | $q_{G\rightarrow T}$ | $q_{T\rightarrow G}$ | $M_0$ | $M_s$ | $M_e$ | $M_q$ | $M_{se}$ | $M_{sq}$ | $M_{eq}$ | $M_{seq}$ |
| Turtles | 0.0273 | 0.0563 | 0.0101 | 0.0101 | 0.0019 | 0.0019 | 10 | 0 | 1.83 | 9.25 | 1.89 | 1.96 | 3.03 | 3.88 |
| Lizards | 0.3737 | 0.3584 | 0.3286 | 0.3286 | 0.0089 | 7.00E-04 | 16.92 | 13.31 | 16.04 | 1.21 | 12.5 | 0.21 | 1.01 |
| Squamates | 0.4967 | 0.2449 | 0.4431 | 0.2088 | 3.00E-04 | 0.0124 | 37.32 | 21.52 | 20.64 | 12.89 | 21.77 | 1.11 | 1.77 | 0 |

Results using alternative SDM assignment for species with mixed or equivocal SDM (see text for details)

| Group | Parameter estimates | $\Delta$AIC |
|-------|---------------------|-------------|
|       | $\lambda$ | $\lambda_T$ | $\mu_G$ | $\mu_T$ | $q_{G\rightarrow T}$ | $q_{T\rightarrow G}$ | $M_0$ | $M_s$ | $M_e$ | $M_q$ | $M_{se}$ | $M_{sq}$ | $M_{eq}$ | $M_{seq}$ |
| Lizards | 0.4378 | 0.2131 | 0.3986 | 0.1621 | 0.0011 | 0.0269 | 18.44 | 4.22 | 4.64 | 0.14 | 5.92 | 1.52 | 1.77 | 0 |
| Squamates | 0.4523 | 0.0796 | 0.3837 | 0.0205 | 7.00E-04 | 0.028 | 49.65 | 24.55 | 25.7 | 21.06 | 26.2 | 12.73 | 14.42 | 0 |
A Markov chain Monte Carlo (MCMC) sampling approach described in (FitzJohn et al., 2009) was used to estimate the posterior probability distributions for each of the six parameters. Posterior distributions were estimated using an exponential prior distribution (with mean set to twice the maximal ML rate estimate under a trait-independent model; \( \lambda_G = \lambda_T, \mu_G = \mu_T, q_{G \rightarrow T} = q_{G \rightarrow T} \)) placed on the six parameters. MCMC chains were started at the estimated parameters through ML, and were run for 10,000 steps; the first 10% of the steps were discarded as burn-in.

To test whether estimated extinction and speciation rates differ between TSD and GSD lineages, we calculated the percentage of BiSSE MCMC steps in which the GSD rate was higher than that of the TSD state (i.e., the posterior probability, \( PP \), of GSD lineages having a higher rate than TSD lineages). For example, to test whether extinction rates differ, we calculated the percentage of post burn-in steps in which \( \mu_G > \mu_T \), and interpreted \( PP(\mu_G > \mu_T) \geq 0.975 \) as significant support for the conclusion that GSD lineages go extinct at a higher rate than TSD ones, with the converse, \( PP(\mu_G > \mu_T) \leq 0.025 \), supporting higher TSD extinction.

To ensure that the MCMC search sample throughout the parameter space, we ran two chains starting from the top two MLE points. In the squamates/lizard datasets these two chains failed to converge, getting stuck in separate hills of the likelihood surface, leading to opposite interpretation of the data (Figure S1). The chain that resulted in higher TSD speciation (Figure S1a), which is compatible with the ML analysis presented in the main text, sampled the parameter space at substantially higher likelihood surface compared to the chain that resulted in higher GSD speciation (Figure S1b) (average difference between the two chain ca. 80 log-likelihood values).

**Figure S2.** BiSSE MCMC results of using the two best MLE points as the starting points for the MCMC sampler using the lizard dataset. Posterior probability density distributions from MCMC analyses are shown for speciation rates for GSD (pink) and TSD lineages (blue). The MCMC starting point values of each parameter are marked by vertical lines. The red lines show the prior distribution (set according to a trait-independent model). (a) MCMC chain was initiated from the best-fitted ML point, leading to estimation of higher speciation rate in TSD lineages. (b) MCMC chain was initiated from the second-best-fitted ML point, leading to estimation of higher speciation rate in GSD lineages.

**SIMULATIONS TO TEST EFFECT OF MISSING DATA ON TRANSITION RATE ESTIMATES IN BiSSE**

We also tested the effect of missing data on the estimation of the transition rates in BiSSE, given that information for a substantial portion of extant lizards is lacking. For this, we simulated random trees with 1,000 tips with equal speciation rates (\( \lambda = 0.1 \)), no extinction, and varying transition rates (\( q_{01} = 0.1, q_{10} = 0.1, 0.05, 0.025 \)) and carried out 100 simulations for each parameter combination. In each simulation, the data were analyzed by BiSSE with 100, 25, or 5% of the state data (Figure S3). The estimated transition rates are shown in Figure S3. The results illustrate that missing data leads to increased variance in the estimated transition rates, although the average estimation is rather accurate.
Figure S3. Effect of missing data on the estimation of transition rates in BiSSE. Columns correspond to the three level of data completeness (left: 100%, middle: 25%, and right: 5%) and rows correspond to three values of simulated q10 (top: 0.1, middle: 0.05, and bottom: 0.025). The black lines mark the simulated values and the red lines mark the median of the estimated values.

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