Data Collection on Intergeneric Hybrids and Basic Types: Reptilia

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"REPTILIA"

4 orders, 78 families, 12.000 species

4 orders: Crocodilia, Rhynchocephalia, Squamata, Testudines

Systematics according to en.wikipedia and reptile database 2024
° = taxa not accepted in the rank of a genus by en.wikipedia

General references on Reptilia

Mertens G (1950) Über Reptilienbastarde. Senckenbergiana 31, 127–144.
Mertens G (1956) Über Reptilienbastarde. II. Senckenbergiana Biologica 37, 383–394.
Mertens G (1964) Über Reptilienbastarde III. Senckenbergiana Biologica 45, 33–49.
http://vipersgarden.at/PDF_files/PDF-2142.pdf Interspecific hybrids only.
Mertens G (1968) Über Reptilienbastarde. IV. Senckenbergiana Biologica 49, 1–12.

Abbreviations:

° = taxa actually not accepted in the rank of a genus, e. g. *Cerasus*° (= *Prunus* p. p.)
10: 50 etc. The numbers behind the names of families etc. refer to extant genera and species
IS = interspecific hybrid. **IG** = intergeneric hybrid. **IST** = intersubtribal hybrid.
IT = intertribal hybrid. **ISF** = intersubfamilial hybrid. **IF** = interfamilial hybrid.
EC = embryo culture or ovule culture
SO = somatic hybrid by cell fusion; normally these hybrids are asymmetric
AS = asymmetric hybrids, they do not equally express maternal and paternal features
HY = assumed intergeneric hybridogeneous origin of a taxon.
nat. hyb. = natural hybrid **art. hyb.** = artificial hybrid

Colours within the crosses:

Red letters: intergeneric hybrids (incl. former IG).
Violet letters: multigeneric = plurigeneric hybrids.
Gray letters: hybridity unconfirmed or erroneous.
Green letters: notes on tribes, subfamilies etc. involved in the hybridization.

Yellow shaded: Notes concerning basic types.

Crocodilia 3 families 8–9: 26

3 families: Alligatoridae 4: 8, Crocodilidae 4: 19, Gavialidae 1: 1 + many extinct taxa!

Crocodilia: Crocodilidae 4: 19

Crocodylus 14, Mecistops 2, Osteolaemus, 2, Tomistoma 1 (or part of Gavialidae)

All 14 species of *Crocodylus* belong to the same basic type according to modern cladograms.

Caiman crocodilus × *C. yacare* **IS** Brazaitis et al. 1998, 197
Caiman latirostis × *C. yacare* **IS** Pacheco-Sierra & Amavet 2021, Tab. 7.1
Crocodylus acutus × *C. moreletii* **IS** Pacheco-Sierra & Amavet 2021, Tab. 7.1; Pacheco-Sierra et al. 2018
Crocodylus acutus × *C. rhombifer* **IS** nat. hyb. Pacheco-Sierra & Amavet 2021, Tab. 7.1; Weaver et al. 2008; Hennigan 2014; Milián-García et al. 2015
Crocodylus acutus × *C. intermedius* **IS** Pacheco-Sierra & Amavet 2021, Tab. 7.1
Crocodylus mindorensis × *C. porosus* **IS** Tabora et al. 2012, 1; Fitzsimmons et al. 2002
Crocodylus niloticus × *C. porosus* **IS** Wei et al. 2022
Crocodylus niloticus × *C. siamensis* **IS** Wei et al. 2022
Crocodylus porosus × *C. siamensis* **IS** art. hyb. Wei et al. 2022; Hennigan 2014; Milián-García et al. 2015
Crocodylus rhombifer × *siamensis* **IS** Weaver et al. 2008; Fitzsimmons et al. 2002

References:

Brazaitis et al. 1998. doi: 10.1163/156853898X00476
Fitzsimmons et al. 2002. https://doi.org/10.1002/jez.10201
Hennigan 2014. https://answersresearchjournal.org/ark-turtle-crocodile-kinds/
Milián-García et al. 2015. https://www.nature.com/articles/hdy201496
Pacheco-Sierra & Amavet 2021. https://doi.org/10.1007/978-3-030-56383-7_7
Pacheco-Sierra et al. 2018. doi: 10.3389/fevo.2018.00138
Tabora et al. 2012. doi: 10.11646/zootaxa.3560.1.1
Weaver et al. 2008. doi: 10.1002/jez.471
Wei et al. 2022. https://doi.org/10.5358/hsj.41.101

Rhynchocephalia 1 family 1: 1

Only 1 extant species in the order, plus many extinct families!

Rhynchocephalia: Sphenodontiidae 1: 1

tuatara = Brückenechsen

Only one species: *Sphenodon punctatus*

Probably basic type **family Sphenodontiidae**, due to its isolated position, but of course it is unresolved to which extent all the extinct taxa of the family or even order belong to the same basic type. The oldest fossil finds of the order are dated to 238–240 million years old (Jones et al. 2013. https://doi.org/10.1186/1471-2148-13-208), family members are about 185–190 million years old (Evans & Jones 2010, Fig. 2.1. doi:10.1007/978-3-642-10311-7_2), and members of the same subfamily are at least 145 million years old (Villa et al. 2021. https://doi.org/10.7717/peerj.11363).

Squamata 3 suborders, 60 families, 11.000 species!

lizards and snakes = Schuppenkriechtiere (Echsen, Schlangen, Doppelschleichen)

The subdivision is matter of debate! Monophyletic

3 suborders (classical):
Lacertilia 30 families, Serpentes 16 families, Amphisbaenia 6 families

Only a small part of the 60 families is listed here! In addition many extinct families exist.

Hennigan T (2005) An initial investigation into the baraminology of snakes: Order - Squamata, Suborder Serpentes. Creation Res. Soc. Quarterly 42, 153–160.
Jancúchová-Lásková JE et al. (2015) Are genetically distinct lizard species able to hybridize? A review. Current Zoology 61, 155–180. Squamates except snakes. No relationship between genetic distance and hybrid fertility was found.

Squamata: Boidae 13: 62 (suborder Serpentes)

boas, boids = Boas

6 subfamilies:
Boinae: *Boa, Corallus, Epicrates, Eunectes* …
Calabariinae: *Calabaria,*
Candoiinae: *Cadnioia,*
Charininae: *Charina, Lichanura* ...
Erycinae: *Eryx,*
Sanziinae: *Acrantophis, Sanzina*

Thus at least all Boinae (New world distribution) belong to the same basic type (cf. Burbrink 2005, Fig. 2-4. doi: 10.1016/j.ympev.2004.08.017; Onary et al. 2022, Fig. 6. https://doi.org/10.1080/14772019.2022.2068386).

Boa constrictor × *Eunectes notaeus* Boinae Ernst et al. 2014
Corallus batesi × *C. caninus* **IS** (captivity; litter are perfectly fertile. Angelo Cabodi, pers. comm. (from reptile-database)
Corallus caninus × *C. hortulana* **IS** Boinae https://thereptileroom.net/can-snakes-crossbreed/

References:
Ernst N et al. (2014) An unexpected occurrence – a case study on an intergeneric hybrid in giant snakes. Revue Suisse de Zool. 121, 293–317.

Squamata: Colubridae 304: 1938 (suborder Serpentes)

colubrids = Nattern

= 75 % of all snakes. Monophyletic.
8 subfamilies, e. g. **Colubrinae** 93: 717
Elaphe 18, Lampropeltis 25, Pantherophis 10, Pituophis 7, …

All reports of hybridization are restricted to subfamily **Colubrinae**.
Since 2002 many but not all species of the genus *Elaphe* have been moved to the genera *Bogertophis, Gonyosoma, Orthriophis, Pantherophis, Rhinechis, Senticolis, Zamenis* and more.

According to modern cladograms (Figueroa et al. 2016, Fig. 10d, doi:10.1371/journal.pone.0161070, Pyron et al. 2011 Fig. 2E, https://doi.org/10.1016/j.ympev.2010.11.006) the named genera belong to a basic type that includes at least 72 species (*Rhinocheilus 3, Arizona 2, Pseudelaphe 2, Pantherophis 8, Pituophis 7, Bogertrophis 2, Cemophora 2, Lampropeltis 25, Senticolis 1, Elaphe 18, Coronella 2*; cf. http://reptile-database.reptarium.cz/search, wikipedia.en).

Elaphe climacophora × *Pantherophis (= Elaphe°) guttatus* ("Corn Snake × Japanese Rat Snake") Colubrinae https://shahfoladi.wixsite.com/snakes/knowledge; https://www.farbvarianten-lexikon.de/detail.php?name=Japanese-Corn&titel=Japanese-Corn
Lampropeltis getula floridana × *Pantherophis alleghaniensis* Colubrinae https://shahfoladi.wixsite.com/snakes/knowledge
Lampropeltis getula, ruthvenii × *Pituophis catenifer* Colubrinae http://www.uk-hybrids.com/ 2012; http://www.cornsnakemorphgallery.com/kingsnake/
Pantherophis alleghaniensis × *Lampropeltis holbrooki* Colubrinae https://shahfoladi.wixsite.com/snakes/knowledge
Pantherophis emoryi × *Lampropeltis splendida* Colubrinae https://shahfoladi.wixsite.com/snakes/knowledge

Pantherophis (= Elaphe°) guttatus × *Lampropeltis alterna, californiae, calligaster, catenifer, getulus/getula, holbrooki, mexicana, obsoletus, pyromenala, ruthvenii, triangulum, Pituophis catenifer* Colubrinae Kreutz 2005 (reptile-database), http://www.uk-hybrids.com/ 2012; http://www.nykota-kipusa.de/thema-hybrid/art-und-gattungshybriden/ 2012; http://www.cornsnakemorphgallery.com/milksnake/ 2012; https://thereptileroom.net/can-snakes-crossbreed/; https://shahfoladi.wixsite.com/snakes/knowledge; https://web.archive.org/web/20150709024606/; http://banereptiles.weebly.com/jungle-corn-snakes.html; https://www.farbvarianten-lexikon.de/detail.php?name=Japanese-Corn&titel=Japanese-Corn

Pantherophis vulpinus × *Pituophis catenifer, melanoleucus* Colubrinae Le Clere et al. 2012 (nat. hyb.), http://www.cornsnakemorphgallery.com/gopher/ 2012; http://www.nykota-kipusa.de/thema-hybrid/art-und-gattungshybriden/ 2012; http://www.fieldherpforum.com/forum/viewtopic.php?t=12731&p=151990 2012; https://community.morphmarket.com/t/my-hybrid-collection/4151/35?page=2; https://www.fieldherpforum.com/forum/viewtopic.php?t=12731&p=151990

Examples of trigeneric hybrids:

Lampropeltis × *Pantherophis* × *Pituophis* Colubrinae http://www.uk-hybrids.com/ 2012

Lampropeltis splendida × *Pantherophis guttatus* × *Lampropeltis californiae* (="Splendida Jungle Corns") Colubrinae https://shahfoladi.wixsite.com/snakes/knowledge; https://www.farbvarianten-lexikon.de/detail.php?name=Splendida-Jungle-Corn&titel=Splendida-Jungle-Corn

Pantherophis guttatus × *Lampropeltis triangulum* × *Lampropeltis californiae* (="Super Pueblacorns") Colubrinae https://shahfoladi.wixsite.com/snakes/knowledge; https://iansvivarium.com/morphs/?m=pueblacorn; https://www.deviantart.com/captbogart/art/Serrano-Super-Pueblacorn-147685254

Pantherophis guttatus × *Pantherophis emoryi* × *Lampropeltis californiae* (="Jungle Creams") Colubrinae https://shahfoladi.wixsite.com/snakes/knowledge; https://blog.naver.com/vkehthflgu/140201358679

Lists and fotos of such hybrids: see https://shahfoladi.wixsite.com/snakes/knowledge and https://southerncaliforniakingsnakes.weebly.com/hybrids.html

References:

Fankhauser G & Cumming KB (2008) Snake hybridization: a case for intrabaraminic diversity. Proc. Sixth Int. Conf. Creationism 17–132. http://www.icr.org/i/pdf/research/ICC08_Snake_Hybrid.pdf

Hennigan T (2005) An initial investigation into the baraminology of snakes: Order - Squamata, Suborder Serpentes. Creation Res. Soc. Quarterly 42, 153–160.

LeClere JB, Hoaglund EP, Scharosch J, Smith CE & Gamble T (2012) Two naturally occurring intergeneric hybrid snakes (*Pituophis catenifer sayi* × *Pantherophis*

vulpinus; Lampropeltini, Squamata) from the midwestern United States. J. Herpetol. 46, 257–262.

Squamata: Crotaphytidae 2: 11 (suborder Lacertilia: Iguania)

Formerly part of Iguanidae
Crotaphytus 8, *Gabelia* 3

Crotaphytus collaris baileyi × *C. (insularis) bicinctores* **IS** Hybrids appear to have lower fitness (Montanucci 1983) from reptile-database

Squamata: Dactyloideae 1: 440 (suborder Lacertilia: Iguania)

Formerly part of Polychrotidae

anoles = Saumfingerechsen

Anolis 440 (incl. *Audantia, Chamaelinorops, Ctenonotus, Dactyloa, Deiroptyx, Norops* and *Xiphosurus*)

Anolis aeneus × *Anolis trinitatis* **IS** nat. hyb., infertile, divergence 10 myr (million years) Lazell 1972; Losos & Thorpe 2004; Thorpe et al. 2018. However, hybrids show greatly reduced reproductive fitness (Gorman et al. 1971). Reptile-database
Anolis allisoni × *A. porcatus* **IS** Wegener et al. 2019; Losos & Thorpe 2004
Anolis bimaculatus × *A. leachii* **IS** https://www.anoleannals.org/2023/10/28/cases-of-interspecific-hybridization-within-anolis-of-the-bimaculatus-group-produced-in-a-private-breeding-facility/
Anolis brevirostris × *A. distichus* **IS** Losos & Thorpe 2004
Anolis carolinensis (from USA) × *A. porcatus* **IS** nat. hyb. (in USA, divergence 6–12 myr or 6.000.000–13.000.000 generations) Wegener et al. 2019
Anolis chlorocyanus × *A. coelestinus* **IS** (suggested by the presence of morphologically intermediate forms) Losos & Thorpe 2004
Anolis chlorocyanus × *A. cyanostictus* **IS** Gabot-Rodríguez et al. 2020. doi: 10.33800/nc.vi15.217
Anolis ferreus × *A. marmoratus marmoratus* **IS** https://www.anoleannals.org/2023/10/28/cases-of-interspecific-hybridization-within-anolis-of-the-bimaculatus-group-produced-in-a-private-breeding-facility/
Anolis grahami × *A. lineatopus* **IS** Losos & Thorpe 2004
Anolis krugi × *A. pulchellus* **IS** nat. hyb. (divergence 1.29 myr) Farleigh & 2023; Wegener et al. 2019
Anolis oculatus × *A. terraealtae* **IS** art. hyb. https://www.anoleannals.org/2023/10/28/cases-of-interspecific-hybridization-within-anolis-of-the-bimaculatus-group-produced-in-a-private-breeding-facility/

References:

Farleigh K (2023) Signals of differential introgression in the genome of natural hybrids of Caribbean anoles. Molecular Ecology 32, 6000–6017, https://doi.org/10.1111/mec.17170.
Gabot-Rodríguez E et al. (2020) Natural hybridization between two species of green Anoles: morphological and genetic Evidence. Novitates Caribaea 15, 73–95. doi: 10.33800/nc.vi15.217
Losos JB & Thorpe RS (2004) Evolutionary diversification of *Anolis* lizards: introduction. In: Dieckmann U , Metz HAJ, Doebeli M & Tautz D (ed.) Adaptive speciation. Cambridge University Press. https://www.researchgate.net/publication/260513030
Wegener JE et al. (2019) Hybridization and rapid differentiation after secondary contact between the native green anole (*Anolis carolinensis*) and the introduced green anole (*Anolis porcatus*). Ecology and Evolution *9*, 4138–4148. https://doi.org/10.1002/ece3.5042

Squamata: Diplodactylidae 25: 150 (suborder Lacertilia: Gekkota)

Doppelfingergeckos

Bavaya 41, Correlophus 3 (belepensis, ciliatus, sarasinorum), Mniarrogekko chahoua, ...

IS (https://www.neukaledonien-geckos.com/wichtige-infos/hybride/) *Bavayia* several nat. hyb., *Correlophus cilatus* × *C. sarasinorum* capt. hyb. not long living

Correlophus cilatus × *Mniarrogekko chahoua*
https://en.wikipedia.org/wiki/List_of_genetic_hybrids 2025 without citation; cf. https://www.neukaledonien-geckos.com/wichtige-infos/hybride/; https://www.morphmarket.com/gb/c/reptiles/lizards/chahoua-geckos/2018096 for sale
Correlophus sarasinorum × *Mniarrogekko chahoua* (capt. hyb. not long living) https://www.neukaledonien-geckos.com/wichtige-infos/hybride/

Squamata: Eublepharidae 6: 47 (suborder Lacertilia: Gekkota)

Eublepharis macularius × *E. angramainyu* **IS** (Frynta, Landová & Lásková 2015, 19 according to https://lyonessandcub.com/2021/07/26/keep-a-hybrid-gecko/; Ančúchová-Lásková et al. 2015, https://doi.org/10.1371/journal.pone.0143630)

Squamata: Gekkonidae 64: 950 (suborder Lacertilia: Iguania)

common geckos = Geckos

Gekko hokouensis × *Gekko yakuensis* **IS** (Toda et al. 2001, Okamoto et al.: Genbank sequences; hybrid zones in South-Japan. Reptile-database)
Gekko tawaensis × *Gekko japonicus* **IS** (nat. hyb, Toda et al. 2006. https://doi.org/10.1007/s10528-006-9010-9)

Lepidodactylus moestus × *Lepidodactylus* spec. *(= ×Lepidodactylus lugubris)*
https://geckotime.com/gecko-hybridization/

Squamata: Iguanidae 9: 700 + 3 extinct genera (suborder Lacertilia: Iguania)

iguanas = Leguane

Amblyrhynchus, Brachylophus, Cachryx, Conolophus, Ctenosaura, Cyclura, Dipsosaurus, Iguana, Sauromalus

IS: For interspecific hybrids and cases of parthogenetic origin of new species see Jancúchová-Lásková et al. (2015, see above)

Amblyrhynchus cristatus × *Conolophus subcristatus* Rassmann et al. 1997, 2004 (nat. hyb. Galapagos, viable), related taxa cf. http://en.wikipedia.org/wiki/Hybrid_Iguana, http://wn.com/Hybrid_Iguana

Ctenosaura bakeri × *C. similis* **IS** Gutsche & Köhler 2004

Iguana × *Ctenosaurus* (*I. iguana* × *C.* (*bakeri* × *similis*)) Dirksen 2004 (no hybrid, only attempt of mating!

Iguana delicatissima × *Iguana iguana* **IS** Vuillaume et al. 2015

Lacerta agilis × *Lacerta viridis* **IS** art. hyb. Rykena & Henke 1978

References:

Dirksen L (2004) Beobachtung eines Paarungsversuchs zwischen einem Hybrid-Männchen (*Ctenosaura bakeri* × *similis*) mit einem *Iguana iguana* Weibchen. IGUANA-Rundschreiben 17, 15–17. No hybrid!

Gutsche A & Köhler G (2004) A fertile hybrid between *Ctenosaura similis* (Gray, 1831) and *C. bakeri* Stejneger, 1901 (Squamata: Iguanidae) on Isla de Utila, Honduras. Salamandra 2004, 201–206. http://www.salamandra-journal.com/index.php/contents/2004-vol-40/198-gutsche-a-g-koehler/file

Rassmann K, Trillmich F & Tautz D (1997) Hybridization between the Galapagos land and marine Iguana (*Conolophus subcristatus* and *Amblyrhynchus cristatus*). J. Zool. 242, 729–739.

Rassmann K, Markmann M, Trillmich F & Tautz D (2004) Tracing the evolution of the Galapagos Iguanas. pp. 71–83 in Iguanas: Biology and Conservation (California: University of California Press).

Rykena S & Henke L (1978) Bastardierung von *Lacerta viridis* und *Lacerta agilis* im Terrarium (Reptilia: Sauria:Lacertidae). Salamandra. 1978, 14 (3), 147–152.

Vuillaume B et al. (2015) Genetic Evidence of Hybridization between the Endangered Native Species *Iguana delicatissima* and the Invasive *Iguana iguana* (Reptilia, Iguanidae) in the Lesser Antilles: Management Implications. PLoS ONE 10 (6): e0127575. https://doi.org/10.1371/journal.pone.0127575

Squamata: Lacertidae 37: 280 (suborder Lacertilia)

wall lizards, true lizards = Halsbandeidechsen

Lacerta 40, Timon 6, …

Lacerta × *Timon* Lacertinae Arnold et al. 2007

Lacerta bilineata × *L. viridis* **IS** https://feldherpetologie.de/heimische-reptilien-artensteckbrief/artensteckbrief-westliche-smaragdeidechse-lacerta-bilineata/
Lacerta schreiberi × *L. agilis grusinica* **IS** Rykena 1996
Lacerta strigata × *L. viridis* **IS** Rykena 1996
Hybrid experiments between: *Lacerta agilis, L. viridis, L. schreiberi, L. strigata*, and *L. trilineata* **IS** Rykena 1991. https://doi.org/10.1002/mmnz.19910670108
Podarcis sicula × *P. wagleriana* **IS** nat. hyb. Capula 1993
Podarcis sicula × *P. tiliguerta* **IS** nat. hyb. Capula 2002

References:

Arnold EN, Arribas O & Carranza S (2007) Systematics of the Palaearctic and Oriental lizard tribe Lacertini (Squamata: Lacertidae: Lacertinae), with descriptions of eight new genera. Zootaxa 1430. 86 pp. http://www.lacerta.de/AS/Bibliografie/BIB_605.pdf

Capula M (1993) Natural hybridization in *Podarcis sicula* and *P. wagleriana* (Reptilia: Lacertidae). Biochemical Systematics and Ecology 21, 373–380. https://doi.org/10.1016/0305-1978(93)90028-P

Capula M (2002) Genetic evidence of natural hybridization between *Podarcis sicula* and *Podarcis tiliguerta* (Reptilia: Lacertidae). Amphibia-Reptilia 23, 313–321. doi: 10.1163/15685380260449199

Heilig C (2008) Ruineneidechsen: Makroevolution oder Polyvalenz. Stud. Integrale J. 15, 76–88.

Rykena S (1991) Kreuzungsexperimente zur Prüfung der Artgrenzen im Genus *Lacerta* sensu stricto. Mitteilungen aus dem Museum für Naturkunde in Berlin. Zoologisches Museum und Institut für Spezielle Zoologie (Berlin) 67, 55–68. https://doi.org/10.1002/mmnz.19910670108

Rykena S (1996) Experimental interspecific hybridization in the genus *Lacerta*. Israel Journal of Ecology and Evolution 42, 171–184. https://doi.org/10.1080/00212210.1996.10688841

Squamata: Pythonidae 11: 38 (suborder Serpentes)

pythons = Pythons

Antaresia 4, Apodora 1, Aspidites 2, Bothrochilus 1, Leiopython 1, Liasis 3, Malayophyfton 2, Morelia 7, Nyctophilophyton 1, Python 10, Simalia 6

Attention: The circumscription of the genera has changed very much, so that the former interspecific hybrid *Python spilota* × *Python amethystina* is now intergeneric *Morelia* × *Simalia!*

The genera in the family are very unstable in cladograms (see Barker et al. 2015), i.e. their positions changes often. According to the hybrids mentioned below all members belong to one basic type (see all cladograms in Barker et al. 2015, Fig. 1–6).

Aspidites ramsayi × *Python regius* (nickname „Wallball") https://thereptileroom.net/can-snakes-crossbreed/

Liasis mackloti × *Morelia spilota* (= *„Python" spilotes*) Banks & Schwaner 1984 (capt. hyb., fertile); Hoser 1988, 2001

Malayopython reticulatus × *Python regius* (nickname „Balltic") https://thereptileroom.net/can-snakes-crossbreed/

Morelia spilota × *Python regius* (nickname „Carpall") https://thereptileroom.net/can-snakes-crossbreed/; https://www.youtube.com/watch?v=466Z9zD6vlU

Morelia spilota (= *„Python" spilotes*) × *Simalia amethistins* (= *„Python"*) *amethystina* Banks & Schwaner 1984 (capt. hyb.)

Morelia viridis × *Morelia spilota* **IS** https://thereptileroom.net/can-snakes-crossbreed/

Python bivittatus × *Malayopython* (= *„Python"*) *reticulatus* https://thereptileroom.net/can-snakes-crossbreed/, https://animalscene.mb.com.ph/the-bat-eater/; https://www.morphmarket.com/morphpedia/reticulated-pythons/hybrid/

Python anchietae × *Python brongersmai* × *Python regius* **IS** hyb. cap. https://thesnakeboss.wordpress.com/category/hybrid-python/; https://www.youtube.com/watch?v=zZky2bqoAOE&t=4s

Python anchietae × *Python regius* **IS** https://thereptileroom.net/can-snakes-crossbreed/

Python brongersmai, bivittatus, anchietae × *Python regius* **IS** https://thereptileroom.net/can-snakes-crossbreed/; https://www.morphmarket.com/eu/c/reptiles/pythons/ball-pythons/gene/hybrid

Python sebae natalensis × *P. molurus bivittatus* **IS** Branch & Erasmus 1984

References:

Banks C & Schwaner TD (1984) Two cases of interspecific hybridization among captive boid snakes. Zoo Biology 3, 221–227.

Barker DG et al. (2015) A review of the systematics and taxonomy of Pythonidae: an ancient serpent lineage. Zoological Journal of the Linnean Society 2015. doi: 10.1111/zoj.12267

Branch B & Erasmus H (1984) Captive breeding of pythons in south Africa, including details of an interspecific hybrid (*Python sebae natalensis* × *Python molurus bivittatus*). Journal of the Herpetological Association of Africa. 1984, 30:1–10. https://www.tandfonline.com/doi/epdf/10.1080/04416651.1984.9650132

Hennigan (2014) An Initial Estimate toward Identifying and Numbering Extant Tuatara, Amphisbaena, and Snake Kinds. Answers Research Journal 7, 31–47. http://www.answersingenesis.org/articles/arj/v7/n1/snakes
Hoser RT (1988) Problems of python classification and hybrid pythons. Litteratura Serpentium 8 (3), 134–139.
Hoser RT (2001) A new case of hybridization in *Morelia* pythons. Monitor: J. Victorian Herpetological Soc. 11 (2), 29–30.

Squamata: Teiidae 18: 150 (suborder Lacertilia)

Aspidoscelis exsanguis × *Aspidoscelis inornatus* **IS HY** Teiinae The parthenogenetic species *A. neomexicana* arose from a hybridization event involving a male *A. inornatus* and a female *A. tigris.* Reptile-database

Squamata: Varanidae 1: 80 (suborder Anguimorpha)

1 extant genus *Varanus* (11 subgenera, 80 species) + 9 extinct genera
IS: *Varanus panoptes horni* × *V. gouldii flavirufus* (en.wikipedia 2024)

Varanus salvadorii × *V. salvator* **IS** parthogenesis, not hybridization ("In addition to parthenogenesis, there have been reports of hybridization within the genus *Varanus*. However, just like the parthenogenetic offspring these accounts were not backed up by science") https://reptilesmagazine.com/project-varanus-salvatorii/ 2021

Squamata: Viperidae 32: 224 (suborder Serpentes)

4 subfamilies

vipers = Vipern

Agkistrodon piscivorus × *A. contortrix* **IS** https://thereptileroom.net/can-snakes-crossbreed/
Bitis nasicornis × *B. gabonica* **IS** https://thereptileroom.net/can-snakes-crossbreed/; https://www.africansnakebiteinstitute.com/articles/can-snakes-crossbreed-2/
Crotalus adamanteus × *C. horridus* **IS** https://thereptileroom.net/can-snakes-crossbreed/
Crotalus horridus × *Sistrurus catenatus* Crotalinae Bailey 1942 (nat. hyb., fertile), Klauber 1997 ("questionable")
Vipera nikolskii × *V. berus* **IS** Zinenko 2003

References:

Bailey RM (1942) An intergeneric hybrid rattlesnake. The American Naturalist 76 (765), 376–385. http://www.jstor.org/pss/2457583
Klauber LM (1997) Rattlesnakes: Their habits, life histories and influence on

mankind.
Zinenko O (2003) First generation hybrids between the Nikolsky's adder, *Vipera nikolskii*, and the common adder, *Vipera berus* (Reptilia, Serpentes, Viperidae). Vestnik Zoologii. 37, 101–104. https://www.researchgate.net/publication/263313337

Testudines 2 suborders, 14 families

turtles = Schildkröten

2 suborders:
Cryptodira: 11 extant families (see below) + several extinct families,
Pleurodira: 3 extant families Chelidae 15, Pelomedusidae 2, Podocnemididae 3

Brophy TR, Frair W & Clark D (2006) A review of interspecific hybridization in the order Testudines. p. 17 in Sanders R (ed.) Proc. Fifth Int. Conf. BSG Group. Occas. Papers BSG Study Group. https://digitalcommons.liberty.edu/cgi/viewcontent.cgi?article=1066&context=bio_chem_fac_pubs A supplementary powerpoint presentation with many details can be downloaded: https://digitalcommons.liberty.edu/bio_chem_fac_pubs/67/
Frair W (1984) Turtles: Now and then. In Proc. Northcoast Bible-Science Conference. Bible-Science Association, Minneapolis, MN.
Frair W (1991) Original kinds and turtle phylogeny. Creation Res. Soc. Quarterly 28, 21–24.
Fritz U (1995): Schildkröten-Hybriden. 2. Halsberger-Schildkröten. [Turtle-hybrids. 2. Cryptodiran turtles (Cryptodira)]. Herpetofauna 17 (95), 19–34.
Fritz U & Baur M (1995): Schildkröten-Hybriden. 1. Halswender-Schildkröten. [Turtle hybrids. 1. Side-necked turtles (Pleurodira)]. Herpetofauna 17 (94), 28–34.
Junker R (2009) Schildkröten-Übergangsform? Stud. Integrale J. 16, 3–40.
Robinson DA (1997) A mitochondrial DNA analysis of the Testudine apobaramin. Creation Res. Soc. Quarterly 33, 262–272.
Wise KP (1992) Practical Baraminology. Creation ex Nihilo Techn. J. 6 (2), 122–137.
Wood TC (2005) A creationist review and preliminary analysis of the history, geology, climate, and biology of the alapagos Islands. CORE Issues in Creation 1, 1–241.
http://blogs.scientificamerican.com/tetrapod-zoology/2012/11/17/quick-history-of-turtles/

Testudines: Carettochelyidae 1: 1 (suborder Cryptodira)

pig-nosed turtle, fly river turtle, pitted-shelled turtle = Warrajan Papua-Weichschildkröte

Carettochelys insculpta

Testudines: Chelidae 15: 60 (suborder: Pleurodira)

Austro-South American side-neck turtles = Schlangenhals-Schildkröten

4 subfamilies:

Chelinae 7 *Chelus, Platemys, …*

Chelodininae 6 *Chelodina 16, Elseya 15, Emydura 6, Elusor, Myuchelys, Rheodytes*

Hydromedusinae 1 *Hydromedusa*

Pseudemydurinae 1 *Pseudemydura*

The 2 intergeneric hybrids listed below are from closely related genera (Fujita et al. 2004, Fig. 1; Wilson & Sánchez-Villagra 2011, Fig. 3). The three genera involved include at least 37 species.

Chelodina longicollis × *Emydura albertisii* Chelidininae Brophy et al. 2006

Emydura albertisii × *Elseya novaeguineae* Chelidininae Brophy et al. 2006

References:

Fujita MK et al. (2004) Turtle phylogeny: insights from a novel nuclear intron. Molecular Phylogenetics and Evolution 31, 1031–1040. doi:10.1016/j.ympev.2003.09.016

Wilson LAB & Sánchez-Villagra MR (2011) Evolution and Phylogenetic Signal of Growth Trajectories: The Case of Chelid Turtles. J. Exp. Zool. (Mol. Dev. Evol.) 316(1):50-60. doi: 10.1002/jez.b.21380

Testudines: Cheloniidae 5: 6 (suborder Cryptodira)

sea turtles = Meeresschildkröten

2 subfamilies, + ca 25 extinct genera:

Carettinae 2 *Caretta 1 caretta*, *Lepidochelys* 2 (*kempii, olivacea*)

Cheloniinae 3 *Chelonia 1 mydas, Eretmochelys 1 imbricata, Natator 1 depressus* (= *Chelonia depressa*)

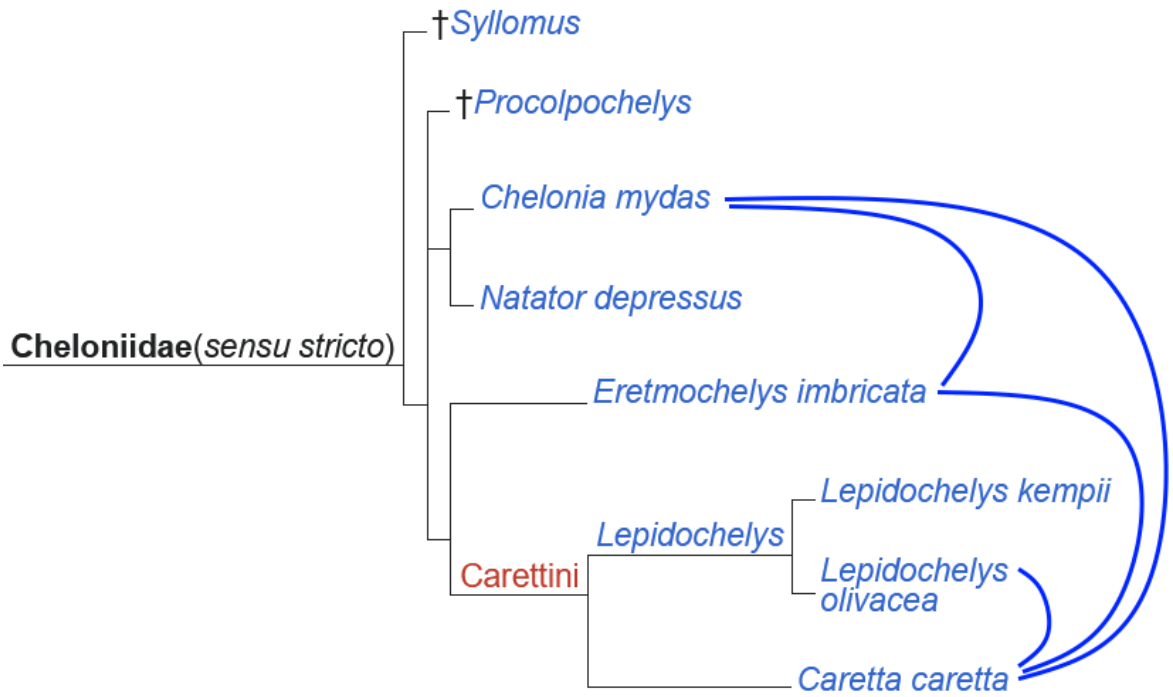
Basic type **family Cheloniidae** (as to the extant taxa): Scholl 2024. 4 of the 5 extant genera and both subfamilies are connected by hybridization (see the figure below). Possibly the monotypic family Dermochelyidae can be inclosed in the basic type?

Caretta caretta × *Chelonia mydas* (→ *Caronia*) **ISF** Carettinae × Cheloniinae (nat. hyb.) Karl et al. 1995, Kamezaki et al. 1996, Brophy et al. 2006

Caretta caretta × *Eretmochelys imbricata* **ISF** Carettinae × Cheloniinae (nat. hyb.) Garman 1888 (!), Kamezaki 1983, Conceicao et al. 1990, Witzell & Schmid 2003, Brophy et al. 2006, https://www.nature.com/articles/s41598-020-69613-8?fromPaywallRec=false

Caretta caretta × *Lepidochelys kempii, olivacea* Carettinae (nat. hyb.) Karl et al. 1995, Barber et al. 2003, Brophy et al. 2006

Chelonia mydas × *Eretmochelys imbricata* Cheloniinae (nat. hyb.) Wood et al. 1983, Karl et al. 1995, Buden & Edward 2001, Kawata 2003, Seminoff et al. 2003



Cheloniidae: Cladogram from en.wikipedia 2025 and cases of hybridization

References on Cheloniidae:

Arantes LS et al. (2020) Genomic evidence of recent hybridization between sea turtles at Abrolhos Archipelago and its association to low reproductive output. Sci. Rep. 10, 12847.

Barber RC, FontaineCT, Flanagan JP & Louis EE Jr. (2003) Natural hybridization between a Kemp's ridley (*Lepidochelys kempii*) and loggerhead sea turtle (*Caretta caretta*) confirmed by molecular analysis. Chelonian Conservation and Biology 4, 701–704.

Brophy TR, Frair W & Clark D (2006) A review of interspecific hybridization in the order Testudines. p. 17 in Sanders R (ed.) Proc. Fifth Int. Conf. BSG Group. Occas. Papers BSG Study Group.

Conceicao MB, Levy JA, Martins LF & Marcovaldi MA (1990) Electrophoretic characterization of a hybrid between *Eretmochelys imbricata* and *Caretta caretta* (Cheloniidae). Comp. Biochem. Physiol. B 97, 275–278.

Garman S (1888) Reptiles and batrachians from the Caymans and the Bahamas. Bull Essex Inst 20, 1–13.

Kamezaki N (1983) The possibility of hybridization between the loggerhead turle, *Caretta caretta*, and the haksbill turtle, *Eretmochelys imbricata*, in specimens hatched from eggs collected in Chita Peninsula. Japanese J. Herpetology 10, 52–53.

Kamezaki N, Nakajima Y & Ishii M (1996) Rapid communication: Hybrids between *Caretta caretta* × *Chelonia mydas* from the Horinoichi beach, Miyazaki. Umigame Newsletter 30, 7–9.
Karl SA, Bowen BW & Avise JC (1995) Hybridization among the ancient mariners: Characterization of marine turtle hybrids with molecular genetic assays. J. Heredity 86 (4), 262–268. http://zebra.biol.sc.edu/~vogt/pdf/turtles/Hybridization%20%28Karl%20Bowen%20Avis%20JHeredity%201995%29.pdf
Scholl B (2024) Meeresschildkröten – ein Grundtyp, der der Evolution trotzte? https://www.genesisnet.info/index.php?News=345
Seminoff JA, Karl SA, Schwartz T & Resendiz A (2003) Hybridization of the green turtle (*Chelonia mydas*) and hawsbill turtle (*Eretmochelys imbricata*) in the Pacific Ocean: Indication of an absence of gender bias in the directionality of crosses. Bulletin of Marine Science 73, 643–652. http://hawksbill.org/sitebuildercontent/sitebuilderfiles/Seminoffetalhawksbillgreenhybrid.pdf
Witzell WN & Schmid JR (2003) Multiple recaptures of a hybrid hawskbill-loggerhead turtle in Ten Thousand Islands, southwest Florida. Herpetological Review 34, 323–325.
Wood JR, Wood FE & Critchley K (1983) Hybridization of *Chelonia mydas* and *Eretmochelys imbricatus*. Copeia 1983, 839–842.

Testudines: Chelydridae 2: 40 (suborder Cryptodira)

Chelydra, Macrochelys, + 7 extinct genera

Testudines: Dermatemydidae 1: 1 (suborder Cryptodira)

Only one genus *Dermatemys* 1

Testudines: Dermochelyidae 1: 1 (suborder Cryptodira)

leatherback sea turtle = Lederschildkröten

Dermochelys coriacea

Possibly part of basic type Cheloniidae (see above)?

Testudines: Emydidae 12: 40 (suborder Cryptodira)

emydids =Neuwelt-Sumpfschildkröten

2 subfamilies:

Emydinae 6 *Clemmys 1, Emys* (incl. *Actinemys*°, *Emydoidea*°), *Glyptemys 2, Terrapene 1.*

Deirochelyinae 6 *Chrysemys, Deirochelys, Graptemys, Malaclemys, Pseudemys, Trachemys.*

According to the cladogram of Guillon (2012, Fig. 2. doi: 10.1163/18759866-08103002) this could be a basic type (even if *Deirochelys* is outside the hybrid network).

Actinemys° (= *Emys*) *marmorata* × *Emys blandingii, orbicularis* Emydinae Brophy et al. 2006
Clemmys insulcata × *Emys* (= *Emydoidea*°) *blandingii* Emydinae Harding & Davis 1999
Clemmys guttata × *C. muhlenbergii* **IS** intermediary morphology Fritz 1995
Clemmys guttata × *Glyptemys muhlenbergii* Emydinae see Brophy et al. 2006
Chrysemys × *Pseudemys* Deirochelyinae see Brophy et al. 2006
Emys blandingii, orbicularis × *Glyptemys insculpta* Emydinae see Brophy et al. 2006
Graptemys geographica × *G. ouachitensis ouachitensis* **IS** Vogt 1978 according to Fritz 1995
Graptemys geographica × *G. pseudogeographica pseudogeographica* **IS** Vogt 1978 according to Fritz 1995
Graptemys oculifera × *G. barbouri* **IS** Fritz 1995
Graptemys ouachitensis × *Trachemys scripta* Deirochelyinae see Brophy et al. 2006
Pseudemys × *Trachemys scripta* Deirochelyinae see Brophy et al. 2006
Terrapene carolina major × *T. ornata luteola* **IS** Fritz 1995
Trachemys nebulosa taylori × *T. scripta elegans* **IS** Fritz 1995
Trachemys ornata callirostris/cataspila × *T. scripta elegans* **IS** Fritz 1995
Trachemys scripta scripta × *T. terrapen*-Komplex **IS** Fritz 1995
Trachemys stejnegeri viciua × *T. decorata* **IS** Fritz 1995

References on Emydidae:
Brophy TR, Frair W & Clark D (2006) A review of interspecific hybridization in the order Testudines. p. 17 in Sanders R (ed.) Proc. Fifth Int. Conf. BSG Group. Occas. Papers BSG Study Group.
Harding JH & Davis SC (1999) *Clemmys insulcata* (wood turtle) and *Emydoidea blandingii* (Blanding's turtle). Hybridization. Herpetol. Rev. 30 (4), 225–226.

Testudines: Geoemydidae (= Bataguridae) 24: 70 (suborder Cryptodira)

leaf turtles = Altwelt-Sumpfschildkröten

en.wikipedia 2025 + de. wikipedia 2025: 2 subfamilies (no longer Batagurinae + Geoemydidae, instead now: Geoemydinae + Rhinoclemmydinae),

Geoemydinae 22: *Batagur, Chinemys, Callagur*° (= *Batagur* p.p.), *Geoclemys, Hardella, Hieremys, Kachuga*° (= *Batagur* p. p.), *Malayemys, Morenia, Ocadia, Orlitia, Pangshura: 4, Cathaiemys, Cuora, Cyclemys, Geoemyda, Heosemys, Leucocephalon, Mauremys* (incl. *Ocadia*), *Melanochelys, Notochelys, Pyxidea* (= *Cuora* p. p.), *Sacalia, Siebenrockiella, Vijayachelys*
Rhinoclemmydinae 1 (America): *Rhinoclemmys* 9

Mauremys ca. 9 IS (Brophy et al. 2006)

Probably basic type **family Geoemydidae**. 10 IG, the 2 subfamilies are connected by hybridization (cf. the cladogram of Guillon et al. 2012, Fig. 2d. doi: 10.1163/18759866-08103002). – en.wikipedia 2025: Most fossil and molecular data support their close relationship to the family Testudinidae.

Chinemys reevesii × *Cuora amboinensis* Geoemydinae Galgon & Fritz 2002 (capt. hyb.)
Chinemys reevesii × *Mauremys japonica, mutica* Geoemydinae Schilde et al. 2004, Brophy et al. 2006, http://www.enotes.com/topic/Yellow_pond_turtle 2012 (*C. reevesii* × *M. mutica* → *Mauremys pritchardi*, **HY** = hybridogeneous origin, fertile)
Cuora × *Geoemyda* Geoemydinae see Schilde et al. 2004, p. 123, Brophy et al. 2006, Otani et al. 1995 (*C. flavomarginata* × *G. japonica*)
Cuora × *Malayemys subtrijuga* Geoemydinae Brophy et al. 2006
Cuora × *Mauremys* Geoemydinae (*C. amboinensis* × *M. annamensis* Fritz & Mendau 2002, Schilde et al. 2004, Brophy et al. 2006; *C. trifasciata* × *M. mutica* (→ *Mauremys* ×*iversonii*) Schilde et al. 2004, http://en.wikipedia.org/wiki/Fujian_pond_turtle 2012; *C. trifasciata* × *M. sinensis* (→ *Ocadia* × *philippeni*) Stuart & Parham 2007, http://en.wikipedia.org/wiki/Philippen%27s_striped_turtle, https://www.mindat.org/taxon-2443246.html)
Cuora × *Pyxidea* (= *Cuora* p.p.) Geoemydinae Schilde et al. 2004 (*C. galbinifrons* × *C. mouhotii*); http://en.wikipedia.org/wiki/Asian_box_turtle 2012 (*C. cyclornata* × *C. mouhotii* → *Cuora „serrata"*)
Cuora trifasciata × *Sacalia quadriocellata* (→ *Sacalia pseudocellata*) Geoemydinae Brophy et al. 2006, Stuart & Parham 2007
Cyclemys shanensis × *Mauremys* (= *Ocadia°) sinensis* Geoemydinae Schilde et al. 2004 (capt. hyb.), Brophy et al. 2006
Heosemys grandis × *Mauremys* Geoemydinae Brophy et al. 2006
Mauremys ammanensis × *Mauremys* (= *Ocadia°) sinensis* **IS** Geoemydinae (→ *Ocadia° glyphistoma*) http://wn.com/Ocadia_glyphistoma
Mauremys × *Rhinoclemmys pulcherrima* **ISF** Geoemydinae × Rhinoclemmytidae Brophy et al. 2006
Mauremys × *Sacalia* Geoemydinae Buskirk et al. 2005, Brophy et al. 2006
Rhinoclemmys punctularia punctularia × *R. diademata* **IS** Fritz 1995

References:

Brophy TR, Frair W & Clark D (2006) A review of interspecific hybridization in the order Testudines. p. 17 in Sanders R (ed.) Proc. Fifth Int. Conf. BSG Group. Occas. Papers BSG Study Group.
Buskirk JR, Parham JF & Feldman CR (2005) On the hybridisation between two distantly related Asian turtles (Testudines: *Sacalia* × *Mauremys*). Salamandra 41, 21–26.
Fritz U & Mendau D (2002) Ein Gattungsbastard zweier südostasiatischer

Schildkröten: *Cuora amboinensis kamaroma* Rummler & Fritz, 1991 × *Mauremys annamensis* Siebenrock, 1903. Salamandra (Bonn) 38, 129–135.
Galgon F & Fritz U (2002) Captive bred hybrids between *Chinemys reevesii* (Gray, 1831) and *Cuora amboinensis kamaroma* Rummler & Fritz, 1991 (Testudines: Geoemydidae). Herpetozoa 15 (3–4), 137–148.
Schilde M, Barth D & Fritz U (2004) An *Ocadia sinensis* × *Cyclemys shanensis* hybrid (Testudines: Geoemydidae). Asiatic Herpetological Research 10, 120–125. http://www.scribd.com/doc/67744648/An-Ocadia-Sinensis-x-Cyclemys-Shanensis-Hybrid
Spinks PQ, Shaffer HB, Iverson JB & McCord WP (2004) Phylogenetic hypotheses for the turtle family Geoemydidae. Mol. Phylogenetics and Evolution 32 (1), 164–182. http://www.scribd.com/doc/72916933/Phylogenetic-Hypotheses-for-the-Turtle-Family-Geoemydidae
Stuart BL & Parham JF (2007) Recent hybrid origin of three rare Chinese turtles. Conservation Genetics 8 (1), 169–175.

Testudines: Kinosternidae 4: 25 (suborder Cryptodira)

mud turtles = Schlammschildkröten

2 subfamilies
Kinosterninae 2: 22 *Kinosternon 16, Sternotherus* 6
Staurotypinae 2: 3 *Claudius 1, Staurotypus* 2

The 2 genera of subfamily **Kinosterninae** belong to the same basic type (includes 22 species).

Kinosternon subrubum × *Sternotherus odoratus* Kinosterninae Brophy et al. 2006, http://www.facebook.com/media/set/?set=a.168887903132332.33596.124918807529242&type=3
Kinosternon baurii × *K. subrubrum hippocrepis* **IS** died as hatchling embryos Fritz 1995
Kinosternon depressum × *K. minor peltifer* **IS** Fritz 1995
Kinosternon flavescens × *K. subrubrubrum* **IS** Fritz 1995

Testudines: Pelomedusidae 2: 27 (suborder Cryptodira)

Pelomedusa, Pelusios

Testudines: Platysternidae 1 (suborder Cryptodira)

Testudines: Podocnemididae 3: 8 (suborder Pleurodira)

Erymnochelys 1, Peltocephalus 1, Podocnemis 6

Testudines: Testudinidae 17: 64 (suborder Cryptodira) + many extinct genera

tortoises = Landschildkröten

At least the following genera form together a basic type according to the cladogram of Guillon et al. (2012, Fig. 2b. doi: 10.1163/18759866-08103002): *Chersina 1* (+1 extinct), *Homopus 2*, *Psammobates 3*, *Stigmochelys 1* (+2 extinct), *Astrochelys 2*, *Dipsochelys* (= *Aldabrachelys*°) *1* (+ 2 extinct), *Geochelone 2*, *Chelonoidis 4* and *Kinixys 8* (cf. reptile database and en.wikipedia 2025)

Centrochelys (= *Geochelys*°) *sulcata* × *Stigmochelys* (= *Geochelys*°) *pardalis*, called "leocata" = "sulcata tortoise × leopard tortoise" https://www.instagram.com/p/CTpFcbljuUx/ and many other entries in the internet, even several videos, e.g. https://www.youtube.com/watch?v=GbmK7n5_UZY

Geochelone (= *Chelonoidis*°) *carbonaria* × *Geochelone* (= *Astrochelys*) *radiata* **IS** Fritz 1995; intergeneric according to reptile database 2025

Testudo hermanni boettgeri × *Agrionemys*° (= *Testudo*) *horsfieldii* **IS** Fritz 1995

Testudines: Trionychidae 14: 34 (suborder Cryptodira)

softshell turtles = Weichschildkröten

Apalone spinifera ater × *A. s. emoryi* **IS** Fritz 1995