



## *Chersine* Merrem, 1820 and *Chersina* Gray, 1831: a nomenclatural survey

ROGER BOUR<sup>1</sup> & ANNEMARIE OHLER<sup>1</sup>

<sup>1</sup>Département Systématique et Évolution, Laboratoire des Reptiles et Amphibiens, 25 rue Cuvier, F-75005 Paris. E-mail: bour@mnhn.fr; ohler@mnhn.fr.

In the tenth Edition of his ‘*Systema Naturae*’, Carolus Linnaeus presented among the species of the genus *Testudo* (including all the turtles and tortoises, thus corresponding to the present order of Chelonians) the species *Testudo graeca* (Linnaeus 1758). The reference was the description and the plate published by George Edwards (1751) of a tortoise from North Africa, more precisely from the old fort of Santa-Cruz (presently Djebel Murdjadjo or “pic de l’Aïdour” 35°42’N, 0°45’W, Oran, Algeria). Several hypotheses tried to explain Linnaeus’s choice of the name *graeca*, one proposing that the species is the tortoise of the old Greek authors. Nevertheless, since 1758, the identity of *Testudo graeca* is rather well established, with a precise type locality, although the pictured holotype is lost. *Testudo graeca* Linnaeus, 1758 is the type species of *Testudo* Linnaeus, 1758 by subsequent designation of Bell (1828).

Johann Friedrich Gmelin gave the name *Testudo hermanni* to a tortoise of which he saw a specimen in Johann Hermann’s collection, in Strasbourg (Gmelin 1789). Johann Gottlob Schneider previously described the same specimen, without naming it (Schneider 1783). The same tortoise was examined once again, by Johann David Schoepff, who described and pictured it, but identified the species as *Testudo graeca* Linnaeus, 1758 (Schoepff 1792). Gmelin’s holotype is still extant in the Strasbourg University Zoological Museum (MZS 111) and the type locality was designated as Collobrières, Var, France (Bour 1987).

Gabriel Bibron was the first to separate both species taxonomically, *T. graeca* and *T. hermanni*, but using an inappropriate nomenclature (Bibron and Bory 1833; Duméril and Bibron 1835), using *T. graeca* to name *T. hermanni*. For about a century, the European tortoise (*Testudo hermanni*) was regularly named *Testudo graeca*, and the *Testudo graeca* of Linnaeus was most often named either *Testudo mauritanica* Duméril and Bibron, 1835, or *Testudo ibera* Pallas, 1814. The mistake was found by Friedrich Siebenrock, who did not dare to change the nomenclature (Siebenrock 1913). That was done by Stanley Flower, and *Testudo hermanni* was consistently used since its resurrection (Flower 1925; 1926).

Blasius Merrem wrote an ‘*Essay on the systematics of amphibians*’ (including reptiles), the publication of which was certainly delayed: his most recent references were Geoffroy 1809 and Oppel 1811, but Schweigger 1812 was not mentioned (Merrem 1820). Within the genus *Testudo*, Merrem recognized four subgenera, without *Testudo* as a nominative subgenus. Land tortoises were included in *Chersine*, new name (*Chersos* and *Chersinos* in Greek mean dry land and [tortoise] living on dry land, respectively). Merrem only included *Testudo* as a synonym of *Chersine*. Therefore, taxonomically speaking, *Chersine* Merrem, 1820 was clearly a nomen novum (replacement name) for *Testudo* Linnaeus, 1758. Among the 18 nominal species incorporated into his subgenus *Chersine*, he put *Testudo graeca*. And, finally, among the synonyms of *Testudo* (*Chersine*) *graeca*, Merrem included *Testudo hermanni* Gmelin, 1789 (Merrem 1820: 31, footnote p). Following Merrem, Ferdinand von Ritgen (1828) used *Chersine* to include all land tortoises or ‘*Ballentrotten*’.

In his genus *Testudo*, Merrem also incorporated the new subgenus *Matamata*, with only *Chelys* Oppel, 1811 (an unjustified emendation of *Chelus* Duméril, 1806) as synonym, and two included nominal species. Therefore, taxonomically speaking, *Matamata* Merrem, 1820 is clearly a nomen novum (replacement name) for *Chelys* Oppel, 1811. It was recognized as such in the checklist of recent turtles and tortoises by Uwe Fritz and Peter Havaš (2007: 327).

John Edward Gray used the name *Chersina* to include only *Testudo angulata* Schweigger, 1812, first as subgenus of *Testudo* (Gray 1831a), then as a full genus (Gray 1831b). In the second paper<sup>1</sup>, Gray stated that “Merrem gives the above generic name to all the Land tortoises”. Obviously, he used Merrem’s name, with a misprint: Gray had very bad handwriting and typographical errors are plentiful in his papers. Further proof appears was evident when Gray wrote ‘*Chersina*

1. Second one according to the date of the forewords, ‘oct. 1830’ and ‘jan. 1831’, respectively; however, a reference to the second with a corrective is given in the first one (GRAY, 1831a: 4). LOVERIDGE and WILLIAMS (1957) gave the second one as the original reference for *Chersina* Gray.

*retusa* and '*Chersina scorpioides*', also referring to Merrem, instead of '*Chersine retusa*' and '*Chersine scorpioides*' (Gray 1831b: 9; 34).

If *Chersina* Gray, 1831 is recognized as a replacement name for (or an unjustified emendation of) *Chersine* Merrem, 1820, both "have the same type species, and type fixation for either applies also for the other, despite any statement to the contrary", according to the present Code of Zoological Nomenclature (Anonymous 1999: art. 67.8). Leopold Fitzinger (1843) formally confirmed that *Testudo angulata* was the type species of *Chersina* Gray, but because this species was not mentioned in Merrem's work, Gray's action cannot be considered as a subsequent designation of the type species of *Chersine* Merrem.

Wassili Adolfovitch Lindholm was apparently the first to recognize that Gray 'borrowed' Merrem's nominal genus, and consequently erected a new name, *Goniochersus*, to include *Testudo angulata* (Lindholm 1929). Independently, John Hewitt reached the same conclusion, creating the new genus *Neotestudo* (Hewitt 1931). Later, Hewitt used *Chersine* (Hewitt 1937a-b) and Robert Mertens and Heinz Wermuth (1955) used *Goniochersus*, each for the same content. But eventually, the nominal species *Chersina angulata* was reinstated by Arthur Loveridge and Ernst Williams (1957) – just fifty years ago – and since regularly used, so its suppression would threaten the stability of nomenclature. Therefore, despite the origin of the name as a lapsus, we recommend retaining *Chersina* as a valid name distinct from *Chersine*.

In the same paper Lindholm (1929) designated as type species ('idiogenotyp' = type by subsequent designation) of *Chersine* Merrem, 1820 '*Testudo graeca* "L." auct. = *Testudo hermanni* Gmelin' (Lindholm 1929). Obviously, this designation was unforeseen, and certainly not in accordance with Merrem's design when he created the genus, but this point is outside of the nomenclatural rules. According to Loveridge and Williams (1957:254), Lindholm in this way designated *Testudo graeca* Linnaeus, 1758 as type of *Chersine* Merrem, 1820. On the other hand, Wermuth and Mertens (1977: 20) stated that Lindholm designated *Testudo hermanni* Gmelin, 1789 as the type species). France De Lapparent *et al.* (2006) followed Loveridge and Williams, recognizing that *Testudo graeca* was the type species of *Chersine*, and erected the new genus *Eurotestudo* to include *Testudo hermanni* and related species.

In a completely opposite treatment of the similar case involving the genus *Matamata* Merrem, 1820, Fritz and Havaš (2007: 327) did not recognize that *Chersine* could be a nomen novum for *Testudo*. Rather, they argued that the designation of *T. hermanni* as type species of *Chersine* was nomenclaturally valid, because Lindholm emphasized that it was not *Testudo graeca* of Linnaeus and because *T. hermanni* was included (as a synonym) in the original description of *Chersine*. On the other hand, they rejected the taxonomic identity of the monophyletic lineage of *Testudo hermanni* proposed by De Lapparent *et al.*, and therefore overlooked the problem that had arisen as a result of the obvious similarities between the names *Chersine* and *Chersina*.

Finally, in a paper dealing with captive husbandry and *Testudo horsfieldii*, Wussow (1916) introduced *Medaestia* (without formal diagnosis) as subgenus of *Testudo*, including *T. horsfieldi* Gray, 1844, *T. graeca*, *T. ibera* Pallas, 1814, and *T. leithi* Günther, 1869. Mertens (1949) designated the type species of *Medaestia* Wussow 1916 as follows: "I fix it here as *graeca* (*hermanni* Gmelin). Thus *Medaestia* (...) becomes a synonym of *Testudo* Linnaeus". As outlined by Mertens himself, *Medaestia* is a synonym of *Testudo* Linnaeus and has *Testudo graeca* Linnaeus as type-species. In any case, *T. hermanni* was not included in the original description of *Medaestia*, and the ICZN Code is clear on that point (art. 67.2): "A nominal species is only eligible to be fixed as the type species of a nominal genus or subgenus if it is an originally included nominal species" (Anonymous 1999). Much later, Wermuth and Mertens (1977: 20) incorrectly stated that Mertens designated *Testudo hermanni* Gmelin as the type species of *Medaestia* (an invalid designation, in any case), contrary to the statement of Fritz and Havaš (2007).

Lapparent de Broin *et al.* (2006) recognized two clades in *Testudo*. We refrain from commenting here on the status of these two clades, but will do so in a separate paper. However, if these clades should be named, the clade including *Testudo graeca* Linnaeus, 1758 should bear the name *Testudo* Linnaeus, 1758 with *Medaestia* Wussow, 1916 as one of its synonyms. For the clade which includes the species *Testudo hermanni* Gmelin, 1789, the name *Chersine* Merrem, 1820 is available and *Eurotestudo* De Lapparent, Bour, Parham and Perälä, 2006 should be considered its junior objective synonym.

## References

- Anonymous (1999) *International Code of Zoological Nomenclature. Fourth edition.* ITZN, London 306 pp.  
Bell, T. (1828) Characters of the order, families, and genera of the Testudinata. *Zoological Journal*, 3, 513–516.  
Bibron, G. & Bory de Saint-Vincent, J.B.G.M. (1833) *Reptiles*. Pp. 57–76, in Geoffroy Saint-Hilaire, E., Geoffroy Saint-Hilaire, I., Deshayes, G. P., Bibron, G. & Bory de Saint-Vincent, J. B. G. M., *Travaux de la Section des Sciences Phy-*

- siques 3 (1) (*Zoologie – 1<sup>e</sup> section. Animaux vertébrés, Mollusques et Polypes*), in Bory de Saint-Vincent, J. B. G. M., Peytier, Puillon Boblaye, E., Servier, Brullé, A., Virlet, T., Geoffroy Saint-Hilaire, E., Geoffroy Saint-Hilaire, I., Brongniart, A., Bibron, G., Deshayes, G. P., Guérin, F. E., Chaubard, L. A. & Fauché, *Expédition scientifique de Morée*. F. G. Levrault, Paris – Strasbourg.
- Bour, R. (1987) L'identité des Tortues terrestres européennes : spécimens-types et localités-types. *Revue française d'Aquariologie*, 13, 111–122.
- Duméril, A.M.C. & Bibron, G. (1835) *Erpétologie générale ou histoire naturelle des Reptiles*. Vol. 2. Roret, Paris 680 pp.
- Fitzinger, L.J. (1843) *Systema reptilium. Fasciculus primus. Amblyglossae (Conspectus geographicus)*. Braumüller & Seidel Bibliopolas, Vindobonae 106 pp.
- Flower, S.S. (1925) Contributions to our knowledge of the duration of life in vertebrate animals. III. Reptiles. *Proceedings of the Zoological Society of London*, 1925, 911–981.
- Flower, S.S. (1926) Species of land tortoises of the genus *Testudo* found in the countries bordering the Mediterranean sea. *Copeia*, 1926, 133.
- Fritz, U. & Havaš, P. (2007) Checklist of chelonians of the world. *Vertebrate Zoology*, 57, 2, 149–368.
- Geoffroy Saint-Hilaire, É. (1809) Mémoire sur les tortues molles, nouveau genre sous le nom de *Trionyx*, et sur la formation des carapaces. *Annales du Muséum d'Histoire naturelle*, 14, 1–20.
- Gmelin, J.F. (1789) *Caroli a Linné Systema per Regna tria Naturae. Tomus I. Pars III*. G. E. Beer, Lipsiae 484 pp.
- Gray, J. E. (1831a) *Synopsis of the Species of the Class Reptilia*. Pp. 1–110, in E. Griffith & E. Pidgeon, *The Class Reptilia arranged by the Baron Cuvier, with specific descriptions*, in E. Griffith, *The Animal Kingdom arranged in conformity with its organization, by the Baron Cuvier ... with additional descriptions ...*, vol. 9. Whittaker, Treacher and Co., London.
- Gray, J.E. (1831b) *Synopsis Reptilium; or short descriptions of the species of Reptiles. Part I. Cataphracta. Tortoises, Crocodiles, and Enaliosaurians*. Treuttel, Wurtz, and Co., London 85 pp.
- Hewitt, J. (1931) Description of some African tortoises. *Annals of the Natal Museum*, 6, 3, 461–506.
- Hewitt, J. (1937a) A note on the relationship of the Cape genera of land-tortoises. *South African Journal of Sciences*, 33, 788–796.
- Hewitt, J. (1937b) *A guide to the vertebrate fauna of the Eastern Cape Province, South Africa. Part II. Reptiles, amphibians and freshwater fishes*. Albany Museum, Grahamstown 141 pp.
- Lapparent de Broin, F. de, Bour, R., Parham, J.F. & Perälä, J. (2006) *Eurotestudo*, a new genus for the species *Testudo hermanni* Gmelin, 1789 (Chelonii, Testudinidae). *Comptes Rendus Palevol*, 5, 6, 803–811.
- Lindholm, W.A. (1929) Revidiertes Verzeichnis der Gattungen der rezenten Schildkröten nebst Notizen zur Nomenklatur einiger Arten. *Zoologischer Anzeiger*, 81, 2, 275–295.
- Linnaeus, C. (1758) *Systema Naturae per regna tria naturae, secundum classes, ordines, genera, species, cum characteribus, differentiis, synonymis, locis. Editio decima, reformata. Tomus I. Laurentii Salvii, Holmiae* 824 pp.
- Loveridge, A. & Williams, E.E. (1957) Revision of the African tortoises and turtles of the suborder Cryptodira. *Bulletin of the Museum of Comparative Zoology*, 115, 6, 163–557.
- Merrem, B. (1820) *Versuch eines Systems der Amphibien*. Johann Christian Krieger, Marburg 191 pp.
- Mertens, R. (1949) *Medaestia* Wussow, 1916, a synonym of *Testudo* Linnaeus, 1758. *Copeia*, 1949, 3, 232.
- Oppel, M. (1811) *Die Ordnungen, Familien und Gattungen der Reptilien als Prodrom einer Naturgeschichte derselben*. J. Lindauer, München 86 pp.
- Ritgen, F.A.M.F. von (1828) Versuch einer natürlichen Eintheilung der Amphibien. *Nova Acta Physico-Medica Academiae Caesareae Leopoldino-Carolinae Naturae Curiosorum*, 14, 1, 246–284.
- Schneider, J.G. (1783) *Allgemeine Naturgeschichte der Schildkröten, nebst einem systematischen Verzeichnisse der einzelnen Arten und zwei Kupfern*. Müller, Leipzig 365 pp.
- Schoepff, J.D. (1792–1801) *Historia Testudinum Iconibus Illustrata*. Ioannis Iacobi Palm, Erlangae 136 pp.
- Schweigger, A.F. (1812) Prodromus monographiae cheloniorum. *Königsberger Archiv für Naturwissenschaft und Mathematik*, 1, 271–368, 406–462.
- Siebenrock, F. (1913) Schildkröten aus Syrien und Mesopotamien. *Annalen des Kaiserlich-Königliches Naturhistorisches Hofmuseum*, 27, 171–225.
- Wermuth, H. & Mertens, R. (1977) Liste der rezenten Amphibien und Reptilien. Testudines, Crocodylia, Rhynchocephalia. *Das Tierreich*, 100, 1–174.
- Wussow, W. (1916) Meine Erfahrungen mit *Testudo horsfieldi*. *Wochenschrift für Aquarien-Terrarienkunde*, 13, 169–172.