the term *Athecae* in Dollo’s sense refers to the fact that the shell of the leathery turtle is not homologous with the typical shell or *θήκη* of the other Chelonians. The grouping of the latter into families recognizable by chiefly internal, skeletal characters has been effected by G. A. Boulenger. For practical purposes the following “ key ” is preferable to those taxonomic characters which are mentioned in the descriptions of the different families. The relationships between them may be indicated as follows:—

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| \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* | Athecae . | . . . | Sρhargidae \*Pelomedusidae |
| Chelonia^ |  | 'Pleurodira | Chelydidae |
|  | Thecophora |  | Carettochelydidae |
|  |  | "Chelydrídae—Derma- |
|  |  |  | temydidae-Cinosternida |
|  |  | Cryptodira | Platysternidae Testudinidae |
|  |  | JΓrionychoidea | Chelonidae |

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| *Key to the Families of Chelonia.* |
| Shell covered with horny shields.  Digits distinct, with five or four claws.  Pectoral shields separated from the mar- ginals by inframarginals.  Tail long and crested. Plastron small  and cruciform ....... Chelydrídae |
| Tail long, covered with rings of shields.  Plastron large Platysternidae |
| ™ .1 , a ( Dermatemydidae  Tail short . . . ∣ Cinosternidae |
| Pectoral shields in contact with the mar- ginals.  Plastral shields 11 or 12, without an inter- gular.  Neck retractile in an S-shaped vertical  curve Testudinidae |
| Plastral shields 13, an intergular being present.  Neck bending sideways under the shell j Pelomîdusidae |
| Limbs paddle-shaped, with one or two  claws Chelonidae |
| Shell without horny shields, covered with soft leathery skin.  Digits distinct, broadly webbed, but with  only three claws Tríonychoidea |
| Limbs paddle-shaped.  Shell composed of regular series pf bony  plates. Two claws Carettochelydidae |
| Shell composed of very many small plates  arranged like mosaic. No claws . . Sphargidae. |

Sub-order I. Athecae.—The shell consists of a mosaic of numerous small polygonal osseous plates and is covered with leathery skin without any horny shields. The limbs are transformed into paddles, without claws. Marine. Sole representative *Sphargis* or *Derma· tochelys coriacea,* the leathery turtle or luth ; it is the largest of living Chelonians, surpassing 6 ft. in length, has a wide distribution over all the intertropical seas, but is very rare everywhere; a few stragglers have appeared as far north as the coasts of Long Island, and those of Great Britain, Holland and France. It is a curious fact that only adults and young, but none of intermediate size, happen to be known. This creature shows many important features. The vertebrae and ribs are not fused with, but remain free from, the cara- pace, and this is fundamentally different from and not homologous with that of other Chelon- ians, O. P. Hay has suggested that the mosaic polygonal components of the shell of *Sphargis* are, so to speak, an earlier generation of osteo- dermal plates than the fewer and larger plates of the Thecophora, which in them fuse with the neural arches and the ribs. *Sphargis* has, how- ever, the later category in the plastron and in its first neural or nuchal plate. If this suggestion is correct, this turtle has either lost or perhaps never had developed the horny shields. The many mosaic plates comprise larger plates which form an unpaired median, two pairs of other dorsal, a lateral and three pairs of ventral series or ridges; thirteen, or when the inner ventral pair fuses, twelve pairs in all.

The skull, excellently studied by J. F. van Bemmelen, much resembles that of *Chelone,* but so-called epipterygoids are absent; further, the pterygoids, instead of sending lateral arms to the jugals and maxillaries, are widely separated from these bones by the

palatines, and these do not at all ventrally roof over the choanae. The position of *Sphargis* in the system is still a moot question. G. A. Boulenger looks upon it as the sole remnant of a primitive group in opposition to all the other recent Chelonia; G. Baur considered it the most specialized descendant of the Chelonidae, a

view which has been supported by W. Dames, E. C. Case, and to a certain extent by J. F. van Bemmelen. For literature, &c., see L. Dollo, *Bull. S. R. Bruxelles* (Février 4, 1901).

Sub-order. II. Thecophora.—The bony shell is composed of several longitudinal series of plates (on the dorsal side a median or neural, a paired lateral or costal series, and marginal plates). With few exceptions this shell is covered with large horny scutes or shields.

Super-family 1. Cryptodira.—The neck, if retractile, bends in an S-shaped curve in a vertical plane. The pelvis is not fused with the shell, and this is covered with large horny shields, except in *Carettochelys.*

Family 1. Chelydrídae.—The plastron is rather narrow, and cross- shaped ; the bridge is very narrow and is covered by a pair of shields, the displaced abdominals, which are separated from the marginals by a few inframarginals. The limbs, neck and head are so stout that they cannot completely be withdrawn into the shell. The tail is very long. Only two genera with three species, confined to America. *Chelydra serpentina,* the “ snapping turtle,” ranging from the Canadian lakes through the United States east of the Rockies; closely allied is *C. rossignoni* of Central America and Ecuador. *Maeroelemmys temmincki,* the “ alligator turtle,” is the largest known fresh-water Chelonian, its shell growing to a length

of 3 ft. It is characterized by the three series of strong prominent keels along the back; it inhabits the whole basin of the Mississippi and Missouri rivers.

Family 2. Dermatemydidae.—The pectoral shields are widely separated from the marginals by inframarginals, the gulars are small or absent, and the tail is extremely short. Only a few species, in Central America. The plastron is composed of nine plates. the nuchal plate has a pair of rib-like processes like those of the Chelydrídae. One or more of the posterior costal plates meet in the middle line. The shell of these aquatic, broadly web-fingered tortoises, is very flat and the covering shields are thin. They feed