

MERREM, Blasius, (1761-1824), German zoologist and the first accurately to separate the reptiles and amphibians, in *Versuch eines Systems der Amphibien* (1820). He combined the snakes and lizards in a single order, the SQUAMATA, and also separated the crocodylians from the lizards.

MERTENS, Robert, (1894-1975), German zoologist and herpetologist, and Director of the Senckenberg Museum in Frankfurt am Main, Germany. His contribution to herpetology was tremendous with over 600 publications to his credit, a number of which he co-authored, including the definitive identification keys and checklists for the recent crocodylians, chelonians and tuataras, which he compiled with Wermuth (1955 & 1961).

MERTENSIAN MIMICRY The theory proposed by R. Mertens to explain the patterns of coral snakes (alternating black, yellow and red or white rings) that occur in both diverse and unrelated snakes. Such ringed coloration is thought to be a warning coloration and is believed to have originated among non-dangerous but rather aggressive species (e.g., genera *Erythrolamprus*, *Rhinobothryum*). They were able to communicate negative experiences to their enemies and therefore, by means of their coloration, they had a deterrent effect.

MESIC Of, relating to, or inhabiting, areas that are damp but not swampy.

MESO- A prefix meaning 'middle'.

MESOGLYPH Any one of a number

of snakes in which the FANG is situated close to the middle of the relatively short maxillary bone of the upper jaw. To the front of the fang lie from two to ten smaller teeth, whilst to the rear of it there are no teeth at all. Examples of mesoglyph snakes are seen in the similar, and closely related, African genera *Polemon* and *Miodon*

MESOPLASTRON Either one of the pair of non-adjacent dermal bones situated between the HYOPLASTRON and HYOPLASTRON bones of the PLASTRON, typical of certain primitive chelonian species but still surviving in the musk turtles (*Sternotherus*) of eastern North America, and the helmeted terrapins (PELOMEDUSIDAE) of Central Africa and Madagascar.

MESOPTYCHIAL Any one of the scales situated on the outer surface of the GULAR FOLD or on the rear, central area of the under surface of the throat (mesoptychis) directly in front of the PECTORAL GIRDLE in lizards.

MESOZOIC The middle geological era dating from the end of the PALAEOZOIC, approximately 230 million years ago, to the beginning of the CENOZOIC, approximately 70 million years ago. The dinosaurs, ichthyosaurs, pterosaurs etc. were the dominant animals at that time and the Palaeozoic is often termed the 'Age of Reptiles'. Most of them, however, had become extinct by the end of the era. The mesozoic era is made up of three main periods: the

TRIASSIC, JURASSIC and CRETACEOUS.

METABOLIC BONE DISORDER; DECALCIFICATION; RICKETS

A serious, progressive, debilitating and, if untreated, often lethal disease, usually resulting from insufficient dietary calcium and/or exposure to ultra violet light.

METABOLISM Chemical balance and reactions that occur in cells within the body, resulting in growth, energy production, removal of waste products etc. The rate of metabolism is the speed, higher in a warm-blooded animal (HOMIOOTHERM) than in a cold-blooded animal (POIKILOOTHERM), at which the chemical reactions occur.

METACARPAL BONE Any one of the rod-shaped bones that form the METACARPUS in the forefoot or lower forelimb of tetrapod vertebrates, and articulate proximally with the CARPALS, and distally with the PHALANGES. In a typical pentadactyl (having five digits) limb there are five metacarpals although there are adaptations to this plan and, in many species, the number is reduced.

METACARPUS The collection of METACARPAL BONES that forms part of the skeleton of the forefoot or lower forelimb in tetrapod vertebrates.

METACHROMATISM A change in colour as a result in a change in the ambient temperature. Many reptiles snake and lizard species darken considerably when cooled.

METAMORPHOSIS The relatively rapid transformation occurring in an amphibian when the LARVA takes on the physical appearance of the ADULT. In anurans the most obvious sign is the loss of the tail and rapid growth of the legs. In urodeles it is the disappearance of the CAUDAL FIN and feathery gills.

METATARSAL BONE Any one of the rod-shaped bones that together form the METATARSUS in the hind foot or lower hind limb of tetrapod vertebrates, and articulate proximally with the TARSAL bones and distally with the PHALANGES. In a typical pentadactyl (having five digits) limb there are five metatarsals, although there are adaptations to this plan and, in many species, the number is reduced.

METATARSAL TUBERCLE A prominent knob-like projection present on the hind foot of many anurans and used by certain species (e.g., *Scaphiopus*, *Pelobates*) as a SPADE for digging.

METATARSUS The collection of METATARSAL BONES that forms part of the skeleton of the hind foot or lower hind limb in tetrapod vertebrates.

mg/kg The abbreviated expression for the quantity of venom required to kill an animal correlated to its mass, with 'mg' representing milligrams and 'kg' kilograms. The taipan *Oxyuranus scutellatus*, for example, has a venom toxicity of 0.064 mg/kg meaning that 0.064 mg (0.0064 grams) will be sufficient to kill an animal weighing 1 kg.