

= Many @-@ banded krait =

The Many @-@ banded krait (*Bungarus multicinctus*), also known as the Taiwanese krait or the Chinese krait , is a highly venomous species of elapid snake found in throughout much of central and southern China and Southeast Asia . The species was first described by the scientist Edward Blyth in 1861 . This species has two known subspecies , the nominate *Bungarus multicinctus multicinctus* , and *Bungarus multicinctus wanghaotingi* . The many @-@ banded krait mostly inhabits marshy areas throughout its geographical distribution , though it does occur in other habitat types .

= = Etymology = =

Since the species ' description by zoologist and pharmacist , Edward Blyth in 1861 , *Bungarus multicinctus* has been the binomial of the species . The generic name , *Bungarus* , is a Latinisation of Telegu baṅḡru , " krait . " The specific name *multicinctus* is derived from the Latin multi- , combining form of multus , " much , many " , and Latin cinctus , past participle of cingere , " to encircle " - as in a " band " . The full species name (*Bungarus multicinctus*) thus literally means " banded krait " . The common name " krait " is from Hindi (कrait) , which is perhaps ultimately derived from the Sanskrit word (काला) , which means " black " .

= = Taxonomy and evolution = =

The kraits , as they are commonly known , belong to the family Elapidae and the genus *Bungarus* . The genus is endemic to the continent of Asia . They are morphologically well connected , forming a close @-@ knit and cohesive unit . The genus has 12 @-@ 13 species who are morphologically distinct from the *Naja* genus and the Afro @-@ elapids according to McDowell (1987) . McDowell stated " species diversity is greatest in Africa , but the Asiatic *Bungarus* and *Ophiophagus* are each so peculiar in anatomy as to suggest an ancient divergence ? . Others , including Slowinski , believed that the kraits (*Bungarus*) , are part of a clade that clusters with a group including the king cobra (*Ophiophagus hannah*) and oddly enough , with the African mambas (*Dendroaspis*) on the most @-@ parsimonious tree or with *Elapsoidea* on the maximum @-@ likelihood tree . This result calls into question the monophyly of cobras and underscores the uncertainty of the homology of the hood spreading behavior in cobras and mambas . The relationships of *Dendroaspis* , *Ophiophagus* , and *Bungarus* differed between the parsimony and likelihood analyses , suggesting that more work is necessary to resolve the relationships of these problematic taxa . McDowell 's findings in regard to the sister @-@ group of *Bungarus* and the sea snakes (*Hydrophiinae*) family , propose that the kraits might just be a per @-@ mutable clade between the elapidae " palatine @-@ erectors " and the hydrophiinae " palatine draggers " . Two genera within the hydrophiinae family in particular , support McDowell 's hypothesis . The two genera are *Salomonelaps* and *Loveridgelaps* due to many shared characteristics . Mao et al (1983) showed that this species , *Bungarus multicinctus* was slightly distinct from the other members of its genus and was immunologically more similar to *Laticauda* , terrestrial Australian elapids , and true sea snakes than it is to *Elapsoidea sundevalli* (Sundevall 's garter snake) , *Naja naja* (Indan cobra) or two *Micrurus* species (New World or American coral snakes) . Minton (1981) , Schwaner et al. and Cadle & Gorman (1981) all suggested similar things to Mao et al . (1983) based on immunological data . The many @-@ banded krait was more similar to the Australian elapids , *Laticauda* and true sea snakes than they were to numerous elapids they were compared to .

= = Description = =

The many @-@ banded krait is a medium to large sized species of snake , averaging 1 to 1 @. @ 5 m (3 @. @ 3 to 4 @. @ 9 ft) in length , with maximum lengths reaching 1 @. @ 85 m (6 @. @ 1 ft) . Its body is slender and moderately compressed . The scales of this species are smooth and glossy ,

with a noticeably distinct vertebral ridge . The colour of the snake is black to dark bluish @-@ black with approximately 21 @-@ 30 white or creamy white cross bands along the entire length of its upper body . More banding is seen in longer than average sized specimens . The tail is short and pointed , that is also black in colour with alternating white cross bands , of which there are 7 @-@ 11 . The belly of the snake is usually white in colour , but could be an off white or creamy white . The head is primarily black in colour , is broad and oval in shape , but flat and slightly distinct from the body . The eyes are small and black in colour . The pupils are black in colour , thus making them hardly noticeable as they blend in with the rest of the eyes . This species has large nostrils . The fangs are small , fixed and are located in the anterior of the upper jaw . Juveniles of this species usually have whitish blotches on the lower side of their heads .

= = = Scalation = = =

Dorsal scales in 15 rows ; ventral scales 200 @-@ 231 in males , 198 @-@ 227 in females ; tail short and tapering ; subcaudal scales single (undivided) , 43 @-@ 54 in males , 37 @-@ 55 in females .

= = Distribution and habitat = =

This species is found in throughout the island of Taiwan (including the Archipelagos of Matsu and Kinmen) , in the central and southern regions of mainland China (in the provinces of Hainan , Anhui , Sichuan , Guangdong , Guangxi , Hunan , Hubei , Yunnan , Guizhou , Jiangxi , Zhejiang , and Fujian) , Hong Kong , Myanmar (Burma) , Laos , and northern Vietnam . It may also be found in Thailand .

Although it can be found in elevations up to about 1 @, @ 500 m (4 @, @ 900 ft) , they are far more commonly found in humid lowland areas , most often observed in subtropical to marshy regions of its range . They also are frequently found in shrublands , woodlands , agricultural fields , and mangroves , often adjacent to water , such as rivers , streams , rice paddies , and ditches . They may also sometimes be found in villages and suburban areas . It is able to survive in other habitats also .

= = Behaviour and diet = =

The snake is nocturnal , when it may be more defensive . It is , however , a timid and placid species of snake . In the daytime , it hides under stones or in holes . The snake appears from April and retreats into hibernation in November . It is considered to be more defensive than the Banded krait (*Bungarus fasciatus*) , thrashing about as it is handled .

Unlike other *Bungarus* species , who are primarily snake @-@ eaters , the many @-@ banded krait usually feeds on fish , but it is also preys on other species of snakes , including members of its own species . This species also feeds on rodents , eels , frogs , and occasionally lizards .

= = = Reproduction = = =

There is limited information on the reproductive habits of this snake . Like many elapids , the many @-@ banded kraits are oviparous . Mating occurs between the months of August and September . Females usually deposit 3 @-@ 15 eggs , although up to 20 eggs can be produced . The eggs are deposited in late spring or early summer , usually in the month of June . Eggs usually hatch about a month and a half later . The hatchlings are around 25 centimetres (9 @. @ 8 in) in length .

= = Venom and toxins = =

The venom of the many @-@ banded krait consists of both pre- and postsynaptic neurotoxins (known as ? @-@ bungarotoxins and ? @-@ bungarotoxins , among others) . The average venom

yield from specimens kept on snake farms is about 4 @. @ 6 mg ? 19 @. @ 4 mg per bite . The venom is highly toxic with LD50 values of 0 @. @ 09 mg / kg ? 0 @. @ 108 mg / kg SC , 0 @. @ 113 mg / kg IV and 0 @. @ 08 mg / kg IP on mice . Based on several LD50 studies , the many @-@ banded krait is among the most venomous land snakes in the world .

? @-@ Bungarotoxin is important for neuromuscular histology , it is known to bind irreversibly to receptors of the neuromuscular junction , and can be labelled with fluorescent proteins such as green fluorescent protein or the rhodamine dye tetramethylrhodamine isothiocyanate .

= = = Clinical symptoms = = =

The local symptoms of victims bitten by the many @-@ banded krait are usually neither serious swelling nor pain ; the victims merely feel slightly itchy and numb . Systemic symptoms occur , in general , one to six hours after being bitten by this snake . Symptoms may include bilateral ptosis , diplopia , discomfort in the chest , general ache , weak feeling in limbs , ataxia , glossolysis , loss of voice , dysphagia , tunnel vision , and difficulty breathing . In case of serious bite , suppression of breathing may occur , leading to death .

Untreated , the mortality rate caused by the bites of this species varies among different studies , ranging from 25 @-@ 35 % to 70 @-@ 100 % . During the Vietnam War , American soldiers referred to the many @-@ banded krait as the ? two @-@ step snake , ? in the mistaken belief that its venom is so lethal , if bitten , you will die after taking just two steps .

The many @-@ banded krait gathered worldwide attention after a juvenile individual bit and killed Dr. Joe Slowinski on September 11 , 2001 in Myanmar . He died just 29 hours after being bitten .