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Crocodile in the Indus Civilization and later South Asian traditions

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Abstract

In order to penetrate further into the little understood Indus script, this study examines texts associated with depictions of the crocodile in the Harappan 'sacrificial tablets'. In contrast to the vast majority of Indus seals, these tablets provide a clear connection between inscriptions and their accompanying iconography. Laying the ground for that study, the first half of the paper collects and analyzes data on crocodiles available in later South Asian traditions¹.

Three species of crocodiles are found in South Asia: the marsh crocodile, the saltwater crocodile, and the long-snouted crocodile. The long-snouted crocodile is sometimes confounded with the South Asian river dolphin, which likewise has a long and narrow snout. This paper begins with a zoological description of these animals.

An etymological examination of important words for 'crocodile' in South Asian languages follows next. The long-snouted crocodile predominates in Harappan iconography; its two primary names, Hindi *ghaṛiyāl* and *kumhīr* (with their cognates, including Sanskrit *ghaṇṭika*- and *kumbhīra*-), have a Dravidian origin. These names are derived from Proto-Dravidian appellations of the distinctive bulbous protuberance on the tip of the crocodile's snout (understood in folk etymology as 'pot', Sanskrit *ghaṭa*- and *kumbha*-). Even after the extinction of the long-snouted crocodile in the lower Indus Valley, Sindhi retains the word *gharyālu*, though it has changed here — but not elsewhere — to denote the 'Indus river dolphin'. Special attention is paid to references to crocodile in Old Tamil literature, the most important source for ancient Dravidian phraseology.

Cults, traditions and conceptions connected with the crocodile in historical South Asia are surveyed, chiefly on the basis of the folk religion studies of William Crooke. This section concludes with a summary of the tribal crocodile cult of southern Gujarat, recently documented by Eberhard Fischer and Haku Shah (1971). This cult involves the creation of wooden images of crocodiles fixed upon poles. A Mature Harappan painted pot from Amri, featuring two long-snouted crocodiles with a pole-like extension projecting ninety degrees from their lower bodies to what could depict the ground, strongly suggests that Gujarati tribals have preserved a local religious tradition that is 4,000 years old.

Finally, representations of the crocodile in Harappan seals and tablets are examined on the basis of the collected material. Several new Proto-Dravidian interpretations for Indus signs are proposed, strictly following the methodology and premises put forward in my book *Deciphering the Indus script* (1994). The results support and widen previous findings.

It appears that the Harappans worshipped the crocodile primarily for the sake of fertility, and that the cult even involved the sacrifice of the firstborn child (as one finds in the Śunaḥśepa legend recorded in Vedic texts and in cult traditions reported as recently as the early 19th century in North India). There is also evidence that the concept of the heavenly crocodile attested in the Veda is predated by the Harappan interpretation of Ursa Major.

THE ZOOLOGICAL BACKGROUND

Crocodiles: some general characteristics

All crocodiles are cold-blooded. For this reason, they

must bask in the sun in order to be able to move, to hunt and to breed. Basking with the mouth open is a way to control body temperature; this practice also dries leeches and allows birds to rid the crocodile of such parasites. The crocodile is mostly active at

night, while much of the day is spent sleeping, either basking or submerged in the water (Whitaker 1986: 151).

The crocodile is structurally adapted to aquatic life. Nostrils are located at the tip of its snout, so that breathing requires only this part of the body to be lifted out of the water. Nostrils and ears are closed with flaps when the crocodile is submerged, while a transparent third eyelid enables it to see underwater. Because folds in the tongue and palate prevent water from entering the lungs, it can open its mouth underwater. It normally comes to the surface to breathe several times per hour, but can stay under for hours without breathing (Daniel 1983: 8; Whitaker 1986: 151; Murthy 1995: 17).

The crocodile can smell, hear and see very well. It also detects prey by tactile (and possibly chemical) receptors. Adult crocodiles eat fish and, in most cases, mammals as well. They usually approach their prey by stealth and then either leap at it or make a fast grab with the jaws. After lying motionless at the drinking holes frequented by buffaloes or deer, the crocodile will use its mighty tail to deliver a swift blow to an unsuspecting animal, seize the prey, and then drag it to the water to drown it. If the victim is too large to be swallowed whole, it is twisted and repeatedly shaken until torn to pieces. Crocodiles do not need to eat every day, and take less food in cool weather (Whitaker 1986: 151; Murthy 1995: 17). The continued survival of crocodiles for 190 million years may be partly due to their ability to live "on the edge of two life zones, water and land, and being able to find their prey from both zones" (Daniel 1983: 8).

Crocodiles swallow stones: a 3.5 m long mugger had about 1 kg of stones in its stomach, while a 5 m long gharial contained about 4.5 kg foul-smelling stones. It is popularly believed that the number of stones in its belly tells the animal's age (Daniel 1983: 11-12, 15-16).

In accordance with the general pattern of

reptiles, crocodiles have a long body and long tail but short limbs. They are excellent swimmers, moving with lateral strokes of their powerful tail, while fore and hind feet are held close to the trunk. They may "high walk" short distances on land, raising their body well above the ground, moving with a slow, waddling gait (Figure 71). More often, however, crocodiles move on land by sliding on their belly, using their legs as propellers. The dead body of a crocodile may twitch and quiver for many hours after it has been killed (Daniel 1983: 8-9, 12; Whitaker 1986: 151).

The male has a single penis situated within its vent or cloaca, which has a longitudinal opening. Located within the cloaca is also one of its scent glands; the other is found on the crocodile's throat. These glands assume more importance in the breeding season (Daniel 1983: 8, 11). Crocodiles mate in the water with "a complicated ritual of bubble-blowing, circling, and head movements" (Whitaker 1986: 151). About six weeks later the female lays eggs, which hatch after two or three months. Both eggs and hatchlings up to the age of one or two years are the prey of birds, snakes, jackals, mongooses, and other animals (including humans, who believe that crocodile-eggs possess aphrodisiac properties) (Whitaker 1986: 151; Maskey and Mishra 1982: 185).

Crocodiles are protected against enemies by their scaly skin. "The skin of the back is armoured with bony plates arranged in transverse series. The tail, similarly armoured, bears two rows of serrated scales which merge before the tail end" (Daniel 1983: 8). Crocodile skin is in great demand for use in leather clothing and accessories. Such demand has led to ruthless hunting of the crocodile since the early 20th century, making it an endangered species. In India, the killing of crocodiles has been prohibited since 1972 (Whitaker 1986: 151). This prohibition has led to problems, however, especially in the monsoon season when river flooding enlarges the water habitat of the crocodiles and in some places brings them

into close proximity with densely populated urban areas (Vyas and Bhatt 2004).

The three species of crocodile in South Asia

Today the global population of crocodiles (or rather, crocodilians) is divided into three genera: true crocodiles (Crocodylidae), alligators and caymans (Alligatoridae), and gavial (Gavialidae). In South Asia, there are three species of crocodile, "which the Anglo-Indian persists in calling *alligators*" (Crooke 1906: 110). Alligators (having two species, with one in China) and caymans exist mainly in America; both are separated from crocodiles by the arrangement of the teeth. The appellation 'alligator' originated from the Spanish word *el lagarto* (from Latin *lacerta* 'lizard') (Yule and Burnell 1903: 13b).

The mugger, or marsh crocodile

The mugger or marsh crocodile (*Crocodylus palustris*, Lesson) (Figure 1) is broad-snouted and stocky, the full-grown adult being about 3.5 m in length and about 200 kg in weight; it is the most common species in South Asia. It is olive and black in colour, with yellowish white on its underside. The mugger was once found throughout the subcontinent in rivers, lakes, ponds, reservoirs and marshes, but has died out over large areas. In summer, muggers can travel great distances in search of water, at which point they dig burrows in the banks of rivers and lakes to cool themselves. They live in groups of up to thirty animals with a strict 'pecking order', large males being dominant. Subordinate males signal submission by raising the head, thereby exposing their throat. In breeding season, the female digs a 50 cm hole and lays between 15 and 50 eggs, usually at night. Two or three months later, sounds from the eggs tell the mother crocodile that it is time to dig up the covered clutch. She will gently carry the hatchlings to the water in her jaws (Daniel 1983: 10-12; Whitaker 1986: 152).

Marsh crocodiles mostly eat fish, but larger

individuals may attack any animal that they have a chance of killing. While man-eating is not common, there are anecdotal statements to the contrary. Crooke (1906: 111), for instance, refers to one beast that was shot, "from the stomach of which were taken 30 lbs. weight of gold, silver, copper, brass, and zinc, all women's ornaments." Such finds, however, are mostly due to the mugger's habit of eating corpses that float unburied in the river (Daniel 1983: 11; Whitaker 1986: 152). The marsh crocodiles on Salsette Island, Mumbai, have been recorded to feed on the fruit of the fig tree (*Ficus glomerata*).

The saltwater or estuarine crocodile

The saltwater or estuarine crocodile (*Crocodylus porosus* Schneider) (Figure 2) is a widely distributed species from South Asia to Australia. Its typical habitats are tidal estuaries, lower reaches of the larger rivers, and coastal mangrove thickets. The saltwater crocodile is the largest existing reptile—specimens over 8 m have been found, but the average length is closer to 4.5 m (weighing approximately 400 kg). Larger individuals can take humans as prey. While saltwater crocodiles are sleeker than the mugger and lack the four distinct post-occipital scales that the mugger has on its neck (Whitaker 1986: 151-153), these two species look so much the same that they are "difficult to distinguish in the wild, without



Figure 1 Marsh crocodile. Photo Karunakar Rayker 2004
(from Wikipedia Commons)



Figure 2 Saltwater crocodile. Photo Molly Ebersold 2004
(from Wikipedia Commons)

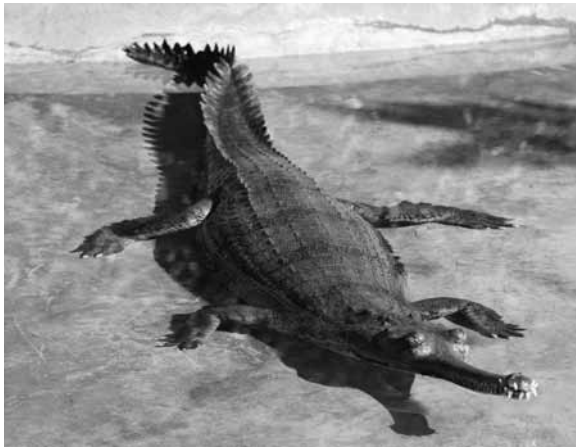


Figure 3 Gharial. Photo Petronas 2008
(from Wikipedia Commons)

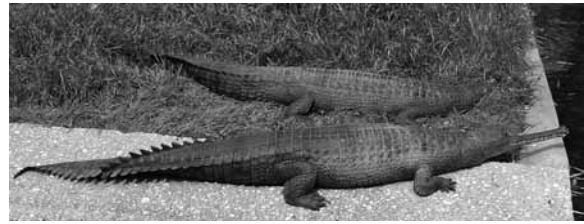


Figure 4 Gharials in S. Antonio zoo. Photo Greverod
2007 (from Wikipedia Commons)

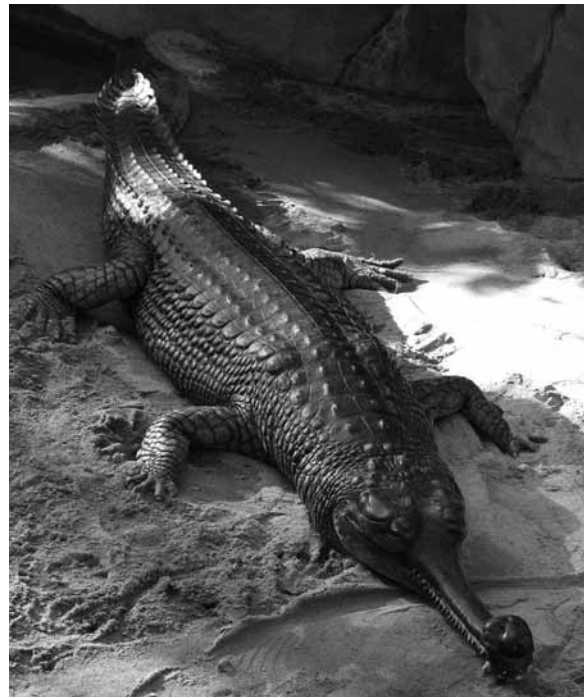


Figure 5 Gharial in San Diego zoo. Photo Bo link 2006
(from Wikipedia Commons)

considerable experience". They share the same name in most Indian languages (Daniel 1983: 8 and 13-14). Their feeding habits are similar as well, but the saltwater crocodile is more solitary, and constructs a mound nest of leaves and grass (about 1 m high) instead of a hole (Whitaker 1986: 152-153).

The gharial, or long-snouted crocodile

The gharial, or long-snouted crocodile (*Gavialis gangeticus* Gmelin) (Figures 3-4), also known as the gharial, is the only surviving species of the genus Gavialidae. It is found only in the Indian subcontinent. The gharial adult male has an average length of 6 m, while the female is slightly smaller.

Its colour is olive, spotted with dark brown patches or stripes. It has bulging, cat-like eyes and a long, narrow snout, by which it is easily distinguished from the other South Asian crocodiles. The males have a prominent excrescence on the tip of the snout, which is believed to enhance virility and the value of which drives hunting of this critically endangered animal even today (Maskey and Mishra 1982: 185) (Figure 5). The bulb at the tip of the snout of the male gharial is hollow and consists of special masses of erectile tissue that can swell to close its nostrils². Males are said to use this snout protuberance to hook onto the female's snout for leverage when mounting in the act of mating (Daniel

1983: 16). Breeding males also hiss loudly, with the protuberance possibly acting as a resonator (Daniel 1983: 15). The gharial is hunted for its hide and also killed by fishermen, who consider predators of fish as threats to their economic success (Majupuria 1982: 150).

The original range of the gharial included all of the major rivers and tributaries from the Indus in Pakistan³ to the rivers of northern India and Bangladesh, extending as far south as the Mahanadi in Orissa. Increased use of rivers by humans has reduced its wild habitat to a few river stretches in Pakistan, India and Nepal. Today it is mainly found in the Chambal, Girwa, Rapti and Narayani rivers of the Ganges system. Recently on the verge of extinction, the species continues to be very endangered (Maskey and Mishra 1982: 186; Daniel 1983: 15; Whitaker 1986: 153; Murthy 1995: 20).

One reason for the gharial's precarious situation is its need for a specialized habitat. Gharials inhabit deep pools in big rivers, where fish are plentiful; they use sandbanks for basking and nesting. "The gharial is the most aquatic of all crocodiles, coming to land only for egg-laying" (Murthy 1995: 20).

Gharials are almost exclusively fish-eaters. They snap their long, narrow jaws sideways to catch passing fish, which are then swallowed by several backward jerks of the head. While the gharial tends to be very timid and "darts into water at the sight of man" (Murthy 1995: 20), breeding females will charge and bite intruders that approach the nest. "There is no record of the gharial ever having killed a man" (Murthy 1995: 20).

"They are social and live in groups usually made up of a single adult male, several females and several sub-adults. As with other crocodilians, the young live apart after a one- or two-month nursery period. 40-80 eggs are usually laid, in nest-holes on river banks. Gharials may fail to breed where there is excessive disturbance..." (Whitaker 1986: 153). Less than one percent of young gharials hatched in the

wild actually survive to reach a length of about 2 metres, at which time they become immune to predation (Singh 1978).

The South Asian river dolphin

On account of its long and narrow snout (called a rostrum), the South Asian river dolphin (*Platanista gangetica*, Lebeck/Roxburgh 1801) (Figure 6) is conflated with the gharial in some vernacular names. Given this confusion, the river dolphin is briefly described here as well.

Dolphins are among the most intelligent animals in the world, with a streamlined fusiform body highly adapted for speed. The horizontally placed, halfmoon-shaped tail fin, called a fluke, is used for propulsion. Pectoral fins, together with the tail, control direction. Dolphins breathe through a blowhole on top of their head, inside of which is a round organ called the melon, used for echolocation. "Dolphin copulation happens belly to belly and though many species engage in lengthy foreplay, the actual act is usually brief, but may be repeated several times within a short timespan... Dolphins are known to have sex for reasons other than reproduction... Sexual encounters may be violent..." (Wikipedia 2009/12 s.v. Dolphin).

The Indus river dolphin found in the Indus River and its tributaries (the Beas and Sutlej in Pakistan)

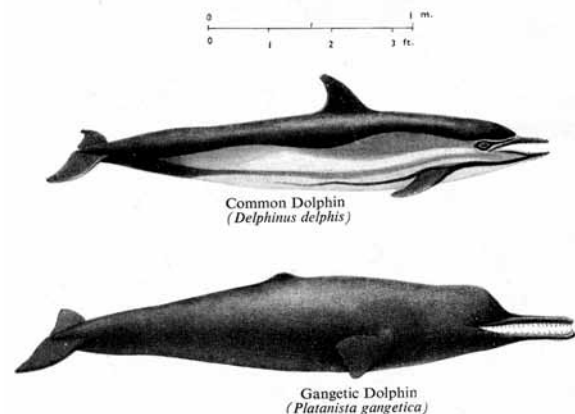


Figure 6 Common and Gangetic dolphin
(after Prater 1971: Plate 69)

was originally regarded as a separate species (*Platanista indi*), but since 1998 has been considered as a subspecies (*Platanista gangetica minor*) of the South Asian river dolphin. The other subspecies, the Ganges river dolphin (*Platanista gangetica gangetica*), is primarily found in the Ganges and Brahmaputra rivers and their tributaries in India, Bangladesh and Nepal. The two subspecies have not interbred for hundreds, if not thousands, of years. The South Asian river dolphin is an endangered species. In dictionaries and non-zoological literature, it is often mistakenly identified as a porpoise.

The South Asian river dolphin is generally about 2 to 2.6 m long, with females being larger than males. Like the gharial, it also has a long, narrow snout with a large number of sharp, conical teeth. This rostrum thickens at the end; its teeth, which may vary in number from 27 to 32 on either side of each jaw, are visible even when the mouth is closed. Its eyes are about the size of a pea and virtually blind. On the dolphin's back, one finds a small fleshy lump in place of a dorsal fin. Its colour ranges from dark brown to black.

River dolphins are usually encountered on their own or in loose groups. During the monsoon, they can be seen in tidal areas, although they do not enter the sea. At this time, river dolphins are known to advance through the water in series of leaps.

The Gangetic dolphin usually rises to the surface to breathe for a few seconds before submerging again for a minute or so. Its jaws are well adapted for browsing on bottom-dwellers (e.g., shrimp and catfish), but it also hunts carp and other types of fish via echolocation. Life in turbid waters has resulted in an evolutionary deterioration of its vision.

The dolphin has historically been hunted with nets and harpoons. Its oil and meat are used as a liniment, as an aphrodisiac, as lamp fuel, and as bait for catfish. (Prater 1971: 313-314; Wikipedia 2009/12 s.vv. Dolphin and Ganges and Indus River Dolphin) Dolphin fat has many uses in the

traditional Indian medical system (Lüders 1942: 70-72).

The scientific name of the South Asian river dolphin is derived from its description by Pliny, H. N. 9,15: *in Gange Indiae platanistas vocant rostro delphini et cauda, magnitudine autem XVI cubitorum* (Lüders 1942: 61 n. 3 points out that Pliny exaggerates the dolphin's length).

SOUTH ASIAN VERNACULAR NAMES OF CROCODILES

Words for 'crocodile' cannot be reconstructed for the Indo-European and Indo-Iranian protolanguages. This is not surprising, given the fact that crocodiles never lived around the Pontic-Caspian steppes where these protolanguages are likely to have been spoken (Mallory 1989; Anthony 2007; Parpola 2008). Crocodiles were not found in the Black Sea, the Caspian and Aral Seas, or the rivers feeding these seas (Figure 7). Coming from the Eurasian steppes to the Indian subcontinent via Central Asia, Aryan speakers are thus unlikely to have brought inherited words for 'crocodile' when they entered South Asia in the second millennium BCE. This is borne out by the following examination: the only words for 'crocodile' that can be shown to have an Indo-European etymology are descriptive terms recorded by lexicographers or rarely used in literature. An exception is Sanskrit *grāha-* m. (literally 'grabber'), which is of Indo-European origin; it does not, however, have extra-Indian cognates with the meaning of 'crocodile', and denotes other beasts of prey as well (e.g., 'shark', 'snake').

On the other hand, crocodiles were certainly native to the areas inhabited by the Early, Mature and Late Harappans, which comprised almost all of present-day Pakistan and northwestern India from Kashmir to Maharashtra, eastwards to around Delhi. It is in this area that Indo-Aryan speakers first



Figure 7 World distribution of Order Crocodilia. Map Wikipedia Commons 2007
(after data from Cogger and Zweifel 1998)

became acquainted with crocodiles and undoubtedly began importing their native names into Indo-Aryan. For this reason, an etymological study of the vernacular names of crocodiles can help answer the vexing question of the language family to which the chief idiom of the Harappans belonged. At the current time, there are three possibilities: (1) Dravidian, (2) Austro-Asiatic, (3) and an unknown substratum. As the following analysis shows, the most important words for 'crocodile' in South Asian languages (except for the admittedly unclear Sanskrit *makara*- and its cognates) have a Dravidian etymology. Austro-Asiatic, on the other hand, does not seem to have any relation to the terms for 'crocodile' used more widely in South Asia. There is only one clearly Austro-Asiatic term.

Proto-Muṇḍa **tajan* or **tajal* 'crocodile'

The only native Austro-Asiatic word for 'crocodile', recorded by Pinnow (1959: 73 no. 31, 263 no. 336, 286 no. 374b, 349 no. 495g), is **tajan* or **tajal* '(broad-headed) crocodile': Santali *tajan*, Muṇḍari *tajan*, Ho *taen*, Sora (Savara) '*tañal-ən*. This word has apparently not been borrowed by Indo-Aryan or Dravidian languages.

Sanskrit terms for 'crocodile'

[Monier-]Williams' *English-Sanskrit dictionary* (1851: 14a and 147a) s.v. 'alligator' lists Sanskrit *nakra*-, *grāha*- and *kumbhīra*-; for 'crocodile', it lists *nakra*-, *kumbhīra*-, *ālāsya*- ['poison-mouthed'], *mahāmukha*- ['big-mouthed'], *dvidhāgati*- ['one who goes in two ways, amphibious'], *asidanta*- ['having sword-like teeth'; actually the word is *asidaṃṣṭra*-], *jalaśūkara*- ['the boar of water'], and *jalahastin*- ['the elephant of water']. The last seven terms (from *ālāsya*- onwards) are rarely occurring descriptive terms that do not require further study. Important terms missing in these two lists are Sanskrit *makara*-, *ghaṇṭika*-, and *śiśumāra*-.

Terms for the marsh crocodile and the saltwater crocodile

According to Daniel (1983: 10), the marsh crocodile is called *muggar* [i.e., *magar*] in Hindi, Gujarati and Marathi, *kuji khumbhira* in Oriya, *kuhmīr* [i.e., *kumbhīr*] in Bengali, *muthalai* [i.e., *mutalai*] in Tamil, *muthala* [i.e., *mutala*] and *cheengkani* [i.e., *cīṅkaṇṇi*] 'alligator, crocodile', literally 'bleary-eyed', Gundert 1872: 367a] in Malayalam, *mossalay* [i.e., *mosaḷe*]

in Kannada, and *moseli* [i.e., *mosali*] in Telugu. According to Daniel (1983: 13), the local names for the saltwater crocodile are the same as those for the marsh crocodile in most Indian languages. In Oriya, however, the saltwater crocodile goes by a different name (*Baula kumbhira*).

Terms for the long-snouted crocodile

Daniel (1983: 15-16) lists the following local names for the long-snouted crocodile: "Hindi *Gharial*; Bengali *Mecho* [cf. Bengali *māch* 'fish'] *kumbhir*; Oriya *Thantia kumbhira*: male *Ghadiala*, female *Thantiana* [cf. Oriya *thunṭi*, *thuthi* 'snout, chin', *theṇṭa*, *thanṭa*, 'beak', *tunḍa*, *tunḍi*, *ṭunḍa*, *ṭhunḍi*, *ṭhunṭhi* 'lip, chin, beak' in Turner 1966 no. 5853 and Sanskrit *tunḍa* 'beak, trunk, snout']; Bihari *Nakar*, *Bahsoolia nakar*; Nepali *Chimpta gohi*, *Lamthora gohi* [Nepali, Oriya and Marathi *gohi* 'crocodile, alligator' < Sanskrit *godhikā* < *godhā* 'lizard', Turner 1966: no. 4286 and below]."

Sanskrit *gōdhā*- or *gōdhikā*- 'monitor lizard, gecko; crocodile'

Taking up the last-mentioned (and rather marginal) etymon first, Sanskrit *gōdhā*- f. and its cognates are sometimes used for 'crocodile' in modern Indian languages. Primarily, however, the word means 'lizard'. This topic has been thoroughly studied by Lüders (1942: 23-50) in his fairly exhaustive examination of all instances (since the Rigveda) of Old and Middle Indo-Aryan literature where *gōdhā*- is attested. Lüders comes to the conclusion that most occurrences describe the monitor lizard (*Varanus monitor* = *Varanus bengalensis*), often mistakenly called 'iguana' or 'leguan'. When *gōdhā*- or *gōdhikā*- appears as an aquatic animal (cf. Amarakoṣa 1,10,22), Lüders (1942: 33-34) suggests that it refers to the water monitor (*Varanus salvator*), which in the past may have been more widely found across the Indian subcontinent than today. With the exception of the desert lizard (*Varanus griseus*), other monitor

lizards are also good swimmers and like to stay in the water (see also Hawkins ed. 1986: 357-360 and 378-379). Lüders (1942: 35-36) further points out that the diminutive *gōdhikā*- f. obviously refers to a smaller lizard, in particular the gecko (*Lacerta gecko*). This word appears in the compounds *gr̥ha-gōdhikā*- and *āgāra-gōdhikā*- 'house lizard'; the lexica even identify *gōdhā*- as gecko (Halāyudha 2,79 *godhā muśalikā proktā*; Vaijayantī 150,51 *godhā musali*). Lüders' conclusions support the evidence of the Neo-Indo-Aryan languages, in which the majority of cognates (see Turner 1966: no. 4286) carry either the meaning of 'iguana' or 'lizard' (other singular glosses include 'venomous lizard', 'chameleon', 'an animal like a snake', or 'a long insect with two horns in front and able to contract itself'). Turner records the meaning 'crocodile' or 'alligator' only for Nepalese *gohilguhi* and Marathi *gohi*, but Lüders (1942: 34) also adds Urdu *gōhl/gōdhi* as an Indo-Aryan loanword in Kannada. Lüders (1942: 35) does not deny that the word *godhā* has been used to denote 'crocodile' in some Neo-Indo-Aryan languages. He points out that the monitor lizard is a large animal that lives near water like the crocodile, but he emphatically stresses that *godhā* never had the meaning of 'crocodile' in the older literature.

Lüders (1942: 43-50) argues at length that *godhā*- should be parsed as *go-dhā*- (with the meaning 'cow-sucker'). He takes the word to be of Indo-European origin, approving of Fick's etymology that links it to Latin *būfō* 'toad'. This hypothesis is fully endorsed by Paul Thieme (1965: 211-212). Turner takes 'cow-sucker' to be a popular etymology, with the more original form preserved in Sanskrit *gōlaka*- m. 'lizard' (cf. *gr̥ha-gōlaka*- m. 'house lizard', attested in Mārkaṇḍeya-Purāṇa 15,24), *gōlikā*- f. 'lizard' (which appears as a variant reading for *gōdhikā*- in Bāṇa's Kādambarī, as well as in the compound *gr̥ha-gōlikā*-, *gr̥ha-gaulikā*-, *gr̥ha-kōlikā*-, etc.; see Lüders 1942: 36 n.1), and *gaulī*- f. 'lizard' (in the Pañcatantra). This latter etymon (Turner 1966: no. 4324) comes from

Ὁ Γάγγης ὁ παρὰ τοῖς Ἰνδοῖς ξέων,
 Κροκοδείλων δὲ παιδεύει
 διπλᾶ γένη· καὶ τὰ μὲν αὐτῶν ἥκιστα βλάπτει, τὰ δὲ παμ-
 βορώτατα σαρκῶν ἐσθίει καὶ ἀφειδέστατα· καὶ ἔχουσιν ἐπ’
 ἄκρου τοῦ ῥύγχους ἐξοχήν, ὡς κέρα. Τούτοις [τοι] καὶ
 πρὸς τὰς τῶν κακούργων τιμωρίας ὑπηρέταις χρῶνται· τοὺς
 γὰρ ἐπὶ τοῖς μεγίστοις τῶν ἀδικημάτων ἐαλωκότας ῥίπτουσιν
 αὐτοῖς, καὶ δημίου δέονται ἥκιστα.

Figure 8 Aelianus (N. An. 12,41) on the two kinds of crocodile in the Ganges (after Jacobs 1832: 283)

Dravidian (DEDR no. 1338), as Turner as well as Burrow and Emeneau both note, and Lüders (1942: 36 n. 1) already acknowledges:

Tamil *kavuli*, *kauḷi*- 'lizard'

Malayalam *gauḷi* 'lizard, especially *Lacerta gecko*'

Kannada *gavuli*, *gavaḷi* 'house lizard'

Kodagu *gavḷi* 'big lizard'

Tulu *gauḷi* 'a kind of lizard'

Telugu *gauḷi* 'lizard'

Gondi *gūwhal* 'a poisonous lizard smaller than the monitor', *goyhal* 'iguana'

? Brahui *glūnṭ*, *gulōnṭ*, *klōnṭ*, in *garri-glūnṭ*, etc. 'rough lizard' (*garri* 'mangy'); *tāzī-glūnṭ*, etc. 'common lizard' (*tāzī* 'greyhound, swift animal').

Hindi *ghariyāl* m.

Gavial, the current name in zoological literature, is a corrupt form of Hindi *ghariyāl*, probably due to clerical error (Yule and Burnell 1903: 366; Crooke 1906: 110-111; Lüders 1942: 35).

Hindi *ghariyāl* has cognates in other Neo-Indo-Aryan languages as follows (Turner 1966: no. 4422), with all except the Sindhi term denoting the long-snouted crocodile:

Sindhi *gharyālu* m. 'long-snouted porpoise' [i.e., 'Indus river dolphin']

Nepali *ghariyāl*

Assamese and Bengali *ghāriyāl*

Oriya *ghariālā*

Hindi *gharyāl*, *ghariyāl*, *ghariār*

The name is explained as follows: "Adult male with a large pot-like cartilaginous mass on the tip of the snout, hence the name Gharial (*ghara* = pot)" (Daniel 1983: 15; see also Maskey and Mishra 1982: 185 on the belief in its potency, one of the main reasons why this animal has been hunted). As early as Aelianus (c. 170-235 CE), this distinctive feature of the gharial has been known (De natura animalium 12,41): "The Ganges which flows in the country of the Indian people ... breeds two kinds of crocodiles [κροκοδείλων]; one of these is not at all hurtful [ἥκιστα βλάπτει] ... and they have a horn-like prominence on the tip of the nostril [καὶ ἔχουσιν ἐπ’ ἄκρου τοῦ ῥύγχους ἐξοχήν, ὡς κέρας]" (Yule and Burnell 1903: 14a) (Figure 8). It is thus quite likely that the ghariyāl was named after this feature.

Hindi *gharā* m. 'pot' has cognates in many Neo-Indo-Aryan languages (in West Pahari, Bengali and Oriya the word is identical with Hindi). These can be traced back to Sanskrit *ghaṭa*- m. 'pot' (first attested in Sūtra texts and Manu) and its diminutive *ghaṭaka*- m. 'pot' (first attested in Somadeva's Kathāsaritsāgara) (Turner 1966: no. 4406). In the opinion of Manfred Mayrhofer (2001: III, 167), the

etymology of this word attested rather late in Indo-Aryan has not been satisfactorily explained.

This explanation of Hindi *ghariyāl* seems to be corroborated by the fact that another word used for the gharial, Sanskrit *kumbhīra-*, can likewise be derived from a word denoting 'pot', namely Sanskrit *kumbha-* m. (see also the lexically attested *kumbhin-* m. 'crocodile', literally 'one having a pot'). Sanskrit *kumbhā-* m. is attested as early as the Rigveda, and is related to Avestan *χumba-* 'pot' and probably Greek κύμβη f. 'drinking vessel', κύμβος m. 'dish, bowl' (Mayrhofer 1992: I, 370). That said, these 'pot' explanations seem to be folk etymologies. In both cases, the gharial's name does indeed appear to owe its origin to the "protuberance at the muzzle" (Yule and Burnell 1903: 366b), but with a different etymology.

As the nasalized *ā* of the first syllable in Assamese and Bengali *ghāriyāl* 'alligator' confirms, these words are related to Sanskrit *ghaṇṭika-* m. 'gavial', which is attested c. 1550 CE in Bhāvamīśra's Bhāvaprakāśa (Turner 1966: no. 4422; McGregor 1993: 284a; Mayrhofer 2001: III, 168). Mayrhofer (2001: III, 168) argues that the etymology of Sanskrit *ghaṇṭika-* m. 'gavial' has not been sufficiently explained. But Turner (1966: no. 4422) is undoubtedly right in linking *ghaṇṭika-* with Assamese *ghāṭ* 'protuberance on the snout of an alligator'.

Turner (1966 and 1985: no. 4420) connects Assamese *ghāṭ* 'protuberance on the snout of an alligator' with the following words:

- Sanskrit *ghaṇṭikā-* f. 'uvula'
- Lahnda *ghaṇḍī* f. 'adam's apple' (in Awāṇkāri dialect also 'soft palate')
- Panjabi *ghaṇḍ* m., *ghaṇḍī* f. 'adam's apple'
- West Pahari (Koṭgāthī dialect) *ghaṇḍu* 'throat'
- Hindi *ghāṇṭī* f. 'throat, adam's apple, uvula, soft palate'
- Nepali *ghāṇṭī* 'throat' (loanword from Hindi)
- Gujarati *ghāṇṭ* m. 'throat', *ghāṇṭī* f. 'adam's

apple'

Marathi *ghāṇṭī* f. 'throat, adam's apple, larynx

According to Turner, etymon no. 4420 "belongs to the group listed s.v. *kaṇṭhā-*." I agree with the etymological connection, although I do not accept his etymology for Sanskrit *kaṇṭhā-* 'throat' (Turner 1966: no. 2680) or his conflation of this word with the other etyma in no. 2680. In my opinion, the word **ghaṇṭa-*, *ghaṇḍa-* 'throat, adam's apple' (mentioned above) and the word *gaṇḍa-* 'goitre, boil, bodily protuberance' (mentioned below) semantically match Sanskrit *kaṇṭhā-*, which seems to have originally referred to 'throat' rather than to 'neck'. The following cognates with these meanings are listed in Turner 1966: no. 2680a:

- Sanskrit *kaṇṭhā-* m. 'throat, neck' (since Śatapatha-Brāhmaṇa)
- Pali *kaṇṭha-* m. 'throat, neck'
- Prakrit *kaṇṭha-* m. 'neck'
- Gypsy (Palestinian dialect) *kand* 'throat'
- Gawarbatī and Savi *khaṇṭī* 'throat'
- Lahnda (Awāṇkāri dialect) *kadhli* 'neck-strap'
- West Pahari (Bhalesī dialect) *kaṇṭh* m. 'collar of shirt', *kaṇṭhi* f. 'sheep with a black neck'
- Kumaoni (Gaṅgoī dialect) *kānī* 'neck' (Turner alternatively derives this word from Sanskrit *skandhā-*)
- Oriya *kaṇṭhā* 'throat'
- Hindi (poetic) *kāṇṭhā* m. 'throat'
- Marathi *kāṇṭhem* n. 'neck'
- Sinhalese *kaṭa* 'throat, mouth',
- Sikalgari *kaṇḍa* 'neck' (Turner notes that this word has been contaminated by Sanskrit *skandhā-*)

It appears that both Assamese *ghāṭ* 'protuberance on the snout of an alligator' and the words for 'throat' that Turner connects with it are related to Sanskrit *gaṇḍā-* m. 'goitre' (attested since the Aitareya-

Brāhmaṇa), 'boil' (attested since Suśruta) and *gaṇḍi*-m. 'goitre or bronchocele' (Wilson 1819). These have the following cognates in Middle and Neo-Indo-Aryan (Turner 1966 and 1985: no. 3997; note that I have omitted unrelated words from his list):

- Pāli *gaṇḍa*- m. 'swelling, boil, abscess'
 Prakrit *gaṇḍa*- m. n. 'goitre, boil'
 Sindhi *gani* f. 'hump of bullock', *ganri* f. 'bubo', (Kacchī dialect) *gaṇḍho* m. 'swelling resulting from a contusion',
 Lahnda *gannh* m. 'boil'
 Panjabi *gann* m. 'protuberance round navel', *gannī* f. 'swelling on eyelid'
 West Pahari (Bhiḍlāi subdialect of Bhādravāhī dialect) *gaṇḍ* n. 'infectious ulcer of sheep and goats', (Jaunsārī dialect) *gān* 'mumps'
 Kumaoni *gān* 'goitre', (Gaṅgoī dialect) *gān* 'hump', *gāni* 'testicle'
 Nepali *gāmṛ* 'goitre'
 Assamese *gāmṛ* 'boil'
 Bengali *gāmṛ* 'protuberance round navel'
 Sinhalese *gaḍuva* 'boil, abscess, *gaḍageḍiya* 'boils and pustules', (Maldivian dialect) *gaṇḍu* 'ulcer, swelling'

For the following cognates, Turner reconstructs **gaḍḍa*- as the protoform instead of Sanskrit *gaṇḍa*-:

- Kashmiri *gaḍur*^u m. 'goitre, bronchocele' (Turner alternatively derives this from Sanskrit *gaḍula*-; see below)
 Hindi *gaḍḍā* m. 'lump, swelling, boil'

As Turner suggests, the following two lemmata (Turner 1966: no. 3977 and 3978) are undoubtedly also related:

- (1) Sanskrit *gaḍu*- m. 'excrescence on neck, goitre, hump on back' (Kātyāyana's vārttika

3 on Pāṇini 2,2,35); cf. also *gaḍu-kaṇṭha*- 'having a swelling on throat, goitrous' and *gaḍu-śiras*- 'having a swelling on the head' in Patañjali's Mahābhāṣya on Kātyāyana l.c., *gaḍula*- 'humpbacked' in Ṣaḍviṃśa-Brāhmaṇa 4,4, and *gaḷu-nas*- or *galū-nas*- 'having a swelling on his nose', as an epithet of Ārkṣākāyana Śālāvātya in Jaiminiya-Brāhmaṇa 1,316; 1,337; 1,338, as well as Jaiminiya-Upaniṣad-Brāhmaṇa 1,38,1 (Mayrhofer 1992: I, 458)

- Pali *gaḷa*- 'boil, swelling (?)'
 Sindhi *garhu* m. 'boil, abscess'
 Lahnda (Awāṅkārī dialect) *gār* 'boil, abscess'
 Panjabi *gar* m. 'boil, abscess'
 Bengali and Oriya *garu* 'swelling of any gland, goitre, hump on back'
 Marathi *gaḷūṃ* n. 'boil'
 (2) Sanskrit *gaḍulā*- 'humpbacked' (Ṣaḍviṃśa-Brāhmaṇa 4,4), *gaḍura*- 'humpbacked' (lexical), Sanskrit *gaṇḍula*- 'humpbacked' (lexical)
 Pali *gaṇḍula*- 'humpbacked'
 Khowar *gurūli* 'goitre, goitrous'
 Kashmiri *gaḍ^rr^u* 'goitrous', *gaḍur^u* m. 'goitre' (Turner alternatively derives this from **gaḍḍa*-; see above)
 Oriya *garūḷa*, *garura* 'humpbacked'
 Sinhalese *gaḍula*- 'humpbacked'

Lüders (1942: 56 n.3) has connected Sanskrit *gaṇḍa*- 'swelling' with the name of another animal distinguished by a big excrescence on its nose, namely the rhinoceros. Mayrhofer (1992: I, 459) dismisses this explanation as a folk etymology. Nonetheless, Mayrhofer (2001: III, 151) does consider that the following Indo-Aryan names for 'rhinoceros' (Turner 1966 and 1985: no. 4000) were possibly borrowed from a non-Aryan source:

Sanskrit *gaṇḍa*- m., (Śukasaptati), *gaṇḍaka*-m.

(Bāṇa's Kādambarī), *gaṇḍa-mṛga-* m.,
gaṇḍāṅga- m. (lexical)

Pali *gaṇḍaka-* m.

Prakrit *gaṇḍaya-* m.

Assamese *gām̐r*

Oriya *gaṇḍā*

With a protoform **gayaṇḍa-* (Turner), ?
hypersanskritism < **geṇḍa-*:

Kashmiri *kōṃḍ* m.

Sindhi *geṇḍo* m. (according to Turner, this is a
loanword on account of g-)

Panjabi *gaimḍā* m., *gaimḍī* f.

West Pahari *geṇḍo mṛg*

Nepali *gaimṛo*

Hindi *gaimṛā* m.

Gujarati *geṇḍo* m., *geṇḍī* f.

Marathi *geṇḍā* m.

Maldivian *geṇḍā* (explained to be a loanword
from Hindi)

Cf. also Tamil *kāṇṭā-mirukam*, *kaṇṭakam*
(Winslow et al. 1888: 1143b) and Malayalam
kāṇṭā-mṛgam 'rhinoceros'

The phonetic differences between Sanskrit
ghaṇṭa- 'throat, adam's apple, uvula', Assamese *ghāṭ*
'protuberance on the snout of an alligator', Sanskrit
gaṇḍā- m. 'goitre' and the related Indo-Aryan words
meaning 'swelling (of glands), boil, tumour' and
'hump on the back', and Sanskrit *kaṇṭha-* 'throat'
can be explained by the supposition that they are
ultimately loanwords from Dravidian, which does
not distinguish between aspirated and unaspirated or
between unvoiced and voiced consonant phonemes.
In Proto-Dravidian, stops were word-initially
unvoiced, but became voiced or spirantized between
vowels and voiced after nasals (unless they were
geminated, in which case nasalization was usually
afterwards lost).

An excellent Proto-Dravidian etymology for

these words is offered by the root **kaṇṭṭV-*, which is
attested in all sub-branches from Tamil to Kurukh
(DEDR 1148):

Tamil *kaṭṭu* 'to harden, consolidate, congeal,
coagulate, be congested (as the throat), swell
(as a boil, tumour); n. boil, abscess, tumour;
firmness, strength

kaṭṭi 'clod, lump, concretion, anything
hardened, coagulated, boil, abscess, enlarged
spleen, foetus'

Malayalam *kaṭṭa* 'lump, mass, clod', *kaṭṭi* 'what
is condensed, solid, ingot', *kaṇṭi* 'lump,
concretion', *keṇṭa* 'a hypochondriacal disease'

Kota *kaṭy* 'solid lump', *geṇḍ* 'round lump or
ball (food, butter), growth in abdomen'

Toda *koṭ-* '(blister) to form, swell'

Telugu *kaṭṭu* 'to gather, collect, become hard',
gaḍḍa 'lump, mass, clod, clot; boil, ulcer;
island'

Gondi *kaṭ* 'spleen', *gaḍa* 'clod', *kaṭṭ-* '(fruits) to
form', (Koya dialect) *gaṭ pāpe* 'adam's apple'
(*pāpe* 'throat')

An ancient derivative seems to be Proto-
Dravidian **kaṇṭṭal*, **kaṇṭṭay* 'bulbous root, bulb-
like fruit' (DEDR 1171).

Sanskrit *kumbhīra-* m.

The other words for the gharial that at first sight
seems to be derived from Sanskrit *kumbhā-* 'pot'
(Turner 1966: no. 3317; also see above) are:

Sanskrit *kumbhīra-* m 'crocodile, long-nosed
alligator' (attested since the Mahābhārata),
kumbhīla- m. (lexical), *kumbhin-* m. (lexical)

Pali *kumbhīla-* m. 'Gangetic crocodile'

Prakrit *kum̐bhīla-* m. 'alligator'

Nepalese *kubir* 'crocodile'

Assamese *kumbhīr* 'alligator, crocodile'

Bengali *kumbhīr*, *kumīr* 'alligator, crocodile'

Oriya *kumbhīra*, *kimbhīra*, *kumbhīla* 'crocodile'
 Hindi *kumbhīr* m. 'long-nosed alligator'
 Marathi *kuṃbhīr*
 Sinhalese *kimbulā*, *kimbulā* 'crocodile'

This etymon seems to be parallel to that of *ghaṇṭika*- (from *ghaṇṭa*- 'swelling on the long nose of the crocodile'), in that it appears to be etymologically connected with Old Indo-Aryan **kumbha*- 'elephant's frontal globe' (in Sinhalese *kumbutalaya*; Turner 1966: no. 3314), *kūmba*- m. n. 'thick end (of a bone or club)' (attested since the Taittirīya-Samhitā; Turner 1966: no. 3307), **kubba* and **khubba* 'hump on back, any projection on the body' (distributed widely in Neo-Indo-Aryan in Turner 1966: no. 3301 **kubba*; see also no. 3300 Sanskrit *kubja*- 'humpbacked'; for **khubba* see no. 3904 and 3903 **khubja*- 'humpbacked').

One also finds an excellent Dravidian etymology here as well; that is, Proto-Dravidian **kumppV* 'to form into a heap or pile, heap up, gather, increase, swell, be full; heap, pile, mound, hump of a bull, protuberance, swelling, knob', which is attested throughout the language family from Tamil to Kurukh and Malto (in the DEDR divided into three related etyma):

(1) = DEDR 1731

Tamil *kuppam*, *kuppai*, *kuppai* 'heap (as of manure), mound, multitude'
 Malayalam *kuppa* 'heap of dirt or refuse'
 Kota *kīp* 'heap of weeds, rubbish'
 Toda *kīp* 'rubbish'
 Kannada *kuppe*, *guppe*, *koppal* 'heap, pile, dung-hill', *kuppu* 'to heap up'
 Kodagu *kuppi* 'a dropping of dung'
 Tulu *kuppe*, *guppe*, *kippē*, *kompā*, *kompē* 'heap'
 Telugu *kuppa* 'heap, pile, dungheap', *guppu* 'to place in heaps or lots', *koppāramu*, *koppārinu* 'to increase, rise, swell', *goppu* 'small elevation in a field', *gubbali* 'mountain, hill'

Kolami *kupp kal*- 'to gather'

Parji *kuppa* 'stack, mound', *kopp*- 'to be full', *koppa* 'small hillock'

Gadaba *kuppā* 'heap', *kop*- 'to be full', *kope* 'hill'

Gondi *kuppa*, *kupa*, *guppa* 'heap, stack', *gubbal* 'hillock', *kupāhanā*, *kupā kiyānā* 'to gather, collect'

Konda *kupa* 'heap (of grain)', *kumba* 'small conical heap', *koparam* 'hump of a bull'

Pengo *kupa* 'heap, stack', *kupli* 'mound of earth', *gomoṇ* 'hump of ox'

Manda *kupa* 'heap', *kupki* 'to fill', *guper* 'hump of ox'

Kui *kupa* 'hillock', *kopa* 'hump, cow's hump'

Kuwi *kuppa* 'stack', *kūpa* 'mound', *kupli* 'hillock', *gu'u* 'hump of ox', *kuppu ānai* 'to overfill'

Kurukh *xoppnā*, *xoprnā* 'to form into a pile, heap up'

Malto *qope* 'heap, pile; to heap, pile up'

(2) = DEDR 1741

Tamil *kumpam*, *kumpal*, *kumpi*, *kumpu*, *kuvavu*, *kuvai*, *kuvāl*, *kūvai* 'heap, pile, collection, assemblage, group, mound', *kumi*, *kuvi*, *kuvavu*, *kūppu* 'to heap up, be heaped up, piled up conically, accumulate, hoard up, gather, crowd'

Malayalam *kumi* 'heap (as of rice), stack, pile', *kūmpal* 'heap', *kumiyuka*, *kumikka*, *kumekka*, *kuvika*, *kuvikka*, *kūmpikka* 'to heap, heap up, be heaped together, assembled'

Kota *gub* 'group of people', *gubl* 'crowd, herd'

Toda *kubīl* 'herd', *kupy* 'crowd, herd, bunch'

Kannada *gumi*, *gummi*, *gummu*, *gumme*, *gumpu* 'heap, crowd, multitude' *gubarū*, *guburu* 'thickness (of foliage), crowdedness'

Tulu *gumpu*, *gumi* 'heap, flock, crowd, multitude, group'

Telugu *kuva*, *kuvva* 'heap, pile, gumpu, gumi' 'crowd, multitude, group', *guburu*, *gumuru*

'thickness (of foliage), cluster'
 Kolami *gum* 'assembly', *gum er-* 'to assemble'
 Naiki *ghuma er-* 'to assemble'
 Parji *kum-* 'to heap on to'
 Gondi *gum ki-* 'to assemble, collect'
 Konda *kumba* 'a small heap conical in shape',
kuma 'heap'
 Kuwi *gombu, gōmbu, gumomi* 'heap', *gumbra,*
kumbra 'clump of trees'
 (3) = DEDR 1743, cf. also the Pengo and
 Manda words for 'hump of ox' above
 Tamil *kumiṣ, kumiṣi* 'knob (as of wooden
 sandals), boss, stud, pommel, hump of an
 ox', *kuppi* 'ferrule (e.g., on scabbard, horn
 of ox)'
 Malayalam *kumiṣ* 'knob, pommel; mushroom',
kuppi 'brass knob on tip of bullock's horn'
 Kannada *gubbi* 'knob, protuberance', *kuppu,*
guppu 'an abnormal globular excrescence of
 the body', *gubāru* 'swelling'
 Tulu *gubbi, gubbē* 'stud, ornamental knob,
 button'
 Telugu *gubaka* 'knob, boss, stud', *gubba* 'knob,
 boss, stud, protuberance, woman's breast',
guburu 'protuberance', *kuppe* 'knob'
 Konda *koparam* 'hump of bullock'

Proto-Dravidian **mōc-alay* / **moc-alay* 'crocodile'

From DEDR 4952, one finds:

Tamil *mutalai, mutalai, mucali* 'crocodile'
 Malayalam *mutala*
 Kota *mocal*
 Kannada *mosaḷe, masaḷe*
 Koḍagu *mosale*
 Tulu *mosaḷe, mudale, mudale, mūdale*
 Telugu *mosali*
 Kolami (Kin.) *moseli*
 Parji *mōca*
 Konda *mōdi, mūdi*

Kurukh *bōca*

Malto *boce*

Indo-Aryan loans from Dravidian:

Sanskrit *mācala-* 'crocodile', *musalī* 'alligator,
 house-lizard' (both only lexically attested)

Prakrit *muduga* 'a kind of crocodile'
 (*grāhaviśeṣa-*)

This Proto-Dravidian etymon may be derived
 from a verbal root preserved only in North
 Dravidian **mōc-* 'to cut (meat), to cut up into
 convenient pieces any object too large for use'
 (DEDR 5130). This verb, which describes quite
 well what a crocodile does after catching a victim
 that is too large to be directly swallowed, seems
 to be related to the Proto-Dravidian verbal root
 **mōk-/mōkk-/mōk-* 'to eat, to eat greedily in large
 mouthfuls, eat voraciously, devour, gobble, swallow'
 (DEDR 5127 + 4897). Tamil has derived *moci-* 'to
 eat' from this root.

This word for 'crocodile' may originally have
 been a compound involving two roots, the latter
 being Proto-Dravidian **alacu, alay* 'to shake or
 agitate in water (e.g., to rinse clothes or vegetables)'
 (DEDR 246), which is undoubtedly related to the
 root **alañkul/alakku, alay* 'to move, shake, wave,
 go to and fro for an object, roam, wander' (DEDR
 240). This etymological interpretation, however,
 necessitates a slight revision of Krishnamurti's
 Proto-Dravidian reconstruction (2003: 13, 531),
 which is **mōc-V-l- / moc-V-l-*. The compound
 nicely complements the first verb by describing the
 characteristic behaviour of the marsh and saltwater
 crocodile noted above (i.e., victims caught on land
 are dragged to the water and swallowed whole, while
 large prey is torn to pieces by means of twisting and
 shaking motions).

Mutalai and other terms for 'crocodile' in Old Tamil texts

Old Tamil provides the oldest source material for

the Dravidian language. The following references to crocodile in Caṅkam literature (Lehmann and Malten 1992) are quoted here in an alphabetical order of the texts in which they appear. When available, I have added existing translations; though these are not always literally accurate, they do provide additional context.

Aiṅkuṟunūru 5, 4-5 *mutalaiṭ pōttu muṣu mīn ārum / taṇ ṭurai yūraṇ*

"... a cool bay where a male crocodile eats fish whole" (Hart 1975: 181)

Aiṅkuṟunūru 24,2 *piḷḷai tinṇu mutalaiṭt avan ūr*

"and crocodiles that eat their young live in his town" (Hart 1980: 19)

Aiṅkuṟunūru 41,1-2 *taṇ pārppuṭ tinṇum anpin mutalaiyoṭu / veṇ pūm poykaiṭt avan ūr eṇpa ...*

"People say that in his region there is a tank in which there are unloving crocodiles which devour their young ones and there are white flowers too." (Jotimuttu 1984: 177)

Akanānūru 3,1 *iruṇ kaṣi mutalai mēen tōl anna*
"like the hide on the crocodile of the great salt river"

Akanānūru 18,3 *karāan tuṇcuṇ kall uyar mari cuṣi*

"whirlpool rising and dashing against rocks upon which crocodiles are basking"

Akanānūru 72,7-9 *ārē arumara piṇavē yārē / cuṭṭunarp paṇikkuṇ cūr uṭai mutalaiya / kaṣaimāy nittam kal porut iraiṅka*

"The paths there are difficult. In the river are terrible crocodiles that men shiver to think of. It roars against rocks with its torrent and breaks the poles of boatmen." (Hart 1980: 114)

Akanānūru 80,1-2 *koṭun tāṇ mutalaiyoṭu kōṭṭu mīn vaṣaṅkum / iruṇ kaṣi*

"great salt river where the fish with a horn (i.e., sharks) live together with the bent-legged crocodile"

Akanānūru 301,6-7 *nīr vāṣ mutalai āvitt anna / ārai vēynta arai vāy cakaṭattu*

"in a rush-mat thatched wagon, the chamber door of which gaped like the crocodile that lives in water"

Kalittokai 103 (102),17-21 *peru muraṇ munpin pukal ēru pala peytu / arimāvum parimāvum kalirum karāmum / peru malai viṭar akatt oruṅk uṭaṇ kuṣi / paṭu maṣai āṭum varai yakam pōlum / kōṭi naṟai cūṣṇta toṣūu*

"And many a belligerent bull of acclaimed prowess; a cloud of dust-smoke rose up therein, making the arena look like a cavern in a massive hill covered with rain-clouds, wherein are huddled up a lion, horse, elephant and an alligator." (Murugan 1999: 441)

Kuriṅcippāṭṭu 256-257 *oṭuṅk iruṇ kuṭṭatt aruṇ cuṣi vaṣaṅkuṇ / koṭun tāṇ mutalaiyum iṭaṅkaruṇ kāramum*

"The black and bent-legged crocodile that lies in wait in whirlpool's dreaded waters deep, the alligator..." (Chelliah 1962: 215)

Kuṟuntokai 324,1-2 *koṭuṇ kāṇ mutalaik kōḷ val ērai / vaṣi vaṣakk arukkuṇ kāṇalam perun turai*

"Skilled at taking their prey, crocodiles with curving legs keep men away from the grove-encircled waters." (Hart 1980: 80)

"bent leg crocodile taking strong male / way wander- tearing- seashore-grove^{am} big ghat by the big ghat of the seashore grove, where the

murderous, strong male of the bent-legged crocodile tears apart what wanders on the way" (Wilden 2010: II, 727)

Malaipaṭukaṭām 90-91 *irai tērnt ivaruṅ koṭun tāṅ mutalaiyoṭu / tirai paṭak kuṇinta kall akaz kiṭaṅkin*

"Now hear me when I speak of the king's old town far famed. Round it are moats with water deep In which live bent-legged crocodiles that seek Their prey, and walls that seem like sky-high hills." (Chelliah 1962: 297)

Malaipaṭukaṭām 211-212 *uravuk kaḷiru karakkum iṭaṅkar oṭuṅki / yiraviṇ anna viru ṭuṅku varaippin*

"There is a path along the river wild that runs through forests as dark as the night in which live crocodiles that swallow up great elephants. There too are whirlpools, ponds and pits. To walk along this path is hard." (Chelliah 1962: 305)

Narriṇai 287,6 *nāma mutalai naṭuṅku pakai yaṅcāṇ /*

"fear crocodile shiver- enmity fear-not-he without fear of the shivering enmity of the fear[-ful] crocodile

[note 988: *naṭuṅku pakai*: here actually the Tamil is imprecise (as is poetic licence); in fact the enmity should be one that makes shiver]" (Wilden 2008: II, 633)

Narriṇai 292,7-8 *karuṅ kar kāṇ yārr aruṅ cuṇi vaṇaṅkuṇ / karāam pēṇāy iravu varin*

"black stone forest river- difficult whirling wandering-alligator esteem-not-you night come-if you who don't care for crocodiles, that roam the difficult whirling of the forest river with black stones" (Wilden 2008: II, 643)

Patirruppattu 53,8-9 *kōḷ vaṇ mutalaiya kuṇṭu kaṇṇ akazī*

"(the fortress has) moats in the depth of which are crocodiles strong at catching (prey)"

Paṭṭinappālai 239-242 *talai tavac cenru taṇpaṇai eṭuppi / veṇ pūk karumpoṭu cen ne nūṭi / mā yitazk kuvalaiyoṭu neyṭalu mayāṅkik / karāaṅ kalitta kaṇṇ akan poykai*

"The spacious tanks round which once grew the blossom white of the sugar-cane, the yellow rice, the lily long with petals black, and neythal bloom and where the crocodile revelled, are now o'evergrown with argu thick and korai grass. The fields and tanks made waterless are so confused that stag with rugged horns with hinds now freely leap about the place." (Chelliah 1962: 43)

Puraṇānūru 37,7-10 *karāaṅ kalitta kuṇṭu kaṇṇ akazī / iṭaṅkaruṅ kuṭṭattuṭaṇ rokk oṭi / yāmaṅkolpavar cuṭar niṇar katūuṅ / kaṭu muraṅ mutalaiya neṭunir ilaṅci*

"... you had the force in battle to destroy the ancient capital, with its walls shielded in bronze, its cavernous moats crowded with alligators, its pools of deep water where vicious crocodiles collect in the dark ranges of the bottom and rush up and snap at reflections of the lights that men who are standing guard hold high in the middle of the night! ..." (Hart and Heifetz 1999: 30)

Puraṇānūru 104,3-4 *tāṭ paṭu cin nīrk kaḷir aṭṭu viṇkkum / irppuṭaik karāatt anna vennai*

"You warriors! Take care of yourselves! Let us tell you my lord is like a crocodile who in shallow water muddied by the playing of children from the city, can drag in, bring down, and slaughter an elephant, with the water only knee deep! ..." (Hart and Heifetz 1999: 72)

Puranānūru 283,4 *māru koṇ mutalaiyoṭ ūz*
māru peyarum

"... a hungry crocodile for whom a snake is no more than a shrimp ..." (Hart and Heifetz 1999: 167)

There are three words for 'crocodile' in Old Tamil texts. As they are sometimes mentioned together, they have been assumed to represent different species. However, the gharial is not found among the three crocodile species found in South India. Sex and age differences may also be involved (cf. *karāam* and *maṇṇan* below).

- (1) *mutalai* (see above).
- (2) *iṭaṅkar*. This word does not seem to have cognates in other Dravidian languages; while several etymologies are possible, none are obvious.
- (3) *karāam*, *karām*, *karā*, *karavu* 'male crocodile' (Tivākaram: *āṇ mutalai*) (TL 1928 II: 745ab). It is very probable that these words (especially *karāam*) are derived from Sanskrit *grāha*- 'crocodile', as suggested in the *Tamil Lexicon*. An alternative possible etymology is the Proto-Dravidian root *kara* 'to conceal, hide, disguise, lie hidden; to deceive, steal', from which Tamil derives *karavu* 'concealment' (DEDR 1258).

Tivākaram's lexicon (3, 196 *kiṅcumāramum iṭaṅkarum karāmum iṅku ivai vaṇmīnum mutalai ākum*, quoted in *Varalārūru...* 2002 IV: 2180a) mentions two more Tamil words for 'crocodile':

- (1) *kiṅcumāram* in Jaffna Tamil (attested in the lexicon *Yāzppāṇattu māṇippāy akarāti*, TL 1938 Suppl. 222b; see below on Sanskrit *śiśumāra*-).
- (2) *vaṇmīn* (an Indus counterpart will be suggested below, in the final portion of the

Indus section).

While no further Tamil items are added under crocodile and alligator by Winslow *et al.* (1888), the following words for Malayalam are given by Zacharias (1933):

- (1) *mutala* (see above).
- (2) *nakram* (see below).
- (3) *cīṅkaṇṇi*. This compound (also *cikaṇṇi*) literally means 'bleary-eyed'. It is also recorded as belonging to Tamil, but the citation refers to a work by a Tamil who lived in Trivandrum (TL 1929 III: 1473a). The *Malayalam Lexicon* (1985 V: 458) records also *cīṅkaṇṇi-vēṭan* 'crocodile hunter' as a subcaste of the Malavēṭas. (See below, in the final portion of the Indus section, for an Indus counterpart)
- (4) *maṇṇan*. According to Gundert (1872: 780a), "a small alligator *taṭākamaddhyē maṇṇan kramēṇa mūtt aṇṇ oru nakram āyi*." The quotation means: "The *maṇṇan* in the middle of the pool, having gradually grown there, became a *nakra*." As *maṇṇu* means 'earth', the etymology supports the first meaning given by Gundert for *maṇṇan*: "earthy = stupid" (cf. Tamil *maṇṇan* 'clod-hopper, dullard, stupid person' and *maṇ-ṇ-āvāṇ* 'fellow doomed to go to dust, a term of abuse' (TL 1933 V: 3033a)).

In addition, Gundert (1872: 321a) offers an additional Malayalam word for 'alligator' (i.e., 'crocodile'): *kōlmutala* = *kōlṭtala* (*paital āyulṭ oru kōlmutala*, in Kṛṣṇagāṭha), which he further correlates with Sanskrit *grāha*-.

Sanskrit *mākara*- 'aquatic monster', 'crocodile'

Sanskrit *mākara*- m. (attested since the Vājasaneyi-Samhitā) 'aquatic monster', 'crocodile'; the meaning 'crocodile' is certain



Figure 9 Makara at the gateway of the Bharhut Stupa (c. 100 BCE) (after Kramrisch 1954: Plate 19)

in Pūrṇabhadra's Pañcākhyānaka and Śukasaptati, where a *makara*- with the name *Karālamukha* is found lying on a sandy beach with its mouth open (Lüders 1942: 65)

Pali *makara*- m. 'sea-monster', 'porpoise' (Lüders 1942: 72)

Prakrit *magara*-, *mayara*- m. 'shark', 'aquatic beast'; according to the Jaina text Paṇṇavaṇāsutta (Bombay 1928: 43b-44a), there are two kinds of *magara*: *soṇḍa-magara* and *maṭṭha-magara* (Lüders 1942: 80)⁴.

Sinhalese *muvarā*, *mōrā* 'shark', (Maldivian dialect) *miyaru* 'shark'

Hindi and Gujarati *magar* m. 'crocodile'; these are loans from Prakrit or Sanskrit on the basis of the preserved *-g*-; in Hindi also *magar-macch* m. 'crocodile', and, as a loan from

Sanskrit, *makar* m. 'a sea-monster; crocodile; the zodiacal sign of Capricorn', Old Hindi (Brajbhāṣā) *makrī* f. 'female crocodile' (McGregor 1993: 780b, 781b)

Sindhi *maṅgar-macho* m. 'whale', *maṅguro* 'a kind of sea fish'; the original meaning seems to have been preserved in Baluchi *māngar* 'crocodile', which is a loanword from Sindhi. Turner (1966: no. 9692) considers this to be a non-Aryan etymon, comparing it to Santali *maṅgar* 'crocodile' (although this may actually be a loan from Indo-Aryan). Bloch (1930: 739) thought that *makara*- might be related to *nakra*- (discussed directly below).

The origin of Sanskrit *mākara*- and its cognates remains unclear. Although New Indo-Aryan *magar* is widely used for the 'broad-headed crocodile' (which includes both the marsh crocodile and the saltwater crocodile), this is not the only meaning of the word: 'shark', 'whale', and 'a kind of fish' are also attested. As the god of the ocean, Varuṇa uses the *makara* as his vehicle. And in the ocean, one finds the saltwater crocodile as well as dolphins, sharks and whales. In Indian art (for a survey, see Vogel 1929-1930; Coomaraswamy 1931 II: 47-56), the *makara* appears as a mythical marine monster with a crocodile-like head (having a snout with many teeth), two or four feet, scales, and a tail (which at its base resembles that of a crocodile, but then ends in a caudal fin). In early iconographic examples, one finds the makara with ears and "horns or fleshy feelers extending backwards from the end of the long snout" (Coomaraswamy 1931 II: 48) (Figure 9). In the Indian zodiac, which is of Near Eastern origin, the *makara* corresponds to Capricorn (which is represented in Mesopotamia as a goat with the tail of a fish). While Kāma, the Indian god of love, is connected with the crocodile, the totem animal of the goddess of love in Hellenistic culture was the dolphin.

Sanskrit *nakra-*, *nākra-* 'crocodile'

Sanskrit *nakra-* m. 'crocodile, alligator' (attested since Manu), *nākra-* 'a kind of aquatic animal' (Vājasaneyi-Samhitā)
 Pali *nakka-* m. 'crocodile'
 Prakrit *ṇakka-* m. 'crocodile'
 Kumaoni *nāko* m. 'crocodile'
 Hindi *nākā*, *nākū* m. 'crocodile'
 Sinhalese *naku* 'crocodile'

According to Turner, the Kumaoni and Hindi words are associated by popular etymology with *nāk* 'nose' < **nakka-* (cf. Kumaoni *nakku* 'long-nosed'). Following Bloch (1930: 739), Turner (1966: no. 7038), as well as Burrow and Emeneau (1984: no. 3732), derive the Indo-Aryan etymon from Proto-Dravidian: **nek-V-l-* 'crocodile' (DEDR 3732; reconstruction of Krishnamurti 2003: 13, 529), although this Dravidian word is attested rather narrowly:

Kannada *negal*, *negale* 'alligator'
 Tulu *negalu* 'alligator', *negaru* 'a sea-animal, the vehicle of Varuṇa'
 Telugu *negadu* 'a polypus or marine animal which entangles swimmers'

This word might be derived from the Proto-Dravidian root **neka-* 'to rise, fly, jump, leap' (DEDR 3730), from the crocodile's habit of jumping to catch its victim.

Sanskrit *śiśumāra-*, *śiṃśumāra-* 'dolphin' and 'crocodile'

Sanskrit *śiṃśumāra-* m. 'South Asian river dolphin' (Rigveda 1,116,18: together with a bull, it is yoked to the chariot of the Aśvins to allow it to proceed by water as well as by land), 'crocodile' (Suśruta, probably already Pañcaviṃśa-Brāhmaṇa 8,6,8-9 and Śāṅkhāyana-Āraṇyaka 12,6), *śiśumāra-*, *śuṃśumāra-* (Vājasaneyi-Samhitā), *śiṃśuka-*,

śiśuka- m. 'an aquatic animal' (Mahābhārata), 'dolphin' (lex.), *śiśūla-* m. 'dolphin' (Rigveda 10,78,6), *śuśulūka-* m. 'a demonic creature' (Rigveda 7,104,22)

Pāli *suṃsumāra-*, *susu-* m., *susukā-* f. 'crocodile', 'dolphin'
 Prakrit *suṃsumāra-*, *susumāra-* m. 'crocodile', 'dolphin'
 Kashmiri *sūs^dmār* m. 'dolphin'
 Sindhi *sesaru*, *sīsār*, *sīsar* m. 'large crocodile', *sūnsar* (and *bhulan*) 'river dolphin' (Lüders 1942: 70, on the basis of *Fauna of British India, Mammalia*, p. 590)
 Lahnda *sisār* m. 'crocodile', *sinsār*, *sansār*, *sīmsār* 'gharial'
 Punjabi *sansār* m. 'crocodile'
 Hindi *sūsmār*, *sūs*, *sūis* m. 'dolphin'
 Kumaoni *sus*, *suis* 'dolphin'
 Nepali *sus*, *suis*, *sos* 'dolphin'
 Assamese *xihu*, (Prater 1971: 313:) *hiho*, *seho*, *buh* 'river dolphin'
 Bengali *śiśuk*, *śuśuk*, *śiśū* 'dolphin'
 Gujarati *sasumārūṃ* n. 'aquatic animal', *susvār*, *susvāl*, *sosvār*, *sosvāl* f. 'crocodile'
 Marathi *susvar*, *susar* f. 'crocodile'
 Konkani *śisari* 'crocodile'

Loanwords from Indo-Aryan in Nuristani include:

Waigali *čucumī* 'lizard'
 Kamdeshi *čac³m* 'large lizard'

Loanwords from Indo-Aryan in Iranian languages include:

Tajik *šuśmār* 'lizard'
 Baluchi *šuśmār* 'large lizard'
 Ormuri *šuśmār*, *samsāṣ^ri* 'large lizard'
 Pashto *samsara*, *samsāra*, *sīmsār* 'lizard'

Loanwords from Indo-Aryan in Dravidian languages include:

Tamil (Jaffna dialect) *kiñcumāram* 'crocodile'

A very thorough analysis of *śiśumāra-* and its cognates appears in Lüders 1942: 61-81; on pp. 69-70, the meaning of 'crocodile' in Gujarat and the Deccan is supported by the fact that these areas lie outside the distribution of the river dolphin (Turner 1966 and 1985: no. 12426).

The word *śiśumāra-* literally means 'baby-killer'. The transformation of *śiṃśumāra-* into *śiśumāra-* can be explained by folk etymology, but the reverse is difficult to substantiate (as the nasalization in *śiṃśumāra-* is never found in the word *śiśu-* 'child'; see Turner 1966: no. 12476 and Mayrhofer 1996: II, 641). Therefore, it is assumed that the earlier attested *śiṃśumāra-* is the original form, based on some unidentified non-Aryan source, in which case *māra-* might be a contraction from *makara-* (Lüders 1942: 80-81; the *māra-* < *makara-* development was proposed already by Coomaraswamy 1931 II: 52 n. 2). We shall return to this etymology in the section on Indus civilization.

Sanskrit *culukin-*, *culūpin-*, *culumpin-* 'dolphin'

Another, albeit only lexically attested, group of Sanskrit words for 'porpoise, dolphin' (see Somadevasūri in his Yaśastilaka II,216,2 *culukī* = *śiśumārī*, and Lüders 1942: 62 n. 2) includes the following: *culukin-*, *culūpin-*, *culumpin-*. There is no doubt that Burrow (1948: 367) has correctly connected these with Sanskrit *ulupin-* and *ulapin-* 'porpoise', deriving them from Dravidian (cf. Kannada *uṇaci-mīnu* and Telugu *ulaca-mīnu*, *uluca* 'porpoise' (DEDR 602))⁵. The ultimate etymology of these words may be the Proto-Dravidian root **cul-* 'to move about, go round, wander about' (DEDR 2693).

Sanskrit *grāha-* 'crocodile', 'snake'

As Lüders (1942: 63) has noted, Sanskrit *grāha-* is an indefinite expression. Literally meaning 'grabber', from the root *gra(b)h-* 'to grab-', it is of Indo-European origin and related to English *grab*. In female gender (*grāhi-*), it occurs as early as the Atharva-Veda (3,2,5; 3,11,1; 6,112,1-2; 6,113,1 and 3; etc.) in the sense of 'seizure' causing illness; the masculine *grāha-* is found in this meaning in the Brāhmaṇa texts (ŚB 3,5,3,25; 3,6,1,25). In classical Sanskrit, *grāha-* denotes a beast of prey living in the water (rivers, lakes, or the sea). Besides 'crocodile', it also means 'shark' and 'water-snake' (Böhtlingk and Roth 1858 II: 862-863).

Referring in chapter 38 to the Indus (i.e., "the Sinthos River, mightiest of the rivers"), the first-century CE Greek text "Circumnavigation of the Red Sea" states: "An indication to those coming from the sea that they are already approaching land in the river's vicinity are the snakes [ὄφεις] that emerge from the depths to meet them; ... the snakes called *grāai* [γράαι]" (trans. Casson 1989: 73). The text clearly quotes Sanskrit *grāha-* (there is no intervocalic *h* in Greek), having 'snake' in meaning. From maritime reports from the 18th century, Casson (1989: 187) cites "Carsten Niebuhr, [who] writing of his voyage in 1763, reports...that his approach to India's west coast was carried out with the greatest safety thanks to 'viele kleine Schlangen, 12 bis 18 Zoll lang, auf der Oberfläche der See...'" The "Circumnavigation" also reports water snakes off the Persian coast (chapter 38); the Gulf of Kutch, where they are "huge and black" (chapter 40); the Gulf of Cambay, where they are "smaller and yellow and golden in colour" (chapter 40); and the Malabar coast, where they are black but "shorter and with dragon-shaped head and blood-red eyes" (chapter 55). Crocodiles are not indicated here, since the text refers to crocodiles in chapter 15 (monitor lizards are probably meant) and chapter 30 (in addition to

vipers and huge lizards)⁶.

In Old Tamil, Sanskrit *grāha-* has become *karāam*, *karām*, *karā*, *karavu*, all of which denote '(male) crocodile' (see above).

SOUTH ASIAN CROCODILE CULTS AND CONCEPTIONS

William Crooke (1926: 376-377 et alibi) collected a wealth of data on religious conceptions and customs related to crocodiles in South Asia. Below I have supplemented Crooke's data from some other sources and organized it by subtitles.

Gods and spirits connected with the crocodile

The Makara "is well known as the vehicle of Varuṇa and the banner of Kāmadeva, and it is significant that these deities are sometimes identified; and as the vehicle of various Yakṣas and Yakṣīs, and of the river-goddess Gaṅgā" (see Coomaraswamy 1931 II: 47 and pp. 53-56, where the Moon is also mentioned as having a makara vehicle; on makara as the vāhana of Varuṇa and Gaṅgā, see also Mallmann 1963: 233). According to South Indian texts, Gaṅgeya-Subrahmaṇya (this appellation was given to Skanda because of his birth in the Ganges) has the makara as his vāhana (Gopinatha Rao 1916 II: 441; Liebert 1976: 91, 166). Skanda corresponds to Tamil Muruku, who is simultaneously the god of war and the god of love (for the Harappan origin of Skanda and Muruku, see also Parpola 1994: 225-239). According to Daniel (1983: 12), "the crocodile is the vehicle of Niridhi [i.e., Nirṛti 'Destruction'], the regent of the SW point of the compass."

Among the Hindu gods included in the pantheon of Tantric Buddhism is Varuṇa (also called Samudra 'Ocean'). While sometimes seated on a moon that is supported by a snake, more commonly he has the makara as his vehicle (Mallmann 1975: 437). In Japan, one finds more than 700

shrines to Konpira, a deity of the sea, who assures marine safety, successful fishing, and avoidance of misfortune. The Japanese name Konpira, also Kubira, goes back to Sanskrit *kumbhira-* 'crocodile'; in Buddhist texts, this name is (among other things) used for one of the twelve Yakṣa generals (Thal 2005; Teeuwen 2006; Edgerton 1953: II, 187b; Lokesh Chandra 2002: VI, 1757b-1760a). There is another deity in Tantric Buddhism associated with the makara (Mallmann 1975: 6): of Vaiṣṇava origin, Madhukara ('Honey-maker') is represented as a young man holding a banner with the image of makara (*makaradhvaja-*) and having a parrot vehicle (*śuka-ratha-*); these are all characteristics of Kāma, the Hindu god of love (Mallmann 1975: 234-235; on the iconography of Hindu Kāma, often identified with Pradyumna, the son of Kṛṣṇa Vāsudeva, see also Mallmann 1963: 47-48).

One reason for the crocodile's association with the god of desire is undoubtedly its voracious appetite. The crocodile is a personification of sexual desire, not only in India but also among African tribes (Ganslmayr 1969).

An earring in the shape of a crocodile (*makara-kunḍala-*, *nakra-kunḍala-*) is worn in the right ear of the fierce form of Śiva (Rudramūrti), as well as by Viṣṇu (Liebert 1976: 166). Crocodiles are regarded as abodes for the souls of ancestors (Majumuria 1991: 194). And the crocodile is regarded by Hindus as "an ally of a magician" (Majumuria 1991: 194).

Eating of crocodiles

"Though some Hindus worship them, the fishing tribes have no scruples about eating them, in spite of the unsavoury taste of their flesh. Sir S. Baker (Wild beasts and their ways, chapter xiii) says: 'I have eaten almost everything, but although I have tasted crocodile I could never succeed in swallowing it. The combined flavour of bad fish, rotten flesh, and musk is the *carte de diner* offered to the epicure.'

The Kanjar gipsy of Behar rejects beef, but loves crocodile flesh; and so do the Irulas of Madras, the jungle tribes of the Central Provinces, the Mor fishermen of the Indus, and the Malláhs and Koch fishermen of Bengal" (Crooke 1906: 113).

"One sub-caste of Dhīmar fishermen in the Central Provinces must kill and eat a crocodile at their marriage, and the Sonjharas or gold-washers, catch a crocodile alive, worship it, and when the rite is done they let it return to the river (R. V. Russell, *Chhindwāra Gazetteer*, Allahabad, 1907, i.75)" (Crooke 1926: 377).

"[T]he liver of a crocodile is used as a charm and its various viscera are used in medicines" (Majupuria 1991: 194).

Dread of the crocodile and its use for defence in moats and for execution

"Crocodiles... are dreaded for their habit of attacking men and animals" (Crooke 1926: 376). "Crocodiles have been utilized in India to prevent the escape of prisoners from forts, in moats of which they used to be preserved. Captain Hervey describes the fort of Vellore as guarded in this way by Hyder Ali. Tavernier, writing of Bijapur, says of the king's palace: 'What causes the approach to it to be difficult is, that in the moat which surrounds it, and which is full of water, there are many crocodiles.' General Mundy gives a similar account of the fort of Barabati, near Cuttack; and the old traveller, Caesar Frederick, describing Pegu in Burma, says: 'It is a great citie, very plaine and flat, and four-square, walled round about, and with ditches that compass the walls round about with water, in which ditches are many crocodiles.' These creatures, according to Sir H. Yule, were there as late as 1830" (Crooke 1906: 111-112).

Old Tamil texts speak of crocodiles guarding the city in the moats surrounding the walls (see above).

According to Aelianus (N. An. 12,41), being "most voracious and cruel eaters of flesh, Gangetic

crocodiles are "used as ministers of vengeance upon evil-doers; for those convicted of the greatest crimes are cast to them; and they require no executioner" (Figure 8).

Killing of crocodiles

"Crocodiles and alligators are usually worshipped by Hindus. Anyone who kills a crocodile is supposed to take the form of a crocodile after death. ... Killing of a crocodile is considered to be a serious crime ... Crocodiles are only killed when they show hostility to man" (Majupuria 1991: 194).

"There is an interesting story about a crocodile and an elephant. Once an elephant stepped into a lake to quench his thirst. After drinking deep, he took water in his trunk and gave it to his wife and children. At the same time, an angry crocodile attacked him. The struggle continued. The elephant grew weaker. Therefore, he prayed to Vishnu, the Supreme Being. Vishnu seated on a Garuda, with attendants or devas immediately appeared at the site. He cut off the neck of the crocodile with his discus (chakra) and saved the elephant. It is described that the elephant was a Gandharva in his former life, who was cursed by a saint on being disturbed by the former. This saint Rishi was reborn as a crocodile. Gandharva was born as an elephant. It also indicates that the sensual pleasures are taken away and, therefore, salvation is essential" (Majupuria 1991: 194). Gajendramokṣa, or 'the release of the elephant king' (from the clutches of a crocodile), is an important motif of the Kathakali theatre of Kerala.

Crocodile and human sexuality and fertility

The protuberance on the tip of the male gharial's snout is believed to be a potent medicine for virility: "The male gharial bears an outgrowth, called the '*Ghara*' in the local vernacular, on the tip of its snout. Since superstitious belief attributes various mystical powers to this *ghara*, males are often killed to collect their snouts" (Maskey and Mishra 1982:

185) (Figure 10).

"At the tank at Khán-Jahán Ali in Jessore young married women feed the monsters [i.e. the crocodiles] in the hope of being blessed with offspring" (Crooke 1906: 112).

"Women in performance of a vow used to throw a first-born son to the crocodiles at the mouth of Hooghly in the hope that such an offering would secure them additional offspring (H. H. Wilson, *Essays*, ii. 166 f.; Ward, ii. 318 f)" (Crooke 1926: 377).

Ward provides uniquely detailed testimony on the practice of this cruel custom in the beginning of the 19th century, when the British had not yet stopped it. Ward's work was first published in 1811 (in four volumes comprising 2055 pages). Crooke quotes its second edition as having two volumes, the latter of which came out first (in 1815). Both of these were printed at Serampore in Bengal. Having accessed the third edition in four volumes (printed in London in 1817-1820), I found several relevant passages that partly overlap and partly complement each other. Because the topic is important for the present study, I quote them all in extenso, modernizing the transcription of the Sanskrit:

"There are, however, many mothers among the Hindoos, who, in fulfilment of a vow to obtain the blessing of children, offer the first-born to the deity to whom this vow has been made. These offerings are frequently made by drowning the child in the Brahmaputra, a river on the eastern side of Bengal. In these immolations the mother encourages her child to pass into the stream beyond its depth, and then abandons it, remaining on the bank an inactive spectator of the struggles and cries of her expiring infant. These 'children of the vow' used also to be offered at Saugar Island; and here the Hindoo mother was seen throwing her living child into the mouth of the alligator, and watching the monster whilst he crushed its bones and drank its blood! The Marquis Wellesley peaceably and successfully

prevented these immolations, by sending a small party of Hindoo sepoy down to the spot at the annual festival held on this island" (Vol. I, p. xl-xli). "The people in some parts of India, particularly the inhabitants of Orissa, and of the eastern parts of Bengal, frequently offer their children to the goddess Gangā. The following reason is assigned for this practice: — When a woman has been long married, and has no children, it is common for the man, or his wife, or both of them, to make a vow to the goddess Gangā, that if she will bestow the blessing of children to them, they will devote the first-born to her. If after this vow they have children, the eldest is nourished till a proper age, which may be three, four, or more years, according to circumstances, when, on a particular day appointed for bathing in any holy part of the river, they take the child with them, and offer it to this goddess: the child is encouraged to go farther and farther into the water till it is carried away by the stream, or is pushed off by its inhuman parents. Sometimes a stranger seizes the child, and brings it up; but it is abandoned by its parents from the moment it floats on the water, and if no one be found more humane than they, it



Figure 10 Snout of the male gharial (photo Bo Link 200)

infallibly perishes. The principal places in Bengal where this species of murder is practiced, are, Gangā-Sāgara, where the river Hoogly disembogues itself into the sea; Vaidyavatī, a town about fourteen miles to the north of Calcutta; Trivenī, Nadiya, Chākdah, and Prayāga" (Vol. IV, p. 122).

"There are different places of the Ganges where it is considered as most desirable for persons thus to murder themselves, and in some cases auspicious days are chosen on which to perform this work of religious merit; but a person's drowning himself in any part of the river is supposed to be followed with immediate happiness. At Sāgara island it is accounted an auspicious sign if the person is speedily seized by a shark, or an alligator; but his future happiness is supposed to be very doubtful if he should remain long in the water before he is drowned. The British Government, for some years past, has sent a guard of sepoy to prevent persons from murdering themselves and their children at this junction of the Ganges with the sea, at the annual festivals held in this place (Vol. IV, p. 116-117).

"In the year 1806, at this place, I saw a brāhmaṇī (dripping with wet and shivering with cold) who had just been prevented by the sepoy from drowning herself; — and during my continuance there I heard of several mothers who had been prevented from murdering their children" (Vol. IV, p. 117, n.1).

"In the eastern parts of Bengal, married women, long disappointed in their hopes of children, make an offering to Gangā, and enter into a vow, that if the goddess will give them two children, they will present one to her: and it is not uncommon for such women to cast the first child into the river as an offering; but it is said, that at present some relation or religious mendicant stands ready to preserve the life of the child. The mother cannot take it again, but this person adopts and provides for it. These offerings are made on the tenth of the moon in Jyaiṣṭha, and on the 13th of Caitra" (Vol. III, p. 275).

Crocodiles in temple tanks, especially at Magar talão near Karachi

"The Hindu temples are usually constructed on the banks of various rivers and tanks where these reptiles are found. Therefore, devotees have been offering food to these sacred animals which were tamed by the priests" (Crooke 1906: 112).

"The Rāja of Jaypur protects them in the lake at Amber, and will not allow a shot to be fired in their neighbourhood)" (Crooke 1906: 112).

"[A]t the tank at Pīr Pokhar, near Pandua in Bengal, one of them [crocodiles], called by the name of Fateh Khān, "Lord of Victory", when called, comes to the surface and is fed" (Crooke 1906: 112).

"Buchanan-Hamilton ([quoted in Martin's] *Eastern India* [1834], iii.59) describes a tank at Purneah in Bengal dedicated to a saint, and inhabited by a pair of crocodiles which are identified with the saint and his wife. When deprived of the usual victims supplied by the pilgrims they became exceedingly voracious, and just before the traveller's visit carried off a young man who was watering a buffalo. 'The natives, far from being irritated at this, believed that the unfortunate man had been a dreadful sinner, and that his death was performed (sic) by the Saint merely as a punishment'" (Crooke 1906: 112).

"The dangerous nature of the reptile has invested him, like the tiger, with sanctity. Tame crocodiles are protected and fed in many places, as in the famous Magar Talão, or 'Crocodile Tank', near Karāchi" (Crooke 1906: 112) (Figure 11).

"Crocodiles are often kept in semi-captivity, usually in association with a religious establishment. Notable among these is the Mugger Pīr at Karachi in Pakistan" (Daniel 1983: 12, with reference to Moses 1948).

"At Magar Talão, 'crocodile tank', near Karachi, in connection with the cult of Pīr Mango, who

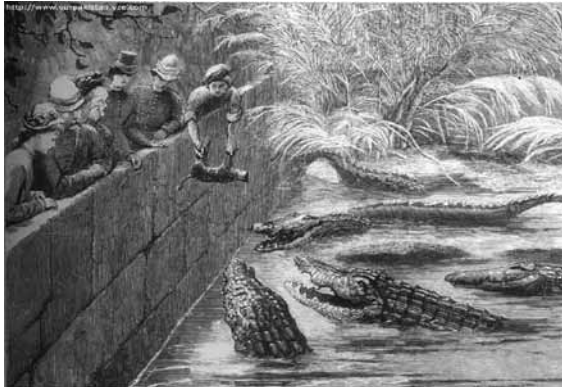


Figure 11 Feeding of crocodiles at the Magar Talão of Mango Pir in 1878 (from <http://www.ourpakistan.vze.com>)



Figure 12 Mango Pir in 1850 (from <http://www.ourpakistan.vze.com>)

caused a stream to trickle out of the rock, tame crocodiles are kept and fed by pilgrims (R. F. Burton, *Sind revisited*, London, 1877, i. 92ff.; E. Balfour, *The cyclopaedia of India and of eastern and southern Asia*, Madras 1858, i. 838f)" (Crooke 1926: 377).

Approximately 700 years ago, there lived a Hindu dacoit named Mango Pir, who was notorious for looting caravans. Impressed by the teachings of Baba Farid, he converted to Islam. Pleased with Mango's devotion, Farid gave him the title of Pir. He went on to become a saint revered by Hindus and Muslims alike. While the crocodiles gifted to Mango Pir came either from Baba Farid or the Sindhi saint Lal Shahbaz Qalandar, the story goes that they were originally the lice of the saint, which turned into crocodiles when dropped into the pond (Baloch 2004: 12) (Figure 12). The practice of feeding crocodiles in pools attached to shrines in Sindh undoubtedly go back to local Hindu tradition; this seems to be reflected in Mango Pir's Hindu background.

The tribal crocodile cult of Gujarat

"The crocodile is worshipped as an object of terror. In Baroda the crocodile god, Magar Deo, is worshipped once a year to protect men and animals from the attacks of these monsters, and also as a preventive against illness. The deity is represented by

a piece of wood in the form of the animal, supported on two posts (Dalal, i. 157)" (Crooke 1912: 9a).

"Some of the wild tribes in Baroda, to avert injury to men and animals as well as sickness, worship Magardeo in the form of a piece of wood shaped like a crocodile and supported on two posts (J. A. Dalal, *Census Report: Baroda*, Bombay, 1902, i. 157)" (Crooke 1926: 377).

In 1969, Dr. Eberhard Fischer (of the University of Heidelberg in Germany, later of the Rietberg Museum in Zürich, Switzerland) and Shri Haku Shah (of the Tribal Research and Training Institute at the Gujarat Vidyapeeth) documented in fair detail this crocodile cult in southern Gujarat. Unaware of Dalal's reference, they believed that they had discovered a previously totally unknown cult. In one year, they made three field trips, visiting by jeep more than fifty villages of the Choudhri, Gamit and Vasava tribes in the tribal areas of the Surat District. In their documentation of sanctuaries, they researched the way in which wooden statues of these crocodile gods were made and interviewed oracle priests (*bhagat*) and other informants on their significance. The results were published in 1971 in a jointly authored booklet entitled *Mogra Dev: Tribal crocodile gods*. The most important findings are summarized below.

Worship of the crocodile gods is both communal and individual. The principal reasons for communal

worship include asking for boons of cows and milk, as well as offspring and good crops. Residents of Devalpada village explained: "The cows from this village were not giving milk and they were not having calves. After installing this crocodile, we got milk and calves." In Amba village, people said: "This crocodile has been installed because the people did not get sons. The tiger was eating their cattle and the crops were spoiled. The (crocodile) god proved good and true. All twelve months they worship the crocodile." And one person interviewed in Jamkhadi said: "Four buffaloes have come to my house. They have been sent by *hela mogra* ['cool crocodile']. (The god) cool crocodile comes walking and gives. Human beings drink milk." Another added, "Man's life is like mogra's life. That is why we offer milk to the crocodile as well" (Fischer and Shah 1971: 39-41).

For individuals, getting children is the most common reason to install crocodile icons. An informant from the village of Singhpur told: "This man had no sons. When he was old (about 70 years ago), in his dream the crocodile-god said: 'Put me,' and the man got the crocodile made and installed." In Sakerda village, one finds similar anecdotes: "One woman was getting no son. She took a vow that she would install a crocodile and worship it after having born a son. That was before 45 years. She got a son and installed this crocodile." And, "Manyo Bhondo had no sons. When he had got his first son, he installed the crocodile. That son is still alive" (Fischer and Shah 1971: 39).

The crocodile god also helps with sorcery and illnesses. A resident of Bhatvada village explained: "If a ghost or a witch has entered someone's body, he will worship. When such a person has become alright again, he will relieve himself of the vow taken when ill" (Fischer and Shah 1971: 41).

One finds another mode of worship in the villages near Mandvi, where Chodhris install undecorated, one-headed crocodile icons. They

usually do this once a year, during the time of *maha amas* (i.e., *amāvāsyā*, the new moon) in February. Carved by the village carpenter, the crocodiles are not worshipped before they are installed. When the crocodile is erected, a goat is killed and wine is offered. The priests and others drink wine as well (Fischer and Shah 1971: 38). In addition to wine, milk is among the major offerings to the crocodile.

When the researchers expressed their wish to have a crocodile image for the museum, a bhagat hesitatingly agreed to carve a crocodile after being promised the raw material (i.e., a block of wood taken from a teak tree ritually felled for this exact purpose), the articles necessary for the installation ceremony, and a fee for his work. The carved crocodile had to be formally installed, even if it was going later to a museum. This was considered essential by the bhagat. In the evening, a plot of ground under a tree near a broken well was cleared and leveled. After the crocodile was placed on a support post, it was taken down and sprinkled with water, and then fixed again to the post. The bhagat muttered to the crocodile a formula in Gujarati, ending with the words "goddess crocodile, we offer you worship." He then sprinkled grain on the crocodile and deposited another handful of grain in a shallow depression in the center of its body. A coconut was offered, broken on a stone and placed near the post. A cock was held in front of the post, before being taken away to be killed by a helper with a sickle. Vermilion and oil were mixed in a bowl, and then smeared with coconut fibres on the crocodile and the post. Women from neighbouring houses gathered around the crocodile and sang a marriage song to it, describing the new owner as the bridegroom, come to fetch Hela Mogra to his village. Then rice was once more offered to the crocodile, wine was poured on the ground in front of it, and the bhagat uttered: "If children are asked, give children; if money is asked, give money; if grain is asked, give grain; if service is asked give service;

give everything asked for. We offer you worship, gift of chicken, gift of coconut, gift of rice, offering of wine is given." The cock was plucked, cut into pieces and roasted. After the liver and heart were offered to the crocodile with a few drops of wine, the participants feasted on the chicken and drank the remaining wine (Fischer and Shah 1971: 18-32).

The majority of wooden crocodiles were found in the bountiful sanctuaries of Dudhmogra (Mandvi Taluk), Devlimadi (Songadh Taluk) and Devmogra (Zagbara Taluk). Often, however, just one or two crocodiles remained in sanctuaries. These tended to be located not in the immediate vicinity of the village, but at a remove, near places where other gods or ancestors were worshipped. They were always found near fields, rarely by a creek or pond, and usually beneath a group of trees or a roof supported by wooden posts (covering the crocodile to keep it cool) (Fischer and Shah 1971: 13, 17). Most of the icons were old, showing signs of a lack of care (Figure 13). This reflects the gradual discontinuation of the cult (Fischer and Shah 1971: 17). To a few crocodiles, however, offerings of cocks, grain, food or money had been recently made.

The icons have two basic forms. The Chodris of the Mandvi Taluk erect a relatively realistic crocodile with one head, a body, and a tail. The body, which is octagonal in section, is usually only ornamented with grooves (imitating reptile scales). As the crocodile revolves on its post, it is thought to be alive, able to see with its eyes and turn around. The mouth of the crocodile should point towards the sunrise; if it points to the north or the sunset, it is believed that something bad will happen. There are also stories of it biting hands that have been put into its mouth (Fischer and Shah 1971: 13-14, 17) (Figure 14 and 15).

The Gamits and Vasavas also make wooden crocodile figures mounted on poles, but these usually have one body and a crocodile head at both ends. The body, which is square in section, is

ornamented with reliefs or chiselled motifs (Fischer and Shah 1971: 15) (Figure 16). The most common ornamental motifs are the sun and crescent moon (Figure 17), followed by two horse riders separated by a standing figure (Figure 18). Aquatic animals are also common (Figure 19), while less frequent motifs include birds and cattle.

The description of two-headed icons by Gamit informants in the village of Ghoda (near Songadh)—"*Mogra* is a couple by itself: one side is male, one side is female" (Fischer and Shah 1971: 38)—suggests that an older tradition of two crocodile images was supplanted. "The fact that quite often two crocodiles are standing together was explained in Karoli: 'There must be two. As we are men and women, we have to install two'" (Fischer and Shah 1971: 37). One is reminded of Francis Buchanan Hamilton, reporting from Purneah in Bengal at the beginning of the 19th century about a water tank "dedicated to a saint, and inhabited by a pair of crocodiles which are identified with the saint and his wife" (Crooke 1906: 112).

"In some places, however, the crocodile can be accompanied with a pole instead of a second crocodile... Chhania Holia explains it [like this]: 'This *khambh*, pole, was installed together with *mogra*, crocodile. It is called *mogra nu jodu*, crocodile's partner (pair). *Khambh* is husband, *mogra* is wife. It was like this in the old sanctuary as well... It is the same with human beings in the house: it needs a couple'" (Fischer and Shah 1971: 38).

The pole tends to be of the same height as the crocodile, square in section, chamfered and terminating in a spherical form. (Fischer and Shah 1971: 16) In this sense, it bears great resemblance to the shape of linga statues!

The installation ceremony ends with *sindur* being applied to the crocodile and the post, women singing a wedding song of the crocodile goddess, and general feasting (Fischer and Shah 1971: 30-31).



Figure 13 Dudhmogra crocodile sanctuary
(after Fischer and Shah 1971: Plate 3)

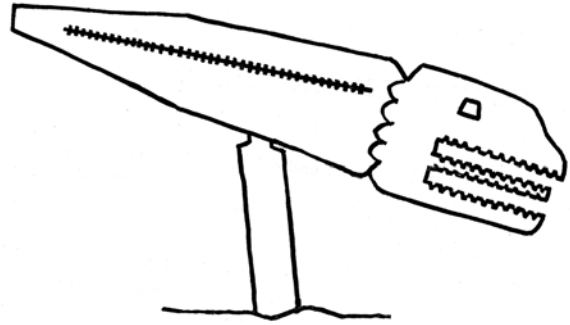


Figure 14 Tailed crocodile image on a pole
(after Fischer and Shah 1971: 14)



Figure 15 Devlimadi crocodile sanctuary
(after Fischer and Shah 1971: Plate 2)

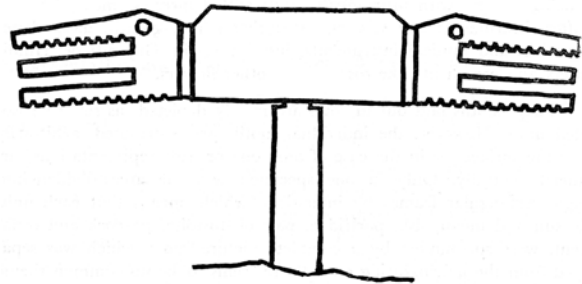


Figure 16 Two-headed crocodile image on a pole
(after Fischer and Shah 1971: 15)



Figure 17 Jundaria Vadia crocodile sanctuary
(after Fischer and Shah 1971: Plate 9)



Figure 18 Riders carved on a two-headed crocodile image
(after Fischer and Shah 1971: Plate 10)



Figure 19 Fish and other watery animals carved on a crocodile image
(after Fischer and Shah 1971: Plate 17)



Figure 20 A Mature Harappan painted pot with two gharials set on poles. from Amri III
(after Casal 1964 II: Figure 75 no. 323)

Fisher and Shah report many legends connected with the history of the crocodile cult and its origin, a number of which are shown in carvings on the two-headed crocodile images. From these, the researchers came to the following conclusion: "The tracing of tribal cultures of Gujarat to prehistoric findings, seems to us out of place and in a future analysis we shall show, that elements from these tribal cultures tend more to be degenerated forms of much later traditions rather than stagnated primitive cultures" (Fischer and Shah 1971: 7-8).

CROCODILE IN THE INDUS CIVILIZATION

Harappan background of the Gujarati crocodile cult

This position by Fischer and Shah is in direct opposition to that of Sir John Marshall who, after quoting beliefs and practices historically connected with crocodiles in South Asia, came to the following carefully formulated conclusion: "The foregoing facts respecting the present-day worship of these animals afford, of course, no proof that they were similarly worshipped five thousand years ago. In a country, however, which is as conservative as India, particularly in regard to its religious cults, these

facts are not without real significance; and when we find, as we do, that most of the elements which make up this prehistoric religion [of the Indus Civilization]—so far as we can at present analyse them—are perpetuated in later Hinduism, we are justified in inferring that much of the zoolatry which characterizes Hinduism and which is demonstrably non-Aryan, is also derived from the prehistoric age" (Marshall 1931: I, 73).

Marshall, of course, was not familiar with the studies of Fischer and Shah, which would be published forty years later. But evidently Fischer and Shah did not know about the artifacts excavated at Amri in the lower Indus Valley by Jean-Marie Casal (Casal 1964 II: fig. 75 no. 323). In particular, one incompletely preserved Mature Harappan painted pot depicts—in addition to a fish, a small circumpunct and an indistinct (animal?) figure—two long-snouted crocodiles with pole-like extensions projecting at a ninety degree angle from their lower body to a painted border that can be interpreted as the earth (Figure 20). When I included the picture of this potsherd in my book *Deciphering the Indus script* (Parpola 1994: 180 Figure 10.1e), I wondered what these extensions might be. I looked in vain in Casal's excavation report for an explanation, but he does not discuss the motif in any detail. When studying Fischer and Shah's work on the Gujarati crocodile cult, however, this puzzling potsherd came to mind. The Gujarati crocodile images installed on poles clarify this unique Harappan picture perfectly. Not only did Gujarat belong to the Harappan realm, but the tribal peoples living in its remote jungle villages are the most likely to have preserved stagnated prehistoric cults. In my opinion, we have clear proof here that the Harappan religion has survived even four thousand years after the collapse of the Indus Civilization. It goes without saying, therefore, that I fully endorse Sir John Marshall's view that "most of the elements which make up this prehistoric religion ... are perpetuated in later

Hinduism," including "much of the zoolatry which characterizes Hinduism and which is demonstrably non-Aryan."

Crocodile on Indus seals and tablets

The crocodile is depicted four times as the main heraldic animal on Indus seals, all of which come from Mohenjo-daro (M-292, M-293, M-410, M-1223). One of the seals is broken and has nothing but the crocodile left (M-1223). Another seal, of the rectangular type, has no script but a crocodile with a fish in its mouth, drawn in the same way as the 'fish' signs of the Indus script (M-410). In both cases, the crocodile appears to be the gharial. In addition, there is also a seal with a tiger as the main heraldic animal (M-1923) that features carvings of the gharial on both sides (Figures 21-25).

Although the crocodile is relatively rarely depicted in the Indus seals, it appears to have occupied a fairly central position among the sacred animals of the Harappans. In some moulded tablets, which have two slightly different variants (see M-440 A and M-1395 A in Figure 26 and 27), the crocodile is the central figure and much larger than the other animals surrounding it.

Fertilization of a human female by gharial

On the A side of Indus tablet H-180 (Figure 28), according to John Marshall (1931: 52), "a nude female figure is depicted upside down with legs apart and with a plant issuing from her womb." For Marshall, this appeared to be a "striking representation of the Earth Goddess with a plant growing from her womb." When the tablet was published in the Harappa excavation report, this interpretation was followed by Vats (1940: I, 42) and later by many others. Mortimer Wheeler (1968: 106), however, speaks of "a nude woman upside down giving birth to what has been interpreted as a plant but may equally well be a scorpion or even a crocodile." Iravatham Mahadevan (1977: 796 no.

70) posits that the tablet depicts "a crab (?) issuing from her womb." Alternatively, Ute Franke-Vogt (1991: I, 90) identifies the scene as the birth of a turtle: "Aus dem Körper scheint ein Vierfüssler, dessen Schwanz noch mit dem Schoss verbunden ist, geboren zu werden. Möglicherweise handelt es sich um eine Schildkröte." But the direction of the animal's legs clearly shows that what is touching the vagina is not the tail, but a long snout. This apparently reveals the gharial in the act of fertilizing the woman.

We have already seen that folk belief ascribes phallic properties to the protuberance on the tip of the male gharial's snout. Among the native names of gharial, Daniel (1983: 15-16) lists Oriya *thantia kumhira*, with *thantia* deriving from Sanskrit *tunḍa-* 'beak, snout, elephant's trunk' (see above). Sanskrit *tunḍa-*, attested since the Atharvaveda, is a loanword going back to Proto-Dravidian **tunṭam*, **tonṭam*, **cuṇṭtu*, **conṭtu* 'beak, snout, elephant's trunk, pointed mouth of an animal' (DEDR 3311 and 2664). Proto-Dravidian had a homophonous word for 'penis', which in Tamil and Malayalam is represented as *cunṇi*, in Kannada as *tunṇi/tunṇe*, and in North Dravidian Kurukh as *conḍō* (DEDR 2666).

The gharial as 'embryo-maker': Indus signs no. 340 and no. 91

The reverse side of tablet C-34 from Chanhu-daro (Figure 29) shows several male gharials (with a swelling on the snout), together with fish. The long inscription on the obverse includes sign no. 354, which is clearly associated with the crocodile (and is discussed below), and a sequence of signs no. 340 and no. 91. This same sequence of signs is also used to conclude the four-sign inscription on a set of copper tablets from Mohenjo-daro (Figure 30), listed as A3 in my classification (Parpola 1994: 111); the first two signs are interpreted below as *val mīn* 'strong fish' = 'crocodile'.

Sign no. 340 (Figure 31) consists of two



M-292 A



M-292 a



M-293 A bis



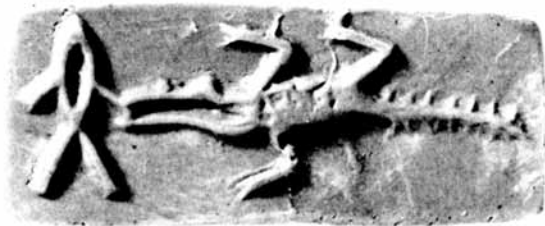
M-293 a

Figure 21 Indus seal M-292 (after CISI 1: 71)

Figure 22 Indus seal M-293 (after CISI 1: 71)



M-410 A



M-410 a

Figure 23 Indus seal M-410 (after CISI 1: 98)



M-1223 A



M-1223 A bis



M-1223 a



M-1223 C



M-1223 F



M-1223 B



M-1223 D



M-1223 E

Figure 24 Indus seal M-1223 (after CISI 2: 151)



M-1923 c



M-1923 a



M-1923 b



M-1923 e

Figure 25 Indus seal M-1923 (after CISI 3.1: 83)



M-440 A

Figure 26 Indus sealing M-440 (after CISI 1: 108)

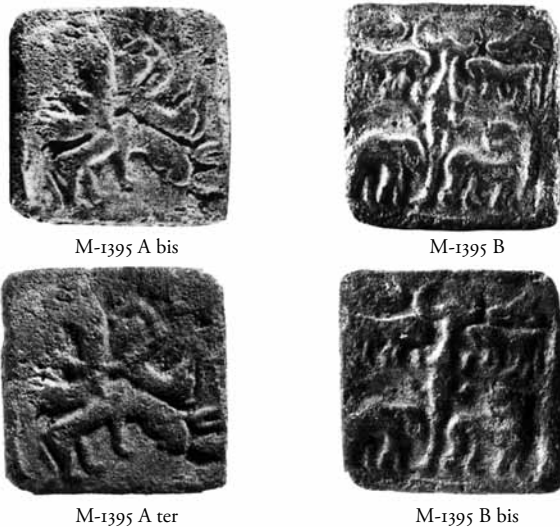


Figure 27 Indus sealing M-1395 (after CISI 2: 186)



Figure 28 Indus tablet H-180 (after CISI 3.1: 398)

components, each of which occurs separately on its own. One of these is sign no. 337 (Figure 32); I have interpreted "intersecting circles" as 'bangles' or 'earrings' = Proto-Dravidian **muruku* (DEDR 4979) = **muruku* 'boy child, young man' (DEDR 4978) (see Parpola 1994: 226-230). Sign no. 337 has been modified in ligature no. 340 by placing three strokes (either slanting or vertical) in the middle of the three spaces within the two "intersecting circles". In my opinion, these three strokes stand for sign no. 143 (Figure 33), "vertical strokes arranged into a triangle" representing the traditional South Asian 'kitchen fireplace consisting of three stones placed so as to make a triangle' = Proto-Dravidian **cullV / *cūl* (DEDR 2857; Turner 1966: no. 4879; Parpola 1994: 216-217, 298). This seems to function as a rebus for the Proto-Dravidian homophone **cūl* 'pregnancy' (DEDR 2733) in the two-sign sequence 'fireplace' + 'bangles' (Figure 34), which could stand for '(the god) Muruku of (i. e., causing) pregnancy'; I now prefer this interpretation to my earlier

suggestion of 'pregnancy bangles' used for protection (Tamil *cūl kāppu*), which are ceremonially given to the expectant mother during her first pregnancy in Tamil Nadu (cf. Parpola 1994: 218). United in a single sign in ligature no. 354, these components **cūl* + **muruku* suggest the meaning of 'pregnancy-baby' = 'embryo, foetus'.

In my list of signs (Parpola 1994: 72), sign no. 91 (Figure 35) occurs quite frequently. Because such frequency makes this an important sign, I have worked for decades to understand its pictorial significance. Some variants of the sign consist of a vertical rod that terminates in extensions, varying in number from three to five, either in a slanting row where the straight extensions become shorter and shorter, or arranged symmetrically on both sides of the central rod (usually with a little curve, making the variant with three extensions look like a trident). Because the number of extensions almost never exceeds five, I have often thought that the sign originally depicted the forearm ending in a hand with five fingers, which then became simplified in number. The common five-extension variants look a great deal like the Archaic Sumerian sign for 'hand'. The rare variants with more than five extensions start lower, however, giving the impression of a tree stem with branches.

The sign could, therefore, denote a Proto-Dravidian word that had both of these meanings, like **taṇṭṭal/*taṇṭṭu* 'arm' (DEDR 3048) and **taṇṭṭal/*taṇṭṭu* 'stalk, stem of plant, trunk of tree' (DEDR 3056). It could also serve as the pictogram for other words with similar meanings, like Proto-Dravidian **kayl/*key* 'hand, arm' (DEDR 2023), which was originally (as noun-verb; see Krishnamurti 2003: 196) the same as the Proto-Dravidian verbal root **kayl/*key* 'to do, make, create, cause, perform' (DEDR 1957) (for the semantic relationship, cf. Sanskrit *kr-* 'to do, make' and *kara-* 'hand', literally 'the doer, maker'). While the latter alternative would support the sign's high frequency

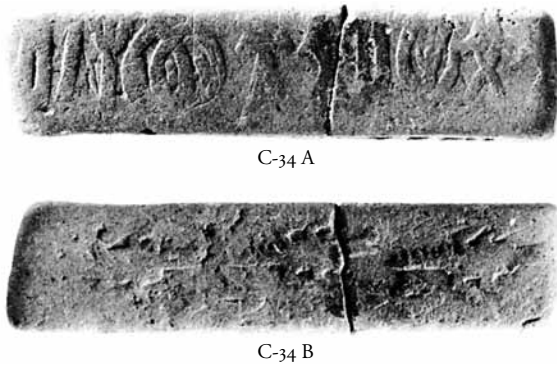


Figure 29 Indus tablet C-34 (after CISI 1: 336)

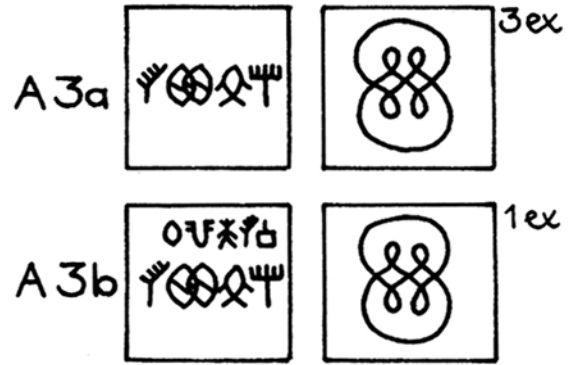


Figure 30 Copper tablets of type A3 from Mohenjo-daro (after Parpola 1994: 111, Figure 7.14)

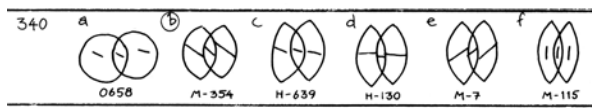


Figure 31 Indus sign no. 340 with variants (after Parpola 1994: 77, Figure 5.1)

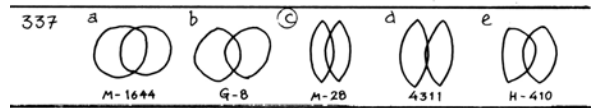


Figure 32 Indus sign no. 337 with variants (after Parpola 1994: 77, Figure 5.1)

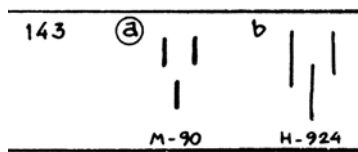


Figure 33 Indus sign no. 143 with variants (after Parpola 1994: 73, Figure 5.1)



Figure 34 Modern impression of the Indus seal H-147 (after Parpola 1994: 228 Figure 13.6)

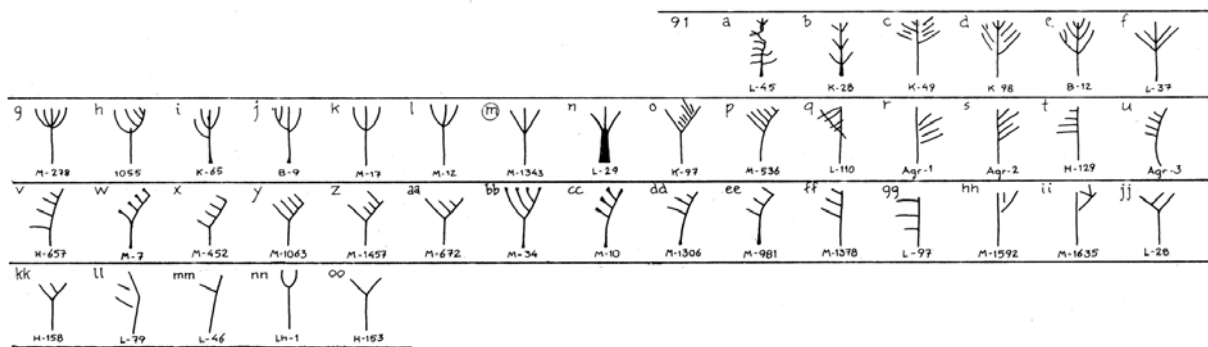


Figure 35 Indus sign no. 91 with variants (after Parpola 1994: 72, Figure 5.1)

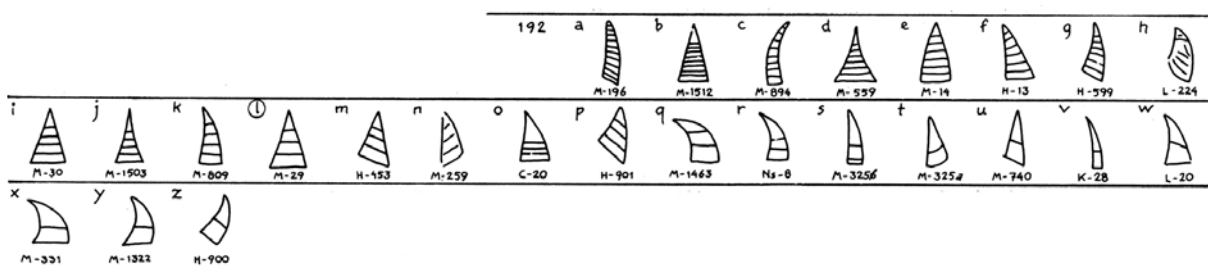


Figure 36 Indus sign no. 192 with variants (after Parpola 1994: 74, Figure 5.1)



Figure 37 Indus seal M-1135 (after CISI 3.1: 378)



Figure 38 Indus seal M-276 (after CISI 1: 381)

of occurrence, this tentative interpretation must be tested further⁷.

In line with these suggested interpretations, the crocodile (*val mīn*) would be called 'foetus-maker' in the copper tablets of type A3 (note that the two signs make a noun phrase in the additional line of text in the variant A3b tablet, also associated with the crocodile; see Figure 30) and in tablet C-34. Although the exact word meant for 'embryo' in this phrase remains open to interpretation, I was struck by the fact that *kaṭṭi* is found among the Tamil words for 'foetus'. The specific meaning 'foetus' seems to be recorded in Tamil alone, but the word is derived from Proto-Dravidian **kaṇṭṭV* 'clod, lump, concretion, anything hardened, coagulated, boil, abscess, swelling, tumour, round lump or ball (of food, butter), etc.' (DEDR 1148). This is the same etymon from which Assamese *ghāṭ* 'protuberance on the snout of gharial' and, accordingly, Sanskrit *ghaṇṭika-* and Hindi *ghariāl* are derived.

Harappan counterpart of Hindi *ghariyāl*: Indus signs no. 192 'rhinoceros' horn' and no. 134 'seven'

In Harappan sign sequences specifically connected with the gharial, one would expect to find the word

that provides the main etymology for the name *gharial*: namely Proto-Dravidian **kaṇṭṭV* 'swelling, lump, boil, abscess, protuberance' (whence Indo-Aryan *gaṇḍa* 'swelling' and *ghaṇḍa-* 'protuberance at the tip of gharial's snout'). Resembling the glans penis, the protuberance clearly has phallic significance. Indeed, Proto-Dravidian had a similar word for 'penis', **keṇṭV*, which has survived only in Kota (*geṇḍ*), Kannada (*geṇḍe*) and Gondi (*gēṭ* 'sexual intercourse') (DEDR 1949). See also Proto-Dravidian **kaṇṭan* 'a strong, manly male person, the male of animals' (DEDR 1173).

As we have seen, Indo-Aryan *gaṇḍa*/**geṇḍa-* also denotes 'rhinoceros', a South Asian animal distinguished by the large excrescence on its nose. Just like the male gharial's snout protuberance (which Aelianus compares with a horn), the "horn" of the rhinoceros is a phallic symbol that is in high demand as an aphrodisiac. The variants of Indus



Figure 39 Copper tablets of type B5 from Mohenjo-daro (after Parpola 1994: 111, Figure 7.14)

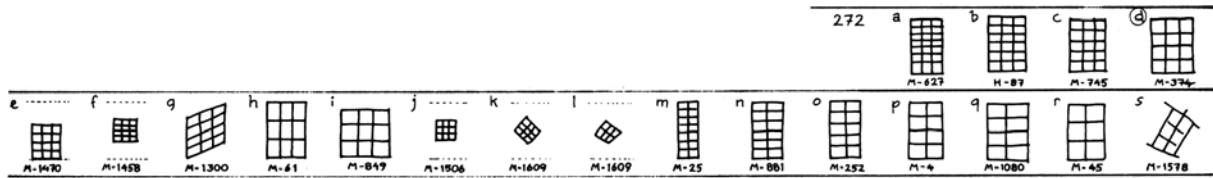


Figure 40 Indus sign no. 272 with variants (after Parpola 1994: 75, Figure 5.1)

sign no. 192 in my list (Parpola 1994: 74) (Figure 36) suggest that it depicts the "nose horn" of the rhinoceros; cf. the actual depiction of the nose horn on the seals M-1135 (Figure 37) and M-276 (Figure 38) from Mohenjo-daro. The copper tablets from Mohenjo-daro constitute a category of inscribed Harappan objects where the iconographic motif is demonstrably connected with the accompanying text. Only one type of these copper tablets depicts the rhinoceros; its inscription begins with sign no. 192 (Figure 39) (Parpola 1994: 110-112 and Figure 7.14 no. B5).

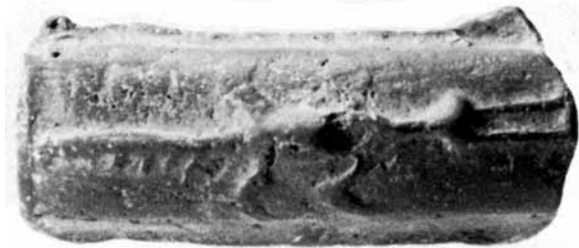
The second sign (no. 272 in Parpola 1994: 75; Figure 40) consists of a rectangle or square, which is divided in various ways into smaller parts. It could very well stand for Proto-Dravidian **tuṇṭṭi-* 'to cut into pieces, tear up, divide' and **tuṇṭṭam*, **tuṇṭṭu* 'piece, bit, slice, section, division, compartment, small plot of field' (DEDR 3310), which has a matching homophone in Proto-Dravidian **tuṇṭṭam* 'beak, bill, nose, snout, elephant's trunk' (DEDR 3311). Together the two signs would make a compound **kaṇṭṭV-tuṇṭṭam* '(animal) having a protuberance on its nose'; while this compound is hypothetical (its survival from Dravidian languages cannot be attested), it can be compared to Greek *rhīnó-kerōs* '(animal) having a horn on its nose', and to such Sanskrit compounds as *vakra-tuṇḍa-* 'having a curved trunk' (one of the names for Gaṇeśa, the elephant-headed god).

Another possible meaning for sign no. 272 is 'animal', cf. the latter part of the Sanskrit compound *gaṇḍa-mrga-* 'rhinoceros'. A good candidate would be Proto-Dravidian **māku-* 'animal, beast'. This

meaning is retained in Tamil *mā-*, which is used especially for horse, hog and elephant; in most Dravidian languages, however, it specifically denotes 'deer, antelope, stag, sambar' (being in this respect very similar to Sanskrit *mrga-*), as well as 'bull' (in Kodagu) or 'horse' (Telugu; cf. also Nahali *māv* 'horse') (DEDR 4780). This word has a (likely even etymologically related) homophone, which parallels the iconic meaning of sign no. 272: **māku-* 'net' (found in this shape in Tamil); although this etymon is attested in South Dravidian alone, it can be posited as Proto-Dravidian on the basis of having been borrowed into Sanskrit (Mahābhārata, Kālidāsa) in the forms *vāgura-* 'net' and *vāgurika-* 'hunter, deer-catcher' (which correspond to Tamil *mākular* 'hunters' and Kannada *māvuliga* 'man who uses nets for catching deer, etc.') (DEDR 4790; for the *m-/v-* and *-m-/l-v-* alternation, which



H-174 A



H-174 B

Figure 41 Indus tablet H-174 (after CISI 1: 207)



H-282 A



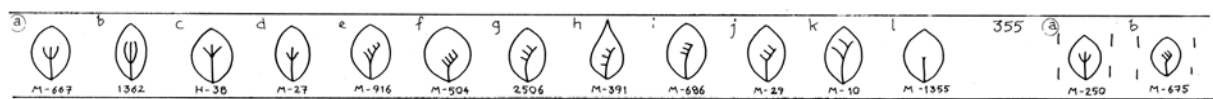
H-282 B

Figure 42 Indus tablet H-282 (after CISI 1: 223)

M-482 A



M-482 B

Figure 44 Indus tablet M-482 (after CISI 3.1: 387)**Figure 43** Indus signs nos. 354 and 355 with variants (after Parpola 1994: 77, Figure 5.1)

is frequent and quite widespread in Dravidian languages, see Zvelebil 1970: 125-128). Further confirmation is necessary, however, to provide a sensible interpretation for the frequently occurring sign sequence of no. 272 and no. 272.

Sign no. 192 begins with the inscription on the obverse of tablet H-174 (which has many duplicates), while the reverse shows the gharial (Figure 41). Sign no. 192 is followed here by sign no. 134, which consists of seven short vertical strokes and undoubtedly represents the numeral 'seven' (Parpola 1994: 73 and 81-82). 'Seven' was **ežu*, **ēžu* in Proto-Dravidian (DEDR 910). This may have served as a rebus for the Proto-Dravidian verb **ižu*, **ežu* 'to draw, pull, drag along the ground' (DEDR 504 a). In the present context, a likely derivative is the verb **iža* 'to creep, crawl, slide along the ground' (DEDR 508), whence Malayalam *ižava*, *iža-jantu*, *iža-jāti* 'a creeping thing, reptile' (Malayalam lexicon 1970 II: 416-418). Therefore, the sequence of the two Indus signs probably means 'reptile with a protuberance (on the snout)'¹⁸.

Gharial as '(fish) catcher': the Indus sign no. 354 'fist'

The crocodile is more common in the Indus tablets than the seals, with numerous cases of duplicates. Most common are long round tablets with a gharial (with a long narrow snout that broadens at the tip) on one side; the other side has a long inscription, which seems to be connected with the beast (see H-282 in Figure 42). Focusing on three signs in particular, I would like to suggest an interpretation.

The first sign, no. 354 in my list (Parpola 1994: 77) (Figure 43), consists of a circle inside of which is sign no. 91 (interpreted above as 'tree stem with branches' and 'arm or hand with fingers'). The graphic of sign no. 91 appears the same when placed within the circle and when occurring on its own without any circle. When placed inside the circle, it is possible that this sign depicts 'hand closed into a fist'.

Looking at Indus tablet M-482 (Figure 44), it is possible to connect this sign (provisionally interpreted as 'fist') with the gharial. The reverse of the tablet contains nothing but a gharial with

a fish in its mouth; on the obverse is a swastika, a tree, and a three-sign inscription. The first of the three signs is the one that could depict 'fist'. It is followed by the most common sign in the Indus script, which usually appears at the end of an inscription or a noun phrase. Paintings on Early Harappan pottery (see Parpola 1994: Figure 7.4 on p. 106) suggest that this second sign (no. 311 in my list) depicts a 'bovine head' with horns and ears on either side (Parpola 1994: 104). Likely expressing Proto-Dravidian **ā*, *ān* 'cow' (DEDR 334), it could denote either the Proto-Dravidian masculine singular marker *-*an* identifying human and divine beings (without the added nominative marker *-*tu* reconstructed for Proto-Dravidian but dropped in Proto-South-Dravidian; see Krishnamurti 2003: 210-217) or the Proto-Dravidian possessive genitive suffix *-*al-ā* (Krishnamurti 2003: 233-235; Parpola 1994: 188, 261; 1997: 169-172).

I suggest reading the 'fist' sign in Proto-Dravidian as **pīti* 'fist' (this meaning is found in many languages), from the Proto-Dravidian root **pīti* 'to catch, grasp, seize, capture, hold' (DEDR 4148, attested from Tamil to Gondi). The gharial is a fish-eater; as seen on the reverse side of the tablet, the gharial has a fish in its mouth. The root *pīti* is used for 'catching fish' (in Tamil *mīn pītikka*). The root can be understood to mean 'to catch fish', even when the word 'fish' is not explicitly mentioned (cf. Tamil *pītipātu* = *mīn pītipātukai* 'capture of fish' and *pītikāraṇ* = *mīn pītikkiravaṇ* 'fisherman' in Jaffna Tamil) (Winslow 1862: 769).

Heavenly 'fish catcher'

The 'fist' sign occurs very often, like the 'crab' sign, in the beginning of sequences that contain one or more 'fish' signs. As both the 'crab' and the 'fish' signs frequently seem to have an astral meaning (Parpola 1994: 179-272), there is reason to suspect a similar significance in this context. An astral connotation is suggested also by the fact

that the crocodile and the fish (appearing either in the crocodile's jaws or somewhere nearby) are placed above (as if in the sky)—not beneath (as if underwater)—a row of various mammals on a number of Harappan tablets (cf. M-489 A and C in Figure 45). Given the likelihood of astral meaning for the 'fist' sign, it is very interesting that the verbal root *pīti* is used in connection with eclipses (cf. Tamil *kirakaṇam* [< Sanskrit *grahaṇam*] *pītikkiṛa vēlai* 'the time of an eclipse') (Winslow 1862: 769).

In Indian folk-belief attested as early as the Atharvaveda (19,9,10), eclipses are thought to be caused by an invisible planetary demon called Rāhu, who is imagined to be a heavenly reptile that swallows the sun or moon. Rāhu's invisibility is reminiscent of the crocodilian habit of lurking beneath the water while hunting prey. As noted by Mayrhofer (1996: II,450), Rāhu's character matches the traditional explanation of his name from **rābh-ú-* 'grasping, holding', derived from the Sanskrit verbal root *rabh-* (which in meaning agrees with Dravidian *pīti*).

In South India, diseases like the common cold



M-489 A



M-489 B



M-489 C

Figure 45 Indus tablet M-489. After CISI 3.1: 400)

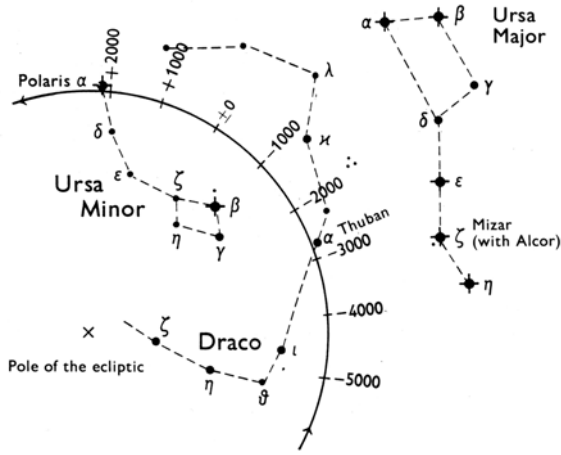


Figure 46 Circumpolar stars (after Parpola 1994: 243, Figure 14.4, based on Liebert 1969: 168)

are often ascribed to ominous planets (Tamil *kōl* = Sanskrit *graha-*) 'catching' (Tamil *koḷ* = Sanskrit *grah-*) people by means of invisible lassoes (Parpola 1994: 232-233, 237). At least in Tamil, the root *piṭi* is also used in the sense of catching cold (cf. *enakkuc calī* [= Sanskrit *jaladoṣam*] *piṭittuk koṇṭatu*, Fabricius 1972: 697). Sanskrit *grāha-* m. *grāhi-* f. 'crocodile' and *grāhi-* f. 'demoness binding people with slings of disease and death' are derived from the root *gra(b)h-* 'to grab, catch, hold'. Like Rāhu, they appear to be translation loans from Dravidian.

See also Tamil *karanturai-kōl* 'phenomena of the heavens, sometimes visible and sometimes not, which are generally regarded as ominous, such as *irāku*, *kētu*, *parivētam*, *vālvēlli*, *vānavil* (Peruñ. uñcaik. 58,57) (TL 1928 II: 743a).

Heavenly crocodile in the Veda and its Harappan background

The Taittirīya-Āraṇyaka (2,19) speaks of a heavenly crocodile called Śākvāra (*divyaḥ śākvāraḥ śiśumāra*), whose tail (*puccha-*) has four sections (*kāṇḍa-*). The prayer constituting worship of Brahma (*brahmopasthāna-*) begins with the words *dhruvas tvam asi*, *dhruvasya kṣitam*, and ends with *namaḥ śiśukumārāya*. This prayer should be muttered at dusk while facing the region of the pole star

(*dhruva-maṇḍala-*). As it says, he who knows this heavenly crocodile, the lord of all beings (*bhūtānām adhipatiḥ*), will conquer death and gain the world of heaven (*jayati svargam lokam*). In a discussion of the śārkara sāman, the Jaiminiya-Brāhmaṇa (3,193-194) calls the sage Śārkara by the name *śiśumāra*—when he ascends to the heavenly world (*svargam lokam udakrāmat*). This word appears to denote the dolphin, as it refers to an ocean animal (*śiśumāro vai samudram atipārayitum arhati*) (Lüders 1942: 66-67). But *śiśumāra-* means both 'dolphin' and 'crocodile'. In Taittirīya-Āraṇyaka 2,19,2, the limbs of the heavenly *śiśumāra-* are equated with different deities. At least in this text, the animal must be a crocodile and not a dolphin, since it is said to have forelegs and hind legs (cf. Lüders 1942: 67-68)⁹.

The heavenly crocodile of the Harappans seems to have been Ursa Major, which in Old Tamil is called *eṇu-mīn* '(constellation of) seven stars'. Above I suggested that **eṇu* 'seven' (DEDR 910) in the Indus script probably served as a rebus for **iṇu*, **eṇu* 'to draw, pull, drag along the ground' (DEDR 504a), from which the Malayalam term for 'reptile' is derived. In this case, *eṇu-mīn* could have been understood to also mean 'reptile asterism'. According to Viṣṇu-Purāṇa 2,9,1, the heavenly form of the God Viṣṇu (which appears in the form of a *śiśumāra-*) includes the pole star in its tail (*tārāmayaṁ bhagavataḥ śiśumārākṛtiḥ prabho | divi rūpaṁ harer yat tu tasya pucche sthito dhruvaḥ*). If such was already the case in Harappan times, then the tail was curved as seen in the gharial depicted on Indus seal M-292 (Figure 21), with the pole star (Thuban) added to the seven stars of Ursa Major (Figure 46).

Evidence for Harappan child offerings to the crocodile god

Both the crocodile and the dolphin are included in the fauna of South Asia. The concept of a heavenly crocodile with its tail ending in the pole star was likely inherited from the Harappans. The

Vedic tradition has preserved a similar (though not identical) concept of Indo-Iranian origin. Albrecht Weber (1853: 237) pointed out that the Sanskrit proper name *Śunaḥśepa* 'Dog's tail' has a counterpart in Greek Κυνόσουρα 'Dog's tail', which describes the asterism of Ursa Major (Scherer 1953: 176-177). For this reason, Weber suspected that the famous *Śunaḥśepa* legend has an astral aspect. The 'Dog's tail' is near the pole star, where the tail of the heavenly crocodile ends. In the Rigvedic hymn 1,24, which is ascribed to *Śunaḥśepa*, there seems to be a reference to the pole star and its connection with the god Varuṇa: in verse 7, Varuṇa is said to hold a heavenly banyan tree up in the sky. This seems to reflect the Harappan concept of the pole star, preserved in the Old Tamil compound *vaṭa-mīn* 'north star' (which also means 'banyan-star'), represented in the Indus script by the sequence of the signs 'fig' + 'fish' (see Parpola 1994: 234-246, especially 245-246).

The oldest version of the *Śunaḥśepa* legend is in the Aitareya-Brāhmaṇa (7,13-18). A sonless king called Hariścandra ('Yellow moon') is advised to approach the god Varuṇa. The god grants Hariścandra offspring, but demands in return that he sacrifice his firstborn son as an offering. The king succeeds several times in postponing the sacrifice, on grounds that the boy is not yet fit, until Prince Rohita turns sixteen and finally comes of age. Rohita refuses to be sacrificed, however. Taking his bow and arrows, he departs for the forest¹⁰. To punish Hariścandra for breaching his vow, Varuṇa inflicts him with dropsy¹¹. Hearing of this, Rohita purchases a Brahmin boy named *Śunaḥśepa* from his parents, in order to use him as a substitute victim. *Śunaḥśepa*'s own father is prepared to perform the sacrifice. Bound to the sacrificial stake, as his father approaches with knife in hand, *Śunaḥśepa* prays to the gods. As he is released, Hariścandra is simultaneously healed.

For good reason, this legend has been compared

to the biblical story of Abraham and his readiness to offer up his son. It is also taken as evidence that the practice of human sacrifice once existed in ancient India (see Müller 1859: 408-419 and 573-588; Weber 1868; Parpola 2007). In my opinion, the *Śunaḥśepa* legend reflects Harappan traditions, although some elements have been replaced with their approximate counterparts in the Indo-Iranian tradition. One such replacement is the correspondence between *Śunaḥśepa* and the tail of the heavenly crocodile. Another is Varuṇa as the name of the fertility god who grants offspring and demands the first-born son as an offering.

There is no question that Varuṇa harkens back to the extra-Indian Indo-Iranian tradition (Parpola 2005). Varuṇa's Rigvedic association with the banyan tree is confirmed by the Gobhila-Grhyasutra (4,7,24), which states that "the banyan is Varuṇa's tree." Yet Varuṇa cannot have originally been the god associated with this tree, which belongs to the flora of South Asia and, as can be seen in Harappan iconography, enjoys a prominent position in the religion of the Indus Civilization, particularly in fertility cults (Parpola 2004). Varuṇa was chosen as a replacement because, as a divine king and god of the waters, he was closest to the respective Harappan deity. In the early Vedic texts, Varuṇa is the "lord of waters" (*apām pati*) in a very wide sense; his domain includes the ocean, the rivers, the heavenly and underground waters, and oath water (Lüders 1951-1959). In later Hinduism, Varuṇa came even closer to his Harappan prototype. In the Mahābhārata, he is not only "the lord of waters" (*apām pati, jaleśvara*) but also "the lord of aquatic creatures" (*ambhasām pati, yādasām pati*). In Old Tamil texts, Varuṇa is the god of the ocean (*kaṭal*), of maritime tracts (*neytal*), and of fishermen; in later Tamil texts, he is "king of the ocean" (*kaṭar-kō*) and "the god of waters" (*nīr-k-kaṭavuḷ*). In later Indian iconography, Varuṇa uses the makara 'mythical sea monster' or 'crocodile' as his vehicle (Figure 47). Crocodiles are

further connected with Varuṇa as the beasts due to be offered to this god in the Vedic horse sacrifice (cf. Maitrāyaṇī Saṃhitā 3,14,2 and Vājasaneyi-Saṃhitā 24,21: *varuṇāya nākṛān*).

It is significant that as recently as 200 years ago, in a fertility cult that included elements resembling the Śunaḥśepa legend of Varuṇa, one still found in India the practice of offering first-born children to crocodiles. Above I have quoted the testimony given by William Ward, from which it appears that these offerings of the first-born were made to the goddess Gaṅgā, not to Varuṇa. There is a connection with Varuṇa, however, revealed by the two preferred dates for these sacrifices.

The first date (the tenth day of the waxing moon in the Jyaiṣṭha month, which coincides with the culmination of the main festival of the goddess Durgā, the *daśaharā*), commemorates Gaṅgā's descent from heaven (Ward 1817-1820 III: 269). On this day, celebrations include "worship of the inhabitants of the waters, as the fish, the tortoises, the frogs, the water-snakes, the leeches, the snails, the makaras, the shell-fish, the porpoises, etc." (Ward 1817-1820 III: 270). He adds, "Persons escaping dangers of water present offerings to Gaṅgā, as well as to Varuṇa, the Indian Neptune" (Ward 1817-1820 III: 271).

The other date is the 13th of the waning moon in the month of Caitra; this day is especially sacred if the moon is in conjunction with the asterism of Śatabhiṣaj, which is presided over by Varuṇa. Then it is called Vāruṇī, and "the merit arising from bathing at this lucky moment is supposed to be very great" (Ward 1817-1820 III: 271-272; Kane 1958 V.1: 405-406). For Indo-Aryan speakers, river names have feminine gender. Accordingly, rivers are goddesses. However, it appears that the Harappans worshipped rivers as masculine gods (see below), as did the Mesopotamians.

Sacrifice of children to a crocodile deity appears to be attested in an unpublished moulded Indus

tablet from Dholavira in Kutch, Gujarat (Figure 48). One side of the Dholavira tablet depicts two crocodiles, one with a fish (or a child?) in its mouth; these two crocodiles accompany the encounter of two partly anthropomorphic, partly animal-shaped Harappan divinities. The other side of the tablet has an Indus inscription of six signs¹² and a kneeling man with a child in his hands; it is unclear if he is just holding the child in the air or piercing it with a pointed object. In any case, the man's kneeling posture resembles that of a man in moulded tablet M-478 (Figure 49), who is extending what looks like a sacrificial vessel to a sacred tree. The accompanying text in M-478 contains a sequence of signs no. 131 (four short vertical strokes = 'four') and no. 296 (U or V-shaped 'sacrificial vessel'), apparently recording the presentation of four vessels filled with unspecified offerings (Parpola 1994: 109). In moulded tablet M-453 (Figure 50), a kneeling worshipper on the left side extends an offering vessel to an anthropomorphic deity seated on a throne, while another kneeling worshipper on the god's right side raises his or her hands in adoration or prayer; behind both worshippers is a raised cobra with its hood expanded.

The reverse side of moulded tablet H-172 from Harappa (Figure 51) shows the gharial swimming in the midst of four fish while eating a fifth one. The obverse has an inscription that ends in Indus sign no. 306 (U-shaped 'sacrificial vessel', modified by sign no. 376 being added inside it). As mentioned above, I have interpreted the preceding sign no. 337 (intersecting circles, Figure 32) as 'earrings' or 'bangles' (which are important in South Asian fertility cults) = Proto-Dravidian **muruku* (DEDR 4979), an exact homophone of Proto-Dravidian **muruku* 'boy child, young man' (DEDR 4978). Muruku is the name of the principal god of the Tamils, a counterpart of Vedic Rudra and Hindu Skanda, both of whom are called *Kumāra* 'boy child, young man' (Parpola 1994: 226-230). Hence tablet



Figure 47 God Varuṇa on makara
(after Majumuria 1991: 194)



Figure 49 Indus tablet M-474 (A side) (after CISI 1: 115)



Figure 50 Indus tablet M-453 (B side) (after CISI 1: 386)

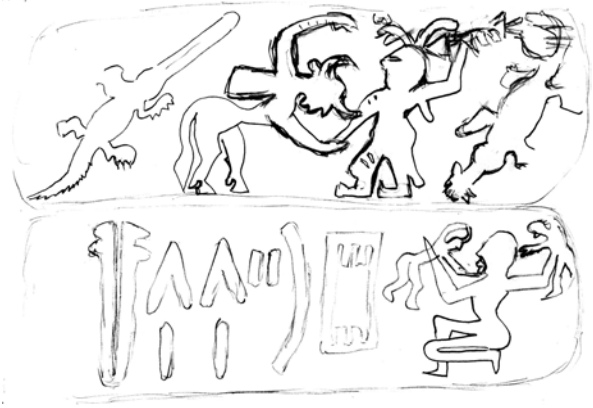
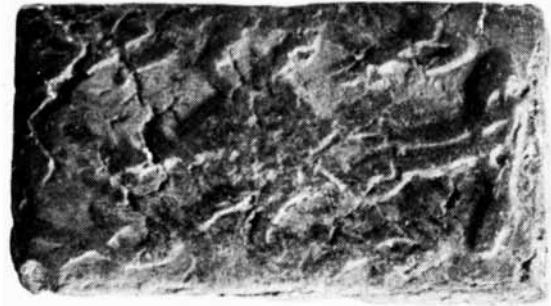


Figure 48 Moulded Indus tablet from Dholavira, Kutch,
Gujarat (sketch by Asko Parpola)



H-172 A



H-172 B

Figure 51 Indus tablet H-172 (after CISI 1: 207)

H-172 may record a child sacrifice to the crocodile god.

That the crocodile god should demand offerings of children sacrificed by their own parents may have its basis in the male crocodile's habit of eating its own offspring, something that is expressly mentioned a couple of times in Old Tamil texts. The Tamil word *piḷḷai* used in this context (Aṇkuṟuṇūru 24: *piḷḷai tinṇu mutalai*) means human as well as animal offspring. In part two of the Ganges

series produced for television by BBC Bristol in 2007, it is shown that the gharial male can also eat its newly born offspring. The same is probably true of the South Asian river dolphin: "Male Bottlenose Dolphins have been known to engage in infanticide." (*Wikipedia* in December 2009 s.v. Dolphin) Sanskrit *śiśu-māra-* has been understood to mean 'baby-killer' by classical Indian authors such as Vasubandhu and Sāyaṇa. In his commentary on the Taittirīya-Āraṇyaka, the latter glosses the

word as follows: *śisūn mārayati mukhena nigiratiti śisumāro jalagrahaviśeṣaḥ* (Lüders 1942: 81). This straightforward and literal interpretation of the word may actually be the correct etymology. In any case, the heavenly *śisumāra*'s connection with Śunaḥśepa does support the traditional Indian etymology.

The Harappan god of water and fertility

Above I suggested that Varuṇa, as the Vedic "lord of waters", has replaced the Harappan water god and adopted his emblems: Varuṇa is associated in the Veda with the pole star, the banyan tree, and the crocodile, all of which appear to have been very important Harappan symbols of divine kingship (Parpola 2004). One face of the three-sided moulded tablet M-2033 from Mohenjo-daro (Figure 52) has the image of a seated anthropomorphic deity with a horned crown, flanked on either side by a gharial and a fish. The fish, which has a phallic shape and boasts phenomenal rates of reproduction, is an important symbol of fertility in South Asia, as well as an aphrodisiac. In Tamil, Varuṇa is called *mīn-ūr̥ti*, 'having the fish for his mount'; usually the mythical water monster makara is mentioned as Varuna's mount. Another Indian deity who rides on the makara is Kāma, the god of sexual love. Kāma also has the emblem of fish in his flag. Fish is the most important aquatic animal, of course, and as such is a symbol of water. In the Vedic horse sacrifice, fish are offered to the waters (Maitrāyaṇī Saṃhitā 3,14,2 *abdhya matsyān*). Fish also appear within the rivers that issue from the body of the Mesopotamian water-god Ea / Enki; praised as a phallic god, he spreads water as his fecundating semen on the soil (Figure 53).

On an unprovenanced cylinder seal likely made in Mesopotamia by a Harappan craftsman (Figure 54), one finds a deity on a throne who is wearing a crown of buffalo horns topped by banyan leaves; the god is flanked on both sides by a fish. This cylinder seal also features a hooded and horned snake on

either side of the deity, instead of the crocodiles found in tablet M-2033 from Mohenjo-daro. Beneath the throne are two water buffaloes drinking from a trough. Buffaloes are also beasts associated with water, as they have to bathe every day. In a Kot Diji-type Early Harappan pot from Burzahom in Kashmir, the water buffalo is depicted in the water (Figure 55). Water buffaloes are mentioned only once in the Vedic ritual literature after the R̥gveda: they are offered to Varuṇa (Maitrāyaṇī Saṃhitā 3,14,10 *varuṇāya mahiṣān*). In later Hinduism, the water buffalo is associated with Yama as the god of death; Yama resembles Varuṇa in several respects, but most obviously in his role as Dharmarāja (cf.



Figure 52 Indus tablet M-2033 (B side)
(after CISI 3.1: 109)



Figure 53 Impression of an Akkadian cylinder seal showing various gods, among them the water god Enki
(after Parrot 1960: 193, Figure 237)



Figure 54 Impression of an unprovenanced Indus-style cylinder seal in the Louvre (AO Collection De Clercq I.26)
(after Parpola 1994: 186, Figure 10.10)

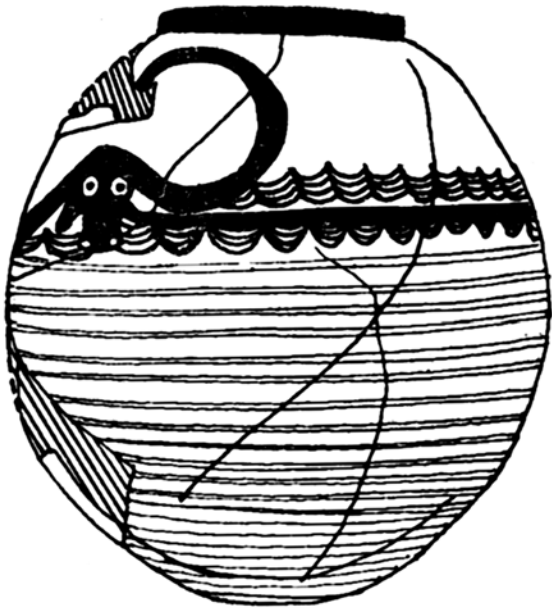


Figure 55 Early Harappan (Kot Diji) pot from Burzahom (Period I B), Kashmir (after Kaw 1979: 224 Figure 4)



Figure 56 Indus seal M-304 ("Proto-Śiva") (after CISI 1: 382)

Varuṇa as Samrāj guarding Ṛta). In its incarnation as Maḥiṣa Asura, the water buffalo is also connected with Śiva, the dying and resurrected husband of the goddess Devī who defeats it.

The buffalo demon Maḥiṣa Asura is the prototype of a valiant warrior. In battle with the goddess Devī, it goes through many metamorphoses, taking the shape of one strong animal after another (including lion and ending in man). I have compared Maḥiṣa's transformations with those of the Vedic creator god Prajāpati. Seeking to multiply himself and generate offspring, this primeval Man (*puruṣa*) approached his own daughter. The daughter tried to escape, changing from one kind of female animal to another, while her father gave chase by assuming the shape of the corresponding male. In this way, all of the different animal species were created. The myth stresses that all male animals are manifestations of the singular primeval male, the creator god Prajāpati. In my opinion, the same concept prevails in the Harappan 'Proto-Śiva' seal (Figure 56), where the seated buffalo-horned deity is flanked by four powerful male animals: rhinoceros, elephant, buffalo and tiger. All of these animals seem

to represent the mighty god depicted in the center in anthropomorphic form. (Parpola 1994: 184-190; 1992; 1998; 2002; 2004; 2007)

Crocodile and the Indus sign depicting 'buffalo-horned man'

Indus sign no. 7 depicts 'man wearing horns', which in some of the variants are clearly those of the buffalo (Figure 57). On the basis of what was discussed above, I would like to propose that this sign stands for Proto-Dravidian **ēru* 'male animal with remarkable physical strength'; in particular, the word refers to the buffalo and the bull (but also tiger, lion, pig, etc.) (DEDR 917). This word is derived from the Proto-Dravidian root **ēru* 'to rise, ascend, climb, increase (in price or quality), multiply, be much, abound (in number, weight or measure), be more than enough' (DEDR 916). In Old Tamil, the variant *ērrai* is also used for the male crocodile (*mutalai*) in Kuṇṭokai 324,1 (quoted above). In such instances, *ērrai* 'male' is preceded by the attribute *kōl val* 'strong in killing, strong killer'; taken as a whole, the phrase is an apposition to the foregoing animal name *mutalai*

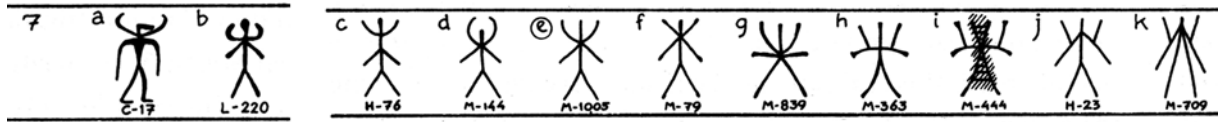


Figure 57 Indus sign no. 7 with variants (after Parpola 1994: 70, Figure 5.1)

(for this interpretation, see Cāminātaiyar 1962: lii: "*mutalai... itaṇ āṇai ērrai yeṇṇal marapu*"; for example, it is common practice to call the male crocodile *ērrai*). The very same phrase follows in apposition to the characterization of the male tiger in Kuṇṭokai 141,5 (*kuṇṭikai yirum pulik kōḷ val ērrai*), occurring in four other places in Caṅkam literature (Akanānūru 171,9; Aiṅkuṇūru 216,1; Narriṇai 36,1; 148,9).

While the moulded Indus tablet M-450 (Figure 58) has broken, enough survives to show that both sides were originally identical and contained, from right to left, the image of a crocodile and an inscription with four signs. The last two signs frequently occur together in this position, but the distinctive first two signs probably refer to the crocodile deity depicted on the tablet. The second sign is the 'buffalo-horned man' discussed directly above, which can be read as **ēru* 'male animal with remarkable physical strength'. Supposing that Old Tamil *val ērrai* 'strong male' is an important formulaic phrase inherited from Proto-Dravidian and demonstrably used to designate the crocodile, there is a fair chance that the first sign (sign no. 101) stands for Proto-Dravidian **val* 'strong' (DEDR 5276).

In the Old Tamil poetic formula *kōḷ val ērrai*, the phrase *val ērrai* is preceded by the word *kōḷ*. Traditionally interpreted to denote 'killing' (Tamil *kolai*), it is derived from the verbal root *kol* 'to grab' (TL 1928 II: 1202a s. v. *kōḷ*¹, 11). Thus, Hart's translation of 'taking prey' is more faithful to the original: the expression corresponds to Sanskrit *grāha-* (from the root *grabh-* 'to grab'), which is used for the crocodile and other beasts of

prey¹³. In the Indus texts, sign no. 88—the 'crab', mostly commonly depicted without feet in order to emphasize its pincers (Figure 59), interpreted as denoting Proto-Dravidian **kōḷ* or **kol* (Parpola 1994: 232-239)—occasionally precedes the phrase *val ēru* 'strong male' posited above. Even more commonly, it precedes the phrase *val mīn* 'strong fish, crocodile' (see below).



M-450 A



M-450 B

Figure 58 Indus tablet M-450 (after CISI I: 110)

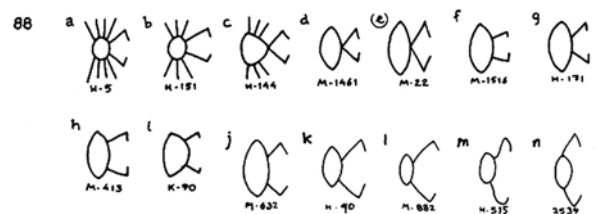


Figure 59 Indus sign no. 88 with variants (after Parpola 1994: 71-72, Figure 5.1)

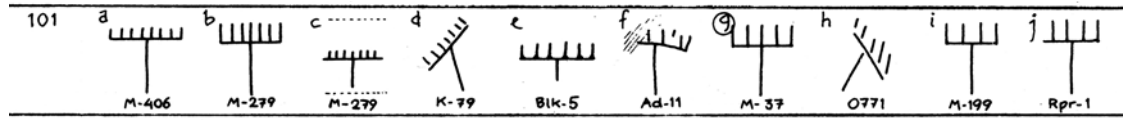


Figure 60 Indus sign no. 101 with variants (after Parpola 1994: 72, Figure 5.1)

Tamil *val-mīn* 'crocodile' and the Indus sign possibly depicting 'fish gig'

Sign no. 101, found at the beginning of the crocodile-related inscription in tablet M-450 (Figure 58) and provisionally read as Proto-Dravidian **val* 'strong' (DEDR 5276) on the basis of an Old Tamil poetic formula, is very often followed in Indus texts by the plain 'fish' sign (interpreted in Proto-Dravidian as **mīn* 'fish' and 'star'). The suggested readings **val* and **mīn* produce the Tamil compound *val mīn* (with sandhi, *vanmīn*). Literally meaning 'strong fish', this is recorded in Tivākaram's ancient lexicon as one of the words for 'crocodile'¹⁴. The antiquity of the compound is supported by its attestation in Tulu as well (though the *Tulu lexicon* edited by U. P. Upadhyaya only vaguely defines it as 'a kind of fish'). Moreover, this sign sequence occurs in the beginning of the inscription in the long moulded tablet H-282 and its many duplicates, perhaps the most important type of tablets depicting the gharial in iconographic form (see Figure 42). The sequence is here preceded just by the aforementioned 'fist' sign, interpreted as Proto-Dravidian **pīti* 'catch(ing fish)'.

Sign no. 101 (Figure 60) consists of a vertical rod topped by a horizontal (sometimes slanting) rod with a row of upwards pointing spikes (usually five, but sometimes more and seldom less). What does this sign depict?

Perhaps the first thing that comes to mind is 'harrow' or 'rake'. In Dravidian (and many other) languages, names for this agricultural tool (such as Tamil *palli*, *palaki*, Kannada *halive*, *halike*, *halube*, *halaku*, and Telugu *palu-gorru*) have been derived

from the word for 'tooth', which in Proto-Dravidian was **pal* (DEDR 3986). It is true that in some Dravidian languages, words with an initial *p*- have variants beginning with *v*- (cf. Tamil *paṇṭi* and *vaṇṭi*, *palappam* and *valappam*, *pāṇali* and *vāṇali*, etc.). Although one can actually posit the variant *val* 'tooth' for Tamil on the basis of Tamil *vanri* 'pig' from *panri* 'pig', since this word is derived from *pal* 'tooth' (the wild pig being distinguished by its tusks), this variation cannot be projected to Proto-Dravidian for the word **pal* 'tooth' on the basis of the available linguistic evidence.

The Indus sign could also represent the fishgig = 'a pole with barbed prongs for impaling fish' (Collins English dictionary) (Figure 61). This many-pronged fishing tool is used by the local fishermen of the Chambal river, featured in the *Ganges* television series (2007). The fishgig serves thematically as an attribute of the gharial, which uses long and very narrow jaws with numerous sharp teeth (Figure 62) for fishing. The slimness of the snout enables the gharial to jerk it swiftly sideways, thereby impaling fish with its teeth. One of the words for 'harpoon' in Tamil (Winslow *et al.* 1888: 621) happens to be *vallayam*, which has cognates with identical meaning (e.g., Kannada *ballega* and Telugu *ballemu*). Use of the fishgig requires considerable strength; the *Tamil Lexicon* (1934 VI: 3528a) suggests that the Tamil word is derived from *val* 'strong, strength' + *ayam* < Sanskrit *ayas*- 'iron'. The latter component would be of post-Proto-Dravidian origin¹⁵.

The Harappan river god

Indus sign no. 175 consists of two vertical and wavy or bending lines (Figure 63). That the wavy and

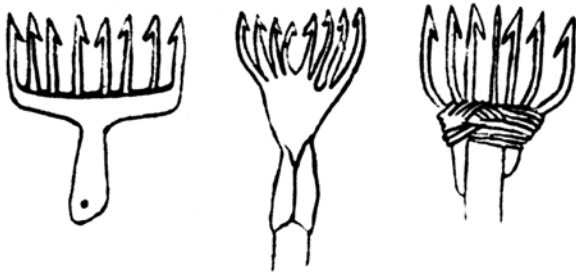


Figure 61 Fish-gigs (after Vuorela 1964: 8)

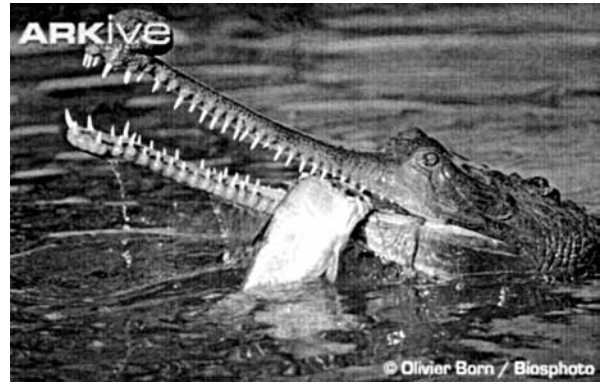


Figure 62 Gharial feeding. ARKive photo G 34691
(courtesy of Olivier Born / Biosphoto)

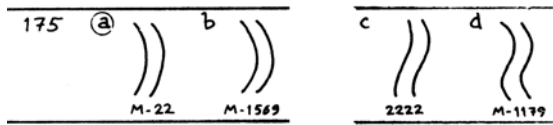


Figure 63 Indus sign no. 175 with variants
(after Parpola 1994: 73, Figure 5.1)

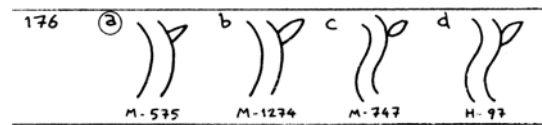


Figure 64 Indus sign no. 176 with variants
(after Parpola 1994: 73, Figure 5.1)

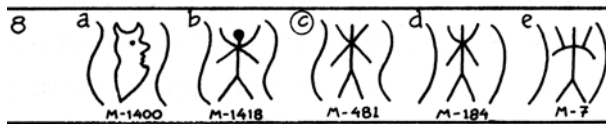


Figure 65 Indus sign no. 8 with variants
(after Parpola 1994: 70, Figure 5.1)



M-481 A

Figure 66 Indus tablet M-481 (A side) (after CISI I: 115)

bending signs are allographs of one and the same grapheme is confirmed by the presence of the same variation in ligatures of this sign in which either an extra element is added to one of the lines (sign no. 176; Figure 64) or another sign is inserted between the two lines (sign no. 8, discussed below). The basic sign (no. 175) is similar to the Sumerian pictogram for 'water': it appears to depict a meandering river. It may have expressed the basic Proto-Dravidian word for 'water', most probably **nīr* (DEDR 3690a). In sign no. 8 (Figure 65), this hypothetical 'water' sign, split in two, surrounds sign no. 7 depicting 'buffalo-horned man' (read above as **ēru* 'male animal with remarkable physical strength'). Sign no. 7 likely functions here as a phonetic indicator, showing that the sign for 'water' (no. 175) denotes 'river' in this context; the Proto-Dravidian word for

'river' was **yāru*, **ēru* (DEDR 5159). This phonetic indicator functions simultaneously as a pictorial symbol, since the 'male' in the 'river' stands for the crocodile. In later Indian iconography, the crocodile represents the river Ganges as the vehicle of this river goddess (Viennot 1964; Tandon and Biswas 1986; Stietencron 1972; 2010). That sign no. 7 ('buffalo-horned man') functions as a phonetic indicator rather than a part of a compound in the ligatured sign no. 8 is supported by the fact that sign no. 8 is followed by sign no. 7 in some Indus texts: this noun phrase would mean 'the male of the river' (that is, the crocodile).

An elaborate pictorial representation of sign no. 8 may be seen in Indus tablet M-2033 (Figure 52), which shows a vertical wavy line on either side of the central god and his crocodile and fish



M-1429 A



M-1429 B



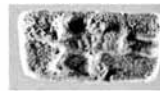
M-1429 C

Figure 67 Indus tablet M-1429 (after CISI 3.1: 386)

H-1932 A



H-1932 B



H-1932 C

Figure 68 Indus tablet H-1932 (after CISI 3.1: 264)

emblems. In Mesopotamian iconography, the river is represented with fish swimming in it; as mentioned above, such a river flows out of either side of the water god Ea (alias Enki) (Figure 53). That sign no. 8 represents a Harappan deity, presumably the 'river god', is confirmed by Indus tablet M-481 (Figure 66). On the obverse of this tablet there is a kneeling worshipper with a pot of offerings in his hand, which is extended towards sign no. 8. The first part of the inscription contains a sequence of sign no. 354 'fist' and sign no. 311 'bovine head', which I already proposed can be read in Proto-Dravidian as **piti-y-an* 'catcher (of fish)' as a name or attribute of the gharial and the heavenly crocodile that causes eclipses (Rāhu).

The heavenly 'overseer'

The 'fist' sign begins the inscription on the three-faced moulded tablet M-1429 from Mohenjo-daro

(Figure 67). The next phrase in this text contains a sequence of sign no. 130 'number three' and sign no. 60 'fish' (without diacritics), read as **mu-m-mīn* '(asterism consisting of) three stars'. This is the Old Tamil name of the calendrical constellation *mṛgaśīrṣa-* (Parpola 1994: 194), but it is possible that it originally denoted another three-starred asterism, the *(apa)bharanī-*. This latter constellation is expressly connected with the waters, the fireplace consisting of three stones, the womb, and Yama (the god of death); in turn, all of these seem to represent King Varuṇa, the Vedic counterpart of the Harappan water-god (see Parpola 1985: 78-101; 1994: 211-218).

The next phrase in the inscription of tablet M-1429 contains a reduplication of Indus sign no. 358 'dot-in-circle', which is interpreted as Proto-Dravidian **kaṇ* 'eye' (DEDR no. 1159) or **kāṇ* 'to see, look' (DEDR 1443). In reduplication, the signs connote the noun phrase 'overseer' (found in Tamil *kaṇ-kāṇi*).

"This would be a fitting epithet for Varuṇa, who is probably meant in ṚS 10,129,7, which speaks of an 'overseer (*ādhyakṣa-*) of this (world) in the highest heaven'. Varuṇa is the 'thousand-eyed' guardian of the cosmic order, and looks down on the earth with the eye of the sun... in other Vedic texts, the sun and moon are the eyes of the highest Brahma ... The two other sides of the amulet [M-1429] suggest that the text relates to the water-god of the Harappans: one side has the picture of a boat, the other an alligator [read: long-snouted crocodile]. Both designs refer to water, which is the realm of the god Varuṇa. Varuṇa is the 'lord of aquatic animals', including the crocodile (# 10.2), and the boat is explicitly connected with Varuṇa in Ṛgveda 7,88,3" (Parpola 1994: 215).

In Taittirīya Āraṇyaka 2,19, the heavenly crocodile is called "the lord of all beings (*bhūtānām adhipatiṃ*)", an appellation which further supports identification of this **kaṇ-kāṇi* 'overseer' with the

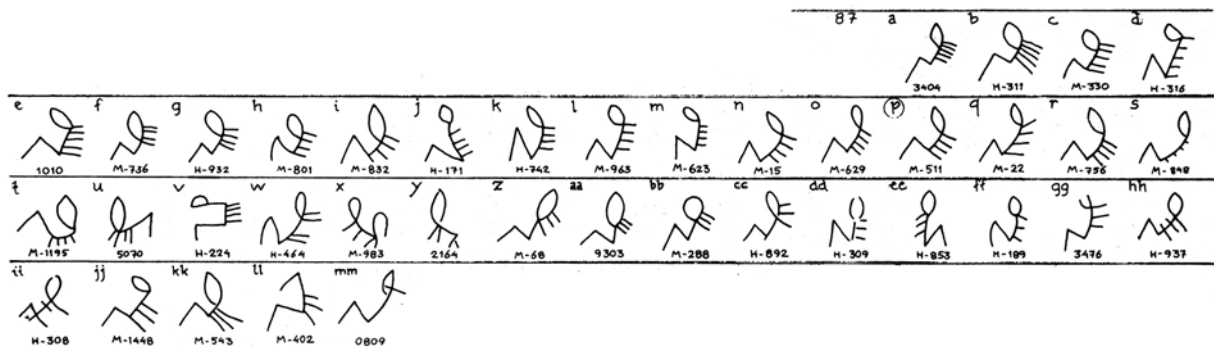


Figure 69 Indus sign no. 87 with variants (after Parpola 1994: 71, Figure 5.1)



Figure 70 Indus sign no. 86 with variants
(after Parpola 1994: 71, Figure 5.1)



Figure 71 Mugger's "high walk" (after Whitaker 1986: 151)

Harappan predecessor of Varuṇa.

Snake and crocodile: A reptile with feet

In tablet H-1932 from Harappa (Figure 68), this phrase consisting of the duplicated 'dot-in-circle' sign and read as **kaṇ-kāṇi* 'overseer' occurs before sign no. 87 (Figure 69), which is formed from sign no. 86 (Figure 70) by adding linear extensions on one side; in the great majority of cases, one finds four extensions but, in a few cases, there are five or three. In 1934, Piero Meriggi suggested that sign no. 87 depicts 'horse'. The domestic horse was introduced to South Asia in the second millennium BCE, however, making this pictorial identification unlikely. I have commented on this as follows:

"Some variants of the basic sign (Figure 5.1 no. 86) rather suggest an enraged cobra with expanded hood; moreover, the number of the added strokes (Meriggi's 'feet') is not always four, and they are sometimes placed as if they represented hair" (Parpola 1994: 59).

I still believe that the basic sign should be identified as a snake. But looking at the graphic variants of sign no. 87 derived from it, I now support the interpretation of the extensions being

'feet'. Normally there are four extensions, sometimes arranged into two pairs (i.e., front legs and back legs). The very few exceptions with three or five legs are likely just carving mistakes. My guess is that the sign depicts a reptile with legs (i.e., the crocodile). That the legs are sometimes placed close to the 'head' is due to the crocodile's legs being closer to its head than its tail (Figure 71).

H-1932 is a three-sided tablet. One of the sides depicts a crocodile; another side has the text IIU, which likely means 'two pots (of offerings)'¹⁶. It appears that the main aim of the "sacrificial tablets" was to obtain offspring. On the basis of its great frequency on the "sacrificial tablets", sign no. 87 probably indicates the deity that was most frequently supplicated for this purpose. Given all of these reasons, as well as the evidence presented in this paper, I propose that this sign renders the principal Proto-Dravidian word for 'crocodile', **mōcalay*, **mocalay* (DEDR no. 4952).

Sign no. 86 'snake' and sign no. 87 'crocodile' mean different but related things. They can occur together, as well as next to each other. Both have phallic connotations and both are associated with fertility cult worship. Moreover, both occur

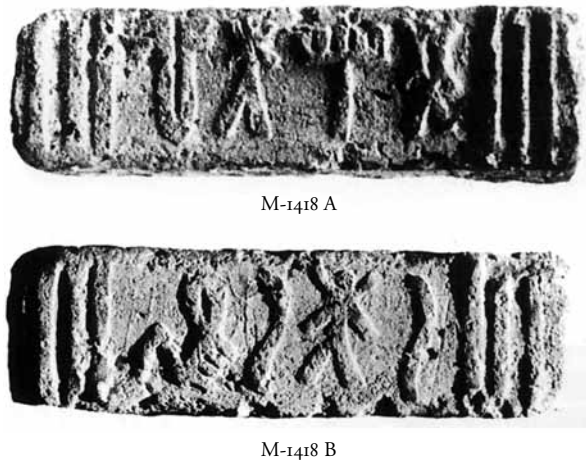


Figure 72 Indus tablet M-1418 (after CISI 2: 191)

frequently in connection with other signs associated with the Harappan god(s) of water and fertility, especially those discussed in the present paper (e.g., tablet M-1418 in Figure 72).

The bleary-eyed beast

Seal H-396 from Harappa (Figure 73) is a large one, suggesting that it may have "belonged to" a divinity, in whose name it was used by priests. Although the first part of the inscription has broken off and is missing, the last five signs survive. An interpretation for the first three has already been posited above: Dravidian **piti* and **val-mīn*, both of which refer to the crocodile. The remaining two signs form a compound-like sequence that recurs in seven other inscriptions, five times at the end of an inscription (M-205, M-370, H-568, H-602, H-797) and twice in the middle (M-396, H-639). Dravidian readings have been suggested for both of these signs, no. 175 (see Figure 63) = **nīr* 'water' and no. 358 'dot-in-circle' = **kaṇ* 'eye'. The resulting compound **nīr-k-kaṇ* literally means 'water-eye'. The compound is attested in Tulu (*nīruda kaṇṇu*, with the genitive marker added to the first member);¹⁷ its meaning in that language is 'the big one of the three hole-like outlets on the top of a coconut' (Upadhyaya ed. 1997: IV, 1802a); the word *kaṇ* in Dravidian languages means not only 'eye', but also 'hole,

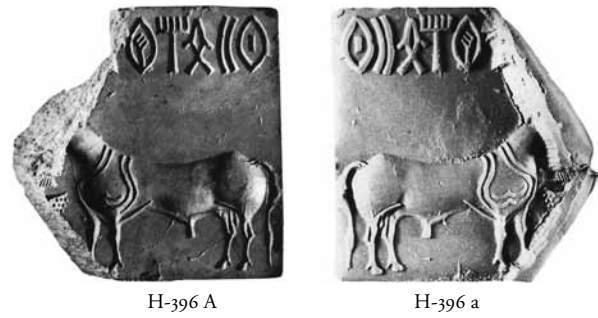


Figure 73 Indus seal H-396 (A) and its modern impression (a) (after CISI 2: 263)

opening' (DEDR 1159). In Tamil, *mu-k-kaṇ* is used both for 'coconut' and 'three-eyed' deities like Śiva (TL 1936 VI: 3217a). In this particular Harappan context, however, the word **nīr* 'water' probably has the following sense attested in Tamil: 'humour of the body, as serum, lymph' and 'pus' (cf. also *nīr-k-koḷ* 'to feel heavy with cold, as the head; to suppurate, form pus, as a tumour', *nīr-p-patumam* 'a disease of the eyelids', and *nīr-p-pāyccal* 'irrigation from a river; discharge of serum from a sore, of water from the eyes, of mucus from the nose') (TL 1931 IV: 2299b, 2301b, 2304b). Thus **nīr-k-kaṇ* 'water-eye(d)' is synonymous with Malayalam *cīṅkaṇṇi*, *cīkaṇṇi*, *cīyaṇṇi* 'an alligator, crocodile', literally 'bleary-eyed' (Gundert 1872: 367a; *Malayalam Lexicon* 1985: V, 456b, 458b), from *cī* 'putrid matter, secretion of eyelids' (Gundert 1872: 367a) < Proto-Dravidian **kī* 'pus, snot; to rot' (DEDR 1606).

Conclusion

In consideration of all the evidence, quite a number of Indus signs associated with representations of the crocodile on the Harappan 'sacrificial tablets' (and by extension in other texts) can be correlated with expressions that the Dravidian languages have for 'crocodile'. To a reasonable degree, these new interpretations satisfy iconic and linguistic requirements; to some extent, they also support each

other. Corroborating the method and premises of earlier interpretations, they open up new avenues for further penetration into the Indus script. That said, we must remain on the lookout for opportunities to further prove or disprove these hypotheses.

Notes

- 1) This is a revised and much enlarged version of a paper presented at the international symposium on "Harappans in Gujarat" held in Bhuj, Kutch, Gujarat, 28-31 January 2010. I am much obliged to Dr Albion Butters for careful language checking.
- 2) See www.gharialconservation.org/gharials; for the phallic snout of the ghariyal, see also Murthy 1995: 20 and Benton 2006: 152-4, with Figure 7.13 and references.
- 3) According to Aristobulus, a very trustworthy companion of Alexander the Great, "crocodiles, neither numerous nor harmful to man, are to be found in the Indus" (Strabo, Geography 15,1,45, transl. Jones 1930: VII, 79).
- 4) Prakrit *sonḍa* = *suṇḍa* (Sheth 1963: 932c) comes from Sanskrit *śauṇḍa-*, both of which mean 'addicted to drink' (Turner 1966: no. 12650); for the Prakrit word, Sheth (1963: 911c) gives the additional meaning of 'skilful'. Prakrit *maṭṭha-* is derived from Sanskrit *mṛṣṭa-*, both meaning 'rubbed, wiped, washed, polished, clean, pure; delicate' (Turner 1966: no. 10299; Sheth 1963: 668b); in addition, Sheth (1963: 668b) records a Prakrit homonym meaning 'inactive, slow, lazy'.
- 5) For the occasional loss of *c-* in South Dravidian, see Krishnamurti 2003: 121-125; cf. Mayrhofer 2001: III, 36 and 195.
- 6) For various kinds of South Asian air-breathing sea snakes, which are highly venomous and have completely adapted to life in the sea (and are often mistaken for eels, and vice versa), see Murthy 1995: 34-39 with Figure 14-20.
- 7) Above all, a meaning must be found that convincingly explains a noun phrase found, on many seals, often alone. The sign that probably depicts 'hand, arm' is preceded by a numeral whose value varies. A good possibility is **taṇṭṭu* 'to collect (debts, rents, taxes, etc.), to pay off (debt)' (DEDR 3054); the meaning recorded in Tulu, 'to put forth the hand to receive anything', suggests that the verb goes back to **taṇṭṭu* 'arm'. The number preceding the 'hand, arm' sign can be an abbreviation for 'x number of pots (of sacrifice or taxation)': in tablets M-494 and M-495, it is preceded by UUU (Parpola 1994: 83), with the sequence UUU being equal to '3' + U = 'three pots (of sacrifice or taxation)' (Parpola 1994: 109).
- 8) A special development of the meaning of the root **iṣu-*, **eṣu* 'to draw, pull' (attested only in South Dravidian) is **iṣu-*, **eṣu* 'to gasp for breath as from asthma, to breathe hard as a dying person, to pant' (DEDR 504 b). This may be relevant as well, as breeding ghariyal males hiss loudly, with the protuberance possibly acting as a resonator (Daniel 1983: 15).
- 9) Lüders (1942: 66-69) argues that the heavenly dolphin of the Jaiminiya-Brāhmaṇa represents the original tradition, while *śiśumāra-* in the Taittiriya-Āraṇyaka means 'crocodile' because this text was composed outside the distribution area of the river dolphin in South India. However, already in Pāṇcaviṃśa-Brāhmaṇa 8,6,8-10 and Jaiminiya-Brāhmaṇa 1,176, *śiśumāri-* denotes 'female crocodile' rather than 'female dolphin', as these texts describe the animal lying in a narrow place of a river with an open mouth, waiting for prey that she can swallow. A river dolphin hardly lies for any length of time, much less with its mouth open. On the other hand, an open mouth is characteristic of a basking crocodile; examples are mentioned in Jātaka texts (Lüders (1942: 77-78). Caland (1919: 67-69, #62) first thought the dolphin was meant here—, and Lüders (1942: 66) followed him—, but Caland (1931: 177-178) later changed his mind to his view to crocodile. Lüders (1942: 70 n. 2) admits that *śiśumāra-* could mean 'crocodile' in Śāṅkhāyana-Āraṇyaka 12,6,28: *nainam pramattaṃ varuṇo hinasti na makaro na graham śiśumārah*. Note that the dangerous aquatic beasts mentioned here are connected with Varuṇa.
- 10) The name Rohita, which means 'the Red one', appears to refer to the rising sun.
- 11) This also appears to have astral significance, as the crescent moon may be thought to suffer from dropsy.

- 12) This phrase, consisting of the repeated sign no. 142 (Parpola 1994: 73), 'roof' over 'number one', occurs relatively rarely in the Indus texts; however, twice (in M-650 and L-98) it precedes the phrase of signs nos. 101 and 60, read below as *val mīn* 'strong fish = crocodile'.
- 13) Cf. also the compounds *kōl-mutala* = *kōlttala* 'crocodile' (attested in Malayalam) and *kōl-ari* 'lion' in Tamil (TL 1928 II: 1202c from Piṅkala's lexicon) and ancient Malayalam (Gundert 1872: 320a, quoting Payanūr pāṭṭu and Rāmacaritam). The latter component is a loanword, from Sanskrit *hari-* 'yellowish; m. lion' (Böhtlingk 1889 VII: 258c).
- 14) The crocodile is occasionally included with fish in Indo-Aryan texts, too (Lüders 1942: 63 and 72-73).
- 15) Tamil *vallayam* and its cognates might be related to other Indo-Aryan words denoting 'fish-hook', which on account of their relatively late appearance (first in Suparṇādhyaṃya 17,2 *matsya iva biliṣaṃ jagrasāno*, then in the epics) and great variation have been believed to be loanwords from a non-Aryan language (Mayrhofer 1996: II, 226; Turner 1966: no. 9123); a Munda origin was once proposed by Kuiper (1948: 94-95), but Kuiper himself later admitted that the related Munda words (Munda *bāṛsi*, *bansi* and Sora *bāṛsi* 'fish-hook') are loanwords from Neo-Indo-Aryan.

In detail, the Indo-Aryan evidence is as follows:

- Sanskrit *biliṣa-* (Suparṇādhyaṃya 17,2; Mahāvastu iii,259,2 and 260,16, with variant reading *billaṣa-*), *baḍiṣa-* (Mahabhārata, Rāmāyaṇa, kāvya), *valiṣa-*, *vaḍiṣa-baliṣa-*, *baḍiṣa-* (lexica)
- Pali *balisa-*, *baḷisa-*, Prakrit *biḍiṣa-*, *baḍisa-*, *barisa-*
- Hindi *varis*, *varīṣī*
- Old Awadhi *banasi*
- Kumaoni *balsī*, *balchī*
- Nepali *balsi*, *balchi* (whence *balche* 'barbed')
- Assamese *barahi*
- Bengali *baris*, *barsi*, *barsā*, *bārsi*
- Oriya *barisa*, *barisi*, *banasi*, *banisi* 'fishing-rod and line' (whence *banasiā*, *banisiā* 'angler')
- Marathi *bansi*
- Singhalese *balasa*, *biliya*, *bili-kaṭuva*.

- If 'fish-gig' rather than 'fish-hook' is indeed the original meaning, I suggest reconstructing Proto-Dravidian **val-l-icam*, from Proto-Dravidian **val* 'strong, strength' (DEDR 5276) and Proto-Central-Dravidian **ic-* 'to strike, beat, thrust into or through, spear, spit, impale' (DEDR 425). On Proto-Dravidian **-c-* [-s-] > -y- > -g-, cf. Kannada *ballega*; Krishnamurti 2003: 148-149.
- 16) Here the text is written from left to right; this is not uncommon in these "sacrificial tablets", though the normal direction of writing is from right to left (Parpola 1994: 107-110).
- 17) Adding this marker is optional, as seen in the case of the southern dialect Tulu compound *niruta kaṇi* 'water canal' (versus *nirukaṇi* in northern dialects).

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