CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES
OF WILD FAUNA AND FLORA

Eighteenth meeting of the Conference of the Parties
Colombo (Sri Lanka), 23 May – 3 June 2019

CONSIDERATION OF PROPOSALS FOR AMENDMENT OF APPENDICES I AND II

A. Proposal

To include the genus *Ceratophora* on Appendix I. All five species of this genus are endemic to Sri Lanka, three of which are classified as Critically Endangered in Sri Lanka's national Red List and two as Endangered. All five are strictly protected under Sri Lankan legislation and no exports for commercial purposes are permitted. A considerable number of adult animals have been observed on sale in the international pet market.

This proposed inclusion is in accordance with Article II paragraph 1 of the Convention, satisfying Criteria A i), ii) and v) as well as B i), iii) and iv) of Annex 1 of Res. Conf. 9.24 (Rev CoP17).

B. Proponent

Sri Lanka

C. Supporting statement

1. Taxonomy

1.1 Class: Reptilia

1.2 Order: Squamata

1.3 Family: Agamidae

1.4 Genus, species or subspecies, including author and year:

Ceratophora aspera (Günther, 1864)

Ceratophora erdeleni (Pethiyagoda & Manamendra-Arachni, 1998)

Ceratophora karu (Pethiyagoda & Manamendra-Arachni, 1998)

Ceratophora stoddartii (Gray, 1834)

Ceratophora tennentii (Günther, 1861)

1.5 Scientific synonyms: *C. stoddartii*: *Ceratophora hoddartii* (Kelaart, 1854)

1.6 Common names: English:

Ceratophora aspera: rough-nosed horn lizard, Sri Lanka horned agama

Ceratophora erdeleni: Erdelen's horn lizard

Ceratophora karu: Karunaratne's (horn) lizard

Ceratophora stoddartii: rhino-horn lizard, mountain horned agama

Ceratophora tennentii: leaf-nose lizard, Tennent's leaf-nosed lizard

Spanish:

C. stoddartii: rhino cornes lézard, Iguane à petites cornes rhino

Sinhala:

C. aspera: Raluang katussa, Kuru angkatussa

C. erdeleni: Erdelenge angkatussa

C. karu: Karunaratnege Angkatussa

C. stoddartii: Kagamuva Angkatussa

C. tennentii: Peti Angkatussa

1.7 Code numbers: None

2. Overview

Of Sri Lanka's 211 recognised reptile species, more than 50% are endemic (MOE 2012), including all five species of *Ceratophora*. *Ceratophora aspera, C. stoddartii,* and *C. tennentii* have been known for decades, while *C. erdeleni* and *C. karu* were only described in 1998 (Pethiyagoda and Manamendra-Arachchi 1998).

Three species (*C. tennentii*, *C. erdeleni* and *C. karu)* are restricted to relatively small parts of Sri Lanka . Like most Sri Lankan agamids, *Ceratophora* species prefer very specific conditions and are restricted to specific microhabitats. Given their unique microclimatic and habitat requirements, all five species in the genus are threatened with extinction: The national Red List of Sri Lanka classifies two species as Endangered (*C. aspera* and *C. stoddartii*), and the remaining three species as Critically Endangered (*C. karu, C. erdeleni, and C. tennentii*) (Wickramasinghe 2012). The IUCN Red List has assessed two *Ceratophora* species; *C. tennentii* is classified as Endangered (criteria B1+2bc; World Conservation Monitoring Centre1996), and *C. aspera* as Vulnerable (criteria B1ab; Somaweera & De Silva 2010).

The entire genus is strictly protected in its sole range State; no exports for commercial purposes are permitted by law. However, since 2011 specimens have increasingly shown up in the pet markets of Europe and the USA (Altherr 2014; Auliya *et al.* 2016).

Ceratophora lizards are known for their spectacular coloration and rostral structure (Whiting *et al.* 2015). In 2010, the high demand for unique and rare species became apparent when a delegation of 14 German pet traders visited Sri Lanka in order to examine export options for endemic reptiles (ZZF 2010). This initiative met with strong local opposition, and was ultimately abandoned (Asian Tribune 2010; Hettiarachchi 2010), with no legal exports resulting. However, in 2011 first a Russian and then shortly thereafter a Japanese wildlife trader offered several Sri Lankan agamids including *C. stoddartii* for sale. Regular adverts on Facebook groups and other online platforms began in 2013, mostly for adult specimens of *C. stoddartii* (Altherr 2014). After 2014, *C. aspera* and *C. tennentii* also began to appear on sale. In August 2017, a Malaysian trader offered *C. erdeleni* and *C. karu* for sale, marking the first (although not the last) instance of these species being observed in trade (see Annex). The entire *Ceratophora* genus has therefore now been observed in international trade.

The nationality of traders offering *Ceratophora* for sale include Russian, German, Italian, Swiss, French, British, Spanish, Czech, Malaysian, and Japanese (Altherr 2014; Krvavac *in litt.* 2015; see Annex). While in the 1990s *Ceratophora* specimens were sold for approximately 176 € each (Auliya 2003), prices are now up to 2,200 € a pair (Altherr 2014; see Annex), making smuggling highly profitable. Smuggling and sale into the pet trade is facilitated by the fact that apart from the USA no other country has legislation prohibiting the sale of specimens that were illegally captured and exported in the country of origin (Auliya *et al*. 2016).

The primary threat to *Ceratophora* is habitat loss due to expanding agriculture (Krvavac *et al.* 2015). Although total numbers in trade may not be very high, for species facing this ongoing habitat loss, in addition to limited range, habitat specialization, low reproduction rate and small populations, even moderate offtakes are very concerning and may precipitate extinction.

Accordingly, Sri Lanka is of the opinion that the criteria outlined in Annex 1 of Res. Conf. 9.24 (Rev CoP17), criterion A i), ii) and v) and criterion B i), iii) and iv) apply to the *Ceratophora* genus. National conservation and protection measures appear to be insufficient to save these lizards from unlawful collection and smuggling to the pet markets in Europe, USA and some Asian countries. Therefore a listing in CITES Appendix I is necessary to involve import markets in enforcement of these highly threatened and nationally strictly protected species.

3. Species characteristics

3.1 Distribution

Ceratophora stoddartii is found in the cloud forests of Sri Lanka's Central massif (1,200–2,200 m elevation): Horton Plains, Hakgala, Namunukula Peak, Peak Wilderness, Haputale, Nuwara Eliya, Maratenna, Balangoda, Pattipola, Pidurutalagala, Ohiya, Kandapola, Galaha, and Kegalle District (Udagedara & Karunarathna 2014). Distribution of this species is limited to an area of less than 200 km² (Bahir & Surasinghe 2005).

C. aspera is found in the South wet zone belt, between 60 and 990 m above sea level. Its extent of occurence is limited to approximately700 km² according to Bahir & Surasinghe (2005), and the area in which it is found is approximantely 10,300 km² according to Somaweera and de Silva (2010).

C. tennentii is restricted to an area of about 130 km² in the Knuckles Range (Bahir & Surasinghe 2005), separated from the Central Massif by the lowlands (500 m) of the valley of the Mahaweli River, and recorded at altitudes of approximately 760-1,220 m (Pethiyagoda & Manamendra-Arachchi 1998). Recent work has underscored the importance of disturbed habitats which retain the species' requirements such as those pertaining to shade and humidity, and which support significant densities of *C. tennentii* outside of undisturbed forest areas (Somaweera *et al*. 2015).

C. karu and *C. erdeleni* are restricted to the Morningside forest reserve at Rakwana and some locations in Deniyaya at the eastern side of Sinharaja, at a 1,000-1,300 m elevation (Pethiyagoda & Manamendra-Arachchi 1998; de Silva *et al.* 2005). The extent of both species is less than 10 km² (Bahir & Surasinghe 2005).

3.2 Habitat

C. aspera is widely distributed in the lowland moist forests of Sri Lanka's south-western wet zone, but restricted to the undisturbed and fragmented, moist lowland and submontane dipterocarp forests (Somaweera & de Silva 2010). There are also instances of it being found in home gardens adjacent to forested areas (S Bandara 2018, pers. comm., 21 September). All other *Ceratophora* species are found in cloud forest between 760 and 2200 m above sea level, with high humidity and lower temperatures, e.g. *C. stoddartii* (Bartelt & Janzen 2007).

C. stoddartii is a slow-moving sub-arboreal species usually found on moss-covered tree trunks in cloudy highland forests. *C. erdeleni*, too, has a sub-arboreal lifestyle, while *C. karu* is a ground-dwelling species (Schulte *et al.* 2002). *C. tennentii* has an arboreal lifestyle (Pethiyagoda &

Manamendra-Arachchi 1998). Most *C. tennentii* were found in mixed cardamom forests followed by natural cloud forests and cardamom plantations, but none were observed in pine plantations (Somaweera *et al.* 2015). Other observations have revealed a greater frequency of occurance of *C. stoddartii and C. tennetii* on small upright plants than on larger tree trunks (S Bandara 2018, pers. comm., 21 September).

3.3 Biological characteristics

Sri Lankan horned lizards exhibit territorial behaviour (Bandara 2012).

Clutch size is between one and ten eggs, which are burrowed in the forest ground (Pethiyagoda and Manamendra-Arachchi 1998). Females of *C. aspera* were observed to deposit only 1-2 eggs per clutch (Krvavac *et al.* 2015), a clutch size of two eggs is reported for *C. karu*, while *C. stoddartii* produces up to eight eggs per clutch. According to Bartelt & Janzen (2007) incubation time, at least in captivity, lasts 90-120 days, depending on external temperature. They report a size of hatchlings of about 2,5 cm; sexual maturity is reached at an age of six months.

3.4 Morphological characteristics

Rostrum: The five species of Sri Lankan agamid lizards of the poorly known endemic genus *Ceratophora* show remarkable variation in the morphology and development of rostral appendages: While the rostral appendage in *C. aspera* is cylindrical and covered with pointed scales, a rostrum is rudimentary or absent in *C. karu* and *C. erdeleni* (Schulte *et al* 2002). According to Pethiyagoda and Manamendra-Arachchi (1998) *C. karu* is distinguished from all other *Ceratophora* (except *C. tennentii* and *C. aspera*) by the rostral appendage being complex, comprising more scales than rostral scale alone (vs. rostral appendage restricted to rostral scale alone in *C. erdeleni* and *C. stoddartii*).

The rostral appendage of *C. aspera* is remarkably complex and long, making in length up to 24% of snout-vent-length (SVL) and comprising more scales than rostral scale alone (Johnston *et al*. 2013). *C. tennentii* shows a laterally compressed, leaf-shaped, elliptical rostral appendage, covered in granular scales (Schulte *et al* 2002).

While the horn-shaped rostral appendages in *C. aspera* and *C. stoddartii* are absent in juveniles and dimorphic in adults, they are already present in juveniles and monomorphic in adults of *C. tennentii* (Johnston *et al*. 2013).

C. stoddartii is distinguished from all other *Ceratophora* by the presence of a prominent rostral appendage restricted to the rostral scale, being a sharp, spine-like white coloured “horn” (Pethiyagoda and Manamendra-Arachchi 1998), whereas the “horn” of *C. tennentii* (the leaf-horned lizard) is a flat, leaf-like one. Males of *C. stoddartii* have a horn of up to 20 mm, horns of females is 5-7 mm, if present at all (Bartelt 1995).

Size: According to Johnston *et al*. (2013) the five species of *Ceratophora* fall into two groups based on body size (Table 1). *C. aspera* and *C. karu* have maximum SVLs < 40 mm, whereas *C. tennentii, C. erdeleni* and *C. stoddartii* have maximum SVLs > 80 mm. *C. aspera* is the only species to show sexual size dimorphism. Female *C. aspera* grows larger than males.

Color: *C. aspera* is of light brown or yellowish colour, about 17 dark bands on body and tail, separated by narrow lighter interspaces (Pethiyagoda and Manamendra-Arachchi 1998).

Mature individuals of *C. erdeleni* show a dorsal and lateral background colour of light brown to yellowish or brownish red; they have about 17 broad, dark brown bands on body and tail separated by narrow, lighter interspaces. The larger lateral scales with lighter margins. Limbs with cross bars; venter is yellowish green. Juveniles are greenish on both dorsum and sides (Pethiyagoda and Manamendra-Arachchi 1998).

Males of *C. karu* are blackish dark brown with some reddish scales on head and mid-dorsal area, some specimens with bright orange-red patches on supralabials, a few black lines on sides of head and neck; females are lighter coloured, and juveniles again lighter than adults (Pethiyagoda and

Manamendra-Arachchi 1998).

In *C. stoddartii* mature individuals have a background colour of dorsum and sides of dark brownish-green or yellowish brown; about 10-16 broad, dark brown bands on tail separated by narrow, lighter interspaces (Pethiyagoda and Manamendra-Arachchi 1998). When being excited or stressed colour of males is changing to a bright green with distinct brown, linked spots (Bartelt 1995).

C. tennentii: Underside of appendage, gular area and thorax of mature males are white or yellow; juveniles brown on both dorsum and sides; a narrow white stripe between eye and gape; background colour of dorsum and sides of mature individuals reddish brown to olive green; larger scales on sides more greenish; area around the eye and sides of neck with black markings; about 10 broad, dark brown bands on tail separated by narrow, lighter interspaces; venter whitish; juveniles dark brown both dorsally and laterally (Pethiyagoda and Manamendra-Arachchi 1998).

3.5 Role of the species in its ecosystem

Ceratophora are reported to feed on insects (moths, caterpillars, bees, large ants, cockroaches) and other species of small arthropods (Whiting *et al.* 2015). Potential foragers of these lizards are arboreal snakes, birds including birds of prey, small carnivores, and other lizards; e.g. Senanayake (1980) observed the common garden lizard (*Calotes versicolor*) predating on juvenile *C. stoddartii*.

4. Status and trends

4.1 Habitat trends

Deforestation in Sri Lanka has seriously compromised its unique biodiversity: timber extraction and clearing of forests for tea plantations have destroyed large areas of the country (Wickramasinghe 2012). As a consequence, Sri Lanka's natural forest cover has dwindled from 80% to less than 16% over the last 130 years. At the end of the 19th century, more than 80% of the country was covered by forest; by1950 only half the land area was forested. At the beginning of the 1990s forest cover was less than a quarter of the land area, and in 2007 only 17% forest coverage was recorded. Should this rate continue, less than 10% of forest cover will remain in Sri Lanka by 2030 (Kariyawasam and Rajapakse 2014).

According to Erdelen (2012) the forests of the wet zone and the central hill range have become highly fragmented and no continuous primary forest cover remains from sea level to over 2,500 m of the central hill range.

4.2 Population size

C. karu is considered to be one of the rarest agamids in Sri Lanka (Bahir & Surasinghe 2005). *C. erdeleni* and *C. tennentii* also have small populations (de Silva *et al.* 2005). All three are classified in Sri Lanka's national Red List as Critically Endangered, with B1ab(iii) as the criteria for *C. karu* and *C. erdeleni*, and B2ab(iii) for *C. tennentii* (MOE 2012).

In the global IUCN Red List, *C. tennentii* is classified as Endangered according to criteria B1+2bc (World Conservation Monitoring Centre 1996) and *C. aspera* is listed as Vulnerable under criteria B1ab(iii) (Somaweera & De Silva 2010).

C. aspera and *C. stoddartii* have the largest ranges and also the highest frequency (Pethiyagoda and Manamendra-Arachchi 1998). *C. aspera* was described as uncommon in Sri Lanka by Bahir and Surasinghe (2005); while others report it as "the most common horned lizard in the lowlands" (of the two other *Ceratophora* species) (Somaweera & de Silva 2010).

4.3 Population structure

No Available Information

4.4 Population trends

In 2005 *C. aspera* was classified in the national Red List as Vulnerable and *C. tennentii* as Endangered (Bahir & Surasinghe 2005), but in 2012 they were re-classified as Endangered and Critically Endangered, respectively (Wickramasinghe 2012).

C. stoddartii now inhabits only a small portion of its former range, most of the lower elevations (under 1800 m) of the Central Massif having been cleared during the past century for the cultivation of tea (Pethiyagoda & Manamendra-Arachchi 1998). The population of this species at Namunukula (06°56'N, 81°07'E; 1980 m altitude) appears to be a marginal relict. It is restricted to a very small forest reserve of about 200 ha, the last remnant of a much larger montane cloud forest that has now given way entirely to tea plantations (Pethiyagoda & Manamendra-Arachchi 1998).

Although reported as being common in certain locations, the distribution of *C. aspera* is severely fragmented due to a lack of suitable habitat (Somaweera and de Silva 2010).

4.5 Geographic trends

During a survey of Janzen and Bopage (2011) in the Morningside area, neither *C. karu* nor *C. erdeleni* were observed. A 2017 survey of typical habitat for C. aspera in Kithulgala failed to reveal any individuals, perhaps accounted for by nearby development (S Bandara 2018, pers. comm., 21 September).

5. Threats

Deforestation, leading to loss of habitat and habitat fragmentation, is the main threat faced by the reptile fauna of Sri Lanka (Erdelen 2012; Wickramasinghe 2012).

The rate of forest depletion and loss of wildlife habitats in Sri Lanka is considered one of the highest in South Asia, with more than 50% of forest cover being lost during the last century alone (Wickramasinghe 2012; MOE 2012). The majority of endemic and threatened reptiles are restricted to lowland and montane forests, and the rapid loss of these habitats is the biggest threat to the reptile fauna of Sri Lanka. Additional identified threats are mortality related to man-made forest fires, use of agrochemicals, road casualties, non-selective killing of reptiles and predation by farm and domestic animals. (Wickramasinghe 2012; Udagedara & Karunarathna 2014).

De Silva *et al.* (2005) describe a serious reduction of suitable habitat for *C. tennentii* due to large-scale clearing for coffee and tea plantations. Somaweera and de Silva (2010) note the continuing decline in quality and amount of suitable habitat available to *C.aspera.*

In addition to habitat loss and other threats identified above, the apparent demand of all *Ceratophora* species in the international pet trade represents an additional threat, with trade observations indicating that *C. stoddartii* is the most heavily targeted species to date (see Annex).

6. Utilization and trade

6.1 National utilization

None

6.2 Legal trade

Until the early 1980s specimens were exported from Sri Lanka for commercial purposes due to less stringent export laws (Karunaratne 1986). Trade in *Ceratophora* has been strictly prohibited since 1993 (Parliament of the Democratic Socialist Republic of Sri Lanka 2009).

6.3 Parts and derivatives in trade

No evidence exists of parts and/or derivatives of *Ceratophora* being used or traded. The only known utilisation and trade of the genus is for live specimens attributable to the pet industry.

6.4 Illegal trade

Since regulation of agamid exports from Sri Lanka was less restrictive in the past, *Ceratophora* individuals may have been legally exported (possibly for other purposes) and later applied for use in the pet industry (Somaweera *in litt.* 2013). However, the substantial numbers of adult Sri Lankan agamids that have been observed in the European pet market during the past 15 years or so is a strong indication of significant smuggling activity. Frequent smuggling of endemic reptiles from Sri Lanka has been noted previously (Bambaradeniya 2006), and is known to be a recurring problem (Altherr 2014; Somaweera in litt. 2013).

Targeting gravid females so that offspring can be later presented as "captive-bred" is a technique commonly practiced by reptile collectors (Smith 2011; Adams 2012; New Zealand 2013; Fullerton 2014; Auliya et al. 2016). In addition, genuinely captive-bred specimens of recently smuggled adult specimens would be a result of illegally acquired breeding stock.

According to Krvavac (2015), foreign professional collectors, scientists, Sri Lankan nationals, and 'tourists' who collect individuals from the wild and then courier them to overseas destinations are all implicated in this illegal trade.

The first species that showed up in online advertisements was *C. stoddartii* in 2011, while *C. tennentii* and *C. aspera* followed in 2014. In August 2017, *C. erdeleni* and *C. karu* were first offered for sale (see Annex).

Europe: A survey of European reptile fairs in 1998 found specimens of *C. stoddartii* among the 15 most expensive non-CITES species on sale, priced at 176 € each (Auliya 2003). By 2014 prices had increased to 2,000-2,500 €/pair (Altherr 2014), perhaps indicative of rarity at the time. Since then prices have dropped to 750-1,200 €/pair (see Annex). The first online offer for "some rare agamids" from Sri Lanka, including *C. stoddartii*, was made by a Russian national at www.europe.bloombiz.com in January 2011. Since mid 2013 regular advertisements have been observed on European online pet trade websites (e.g. www.terraristik.com) and in Facebook groups. For example, in 2013 at least three Russian and one German traders advertised several species of Sri Lankan agamids, including *C. stoddartii* at 1,100 €/pair. Since then, similar offers were made by Swiss, French, Russian, Italian, British, Czech and Spanish nationals. Since December 2014, several offers for *C. aspera* and *C. tennentii* have been observed, with *C. aspera* being sold for 2,500 €/pair and *C. tennentii* for 750 €/pair.

Asia: A 2004-2005 survey of exotic species in Taiwanese pet shops identified Sri Lankan endemic agamids on sale, including *Ceratophora stoddartii* (Shiau *et al.* 2006). In 2013, adult specimens were offered for sale by a Japanese national in a Facebook group. In 2014, a trader from Malaysia offered specimens of *C. stoddartii* and *C. tennentii* on the European online platform www.terraristik.com. The same trader offered two pairs of *C. erdeleni* and one pair *of C. karu* in August 2017, noting "this is (an) expensive and rare species" (see Annex), marking the first time these species were offered for sale online.

USA: U.S. Fish and Wildlife Service Law Enforcement Management Information System data shows the import of two wild-caught specimens of *Ceratophora* in 2009 (species unspecified; for scientific purposes). Between 2013 and 2017, LEMIS data show imports of 25 live specimens of *C. stoddartii*; of these, 3 were declared as wild and 22 as captive-bred. In 2016, eight captive-bred live individuals of *C. tennentii* were imported and in 2017 two live individuals declared as wild were imported. All these specimens were imported for commercial purposes and came from Germany and Poland (LEMIS 2017).

In 2014 an Italian trader offered adult *C. stoddartii* for delivery to USA for 1,250 USD a pair,

and since then, several US nationals have offered this species for sale.

Refer to Annex for further information on the above examples.

6.5 Actual or potential trade impacts

The long-term survival of Sri Lankan horned-lizards is in the first instance threatened by habitat loss (Somaweera & de Silva 2010; Somaweera *et al.* 2015). International pet trade as an additional risk factor is relatively new but serious, especially given the low reproductive rate of the genus, the ease of collection and their high demand in international pet trade, reflected in prices of up to 2,500 €/pair, making illegal capture and smuggling highly lucrative activities (Altherr 2014; Auliya *et al.* 2016).

All species of *Ceratophora* are on Sri Lanka's national Red List, classified as either Endangered (*C. aspera* and *C. stoddartii*) or Critically Endangered (*C. karu, C. erdeleni, C. tennantii*). Their populations are already fragmented (Janzen & Bopage 2011; Wickramasinghe 2012). Accordingly, offtakes of even small numbers, especially of mature females, may severely damage the longevity of remaining populations and potentially lead to disappearance of these animals from their natural habitat (Altherr 2014;Krvavac 2015).

7. Legal instruments

7.1 National

In accordance with Section 30 of the Seventh amendment to the Fauna and Flora Protection Ordinance of Sri Lanka (FFPO), all reptiles (except for five highly venomous snakes) are protected species, and thus cannot be collected, even outside of protected areas. Section 40 of the FFPO completely prohibits the export from Sri Lanka of any reptile, dead or alive, including eggs and any part, without a permit from the Director General of the Department of Wildlife Conservation. Exceptions are only possible for the promotion of scientific knowledge and research (Parliament of the Democratic Socialist Republic of Sri Lanka 2009).

Genus *Ceratophora* is classified as a strictly protected species in the FFPO, resulting in significantly higher penalties for any trade in these species.

However, FFPO restrictions alone are not enough to effectively conserve this genus as smuggling out of Sri Lanka is occurring (Section 6.4 above).

7.2 International

None

8. Species management

8.1 Management measures

With regards to *Ceratophora aspera*, measures to address habitat loss are urged by Somaweera and de Silva (2010).

8.2 Population monitoring

Somaweera and de Silva (2010) recommend further habitat and population monitoring of *Ceratophora aspera.*

8.3 Control measures

8.3.1 International

None

8.3.2 Domestic

In Sri Lanka, all endemic reptile species have full legal protection against deliberate harm or collection from the wild. A permit issued by the Department of Wildlife Conservation is mandatory to perform any *ex-situ* or *in-situ* activity that involves a protected reptile species. Ranching and breeding of reptile species is not permitted in Sri Lanka (Ratnayake 2011). Section 40 of the Flora and Fauna Protection Ordinance completely prohibits the export from Sri Lanka of any reptile whether dead or alive; or the eggs or skin of any reptile; or any other body part of a reptile, without a permit from the Director General of the Department of Wildlife Conservation (Ratnayake 2011). Exceptions are only possible for the promotion of scientific knowledge and research.

8.4 Captive breeding and artificial propagation

Reports on successful captive breeding of *Ceratophora* species are scarce. Bartelt (1995) reported some captive breeding of *C. stoddartii*.

8.5 Habitat conservation

Sri Lanka currently has over 500 protected areas including over 90 key biodiversity areas, recently identified jointly by the Wildlife Heritage Trust and the University of Peradeniya (IBP 2015). According to Erdelen (2012) the most recent significant international achievement for Sri Lankan wildlife conservation has been the recognition of the Central Highlands of Sri Lanka as a World Heritage Site. This includes the Peak Wilderness Protected Area, the Horton Plains National Park, and the Knuckles Conservation Forest.

As stated in the relevant text of the World Heritage Committee (34 COM 8B.9) decision: “the property includes the largest and least disturbed remaining areas of the submontane and montane rain forests of Sri Lanka, which are a global conservation priority on many accounts…. (t)hey include areas of Sri Lankan montane rain forests considered as a super-hotspot within the Western Ghats and Sri Lanka biodiversity hotspot” (UNESCO 2010). This new World Heritage Site is of outstanding importance to the long-term conservation of a significant proportion of Sri Lanka’s herpetofauna and its fauna and flora in general (Erdelen 2012). *C. aspera* is known to occur in a number of protected areas within its range, including the Sinharaja Natural Heritage Wilderness Area. However, illegal logging, mining and human encroachment remain a threat, even in this location Somaweera & de Silva 2010).

8.6 Safeguards

Not applicable

9. Information on similar species

According to Pethiyagoda & Kelum Manamendra-Arachchi (1998), *Ceratophora* is distinguished from the other members of Family Lyriocephalinae due to the absence of the highly developed and bizarre *canthus rostralis* extending beyond the eye as a bony, terminally-pointed superciliary ridge (present in *Lyriocephalus* Merrem, 1820); due to the lack of a dorsal crest and a prehensile tail; and having oviparous reproduction (dorsal crest and prehensile tail present, reproduction viviparous in *Cophotis ceylanica* Peters, 1861).

Ceratophora differs from all other Agamidae by the presence of a simple rostral appendage in the form of a modified rostral scale or a complex rostral appendage comprising several scales, sometimes together with postrostrals; the appendage is prominent in males (except in some male specimens of *Ceratophora erdeleni*). It also differs from other Agamidae by having a subdermal tympanum, by the gular fold and nuchal crest being absent or greatly reduced, and by having some of the lateral scales of the body greatly enlarged (Pethiyagoda & Kelum Manamendra-Arachchi (1998)..

10. Consultations

European Union and United States of America

11. Additional remarks

None

12. References

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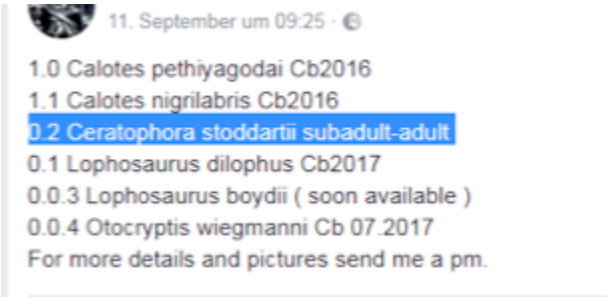
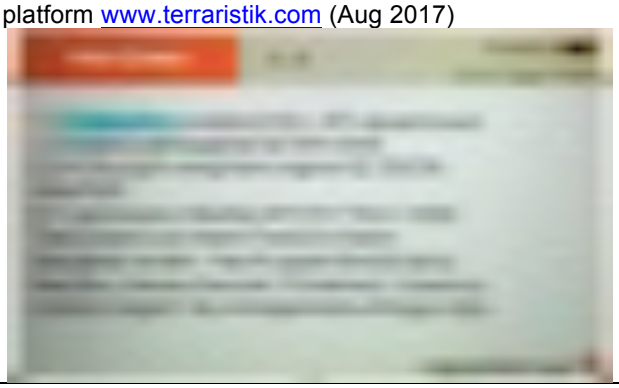
Annex

Online adverts for *Ceratophora* (selection, order from newest to oldest adverts)

<table>
<tr>
<td>Advert by a German trader, European online platform www.terraristik.com (Sep 2017)
  </td>
<td>Advert by a German trader, open Facebook group „Terraristika Hamm - MARKTPLATZ" (Sep 2017)
 
</td>
</tr>
<tr>
<td>Advert by a German trader, European online platform www.terraristik.com (Sep 2017)
  </td>
<td>Advert by a German trader, European online platform www.enimalia.com/terraristic (Sep 2017)
 
</td>
</tr>
<tr>
<td>Advert by a German trader for three different *Ceratophora* species, European online platform www.terraristik.com (Aug 2017)</td>
<td>Advert by a German trader for three different *Ceratophora* species, open Facebook group „Terraristika Hamm - MARKTPLATZ" (Aug 2017)</td>
</tr>
</table>

Advert by a German trader, explicitly noting wild-caught („WF“) *C. stoddartii*, European online platform www.terraristik.com (Aug 2017)

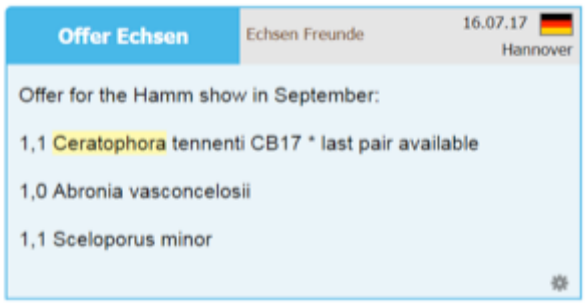


Advert by a Malaysian trader, European online platform www.terraristik.com (Aug 2017)

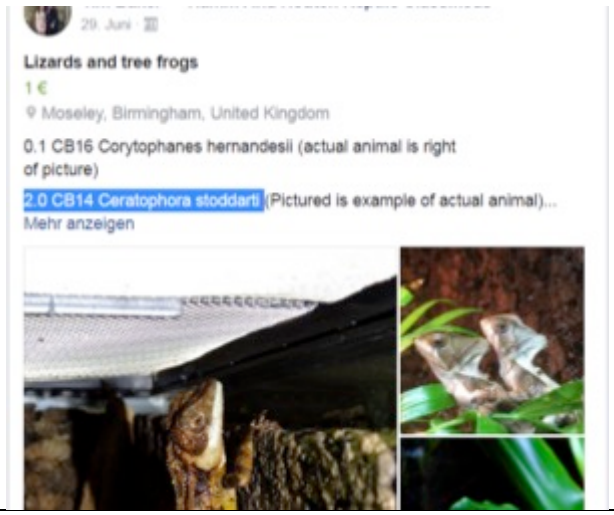
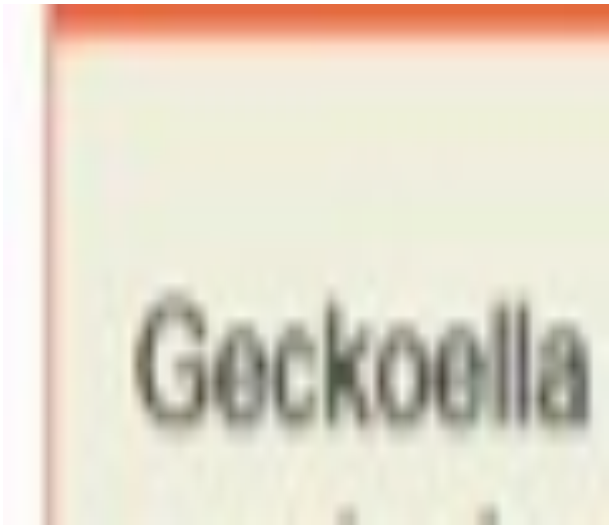
Advert by a Spanish trader, European online platform www.terraristik.com (July 2017)

Advert by a German trader, European online platform www.terraristik.com (July 2017)

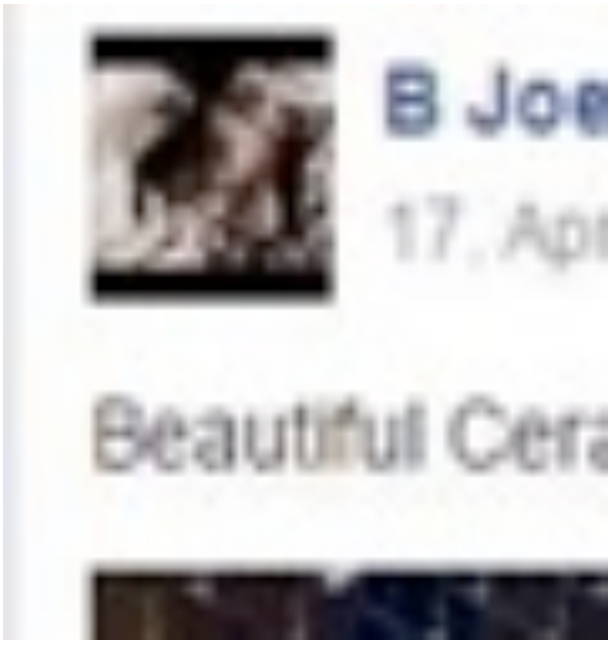
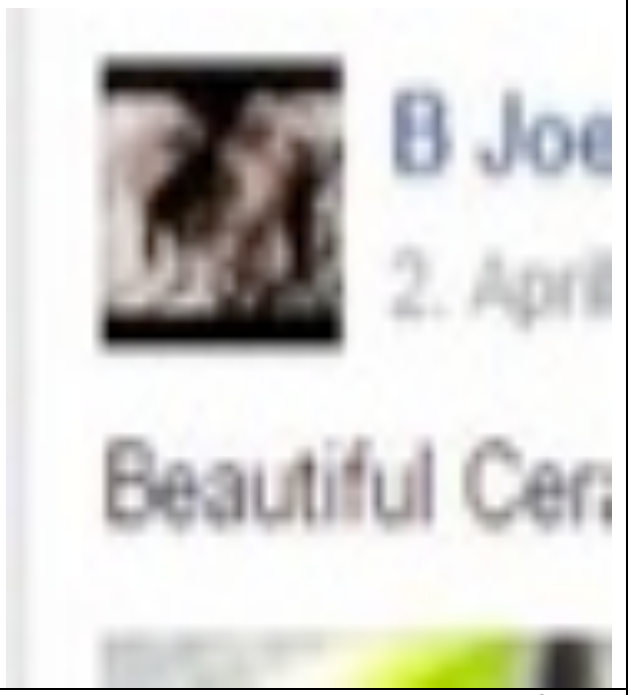
Advert by a German trader, European online platform www.enimalia.com/terraristic (July 2017)



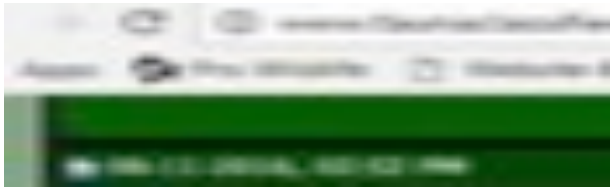
Advert by a German trader for two different *Ceratophora* species, open Facebook group „Terraristika Hamm - MARKTPLATZ" (Aug 2017)

	
Advert by a British trader, open Facebook group „Hamm And Houten Reptile Classifieds" (June 2017) 	Advert by a German trader, European online platform www.enimalia.com/terraristic (June 2017) 
Facebook advert by a trader, located in Sri Lanka, offer for German reptile trade show Terraristika in Hamm (June 2017) 	Advert by a Czech trader, European online platform www.terraristik.com (May 2017) 
Advert by a German trader, open Facebook group „International trade for agamidae" (April 2017); at least three specimens of *C. tennentii,* including gravid females	Advert by a German trader, open Facebook group „International trade for agamidae" (April 2017)

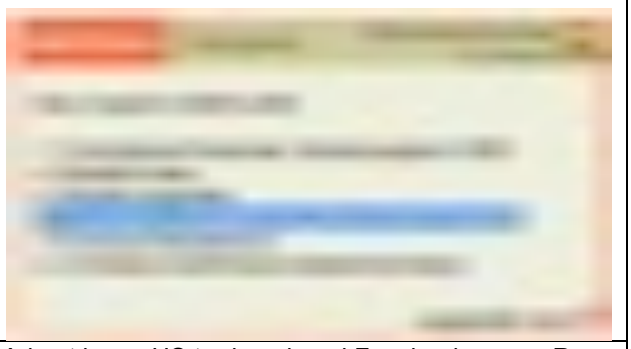
	

Advert by a German trader, open Facebook group „International trade for agamidae" (April 2017)  	Advert by a German trader, open Facebook group „International trade for agamidae" (April 2017) 
Advert by a German trader, open Facebook group „International trade for agamidae" (March 2017)  	Facebook advert by a British trader (Nov 2016) for wild-caught *C. stoddartii*, markes as “long-term in captivity” (LTC) 

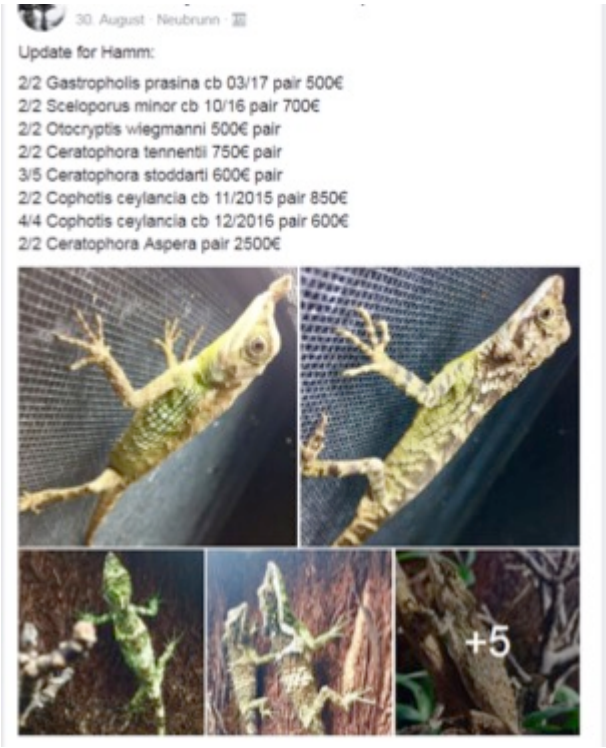
Advert for many Sri Lankan endemits, including three different *Ceratophora* species. US trader, at www.faunaclassifieds.com" (Nov 2016)



Advert by a Spanish trader, European online platform www.terraristik.com (May 2016)

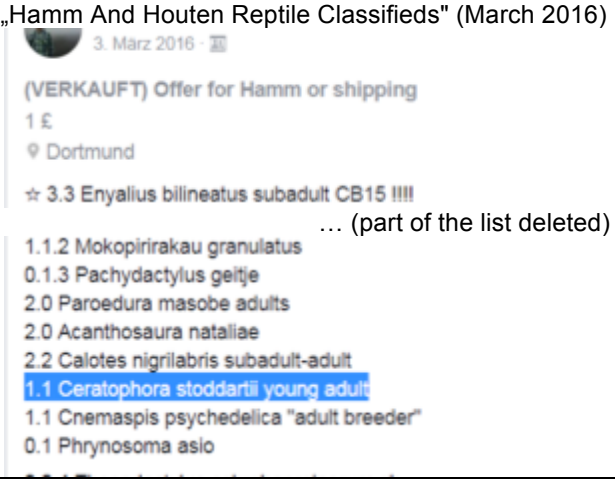


Advert by a German trader, closed Facebook group „Rare Reptile Collection" (Aug 2016)

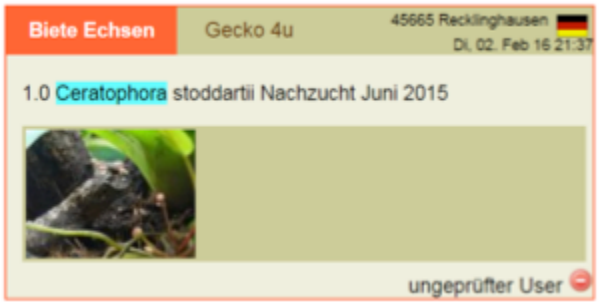


Advert by an US trader, closed Facebook group „Rare Reptile Collection" (May 2016)

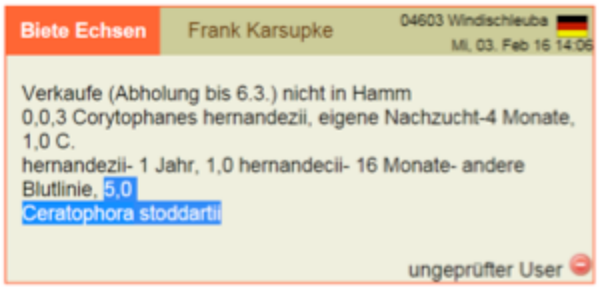
Advert by a German trader, closed Facebook group „Hamm And Houten Reptile Classifieds" (March 2016)



Advert by German trader (Feb 2016) at European online platform www.terraristik.com, claiming captive bred specimens



Adverts by German trader (Feb 2016) at European online platform www.terraristik.com: 5 adult males of *C. stoddartii*



Advert by an US trader/keeper Facebook group „rare reptiles collection“ (of Jan 2016)

Facebook advert (Nov 2015) by an Italian trader for reptile trade fair Terraristika in Germany

advert by a French trader in Facebook group „International trade for agamidae“ (Oct 2015)

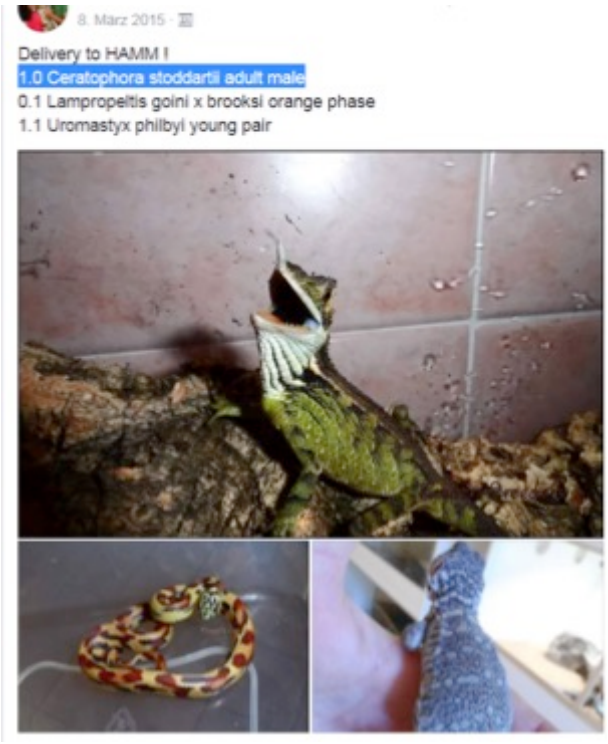
Facebook post by a Spanish keeper for *C. stoddartii* (as of Oct 2015)

Facebook advert by an US citizen for *C. stoddartii* (as of Sep2015), noted as captive-bred

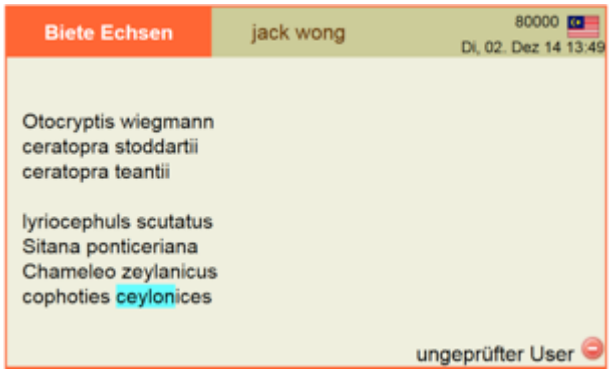
Facebook advert by a German trader (Sep 2015) for 2 adult males of *C. stoddartii*

Facebook advert by an US trader (Sep 2015) for 2 adult males of *C. stoddartii*

Facebook advert by an US citizen (July 2015) for a pair of *C. stoddartii*, price 1,200 USD 	Advert at faunaclassifieds.com (July 2015) for a pair of *C. stoddartii*, price: 1,200 USD, “perfect healthy from Sri Lanka” indicating wild origin 
Advert (June 2015) by an Italian trader at online platform www.terraristik.com for reptile trade fair Terraristika in Hamm/Germany 	Facebook post by an US trader (May 2015) for an adult male of *C. stoddartii* 
Facebook advert by a Russian trader (May 2015) for a variety of Sri Lankan agamids, including 3 males and 3 females of *C. stoddartii* 	Facebook post by the same Russian trader, but in the closed Facebook group “Rare Reptiles Classifieds” (details on prices and age) 
Advert by an US trader (March 2015) for a pair of *C.*	

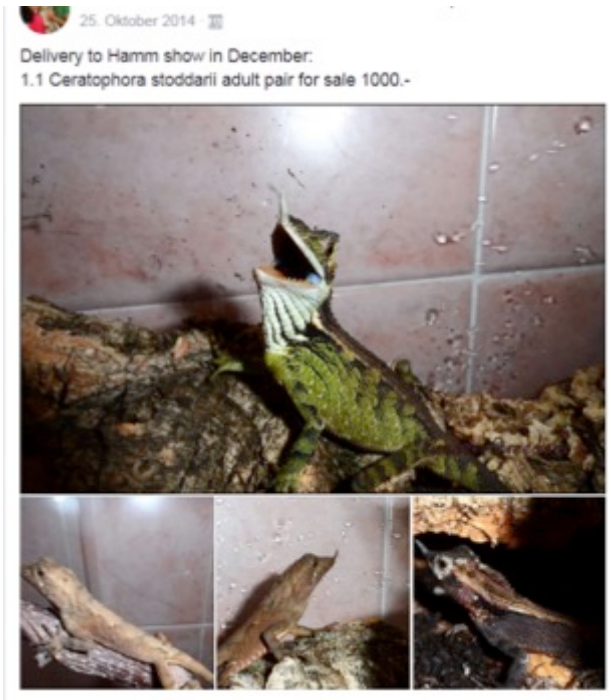
stoddartii, closed Facebook group “Rare Reptile Collection”  	*Ceratophora stoddartii*, on sale at German reptile show (March 2015) 
advert by an Italian trader (March 2015) for a male *C. stoddartii*, closed Facebook group “Hamm And Houten Reptile Classifieds”  	Facebook post by a German trader and breeder: *Ceratophora aspera* (Dec 2014) 

Advert by a trader from Malaysia at European online platform www.terraristik.com (Dec 2014), offering several Sri Lankan agamids, including *C. stoddartii* and *C. tennentii*



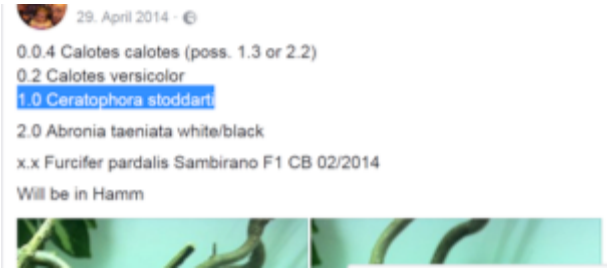
Facebook advert by an Italian trader (Nov 2014), offering several Sri Lankan agamids, including a pair of adult *C. stoddartii*

Facebook advert by an Italian trader for reptile trade fair Terraristika in Hamm, Germany (Oct 2014), offering a pair of *C. stoddartii*



Facebook advert by a Russian trader (Aug 2014) for a pair of wild-caught *C. stoddartii* ("already six months in captivity")

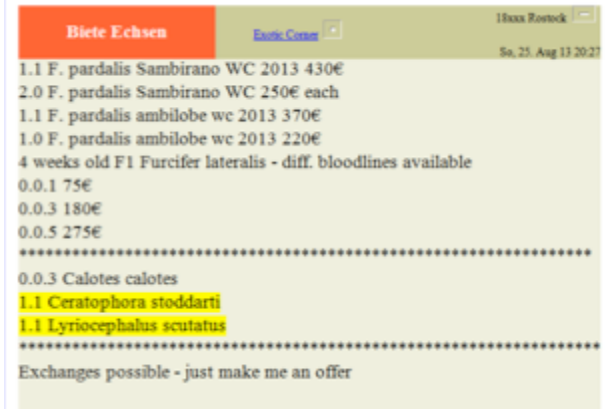
Advert by a German trader, open Facebook group „Terraristika Hamm - MARKTPLATZ" (Apr 2014)



Advert as of Apr 2014 at European online platform www.terraristik.com by a Swiss keeper & trader (although marked as German citizen)

Facebook advert by a Swiss trader (Dec 2013) for two pairs of adult *C. stoddartii*, to be sold at reptile fair Terraristika in Hamm, Germany

Advert at European online platform www.terraristik.com by a German trader



Facebook advert by a Japanese trader (July 2013) for a pair of adult *C. stoddartii*

Advert by a Russian trader at the website http://europe.bloombiz.com/ (Jan 2011)