

## **The Horns of a Dilemma: The Impact of the Illicit Trade in Rhino Horn**

**Paolo Viscardi**

Deputy Keeper, Horniman Museum and Gardens

Email: pviscardi@horniman.ac.uk

### **Abstract**

Rhinoceros horn has recently become highly sought after on the black market for use in Traditional Asian Medicine. Demand has increased levels of poaching and has led to the theft of material from collections across Europe through 2011. This article provides background to the situation and reiterates guidance on protecting both rhinoceros horn and staff in natural science collections.

### **Keywords**

Rhinoceros, rhino, horn, poaching, security, theft, auction, legislation, threat, CITES, DEFRA, AHVLA

### **Introduction**

It has been a bad year for rhinoceros and for natural history collections holding their horn. The international black market dealing in rhino horn has been particularly active recently, following a rumour that Traditional Asian Medicine (TAM) containing powdered horn could successfully treat and prevent cancer.

This has led to demand for rhino horn, driving up prices and increasing the risks criminals are willing to take in order to obtain it. Poaching of rhinoceros has increased dramatically and black market interest in taxidermy and cultural artefacts made from rhino horn has led to auction prices increasing by as much as tenfold and has ultimately resulted in the theft of material from collections.

The Natural Science Collections Association (NatSCA) has been active in monitoring the growing issue of theft from natural science collections and during the year we have issued guidance and liaised with media and government bodies in relation to the problem. This article is intended to contextualise and summarise the state of the rhinoceros horn situation at the end of 2011.

### **Uses of rhino horn**

Rhinoceros horn is often described as being made of compacted hair, but it is more accurately described as being formed of partially mineralised keratin tubules embedded in an intermittently melanised keratin matrix (Hieronymus et al. 2006). This structure is secreted by highly vascularised tissue often supported by an osseous protuberance of the nasal bones of the rhino. The most commonly cited use of rhino horn is as an aphrodisiac in TAM, which is a misconception<sup>1</sup>. There have been a few suggestions of the horn being used for this purpose in parts of Africa, but traditionally in TAM the horn has been used to treat fever and a variety of conditions including gout and rheumatism<sup>2</sup>.

There is no mention of rhinoceros horn in relation to cancer before 2009 and the earliest articles citing a link refer to claims that a 'prominent Vietnamese official' (who goes unnamed) was apparently cured of liver cancer using rhino horn. Official representatives for TAM have distanced themselves from these claims, stating that they no longer support the use of rhino horn in TAM and they have made it clear that the use of horn as a cancer treatment has no traditional or evidential basis<sup>3</sup>. Nonetheless, the increasing wealth in Asia and the wide acceptance of the cancer cure rumours in China, Vietnam and Taiwan have created a booming illegal trade.

Prior to the emergence of the cancer cure rumour, the illicit trade in rhino horn had been decreasing. The main market for horn previously had been in Yemen, where it was used to make handles for traditional daggers called *jambiya* (Martin et al., 1997). Since Yemen became a member of CITES in 1997, the trade for *jambiya* handles has significantly decreased and Yemen no longer appears to be a major destination for illegal horn (Milliken et al., 2009). This reduction in illegal trade to Yemen had been reflected in the population figures for African rhino species, where numbers in the wild increased substantially from the mid 1990s to 2007 (Milliken et al., 2009).

**Rhinos in the wild**

The Indian Rhinoceros *Rhinoceros unicornis* Linnaeus, 1758 have been recovering from overhunting and habitat loss for the last 100 years, resulting in a population of almost 3,000 individuals where there were just 200 a century ago. Poaching is a problem, but so far the Indian rhino population still seems to be increasing, thanks to conservation efforts supported by the Indian government (Talukdar et al., 2008).

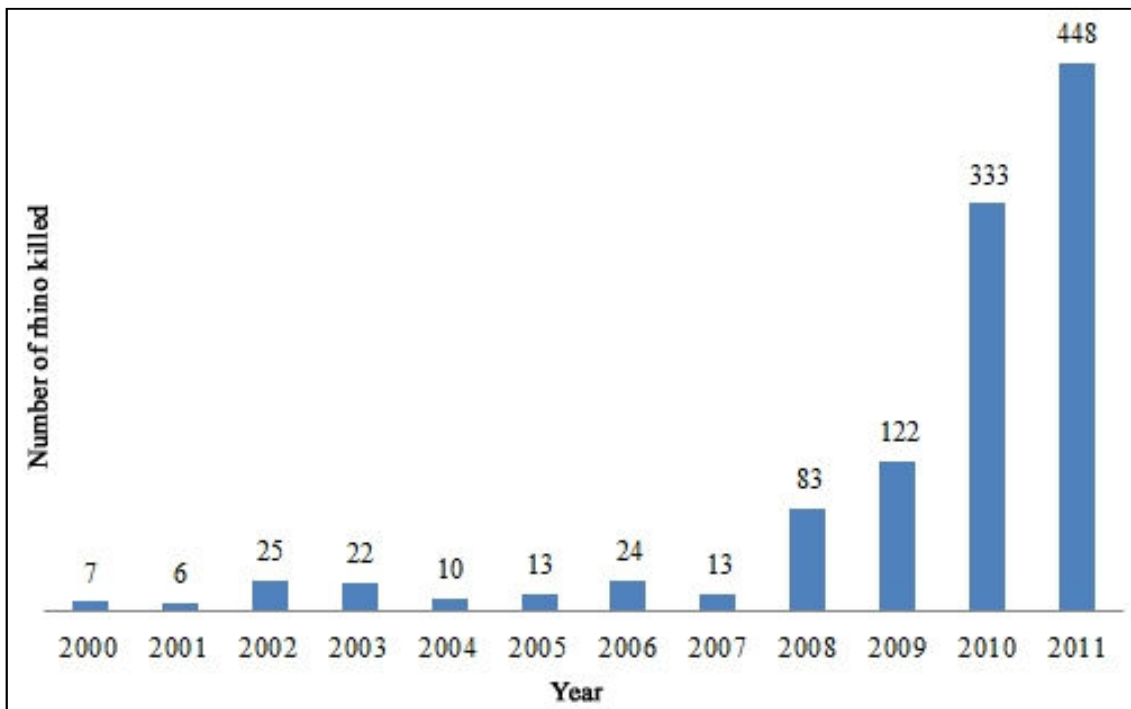
The Vietnamese Javan Rhinoceros *Rhinoceros sondaicus annamiticus* Heude, 1892 is now considered extinct after the last individual was found dead with its horn removed in 2010 (Brook et al., 2011). This leaves just 44 of the nominate subspecies of Javan Rhinoceros *R. sondaicus sondaicus* Desmarest, 1822 in the world, all of which are restricted to one Indonesian National Park.

The Sumatran Rhinoceros *Dicerorhinus sumatrensis* (Fischer, 1814) has also suffered considerably at the hands of poachers. No more than 230 individuals remain in total, with the Northern subspecies *D. sumatrensis lasiotis* probably extinct and fewer than 50 individuals left of the Eastern subspecies *D. sumatrensis harrissoni* (van Strien et al., 2011).

The Western Black Rhinoceros *Diceros bicornis longipes* (Zukowsky, 1949) subspecies was declared extinct this year (Emslie, 2011). Populations of the other three subspecies of Black Rhinoceros *D. bicornis bicornis* Linnaeus, 1758, *D. bicornis michaeli* Zukowsky, 1965 and *D. bicornis minor* Drummond, 1876 have been slowly increasing after extensive conservation efforts in the past few decades, so they now number approximately 4,800 individuals in total. However, there have been regular reports of Black Rhinoceros being poached that will impact on this past conservation success.

The Northern White Rhinoceros *Ceratotherium simum cottoni* (Lydekker, 1908) is now probably extinct in the wild (Emslie, 2011), with just 4 individuals left in captivity. In contrast, the Southern White Rhinoceros *C. simum simum* (Burchell, 1817) has a healthy population at present, with over 20,000 individuals in the wild and a further 750 in captivity (Emslie, 2011).

Despite the past conservation success stories for the Black and Southern White Rhinoceros, poaching in South Africa has rocketed in the last two or three years, with 333 animals killed in 2010 and 448 in 2011<sup>4</sup>. On average at least one rhinoceros is killed by poachers every day to supply the black market for horn.



**Fig. 1.** Incidents of rhino poaching in South African National Parks based on data from South African National Parks (SANParks<sup>5</sup>).

**Black market horn**

Poachers are using a range of methods to acquire horn, from misappropriating game licenses using Thai prostitutes<sup>6</sup> to using helicopters, tranquiliser guns and chainsaws to take the horn from living rhinos (usually fatally wounding them in the process). Besides poaching, there has been a great deal of illicit activity surrounding rhino horn stockpiles, involving armed organised crime cartels and implicating South African<sup>7</sup> and Vietnamese<sup>8,9</sup> officials.

The first inklings that the black market in rhino horn was starting to have an impact on historic material came in 2008 when an unknown number of horns were stolen from Grahamstown Observatory Museum and Oudtshoorn Museum in South Africa (HSI, 2011). The following year Cape Town's National Iziko Museum had two 19<sup>th</sup> century White Rhinoceros horns stolen (HSI, 2011).

There were also indications that historic horn was finding its way onto the black market from legal sources, when auction prices of rhino horn suddenly increased dramatically. A report on an auction conducted in May 2010 makes the following statement: "*The biggest surprises came in a sale of rhinoceros horn carvings, in which 30 lots, estimated at \$3.9 million, sold for \$30 million. The record for a single piece now stands at \$5 million, the price a Chinese collector paid for a 300-year-old rhinoceros horn vase.*" (Gleadell, 2010).

While carved libation cups and vases have commanded considerable sums for many years, the market for trophy horns also became unusually active. To illustrate, in November 2008 Tennants Auctioneers in Yorkshire listed a guide price of £5,000-7,000 for a Black Rhinoceros horn trophy shield (Lot 1235<sup>10</sup>), which sold for £19,000; the same auctioneers in July 2010 listed a very similar Black Rhinoceros horn trophy (Lot 1153<sup>11</sup>) at a guide price of £15,000-25,000 and it was sold for £42,000.

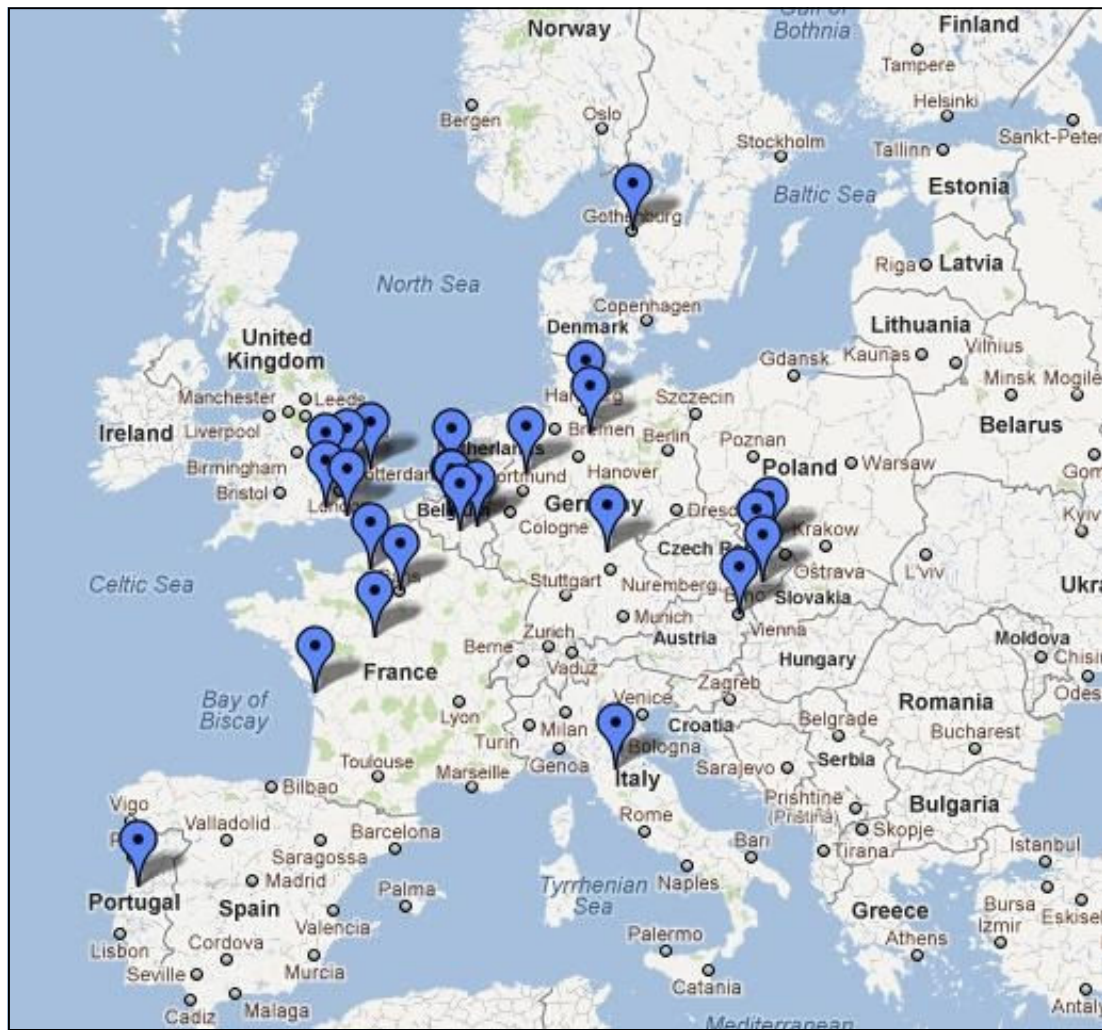
This escalation in price at auction and the increasing number of buyers based in Asia suggested that black marketeers were exploiting a loophole in CITES legislation regarding sale of worked rhino material. The European Commission responded by issuing guidance<sup>12</sup> which led to amendments to legislation in the UK by Animal Health (which become part of Animal Health and Veterinary Laboratories Agency, AHVLA, on April 1st 2011) and the Wildlife Licensing and Registration Service (WLRS) in February 2011<sup>13</sup>. These changes meant that mounted horns would no longer be recognised as having been 'worked' and would therefore no longer be covered by the Antiques Derogation that had previously allowed the sale of such material.

In light of the Europe Commission reassessment of the CITES guidelines cutting off a supply route for rhino horn, black market elements turned to thefts from European Natural Science Collections to supplement the supply. Between 31<sup>st</sup> December 2010 and 31<sup>st</sup> December 2011 there have been 26 reported incidents across Europe involving the theft or attempted theft of one or more rhino horns from museums, historic houses, auctioneers and displays in zoos (see figure 2).

In July 2011 Europol identified an Irish organised crime group as being involved in the illegal acquisition and trading of rhino horn from Europe. The group may be acquiring horn by offering cash to petty criminals who commit the robberies. This certainly appears to be the case for a specimen stolen from Liege, where the thieves were caught and informed police that they were to leave the horn at a drop point to be exchanged for €3,000.

Several thefts have been undertaken during museum opening hours and on occasion the thieves have used force (including tear-gas) or the threat of force to make an escape, which raises concerns over staff safety on top of concern for the collections. There have also been a number of incidents in museums where suspicious individuals or groups have been identified undertaking hostile reconnaissance, sometimes intimidating and explicitly asking staff where the rhino material is stored. On one occasion curatorial staff and a group of visitors bravely (and successfully) foiled a raid on a specimen<sup>14</sup>, but in doing so they exposed themselves to potential harm. Adequate briefing and training of staff have proven important when dealing with such incidents and with foresight and appropriate action the risks to staff should be minimised.

Other thefts have taken place outside opening hours, with thieves gaining entry by breaking into premises. In several such incidents thieves have been disturbed during their initial attempt, but they have returned with days or even hours to achieve their goal. Clearly the criminals undertaking the thefts are highly motivated and willing to take considerable risks.



**Fig. 2.** Location of thefts or attempted thefts of rhino horn in Europe from 31<sup>st</sup> December 2010 to 31<sup>st</sup> December 2011. Derived using Google Maps, interactive map with data available at: <http://g.co/maps/e29k8>

It is worth noting that the Police force have been taking the situation seriously and there have been arrests and charges brought against some of those undertaking thefts, including Jamie Channon of Melba Gardens, Tilbury who was one of those responsible for the theft of horn from Haselmere Educational Museum in Surrey in May 2011<sup>15</sup> and Darren Bennet of Battenberg Road, Leicester for the theft of two replica horns from the Natural History Museum at Tring in August 2011<sup>16</sup>.

#### **NatSCA's involvement**

After the initial spate of European thefts, NatSCA issued the following guidance<sup>17</sup> for rhino horn in museum collections:

1. This is an area that has implications for the safety of people and objects. We recommend that a security audit is carried out and if your material is not secure it should be taken off display and put in a secure location.
2. If you are worried about holding on to rhino horn then you should either put it in a more secure location at your site or dispose of it (either by loan or permanently) to another museum willing to take it on. This would probably be a museum that already looks after rhino horn.

3. Rhino material should not be destroyed. Apart from the obvious problems of destroying museum material, there are good scientific reasons for maintaining rhino horn for future research that can tie in to conservation efforts. A guide might be taken from national parks in South Africa where rangers lock up rhino horn rather than destroy it.
4. NatSCA does not advise on value, but for insurance valuation purposes auction houses can provide some guidance.
5. Do not publicise your rhino material. Thefts have targeted rhino horn that is on display or has been publicised in some way.

The above guidance has been circulated to the Museums Association (MA) and has received mention in articles on the MA website<sup>18,19</sup>, on rhino conservation blogs<sup>20</sup> and in the wider press<sup>21</sup>.

In addition to the published guidance, it is recommended that front-of-house and collections staff are made aware of the situation regarding the status and security of rhino horn and are adequately primed to safely deal with genuine enquiries from the public and reconnaissance from would be thieves.

It is also suggested that for horns which are difficult to take off display, for example horns on large trophy heads or full taxidermy mounts, it may be worth considering removal of the horn by a conservation professional and replacement with replicas. This reduces the likelihood of damage to specimens from the inexperienced removal of the horn by thieves. It is important to make it clear that any replacement horns are indeed replicas, since some thieves have stolen replicas<sup>22</sup> and caused damage to specimens in the process. Contact details of well-established natural history conservators able to produce and install replica horns can be supplied by the author on request.

Beyond the level of collections, NatSCA has approached the AHVLA with concerns about the sale of rhino horn during the autumn of 2011 by UK auction houses. A particular point of concern has been a recent tendency of some auctioneers to list the weight of objects made of rhino horn, a detail not included for ivory or other materials. By listing weight items become more easily assessed as material products as opposed to primarily cultural objects – contravening the intent (if not the letter) of current legislation relating to sales of objects made from rhino horn.

The AHVLA looked into the issue, but were unable to act since the auction houses were acting in compliance with current requirements. However, NatSCA were informed that the whole issue regarding the sale of rhino horn, rhino horn products and trade with third countries in the specimens is currently under review by the AHVLA and DEFRA, and that our concerns have been highlighted. Rest assured that NatSCA will circulate any further information that arises in relation to this topic, particularly when new legislation is put in place.

Members can always approach NatSCA for advice or with any concerns or queries regarding this particular issue via the email provided on the website.

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#### Further information

<sup>1</sup>[http://www.rhinoresourcecenter.com/pdf\\_files/132/1320140242.pdf](http://www.rhinoresourcecenter.com/pdf_files/132/1320140242.pdf)

<sup>2</sup><http://www.pbs.org/wnet/nature/episodes/rhinoceros/rhino-horn-use-fact-vs-fiction/1178/>

<sup>3</sup><http://www.asianscientist.com/topnews/wwf-traditional-chinese-medicine-rhino-horn-cancer-cure-cites-meeting/>

<sup>4</sup><http://www.wwf.org.za/?5203/rhino2011>

<sup>5</sup><http://celtis.sanparks.org>

<sup>6</sup><http://www.news24.com/SouthAfrica/News/Sex-workers-used-to-hunt-rhino-20110722>

<sup>7</sup><http://www.news24.com/SouthAfrica/News/Rhino-horn-theft-government-officials-fingered-20101027>

<sup>8</sup><http://www.traffic.org/recent-coverage/health-fads-put-rhinos-on-death-row.html>

<sup>9</sup><http://www.rhinoconservation.org/2010/08/16/illegal-trade-in-rhino-horn-the-vietnamese-connection/3/>

<sup>10</sup><http://www.tennants.co.uk/Catalogue/Lots/22193.aspx> (N.B. see <http://www.tennants.co.uk/getdoc/ded90eef-8ad7-43f9-8e88-8a33d1c1e82b/1s145-sales-results.aspx> for sale results, as not listed on catalogue)

<sup>11</sup><http://www.tennants.co.uk/Catalogue/Lots/75769.aspx>

<sup>12</sup>[http://ec.europa.eu/environment/cites/legis\\_wildlife\\_en.htm#guidance](http://ec.europa.eu/environment/cites/legis_wildlife_en.htm#guidance)

<sup>13</sup><http://animalhealth.defra.gov.uk/News/archived-news/180211-new-rules-rhino-horns-in-the-UK.htm>

<sup>14</sup><http://www.bbc.co.uk/news/uk-england-norfolk-17112582>

<sup>15</sup><http://www.bbc.co.uk/news/uk-england-15759829>

<sup>16</sup><http://www.bbc.co.uk/news/uk-england-beds-bucks-herts-16590484>

<sup>17</sup><http://natsca.info/content/rhino-horn-guidance-museums>

<sup>18</sup><http://www.museumsassociation.org/museums-journal/news/13062011-rhino-horn-warning>

<sup>19</sup><http://www.museumsassociation.org/museums-journal/news/10082011-rhino-horn>

<sup>20</sup><http://www.rhinoconservation.org/2011/07/06/rhino-head-stolen-from-brussels-museum/>

<sup>21</sup><http://www.bbc.co.uk/news/uk-england-london-14278681>

<sup>22</sup><http://www.nhm.ac.uk/about-us/news/2011/august/theft-of-replica-rhino-horns-at-natural-history-museum-tring102898.html>