



Research News

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Behavioural assessment following the relocation of "Rosie", the black rhinoceros (*Diceros bicornis michaeli*).

Helen Boczek, Manchester Metropolitan University, and Stephanie Wehnelt, Chester Zoo

Relocation of animals can result in a behavioural stress response of various forms. This study assessed the change in behaviour of the black rhinoceros Rosie after being relocated from London Zoo to Chester Zoo, on the 9th August 2000, as part of the European Breeding Programme. Data collection took place four times a week for the first two weeks after relocation and then twice a week for the remainder of a period of six months to try and assess behavioural change. A barrier was placed around Rosie's pen to allow some privacy from the public. Rosie's behaviour was compared to that of the female black rhinoceros Esther, who was kept under the same housing conditions at Chester Zoo. Initially, after her arrival at Chester, Rosie displayed stereotypic pacing, along with having her tail elevated (alert posture), for a high proportion of the day (62%) between 0800 and 1700. However, by the end of October, pacing behaviour had declined and coincided with increased levels of non stress-related behaviours, such as lying and sleeping. Rosie's activity budgets between week 11 to week 24 after relocation were very similar to that of Esther, indicating that Rosie's behaviour had normalised after week 10. This study indicates that Rosie has settled in well at Chester Zoo. She is no longer displaying any stress-related behaviour and she is now exploring her outside paddock. This study is part of a long-term assessment of the welfare of the rhinoceros group at Chester Zoo with special emphasis on the effect of the new exhibit (starting 2002).

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A comparison of the hair morphology of West African shrews (Soricidae).

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The identification of hair samples can be immensely valuable for taxonomic and wildlife research, allowing accurate identification of prey remains in mammalian faeces or avian pellets. It also provides a mechanism by which areas can be surveyed using baited hair sampling tubes. The external morphology of hair from 16 species of shrew which definitely or potentially occur in Senegal were investigated for diagnostic features. The 16 species examined represented three genera; *Crocidura bottegi*, *C. buettikoferi*, *C. crossei*, *C. grandiceps*, *C. lamottei*, *C. lusitania*, *C. muricauda*, *C. nimbae*, *C. obscurior*, *C. olivieri*, *C. poensis*, *C. theresae*, *C. viaria*, *Suncus etruscus*, *Suncus murinus* and *Sylvisorex megalura*. The hairs of shrews can generally be distinguished from those of other families by their distinctive zigzag appearance, caused by one or more constrictions along the length of the hair forming distinct angles or bends. The hair of *C. olivieri* and *C. grandiceps* is diagnostic and clearly distinctive from the other shrews examined by the poorly defined, or lack of, constrictions. *C. nimbae* appears to possess deep grooves within the shield region distinguishing it from other species. *C. bottegi*, *C. obscurior* and *C. theresae* form a distinct group, the hair sharing many similarities, although that of *C. theresae* is diagnostic within the shield region. The hair of *C. buettikoferi*, *C. lamottei*, *C. muricauda* and *C. viaria* is extremely similar, forming another distinct group. *C. crossei*, *C. lusitania* and *C. poensis* form a third distinct group, although *C. lusitania* has a rather unusual and poorly defined shield region which is diagnostic. The hair of *Suncus etruscus* is extremely small (approx. 1.5 mm long) and the shaft scale widths were significantly smaller than any other shrew examined ($F = 68.295$, d.f. = 15, 304, $P < 0.05$). The hair of *Suncus murinus* and *Sylvisorex megalura* is very similar, the shaft scale patterns of *Sylvisorex megalura* forming a more regular diamond pattern, whilst the shield region of *Suncus murinus* is more distinctly grooved. The high degree of similarity between a number of the shrew species and the large number of species occurring in any region make this a particularly difficult group to diagnose. This is not surprising given the extremely provisional taxonomy and difficulty of identification of African shrews, many of which are only separable on skeletal or dental characters. Despite this some species are diagnostic on hair characters alone, whilst others form small discrete species groups which can be clearly identified.