

effect on the populations of these small mammal species.

REFERENCES

- August, P.V. (1983). The role of habitat complexity and heterogeneity in structuring tropical mammal communities. *Ecology* 64: 1495-1507.
- Ashton, P.A. and C.V.S. Gunatilleke (1987). New light on plant geography of Ceylon I. Historical plant geography. *Journal of Biogeography* 14: 249-285.
- Flowerdew, J.R. (1976). Ecological methods. *Mammalian Review* 6: 123-159.
- Gurnell, J. and J.H.W. Gipps (1989). Inter-trap movement and estimating rodent densities. *Journal of Zoology, London* 217: 241-254.
- Halama, K.J. and R.D. Dueser (1994). Of mice and habitats: Tests for density-dependent habitat selection. *Oikos* 69: 107-114.
- Happold, D.C.D. and M. Happold (1991). An ecological study of small rodents in the thicket-clump savanna of Lengwe National Park, Malawi. *Journal of Zoology, London* 223: 527-547.
- Isabirye-Basuta, G. and J.M. Kasenene (1987). Small rodent populations in selectively felled and mature tracts of Kibale forest, Uganda. *Biotropica* 19: 260-266.
- Jeffery, S.M. (1977). Rodent ecology and land use in western Ghana. *Journal of Applied Ecology* 14: 741-755.
- Krebs, C.J. (1966). Demographic changes in fluctuating populations of *Microtus californicus*. *Ecological Monographs* 36: 239-273.
- Madsen, T. and R. Shine (1999). Rainfall and rats: Climatically-driven dynamics of a tropical rodent population. *Australian Journal of Ecology* 24: 80-89.
- Mares, M.A. and K.A. Ernest (1995). Population and community ecology of small mammals in gallery forests of Central Brazil. *Journal of Mammalogy* 76: 750-768.
- Montgomery, W.I. (1980). Population structure and dynamics of sympatric *Apodemus* species (Rodentia: Muridae). *Journal of Zoology, London* 192: 351-377.
- Shanker, K. and R. Sukumar (1999). Community structure and demography of small mammal populations in insular montane forests in southern India. *Oecologia* 116: 243-251.
- Skupski, M.P. (1995). Population ecology of the Western Harvest Mouse, *Reithrodontomys megalotis*: A long-term perspective. *Journal of Mammalogy* 76: 358-367.
- Zollner, P.A. and S.L. Lima (1997). Landscape-level perceptual abilities of the white-footed mice: Perceptual range and the detection of forested habitat. *Oikos* 80: 51-60.

ACKNOWLEDGEMENT

I am very grateful to the Cambridge Commonwealth Trust and the National Science Foundation of Sri Lanka for supporting this work. I also wish to thank the Forest Department, Sri Lanka, for granting permission to carry out this study in the Sinharaja forest.



LACERATED WOUND IN AN INDIAN PANGOLIN *MANIS CRASSICAUDATA*

I. Nath¹, V.S.C. Bose¹, S.K. Panda²,
R.K. Samantray³ and P.K. Roy³

¹ Department of Surgery, ² Department of Pathology, Orissa Veterinary College, Bhubaneswar, Orissa 751003, India

³ Veterinary Officer, Nandankanan Zoo, Orissa, India

web supplement

The Indian Pangolin (*Manis crassicaudata*) has a wide distribution range in India. Little is known about infectious diseases of pangolins (Kuehn, 1986). The present paper describes management of a lacerated wound in an Indian Pangolin of Nandankanan Zoo.

An animal keeper of the nocturnal house at Nandankanan Zoo observed a wound on the ventral aspect of the abdomen of a pangolin during routine inspection. The animal was shifted to the isolation ward for treatment. The Pangolin was restrained by grasping the tail and hanging it upside down, a method normally practised to control this animal. On examination a lacerated wound measuring 10 x 2cm extending from xiphoid area to anterior aspect of umbilicus was found (Image 1^w). The wound was irrigated with lukewarm potassium permanganate lotion and dried with clean absorbent cotton swab. Povidine-iodine (Betadine 5%) ointment was applied to the wound and the dressing continued, intramuscular injection of cefotaxime sodium 250mg bid (twice a day) was also administered for five days. The wound healed within a month and the pangolin was released to its enclosure. After two days there was recurrence of the wound. On examination small pebbles were found inside the wound. The previous treatment was again continued keeping the Pangolin in the isolation ward. As there were pebbles sticking to the wound, the nocturnal house was inspected. A hole was found in one corner of the concrete floor along with blood stains. As Pangolins are powerful burrowers the wound might have been caused due to the sharp concrete pieces removed while burrowing. Dressing and parenteral antibiotic administration resulted in healing of the wound. Immediate repair of the concrete floor prevented recurrence of the wound. The present article emphasizes the importance of maintaining proper husbandry techniques to prevent such conditions.

REFERENCES

- Kuehn, G. (1986). Pholidota, pp.618-619. In: Fowler, M.E. (Ed.). *Zoo and Wild Animal Medicine*. 2nd edition. W.B. Saunders Company, Philadelphia.

ACKNOWLEDGEMENT

Authors are thankful to M. Mohapatra, Assistant Director, Nandankanan Zoo for his cooperation and advice.

^w see Image 1 in the web supplement at www.zoosprint.org

