

- BARTON, N. H. (1987): The genetic consequences of dispersal. In: Dispersal in Small Mammals. Ed. by N. C. STENSETH and LIDICKER, W. Z. London: Chapman and Hall (in press).
- GAINES, M. S. (1981): Importance of genetics to population dynamics. In: Mammalian Population Genetics. Ed. by SMITH, M. H. and JOULE, J. Athens: University of Georgia Press.
- GAINES, M. S.; McCLENAGHAN, L. R. (1980): Dispersal in small mammals. *Ann. Rev. Ecol. Syst.* **11**, 163–196.
- HANSKI, I. (1986): Population dynamics of shrews on small islands accord with the equilibrium model. *Biol. J. Linn. Soc.* **28**, 23–36.
- HANSSON, L. (1977): Spatial dynamics of field voles *Microtus agrestis* in heterogeneous landscapes. *Oikos* **29**, 539–544.
- KREBS, C. J. (1979): Dispersal, spacing behaviour and genetics in relation to population fluctuations in the vole *Microtus townsendii*. *Fortschr. Zool.* **25**, 61–77.
- LOMOLINO, M. V. (1984): Immigrant selection, predation and the distribution of *Microtus pennsylvanicus* and *Blarina brevicauda* on islands. *Am. Nat.* **123**, 468–483.
- McSHEA, W. J.; MADISON, D. (1987): Alternative approaches to the study of small mammal dispersal: insights from radio telemetry. In: Dispersal in Small Mammals. Ed. by STENSETH, N. C. and W. Z. LIDICKER. London: Chapman and Hall (in press).
- MICHIENSEN, N. C. (1966): Intraspecific and interspecific competition in the shrews *Sorex araneus* L. and *S. minutus* L. *Arch. Néerlandaises Zool.* **17**, 73–174.
- MYLLYMÄKI, A. (1970): Population ecology and its application to the control of the field vole, *Microtus agrestis* (L.). *Eppo Publ.*, Ser A **58**, 27–48.
- POKKI, J. (1981): Distribution, demography and dispersal of the field vole, *Microtus agrestis* (L.) in the Tvärminne archipelago, Finland. *Acta Zool. Fennica* **164**, 1–48.
- SHILLITO, J. F. (1963): Observations on the range and movements of a woodland population of the common shrew *Sorex araneus* L. *Proc. Zool. Soc. London* **140**, 533–546.
- SLATKIN, M. (1985): Gene flow in natural populations. *Ann. Rev. Ecol. Syst.* **16**, 393–430.
- TAYLOR, K. D.; QUY, R. J. (1978): Long distance movements by a common rat (*Rattus norvegicus*) revealed by radio-tracking. *Mammalia* **42**, 63–71.
- VERNER, L.; GETZ, L. L. (1985): Significance of dispersal in fluctuating populations of *Microtus ochrogaster* and *M. pennsylvanicus*. *J. Mammalogy* **66**, 338–347.

Authors' addresses: HÅKAN TEGELSTRÖM, Department of Genetics, Uppsala University, Box 7003, S-750 07 Uppsala, and LENNART HANSSON, Department of Wildlife Ecology, Swedish University of Agricultural Sciences, Box 7002, S-750 07 Uppsala, Sweden

A rare nipple anomaly in Ringtails, *Bassariscus astutus* (Procyonidae)

By INGEBORG POGLAYEN-NEUWALL and I. POGLAYEN-NEUWALL

Receipt of Ms. 27. 7. 1986

Ringtails typically have 4 mammae and 1 to 4 young per litter (POGLAYEN-NEUWALL and TOWEILL, in press). BURT and GROSSENHEIDER (1960) reported 6 mammae, CAHALANE (1947) and LECHLEITNER (1969) litters of up to 5 young. None of these authors indicated the source of his information. TOWEILL (pers. comm.) mentioned his pet ringtail (*Bassariscus astutus flavus*) having had 5 nipples, the supernumerary probably being non-functional.

On 25 May 1986 we trapped a female *Bassariscus astutus arizonensis* in a canyon in the Santa Rita Mountains of southern Arizona. This animal had 5 prominent mammae with well developed nipples, which appeared barely suckled; the vulva was conspicuously inflated indicating very recent parturition. We had neither measuring tools nor camera with us, therefore released the animal immediately.

On 7 June we returned to carry out another trapping operation. We recaptured this



Ventral view of ringtail with 5 mammary glands. (Photo by Dr. IVO POGLAYEN-NEUWALL)

female at the same location. The animal was anesthetized with Parke-Davis Vetular (Ketamine HCl) i.m., and the mammary region examined. Her aureolas and nipples were even more enlarged and obviously suckled (see figure). All 5 nipples were functional as evidenced by oozing of milk when manipulated by the authors.

It seems probable that the anterior and central nipples of the right side derived from the same "anlage". Both are at the same distance from, but neither is in line with the anterior nipple of the left side. In the case reported by TOWEILL (pers. comm.) the fifth nipple was also on the right side, but located posteriorly to the normal paired nipples.

There is no correlation between the number of functional nipples and the number of young; in 9 females with 14 litters of less than 4 young all 4 nipples were functional (POGLAYEN-NEUWALL and POGLEYEN-NEUWALL, pers. observ.). Suckling kittens show no nipple preference and freely change nipples from one suckling bout to another (POGLAYEN-NEUWALL and TOWEILL, in press).

Acknowledgement

A trapping permit was generously granted by the Arizona Game and Fish Department.

References

- BURT, W. H.; GROSSENHEIDER, R. P. (1960): A field guide to the mammals. The Peterson Field Guide Series. Boston: Houghton Mifflin Co.
 CAHALANE, V. H. (1947): Mammals of North America. New York: MacMillan Co.
 LECHLEITNER, R. R. (1969): Wild mammals of Colorado. Boulder, Colorado: Pruett Publ. Co.
 POGLEYEN-NEUWALL, I.; TOWEILL, D. E.: *Bassariscus astutus*. Mammalian Species. Publ. Amer. Soc. Mammalogists (in press).

Authors' addresses: Dr. INGEBORG POGLEYEN-NEUWALL, 1765 N. Indigo Dr., Tucson, AZ 85745, USA and Dr. IVO POGLEYEN-NEUWALL, Dept. of Ecology and Evolutionary Biology, University of Arizona, Tucson 85721 USA

ZOBODAT - www.zobodat.at

Zoologisch-Botanische Datenbank/Zoological-Botanical Database

Digitale Literatur/Digital Literature

Zeitschrift/Journal: [Mammalian Biology \(früher Zeitschrift für Säugetierkunde\)](#)

Jahr/Year: 1986

Band/Volume: [52](#)

Autor(en)/Author(s): Poglayen-Neuwall Ingeborg, Poglayen-Neuwall Ivo

Artikel/Article: [A rare nipple anomaly in Ringtails, Bassariscus astutus \(Procyonidae\) 54-55](#)