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Anschrift des Verfassers: Dr. PETER LÜPS, Naturhistorisches Museum, Bernastrasse 15, CH-3005 Bern

WISSENSCHAFTLICHE KURZMITTEILUNGEN

Observations of *Mus musculus* raised by *Suncus murinus*

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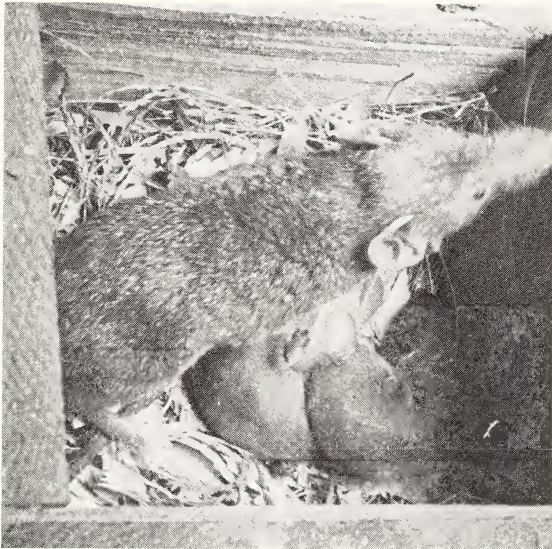
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BLUS and JOHNSON (1968) reported an unsuccessful adoption of a nursling wild house mouse by a lactating *Blarina* and suggested that the mouse's death may have resulted from ingestion of the shrew's milk, though suckling was unconfirmed. Newborn domestic *Mus musculus* are routinely fed to pregnant and lactating *Suncus murinus* in my captive shrew colony and the occasional adoption of the mice has been noted (DRYDEN 1975). Since cross-ordinal adoption by insectivores is otherwise unreported and numerous successful adoptions of *Mus* by *Suncus* have been observed, some of the behavioral aspects of these adoptions are reported here.

Fifty-six mice have been reared by shrew in this colony since 1974. Originally 4 nursling mice were adopted by shrews to which the mice had been given as food. The others were intentionally introduced to determine cross-fostering success and infant-, maternal- interactions. No manipulations were performed after introduction of single mice 1 to 5 days of age to shrews suckling 1 to 3 shrews 2 to 6 days old. Some mice were smeared with soft maternal shrew feces but those not so pretreated were accepted as readily.

Typically, the lactating shrew pays little special attention to the mouse beyond grooming it as she does her own young. The mother shrew accommodates the mouse and her own young by posturing with her nipples exposed (STINE and DRYDEN 1977) and has never been observed to reject a mouse, although 5 mice died before reaching a week of age. During nursing, young mice approach the nipple in a less predictable way than do young shrews (STINE and DRYDEN 1977). Young mice sleep and huddle harmoniously with their nestmates (Fig.). Mother shrews retrieve mice which leave the nestbox during the first 8 to 10 days of life but after that, when her own young become increasingly active and begin caravanning (DRYDEN 1968) shrews cease attempting to retrieve vagrant foster young. Young mice have never been observed to participate in caravan formation, even though they scurry about with their agitated shrew littermates. After about 12 days of age young shrews more frequently abandon the less mobile mouse, which then spends most of its time alone in the nestbox or foodbowl. At no time was an adopted mouse overtly rejected by its nestmates or harmed by its foster mother. Nursling mice appear unkempt and never attain the body size of their shrew nest-

mates even when only a single shrew competes for the available milk. It is unknown whether this is a consequence of an anatomical misfit of the shrew nipple and mouse mouth, less aggressive nursing by the mouse, or as BLUS and JOHNSON (1969) suggest some physiologic incompatibility of the shrew milk. *Suncus* milk is much richer (DRYDEN and ANDERSON 1978) than that of *Mus* (JENNESS 1974) but the fact that not all mice drinking shrew milk are runty indicates no serious digestive problem. All mice were eventually weaned successfully and 6 left paired with opposite-sex shrews for 4 months after weaning were normally developed (but fat) at necropsy.



Nine-day-old *Mus* (blazed forehead) resting with head on two same aged *Suncus* nestmates

After we became aware of lip-licking behaviour in *Suncus* (STINE and DRYDEN 1977), two nursing mice were observed intensively. Following a particularly vigorous nursing bout, one mouse approached one of its 3 larger shrew nestmates and initiated a lip-licking sequence characteristic of *Suncus*. After 5 seconds the young shrew abruptly swung its head aside. The mouse followed and attempted to reinitiate lip-licking but the shrew moved off, terminating contact opportunity for the mouse.

We are presently determining the differential development of mice raised by mice or by shrews. We also plan to more fully document lip-licking by mice in social contact with shrews since the function of this activity is unknown in any species.

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Digitale Literatur/Digital Literature

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

Jahr/Year: 1979

Band/Volume: [45](#)

Autor(en)/Author(s): Dryden G. L.

Artikel/Article: [Observations of *Mus musculus* raised by *Suncus murinus* 249-250](#)