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# On a Vole, *Clethrionomys rufocanus bedfordiae* with an Aberrant Coat Colour

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With 4 text-figures

A full grown specimen of the vole, *Clethrionomys rufocanus bedfordiae* THOMAS<sup>1)</sup> (Microtinae-Muridae) with an anomalous coat colour was found among the specimens collected by the senior author, who has been engaged in an ecological survey of the small rodents in Hokkaido from the standpoint of forest conservation. The occurrence of this colour mutant in the wild rodents is sufficiently rare to justify its being recorded in the following note.

The vole, *Clethrionomys rufocanus bedfordiae* abundantly inhabits Hokkaido with a wide distribution throughout the whole of the area. The normal colour of the pelage of the animal is rufous above, shaded with dispersed blackish hairs, thus representing an agouti pattern, the belly being whitish, with or without buff suffusion, strongly based with slaty (Fig. 1). This species is a representative of the small rodents injurious to agriculture and forestry which are found in Hokkaido. There are, of course, other endemic mice and voles found in this

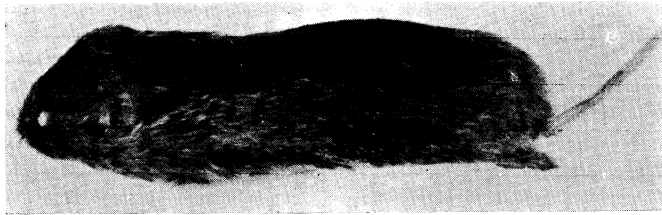


Fig. 1. Normal coat colour. 3/5 x

region which also are injurious to crops and trees; such as *Apodemus speciosus ainu*, *A. geisha* and *Clethrionomys mikado*. But their population is not so evident and being comparatively small is consequently not so destructive in the fields. Owing to their superiority in numbers the damage done by *Clethrionomys*

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1) KURODA, N. (1931). Zool. Mag. (Jap.), vol. 43, p. 666.

Trans. Sapporo Nat. Hist. Soc., Vol. XV, Pt. 3, 1938.

*rufocanus bedfordiae*, especially to the forests, has been enormous. The results of a survey of these injurious animals carried out by the senior author during seven months from May to November, 1931 are tabulated below as a matter of reference.

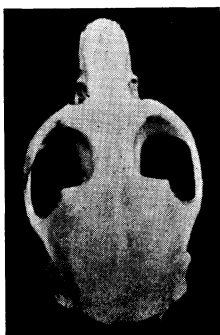
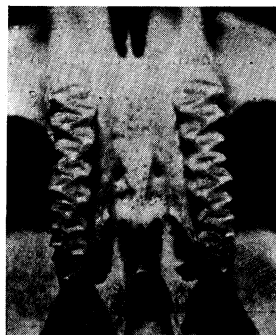
Localities in Hokkaido	Numbers of species collected in 1931 (V-XI)				Total
	<i>Apodemus speciosus ainu</i>	<i>Apodemus geisha</i>	<i>Clethrionomys rufocanus bedfordiae</i>	<i>Clethrionomys mikado</i>	
Sapporo	16	5	106	0	127
Kutchan	18	12	83	2	115
Hiyama	10	5	109	0	124
Hakodate	44	18	392	7	461
Muroran	26	24	143	1	194
Urakawa	10	11	132	0	153
Asahikawa	48	73	418	0	539
Teshio	18	10	85	1	114
Wakkanai	208	107	1723	11	2042
Nakatonbetsu	56	89	823	3	971
Engaru	63	38	393	2	496
Nokkeushi	46	43	265	6	360
Abashiri	32	29	657	7	725
Ob'hiro	37	51	313	1	402
Kushiro	60	31	804	8	903
Nemuro	57	49	901	7	1014
Rikubetsu	23	27	283	0	333
Total	765	622	7630	56	9073

The mutant individual to be described here was collected on 20th December 1937 at Nakashibetsu near Nemuro, Hokkaido. It is a mature female with a body measuring 95 mm in length from the tip of the snout to the base of the tail, and a tail 45 mm long. The coat colour of the specimen is uniformly muddy white both above and below, leaving a median line along the back, including

Fig. 2. Aberrant coat colour.  $2/3\times$ 

the head, which is of a pale ochraceous-buff (Fig. 2). The inner surfaces of the ears are covered with dusky hairs which are slightly tipped with dull grey, giving a darkened appearance. The tail and the upper surface of the hands and feet as well, are uniformly clothed with whitish hairs. As the specimen when examined was not fresh, it cannot be stated with certainty about the colour of the eyes whether they were black or pink. It is most probable, however, that this vole is a sort of mutant, non-agouti probably affected by some diluting factors.

There is nothing abnormal in the skull and teeth of this specimen. For reference they are reproduced in Figs. 3 and 4.

Fig. 3. Skull.  $1.5\times$ Fig. 4. Upper molars.  $5\times$ 

According to DUNN ('21) and TOKUDA ('36), a mutational coat colour variation does not seem to be of very frequent occurrence in the Microtinae, only a few cases having been recorded from the wild forms. In fact, the present case seems to be the only one and the first of this kind so far recorded in the

wild Microtinae from Japan<sup>1)</sup>. Though the senior author has been engaged in an ecological survey of the small rodents of Hokkaido for some ten years past, he has never encountered any other kind of anomaly in coat colour, the present specimen being the sole example of this colour variation so far collected. Recently INUKAI ('34) has reported on three kinds of partial albinos in the Japanese mink, *Mustela itatsi itatsi*, from Hokkaido. He also records that complete and partial albinos of the racoon dog have been frequently found in Hokkaido. In view of the fact that albinos have been found occurring not infrequently in various kinds of wild mammals inhabiting Hokkaido, where an abundance of ice and snow occurs in winter, INUKAI ('34) suggests that this occurrence of colour abnormality may possibly be due to some influence of the environment upon the animal. However, the question is inescapable whether such mutation has occurred on account of the special environment of Hokkaido or whether it is due to some other unknown factors. Examples are at present too scanty to warrant any generalizations and, at least with regard to Muridae, to warrant any supposition.

The writers are greatly indebted to Dr. M. TOKUDA of the Kyoto Imp. University for the information he has kindly supplied and for his valuable advice in respect to recording this case.

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1) Recently WATANABE (1937) recorded some unusually spotted individuals of the Japanese field mouse, *Microtus montebelli* from Hondo (Occ. Rep. Ibaraki Agr. Stat., No. 2, 1937).