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TRYPANOSOMA (HERPETOSOMA) LEMMI SP. N. FROM THE NORWEGIAN LEMMING, LEMMUS LEMMUS (L.).

The first report concerning "*lewisi*-like" trypanosomes in Norwegian lemmings, *Lemmus lemmus* (L.) included information on the incidence of infection and morphological measurements of blood stream forms (Wiger R., Norw. J. Zool. 19: 83—87, 1971). Trypanosomes had not been reported earlier from the genus *Lemmus*. However, the results of cross infection experiments and certain biological aspects of this trypanosome imply that it is specific for *L. lemmus*, the only member of the genus in Fennoscandia.

The trypanosomes in the present study originate from *L. lemmus* which were collected near Standal (62° 15′N, 6° 15′E) inl 969. The blood stream forms of trypanosomes from *L. lemmus* were long and narrow, and generally S-shaped, although many possessed several undulations which resulted in double S-forms. The posterior end was long and pointed. The kinetoplast was generally oval and the undulating membrane had few undulations (Fig. 1). Trypanosomes from the reproductive phase of the infection were more variable in form and both long, slender "adult" forms (Figs. 1a, b), and "stubby" forms (Figs. 1c, d) could be found.

Morphological data reveal that blood stream forms of trypanosomes from *L. lemmus* have bodies that are both longer and wider than either *Trypanosoma microti* from *Microtus agrestis* and *T. evotomys* from *Clethrionomys glareolus*. The mean body length and width in microns of "adult" forms of *T. microti* are 18.0 and 1.3, of

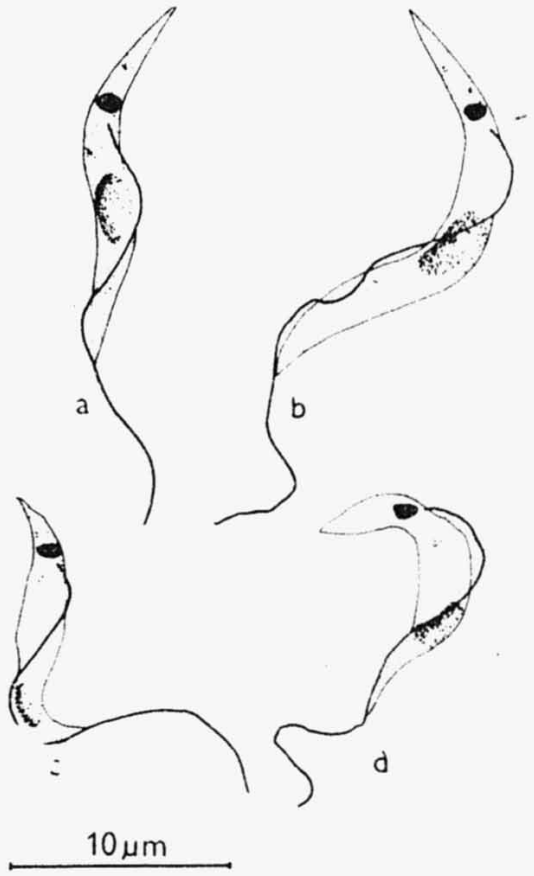

Fig. 1. Blood stream forms of *Trypanosoma* (*Herpetosoma*) *lemmi* sp.n. from the Norwegian lemming, *Lemmus lemmus* (L.). "Adult" forms (a and b) and "stubby" forms (c and d).

Table 1: Morphological measurements of eight parameters based on 50 individuals of *Trypanosoma (Herpetosoma) lemmi* sp. n. from the blood films of wild Norwegian lemmings, *Lemmus lemmus*. (L.). (The distance from the posterior end to the centre of the kinetoplast (P—K), the distance from the center of the kinetoplast to the center of the nucleus (K—MN), the distance from the center of the nucleus to the anterior end (MN—A), the distance from the anterior end of the body to the end of the free flagellum (FLAG), the total length is the sum of the preceding measurements, body width (midway between nucleus and kinetoplast and exclusive of the undulating membrane. (In microns). (After Wiger 1971)

	Total length	P—K	K—MN	MN—A	FLAG
Average	31.1	5.5	6.0	11.7	7.9
Range	25.0—34.9	3.8—7.8	4.5—8.1	8.5—15.9	5.0—11.3

	Width	Length and width	
		Nucleus	Kinetoplast
Average	1.8	3.0 × 1.2	1.3 × 0.7
Range	1.3—2.4	2.0—3.8 × 0.6—1.8	0.5—1.8 × 0.3—1.0

T. evotomys 19.0 and 1.3 compared to 23.2 and 1.8 for trypanosomes from *L. lemmus* (Molyneux D. H., Parasitology 59: 843—857, 1969a; Ann. trop. Med. Parasit. 63: 229—244, 1969b, Wiger 1971). *T. microti* from other hosts and/or localities had the following total lengths: *M. nivalis* 28.8 (Mahnert V., Ber. Nat. Med. Ver. Innsbruck 58: 131—142, 1970), *M. oeconomus* 24.8 (Fay F. H., Rausch R. L., J. Parasitol. 55: 1258—1265, 1969), *M. agrestis* 23.6 (Krampitz H. E., Z. Tropenmed. Parasit. 12: 117—137, 1961), and *M. agrestis* 27.4 (Molyneux 1969b). The total length of the trypanosomes from *L. lemmus* is 31.1 (Table 1).

Dividing forms of trypanosomes were never observed in the blood of *L. lemmus*. Blood stream forms injected i.p. into non-immune laboratory-bred. *L. lemmus* resulted in infections. Trypanosomes, stubby reproductive forms, could be detected in the blood five days post infection. The resulting parasitemias were relatively low. Finally, unsuccessful attempts were made to infect nine laboratory-reared root voles, *Microtus oeconomus* with infected *L. lemmus* blood.

On the basis of the information presented above it is proposed that the trypanosomes of *L. lemmus* be designated as *Trypanosoma (Herpetosoma) lemmi*, sp.n.

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