

The 11 samples from loc. 7 are all heterozygous in MDH-1 (4 or more specimens/colony analyzed) clearly showing that they are hybrids, although they are morphologically typical *L. tuberosum* (Table 2). From a morphological point of view *L. "tubero-interruptus"* should be one of the parents, contributing M to the MDH-1 heterozygote. This could also explain the rather high score for PGM (Table 2) and why the PGI S allele is found in some of these hybrid colonies (Table 3). The other parent has to be *L. nigriceps* being the only species with sufficiently high frequency of MDH-1 F (100%) to produce nothing but FM hybrids. Furthermore *L. nigriceps* was common in loc. 7. The queens in these hybrid colonies are typical *L. "tubero-interruptus"* in size (alitrunk length $\bar{x} = 1.17$, SD = 0.05, n = 8; *L. nigriceps*, $\bar{x} = 1.28$, SD = 0.04, n = 28) and colour (yellowish brown, not dark brown as in *L. nigriceps*).

The remaining two colonies in Table 2 contain only MDH-2 heterozygotes and could thus be hybrids between *L. tuberosum* (the F allele) and most likely *L. "tubero-interruptus"*. The queens are small (alitrunk length $\bar{x} = 1.10$ and 1.18; *L. tuberosum* $\bar{x} = 1.23$, SD = 0.04, n = 11) and almost as dark as in *L. tuberosum* (dark brown).

The three isolated samples between *L. nigriceps* and *L. unifasciatus* in Fig. 2 are morphological intermediates between these species; rather dark head and slightly darkened femur (from *L. nigriceps*) and distinct gaster band (from *L. unifasciatus*). A hybrid origin of the two samples that are FM heterozygotes in MDH-1 is very likely, whereas the third sample (MS heterozygote) could be a back cross with *L. unifasciatus* (included in *L. unifasciatus* for the analysis below) (Fig. 4). Only in one of the samples (FM heterozygote) the queen was obtained, a typical *L. unifasciatus* queen.

So far we have assigned each sample to species or a specified hybrid using the available information from morphology and allozymes. The next step is to determine the morphological affinities between the species and the hybrids using a discriminant analysis.

Table 7. No. of colonies of *Leptothorax tuberosum* species and hybrids collected at 21 localities in Sweden and Germany (see Fig. 1)

(For abbreviations of the species names see Tables 1–2)

Locality nr.	Number of colonies							
	UNIF	UNIF× TUIN	TUIN	UNIF× NIGR	NIGR	NIGR× TUIN	TUIN× TUBE	TUBE
1								11
2								16
3								3
4	18							
5	12	1			19			
6	3							
7	20	6	14		11	11		
8					2			
9	2							
10	4							
11	10		2					
12	1							
13	2							
14	5		1	1	3			
15	10							
16	4							
17	22			1	3			
18	22				1			
19	1							
20								1
21							2	2
Total	136	7	17	2	39	11	2	33