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Regional Variability of Skin Hypersensitiveness to Neoarsphenamin in Guinea Pigs and Rabbits.

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It is well recognized that variations in the intensity and constancy of hypersensitive cutaneous reactions occur in the human subject with respect to different regions of the body. As far as similar variations in animals are concerned, however, few observations appear in the literature. The object of the present study was to ascertain whether different skin areas of guinea pigs and rabbits sensitized to neoarsphenamin would react in a similar or in a different manner to subsequent intradermal injections of this drug.

The experiments included 9 adult male albino rabbits and 12 adult guinea pigs; in the latter animals the skin of the flanks and abdomen was non-pigmented. The neoarsphenamin solution was prepared and the animals were shaved according to the technique described in the preceding report.¹ The rabbits were sensitized and tested for hypersensitiveness with 0.2 cc. and the guinea pigs with 0.1 cc. The injections which were given with a sharp tuberculin needle and a tuberculin syringe calibrated to 0.01 cc., were made as equally deep in the epidermis of the flank and abdomen as possible; the wheals formed were of approximately the same area and depth. The test

TABLE I.
Measurements of Skin Hypersensitiveness Reactions on the Flank and the Abdomen.

No. animal	Guinea Pig Hypersensitiveness Reaction (cm.)		No. animal	Rabbit Hypersensitiveness Reaction (cm.)	
	Flank	Abdomen		Flank	Abdomen
1	1.0 x 1.0		1	1.2 x 1.2	
2	1.0 x 1.0	1.0 x 1.0	2	1.0 x 0.8	
3	1.0 x 0.7		3	1.0 x 1.5	0.5 x 0.5
4	0.8 x 0.8	0.3 x 0.3	4	2.0 x 1.5	1.0 x 1.0
5	1.0 x 1.0		5	1.0 x 1.5	0.5 x 0.5
6	1.0 x 1.0	0.5 x 0.5	6	1.8 x 1.5	0.8 x 0.8
7	1.2 x 1.2		7	1.5 x 1.5	
8	0.8 x 0.8		8	1.0 x 1.5	0.5 x 0.8
9	0.8 x 0.8		9	1.0 x 1.0	
10	1.0 x 1.2				
11	1.0 x 0.7				
12	0.7 x 0.7	0.5 x 0.5			
Average	0.9 x 0.9	0.2 x 0.2		1.3 x 1.3	0.4 x 0.4

¹ Mu, J. W., PROC. SOC. EXP. BIOL. AND MED., 1932, 29, 781.

for hypersensitiveness was made 5 weeks after the first or sensitizing injection. The reaction was read 24 hours after injection, the width and breadth of the involved skin area being measured.

The results shown in the accompanying table indicate that there was a distinct variation in the reactions on the flank and abdomen in every animal, those on the flank being larger than those on the abdomen. Furthermore, in 8 of the 12 guinea pigs and in 4 of the 9 rabbits, there was practically no reaction in the abdominal area in contrast to the definite flank reaction in each case. Besides the difference in the size of the reaction, most of those on the abdomen were macules, while those on the flank were for the most part papules.

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A Case of Hybrid Vigor in the Albino *Mus Musculus*.

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Two strains of mice, both albino *Mus musculus* and here designated as H T M and E L T M, are known to differ in the number of tail-rings as previously reported (Fortuyn¹). They also show differences in the number of young per litter which the mother, in the absence of the father, is able to raise to an age of one month. In each strain this has been tested in the offspring of a single pair so as to reduce variability. Table I gives the size of the litters. In 45 first litters of H T M the average number of young which lived

TABLE I.

Mother x father	Litter No.	Total Number of litters, one month old, with the following number of young.												
		No. litters	0	1	2	3	4	5	6	7	8	9	10	11
H T M x H T M	1st	45	5	0	4	6	3	9	4	7	6	0	1	
H T M x H T M	2nd	28	2	0	1	1	3	9	2	4	2	2	1	1
E L T M x E L T M	1st	32	18	3	1	4	2	1	2	1				
E L T M x E L T M	2nd	39	19	8	0	2	3	2	3	2				
same } H T M x H T M	1st	26	2	0	3	4	1	6	1	4	4	0	1	
mothers } H T M x E L T M	2nd	26	1	0	0	0	1	2	2	7	9	3	1	
same } H T M x E L T M	1st	26	1	0	2	2	4	3	4	4	3	3		
mothers } H T M x H T M	2nd	26	2	0	1	1	3	8	2	4	2	1	1	1
same } E L T M x H T M	1st	15	2	2	2	1	0	2	3	1	1	0	0	1
mothers } E L T M x E L T M	2nd	15	6	4	0	1	1	1	0	2				

¹ Fortuyn, A. B. D., PROC. SOC. EXP. BIOL. AND MED., 1928, **25**, 543; *Genetics*, 1931, **16**, 160.