

IV. - GENETICS AND REPRODUCTION

**Discovery of a reciprocal translocation
in boars and consequences on their performance**

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A new type of chromosomal abnormality was found in a *Large White* × *French Landrace* boar exhibiting a 49 p. 100 reduced prolificacy. This abnormality was a reciprocal translocation involving the chromosomes n° 4 and 14. The same rearrangement was found in 9 offsprings of this boar (7 females and 2 males). Another boar, born in the same farm, showed a similar reduction of the litter size : 5.9 ± 2.3 piglets born in 30 litters. Nine of its offsprings were studied and the same rearrangement was found. A third boar originally from the same farm exhibited a similar reduction of the litter size, but it was not studied. Because of a « National Programme for Technical Management of sow herds » it is possible in France to rank the boars according to the size litters they produce and to detect males with a reduced prolificacy.

**Additive and non-additive effect of genes on age and weight at puberty,
ovulation rate and embryonic mortality in gilts**

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Age, weight, ovulation rate and embryonic survival at puberty were analysed in 1 284 *Large White*, 501 *Large White* × *Landrace* crossbred and 110 *Landrace* gilts.

Data concerning the *Large White* breed were classified according to a hierarchical model : year (12 levels), sire (133 levels), dam (490 levels) and estimates of heritability were : 0.30 ± 0.08 for age at puberty ; 0.48 ± 0.10 for weight at puberty ; 0.28 ± 0.09 for ovulation rate and 0.03 ± 0.06 for the number of embryos at 30 ± 3 days of pregnancy.

For these four variates, the estimates of heterosis were : 6.7, 1.4, 1.7 and 8.8 p. 100 respectively. For the rate of embryonic mortality, the heterosis effect ranged between 13 and 14 p. 100. However, this character was higher in *Large White* gilts (39 p. 100) than in F_1 and *Landrace* gilts (29 and 30 p. 100 respectively).