between NB, NA and NW within each parity are very high, from 0.7 to 1. Genetic correlations between data of consecutive parities seem to be high, excepting those including the first litter, which go from 0.7 with the second to 0 with the fourth (for NB and NA). So it appears that data of first parity are a poor enough information about the genetic value of sows ; on another hand, taking into account the genetic correlation between parities could improve the efficiency of selection on litter size.

Crossbreeding of pigs : effects on growth, feed conversion and carcass

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Heterosis and maternal effects on daily gain, feed conversion ratio and carcass traits were investigated in the pig crossbreeding experiment. Three breeds of pigs were used : *Large White, Dutch Landrace,* and *Swedish Landrace.* Nine genetically different pig groups of purebreds and crossbreds had been examined. General heterosis effects were small and nonsignificant. Comparisons between pure breeds show small differences with *Dutch Landrace* to some extent exceeded two other breeds. Significant specific heterosis effects were found for daily gain, feed conversion ratio and fat thickness at shoulder. Average difference in reciprocal crosses or general maternal effects were significant for daily gain and feed conversion. Specific maternal effects were significant for all characters studied, with exception for carcass length.

Use of micro-computers in the field for estimating breeding values : a system to automatically collect all data handled on a population in a computer compatible way for further processing

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Definition and development of breeding programs require data as a basis of analysis. A micro computer system is described which supports and carries out the routine calculations that have to be done in a breeding program. All data handled are stored on floppy discs or cassettes. Input is checked for plausibility. Data transmission to a central computer is via a direct link between the micro computer and the host. As a by-product of index calculation for auction boars in Northern Germany data on 23 000 boars have been collected in 1980, which comprises the total male population on sale in this region and 40 p. 100 of all boars sold in the Federal Republic of Germany.

What can be gained by the BLUP procedure under various circumstances ?

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In recent years the Blup procedure has replaced older procedures like the Contemporary Comparison method and the Herdmate method. The two main differences between Blup and the older methods are : all factors considered are estimated simultaneously and available

a priori information can be used more efficiently and flexibly. In the present paper the relative efficiencies of four methods, two Blup versions, Contemporary Comparison and Least Squares, were investigated. For sires satisfying certain conditions two quasi-independent breeding values were estimated. The higher the correlation between these independent estimates the better the method. The results show considerable differences between the methods and indicate a superiority of Blup.

Effect of selection on the base of performance test and progeny test

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The comparative selection of mice was conducted on the base of performance test and progeny test. From heterozygous population three experimental populations were formed :

The first population was selected on the base of performance test consisted 120 mice (30 ♂♂ + 90 ♀♀), in each generation.

In the second population selection was conducted on the base of the progeny test. The population also consisted of 120 mice (30 ♂♂ + 90 ♀♀).

The control population was not selected. In every generation 30 ♂♂ and 90 ♀♀ were chosen at random and one male was mated with 3 females in order to obtain the next generation.

Selection was conducted on the base of highest weight gains between the 3rd and 6th week of life in each generation, from the second litter (the second litter was used for selection because of the necessity of comparing the results with group 2 selected on the base of their progeny). The selection was carried out for 12 generations.

Evaluating animals on the base of performance test prowed to give much better selection results than on progeny test. Direct selection response was higher when selection was conducted on the base of performance test, than on the progeny test.

Estimation of body composition in live animals by use of computerized tomography

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Computerized Tomography means a presentation of anatomical information by computed synthesis of an image from X-ray transmission data obtained in many different directions through the plane under consideration. By this technique it is possible to calculate the density (CT-number) of different body tissues in different distances from the X-ray tube. Computerized Tomography (CT) is today widely used in human medicin.

In animal breeding we are interested in estimating body composition and energy content of living animals. This is important in order to improve biological feed efficiency and meat quality. The Computer Tomograph has now been tried out for this purpose at Ullevaal Hospital in Norway. By scanning 23 anestized pigs and thereafter slaughter them and