VI. — PATHOLOGY

Hereditary abnormalities in pigs

L. OLLIVIER

Station de Génétique quantitative et appliquée,
Centre national de Recherches zootechniques, I.N.R.A.,
78350 Jouy-en-Josas (France)

In the first part of this review, the overall importance of abnormalities in the pig and the subsequent economic losses are estimated, taking due account of the difficulties of such estimations. The second part deals with the main abnormalities and their hereditary basis, this being often complex and not well understood. However, a monogenic basis may reasonably be assumed for 27 different abnormalities 21 of which are due to a single autosomal recessive gene, 5 to one autosomal dominant gene and 1 to a sexlinked recessive gene. A detailed list of references is given by OLLIVIER and SELLIER (1979) in *Handbook of Mammalian Genetics*, R. ROBINSON (ed.) (in press). Pig breeding decisions with respect to genetic abnormalities are discussed in the third part. For those defects whose frequencies reflect a balance between selection and mutation with possible effects of genetic drift (in the case of many recessive lethals), not much can be done except when artificial insemination is widely used. On the other hand, a few abnormalities maintain themselves at relatively high frequencies as a consequence of a kind of « balanced polymorphism », with advantages in production traits compensating for the disadvantages due to the abnormality itself; this is for instance the case for the malignant hyperthermia syndrome. The threshold of an acceptable incidence may therefore be very different according to the type of abnormality considered and any breeding decision requires a preliminary economic assessment, as complete as possible. Use of this procedure in the case of genetically complex abnormalities means that the various effects of the latter are taken into account when establishing the selection indices.

Respiratory distress syndrome in the newborn piglet. Observations made in a farm

F. MADEC [1], P. VANNIER [1], G. PERRIN [2]

[1] *Ministère de l'Agriculture, Direction de la Qualité,*
Services Vétérinaires, Station de Pathologie Porcine,
B.P. 9, 22440 Ploufragan (France)

[2] *Laboratoire Départemental des Services Vétérinaires,*
8, place du 74e-R.I., 22000 Saint-Brieuc (France)

In a pig production unit belonging to a network of permanent epidemiological surveys, we observed piglets which were abnormal at birth and which died a few hours thereafter.

The piglets were born hairless and showed a severe dyspnea. Most of them died in a respiratory distress. The necropsy revealed a generalized subcutaneous oedema, a thyroid hypo-