

denoted (—), normally supported anaesthesia. At about 90 kg live weight, the same pigs were subjected to a 2-hour test intended to simulate transportation to slaughter house. A significant interaction sex \times type of reaction to anaesthesia was evidenced for most traits measuring the reaction of the animal, (+) gilts being definitely more stress-susceptible than other animals, as indicated by a marked rise in body temperature during both tests. The cases of stress-associated sudden death observed in our experiment only concerned (+) pigs, thus indicating that a strong relationship, if not a strict identity, exists between malignant hyperthermia syndrome and stress syndrome. No difference between (+) and (—) pigs was found in growth rate but (+) pigs had a shorter carcass, a higher dressing-out percentage and a much better carcass composition, especially with respect to muscularity. A disadvantage of (+) was found for some meat quality traits measured 24 hours *post mortem* (chiefly for water holding capacity of muscle) but the technological yield of the transformation into « Paris ham » was the same in the two groups; the relationship between malignant hyperthermia syndrome and meat quality requires further investigation.

VI. — PATHOLOGY

Learning of a conditioned avoidance response by the pig

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Non specific resistance to stress in pigs is investigated by use of defensive instrumental conditioning techniques in which the animal has to learn to avoid an electric shock preceded by a warning signal (discriminated avoidance schedule) or a scheduled electric shock (continuous avoidance schedule) by a running response in a shuttle box. 8 weeks old pigs learn more or less easily to perform the conditioned avoidance response, depending on the difficulty of the task.

Some applied examples of the use of these techniques are given : the influence of the variation of the shock-shock and response-shock intervals in the continuous avoidance schedule are studied on the rate of learning and the plasma level of corticoids ; by use of yoked control animals, the adaptiveness of the conditioned response can be measured ; drugs can also be tested either on the performance of the conditioned avoidance response or on the fear evoked by a signal preceding an unavoidable shock.

The study of behavioural and metabolic changes in such procedures enables a better understanding of the capacity of the organism to adapt to stress and the way to improve it by use of drugs.
