

mentioned diets were 487, 503 and 505 g, respectively without significant difference. Feed conversion ratios were 2.04, 2.07 and 2.17. The latter value was significantly different from that of the control.

In three piglets per treatment the calcium content of bones was 19.43 p. 100 (bicalcic), 18 p. 100 (M 19), 17.87 p. 100 (M 19-81) and that of phosphorus 9.23 p. 100 (bicalcic), 8.66 p. 100 (M 19), 8.6 p. 100 (M 19-81) without significant difference.

V. — PATHOLOGY

Evaluation of a multifactorial method for the analysis of digestive disorders at weaning

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An epidemiological survey was made in Brittany (France) during the second half of 1979 in a group of 89 piggeries. A total of 515 variables was obtained in each farm and a computer processing method was used to compare the status of herds with and without weaning problems. Conditions currently associated with these disorders were selected. Ten variables proved to be prevalent and they were considered as predisposing and causative conditions for weaning diseases in the piggeries. The role of housing, feeding and management is shown; the effect of a recent episode of T.G.E. is pointed out and the multifactorial determinism of weaning disorders is discussed.

Different forms of colibacillosis in the pig in France according to the *Escherichia coli* serological groups Comments about vaccinations

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The different forms of colibacillosis in the pig observed in France in 1980 were studied according to a serological groupage of 229 strains.

In the new-born piglet colibacillosis was induced in 27 p. 100 of the cases by enteropathogenic strains (among which 40 p. 100 possessed the attachment antigen K 88), and in 11 p. 100 of the cases by the strains responsible for the oedema disease.

In the piglet from the age of eight days and until weaning, colibacillosis was induced in 27 p. 100 of the cases by enteropathogenic strains (among which 35 p. 100 possessed the attachment antigen, 17 p. 100 were composed of the same serogroupes without attachment antigen and 48 p. 100 of « intermediate » strains), in 19 p. 100 of the cases by

unusual strains enteropathogenic or not and in 7 p. 100 of the cases by strains responsible for the oedema disease.

In the weaned piglet colibacillosis was induced in 64 p. 100 of the cases by enteropathogenic strains (among which 32 p. 100 possessed the attachment antigen, 60 p. 100 were composed of the same serogroups and 8 p. 100 of intermediate strains), in 7 p. 100 of the cases by unusual strain enteropathogenic or not and in 6 p. 100 of the cases by strains responsible for the oedema disease.

These results as well as the appearance of strains resistant to antibiotics (16 p. 100 to ampicillin, 74 p. 100 to streptomycin, 9 p. 100 to framycetin, 18 p. 100 to chloramphenicol, 33 p. 100 to furocone, 6 p. 100 to trimethoprime-sulfamid) led the authors to reexamine the problem of vaccination. On the basis of an overall survey of the main microbial vaccines and of the new vaccines containing purified fractions of enterotoxin LT, attachment antigen K 88 or endotoxin, the authors determined the different vaccination programmes according to the identified strains and to the age of the animals.

**Transmissible gastroenteritis in swine :
in vitro stability of viral infectivity in gastric and small intestine juices**

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Low and high passaged cell culture strains of T.G.E. virus were examined for stability towards gastric and small intestine juices collected in 22 pigs slaughtered at 6-12 months, 15, 24 and 48 hours after last feeding. Results revealed high sensitivity of T.G.E. virus to both groups of digestive juice. Differences in stability were observed between strains of T.G.E. virus. However, no correlation could be established between the level of resistance and the cell-passage status or the degree of virulence of the virus strain.

**A survey of pulmonary lesions in bacon pigs
(Observations made at the slaughterhouse)**

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Three surveys were made in 4 slaughterhouses in Brittany (France) in July, November 1980 and in March 1981. A total of 12 548 pigs were slaughtered and 7 543 examined at random. They came from 236 herds. Pneumonia was found in 66 p. 100 of the lungs, pleurisy in 17 p. 100 and abscesses in 5 p. 100. Pericarditis affected 4.6 p. 100 of the pigs. Several kinds of lesions were found in the same lungs. The prevalence of environmental factors in the development of these diseases suggests that more attention should be paid to the management of the piggeries.