least three, and probably only three, cistrons specifying the phage coat protein, an enzyme RNA synthetase to replicate the phage RNA and the so-called "A" protein or maturation factor. Since each phage particle consists of one RNA molecule enclosed in 180 coat protein molecules and one or two molecules of "A" protein, some mechanism must regulate the translation of the genome to ensure that the coat protein cistron is translated much more often than the two other cistrons. Lodish and Zinder (1966) suggested that the coat protein itself acted as a 'repressor'. Sugiyama and Nakada (*Proc. US Nat. Acad. Sci.*, **57**, 1744; 1967), who recently achieved the *in vitro* assembly of phage-like particles from coat protein and phage RNA (*J. Mol. Biol.*, **25**, 455; 1967), have obtained some direct evidence suggesting that coat protein does in fact play a part in this regulation by complexing with the phage RNA.

They compared the *in vitro* incorporation of histidine, phenylalanine and leucine in an *E. coli* cell-free system programmed with MS2 RNA or MS2 RNA that had, by prior incubation with coat protein, been made into Complex I, that is a few coat protein molecules attached to an RNA molecule. Since MS2 coat protein does not contain histidine the incorporation of histidine is taken as a measure of the synthesis of RNA synthetase and "A" protein. Sugiyama and Nakada find that with Complex I as messenger incorporation of histidine is 71–77 per cent less than with MS2 RNA as messenger, whereas phenylalanine incorporation is only inhibited by 19–36 per cent. The incorporation of histidine was also always more strongly inhibited than the incorporation of leucine or alanine. It appears that the coat protein selectively reduces synthesis of non-coat protein. This inhibitory effect is specific; MS2 coat protein does not inhibit protein synthesis directed by TMV RNA or PolyU. Eggen and Nathans (*Fed. Proc.*, **26**, 449; 1967) have briefly reported similar observations to those of Sugiyama and Nakada.

Does the coat protein regulate translation *in vivo* as well as *in vitro*? Two pieces of evidence suggest that it may. First, in MS2 infected *E. coli* the ratio of coat protein to non-coat protein synthesized increases progressively during the infective cycle. Second, as Lodish and Zinder *et al.* (1964) found, amber mutants of f2 that are unable to make coat protein produce large quantities of RNA synthetase; this suggests that coat protein molecules are involved in the normal regulation of RNA synthetase synthesis.

The existence of polar coat amber mutants of f2 and R17 (Zinder *et al.*, 1966; Gussin *et al.*, 1966) indicates that the coat protein cistron precedes the synthetase cistron. Furthermore, the failure to synthesize "A" protein *in vitro* can be interpreted as showing that the "A" cistron is the last of the three. This would make the order of the cistrons coat protein first at the 5′ terminus, followed by the RNA synthetase cistron and finally the "A" cistron at the 3′ terminus. It may well be that the coat protein when regulating translation attaches to the 3′ terminal end of the RNA first and then progressively towards the 5′ terminus. If this is so, the "A" cistron will be translated least often and the coat protein cistron most often. This is an attractive hypothesis because we know that although each phage requires 180 coat protein molecules, it needs only a few (and certainly fewer than 10) molecules of "A" protein.

Parliament in Britain

Dragon Reactor

To avoid the premature shut-down of the Dragon reactor project at Winfrith Heath, the British Government is prepared to bear most of the cost of the project through 1968. This was announced by Mr Wedgwood Benn, Minister of Technology. The Dragon high temperature reactor is supported by the OECD, and doubts about the future of the project—which is due to run until 1970—have been spreading since the Euratom countries have been unable to agree about the support costs. To finish the project would need another £4·5 million, according to evidence given to the Select Committee on Science and Technology by Sir William Penney. Costs for 1968 may therefore be about £1·5 million. Unless Euratom stops dragging its feet on the project, it may well have to close down, as the British Government is unlikely to do more than a temporary holding operation. (Written reply, July 25.)

Sonic Bangs

QUESTIONS on sonic bangs were prominent in both Houses. On July 17 in the House of Commons the Minister of Technology, Mr Wedgwood Benn, stated that his Department and others concerned would investigate any reports of adverse effects of sonic booms. His Department also had a programme of scientific research into the nature and effects of sonic bangs. Mr Benn preferred not to anticipate in detail the information which this series would provide about higher intensity tests, but valuable lessons should be learned. In reply to further questions on July 18, Mr Benn said he was aware that there was some concern at the disturbance being caused, but he did not think it justified stopping the exercise, which was planned to end that week. The place and time of the final flight—noon on July 21—would be announced in advance, and all the remaining flights in the series would be designed to hold the bangs to within the same degree of intensity as those that had already been made. Whether or not we built a supersonic airliner, at some stage this country would have to decide whether it was prepared to allow supersonic flying. One of the reasons for the tests, he said, was to see whether people complained about tests that do not take place. Possibly, he suggested, the high and prolonged intensity of an aircraft taking off and landing was more irritating and more likely to affect hospitals and others than the single impact of a supersonic plane.

In the House of Lords, Lord Shackleton said that two isolated instances of momentary fluctuation in the calibration of equipment at Frenchay Hospital had been reported but that the equipment immediately returned to normal and no damage of any kind occurred.

Veterinary Medicine

MR A. BOTTOMLEY, Minister of Overseas Development, reported that after discussions with Edinburgh University, he intended to provide a grant of up to £210,000 in the five year period up to March 1972 for erecting, furnishing and equipping a building next to the University's existing Veterinary Field Station to provide a Centre for Tropical Veterinary Medicine. An agreement had recently been concluded with the University on the conditions under which the centre would be established and managed.