other than that with which Beckwith has been concerned. There is, however, no assurance that manipulations like these presage the manipulation of the inheritance of *E. coli* in any deliberate way, and it is of course a far cry from even that to the deliberate manipulation of genetic inheritance in more complicated organisms than bacteria.

So why are people anxious to read sinister messages in this new development? The question is perplexing because it reflects an implicit change in the public mood. A century ago, for sure, few people would have been tempted to look for such sinister outcomes. For all the opposition of the Victorians to what they called Darwinism, few people feared (as they might have done) that the discovery of the importance of natural selection would make it possible for eugenicists to transform the character of living things. Indeed, the tendency to seek sombre consequences for scientific discoveries is a comparatively recent event, a thing of the sixties and not simply of the nuclear world. Two dangers lie concealed in this. First, the progress of science itself may be interrupted or even halted by excessive fears of the consequences. Second, as in the tale of the shepherd boy who cried wolf too often, exaggeration may blunt the sensibilities of society to real dangers. It is for scientists to help to distinguish between a responsible concern for the social consequences of what they do and an exaggerated fear of them.

100 Years Ago

A WEEKLY ILLUSTRATED JOURNAL OF SCIENCE.

"To the solid ground
Of Nature trusts the mind which builds for aye."—WORDSWORTH.

The deep-sea dredgings in this cruise yielded no end of novelties and interesting results in every department of the Invertebrata. They were enough to take one's breath away. Among the Mollusca were valves of an imperforate Brachiopod with a septum in the lower valve, which I propose to name *Cryptopora gnomon*. Some shells were of a tolerable size; and the fry of *Isocardia cor* (*Kelliella abyssicola* of Sars) were not uncommon. Many Crustacea (Amphipoda) were scarlet, and others bright red with feathered processes of a golden colour at the tail. A magnificent Annelid was pinkish, with purplish-brown spots on the line of segmentation. A *Holothuria*, from 1,443 fathoms, was 5 inches long and $2\frac{1}{4}$ in circumference. None of the animals, especially the Mollusca, were living when they were brought on board and examined; this was perhaps owing to the great change of temperature (sometimes as much as 20°) between that of the sea-bed and that of the atmosphere.

From J. Gwyn Jeffreys's account of the deep sea dredging expedition in HMS Porcupine. (*Nature*, **1**, 136, *December* 2, 1869.)

COMMITTEES

Swann dissects Antibiotics

In recommending that antibiotics should be classed into feed antibiotics and therapeutic antibiotics, of which only the former may be given to animals without a vet's prescription, the committee chaired by Professor Michael Swann has deftly struck what seems to be the optimum balance between two evils. The problem the Swann committee found itself facing was that the more severely it restricted the agricultural uses of antibiotics, thereby raising the costs of producing food, the more lives of old people and children would eventually be saved from falling to resistant micro-organisms.

"Solutions to such problems come not from dwelling on the ethical dilemma but by scientific discussion of the basic problems", the committee declares in the first page of its report (*Report of the Joint Committee on the Use of Antibiotics in Animal Husbandry and Veterinary Medicine*; HMSO, 8*s* 6*d*). In the spirit of this credo the report sets forth in uncluttered language the agricultural value of antibiotics and the dangers implicit in the situation, notably the transfer of organisms from animals to man and the transfer of resistance between organisms.

The report's chief recommendation is that what are to be defined as "feed" antibiotics shall fulfil the three conditions that (*a*) they are of economic value in livestock production, (*b*) they have little or no application as therapeutic agents in man or animals, and (*c*) they will not impair the efficacy of therapeutic drugs through the development of resistant strains of organisms. Therapeutic antibiotics should be available to treat animals only if prescribed by a vet. The committee's most taxing decision was whether to allow chloramphenicol, the chief antibiotic used in treatment of typhoid fever, to be available in this way. In the event, they decided that vets should be allowed to prescribe chloramphenicol in special circumstances.

The Swann committee notes that more than half the antibiotics used in Britain are prescribed for human use. Use of antibiotics by doctors fell outside the Swann committee's terms of reference, but it recommends that a committee should be set up with overall responsibility for the whole field of use of antibiotics whether in man, animals, food preservation or for other purposes.

The use of antibiotics for the treatment of "stress" in animals is frowned on as being unscientific, but the Swann committee recommends that feed antibiotics should be available for use in calves up to 3 months old as well as in pigs and poultry. Present legislation restricts the feeding of antibiotics to the latter two species.

Feed containing antibiotics may be advertised, provided it is labelled with the name and dose of the feed antibiotics it contains; therapeutic antibiotics, however, may not be advertised to laymen.

The Swann committee believes that too little is known about veterinary epidemiology, a subject which is a distinct discipline in its own right. It wishes that departments of veterinary epidemiology were established in universities and that the Agricultural Research Council and the Medical Research Council would consider how best they could promote such studies.

Mr Cledwyn Hughes, Minister of Agriculture, has