

the BBC and two for the commercial television companies, each neighbouring transmitter must be given four entirely different channels so as to avoid radio interference. The result, of course, is that the available band-width is rapidly consumed.

If there is to be a uniform television service for the whole of Britain, there is no doubt that the available band-width is sufficient for only four separate networks of programmes. The question that should be asked, however, is whether it is necessary, let alone desirable, to provide a strictly uniform service. If there are to be minority programmes, might they not most efficiently be centred on the large cities? And might not there be advantages in arrangements which allow, say, 90 per cent of the British population to have access to six choices of broadcast programmes even if the remaining 10 per cent were compelled to put up with fewer than four? As things are, there is certainly no prospect that broadcast television will be able to offer the British public anything like the diversity of programmes which is certain to be commonplace elsewhere by the end of the century.

Another uncertainty in the pattern of broadcasting in the late 1970s is the extent to which the British government will actively encourage the development of cable television. Although some parts of the country, especially in hilly regions where television signals are not easily received, are well provided with cable services, the Ministry of Posts and Telecommunications has not made up its mind about the future of multi-channel cable television. By all accounts, it is waiting for Sir Robert Cockburn's Television Advisory Committee. The difficulty is not merely to know who should be responsible for laying and for financing urban networks of coaxial cables, but also that of deciding who should have access to broadcasting stations linked with them. The ideal is that the maintenance and operation of the cable system should be separated from the right or responsibility to provide programmes. Moreover, there is every reason why the same separation should be made between the technology of television transmission and the provision of programme material. In other words, there is something to be said for putting the BBC on the same footing as the commercial broadcasting companies, for whom the ITA provides central engineering services. Whether one public authority could broadcast television signals and operate coaxial cable networks is a more tricky question. Until that and related problems are answered, however, it is hard to see how any government could make a sensible decision on the future of British broadcasting.

For the British Government, the problems occasioned by the need to provide a more rational basis for broadcasting in Britain touch several parts of the government machine. One important issue to be decided is whether the Post Office should retain its monopoly on the provision of telecommunications links within the country—as things are, even the networking arrangements by means of which the commercial television companies and the BBC transmit from one point to another are owned or at least licensed by the Post Office. There have been circumstances in which television relay companies have been allowed to set up their own arrangements for distributing signals, but it remains to be decided who, if anybody, would be able to operate a network of coaxial cables designed not merely so as to distribute television signals but also the other signals which might profitably accom-

pany ordinary television signals. After all, in due course there is every reason why the same cable network should be used for television transmission and even such urban refinements as burglar alarms and the like. Obviously the separation of such a system from the Post Office would thoroughly undermine the basis on which telecommunications in Britain are at present organized. That would mean too much disruption, but there is no doubt that the Post Office itself is slow to recognize the benefits that could come from a vigorous exploitation of a coaxial cable network for distributing video signals. At least one outcome of the present concern for the reorganization of broadcasting services should be an explicit set of marching orders for the Post Office, which must be made to act more quickly than in the recent past.

100 Years Ago



"University of London, Burlington Gardens, W.,
December 5th, 1871.

"MY DEAR TYNDALL,—If I correctly apprehended what you said at the Dinner of the Royal Society in regard to Dr. Mayer, you repeated what you had previously stated in your Lecture at the Royal Institution in 1863, as to the entire ignorance of Mayer's work which prevailed in this country until you brought it into notice on that occasion.

"Now, I very distinctly remember that a few days previously to that Lecture, I mentioned to you that as far back as 1851 I had become acquainted, through the late Dr. Baly, with one of Dr. Mayer's earlier publications; and that, in bringing before the readers of the *British and Foreign Medical Review* (of which I was then the Editor) the 'Correlation' doctrine, as developed in Physics by Grove, and in Physiology by myself, I had stated that we had both been to a great extent anticipated by Mayer—as I should have shown much more fully if the pamphlet had earlier come into my hands.

"I also most distinctly remember that, as you stated in that Lecture, no one in this country—'not even Sir Henry Holland, who knows everything'—had ever heard of Mayer, I spoke to you again on the subject a few days afterwards; and that you then expressed your regret at having entirely forgotten what had previously passed between us on the subject.

"As it would seem that this second mention of the matter has also passed from your mind, I shall be obliged by your looking at the passages I have marked in pp. 227 and 237 of the accompanying volume, from which I think that you will be satisfied that I had at that date correctly apprehended Mayer's fundamental idea, and that I have done the best to put it before the public that I could under the circumstances—the article having been in type and ready for press before his pamphlet came into my hands.

"Since, in thus bringing forward Mayer, I spontaneously abdicated the position to which I had previously believed myself entitled, of having been the first to put forward the idea that all the manifestations of Force exhibited by a living organism have their source *ab extra*, and not—as taught by physiologists up to that time—*ab intra*, I venture to hope that you will do me the justice of stating the real facts of the case in a short communication either to the *Athenaeum* or to *NATURE*.—I remain, my dear Tyndall, yours faithfully,
"WILLIAM B. CARPENTER
"Prof. Tyndall."

From Nature, 5, 143, December 21, 1871