been further emphasized by many developments of the past twenty years. Analysis of the likely effects of the new road bridges and tunnels of the major estuaries, of the layout of the 275-kV grid, of the proposals of the Beeching Report, of access to commercial services and many other features, all show that the periphery is at an ever-greater comparative disadvantage.

Great Britain's problem is the concentration of urban functions and much economic activity. This problem is common to many parts of the world, but it presents particular difficulties and greater urgency in this small, irregular and densely-peopled island. To think of present planning problems simply as the rapid relative growth of the South-east at the expense of other regions is to think in the wrong terms. Great Britain must face the coming of 'Megalopolis'—the vast diffused city which will occupy much of the Midlands of England with dormitories on the nearer coastal areas particularly in the South-east. The days of planning separate cities and towns, and possibly of local government areas as now known, have gone. The planning of 'Megalopolis' requires the biggest minds and a carefully controlled imagination—personnel will be difficult to find. One thing at least is clear—it must be planned with a full appreciation of the profound and continuing changes in geographical values. Given the changes in spatial relationships of recent years thinking even on a regional scale is not big enough, and we must take cognizance of the geography of Great Britain as a whole.

## ENGINEERS AT THE CROSS-ROADS

TO-DAY engineers in Britain are facing a new dilemma —the dilemma of professionalism. The problem as Mr. H. G. Conway sees it in his presidential address to Section G (Engineering) is: do engineers want to become 'respectable', raising the title 'engineer' above the level of a garage mechanic? Moreover, what is Britain's greatest need: for scientists to advance the boundaries of technology, or for engineers to apply its fruits? In many fields, remarkable engineers are found who have had little or no technical education. These men, the Henry Royces of to-day, succeed because an instinctive ability, particularly in design, cannot be held back by a lack of formal qualifications. In science, however, academic training is more necessary, and there is perhaps less scope for intuitive genius without academic embellishment. Many professions, such as medicine and the law, require strict compliance with the rules of the profession if success is to be achieved.

While comparisons between engineers and scientists can be made (but tend to be very inaccurate), one common factor is that the successful individual in either discipline tends to have an intelligence well above the average of the community. That there are certain essential differences within each group can broadly be related to an interest in the practical or in the abstract. It is essential that these differences are kept in mind when educational patterns are directed towards the future needs of technology. Obviously too rigid an educational system might hamper the progress of some men, and this is particularly true of the visually perceptive and mechanically apt men who may not be so successful in passing through the normal university degree course.

Intelligence is a quality that many men have. However, the knack of making use of it is another quality. Psychologists in the United States, investigating the difference between creativity and intelligence, have shown that the conventional intelligence quotient rating system leaves much to be desired in assessing those qualities which comprise creativity. Indeed they give some evidence indicating that young people of high intelligence (by *I.Q.* rating) are generally low in creativity. Perhaps here is the essence of the differences between the scientist and the engineer. While the average scientist would probably be proud to have a high *I.Q.* rating, and certainly gifted, highly intelligent children are most likely to be able to follow the educational stream which produces scientists, in some branches of technology, virtually throughout engineering, creativity is highly important. It is common experience that those who do best have some innate ability which is not necessarily nurtured by a university curriculum.

Traditionally, the ambition of the British parent is for his child to go into a 'respectable' profession, such as medicine, law or finance. It is only recently that science and technology have become recognized as 'respectable' professions. It can be questioned whether steps are being deliberately taken to raise the professional status of engineers, so that they have the same public standing as doctors, dentists, accountants, etc. A generation ago the engineer would join a learned society because he was interested in his new profession and wanted to keep up to date, 'in the swim', by means of its journal. Meetings were only attended occasionally, branches outside London being few. There were no ties to wear symbolically! The young engineer of to-day is much the same as his father, except that competition is far keener and technology vastly more complex. Specialists have brought about the setting up of artificial barriers within this creative discipline, and now it is necessary to distinguish between electrical and mechanical engineering, etc. It is clear, however, that a method must be found for rating qualified engineers in such a way that the general public will know them for what they are.

A step forward in this endeavour was made in 1963 when the Engineering Joint Council was formed. Hereby a means was established for thirteen learned societies to set common standards which will enable the 'professional engineer' to be given a good standard without reference to whether he is electrical, mechanical, chemical, etc. The problems of standard are immense, and in no circumstances can a lowering of any standard be tolerated. Certainly the Joint Council must set a standard which will be equivalent to a university degree, and it must lay down the standards of professional experience which must also be achieved before the young member of a constituent institution can be allowed to call himself a 'professional engineer'.

## HISTORY AND ARCHÆOLOGY

THE rapid expansion of British archæology in the late nineteenth and early twentieth centuries was largely concerned with prehistory and was carried out in close association with the natural sciences. As a consequence, the link with historical studies, which had always been realized in the field of Roman Britain, became dangerously weakened in other branches of British archæology. The necessity for re-examining the relations between historical and archæological studies has become increasingly evident as medieval and post-medieval archæology have grown in stature in the past generation. It is thus fitting that Dr. C. A. Ralegh Radford should choose