

artificial lighting is often very defective. In many recent factories excellent equipment is installed, but in some of the older buildings, antiquated and imperfect arrangements still persist. Britain, almost alone amongst the civilised countries, has even now no specific requirement of adequate lighting in its Factory Act, although this step was advocated twenty years ago by a Departmental Committee.

Mr. Sully thinks that street lighting lags behind modern requirements. In a factory, five foot candles is regarded as essential for fine work. According to the B.S.I. specification, one per cent of this is

given as the candle power sufficient for a moderately lighted street. This only represents 1/10,000th of the average value of unrestricted daylight from an over-cast sky. No wonder the accident risk by night is greater than that by day. The problem of public lighting is complicated by the fact that many roads now fulfil functions quite different from those for which their lighting was originally designed. In Mr. Sully's opinion, the lighting of the King's highway is a national rather than a parochial duty. The Ministry of Transport should assume a greater degree of responsibility for its illumination.

### Association of Technical Institutions

THE annual general meeting of the Association of Technical Institutions was held in the Drapers' Hall, London, on February 23-24. During the first session Mr. Will Spens, Master of Corpus Christi College, Cambridge, and newly-appointed chairman of the Board of Education's Consultative Committee, who was elected president of the Association for the year 1934, delivered his presidential address.

At the outset, Mr. Spens suggested that he was unable to enter into a discussion how to enhance the value of technical education, since his knowledge of that, and of industry and commerce, was not very considerable. However that may be, his address demonstrated the closeness and profundity of his knowledge of the field of education generally. He insisted on the value of literary studies in teaching men to think: he would not, therefore, have traditional academic education weakened, although he thought too much emphasis had been placed upon it. He pleaded for research in applied science, but stressed the need for inculcation of scientific *method* rather than the simple acquisition of scientific knowledge.

Among the papers read during the following sessions was one on "Education for Commerce from the Employer's Point of View" by Mr. F. Hickinbotham, of Birmingham. He emphasised the point that commercial education lags behind other branches of technical education because of the fact that the need for specialised education for commerce arose later in commerce than in the sciences and skilled trades. It is impossible, for example, to practice chemistry, pharmacy, engineering, etc., without a body of specialised knowledge; but many branches of commerce do not require this specialised knowledge: hence educational facilities have developed

slowly. The present need for systematic instruction, however, is occupying considerable attention. Mr. Hickinbotham believed that the efforts which are being made to introduce commercial subjects into the secondary school curriculum were mistaken. In the secondary school the pupil should receive a general education, and afterwards take a one- or two-year full-time course in a commercial college, where instruction given by teachers with commercial experience would be better than that given by teachers who acquire their knowledge merely from books. One of the greatest needs of the world is to break down the barriers of nationalism and to promote a spirit of internationalism. To this end the first essential is to know the language the other man is speaking. Languages, therefore, should find an important place in all commercial courses.

Mr. Hickinbotham's paper had a special interest since the thought now being given to commercial education is a reflection of some of the wider anxieties of our civilisation. The science of production has developed swiftly and efficiently: we have scarcely begun to understand the science of distribution. Those responsible for technical education are alive to their responsibilities in this connexion. Evidence of this was submitted as the meeting proceeded, when a "Report on National Certificates in Commerce", prepared by a joint committee of the Associations of Technical Institutions, of Principals of Technical Institutions and of Teachers in Technical Institutions, was accepted. While it does not yet seem possible to draw up a scheme for national certificates in commerce such as those applying to engineering, chemistry, etc., the report goes far to establish means by which it is hoped that national certificates in the full sense of the phrase may ultimately be available.

### Dog Breeding for Show Points

"WE have bred dogs for all sorts of show points, but we have never considered whether our principles of breeding have been to the advantage of the dog itself. We have thought only of our own profit." So concludes the editor of the *Countryman*, who asks whether or not our dog breeding principles so far, judged entirely from the dog's point of view, are not a bit 'low down' and, further, why should not some breeding now be done for intelligence? In a series of articles now appearing in this quarterly review, these questions are considered by a number of people. Dr. Darling expends most of his space in

proving to his own satisfaction that he is quite unable to decide as to what could be regarded as intelligence in the dog, and argues that in any event the experiment suggested has already been carried out with the working hill collie. But he agrees with the editor of the *Countryman* in stating that there can be no defence for many show points. The standard of the St. Bernard is merely acromegaly, that of the bulldog achondroplasia; the toy dog is hyperthyroidic, and terriers microcephalic. Prof. L. C. Dunn, of Columbia University, in a very well-written article, suggests that it is not intelligence that is