

of the Edinburgh Geological Society on March 9. The map, which belongs to the Geological Society of London, is based in part on information supplied to Necker by other geologists and in part on his own extensive travels in Scotland. The map has never been published, and in view of its historical importance, it is hoped to reproduce a colour facsimile. Mr. Eyles said that Necker, who was born in Switzerland, went to Edinburgh in 1806, and studied geology under Prof. Jameson at the University. He was a grandson of de Saussure, the famous Alpinist and geologist; he was related to Madame de Stael, the novelist, and to Necker, the financier, a minister of Louis XVI. After leaving Edinburgh in 1808, he became professor of mineralogy at Geneva, and travelled extensively in Europe. In 1821, he published an account of his travels in Scotland in a three-volume work entitled "Voyage en Ecosse et aux Iles hébrides". He returned to Edinburgh on several occasions. In 1841 he retired to Skye for reasons of health, and remained there until his death in 1861. He was buried at Portree.

Comfort in Travel

At the annual joint meeting of engineering and technical societies organized by the Institution of Automobile Engineers and held on March 10 at the Institution of Civil Engineers, three short papers were read on "Comfort in Travel". The first paper was on road travel by S. Gareke, the second on rail travel by Lord Stamp, and the third on air travel by Capt. E. W. Percival. Mr. Gareke pointed out that much of the improvement in the comfort in travel by road is due to the improvements of the surface of the roads. The invention of the railway was essentially the product of necessity, and was mainly due to finding something better than the water-bound flint or stone road. It seems improbable that further marked improvements in road surfaces can be anticipated. The discomfort due to nervous reaction imposed upon a driver by the presence on the road not only of many signals, but also of advertisements, lights and other contrivances, readily confused with official signs, is very real. Such signs are now greatly on the increase and will have to be controlled.

LORD STAMP laid stress on two elements in rail travel: mental ease and physical ease. Mental ease is promoted by removing difficulties in the way of finding out how to go and when to go. Throughout the United States and Canada many agencies have been established by the British railways, all with the object of easing matters for the customers. Physical ease is promoted by absence of disturbing vibration and noise and by the provision of adequate heating, ventilation and lighting. The L.M.S. Co. has employed eminent men of science in Great Britain to solve some of their problems, and both here and in the United States the motion of tyres of different profiles have been studied by means of cinematograph records. It has been found that a profile as nearly cylindrical as possible gives the greatest freedom from high-frequency lateral oscillations.

Captain Percival considers that the development of the aeroplane has progressed more rapidly than that of any other form of transport vehicle. For very large cities it will soon be essential to have several main aerodromes so as to take care of the ever-increasing traffic.

Social Survey of Bristol

A PRELIMINARY report on the standard of living in Bristol, by H. Tout, has been issued by the University of Bristol Social Survey, of which Mr. Tout is director ("The Standard of Living in Bristol: a Preliminary Report of the Work of the University of Bristol Social Survey." By Herbert Tout. Pp. 64. Bristol and London: J. W. Arrowsmith, Ltd., 1938. 1s. net). The comprehensive social survey of Bristol which is nearing completion has been made possible by the Colston Research Society, which has assumed entire financial responsibility, while the University undertook responsibility for the conduct of the research work and the appointment of the Survey staff. The preliminary report is only concerned with incomes which fall below middle-class levels, and covers four fifths of all Bristol families. The report indicates that, on the whole, the typical Bristol family is fortunately placed and probably better off than the families of many other towns. There are estimated to be 12,000 families in the Survey area which are very comfortable by the prevailing standards, which are not high, in the classes covered. At the other end of the scale there are 11,000 families in poverty. Between these extremes there are 56,000 families whose standard of living calls for no special remark, and some of these have a small margin for saving or pleasure. Beneath them come 21,000 families who, whilst not in poverty, have a hard struggle and whose lot is far from comfortable. Probably 40,000 people in the area live in actual poverty, and among them a disproportionate number of children, so that one out of five working-class children comes from a home that is unable to give it a fair start in life.

THE inquiry upon which the report is based was conducted from May to October 1937, coinciding roughly with the peak of the revival of business which started in 1932. The standard of minimum needs adopted in the survey in assessing poverty closely follows that used by Mr. R. F. George (*J. Roy. Statistical Soc.*, 100, 74 (1); 1937). The average Bristol working-class family has a standard of living more than 100 per cent above its minimum needs, and the average size of the family is only slightly above that of the middle class (3.73 in the poorest groups as against 2.94 in the most comfortable group). The rate of poverty is highest for those under fifteen and lowest for those in their twenties, being only 4.1 per cent in the age group 20-24. Unemployment is outstandingly the most important reason for family income falling below 'needs', and affects nearly one third of the families. Old age ranks third in importance, rather less than one sixth of the cases being assigned to it. Broken families, in which there is no adult male earner, account for 10 per cent of