

began with the lamplighter going his rounds with his pole. The method is the distribution of high-frequency A.C. ripples over the electric supply network from a central transmitting apparatus. The high-frequency machine which generates the current injected at various points into the network is rated at 30 kilowatts, and its frequency can be varied between 300 and 900. They are injected directly on to the 6,600 volt A.C. system and actuate relays on the low-tension side. As condensers are placed in the high-frequency circuits, the power consumption is small. At present there are about 500 relays installed for the control of the lamps. The great advantage of the system is that the whole street lighting of a city can be switched on or off by actuating push buttons at a central point. If this system were adopted in a city, every street lamp could be extinguished within a few seconds of warning of an emergency being received. The system can also be used to control part of a load, for example the load required for the 'water heaters', for a short time so as to prevent the maximum load, as shown by the 'maximum indicator' being exceeded. The system was installed in Maidstone by Actadis Ltd., Vincent House, Vincent Square, S.W.1. The bulk of the apparatus is manufactured in Great Britain.

Coloured Roads

IN *Roads and Road Construction* of October 1 Mr. C. W. Manlove considers the question of whether it would not sometimes be advisable, instead of having a mass of signs at the side of the road, to colour the traffic lanes with various colours. A good driver looks at the road surface ahead, and should not be distracted by having to decipher road signs, a necessity which is sometimes contributory to accidents. If the road surface had a tinted colour when the speed limit changed, the driver would automatically notice that he was entering or leaving a controlled area. The coloured road has for several years been a common feature in the United States. This is probably due to the fact that in America many of the roads are made of concrete; in Great Britain concrete roads are only beginning to be made. Recent official tests on the main Bath Road prove that a concrete road has a very long life. It has been computed that if the load does not exceed 15,000 tons of traffic a day, to wear the surface down one inch would take 200 years. The Cement Marketing Board estimates that the cost of tinting the top of a cement carriage road to the depth of two inches, supposing the road to be 30 feet broad, would be about £250 per mile. As international colours are used for colouring electrical engineering diagrams, the day may come when international colours will be used on the surfaces of the roads for warning and directing chauffeurs when danger is ahead and a change of speed is necessary.

The Cross-Channel Ferry Service

THE cross-channel ferry service between Dover and Dunkerque has now been in operation since October 1936. The three ferry steamers engaged in the service carry passengers between Great Britain and

Europe in through sleeping cars. Recently a special ramp has been built which enables motorists to drive straight into the special garage on board the ship, which has accommodation for twenty-five cars. It is not necessary to empty the petrol tanks of the cars before boarding the ship as special fireproof construction has been adopted. The new ramp is a reinforced concrete structure at the side of the ferry dock and there is a portcullis type of transfer bridge which is lowered on to the deck of the ship. The length of each of the ferry steamers is 360 feet and the beam is 63 feet. It is provided with twin screws each driven by a Parsons steam turbine through single reduction gearing. The normal speed is 16½ knots and the total horse-power is 4,900. It takes 500 passengers, 12 sleeping cars (or forty goods wagons) and 25 cars in the garage. The *British Engineers' Export Journal* of August states that the traffic carried by the train ferry is very varied. To the engineering exporter this ferry service is of great value, since heavy and awkward pieces of machinery can be loaded on a truck at Victoria and need suffer no transshipment until they arrive at a destination on the Continent. Up to May 31 of this year, the ferry service conveyed 9,577 loaded wagons, and during the same period 12,277 tons of merchandise were conveyed in through trucks from Dover to Dunkerque, and 23,288 tons were carried in the reverse direction.

Forestry Research in Malaya

THE Research Institute of the Forestry Department of the Federated Malay States has now been in existence for some years and is carrying out investigations of varying types which should have considerable importance for the improvement of the forests of the country. The Institute is organized on the lines of the Imperial Forest Institute at Dehra Dun in India, the branches consisting of silviculture, botanical, wood technology, timber mechanics, seasoning, preservation and durability of timbers and entomology. Chemical investigations affecting forestry are undertaken by the Chemical Division of the Department of Agriculture, a grant being made by the Forest Department for this purpose. The Institute works in collaboration with Princes Risborough and also with the Malayan Railway Department and with the Civil Engineer, H.M. Naval Base, Singapore. The Forest Botanist, whilst on leave, spent some time working on a collection of Malayan specimens at Kew, where, by the courtesy of the director, he was accorded assistance by the Kew Herbarium staff. An item of botanical interest is mentioned in the annual report for 1936 (Forest Research Institute, Kepong, 1936) referring to the Gunong Tahan Expedition. The collection made includes 144 numbers, mainly from the open *padang* of the mountain tops. Although this collection has not yet been completely worked through, it is said that "it is evident that, though it contains very little that is new, it includes some nice material of rare species known only from this locality, e.g. *Agathis flavescens*, Ridl. and *Gentiana malayana*, Ridl."