

exhortation. The colour bar is not entirely a product of that racial prejudice and exclusiveness to which such exhortation is addressed. Its roots extend to cultural, social and economic conditions, from which spring problems demanding the closest examination and study before their solution will bring about that co-operation between different classes in the community, each according to its kind and its capacities, instead of present antagonisms. This constitutes the real elimination of the colour bar—a partnership in realities and not a brotherhood by adoption in which the conditions of unity have yet to be attained.

### Road Travel in Air Raids

A NEW aspect of road safety emerges with the decision to allow road traffic to continue during air-raid warnings. General agreement seems to have been arrived at that this decision is a wise one. As pointed out in *Roads and Road Construction* of September 2, the long lines of vehicles held up during the early raids, with their occupants standing about waiting for something to happen, presented an excellent target for machine-guns. It is difficult to see what other course could have been taken. Judging by experience learned from recent raids, many motorists are taking advantage of this concession. Travelling along roads deserted of all but police and A.R.P. personnel is a curious experience; and so is the feeling of frustration in a closed car produced by inability to see what is going on overhead. Something of what is happening can be guessed from the attitude of wardens and others, but in the absence of exact knowledge one tends to develop what has been called a sort of 'musical chairs' attitude towards the public shelters passed when driving, the question now being where the music (?) will start—not when it will stop. It has been suggested that something might be done to give motorists a feeling of greater security, or rather to reduce their feeling of insecurity, by way of signposting shelters along the main traffic routes. In many places signs have already been erected, but these are scarcely conspicuous enough to be seen by passing traffic; they cater more for the local inhabitants. Shops and private houses with surplus shelter accommodation might also be induced to co-operate.

### Medicinal Herb Production in Great Britain

A SHORT memorandum, presumably a preliminary one, has been issued by the Ministry of Health declaring its policy regarding the domestic cultivation of medicinal plants and outlining the arrangements which have already been made in respect of belladonna, digitalis, henbane and stramonium. These four potent drugs are to be made the special care of the Ministry, and it is understood that the owners of established herb farms have undertaken to extend the acreages under cultivation. Outside effort is not discouraged; but, as the memorandum states, "Farmers and owners of large private gardens who wish to engage in the cultivation of herbs are recommended to operate in close association with commercial firms to ensure that the crop is properly harvested and

dealt with". This is sound advice, and if followed will help amateur gardeners to avoid pitfalls, which are not a few in number. It is hoped that the deficiency of supplies of these four important drugs, which is due to the cessation of imports from Continental sources, will be made up by greatly increased home production. The Ministry has given no guidance with regard to the many other herbs which, although of lesser medical importance than the four specifically named plants, are of considerable commercial interest as household remedies. The matter might perhaps be taken up by the Ministry of Agriculture, and the Board of Education might give official advice about the collection of herbs by school children.

### Rectifier Plant in Time of War

IT has been doubted by some engineers whether the glass bulb devices used in some electric stations for converting alternating into direct current are able to withstand the blast and other effects of aerial bombing. It has to be remembered that the bulbs, being spherical, present a minimum surface to blast contact. They are flexibly mounted and are made of a special toughened high-grade glass. They are always operating under an external atmospheric pressure of approximately 15 lb. per sq. in. (as the bulbs are various). This is equivalent to a total pressure of about 20 tons in the case of a large rectifier bulb and so its inherent strength is very considerable. It has been computed that one ton of high explosive will cause a blast pressure of about 2½ lb. per sq. in. at 100 yd. distance. Such a pressure might be sufficient to knock down a 9-in. brick wall (because of the large resistance surface it presents), for 2½ lb. per sq. in. is the equivalent of 1½ tons per sq. yd. A rectifier bulb is always working at 15 lb. per sq. in. and can withstand many times this amount.

A further point is that the bulbs are always installed inside sheet steel cubicles, and the cubicles are generally housed inside a building. The concussion effect that can reach a bulb through the walls of the building and the walls of the cubicles is only a small fraction of the blast impinged on the external sub-station walls. The bulbs can withstand much higher pressures than the normal sub-station walls and yet it is the walls that must take the brunt of the blast. Finally, the multi-unit construction of the glass bulb rectifier makes it far less vulnerable than most other types of plant to the secondary effects of aerial warfare, as for example, shrapnel. *Electrical Industries* of September 2 points out that a splinter which would be sufficient to put a one-unit type of plant, whether static or rotary, out of operation, would probably damage at most one cubicle of a bulb rectifier plant.

### Guide to Fuel and Allied Industries

THE War has profoundly influenced life, industry and technology, and especially in all that concerns fuel and allied industries. Organizations have been modified, their activities suspended and new ones established. As a result people concerned are often at a