of the cardiac adrenergic receptors (beta adrenergic receptors in Ahlquist's terminology). When noradrenaline is infused at a moderate rate into the intact circulation (of the order of 20 $\mu\text{g./minute}$ in man) one usually observes a slight decrease in heart rate and in cardiac output. These effects of noradrenaline are entirely indirect; they are reflex effects originating from the sino-aortic baroreceptors which are activated by the peripheral pressor action of the agent. At a high rate of administration the reflex effects are overwhelmed, the direct effects of noradrenaline on the heart predominate, and the heart rate rises above normal. When the action of the cardiac moderator reflex is prevented (atropinization, inactivation of the baroreceptors, administration of a blocker of the alpha adrenergic receptors) the direct cardiac effects of noradrenaline are apparent even at low rates of administration.

It would be most unfortunate if Ahlquist's suggested classification of adrenergic receptors were misunderstood to mean that sympathomimetic amines which are primarily alpha-receptor stimulants in the peripheral blood-vessels cannot have highly effective actions on the heart. A bit of reflection as final evidence: since noradrenaline is the sympathetic transmitter substance, how could the heart respond to sympathetic stimulation unless the beta adrenergic receptors in the myocardium were stimulated by noradrenaline?—I am, etc.,

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Drug Dependence

SIR,—As pointed out in your leader on drug dependence (22 August, p. 461), confusion surrounding the subject still has remained despite the World Health Organization's attempt clearly to differentiate between drug addiction and drug habituation. Such confusion, for instance, was evident in the frequent verbal quarrels as to whether the amphetamines were habit-forming or addictive drugs. However, the attempt to make a clear pharmacological differentiation between psychological dependence ("habituation") and physical dependence ("addiction") certainly had (and still has) its merits, as for instance in regard to the question of whether sudden withdrawal is possible, as in the case of stimulating drugs, or whether tapering-off is necessary, as with barbiturates.

Certainly, in the example of alcoholism which you quote, the difference between psychological and physical dependence proved of great importance in Jellinek's recent classification of the various types of alcoholism, in which he describes only two of them as "addictions"—namely, those producing pharmacological dependence. One of them is the "loss of control" variety (gamma alcoholism).¹ Dr. Davies's finding of a number of alcohol addicts who were able to return to normal drinking is certainly of high theoretical interest, but as Dr. Davies, in spite of his findings, states, "all patients should be advised to aim at total abstinence." This, certainly, is the almost unanimous view of many European and American experts, with wide experience, with whom I discussed this question on recent International Conferences, in spite of the exception quoted in your

report on the European Conference in the same issue (p. 502).

Incidentally, it is important to keep in mind that "loss of control" does not mean that the alcoholic will get drunk on each and every occasion when he starts drinking; rather does it mean that he could never be quite certain that he would be able to stop once he had started to drink on a given occasion. For example, it is not very uncommon to meet people who, for a while, are able to drink "in moderation" when switching from spirits to beer, or when drinking only with meals, or when drinking only in company, etc. However, sooner or later—and as a rule fairly soon—this attempt becomes too much and they resort to the uncontrolled drinking.

One might, perhaps, speculate on the possibility of a certain threshold of blood-alcohol concentration, varying from person to person, and in the same person from time to time, below which the alcoholic could drink without losing control (depending possibly on psychological, psycho-social, psychosomatic, or chemical factors) but beyond which the "loss of control" becomes effective. However, quite clearly, there is a need for further research and for attempts at an even finer differentiation between the various types of alcoholics.—I am, etc.,

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M. M. GLATT.

REFERENCES

- 1 Jellinek, E. M., *The Disease Concept of Alcoholism*, 1960. Yale Centre of Alcohol Studies, Yale Station, New Haven, Conn.
- 2 Davies, D. L., *Quart. J. Stud. Alcohol*, 1962, 23, 94.

Code for Drugs

SIR,—As dispensing doctors we have recently noticed the increasing tendency of drug firms to mark individual tablets and capsules with the brand name or symbol of each company. This has undoubtedly been stimulated by the introduction into this country of tablets and capsules of similar appearance manufactured on the Continent.

We had not until now realized that it was possible to mark a sugar-coated tablet or a capsule, but now that the problem apparently no longer exists we feel it is appropriate to investigate the possibilities of introducing a comprehensive individual tablet-identification code using a series of letters and numbers.

Such a code would enable a doctor, chemist, nurse, or other qualified person to identify immediately without doubt an otherwise anonymous tablet by reference to a standard key. This information we believe would prove of inestimable value in the day-to-day use of drugs, apart from the more dramatic and potentially life-saving effects in cases of suicide and accidental poisoning. The individual companies could, of course, retain their own tablet markings in addition to the code. A recognized body like the Dunlop Committee, in association with the Formulary Committee and the pharmaceutical industry, could no doubt devise, assign, and publish code numbers for each drug.

The adoption of such measures would seem to us a rational step in the control and use of drugs. The advice and co-operation of the pharmaceutical industry, so important in such a system, would, we feel, go far to

improve the "public image" of that industry, at present the target of so much criticism.

Obviously there will be practical difficulties, but as doctors intimately concerned in the prescription, supply, and identification of an ever-increasing range of drugs, we feel such a scheme merits earnest consideration by the profession and pharmaceutical industry.—We are, etc.,

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F. C. CLOUTING.
J. WIGHTMAN.

Plastic Shoes for Ultra-clean Wards

SIR,—In discussing the provision of an ultra-clean ward, Dr. K. D. Bagshawe (3 October, p. 871) states: "Other outstanding problems that require further study are the design of suitable clothing and especially of sterilizable footwear." I wish to suggest that the solution of the problem of sterilizable footwear is to be found in the field of plastic shoes.

Shoes of flexible plastic are currently made in Australia and freely available in Sydney, but do not appear to be on sale in London. I have seen two types—(1) Roman sandals, and (2) slipper shape without fastening. These shoes are cheap, very hard-wearing, and comfortable, except that because the plastic is impervious to fluid perspiration tends to collect under the sole of the foot. This can be minimized by wearing cotton socks. My own pair was originally obtained for use as wading shoes, to protect my feet while studying seashore animals. They have successfully withstood repeated prolonged immersion in sea-water. Because the shoes are washable I have used them as operating-theatre shoes. My practice was to rinse the insides and scrub the outsides of the shoes with soap and water. I have not yet tried to sterilize them completely, but suggest that after washing they could be soaked in an antiseptic solution. Autoclaving might be possible if care is taken not to damage the shoes while hot and therefore soft.

Plastic shoes of slipper form can be changed quickly and easily when walking from a clean area into a dirty area or vice versa, the change being accomplished if desired without touching the shoes with one's hands.—I am, etc.,

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Circumcision and Cervical Cancer

SIR,—Your leading article on "Circumcision and Cervical Cancer" (15 August, p. 397) is very important for the Turkish population, 99% of whom are Moslems and 96% fully circumcised. The Moslem women in Yugoslavia mentioned in your article live usually in areas where many of the men are not circumcised, and these facts make assessment of the problem difficult. Turkey furnishes a suitable area of investigation in this field, since noncircumcised men are few and they are settled in definite regions of the country. Intercourse between Moslem women and the noncircumcised men is therefore unlikely and in some parts impossible. The incidence of cervical cancer among Turkish women is therefore of some interest. Our survey^{1,2} of the material from different hospitals in Turkey has led us to the conclusion