

are actually absorbed and this would be insufficient to produce any harmful effect on the liver, kidney and other organs.

(2) Physiological action.—This no doubt acts in two ways. (a) By direct cardiac stimulation. Professor Dixon<sup>1</sup> pointed out that moderate doses of alcohol increased the activity and beat of the heart and in cases of cardiac failure the rise of blood-pressure following the administration of alcohol was directly due to action on the heart. It seems probable that when alcohol is given by inhalation the small quantity absorbed passes directly to the heart and has a direct stimulating effect. (b) By weakening all inhibitory impulses, central and peripheral, no doubt the alcohol vapour when administered with oxygen has an important action.

Alcohol vapour mixed with oxygen does not appear to have any stimulating effect on the normal heart. Its use is recommended in cases showing signs of cardiac failure, and in these cases a marked beneficial result has usually been observed.

#### DR. ROBERT HUTCHISON.

The therapeutic effects obtained from alcohol correspond more closely with its pharmacological action than is usual with drugs. As regards some of its effects there will be general agreement amongst clinicians: (1) Alcohol is undoubtedly a food and is of special value for this purpose in diabetes and in prolonged fevers. (2) It is a digestive stimulant and is often useful in cases of impaired appetite, gastric atony and in convalescence. The form in which it is administered has, however, a great influence on its digestive value. It is also useful as a carminative in cases of severe flatulence. (3) Its effect in dilating superficial blood-vessels is of use in counteracting the effects of chill as well as in rigors and in helping to reduce blood-pressure during an attack of angina. (4) Its narcotic action is helpful in some cases of insomnia, especially in old people, and in cases of delirium and restlessness in acute illness.

The chief point of controversy will be as to whether alcohol can be regarded clinically as a cardiac stimulant. In cases of acute heart failure, as in syncope and fainting, its action in reflexly stimulating the heart is certainly of great use, but in my opinion there is no

<sup>1</sup> *Journ. Physiol.*, 1906-7, xxxv, p. 346.

clear clinical evidence that it acts as a heart stimulant in cases of acute infections. On the other hand by calming the nervous system, counter-acting delirium and promoting sleep it may benefit the heart, in a case of prolonged illness, indirectly, and I therefore usually make use of it in such circumstances, though I am guided in prescribing it rather by the state of the patient's nervous system than by the pulse. As to whether alcohol increases a patient's resistance there is considerable difference of opinion, but my own view is that there is some reason to believe that in septic infections at least it has some power in this direction.

SIR WILLIAM HALE WHITE.

The President has given us an admirable survey of the subject. Therapeutically, it seems to me, alcohol is of great value as a food, for example, in certain cases of anorexia and vomiting, such as are met with in phthisis and cancer. I remember, for instance, a man afflicted with phthisis who was vomiting constantly, and could not retain any food except alcohol for some days, and then, gradually, his power to take and retain ordinary articles of diet returned. I can only say it was the opinion of all of us who saw him that the giving of alcohol during those days saved his life for the time. Of course, alcohol must never be given in functional anorexia and vomiting, because they are just the patients who would form the alcohol habit.

I will not go into the question of its value in diabetes during the starvation period—though I am convinced it has a value there—because we are to hear more about that later.

In acute fever, as Dr. Hutchison has just said, when anorexia and vomiting or indigestion are present, so limiting the intake of ordinary food, alcohol is an admirable food, because it requires no digestion and is easily absorbed. And it has the inestimable advantage, in these conditions, of making the patient feel comfortable, and sending him to sleep. The disadvantages of it in such conditions are, that occasionally there is a complaint of headache, and some do not easily sleep when they have had alcohol. But in the majority of cases of acute fever, when the patient cannot take food well, I think you will find alcohol is beneficial, and has no deleterious effect.

Coming now to the President's second heading—convalescence, there again, alcohol often does good, much good. He who has just recovered from a severe illness, or from an attack of diarrhoea or influenza, often