that this effect of alcohol in inducing microsomal enzymes had to be considered separately from the toxic effects of alcohol on the liver, for which no satisfactory experimental model had yet been produced.

Dr. A. M. JEZEQUEL (Ancona, Italy) said she had studied the pathogenesis of the fatty liver which could follow administration of tetracycline. In studies in rats she had shown that the mitochondrial alterations and inhibition of protein synthesis which could be shown in liver cell cultures did not occur in vivo, even at the peak of the increase in total liver lipids. In human volunteers, five days after administration of tetracycline (10 mg./kg. body weight intravenously), lipid droplets had been seen on electron microscopy, but there had been no mitochondrial changes. The pathogenesis of the fatty liver and hepatic damage had therefore to be considered separately from the effects of tetracycline demonstrated in vitro on mitochondrial metabolism, which did not appear to occur in vivo.

Australia Antigen

Dr. O. KRASSNITZKY (Vienna, Austria) reported studies of sera from two groups of blood donors. In one group the sera had been selected because of slightly elevated serum transaminase values. Five positives had been found in 700 specimens. In the other group all specimens had been tested and antigen had been detected in two cases out of the 260 specimens. He had found

Australia antigen in the serum of a significant proportion of patients with prolonged hepatitis, chronic aggressive hepatitis, and in cirrhosis.

This report led to considerable discussion concerning the role of persisting antigen (and antibody to this antigen) in the pathogenesis of the diseases.

Dr. A. J. ZUCKERMAN (London, England) described recent studies on Australia antigen and the closely related serum hepatitis (S. H.) antigen. He showed that S.H. antigen was present in fresh samples of serum collected in 1968 and 1969 from a blood donor who in 1951 had been identified as a silent carrier of the virus of serum hepatitis. S.H. antigen had also been readily identified in specimens of freeze-dried serum collected and pooled in 1944 from about 1,000 apparently healthy blood donors. Serum containing antigen had a cytopathogenic effect on liver in tissue culture.

In discussion, all were agreed that large-scale testing of blood donors was now becoming essential, and that further studies on the persistence of this antigen in different clinical liver diseases and in different geographical areas were indicated.

Acute Liver Failure and Transplantation

Dr. A. HALLPERN (Berne, Switzerland) had studied the function of isolated perfused pig liver and compared it with that of the intact animal. In the perfused liver the

hepatic oxygen consumption and the blood lactate-pyruvate ratio were comparable to those in the intact animal, but despite improved techniques in perfusion the galactose elimination capacity and the excretory rate of the dye bromsulphalein was reduced to about 25% of normal. Bile flow was also lower. Extracorporeal pig liver perfusion had been used in six patients with acute hepatic failure with significant but only temporary clinical improvement.

Dr. M. O. RAKE (London, England) showed that the bleeding diathesis and low levels of clotting factors found in acute hepatic necrosis were caused not only by decreased hepatic synthesis of clotting factors but also by increased consumption due to widespread intravascular coagulation. A similar "consumptive coagulopathy" was seen in the initial weeks after orthotopic liver transplantation. He described the technique of using heparin to control this intravascular coagulation.

Dr. R. WILLIAMS (London, England) described the use of a leucocyte migration test in the early and specific diagnosis of rejection episodes following liver transplantation. This allowed better control of immunosuppressive therapy. Of eight adult patients who had survived the immediate operative and post-operative period following orthotopic transplantation, two were alive and well in the sixth and seventh month respectively. Both had normal liver function tests. One, who had had severe chronic portal systemic encephalopathy before transplantation, now had a normal mental state and electroencephalogram.

NEW APPLIANCES

New Towel Clip

Mr. ALEXANDER DUFF, Salisbury, Wilts, writes: A number of models of towel clip are in common use; these all have as their functional part two sharp spikes that, when applied, overlap by about $\frac{1}{4}$ in. (6 mm.), pierce the towels, and make two punctures in the skin. They are very traumatic and cause postoperative pain, haematomata, and, if applied incautiously to the region of a septic skin lesion, may initiate severe and widespread infection. Methods of dispensing with towel clips have therefore been tried, but have been successful in only certain special fields. The instrument makers state

that the existing classical towel clips are still widely supplied.

The instrument illustrated here has been designed with the teeth of the Allis's tissue forceps and is otherwise of the Bakhaus pattern. It is made so that when closed to

the first notch of the ratchet the teeth are in line; they overlap somewhat on the second notch.

The instrument can be applied to the loose skin of the forearm without causing undue pain. It makes no wound or haematoma, and, unless a thick ridge of skin is included, it does not even leave a mark. It has proved entirely successful in constant use in general surgery.

The instrument has been made for me by Chas. F. Thackray Ltd., Park Street, Leeds, to whom I am also indebted for the illustration.