was found that good chromosome pictures can be displayed on a 24-in. (61-cm.) television screen using a microscope with a built-in light source (Baker "patholette") and a $\times 80$ apochromatic objective. This procedure can be useful for teaching purposes.

Projecting an enlarged image from a chromosome negative on to a Thorn image-retaining panel² produced a well-defined orange-coloured luminescent image which increased in intensity the longer the plate was left under the enlarger. The image was retained for half an hour after the enlarger was switched off provided the voltage across the plate was maintained. This procedure may be of assistance in examining and classifying individual chromosomes.

I am indebted to Mr. J. Andrews and Mr. K. Cecil for preparing the chromosomes and buccal smears for examination at this hospital. Also to Miss J. Ishmael and Dr. R. M. Lawrence of Llandough Hospital for carrying out five chromosome analyses and for their help and encouragement in the establishment of a chromosome unit at this hospital.

—I am, etc.,

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T. S. DAVIES.

REFERENCES

- ¹ Sanderson, A. R., and Stewart, J. S. S., *Brit. med. J.*, 1961, 2, 1065.
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Oral Phosphates for Hyperparathyroidism

SIR,—In the Humphry Davy Rolleston lecture before the Royal College of Physicians, June, 1962 (December 1, 1962, p. 1419, and December 8, p. 1495), Dr. C. E. Dent discussed the feeding of phosphate as a form of medical treatment for primary hyperparathyroidism. Whereas we agree that the feeding of phosphorus can reverse many of the biochemical changes of hyperparathyroidism, we would like to re-emphasize the danger of such treatment. As Dr. Dent points out, metastatic calcification may occur. A more important consequence may be a decrease in renal function or a rapid worsening of renal function if it is already impaired. In two patients, who received 8 g. of neutral phosphate daily for two to three weeks, the glomerular filtration rate decreased from control levels of 86 and 55 ml. per min. to 68 and 35 ml. per min., respectively.¹ In a group of normal dogs, each of which received 9 g. of neutral phosphate daily for four to six weeks, glomerular filtration rate decreased 30 to 50% from control levels. Two months later the glomerular filtration rate was still depressed. Relatively large changes in glomerular filtration rate may occur without obvious changes in blood urea nitrogen or in serum creatinine. These findings raise the question as to whether it is ever safe to use oral phosphate in the treatment of conditions characterized by hypercalcaemia. Certainly, if phosphate is used at all, measurements of renal function should be performed at frequent intervals.—We are, etc.,

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FREDERIC C. BARTTER.

REFERENCE

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Treatment of Umbilical Hernia

SIR,—Your interesting annotation on the treatment of umbilical hernia (May 11, p. 1249) does not stress the importance of invagination of the umbilical hernia

before the application of strapping, which is so necessary for this procedure to be successful. Also there was no mention that the application of any padding or coin underneath the plaster defeats the object of the application and might indeed result in enlargement of the hernial orifice. It might also have been mentioned that transparent "sellotape" is very useful for fixing the invaginated umbilical hernia and causes less reaction in the skin than strapping, but needs more frequent application. The state of the skin and the hernia can easily be seen through the sellotape.

Personally, I think that strapping with invagination speeds the recovery of this condition in most cases and certainly stops the further distension of the hernial orifice that occurs when the baby cries and the hernia protrudes more obviously.

With regard to avoiding the surgical treatment of these herniae before the age of 4 to 6 years, may we truly hope that yet another unnecessary operation, so often involving traumatic separation of baby and mother in the most vulnerable years, be given up?—I am, etc.,

Kettering, Northants.

ROBERT WIGGLESWORTH.

Portal Hypertension following Cholecystectomy

SIR,—The frequency of gall-stones has been estimated at 15 to 20% of all adult subjects in this country. Of the operations performed on the gall-bladder and the common bile-duct 90% are for gall-stones or their complications, or for complications following cholecystectomy. It is not surprising that cholecystectomy is the second most commonly performed intra-abdominal operation, being exceeded only by appendicectomy. Maingot¹ has listed a formidable number of complications, one of which was portal hypertension secondary to biliary cirrhosis resulting from long-standing biliary obstruction by gall-stones.

I wish to draw attention to the fact that portal hypertension can develop as a result of portal-vein damage or constriction from fibrosis following cholecystectomy. This was stated by Milnes Walker² to be a rare occurrence, but in view of the increasing number of cholecystectomies and common bile-duct explorations it might become a not uncommon complication. The following case illustrates this point.

A woman, aged 63 years, was admitted to a hospital elsewhere with cholecystitis in June, 1955. Cholecystectomy was carried out. The common bile-duct at operation appeared normal and contained no palpable gall-stones. Therefore it was not explored. The patient made a satisfactory recovery.

Two months later she complained of episodes of colicky epigastric pains associated with vomiting, but no jaundice or fever. In May, 1956, she sought medical advice. An intravenous cholangiogram was carried out. This showed a gross dilatation of the common bile-duct due to stone. She was admitted to hospital for exploration of the common bile-duct. The liver-function test showed a mild degree of obstructive jaundice. At laparotomy a stone was removed from the common bile-duct and an operative cholangiogram was done. This revealed a free passage of the "dye" in the duodenum and there were no residual stones. On the fourth post-operative day she was noticed to have ascites. Abdominal paracentesis was carried out and 1½ litres of clear fluid was drained. After this she became completely symptom-free and there was no evidence of ascites.

In December, 1960, she was readmitted to hospital with haematemesis. This was treated by blood transfusion and she made a good recovery. Barium-meal examination at