it could be collected and analysed. This method, with subsequent modifications, improvements, and variations (Boyd, Jackson, and Ronan, 1943; Boyd and Ronan, 1942; Boyd and MacLachlan, 1944; Boyd, Perry, and Stevens, 1944), consists essentially in collecting R.T.F. through a T-cannula ligated into the trachea of lightly anaesthetized or decerebrate animals, with the inhaled air warmed to body temperature and saturated with water vapour. By means of this technique it has to date been possible to measure the effect upon the output and composition of R.T.F. of the following drugs: ammonium chloride, ammonium carbonate, and thymol (Perry and Boyd, 1941); various guaiacols and creosotes (Stevens, Ronan, Sourkes, and Boyd, 1943); sympathicomimetic amines (Boyd, Jackson, and Ronan, 1943); ether (Boyd and Munro, 1943); inhalation of ammonia (Boyd, MacLachlan, and Perry, 1944) and steam (Boyd, Perry, and Stevens, 1944); paregoric, camphor, benzoic acid, and alcohol (Boyd and MacLachlan, 1944); theophylline ethylenediamine, potassium citrate, and chloroform (Boyd, Palmer, and Pearson, 1946); ipecacuanha (Perry and Boyd, 1941; Boyd, Palmer, and Pearson, 1946); organic and inorganic iodides (Boyd, Blanchaer, *et al.*, 1945), volatile oils, balsams, terpene hydrate, and terebene (Boyd and Pearson, 1946); parasympatheticomimetic drugs and atropine sulphate (Boyd and Lapp, 1946; Lapp and Boyd, 1946; Boyd and Munro, 1943); sulphonamides (Boyd and Dorrance, 1946) and expectorant saponins and related drugs (Boyd and Palmer, 1946). Further studies are in progress.

In the investigation described here, the same technique was applied to a study of the effect of several pharmacopoeial syrups on the rate of output of R.T.F. in approximately 200 animals, including guinea-pigs, rabbits, and cats. The general procedure was to arrange the animals for collection of R.T.F., and at the end of three hours, when the rate of output had been at a plateau level for two hours, administer the respective syrup by stomach tube. The dosage ranged from 0.1 to 10 ml. per kilogramme body weight, and when the volume was below 10 ml. per kg. it was made up to that volume with water. In previous studies from this laboratory it has been repeatedly shown that water given by stomach tube in doses up to 10 ml. per kg. body weight has no effect upon the output of R.T.F. On the average, somewhat over twenty animals were used for each syrup given to each species. To standardize the presentation of results the mean output of R.T.F. per kg. body weight per hour was first determined for the two control hours immediately preceding the administration of the syrups. The mean output each hour afterwards was then found, and any increase in the rate of excretion expressed as a percentage of the initial control two-hour output. In calculating these means all values from all doses of syrups were included, since no syrup, with the possible exception of syrup of tolu, had any significant effect on the output of R.T.F. in any of the doses studied. The results thus determined are presented in the accompanying Table.

Table Showing Effect of Several Pharmacopoeial Syrups on Rate of Output of Respiratory-tract Fluid in Animals

Syrup	Species	Change in Output of R.T.F.			
		1st Hour	2nd Hour	3rd Hour	4th Hour
Simple syrup	Rabbit	% +6	% 0	% -10	% -15
	Cat	-13	-11	-16	+7
Wild cherry	Rabbit	-22	+16	+8	-22
	Guinea-pig	-24	-26	-20	-21
Squill	Cat	-18	-16	-14	-9
	Rabbit	-2	+21	+18	+8
Liquorice	Cat	+32	+33	+47	+37
Tolu	Rabbit	+93	+43	+28	+4
	Cat	+10	+6	+28	+21

Syrupus, *B.P.*, syrupus pruni serotinae, *B.P.*, syrupus scillae, *B.P.*, syrupus zingiberis, *B.P.*, and syrupus glycyrrhizae, *U.S.P.*, had no significant effect on the rate of output of R.T.F., even in doses which would correspond to a pint (568 ml.) or quart (1.14 l.) taken by mouth by an average man, on a body-weight basis. Syrupus tolutanus, *B.P.*, slightly augmented the output of R.T.F. in cats and rabbits. From the results with this group of syrups it is apparent that the syrup in a cough syrup has little or no effect on the rate of output of R.T.F. when it is given by stomach tube.

Conclusions

From the results of these experiments on animals and man the following conclusions are indicated. First, the syrupy vehicle of a cough syrup exerts a short demulcent effect on the mucosa of the pharynx and upper respiratory tract, and if cough is due to irritation of this mucosa the syrup has an antitussive effect *per se*. Secondly, when the bulk of the volume of syrup enters the stomach it has little or no expectorant property in itself, in the sense that it does not increase the rate of output of soothing respiratory-tract fluid. Thirdly, effective expectorant drugs added to the syrup begin to exert an antitussive action, again in the sense that they increase the output of respiratory-tract fluid, at about the time that the local antitussive action of the syrup alone has begun to wear off. These experiments offer a logical explanation of the time-honoured use of expectorants in a vehicle of syrup, producing a cough syrup, and at the same time justify the continued use of this form of prescribing and medication.

I wish to acknowledge the technical assistance of Mrs. J. P. Grant, and also the receipt, on behalf of Queen's University, of a financial research award in aid of this work from the Ciba Company, Ltd., of Montreal.

REFERENCES

- Beckman, H. (1945). *Treatment in General Practice*, 5th ed., Saunders, Philadelphia.
 Boyd, E. M., Blanchaer, M. C., Copeland, J., Jackson, S., Phin, K., and Stevens, M. (1945). *Canad. J. Res.*, **23**, E195.
 — and Dorrance, J. A. S. (1946). *Rev. canad. Biol.*, in press.
 — Jackson, S., and Ronan, A. (1943). *Amer. J. Physiol.*, **138**, 565.
 — and Johnston, G. M. (1940). *Amer. J. med. Sci.*, **199**, 246.
 — and Lapp, M. S. (1946). *J. Pharmacol. exp. Ther.*, **87**, 24.
 — and MacLachlan, M. L. (1944). *Canad. med. Ass. J.*, **50**, 338.
 — and Perry, W. F. (1944). *J. industr. Hyg.*, **26**, 29.
 — and Munro, J. S. (1943). *J. Pharmacol. exp. Ther.*, **79**, 346.
 — Palmer, B., and Pearson, G. (1946). *Canad. med. Ass. J.*, **54**, 216.
 — and Palmer, M. E. (1946). *Acta pharmacol. toxicol.*, in press.
 — and Pearson, G. L. (1946). *Amer. J. med. Sci.*, **211**, 602.
 — Perry, W. F., and Stevens, M. E. T. (1944). *Amer. J. Physiol.*, **140**, 467.
 — and Ronan, A. (1942). *Ibid.*, **135**, 383.
 Connell, W. F., Johnston, G. M., and Boyd, E. M. (1940). *Canad. med. Ass. J.*, **42**, 220.
 Flückiger, F. A., and Hanbury, D. (1879). *Pharmacographia*, 2nd ed., Macmillan, London.
 Gordonoff, J. (1935). *Ann. Méd.*, **38**, 249.
 — (1938). *Ergebn. Physiol.*, **40**, 53.
 Gunn, J. A. (1927). *British Medical Journal*, **2**, 972.
 Lapp, M. S., and Boyd, E. M. (1946). *Federation Proc.*, **5**, 189.
 Perry, W. F., and Boyd, E. M. (1941). *J. Pharmacol. exp. Ther.*, **73**, 65.
 Stevens, M. E., Ronan, A. K., Sourkes, T. S., and Boyd, E. M. (1943). *Canad. med. Ass. J.*, **48**, 124.

Medical Memoranda

An Accessory Liver in an African

While accessory spleens are commonly found at necropsy both in Europeans and in Africans, accessory livers are extremely rare. Rolleston and McNee (1929) were able to record only a very few cases, and in the literature available to me since their publication I have not been able to find reports of other cases. Thus this record of the occurrence of an accessory liver in an African may be of interest.

In the body of an adult male African of unknown tribe, dying of bronchopneumonia, a dark tumour, shaped like a fat cigar, about 3.5 by 1 cm. in its greatest dimensions, was found adherent to and partly embedded in the anterior surface of the pancreas at about the junction of the head and body, the longest axis being transverse. It was attached by a delicate pedicle which disappeared into the substance of the pancreas and, under the circumstances of the necropsy, was not traced further. The tumour was not attached to the liver. It was of darker colour than the true liver, which had no anatomical abnormalities.

Microscopically it proved to be hepatic tissue showing the normal liver architecture, enclosed in a delicate fibrous-tissue capsule with arteries, veins, and bile ducts running beneath the capsule, and these left the accessory liver at a small hilum and ran into the pancreas. Both the true liver and the accessory liver showed pathological changes, but these were much more pronounced in the accessory organ. They consisted of collections of fibroblasts and chronic inflammatory cells in the portal areas, with an increased amount of fibrous tissue surrounding and partially delimiting the periphery of some of the lobules. The rather dilated central veins were surrounded by liver cells containing considerable amounts of fat in large and small droplets, but the peripheral cells were free of fat. Considerably increased amounts of pigment were present—as granules in the Kupffer cells, in the sinusoids near the periphery as amorphous masses, and in the portal cell collections. All these changes were much more noticeable in the accessory liver.

DISCUSSION

Most of the accessory livers recorded by Rolleston and McNee (1929) were attached to, or in close proximity to, the liver; mostly in the hepatic ligaments or directly attached to the liver or gall-bladder. One case is recorded by them of hepatic tissue in the omentum and scattered over the peritoneum; and one with a nodule of liver tissue in a suprarenal gland. None had such an attachment to the pancreas as was found in this case. They do, however, record the occurrence, reported by Mohamet, of an accessory liver attached to the tip of the gall-bladder in a case of cirrhosis; the accessory liver was also cirrhotic.

Permission to publish has been granted by the D.M.S., Uganda.

Mulago Hospital, Kampala.

J. N. P. DAVIES, M.B., Ch.B.

REFERENCE

Rolleston, H., and McNee, J. W. (1929). *Diseases of the Liver, Gall Bladder and Bile Ducts*, 3rd. ed., London.

Persistent Vomiting in Infants treated by Continuous Nasal Drip-feeds

The difficulty of getting an infant suffering from severe and persistent vomiting to take enough food by ordinary means is well known. With a view to overcoming this difficulty I have in many cases during the past three years adopted the method of drip-feeding described below.

TECHNIQUE

A small soft rubber catheter (size 4-6, according to the size of the infant) is lubricated and passed through one of the nostrils into the stomach. This is easily accomplished, with little discomfort to the infant. The free end of the catheter is attached to an ordinary blood transfusion set, the bottle of which contains the prescribed feed. The amount of milk mixture required by the infant is calculated for 24 hours, and this is run into the stomach by means of a slow drip. A rate of eight drops a minute will deliver 20 fl. oz. (568 ml.) in 24 hours. If a larger feed is required, the rate can be increased accordingly. The method is simple and can be easily mastered by trained nurses.

Before starting this regime of feeding the stomach is washed out and sufficient glucose saline (5%), or Hartmann's solution, is given by this method to combat dehydration. The actual feeding mixture will depend, naturally, on the requirements of the case concerned, and may consist of a milk mixture or a pure protein preparation, such as casein hydrolysate. Feeding in this way can be continued over a period of days until improvement occurs, when it is discontinued and normal feeding resumed.

DISCUSSION

During the last three years I have used the above method of feeding for infants suffering from incessant intractable vomiting, for which no organic cause can be found, and for very weak wasted babies. In the first type of case the vomiting seemed to occur as a sequela to an attack of gastro-enteritis which had subsided, and may possibly have been due to a form of habit vomiting (Holt and MacIntosh, 1940). In weak malnourished infants the strain of having to be fed with small feeds at frequent intervals is exhausting, and it was regarded as far less tiring for the infant if it could be fed in a way unlikely to cause any such exhaustion. With this in mind the continuous-drip method was adopted. I have also used this method in other selected cases; notably, in infants suffering from rumination and in young children suffering from cyclical vomiting, during severe attacks. The chief advantage of this method is that the food requirement of the infant is maintained over a long period, without at any time overloading the stomach and so producing a recurrence of vomiting; and the patient is assured of adequate rest by not having to be disturbed at frequent intervals, as would occur if feeding by normal means were carried out. Where sedation by means of drugs is an essential part of the treatment, as in cases of rumination and habit vomiting, this is a very important consideration. I prefer this method to the usual form of oesophageal feeding of weak marasmic infants because it obviates the passing of a tube into the oesophagus several times a day.

I am very grateful to Dr. K. H. Tallerman, consulting paediatrician to the Essex County Council, for his help and encouragement in preparing this note, and to Dr. E. Miles, medical superintendent, for permission to publish it.

Oldchurch County Hospital, Romford. T. N. NAUTH-MISIR, M.B.

REFERENCE

Holt, L. E., and MacIntosh, R. (1940). *Diseases in Infancy and Childhood*, 11th ed. New York.

Reviews

THE DOCTOR-PATIENT RELATIONSHIP

The Human Approach. A Book for Medical Students. By Henry Yellowlees, M.D., F.R.F.P.S., F.R.C.P., D.P.M. (Pp. 189. 10s. 6d.) London: J. and A. Churchill. 1946.

This is a book for which we have long been waiting. It may be described as a textbook of the doctor-patient relationship. Primarily intended for medical students, it would be read with great profit by all qualified doctors and not least by hospital physicians and surgeons and even psychiatrists themselves. It is possible that this volume will not help the student much in passing his examinations, but if he will learn, mark, and inwardly digest all the admirable common sense and enlightened appreciation of the other fellow's point of view which it contains, he will certainly be a much better doctor. He can do this not only with profit but with enjoyment too, for the style is delightfully humorous and the homely examples can be appreciated by those who are in no way versed in academic psychiatry. The book does not deal either with elementary psychology or psychiatry, but gives some simple explanations of psychopathology, a pathology from which none of us can escape since no one can be perfectly adjusted to life and everyone uses various devices to get round these maladjustments. It is with these devices that most of the book is concerned, but there are excellent chapters on the much discussed problem of rehabilitation, which must after all be primarily psychological, on the doctor's relation with the legal profession and his behaviour in court, on medical etiquette and ethics, and on the medical curriculum. A book to be thoroughly recommended.

MANAGEMENT OF VENEREAL DISEASES

Aids to the Diagnosis and Treatment of Venereal Diseases. By T. E. Osmond, M.B., M.R.C.S. (5s.) London: Baillière, Tindall and Cox. 1946.

Students and general practitioners and perhaps many specialists will welcome this work as giving in a very handy form (138 octavo pages) an account of the management of venereal diseases and of some others commonly dealt with by specialists in this branch of medicine. The author has had many years' experience in venereal diseases on both their clinical and laboratory sides, and during the late war was adviser on them to the Army.

Approximately 44 pages are devoted to gonorrhoea and 52 to syphilis, the remainder of the book containing accounts of soft chancre, granuloma venereum, lymphogranuloma inguinale, trichomonas infestation, non-specific urethritis, balanitis, and condylomata acuminata; serum tests; technical methods such as irrigation, staining by Gram's method, dark-ground microscopy, collection of specimens, and injections; prophylaxis; and the social aspects of venereal disease. The size of the work does not permit of an elaborate account of any of the above subjects, but sufficient has been given in most of those commonly met to enable the reader to deal with them. Indeed, the author is to be congratulated on having packed into such a small space and in such readable language so much useful information.

It is pleasant to find in this work so little that seems to call for criticism, but one of the few points which might be revised concerns the arrangement of some of the sections. One would think that diagnosis should follow symptoms; here it often precedes the latter. On page 58 the gonococcal fixation test is sandwiched between an account of the Kahn test and interpretation of the Kahn and Wassermann tests, and this is followed by a schematic presentation of these tests, the principles of which were described before the paragraph on the gonococcal test. On page 100 there is a little on serum diagnosis of congenital syphilis, yet on pages 101 and 102, under the principal heading of "Late Congenital Syphilis," subhead "Central Nervous System," there is more on serum diagnosis in the early weeks of life. Again, the treatment of congenital syphilis, into which the general treatment of syphilis is interpolated, would be more conveniently described in a single section.