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agglutination provided that the precautions mentioned by Bridges and Taylor (1944) are observed; it is obviously best to confirm the findings by tube agglutination if possible when an unusual organism has been found. Whether the method will be of universal application in the field can only be discovered by trial. There are no obvious pitfalls except that a minor antigen in the organism may cause cross reactions, but this seems unlikely if dilute sera are used. Although the concentration of each individual serum in any mixture is low the total quantity of serum is rather large, and it is possible that this may occasionally give rise to non-specific effects.

An objection that might be raised from the point of view of serum production is that there is some waste of sera against rare antigens since these are used almost as often as commoner ones.

This does not appear to be a very serious fault when dealing with H- antisera, which are usually of high titre and therefore economical to produce.

Extension of this method to Salmonella O antisera is not very practical owing to their low titre and to the overlapping of antigens between O groups.

I am very grateful to Dr. Joan Taylor for her cooperation in testing this method and to her and Dr. G. S. Wilson for their comments on the manuscript. I must also thank Mr. T. Nash for a suggestion that initiated the work.

The polyvalent sera mentioned in this paper are available in limited quantities from the Standards Laboratory, Central Public Health Laboratory, Colindale, London, N.W.9.

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 Edwards, P. R., and Kauffmann, F. (1952). Amer. J. clin. Path., 22, 692.

Third International Congress of Clinical Pathologists

The third international congress of clinical pathologists will be held in Brussels from July 14 to 20, 1957, preceded by a symposium to be held at Liège under the auspices of the C.I.O.M.S. The subject of the symposium is "Sensitivity to Drugs." Those who wish to attend all or part of the conference are asked to register as soon as possible with Dr. W. H. McMenemey, Maida Vale Hospital for Nervous Diseases, London, W.9.

The Estimation of True Lipase in Small Intestinal Contents

H. G. SAMMONS, A. C. FRAZER, AND MARGARET THOMPSON

From the Department of Pharmacology, University of Birmingham, and Metabolic Unit, Little Bromwich General Hospital

(RECEIVED FOR PUBLICATION AUGUST 26, 1955)

An estimation of lipolytic activity in specimens of duodenal juice obtained by intubation is a necessary step in the assessment of intestinal function in relation to fat absorption.

In this method conditions *in vitro* were made to resemble as closely as possible those found *in vivo* during normal fat absorption. Therefore, neither preformed emulsion (Palmer, 1922), short-chain glycerides (Lagerlöf, 1942), or polyoxyethylene esters (Archibald, 1946) were used as substrates, but one of the common dietary long-chain triglycerides. A similar substrate was used by Willstätter, Waldschmidt-Leitz, and Memmen (1923). The mixing properties of intestinal motility were reproduced by agitation on a mechanical shaker. Bile was added to give the concentration normally found in the intestine.

Experimental

Special Apparatus.—A microid flask shaker (Griffin and Tatlock Ltd.), which carries two flasks each held in clamps 9 cm. from the fulcrum, is used. It was calibrated by recording vibrations on a smoked drum. This can also be done roughly by clamping a pencil in one arm and counting the number of dots on a paper held near during a period of 15 seconds.

Reagents.—The following are required :

Pancreatin U.S.P. XI, Philip Harris Ltd., Birmingham, 5%, w/v in water.

Bile salts, Difco No. 3, 25% w/v in water.

Tetramethyl ammonium hydroxide, B.D.H., 25%, diluted with ethanol to give an N/20 solution.

Olive oil, B.P., rendered acid-free and almost colourless by passage through an alumina column.

Thymol blue, 0.1% in ethanol.

Alumina, Hopkin and Williams, "chromatographic grade."

Method.—Acid-free olive oil, 1 ml., was added by syringe to 5 ml. phosphate buffer, pH 7.8, containing 0.5% bile salts in a 50 ml. stoppered conical flask. Duodenal juice, 0.1 ml., or 1 ml. pancreatin solution,

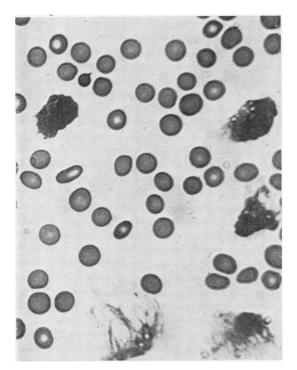


FIG. 4a.—Lymphatic leukaemia. Direct film from finger-prick. The majority of cells are disrupted. Leishman, \times 900.

in this work, and Dr. M. C. G. Israëls, Dr. J. V. Dacie, and Dr. F. G. J. Hayhoe for advice. Mr. V. H. Knight took the photographs.

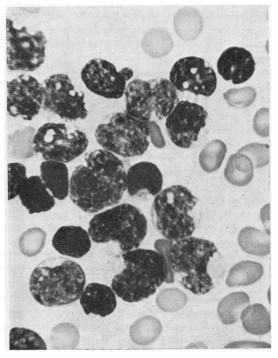


FIG. 4b.—Same case as 4a, but blood mixed with bovine albumin and centrifuged. Buffy coat film. Leishman, \times 1,900.

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POSTGRADUATE COURSES IN PATHOLOGY ARRANGED BY THE ASSOCIATION OF CLINICAL PATHOLOGISTS, 1957

	Date	Subject	Institution	For further particulars apply to :
Jan.	4 & 5	Pathology of Diseases of the Skin	Institute of Dermatology and St. John's Hospital for Diseases of the Skin	Dr. John Oliver, St. John's Hospital for Diseases of the Skin, Lisle Street, Leicester Square, London, W.C.2.
Jan.	18 & 19	Pathology of Diseases of Bones and Joints	Institute of Orthopaedics and Royal National Orthopaedic Hospital	The Dean, Institute of Orthopaedics, Royal National Orthopaedic Hospital, 234 Great Portland Street, W.1.
Jan.	27 & 28	Obstetrical and Gynaecological Pathology	Institute of Obstetrics and Gynaecology in association with the Chelsea Hospital for Women and Queen Charlotte's Hospital	The Secretary, Institute of Obstetrics and Gynaecology, The Chelsea Hospital for Women, Dovehouse Street, S.W.3.
Feb.	8&9	Pathology of Diseases of Children	Institute of Child Health and Hospital for Sick Children	Dr. Martin Bodian, The Hospital for Sick Children, Great Ormond Street, London, W.C.1.
Feb.	22 & 23	Pathology of Diseases of the Ear, Nose and Throat	Institute of Laryngology and Otology	Dr. I. Friedman, Institute of Laryngology and Otology, 330/332 Gray's Inn Road, London, W.C.1.
Mar.	8 & 9	Pathology of Diseases of the Nervous System	Institute of Neurology in association with the National Hospital, Queen Square, and the Maida Vale Hospital	Dr. John Cumings, The National Hospital for Nervous Diseases, Queen Square, London, W.C.1.

Note: These "week-end" courses in pathology are intended primarily for trained pathologists of consultant or S.H.M.O. status. In exceptional circumstances pathologists of senior registrar grade or other doctors may be accepted, but only if there are vacancies. Since accommodation is limited early application is desirable. No fee will be charged, but for most courses there will be a small charge to cover expenses.

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