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washing fluid, which are associated with the washing process.

We have found it necessary to make certain alterations in the procedure recommended by Bradbury. We have found that, with the quantities of reagent and alcohol recommended by him, precipitation of the triple salt is by no means complete in the twenty to thirty minutes he specifies. We have increased the proportion of alcohol and generally varied the volumes of fluids used so as to get complete precipitation, and at the same time to have readings of the colour of the supernatant fluid which shall give the most convenient range with the Spekker instrument when applying the method to serum sodium determinations. Even with the increased proportion of alcohol we find it necessary to let the mixture stand for two hours in the refrigerator at approximately 3° C. to ensure complete precipitation. The readings we have obtained with sodium solutions corresponding to serum concentrations of 200 to 400 mg. per 100 ml. fall on a straight line.

The full details of the method we use are as follows:

Method

To 1 ml. of serum add 1 ml. of water and 1 ml. of 20 per cent trichloroacetic acid solution. Mix and allow to stand for 10 minutes; filter. To 1 ml. of

filtrate in a small conical flask add 2 ml. of the Weinbach uranyl zinc acetate reagent,¹ 3 ml. of absolute alcohol, and 2 ml. of water. Mix thoroughly; stopper the flask, and allow it to stand in the refrigerator for two hours. Centrifuge the contents of the flask and determine the colour of the supernatant fluid in the Spekker photo-electric absorptiometer, using the Ilford violet filter 601. Subtract the Spekker reading of this fluid from the reading obtained with a similar mixture except that 1 ml. of water replaces the 1 ml. of filtrate, and obtain the sodium content of the serum by reading off the difference on the curve obtained by plotting the differences obtained from a series of standard sodium solutions.

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¹Preparation of Weinbach's uranyl-zinc-acetate reagent. *Solution A*: 77 g. of uranyl acetate and 14 ml. of glacial acetic acid are dissolved with gentle heating and stirring in 400 ml. of water, and volume made up to 500 ml. in a volumetric flask. *Solution B*: 231 g. of zinc acetate and 7 ml. of glacial acetic acid are dissolved by gentle heating and stirring in 400 ml. of water, and volume made up to 500 ml. in a volumetric flask. The two solutions are mixed while hot, allowed to stand twenty-four hours or longer, and filtered.

INTERNATIONAL SOCIETY OF HEMATOLOGY

The International Society of Hematology will hold its biannual meeting at the Hotel Statler, in Buffalo, New York, from August 23 to 26, 1948. The following time has been tentatively allotted for symposia and presentations: half a day on general subjects, including radioactive and stable isotopes in haematology, half a day for problems and diseases related to the red cells, half a day for problems and diseases related to white cells, one day for immuno-haematology, Rh-Hr (CDE-cde) antigens and antibodies and haemolytic anaemias, half a day for coagulation problems and haemorrhagic diseases, and half a day for the business meeting.

Applications for the presentations of scientific exhibits are now being received by Dr. O. P. Jones, Department of Anatomy, University of Buffalo, Buffalo, New York. Chairman of the Programme Committee is Dr. Ernest Witebsky, Buffalo General Hospital, Buffalo, New York.

Dr. Eduardo Uribe Guerolo, Leibnitz 212, Nueva Colonia Anzurez, Mexico, D.F., is in charge of the programme from South and Central America, and Sir Lionel Whitby, University of Cambridge, England, is in charge of arrangements for the programme from Europe. Communications concerning applications for the programme will be received by the above-named committee men.

All scientific sessions and exhibits will be open to scientists interested in haematology. This will, of course, include members of the medical profession and those branches of science dealing with haematology, such as biochemistry, biophysics, genetics, immunology, etc.

Communications from interested haematologists in the United Kingdom, and applications concerning membership, should be sent to Dr. Robert R. Race, Lister Institute, Chelsea Bridge Road, London, S.W.1.

REVIEWS

The Background of Therapeutics. By J. Harold Burn. Geoffrey Cumberlege, Oxford University Press. 1948. Pp. 367. Price 22s. 6d.

This is not merely another book on therapeutics, but an attempt to describe the scientific background to recent therapeutic advances. The author is therefore frequently involved in discussions on bacteriology, as in the excellent review on methods of sterilization, and on chemistry, biochemistry, and pathological processes; all of which are in a clear style which is simple and easy to follow.

The author, in the preface, states that the work was undertaken after impressions, gained in America, of the importance placed in that country on laboratory and experimental work, and their value in improving diagnosis and treatment. He has used mainly British work as his basis, and has provided many British references in the hope that "Americans may learn of some of the work done in this country which ought to be more widely known." His approach to clinical research, which shows a full understanding of laboratory methods, will be found very acceptable to pathologists. It is clearly impossible to cover all the modern views on many varied subjects in 340 pages, but the condensation is on the whole admirably done. There are, however, several chapters which may well be recast in a future edition. The order of chapters might with benefit be arranged, so that disinfection, for example, is not squeezed between thyroid and allergy. The compound chapters are not all suitably chosen; for example a chapter dealing with plasma proteins and their place in cirrhosis of the liver ends up with the treatment of heart failure with digitalis.

There is an excellent half-chapter on iron metabolism, and it is hoped that in a new edition this will become the basis of a discussion on the therapeutics of the anaemias, instead of ending with a short discourse on calcium metabolism. The outstanding omission is, in fact, the absence of a review on blood and blood products in therapeutics, particularly as so much work on these subjects has been done in this country.

Clinical pathologists will be delighted to find, in a

book written for clinicians, so many of the recent advances in investigational and experimental pathology which will give their colleagues an appreciation of the newer trends involving laboratory investigations, many of which will in the near future be in everyday demand in the control of modern therapeutic measures.

A. GORDON SIGNY.

Catalogue of Medical Films. Compiled by the Royal Society of Medicine and the Scientific Film Association. Published by ASLIB, 1948. Price 7s. 6d.

Those of us who know anything of the history of this jointly compiled catalogue have impatiently awaited its appearance. Now that it is available many will appreciate it and will realize that a document of this nature has been much needed in the past.

In this booklet are to be found the titles of some eight hundred films of medical interest, and although a good deal of space is devoted to an elaborate cross-indexing of these titles the net result is that films may be located numerically, generically, or alphabetically. In addition to this, details are given of some two hundred of these films: such details, however, are descriptive and not critical. This is perhaps disappointing, but the difficulties in the way of adequate appraisal must be considerable. It seems that we have not yet reached American standards in this respect; the American College of Surgeons have already laid down some criteria of medical film appraisal. Critical review, however, sometimes discourages the previewing of films by the teacher himself: this in turn leads to misuse and then to discredit.

The majority of those who refer to this work will be amazed at the wide choice of subject material, and it will now seem as easy to arrange a programme of films for an informal meeting as to select a single available film for the illustration of a specific lecture.

R. J. V. PULVERTAFT.

ASSOCIATION OF CLINICAL PATHOLOGISTS

COMPETITION FOR THE DESIGN OF A PATHOLOGICAL DEPARTMENT

The Association invites entries from interested individuals (e.g., pathologists, technicians, architects, and others) for this competition. Entries by two or more competitors jointly, will be permitted. The essay should include a description and plans for a department of pathology to serve a population of 200,000 to 300,000, and providing: clinical pathology for an "area" or "group" hospital and for general practitioners of the area, including domiciliary service; bacteriology for authorities in public health.

The following subjects and aspects of work should be surveyed: clerical and record services; amenities for patients and staff; bacteriology; biochemistry; haematology; morbid histology; morbid anatomy (including coroner's work and comprising post-mortem

room and mortuary, not necessarily within the same building as the rest of the department). The competitor should describe and give detailed plans of type of building and layout of accommodation and should consider light, heat, ventilation, other systemic services, and the attributes and type of material used in building and in internal fixtures and fittings.

There will be first, second, and third prizes of respective values £50, £30, and £20. The competition will remain open until May 1, 1949, by which date all entries should have been sent to the Hon. Secretary, Association of Clinical Pathologists, The Royal Infirmary, Worcester. The plan will remain the property of the competitor, but a copy of the plan and the accompanying essay will remain with the Association.

know that their spell in clinical pathology under his guidance was time well spent.

To one closely in touch with him over the last quarter of a century, an outstanding feature in his character was his humility and tolerance, shown even to the callow and the ignorant. He remained free from the accretions of dogma and self-assurance which are apt to clog the minds of teachers in their fifth or sixth decades. His humility was genuine, and prevented him from publishing work which ought to have been published long since—for example, his careful and critical elaboration and assessment of the technique of blood fragility estimation, which he did not publish for some fifteen years. His humility was not due to any lack of critical faculty; he was quick in finding weak spots in an argument. Some of us can recall the quiet way in which after a meeting

he could on occasions tear to pieces an elaborate and convincing thesis.

He was a pupil of Georges Dreyer, of Oxford, and was essentially a clinical pathologist. His interest always lay in the practical application of pathology to medicine. He was too occupied in perfecting techniques for routine work to tackle more basic problems. He upheld the tradition that the pathologist should be constantly at the bedside, and as his interest lay in clinical problems his heart was in his work.

A careful and patient teacher to the many, to the few who knew him well his loss will be keener and more personal. They will miss a delightful and sympathetic companion, perhaps a trifle reserved, but one whose conversation, full of wisdom, was lit by frequent shafts of whimsical humour.

C. H. WHITTLE.

We regret to record the death of Professor James McIntosh, Director of the Bland-Sutton Institute of Pathology, Middlesex Hospital, and Professor of Pathology in the University of London.

ABSTRACTS

This section of the JOURNAL is published in collaboration with the two abstracting journals, *Abstracts of World Medicine*, and *Abstracts of World Surgery, Obstetrics and Gynaecology*, published by the British Medical Association. In this JOURNAL some of the more important articles on subjects of interest to clinical pathologists are selected for abstract, and these are classified into four sections: bacteriology; biochemistry; haematology; and morbid anatomy and histology.

BACTERIOLOGY

"Aerosporin": an Antibiotic Produced by *Bacillus aerosporus* Greer. AINSWORTH, G. C., BROWN, A. M., and BROWNE, G. (1947). *Nature, Lond.*, **160**, 263.

An antibiotic for which the name "aerosporin" is proposed has been isolated from a Gram-positive spore-forming rod identical with that isolated by Greer from Chicago tap water and called *Bacillus aerosporus*. The organism has been isolated both from Surrey and Yorkshire soil, and can be extracted by methods similar to those used for streptomycin. It shows selective action against Gram-negative organisms, particularly *Bacterium coli*, *Haemophilus pertussis*, and *Salmonella typhi*, as well as against *Brucella bronchiseptica*. It is stated to be bactericidal in action, and weight for weight to have the same order of activity against Gram-negative as penicillin against Gram-positive organisms. Resistant strains could not be obtained by culture methods. R. Wien.

Polymyxin: A New Chemotherapeutic Agent. STANLEY, P. G., SHEPHERD, R. G., and WHITE H. J. (1947). *Bull. Johns Hopk. Hosp.*, **81**, 43.

This antibiotic, specific for Gram-negative bacteria, is produced in shallow or deep culture by the soil organism *Bacillus polymyxa*.

Streptomycin Therapy in Urinary Tract Infections. PULASKI, E. J., and AMSPACHER, W. H. (1947). *Surg. Gynec. Obstet.*, **85**, 107.

Of 465 patients with urinary-tract infections treated by streptomycin, 45% were not improved; calculi, pathological affections of the kidney (especially hydro-nephrosis, and paraplegia accounted for many of the failures. *Bacterium coli* and *B. aerogenes* infections responded well and *Pseudomonas* badly.

Guy Blackburn.

A Streptomycin Sensitivity Test. MATHEWS, A. G., and SHELTON, M. L. (1947). *Med. J. Aust.*, **2**, 387.

The authors investigate conditions, such as the suitability of the medium, effect of pH, and size of inoculum, affecting the estimation of the sensitiveness of bacteria to streptomycin, and describe a method giving reproducible results.

A Method for Determining Sensitivity to Penicillin and Streptomycin. HOYT, R. E., and LEVINE, M. G. (1947). *Science*, **106**, 171.

The authors have devised a method of sensitivity determination which obviates the use of a sterile technique and employs compressed tablets of penicillin and of streptomycin weighing 60 mg. each. The penicillin tablets contain approximately 1, 0.5, and 0.1 Oxford unit, and the streptomycin tablets contain 1, 0.1, and 0.01 mg. respectively. The agar plate is heavily streaked with the organism being tested, and the tablets are dropped into position with forceps. Such material as sputum, exudates, and infected body fluids can be tested directly without preliminary subculture. The plates are incubated, and are read when growth of the organisms is sufficiently advanced to show sensitivity or resistance. R. Wien.

The Sensitivity of Organisms of the Genus *Leptospira* to Penicillin and Streptomycin. WYLIE, J. A. H., and VINCENT, E. (1947). *J. Path. Bact.*, **59**, 247.

Tests were made *in vitro* of the sensitivity to penicillin and streptomycin of 6 strains of *Leptospira icterohaemorrhagiae* and single strains of 23 other species of leptospira of European and Oriental origins. Streptomycin is stable but penicillin deteriorates on incubation, so the potency of the penicillin was estimated at the end of the experiment and it was found to have diminished by one-quarter to one-third of its original strength. Growth was markedly diminished in all cases and a number of strains were completely inhibited. In most cases penicillin was effective in a lower concentration than streptomycin.

The Relation of Protein Binding to the Pharmacology and Antibacterial Activity of Penicillins X, G, Dihydro F, and K. TOMPSETT, R., SCHULTZ, S., and McDERMOTT, W. (1947). *J. Bact.*, **53**, 581.

Among these four penicillins the degrees of reduction in antibacterial activity caused by serum and albumin were roughly in direct proportion to the degrees of binding to these substances as demonstrated by dialysis. "The most satisfactory rationalization of these data is that the individual penicillins bind *in vitro* to a varying degree to the albumin content of serum, and that the resulting penicillin-albumin complex has little or no antibacterial activity."

The authors consider other possible explanations of their findings; examine evidence to suggest that binding of penicillin to protein occurs also *in vivo*; and say that their finding that penicillin sensitivity is different in different concentrations of serum may have an important bearing on the usual methods of assay of penicillin in serum.

A Study of the Absorption and Excretion of Oral Penicillin in Children. MARKOWITZ, M., and KUTTNER, A. C. (1947). *J. Pediat.*, 31, 195.

It has been shown that gastric acidity is probably not a major factor in the destruction of orally administered penicillin and that the presence of food in the stomach influences penicillin absorption. The authors report their study on the absorption and excretion of oral penicillin as part of an investigation to determine its value as a measure for the prevention of streptococcal upper respiratory infections in rheumatic subjects, and conclude that oral administration of penicillin is a satisfactory procedure in children provided the drug is given under fasting conditions. A. G. Watkins.

The Effectiveness of Metachloridine in Suppressing Natural Infections with *Plasmodium malariae* and *P. falciparum* in British Guiana. KENNEY, K., and BRACKETT, S. (1947). *Amer. J. trop. Med.*, 27, 493.

The suppressive effect of metachloridine on infections with *P. malariae* and *P. falciparum* was tested in school-children of a malarious district of British Guiana; infections with *P. vivax* were too scarce to be included. *P. malariae* was found in only one blood film in the treated group, while 35 controls showed the presence of parasites. Fifty days after the end of treatment, however, there were 10 infections in the treated group and 23 in the controls. The effect on *P. falciparum* was much less, and it was necessary to double the dose. *P. falciparum* was found in 20 blood films of the first group and in 33 of the controls, and in 17 treated with the double dose compared with 60 controls. No toxic effects of metachloridine were seen in any of the trials.

***Streptobacillus moniliformis* Bacteremia with Minor Clinical Manifestations.** LEVINE, B., and CIVIN, W. H. (1947). *Arch. intern. Med.*, 80, 53.

A case of rat-bite fever caused by *Streptobacillus moniliformis* is described. The clinical phenomena include an incubation period of a week, fever, fleeting arthralgia, a rash, and very little local inflammation. Penicillin is curative. G. F. Walker.

Cultivation of Tubercle Bacilli from Gastric Juice. A Study of the Factors affecting the Cultivation of *Mycobacterium tuberculosis* from Gastric Juice. VINCENT, V., and BIRGE, E. A. (1947). *Amer. Rev. Tuberc.*, 55, 556.

The authors show that the survival of the tubercle bacillus depends on the acidity of the gastric juice: the more acid the specimen the shorter the survival time. To eliminate false negative reports gastric specimens should be examined immediately. When this is not possible, neutralization of the sample by the addition of sterile N/10 NaOH until the pH is 6.5 to 7.0 will allow the tubercle bacillus to live for several days. R. J. Lumsden.

Aetiology and Pathogenesis of Vincent's Angina and of Ulcero-membranous Stomatitis. (Zur Aetiologie und Pathogenese der Vincent'schen Angina und der Stomatitis ulceromembranosa.) MELCZER, N. (1947). *Dermatologica*, 94, 13.

The author demonstrated elementary bodies in smears from 26 cases of Vincent's angina. Animal inoculation with material from the lesions was negative, but 70% of the human cases reacted to intradermal injections. Bacteria-free filtrate of exudate mixed with bacterial suspensions caused phagedena-like ulcers. It is concluded that virus plus bacteria are responsible in symbiosis in the lesions.

Pathogenic Mechanism of Infective Phlebitis and the Genesis of Septicaemia. (Le mécanisme pathogénique des phlébites infectieuses et la genèse des septicémies.) REILLY, J., and GRISLAIN, J.-R. (1947). *Ann. Med.*, 48, 113.

The authors, struck by the failure to produce phlebitis experimentally by the intravenous injection of organisms, decided to use the approach from the adventitia. They conclude that bacterial toxins and various soluble products of tissue breakdown can reach a vein from without, alter the endothelium, and so lead to thrombus formation. Any organisms circulating in the blood are entrapped in this thrombus. Thus an intravenous dose of organisms which in the healthy animal would be without apparent effect leads to infection of the thrombus and proliferation therein. The subsequent changes depend on the proteolytic activity of the organism used; if this is slight, further thrombosis occludes the infected portion, and after a brief bacteraemia the blood remains sterile; if the organisms cause disintegration of the thrombus, then the progression is to pyaemia and fatal septicaemia. A. C. Lendrum.

Factors Influencing the Red Cell Agglutination-inhibitive Reaction in Influenza and their Application to the Diagnostic Test. WHITMAN, L. (1947). *J. Immunol.*, 56, 167.

Though a considerable number of modifications have been made to the original red-cell agglutination test for influenza, the author considers that a need exists for a standard procedure simple enough to permit its widespread employment. He describes such a procedure. The PR 8 strain of influenza A virus and the Lee strain of influenza B virus were used in all experiments. F. O. MacCallum.

Experience with Vaccination Against Influenza in the Spring of 1947. A Preliminary Report. FRANCIS, T., SALK, J. E., and QUILLIGAN, J. J. (1947). *Amer. J. publ. Hlth*, 37, 1013.

Anticipating an outbreak of type-A influenza in the winter of 1946-7, the authors vaccinated 10,328 students with a vaccine having a red-cell agglutinating titre of 5120. 7615 students acted as controls. Excellent antibody responses were obtained, but investigations of the febrile illnesses showed no significant differences in the incidence of respiratory disease between the vaccinated and unvaccinated groups.

Early Immunization against Pertussis. ADAMS, J. M., KIMBALL, A. C., and ADAMS, F. H. (1947). *Amer. J. Dis. Child.*, 74, 10.

The authors conclude that pertussis immunization in the first six months of life is a safe, practical, and desirable procedure. Reactions to inoculation were negligible. The weekly inoculations gave rapid agglutination response. It remains to be seen whether the titre level can be maintained by giving antigen at monthly intervals during the early months of infancy.

Aetiology of Typhoid Osteitis in Children Confirmed by Bone-marrow Culture. (Etiología de las osteitis tíficas en el niño comprobada por el mielo-cultivo.) JAUREGUY, M. A., and SIMON, G. (1947). *Arch. Pediat. Uruguay*, 18, 298.

The authors found bone-marrow culture for diagnosis of typhoid fever so useful that they performed a Widal test, blood culture, and marrow culture as a routine. Out of 162 cases examined, 9 remained with persistently positive bone-marrow cultures.

Studies in the Pathogenesis of Rheumatic Fever. The Antistreptolysin Titre in Acute Tonsillitis and Rheumatic Fever. (In English.) WINBLAD, S., MALMROS, H., and WILANDER, O. (1947). *Acta med. scand.*, 196, 533.

The investigation of antistreptolysin titre of 71 cases of acute tonsillitis was made serially using Ipsen's modification of Kalbak's method. Readings of over 200 were considered to be raised, and 52 cases showed some such elevation. Of the 14 who developed rheumatic complications, 12 had an initial titre of 140, and 9 a titre of 200 or more, suggesting previous infections with haemolytic streptococci.

Smear and Culture Diagnosis in Gonorrhoea. MCLEOD, J. W. (1947). *Brit. J. vener. Dis.*, 23, 53.

In a series of 275 cases of suspected gonorrhoea in which 50% of the combined smear and culture results were positive, 42% of the cultures were positive against 29% of the smears; the cultures from the cervix and urethra were both positive in 22%, whereas only 7% of smears were positive from both these sites; from the urethra alone, the cultures were positive in 32% against 24% of positive smears; and the cervical cultures alone were positive in 33% against 16% of positive cervical smears. These figures show that diagnosis by culture is superior to that by smears and that the percentage of error is lessened when both methods are used together.

The author draws attention to Stuart's method (*Glasgow med. J.*, 1946, 27, 131) of keeping gonococci under conditions of reduction and so preventing the oxidation which, with drying, is lethal to them.

T. Anwyll-Davies.

The Laboratory Diagnosis of Leprosy. McDONALD, S. (1947). *Trans. R. Soc. trop. Med.*, 40, 451.

Laboratory methods of confirming a clinical diagnosis of leprosy comprise: (a) the examination of skin smears stained by the Ziehl-Neelsen method, which is especially suitable for lepromatous and major tuberculoid forms; (b) the lepromin test; (c) Wassermann and Kahn tests; (d) skin biopsy.

BIOCHEMISTRY

Insulin Resistance. AXELROD, A. R., LOBE, S., ORTEN, J. M., and MYERS, G. B. (1947). *Ann. intern. Med.*, 27, 555.

Insulin resistance has occurred in conditions favouring the destruction of insulin in the body, particularly associated with abnormal leucocyte activity. Investigating 3 cases of spontaneous insulin resistance, the authors found no evidence of an insulin antagonist in the sera of their patients. Whilst the aetiology remains unknown no specific therapeutic measures are available. Single large doses are recommended in treatment, rather than repeated smaller doses, and glycosuria and acidosis may require as much as 1,000 to 5,000 units of insulin.

Serum Potassium, Magnesium, and Calcium Levels in Diabetic Acidosis. MARTIN, H. E., and WERTMAN, M. (1947). *J. clin. Invest.*, 26, 217.

The changes in the levels of serum potassium, magnesium, and calcium were studied in 14 patients, aged 12 to 69 years, undergoing treatment for severe diabetic acidosis. The blood-sugar levels varied between 285 and 1,029 mg. per 100 ml. and the insulin requirement in the first 24 hours between 110 and 1,000 units; large amounts of fluid (4 to 12 litres) were given parenterally in the first 24 hours. There was a marked fall in the serum potassium in 46% of patients; critically low values (1.9 and 2.18 milliequivalents) were found in some. The minimum was usually reached after 12 to 24 hours. No constant correlation between total calcium concentration and ionized calcium was found. A marked fall in the serum-magnesium concentration was seen in 36% of the patients during treatment; concentration returned to normal very slowly. It is suggested that potassium and magnesium salts should be given as adjuvants to therapy, but this is contraindicated in patients in shock and with decreased renal function, because dangerously high blood levels may be produced. A. Schott.

Carbohydrate Metabolism in the Undernourished. (Der Kohlehydratstoffwechsel bei Unterernährten.) GÜTZOW, M. (1947). *Z. ges. inn. Med.*, 2, 91.

The first part of this paper is a study of 45 cases of inanition, mostly with oedema, 25 of which were fatal. Hypoglycaemia was marked and sugar-tolerance tests always gave a poor response with a flat curve and a very low and delayed peak. After about 1 month on an ample diet in hospital injections of adrenaline and insulin gave normal responses.

A further study was made in order to ascertain the site of the metabolic lesion in starvation, and the observed failure of the tissues to assimilate sugar is attributed to damage to cell enzymic processes and to diminution in hormonal action, especially insulin insufficiency.

The Effect of Ingested Mineral Oil on Plasma and Vitamin A. ALEXANDER, B., LORENZEN, E., HOFFMANN, R., and GARFINKEL, A. (1947). *Proc. Soc. exp. Biol., N.Y.*, 65, 275.

Continued ingestion of mineral oil as such or in the form of mayonnaise dressing by 20 subjects on a normal unrestricted diet resulted in a moderate decrease in plasma carotene concentration. Vitamin A levels remained unchanged. It is concluded that simultaneous ingestion

of mineral oil with food prevents substantial amounts of food carotene from entering the body.—[Authors' summary.]

A Study of Thiamine in Paediatrics. (Studie o thiaminu v pediatrii.) HOUSŤEK, J. (1947). *Čas. Lék. čes.*, **86**, 1006.

Present methods of vitamin B₁ estimation are reviewed. Although physico-chemical methods with thiochrome are most often used, the author prefers Schopfer's microbiological technique because of its specificity and accuracy. It is based on the fact that *Phycomyces blakesleanus* requires thiamine for growth but is unable to synthesize it.

Breast-milk seems the only source of thiamine for the infant. Synthesis of thiamine in the intestine is doubtful. Breast-milk of 233 mothers of all classes had a vitamin B₁ content of 15 to 19 µg. per 100 ml. Some differences were encountered in various age groups. Colostrum is free from vitamin B₁. The vitamin content increases from 13.8 µg. per 100 ml. in the first week of lactation to 20.2 µg. per 100 ml. after the second month. Saturation of the mother with 50 to 100 mg. thiamine by oral, intravenous, or intramuscular administration raises the level in breast-milk transiently. It is highest after intravenous injection. The blood level remains lower than the level in the milk.

The vitamin-B₁ content of the cerebrospinal fluid was estimated in 105 children of all ages with various affections of the nervous system. The values were fairly constant and ranged from 1 to 4 µg. per 100 ml. independent of age, condition, or cell and protein content of the liquor. The diffusion of thiamine into the spinal fluid was demonstrated. After intravenous doses of 50 mg. vitamin B₁ the level increased from 1 to 2.5 µg. to 12.5 to 16.5 µg. per 100 ml. With lower doses the increase was negligible.

The thiamine level in blood (usually capillary) was examined in 180 children. A level of 5 to 8 µg. per 100 ml. was found. Values below 4 µg. per 100 ml. are considered to reveal a latent hypovitaminosis. Premature infants had a relatively high level (mean value 9.8 µg. per 100 ml.). The estimation of thiamine in blood is considered unsatisfactory and inconclusive, even with Schopfer's method. The vitamin-B₁ equivalent is recorded as a whole, without distinction of free and fixed vitamin and of intermediate metabolites.

M. Dynski-Klein.

A Study of the Fasting-hour Excretion of Thiamine in the Urine of Normal Subjects. PAPAGEORGE, E., and LEWIS, G. T. (1947). *J. Nutrit.*, **34**, 301.

The authors have estimated the 24-hour urinary excretion of thiamine by 63 normal university students, and have compared the values with the amount in a "fasting-hour" specimen, collected in the hour following the 24-hour period and after an overnight fast of about 12 hours. There is a good correlation between the values. In 20 of their 63 subjects the authors also determined the percentage of a 1-mg. oral dose of thiamine excreted in the next 4 hours in the fasting state. The authors therefore confirm previous work which indicates that the fasting-hour excretion is a convenient method in nutritional surveys of obtaining an approximate indication of the trend of thiamine levels in the body. They suggest that the critical level of fasting-hour excretion of thiamine is 4 µg.

H. M. Sinclair.

Factors Influencing the Urinary Excretion of Calcium. I. In Normal Persons. KNAPP, E. L. (1947). *J. clin. Invest.*, **26**, 182.

The normal urinary excretion of calcium was studied under standard dietary conditions in 606 normal persons ranging in age from 1 to 80 years. The mean urinary calcium excretion increased with both age and intake; in adults the increase in excretion with increase in intake is greater than in children. With constant daily calcium intake the mean urinary excretion increased with age throughout the period of growth. The skeletal weight was found to be the factor responsible for these differences as well as for those with sex. The urinary calcium values calculated as a percentage of calcium intake were plotted against the calcium intake per kilo of body weight; it was found that $\frac{\text{urinary Ca} \times 100}{\text{Ca intake}}$ was an exponential

function of, and varied inversely with, the intake per kilo. The position of urinary calcium values in any individual person relative to the mean depended on the endocrine balance of the person and was independent of age or calcium intake. Normal infants, irrespective of a low or high calcium intake per kilo, had a level of urinary excretion within the range of normal for older subjects but below the mean for this latter group, the mean level characteristic for older subjects being reached at about the age of 2. Undernourished children had a uniformly low calcium excretion, which rose sharply as the child gained weight. Ingested acids (ammonium chloride, ketogenic diet) and a high calcium/phosphorus ratio, without altering the total calcium content of the diet, increased urinary calcium. Some other dietary factors of less importance in urinary calcium excretion are discussed.

A. Schott.

Metabolism of Women during the Reproductive Cycle.

XIII. The Utilization of Niacin during Lactation.

CORYELL, M., RODERUCK, C., HARRIS, M. E., MILLER, S., RUTLEDGE, M. M., WILLIAMS, H. H., and MACY, I. G. (1947). *J. Nutrit.*, **34**, 219.

Niacin intake, secretion in milk, and excretion in urine were studied in 7 healthy nursing mothers during the first 10 days post partum, and in 9 women during periods of 5 consecutive days 2 to 10 months post partum.

The average daily intakes of niacin and its precursor during the 5-day periods ranged from 13 to 23.4 mg. The results show during the first 10 days post partum rapid increases in the amounts of niacin secreted daily in milk, averaging from 0.04 mg. on the first day post partum to 2.9 mg. on the tenth; these figures portray the increases both in concentration and in volume of milk secreted during the puerperium. The average daily niacin content of mature milk ranged from 0.52 to 2.02 mg.; these values, also, show a general relationship to milk volume rather than to intake, and illustrate the wide range of normal variation in the composition of human milk from different mothers and from the same mother at different times.

J. Parness.

Oral Smears Compared with Vaginal Smears. Case Report. RUSSELL, P. B. (1947). *Sth. med. J.*, **40**, 561.

This is a case report to illustrate the value of Russell and Bennett's method in controlling the synthetic oestrogen therapy of menopausal symptoms in a woman of 44, following surgical operation. Gram-stained smears from the surface of the mouth show the influence

of hormonal stimulation on the buccal epithelium, and permanent preparations can be made for comparison. It is suggested that the method is applicable to the oestrogen therapy of vulvo-vaginitis in children, and that the patients themselves could prepare the smears.

E. T. Ruston.

The Effect of Trauma and Disease on the Urinary 17-Ketosteroid Excretion in Man. FORBES, A. P., DONALDSON, E. C., REIFENSTEIN, E. C., and ALBRIGHT, F. (1947). *J. clin. Endocrinol.*, 7, 264.

Analysis of 4,000 determinations of urinary 17-ketosteroid excretion showed that the output was low in chronically ill or seriously undernourished patients. Members of the laboratory staff whose basal output was well established showed a 70% reduction in output during acute infections. The effect of various types of "alarm," including operation, acute infections, etc., showed an immediate rise in excretion in men, followed by a period of subnormal excretion. Women showed no preliminary rise.

The Excretion of 17-Ketosteroids and Gonadotrophin in Children: Normal and Abnormal Cases. HAIN, A. M. (1947). *Arch. Dis. Childh.*, 22, 152.

Gonadotrophin can be detected in normal girls before the seventh year and in normal boys before the ninth. It is excreted in abnormally large amounts in cases of precocious sexual development. Constitutional precocious menstruation is probably due to premature pituitary secretion in association with abnormal ovarian response. Instances of the use of hormone excretion assays in various types of endocrine and constitutional abnormalities are given.

P. R. Evans.

Correlations of Biochemical and Histologic Changes in the Adrenal Cortex. ROGERS, W. F., and WILLIAMS, R. H. (1947). *Arch. Path.*, 44, 126.

The adrenal cortex was studied in a number of healthy persons who died instantaneously after traumatic injury and in whom the glands could justifiably be regarded as normal. Comparisons were made between the cholesterol content and the amount of lipid present, as demonstrated in histological section by use of polarized light, ultraviolet light, and phenylhydrazine and Sudan IV stains in frozen sections. Phloxine-methylene-blue was used in paraffin sections to study vacuolation. The amount of lipid demonstrated by the first three methods was directly proportional to the cholesterol content. Similar correlation was found in glands depleted of lipid in severe toxic states such as fulminating streptococcal septicaemia and by administration of adrenotrophic pituitary hormone.

W. S. Killpack.

Proteins in the Colloidal Gold Reaction. BERNSOHN, J., and BORMAN, E. K. (1947). *J. clin. Invest.*, 26, 1026.

The authors suggest that abnormal colloidal gold reactions are due to a significant change in the γ -globulin content or to an alteration in the proportions of β - and possibly α -globulin to the γ -globulin. A spinal fluid giving the general paretic curve (type I) contains significantly less protective globulins and generally more γ -globulin. A spinal fluid giving the curve found in bacterial meningitides (type III) contains more globulin of the β type than a normal fluid. Other curves of type II can be explained on an alteration of the ratio of the

protective to the γ -globulins. The reactions obtained with blood serum in cases of liver dysfunction arise from the relative decrease of protective globulins which are elaborated by the liver cells. The authors suggest that γ -globulin could be used to determine whether or not two batches of gold sol are comparable.

E. T. Ruston.

A Microbiological Method of Standardizing Liver Extracts. MAHDIHASSAN, S., and BAKSHI, V. M. (1947). *Nature, Lond.*, 160, 404.

A bacterium, *Bacterium carotene*, producing a red pigment was isolated from the insect *Cicadella viridis* and grown on artificial media containing liver extract. Growth occurred only when liver extract was added to the medium, and it appeared to be related quantitatively to the concentration of liver extract. The growth factor present in the liver extracts was found to resist autoclaving for 6 hours at 15-lb. pressure, and to be adsorbed on to fuller's earth and activated charcoal but not on to kaolin. It is suggested that this organism may provide a method of microbiological assay for standardizing liver extracts.

Hepatic Dysfunction in Peptic Ulcer. Observations with the Hippuric-acid Test. POLLAK, H. (1947). *Lancet*, 2, 131.

Oral hippuric-acid excretion tests were performed on 68 male patients with peptic ulcer. No other tests of liver function are recorded and no details of the clinical condition of these patients are given, but the author concludes that they had a tendency to depressed liver function, the impairment being greater in the active phase of the disease.

C. Hardwick.

Liver Function Tests in the Diagnosis of Jaundice. A Review of 200 Cases. MACLAGAN, N. F. (1947). *Brit. med. J.*, 2, 197.

Serum alkaline phosphatase shows a maximum deviation from normal in obstructive jaundice, whereas the flocculation tests show maximum abnormality in hepatitis. The present paper is concerned with the results obtained in 200 jaundiced patients, in whom the cause of the jaundice was satisfactorily established by other means. Of these, 56 were cases of obstructive jaundice (37 due to neoplasm) and 118 of acute hepatitis (95 infective hepatitis) and there were also 15 cases of chronic hepatitis and 11 of haemolytic jaundice.

All cases with phosphatase levels above 42 units were obstructive. All with phosphatase levels below 15 units were non-obstructive, and this group included all cases of haemolytic jaundice. All cases with strongly positive flocculation reactions were non-obstructive; all those with weak or negative flocculation reactions and phosphatase levels above 35 units were obstructive.

Douglas H. Collins.

Chronic Liver Disease Following Infectious Hepatitis. I. Abnormal Convalescence from Initial Attack. KUNKEL, H. G., LABBY, D. H., and HOAGLAND, C. L. (1947). *Ann. intern. Med.*, 27, 202.

Reviewing 350 cases of the disease, with a special study of tests of liver efficiency, the authors describe as necessary for the estimation of persistent impairment of the liver a combined use of determinations of the plasma bilirubin level, the bromsulphalein retention test, and the thymol turbidity reaction of the serum. Under an elaborate scheme of chemical testing the authors found

that 17% of their patients sustained relapses or other forms of delayed healing due to functional hepatic impairment; in several, recovery was delayed for over a year.

G. F. Walker.

A Study of Hepatic Function in Acquired Malaria.

SCHNEIDER, L. A., and SHALLENBERGER, P. L. (1947). *Amer. J. med. Sci.*, **214**, 80.

Approximately one-third of all acute acquired malaria cases under atebirin therapy are shown to have demonstrable hepatic dysfunction as evidenced by standard liver function test.

Changes in Blood Phosphate after Ingestion of Glucose and Fructose in Sprue.

FOURMAN, L. P. R. (1947). *Brit. med. J.*, **2**, 411.

Inorganic phosphate concentrations in the plasma, cells, and whole blood after the ingestion of 50 g. of glucose and the ingestion of 50 g. of fructose were estimated in 5 normal subjects and in 4 patients suffering from tropical sprue. Changes in blood "ester" phosphate concentrations and in the rate of phosphate excretion in the urine were also observed.

In normal subjects the plasma phosphate diminished after the ingestion of both glucose and fructose, whereas in the sprue patients after glucose the drop in phosphate was less than in the normal, and after fructose the phosphate remained unchanged or rose. These findings are taken as evidence that in the sprue patients there was a failure of absorption of glucose and fructose.

H. K. Goadby.

Measurement of the Concentration of Miracil in Biological Fluids.

LATNER, A. L., COXON, R. V., and KING, E. J. (1947). *Trans. R. Soc. trop. Med. Hyg.*, **41**, 133.

"Miracil D" (1-diethylaminoethylamino-4-methylthioxanthone) has been shown by German workers to be active against schistosome infections in laboratory animals. In view of the possible use of the drug in medicine methods have been worked out for its determination in blood and urine. Blood concentrations may be determined by colorimetric measurement of the amount of bromothymol blue which will combine with the miracil extracted from blood with ethylene dichloride, or by determination of the yellow colour of the drug extracted from the sample.

L. G. Goodwin.

The Value of Spinal Fluid Examination as a Diagnostic Procedure in Weil's Disease.

CARGILL, W. H., and BEESON, P. B. (1947). *Ann. intern. Med.*, **27**, 396.

Of 14 cases of Weil's disease observed during a 4-year period, 13 were found to have abnormal spinal fluid. In only 6 were there clinical signs which could be attributed to meningeal irritation. The commonest abnormality was an increase in the cell count. Xanthochromia was noted in approximately 90% of the cases in which jaundice was present. Spinal fluid examination is of value as a routine diagnostic procedure when the diagnosis of Weil's disease is suspected.

On Changes in the Cerebrospinal Fluid during Measles.

(In English.) OJALA, A. (1947). *Ann. Med. intern. fenn.*, **36**, 321.

After investigating 123 unselected cases of measles without clinical evidence of central nervous system involvement, and 4 cases in which lumbar puncture was called for on clinical grounds, the author concludes that

pleocytosis in measles (nearly 30% in his series) is more frequent than has been previously recorded. Changes in the cerebrospinal fluid may be due to the virus itself or its toxins, and the view is expressed that in measles pleocytosis is an allergic phenomenon caused by toxin. The author believes that measles encephalitis is more common than is assumed but that the symptoms are chiefly psychic.

E. H. R. Harries.

Caronamide for Increasing Penicillin Plasma Concentrations in Man.

CROSSON, J. W., BOGER, W. P., SHAW, C. C., and MILLER, A. K. (1947). *J. Amer. med. Ass.*, **134**, 1528.

Normally, about 80% of the penicillin in the urine is excreted by the renal tubules and only about 20% by glomerular filtration. The excretion of the drug by the tubules can be completely suppressed by the intravenous administration of either iodopyrin ("diodrast") or *p*-aminohippuric acid, but the usefulness of this procedure is limited by the large amounts of either of these compounds which have to be injected.

This report describes the clinical application of caronamide (4'-carboxy-phenylmethanesulphonanilide), an orally effective compound of low toxicity capable of producing a reversible inhibition of penicillin excretion by the renal tubules. The effectiveness of caronamide depends upon a "substrate competition between penicillin, which is excreted by the tubules, and 4'-carboxy-phenylmethanesulphonanilide, which is essentially refractory to excretion by that transport mechanism."

Of 6 patients studied, 5 showed increases in plasma penicillin concentrations during the period of administration of caronamide. The average concentrations during the period of administration of the new drug were from 2.4 to 7.1 times greater than during the two control periods.

A. L. Walpole.

Oliguria after Abortion.

HUMPHREY, J. H., and JONES, F. A. (1947). *Clin. Sci.*, **6**, 173.

Renal failure with oliguria after abortion (of which only 19 cases have been hitherto reported) may be due to pyelonephritis, ingested poisons, sulphonamides, quinine sensitivity, incompatible transfusion, a syndrome with renal changes resembling those of crush syndrome, or symmetrical cortical necrosis. Four patients, all of whom recovered with "conservative" treatment, are fully described. The pathogenesis of this syndrome is discussed in the light of the work of Barclay and others (*Lancet*, 1946, **2**, 237). The pathological process involved was thought to be renal vessel spasm with or without thrombosis, such as is found in persons dying with symmetrical renal cortical necrosis.

Studies in Urolithiasis: I. The Composition of Urinary Calculi.

PRIEN, E. L., and FRONDEL, C. (1947). *J. Urol.*, **57**, 949.

Approximately 700 urinary calculi were studied under the polarizing microscope. Only 9 distinct crystalline substances were found, and these fell into the following groups: oxalates, phosphates, uric acid, urates, and cystine. Detailed descriptions and chemical analyses are given of the stone formations. As many as 4 crystalline compounds were often found by optical analysis in the same calculus.

HAEMATOLOGY

Does Rh-Isimmunization Cause Early Abortion? OVER-STREET, E. W., TRAUT, H. F., HUNT, M., and LUCIA, S. P. (1947). *Amer. J. Obstet. Gynec.*, **54**, 235.

The authors conclude that there is no evidence that Rh-iso-immunization may cause abortion in the first 20 weeks of pregnancy.

The Role of a Presumed Serum Protein in the Pathogenesis of Erythroblastosis Fetalis. GUREVITCH, J., POLISHUK, Z., and HERMONI, D. (1947). *Amer. J. clin. Path.*, **17**, 465.

The authors conclude that sera from umbilical cords and from infants less than 6 months of age do not enhance the agglutinating action of immune antibodies as do normal adult sera.

Use of Trypsin in the Detection of Incomplete Anti-Rh Antibodies. MORTON, J. A., and PICKLES, M. M. (1947). *Nature, Lond.*, **159**, 779.

Rh-positive cells sensitized *in vitro* with Anti-D incomplete antibody, and cells from infants suffering from haemolytic disease of the newborn were agglutinated by solutions of trypsin.

Kernicterus. A Follow-up Study of Thirty-five Erythroblastotic Infants. STILLER, R. (1947). *Amer. J. Dis. Child.*, **73**, 651.

Out of 35 children born with erythroblastosis, 29 survived; 4 showed signs of C.N.S. involvement, 2 of these in the neonatal period. Transfusion is of no value in ameliorating damage to the brain.

Modification of Human Red Cells by Virus Action. CHU, C. M., and COOMBS, R. R. A. (1947). *Lancet*, **1**, 484.

After treatment with the haemagglutinating viruses of influenza A and B, swine influenza, and Newcastle disease (N.D.V.), Rh-positive cells were agglutinated by incomplete Rh antibody. The order of activity in this respect was as follows: N.D.V. > swine influenza > influenza B > influenza A. Rh-negative cells were not agglutinated.

The Improved Demonstration of Circulating Antibodies in Hemolytic Anemia by the Use of a Bovine Albumin Medium. NEBER, J., and DAMESHEK, W. (1947). *Blood*, **2**, 371.

Using 20% albumin as diluting fluid, the authors claim to have demonstrated "warm agglutinins" in 5 patients with acquired haemolytic anaemia; in 4 of these no agglutinin was demonstrable when saline was used instead of the albumin. Employing the albumin technique they demonstrated a serum haemolysin in one patient with acquired haemolytic anaemia and in a case of familiar spherocytic anaemia during a haemolytic crisis.

The Significance of the van den Bergh Reaction. GRAY, C. H. (1947). *Quart. J. Med.*, **16**, 135.

The author claims that the terms "prompt," "biphasic," and "delayed" reactions are obsolete, as they depend on the amount of bilirubin present and not on the type of jaundice. The direct-indirect quotient (D.I.Q.), i.e.,

$$\frac{\text{final amount of azobilirubin in the direct reaction}}{\text{final amount of azobilirubin in the indirect reaction}} \times 100$$

is a useful calculation. Below 40, this is diagnostic of haemolytic jaundice; above 50, it indicates obstructive or hepatogenous jaundice. The van den Bergh reaction is quite incapable of differentiating obstructive from hepatogenous jaundice.

Biochemical and Physiological Studies of Two Active Substances Produced by the Spleen. (Études biochimiques et physiologiques sur deux substances actives produites par la rate.) UNGAR, G. (1947). *J. Physiol., Paris*, **39**, 219.

Two physiologically active substances, splenin A and B (*Endocrinology*, 1945, **37**, 329), have been isolated from ox, horse, and sheep spleen and have been produced by an *in vitro* method. Splenin A decreases and splenin B increases bleeding time. Thus, in guinea-pigs one unit of splenin A per kilo injected subcutaneously lowered the mean bleeding time from 131 to 100 seconds, and one unit of splenin B raised it from 131 to 160 seconds.

Splenin A is normally found in the spleen (about 10,000 units per g.), from which it flows into the blood stream and is excreted in the urine. Splenin B occurs in the spleen (about 30 units per g.) and bone marrow (about 30,000 units per g.), but is not normally found in the blood stream. Splenin B is probably identical with thrombocytopen (Troland and Lee, *J. Amer. med. Ass.*, 1938, **111**, 224). Splenin A and B have opposing pharmacological actions on bleeding time, capillary permeability, and haemolysis, the former promoting and the latter retarding combination between the protease and anti-protease of blood. When excess splenin B is produced, it passes into the blood stream and interferes with the mechanism of certain pathological states such as purpura and haemolytic jaundice. Splenin A, the liberation of which may be controlled by the hypophysis and suprarenal cortex, intervenes during the adaptation syndrome probably by neutralizing protease and thus protecting the capillary endothelium. Its pharmacological properties are similar to those of vitamin P substances such as hesperidin and rustin. *J. E. Page.*

Studies on the Enigma of the Hemostatic Dysfunction of Haemophilia. QUICK, A. J. (1947). *Amer. J. med. Sci.*, **214**, 272.

The author describes experiments which in his opinion show that the defect of coagulation in haemophilia is due to lack of thromboplastinogen, the inactive precursor of thromboplastin. Other components are present in normal proportions.

Some Clinical Observations on the Prothrombin Test. FISHER, B. (1947). *Amer. J. clin. Path.*, **17**, 471.

Whole plasma is recommended for use in Quick's one-stage method for the estimation of prothrombin. Dilution with saline, rather than with prothrombin-free plasma, introduces errors. Prothrombin levels should

$$\left(= \frac{302}{\text{prothrombin time in sec.} - 8.7} \right)$$

also be expressed as percentages of prothrombin (Quick), and not in seconds or as percentages of prothrombin times determined in normal subjects.

Significance of the Accelerated Reaction in Determination of Prothrombin Time of Diluted Plasma. TUFT, H. S., and ROSENFELD, R. E. (1947). *Amer. J. clin. Path.*, **17**, 704.

A 10% dilution of plasma employed in 500 deter-

minations did not indicate that a decreased prothrombin time was correlated with clinical evidence of thrombosis or embolism.

Variations in Prothrombin and Antithrombin in Patients with Thrombosing Tendencies. HURN, M., BARKER, N. W., and MANN, F. D. (1947). *Amer. J. clin. Path.*, 17, 709.

The plasma prothrombin by the one- or two-stage methods and serum antithrombin levels were estimated in 63 patients with thrombotic or embolic conditions. There was no diagnostic correlation between clinical state and laboratory observation.

Variations in Prothrombin and Antithrombin Following the Administration of Dicoumarol. HURN, M., BARKER, N. W., and MANN, F. D. (1947). *Amer. J. clin. Path.*, 17, 712.

The authors compare the one- and two-stage techniques for estimating prothrombin times. The one-stage technique, which depends upon the rate of conversion of prothrombin, is held to be preferable in the control of dicoumarol therapy.

Congenital Hypoproteinaemia and Pseudo-hypoproteinaemia. QUICK, A. J. (1947). *Lancet*, 2, 379.

The author summarizes his views on blood coagulation, and describes a labile factor (probably identical with Owren's factor 5) whose disappearance causes an increase in prothrombin time when plasma is stored. Two families are described; one suffering from true familial hypoproteinaemia; the other from "pseudo-hypoproteinaemia." In the latter the prothrombin time was elevated, but prothrombin and the labile factor were present in normal preparations. The lack of still another factor is postulated.

Essential Thrombocytopenic Purpura. Autopsy Findings in Thirty-six Cases. HERTZOG, A. J. (1947). *J. Lab. clin. Med.*, 32, 618.

The post-mortem findings in 36 cases of essential thrombocytopenic purpura are described; these are taken from the records of over 51,600 necropsies performed at the University of Minnesota. Haemorrhages were the chief necropsy findings; in 12 cases intracranial haemorrhages caused death. In 2 cases bleeding from the gastro-intestinal tract predominated. In 1 the principal bleeding was from the renal pelvis and bladder. Nine patients had continued to suffer from widespread haemorrhages after splenectomy. There were no characteristic histological findings. The bone marrow was examined in 10 of the 36 cases. The most constant feature was a marked increase in the number of megakaryocytes. The author suggests that, where the marrow shows a marked decrease in number of megakaryocytes, little or no benefit is derived from splenectomy.

R. Winston Evans.

Influence of Penicillin on the Coagulation of Blood, with Especial Reference to Certain Dental Operations. FLEMING, A., and FISH, E. W. (1947). *Brit. med. J.*, 2, 242.

With high concentrations of penicillin (1,000 units per ml. or more) there is some interference with the clotting mechanism. This effect is of no practical importance in the systemic administration of penicillin. It should be

borne in mind when employing solutions of high concentration locally.

Leucocytosis and Changes in the Differential White Cell Count in Renal Colic. (Sul comportamento della leucocitosi e della formula leucocitaria nella colica renale.) BELUFFI, E. L., and FANTONI, S. (1947). *Ann. ital. chir.*, 24, 152.

Cases are cited of right-sided pain due to uncomplicated non-infected ureteric calculi which are associated with leucocytosis up to 14,000 per c.mm. Doubt is thus thrown on the value of the leucocyte count in differentiating appendicitis from ureteric colic.

Idiopathic Thrombocytopenic Purpura. A Study of Three Cases with Special Reference to Changes in the Megakaryocytes. VALENTINE, E. H. (1947). *Amer. J. med. Sci.*, 214, 260.

A decreased formation of platelets by an increased number of megakaryocytes is held to be due to an inhibiting factor secreted by the spleen.

Iron-staining Erythrocytic Inclusions with Especial Reference to Acquired Haemolytic Anaemia. MCFADZEAN, A. J. S., and DAVIS, L. J. (1947). *Glasg. med. J.*, 28, 237.

The authors confirm and extend the observations of Pappenheimer *et al.* (*Quart. J. Med.*, 1945, n.s., 14, 75), who described the appearance of numerous stippled red cells in patients with acquired haemolytic anaemia after splenectomy. The basophilic inclusions are found in both nucleated and adult red cells. They react with acid-potassium ferrocyanide and are believed to correspond with the siderotic granules of Grunenberg. Their formation is attributed to some abnormality in haemoglobin formation.

Development of Inclusion Bodies containing Ribose Nucleic Acid in Myeloma Cells after Injections of Stilbamidine. Determination of Stilbamidine in Myeloma Tissue. SNAPPER, I., MIRSKY, A. E., SCHNEID, B., and ROSENTHAL, M. (1947). *Blood*, 2, 311.

Basophilic granules containing ribose nucleic acid not normally present in the cytoplasm of myeloma cells appear after injections of stilbamidine. Methods are given for identifying ribose nucleic acid, and for the estimation of stilbamidine in myeloma tissue.

The Diffraction Method of Measuring Red Blood Cells. PIJPER, A. (1947). *J. Lab. clin. Med.*, 32, 857.

The author reviews the development of the diffraction technique of measuring red-cell diameters and describes an improved apparatus whereby it is possible to calculate the degree and quality of anisocytosis, as well as mean cell diameter.

The Osmotic Resistance (Fragility) of Human Red Cells. PARPART, A. K., LORENZ, P. B., PARPART, E. R., GREGG, J. R., and CHASE, A. M. (1947). *J. clin. Invest.*, 26, 636.

Temperature, pH, and time as well as salt concentration determine the apparent fragility of red blood cells. This paper should be read by all interested in this determination.

MORBID ANATOMY AND HISTOLOGY

Adnexal Carcinoma of the Skin. CHANDLER, N. (1947). *Amer. J. Path.*, 23, 1.

This paper gives an account of the group of "basal-cell carcinomata," or, as the author rightly prefers to call them, "adnexal carcinomata of the skin." The present position as regards nomenclature, classification, and histogenesis of these growths is confused, and the author bases his attempt to bring order out of the existing chaos on a careful study of over 200 tumours. The interesting and fully documented historical review reveals little that is essentially new.

The subdivisions given are as follows: (1) *Pilar Type*; (2) *Sudoriparous Glandular Type*; (3) *Basal-celled Type*.

The author's theory, based on his observations and on a consideration of the development of epidermal structures, is that adnexal carcinomata are derived not from basal cells of the epidermis but from the hair follicles, sweat glands, or rather from cells of the embryonal rudiments of these, as opposed to Mallory's hypothesis that they arise from the adult hair matrix.

Mummified Epidermal Cysts (So-called "Calcified Epitheliomas"). KING, L. S. (1947). *Amer. J. Path.*, 23, 29.

A review of the literature relating to "calcified epitheliomata" suggested to the author that several types of these tumours occur. With this in mind he analysed 9 such cases taken from 7,500 consecutive surgical specimens. At the same time 123 epidermal cysts drawn from the same series were also reviewed. The author considers that the term "calcified epithelioma" is misleading and should be abandoned. He suggests that one group of cases be described as "mummified epidermal cysts" and the other group, of which he describes only one, as "basal carcinoma with mummification."

The "Eosinophilic Granulomas" of the Skin. WEIDMAN, F. D. (1947). *Arch. Derm. Syph., Chicago.*, 55, 155.

The diversity of the disease processes in which cutaneous lesions have the histological features of eosinophilic granuloma is emphasized. The term "eosinophilic granuloma of the skin," not to be confused with eosinophilic granuloma of bone, was used originally for an unclassified cutaneous granuloma in which a dense infiltrate, consisting predominantly of eosinophilic cells, was found; histiocytes, monocytes, plasma cells, and mast cells were also present. It is correct to speak of the condition in the plural, and of a given case as "one of the eosinophilic granulomas of the skin." Five hitherto unpublished American cases are described and most of the published cases are quoted. It is suggested that they fall into two broad categories—idiopathic and symptomatic. All the idiopathic cases are thought to be cutaneous manifestations of one or other of the reticuloses; in all of them some eosinophilia of the blood was present. In the symptomatic cases are included cases of Loeffler's syndrome, erythema elevatum diutinum, orificial tuberculosis, non-specific ulceration, yeast infection, and other unclassified inflammatory conditions. Histologically, a disease known as "syphiloid" of cats can be classified as an eosinophilic granuloma.

Whatever underlying disease may be concerned, it is suggested that eosinophilogenic factors may be responsible for concealing or modifying the typical features of the condition.

G. B. Dowling.

Eosinophilic Granuloma and its Relation to Xanthomatosis Ossea. (Contribución al estudio del denominado "granuloma eosinofílico" y a sus relaciones con la xantomatosis ossea.) SCHAJOWICZ, F., and POLAK, M. (1947). *Rev. Asoc. méd. argent.*, 61, 218.

The authors describe the relations between three main types of benign reticulo-endothelial hyperplasia of bone: the solitary granuloma, the eosinophil granuloma, and the local or diffuse types of xanthomatosis ossea which may be accompanied by the Schüller-Christian syndrome or which may rarely complicate Letterer-Siwe's disease.

Using classical staining techniques as well as the silver impregnation methods of Rio Hortega, on material obtained from biopsies and excised tumours, the authors studied the relations of the three types of lesions in 8 cases of their own. Radiologically, the lesions were similar in the different cases, there being destruction of bone with at least one focus in the cranial vault. Histologically, the main finding was the hyperplasia of the histiocytic cells, with infiltration by lymphocytes, plasma cells, and polymorphonuclear leucocytes. Eosinophil infiltration was found in lesions from cases differing widely clinically—for example, in a case by simple extirpation, another with the typically chronic lesions of the Schüller-Christian syndrome, and a third with the acute lesions of Letterer-Siwe's disease. In other cases eosinophils were entirely absent from the lesions. In 2 cases of eosinophil granuloma the authors observed follicles of reticulo-endothelial cells, with transitions to multinucleate giant cells, well demonstrated in the lesions by impregnation with ammoniacal silver carbonate. These appearances were reminiscent of those in sarcoidosis and suggested an inflammatory reaction. The intense eosinophil infiltration might represent an allergic type of reaction to a toxin, tuberculous or other. Xanthomatous transformation appeared mostly in the older lesions and was probably not a permanent change, sometimes disappearing again, either spontaneously or after radiotherapy. Because the xanthoma cells were not always found, even in cases with the Schüller-Christian syndrome, the xanthomatous degeneration was thought to be only a stage in the evolution of the histiocytic granuloma, which, possibly with a stage of giant-cell formation, finally goes on to fibrosis. The xanthomatous change would thus be due to a local disturbance of lipid metabolism, secondary to the inflammatory reaction which the authors believe to be the basis of the histiocytic granuloma.

L. P. R. Fourman.

Tumours of Sweat Glands. (Tumeurs sudoripares.) DUPONT, A. (1947). *Arch. belg. Derm. Syph.*, 3, 275.

The author divides his cases into three categories: (1) sudoriferous tumours whose structure recalls the excretory portion of the sweat apparatus; (2) sudoriferous tumours of the secreting portion; and (3) tumours which, possessing certain characteristics relating them to sweat glands, evolve towards Malpighian epitheliomata.

The histological details of 11 cases are described and illustrated by drawings.

Ewing's Sarcoma of Bone. LICHTENSTEIN, L., and JAFFE, A. L. (1947). *Amer. J. Path.*, 23, 43.

A study of 17 cases of Ewing's sarcoma of bone is described. Most of the patients were in the second decade of life, 65% being males.

Morphology is described on the basis of four necropsies. Widespread involvement of many bones was often

found in spite of lack of clinical and radiological evidence. Histologically, in all cases crowded cells of uniform size with ill-defined borders were found. They contained little cytoplasm, and their nuclei were large, round, or oval in shape and showed powdery chromatin. Appearances were often variable owing to necrosis and haemorrhage with the subsequent processes of repair.

This description is at variance with Ewing's original description but agrees with that of Oberling.

Metastases were found in the lungs, liver, heart, spleen, kidneys, pancreas, thyroid, and of course in many bones, though it is possible that multifocal origin is the basis of widespread involvement of the skeleton. Lymph nodes were strikingly free from metastases. The breasts, testes, bronchi, gastro-intestinal tract, suprarenals, and sympathetic chain were scrutinized with a view to eliminating the possibility of incorrect diagnosis.

R. B. T. Baldwin.

Endothelial-cell Sarcoma of Liver following Thorotrast Injections. MACMAHON, H. E., MURPHY, A. S., and BATES, M. I. (1947). *Amer. J. Path.*, 23, 585.

Twelve years after the administration of "thorotrast" for radiographic visualization of the liver a woman aged 70 died suddenly from intra-abdominal haemorrhage from a haemorrhagic lesion of the liver, which the authors regard as sarcomatous. Radioactive deposits of thorotrast were present in the liver, spleen, lymph nodes, bone marrow, adrenals, kidney, and blood-vessel walls. While the diagnosis of sarcoma might be questioned, the case undoubtedly showed widespread damage due to irradiation and haemorrhagic lesions attributable to the thorotrast.

R. A. Willis.

Multiple Idiopathic Hemorrhagic Sarcoma of Kaposi. Histopathologic Study. SACHS, W., AZULAY, R. D., and CONVIT, J. (1947). *J. invest. Derm.*, 8, 317.

Haemorrhages, angioblasts ("endothelioid cells" by some authors), and spindle cells are described as constant features of Kaposi's idiopathic haemorrhagic sarcoma. The condition may resemble a simple inflammatory process or an angioma, granuloma, or neoplasm, and the suggestion is made that glomus tumour, pyogenic granuloma, and Kaposi's sarcoma may have a common origin; they may be angioblastomata. Kaposi's sarcoma may be considered as a systemic angiosarcomatosis belonging to this group.

G. A. Hodgson.

Carcinoma in the Wall of a Lung Cavity. (Das Kavernekarzinom. Seine Bedeutung für den Arzt und für die Begutachtung.) GRÄFF, S. (1947). *Dtsch. med. Wschr.*, 72, 465.

Six cases of cancer in the wall of a lung cavity in males are reported. These carcinomata are apparently often overlooked even at necropsy. *In vivo* the diagnosis is unlikely to be made. All known cases occurred in tuberculous cavities, originating mostly from the point where the bronchus passes out of the cavity. Microscopically a soft or keratinizing squamous-celled carcinoma was found in all cases. This kind of cancer is seen in the small group of cases in which an external stimulant, here starting from the chronically ulcerated wall of the cavity, is the inciting cause of malignancy.

O. Neubauer.

Bronchogenic Carcinoma: Diagnosis by Microscopic Examination of Sputum and Bronchial Secretions; Preliminary Report. WOOLNER, L. B., and McDONALD, J. R. (1947). *Proc. Mayo Clin.*, 22, 369.

The subject of the identification of tumour cells in sputum and bronchial secretions is reviewed, and the writers record their observations in 70 cases in which there were positive findings. They give illustrative examples of these, and conclude that a positive result may be expected in at least 80% of cases of bronchial carcinoma. [In the opinion of the abstracter this is likely to prove an over-optimistic estimate.] The paper points out that a negative result does not exclude the presence of carcinoma, that considerable experience is necessary to distinguish neoplastic cells from others, and that peripheral carcinomata not involving large bronchi usually give negative results. The authors' findings were negative also in cases of bronchial adenoma.

R. A. Willis.

Invasion of the Internal Mammary Lymph Glands in Carcinoma of the Breast. HANDLEY, R. S., and THACKRAY, A. C. (1947). *Brit. J. Cancer*, 1, 15.

In 5 unselected cases of carcinoma of the breast a lymph node of the internal mammary chain was removed through the secondary intercostal space at, or shortly after, radical mastectomy. In 4 cases the internal mammary node was histologically proved to contain carcinoma. In only 2 cases were there axillary deposits. The case in which the internal mammary node was free from growth also had no deposit in the axilla. It is suggested that the technique of radical mastectomy might be modified to include removal of the second-space internal mammary lymph node. Microscopical examination of this node might greatly increase the accuracy of prognosis and prove of assistance in post-operative treatment by irradiation.

R. A. Willis.

Dysgerminoma Ovarii. MAZEL, M. S. (1947). *Amer. J. Obstet. Gynec.*, 53, 1036.

A review of some of the literature on dysgerminoma ovarii is given, with particular stress on the malignancy of the condition and the need for radical operation even in young women. The author reports a case in a single woman, aged 23.

The Question of Theca-cell Tumours of the Ovary and their Hormonal Function. (Zur Frage der Thekazell-tumoren des Ovariums und ihrer hormonalen Funktion.) LIMBURG, H. (1947). *Z. Geburtsh. Gynäk.*, 128, 186.

Five cases of theca-cell tumours accompanied by post-menopausal hyperplasia of the endometrium are described. In 1 case, 3 years after partial removal of a theca-cell tumour the residue had developed into a simple fibroma. It is probable that all fibromata of the ovary are end-products of theca-cell tumours, analogous to the corpus fibrosum. Oestrogenic ovarian tumours fall into three related groups: (1) pure granulosa-cell tumours, (2) theca-cell tumours, (3) mixed granulosa-cell and theca-cell tumours. Luteinization may take place in any of these. The paper includes an account of a mixed granulosa-cell and theca-cell tumour in a child of 2 years with precocious puberty.

R. Willis.

Uterine Adenomyosis. Incidence, Symptoms, and Pathology in 1,856 Hysterectomies. HUNTER, W. C., SMITH, L. L., and REINER, W. C. (1947). *Amer. J. Obstet. Gynec.*, **53**, 663.

Adenomyosis was found in 517 cases (27.8%) of 1,856 hysterectomies performed for all causes. The two youngest subjects were each 27 and the oldest (carcinoma also present) 73. While most patients were between 41 and 50, 38 were under 35. Since adenomyosis occurs so often in association with leiomyoma of the uterus it is difficult to evaluate its symptomatology. For this purpose 110 cases of advanced adenomyosis without associated pathology were chosen. Of these, 85 had menorrhagia, 61 dysmenorrhoea, 42 metrorrhagia, 23 pain before periods, 9 dysuria and frequency, 7 pain radiating down legs, 6 bearing-down sensations, and 5 nausea and vomiting. Nearly all had either some menstrual irregularity or dysmenorrhoea. A globoid, slightly enlarged, and tender uterus was usually discovered bimanually. A uterus with leiomyoma and adenomyosis was more tender than one with leiomyoma only.

Granuloma of the Fallopian Tube due to Surgical Glove Talc. Silicious Granuloma. ROBERTS, G. B. S. (1947). *Brit. J. Surg.*, **34**, 417.

An account is given of granulomatous lesions (2 in abdominal scars and 5 in Fallopian tubes) in which the author ascribes the aetiology to talc from surgical gloves. In spite of a latent period of several years (2 to 17) in which the agent appeared to be dormant, the lesion when activated developed within 2 months in 1 case. The silicious nature of the substance deposited, demonstrated in each case with the polarizing microscope, was proved microchemically in only 1 case. Cultures or animal inoculations were not performed, so that tuberculosis may have co-existed. Amongst other clinical features, pelvic pain and infertility are mentioned.

[The author questions a diagnosis of tuberculosis made on histological grounds only. But if these granulomata are due to talc, the danger of the continued use of this form of glove powder must again be considered.]

Histopathological Study of Prostatic Tissue following Endoscopic Prostatic Resection. BARNES, R. W., BERGMAN, R. T., and FARLEY, S. (1947). *J. Urol.*, **57**, 755.

The authors have studied the pieces of tissue removed by transurethral resection of the prostate. They have found that portions removed posteriorly from near the capsule are much more likely to show carcinoma than those from any other site.

Giant Follicular Lymphoblastoma (Brill-Symmers' Disease). PANTRIDGE, J. F. (1947). *Ulster med. J.*, **16**, 46.

This is an account of 7 cases of giant follicular lymphoblastoma. The author considers that the disease is little less than half as common as lymphosarcoma, and that some 27% of lymphosarcomata arise from a preceding follicular lymphoblastoma. It is thought that many cases of lymphoblastoma are unrecognized because early sarcomatous change completely obscures the hyperplastic process.

R. B. Lucas.

The Importance of Malignant Degeneration as a Complication of Chronic Ulcerative Colitis. CATTELL, R. B., and BOEHME, E. J. (1947). *Gastroenterology*, **8**, 695.

Data are presented suggesting that malignant disease may be found to complicate chronic ulcerative colitis in a small but significant percentage of cases if clinical observation is sufficiently prolonged.

Pernicious Anemia and Susceptibility to Gastric Neoplasms. KAPLAN, H. S., and RIGLER, L. G. (1947). *J. Lab. clin. Med.*, **32**, 644.

The authors review the literature on the coexistence of epithelial gastric tumours and pernicious anaemia, and claim that the two diseases develop in the same individuals more often than would be expected on the basis of chance alone.

The precise nature of the relation between pernicious anaemia and gastric carcinoma is not clear. The authors believe that the evidence suggests that the two diseases are probably linked together by some common factor. Possible factors would include hereditary tendencies, achlorhydria, gastritis, and liver therapy.

R. Winston Evans.

Rare Tumours of the Lacrimal Caruncle. (Seltene Geschwulste der Caruncula lacrimalis.) RADNOT, M. (1947). *Ophthalmologica, Basel*, **113**, 270.

Two tumours of the lacrimal caruncle are reported in elderly men. In the first case the tumour was ascribed to an accessory lacrimal gland. In the second the tumour was malignant and appeared to be a sarcoma of a vascular origin.

Pigmented Tumours. REESE, A. B. (1947). *Amer. J. Ophthalm.*, **30**, 537.

An exposition and classification of the pigmented tumours of the eye and its adnexa, which may be summarized according to the origin of the melanoblasts as follows:

1. Neurogenic melanoblasts
 - (a) Schwann cells } Benign and malignant neuro-
 - (b) Naevus cells } genic melanoma.
 - (c) Melanoblasts of secondary optic vesicle giving rise to:
 - (i) Tumours of pigment epithelium of retina or ciliary body: benign and malignant neurogenic melano-epithelioma.
 - (ii) Tumours of muscle of iris: leiomyoma.
 - (iii) Tumours of pigment epithelium of iris: dictyoma.
 - (d) Melanoblasts of leptomeninges: melanoblastic meningiomata.
2. Ectodermal melanoblasts: pre-cancerous and cancerous melanosis of lids and conjunctiva.
3. Mesodermal melanoblasts of uvea: benign and malignant chromatogenic melanoma.

Fluorescein as an Agent in the Differentiation of Normal and Malignant Tissues. MOORE, G. E. (1947). *Science*, **106**, 130.

The author injected 5 ml. of 20% sodium fluorescein intravenously into patients suspected of having malignant neoplasms, and examined the tissue with an ultraviolet lamp emitting rays at about 3,600 degrees. When the interval from injection to examination was between 3 and 8 hours a difference between normal and malignant tissues was observable. In patients subjected to laparo-

tomy for gastric carcinoma, implants of tumour tissue on the peritoneal surface were readily seen, because they fluoresced with a vivid yellow colour. When the tumour tissue was more than a few mm. below the surface no fluorescence was observed, presumably because of the failure of ultraviolet light to penetrate the tissue. Of 46 neoplasms of different organs examined by this technique, 31 exhibited a high degree of fluorescence, 6 only slight fluorescence, and 9 none at all. In each case malignancy was confirmed by histological examination. Carcinomata of the colon, stomach, and breast were less likely to fluoresce, but the best results were obtained with brain tumours. With subcortical lesions the method has been of particular value. Tumour tissue taken from suspected areas by aspiration-needle biopsies was readily recognized by its exaggerated fluorescence in ultra-violet light. A source of confusion in studying fluorescence of abdominal masses is introduced by the fact that areas of oedema and cyst formation may retain the dye for many hours. *R. J. Ludford.*

Meningeal Gliomatosis. A Study of Forty-two Cases. POLMETEER, F. E., and KERNOHAN, J. W. (1947). *Arch. Neurol. Psychiat.*, Chicago, **57**, 593.

The authors have collected 42 cases of "meningeal gliomatosis" over a period of 20 years. In 47.6% of cases the primary tumour was a medulloblastoma, in 14.3% glioblastoma multiforme, in 11.9% ependymoma or ependymoblastoma, in 11.9% oligodendroglioma or oligodendroblastoma, in 7.1% astrocytoma, in 4.8% retinoblastoma, and in 2.4% pinealoma. In the 42 cases reviewed there was no instance of metastasis outside the central nervous system. The paper includes a brief review of the subject of glial heteropia, first described by Wolbach in 1907.

Involvement of the Nervous System by Malignant Lymphoma. SPARLING, H. J., ADAMS, R. D., and PARKER, F. (1947). *Medicine, Baltimore*, **26**, 285.

The authors classify malignant lymphomata into 6 types: (1) lymphocytoma, lymphocytic lymphosarcoma, and lymphatic leukaemia; (2) lymphoblastoma, lymphoblastic lymphosarcoma, and lymphatic leukaemia; (3) giant follicle lymphoma; (4) Hodgkin's disease; (5) reticulum-cell sarcoma; (6) plasmacytoma and myeloma. They report 19 cases of involvement of the central nervous system among 118 cases of lymphoma examined at the Mallory Institute of Pathology between 1930 and 1945. In all forms paraplegia due to invasion of the spinal epidural space by growth may occur, and it is the common neurological lesion in giant-celled lymphoma, Hodgkin's disease, reticulo-sarcoma, and plasmacytoma. The authors adduce evidence that the damage to the cord may be due to vascular disturbances. Hodgkin's disease and reticulosarcoma may, however, appear as intracerebral tumours. In leukaemia and lymphosarcoma there may be diffuse infiltration of the meninges and nerve roots, but the most frequent lesion is one or more cerebral haemorrhages. The authors give full clinical and pathological descriptions of the new cases and comment on those previously reported. *J. G. Greenfield.*

On the Origin of Heparin. An Examination of the Heparin Content and the Specific Cytoplasmic Particles of Neoplastic Mast Cell. OLIVER, J., BLOOM, F., and MANGIERI, C. (1947). *J. exp. med.*, **86**, 107.

The authors have estimated the heparin content of

two mast-cell tumours in dogs. The first contained 50 times, and the second 1.7 times, as much heparin, weight for weight, as normal dog's liver. The findings support the theory that the mast cells produce heparin.

The Examination of Serous Fluids by the Cell-block Technic. CHAPMAN, C. B., and WHALEN, E. J. (1947). *New Engl. J. Med.*, **237**, 215.

This is an analysis of the results of cytological examination of pleural and peritoneal exudates by the method of sectioning a "false tissue" centrifuge deposit. At the Boston City Hospital during the last 15½ years 833 samples of fluid have been so examined. The material came from 666 patients, in 102 of whom positive results for new growth were obtained. Of 114 cases in which malignant disease was found at necropsy or biopsy, cell-block preparations were positive in 47. The diagnostic criteria were rather more stringent than those often employed elsewhere. For a positive diagnosis the authors require that fully or partly formed acini or sheets composed of cells showing definite evidence of anaplasia should be present. *D. H. Collins.*

Significance of the Cell Types of the Human Islets of Langerhans in Islet Function and Diabetes Mellitus. (Die Bedeutung der Zelltypen des menschlichen Inselapparats für Inselfunktion und Diabetes mellitus.) TERBRUGGEN, A. (1947). *Klin. Wschr.*, **24**, 25, 434.

Employing a technique similar to that used in animals by Lane and Bensley, the author has examined the number of α - and β -cells in the pancreas of normal and diabetic men. There is in diabetic subjects both a relative and an absolute reduction in the number of β -cells in the islets of Langerhans and this reduction seems to be responsible for the disease. The ratio of α -cells to β -cells in normal adults has been found to be from 1:3 to 1:5. In juvenile diabetic patients (those who died before the age of 40; 8 cases) the ratio was mostly from 1:1 to 1:2 and was in no case higher than 1:3. Results in diabetic subjects over 40 (18 cases) were not so clear. Here the results are complicated by other changes in the islets, especially hyaline degeneration and sclerosis, but in islets not hyalinized and not sclerosed the same diminution of β -cells has been observed. In hyperinsulinism a relative diminution of the β -cells has also been observed; this may be explained as an adaptation. In adenomata of the islands very few α -cells are seen. The β -cells obviously do not originate from the α -cells; the latter may represent a stage of rest or be regarded as a special kind of cell. *O. Neubauer.*

The Histopathology of Acute Mumps Orchitis. GALL, E. A. (1947). *Amer. J. Path.*, **23**, 637.

During an epidemic of mumps among adult males, orchidotomy was practised for acute mumps orchitis and biopsies of testis from 75 such cases were taken, the majority within 48 hours of onset and none later than the fifth day. Necropsy material was obtained from 1 patient who died of pulmonary embolism 11 days after the onset of orchitis. Stages of degeneration and inflammation are described. Complete atrophy is unusual, although permanent focal damage may result. Owing to the interval of 11 days between onset of orchitis and death, the lesions were more intense and the processes of repair became more apparent; fibrosis and hyaliniza-

tion of the lamina propria of the affected tubules were beginning, macrophages were more numerous, and polymorphs were scarce. Several groups of tubules showed actively proliferating normal epithelium.

Specimens of epididymis revealed interstitial changes similar to those in the testis. The epithelium seemed normal, but the lumina were filled with plugs of debris coming from the damaged tubules.

Dysontogenetic Pituitary Cysts. (Pituitary Cachexia in Childhood.) BARR, H. S. (1947). *Arch. Dis. Childh.*, 22, 118.

Two cases of pituitary cachexia in childhood were due to large colloid cysts of Rathke's cleft with pressure atrophy of the anterior lobes. The designation "dysontogenetic pituitary cysts" for this type is proposed. The reasons are pointed out why the designation "tumours of Rathke's pouch" for craniopharyngiomas is considered to be a misnomer. The pituitary cachexia was associated with syringomyelia in one case and with fibrocystic dystrophy of the pancreas in the other. The possibility of a causal link between the latter and the pituitary disease is discussed.—[From the author's summary.]

Hypercalcemia and Idiopathic Hyperplasia of the Parathyroid Glands in an Infant. PRATT, E. L., GEREN, B. B., and NEUHAUSER, E. B. D. (1947). *J. Pediat.*, 30, 388.

An infant was studied from the age of 15 weeks until its death at 10 months. The leading symptoms were weakness, hypotonia, lethargy, anorexia, and malnutrition. Investigations revealed a constantly high blood calcium with low urinary calcium excretion and deficient renal function. Radiographs of bones showed some hypocalcification, and biopsy revealed fibrosis of the marrow spaces.

At necropsy there was very slight enlargement of the parathyroids, which microscopically showed lack of stroma, great cellularity, and increase in chief cells and transitional water-clear cells. Some nephrocalcinosis and a calcium plaque in the aorta were seen, but no other metastatic calcification was observed. The bones showed osteitis fibrosa. No satisfactory explanation is offered for the apparently unique association of hypercalcaemia with chief-cell hyperplasia.

N. M. Jacoby.

Myelolipoma of the Adrenals. Report of Seven Cases. GIFFEN, H. K. (1947). *Amer. J. Path.*, 23, 613.

Seven examples of heterotopic development of bone marrow in the adrenal glands are described, 4 with yellow and 3 with red marrow; all were in middle-aged or elderly people, none of whom showed significant anaemia. The cause and histogenesis of the change are obscure.

R. A. Willis.

Polycystic Disease of the Kidney. A Review. LAMBERT, P. P. (1947). *Arch. Path.*, 44, 34.

It has been proved by serial sections that the cysts in neonatal cases do not communicate with the pelvis; these patients survive for only a short time. Although the adult type is clinically so different (in that the patient often lives to middle age), it has generally been assumed that the cysts were also closed in this type. Cysts in adult cases had not been studied in serial sections because of their size, but this has now been done in 5 adult cases with unexpected results.

Cysts are classified as: (1) Glomerular cysts: these have a normal glomerular tuft and granular content. They never communicate with the pelvis in either adult or neonatal cases. (2) Tubular cysts: these have a colloid content. They communicate with the convoluted tubules or loops of Henle, and in adult cases the nephrons thus affected generally communicate with the pelvis. (3) Excretory cysts, connected with the collecting tubules. All the above may be simple or complex. (4) Cysts of the calices.

The author produces evidence that the nephrons connected with tubular and excretory cysts function normally, thus accounting for survival of these cases into middle age. The author discredits previous theories of the genesis of the disease, and it is clear that non-union of ureteric tubules and nephrons will not account for the formation of cysts which communicate with open tubules.

D. M. Pryce.

Acute Liver Necrosis in Fulminating Infectious Hepatitis.

TAYLOR, H. E. (1947). *Amer. J. clin. Path.*, 17, 314.

Four fatal cases of fulminating liver necrosis in infectious hepatitis, homologous serum jaundice, and arsenotherapy jaundice have been presented. The length of illness was 4 or 5 days. The essential lesion was an extremely rapid diffuse necrosis and disintegration of the parenchymal liver cells. No normal cells were found in the many blocks examined. There was an associated meningo-encephalitis in 2 cases.—[From the author's summary.]

The Pathology of Epidemic Hepatitis. MALLORY, T. B. (1947). *J. Amer. med. Ass.*, 134, 655.

Biopsies of liver from 160 patients in various stages of the disease, and necropsy material from 296 cases have been studied. Histological stages of the disease are described.

Studies of Gaucher Cells. (Etudes sur la "cellule de Gaucher.") FRANCO, S., and WOLMAN, M. (1947). *Schweiz. Z. Path. Bakt.*, 10, 621.

A staining method is described for the demonstration of keratin in the spleens of patients who died from Gaucher's disease. Frozen sections of formalin fixed tissue are treated with ether and acetone to remove the fat; after the sections have been exposed for 30 seconds to boiling water at pH 4 they are stained with Sudan III. The method is specific for cerebroside, and in the cases described for keratin.—[From the author's summary.]

The Cutaneous Lesions in Acute Meningococcemia. A Clinical and Pathologic Study. HILL, W. R., and KINNEY, T. D. (1947). *J. Amer. med. Ass.*, 134, 513.

This paper describes the pathogenesis of the cutaneous lesions in acute meningococcaemia, through the stages of endothelial damage, inflammatory necrosis, and thrombosis. The first is responsible for the purpuric rash sometimes proceeding to local gangrene. In the early stages histological examination may show desquamation of vascular endothelial cells, which elsewhere may exhibit phagocytosis of cocci. Invasion by polymorphonuclear leucocytes follows, many cells displaying active phagocytosis. Platelet thrombi, becoming organized in the later stages, were most commonly found in deeper vessels of the cutis, though the superficial

capillaries were also involved. The stained sweat glands were abnormally pale, their cytoplasm appearing swollen or vacuolated, the result of interference with the blood supply of the gland. The hair, muscles, and nerves showed similar degenerative changes and focal necroses were seen in subcutaneous fat. Similar vascular lesions were found in many other organs and are by no means limited to the skin. The authors suggest that the formation of thrombi may cause thrombocytopenia and thus lead to purpura. They say that in 2 cases without purpura the platelet count was normal. Other workers, however, have found normal platelet counts in patients showing a purpuric rash.

R. H. D. Short.

Transitory Diabetic Syndrome associated with Meningococcal Meningitis. FOX, M. J., KUZMA, J. F., and WASHAM, W. T. (1947). *Arch. int. Med.*, **79**, 614.

In 233 cases of meningococcal meningitis, 1 in 4 showed transient diabetes mellitus. Fortunately, if the septicaemia is well and promptly treated the diabetic syndrome subsides. In 5 cases a wrong diagnosis was made, and the patient, who was in fact suffering from meningococcal septicaemia, was deemed to be in a state of diabetic coma and treated accordingly. During such a mistaken course of treatment irreparable damage may be done to the tissues and viscera. Seventeen cases were examined at necropsy, but the findings do not sustain the contention that glycosuria in meningitis may be due to damage to the pituitary as all the viscera, especially the liver, thyroid, spleen, pancreas, and adrenals, showed damage.

G. F. Walker.

Histopathologic Changes Associated with Human Poliomyelitis. SCHEINKER, M. (1947). *Arch. Neurol. Psychiat.*, Chicago, **57**, 565.

The results of studying 6 cases of acute anterior poliomyelitis support the now generally held view that this disease of the central nervous system is not as focal as was formerly thought but can be widespread in its incidence. The author finds no direct parallelism between the neuronal destruction and the inflammatory reactions in the mesoderm. Cellular infiltration, for instance, is most intense in the medulla and midbrain, especially in the vicinity of the nucleus ambiguus, substantia nigra, and aqueduct, in all of which places neuronal destruction is slight compared with that in the anterior horns of the spinal cord. These cases, in that they exhibited massive inflammatory changes in the region of the vagal nuclei, tend to support the view that the virus may spread from the upper part of the alimentary tract to the brain through the fifth, seventh, ninth, and tenth cranial nerves.

W. H. McMenemy.

A Clinic-Pathological Report of Unusual Cases of Chronic Encephalitis. ROSANOFF, W. R. (1947). *J. Neurol. Neurosurg. Psychiat.*, **10**, 65.

Three cases of encephalitis are described. All were insidious in onset and progressive over periods varying from 4 months to 5 years. They were characterized by intense inflammatory changes widely distributed throughout the brain. Case 1 was distinguished by a particularly severe involvement of the cerebral white matter which closely resembles the "leuco-encephalite sclerosante subaigue" of van Bogaert. The second had a positive iron reaction. In the third there was the combination of diffuse and focal cystic lesions characteristic of some of the extra-European types of epidemic encephalitis.—[From the author's summary.]

Deposition of Iron in Paraventricular Areas of the Human Brain in Hemochromatosis. CAMMERMEYER, J. (1947). *J. Neuropath. exp. Neurol.*, **6**, 111.

The author studied the deposition of iron pigment in the brain in a long-standing case of haemochromatosis and compared his findings with the results of injections of vital dyes by Wislocki, King, and others. He concludes that the deposition of iron in the paraventricular areas of the brain is related to structural and functional peculiarities of the blood vessels in these areas.

J. G. Greenfield.

Studies on Typhoid Pneumonia. Communication I. Pneumonia Types in Typhoid Fever (in Russian). LAZOVSKY, Y. M., KUDRAVITSEVA, E. N., and MELNIK, E. G. (1947). *Klin. Med., Mosk.*, **25**, 35.

The authors examined 35 cases of pneumonia in typhoid fever and concluded that although 15 were of the hypostatic type, 20 showed changes which they considered specific for typhoid pneumonia and which resembled the lesions found in the alimentary canal. Whole lobes were often involved, and pneumonia was bilateral in 13 cases.

Pulmonary Vascular Lesions in Silicosis and Related Pathologic Changes. GEEVER, E. F. (1947). *Amer. J. med. Sci.*, **214**, 292.

An analysis is made of the vascular lesions in 43 unselected and consecutive cases of pulmonary silicosis. In 26 there was hypertrophy of the right ventricle attributable to the silicosis alone. Changes in the lung parenchyma are also described.

Lymphogranuloma Venereum. A Histologic Study of the Primary Lesion, Bubonulus, and Lymph Nodes in Cases Proved by Isolation of the Virus. SHELDON, W. H., and HEYMAN, A. (1947). *Amer. J. Path.*, **23**, 653.

The authors suggest that the histological appearances of biopsy specimens are sufficiently typical to enable diagnosis to be made with reasonable certainty. Their observations are based on examination of material obtained from 12 cases of the disease in which the diagnosis had been confirmed by large numbers of tests, both clinical and laboratory. In 8 of these cases absolute proof was obtained by isolation and identification of the virus from material derived from the lesions.

The earliest lesion is the formation of foci of large mononuclear cells in the adventitia of the small blood vessels or, in the case of the lymph nodes, in the cortex just beneath the marginal sinus. The proliferation proceeds to involve all the coats of the blood vessels and eventually obliterates their lamina by compression, and without the vascular endothelial proliferation or thrombosis usually stated to take place. Similar changes affect the sinuses and small capillaries in the lymph nodes, so that small granulomata are produced. Their centres undergo ischaemic necrosis and numerous polymorphonuclear leucocytes appear. Thus small abscesses are formed which by fusion form larger ones and, if the lesion be near the skin, as in the case of the primary lesion particularly, the epidermis breaks down and an ulcer is formed. Peripherally the abscess is surrounded by a ring of mononuclear cells, outside which a few giant cells may be found together with plasma cells and

lymphocytes in small numbers and a very occasional eosinophil leucocyte. Fibrosis was scarcely noticeable in the acute stages, and was present only to a small degree in the node removed from the patient in whom the disease had been cured. The authors found the eosinophilic intracytoplasmic inclusions, or "gamma bodies," only after necrosis had taken place, and believe that they are merely debris phagocytosed by the mononuclear cells and bear no relation to the virus of lymphogranuloma. No elementary bodies were found.

Temporal or Giant-Cell Arteritis. ROBERTSON, K. (1947). *Brit. med. J.*, 2, 168.

Details are given of 4 cases of temporal arteritis met with in a period of a little more than a year, 2 of which were proven by biopsy. The patients were aged 65 (2), 73, and 65. In 3 cases the erythrocyte sedimentation rate was high for a considerable time. The blood urea is normal. Progressive secondary anaemia and mild leucocytosis were present. The disease is self-limited and rarely fatal, and treatment is entirely symptomatic. It differs from periarteritis nodosa in that the latter attacks younger people; the visceral vessels in periarteritis nodosa suffer severely, the blood urea is almost always raised, and the mortality from the disease is high.

S. Oram.

Ostropetrosis : Albers-Schonberg Disease (Marble Bones). Report of a Case and Morphologic Study. PINES, B., and LEDERER, M. (1947). *Amer. J. Path.*, 23, 755.

The authors review the literature and present details of the necropsy and histology of the bones in an infant. The original paper should be consulted.

Nodular Inflammatory and Degenerative Lesions of Muscles from Four Hundred and Fifty Autopsies. CLAWSON, B. J., NOBLE, J. F., and LUFKIN, N. H. (1947). *Arch. Path.*, 43, 579.

In small biopsies of skeletal muscle in rheumatoid arthritis Steiner *et al.* found chronic inflammatory foci composed mainly of lymphocytes in each of 9 cases. They also noted various degenerative lesions in the muscle fibres. They found no similar lesions in a control series of 196 necropsy specimens, and considered them specific and indicative of an infective aetiology. The present authors found lymphocytic foci in 39% and degenerative

lesions in 25% of 44 clinical cases of rheumatoid arthritis. They noted lymphocytic foci in 26% and degenerative lesions in 42% of 450 controls. The incidence increased with age. The muscles most commonly affected were the diaphragm and sacro-spinalis. Although more common in association with rheumatoid arthritis, the lymphocytic infiltrations are not specific.

D. M. Pryce.

Deaths Following Use of Abortifacient Paste. Report of Two Cases. KULKA, W. (1947). *Amer. J. clin. Path.*, 17, 723.

The necropsy findings are described in 2 patients in whom death followed the injection of an abortifacient paste. In 1, death occurred 2½ months after the attempted abortion. Necrosis of the uterine wall, parametrial abscesses, and generalized peritonitis were found. The second patient died suddenly of pulmonary embolism within a few hours after an attempt to cause abortion by intrauterine injection of the paste. The emboli were composed of fatty material and particles from the damaged chorionic villi. There was necrosis of some of the villi and vessels of the uterine wall but no apparent changes in the embryo or the embryonic sac. The presence of a pasty material was demonstrated by the technique used as a routine for the demonstration of fat but the staining reaction was different from that of fat.—[Author's summary.]

Sudden Deaths of Infants Allegedly Due to Mechanical Suffocation. WERNE, J., and GARROW, I. (1947). *Amer. J. publ. Hlth*, 37, 675.

During the past 15 years 167 consecutive cases of infants ordinarily certified under the heading of "accidental mechanical suffocation" have been investigated by the authors. In no case did they find that an infant had been suffocated. In 43 cases necropsy alone was sufficient to determine that death was due to a natural cause, mainly upper respiratory tract infection. In the remaining 124 cases histological study showed that fulminating respiratory disease was the most likely explanation for death in all except 15, in 6 of which no tissues were available for microscopical examination. An examination was made of 67 other infants who had died suddenly in circumstances in which there could be no possible allegation of smothering. In these, acute respiratory disease was the usual cause of death.