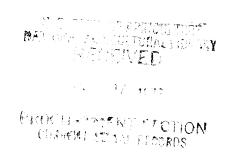
SRITISH MEDICAL JOURNAL



SATURDAY 30 DECEMBER 1972

LEADING ARTICLES

Giddiness page 743 Defeating the Breathalyser page 744 Virus and Bacteria in Influenza page 745 Hazardous Wastes page 746 Bad Food Guide page 747 A Look at Practice

Organization page 747 Fluoride and Osteoporosis page 748

PAPERS AND ORIGINALS

Plasma Renin Activity and Blood Pressure in 89 Patients Receiving Maintenance Haemodialysis Therapy	
P. W. CRASWELL, V. M. HIRD, P. A. JUDD, R. A. BAILLOD, Z. VARGHESE, J. F. MOORHEAD	749
Cell-mediated Immunity in Patients Positive for Hepatitis-associated Antigen F. J. DUDLEY, V. GIUSTINO, S. SHERLOCK	754
Permanent Neurological Sequelae Despite Haemodialysis for Lithium Intoxication	
B. VON HARTITZSCH, N. A. HOENICH, R. J. LEIGH, R. WILKINSON, T. H. FROST, A. WEDDEL, G. A. POSEN	757
Dyslexia as Cause of Psychiatric Disorder in Adults W. A. SAUNDERS, M. G. BARKER	759
Genital Yeast Infections J. D. ORIEL, BETTY M. PARTRIDGE, MAIRE J. DENNY, J. C. COLEMAN	761
Pulmonary Contusion in Children due to Rubber Bullet Injuries J. SHAW	764
Voluntary Visitors to the Elderly Deaf DENNIS CLARK	766
Alpha-fetoprotein in Abortion MARKKU SEPPÄLÄ, ERKKI RUOSLAHTI	769
Fatal Paralytic Ileus due to Strongyloidiasis J. B. COOKSON, R. D. MONTGOMERY, H. V. MORGAN, R. W. TUDOR	771

MEDICAL PRACTICE

Clinicopathological Conference: Heart Failure in a Middle-aged Woman	773
Controlled Trial of Treatment for Cerebral Concussion	
MIKAEL RELANDER, HENRY TROUPP, G. AF. BJÖRKESTEN	777
Second Opinion, Please: Acute Polyarthritis S. S. BEDI, G. N. MARSH	779
Working with the Family Doctor: A Programme for Mental Health DAVID ANDERSON	781
Monitoring Pacemaker in Treatment of Acute Heart Block	784
Any Questions?	785
Personal View D. EVERLEY	787
CORRESPONDENCE—List of Contents	

ASTM CODEN: BMJOAE 4 (5843) 743-804 (1972)

Epidemiology—An Outbreak of Food-poisoning 800 **Medicolegal**—Working of the Mental Health Act 800

Parliament—Call for Free Contraceptives802Royal Commission on Compensation for Personal Injury802Medical News803

Association Notices..... 803

OBITUARY NOTICES..... 797

BOOK REVIEWS...... 798

CORRESPONDENCE

Hepatitis Hazard in Clinical Laboratories
N. R. Grist, f.r.c.p.ed., f.r.c.path788
Changes in Lung Capillary Permeability
in Renal Failure
P. D. Snashall, M.R.C.P788
Gastric Ulcer after Highly Selective
Vagotomy
R. Hall, F.R.C.S
AHF-Related Protein and Precipitation
Reactions
H. Ekert, and others789
Trapped Nerves
R. Cilento, F.R.C.S
Mixed Connective Tissue Disease
B. I. Hoffbrand, D.M790
Poisoning Treatment Centres
A. A. H. Lawson, F.R.C.P.ED., and I. Mitchell,
M.R.C.P
Herpes Simplex Encephalitis
L. S. Illis, M.D., and Flora M. Taylor790
Causes of Failure in Antibiotic Treatment
A. V. Pollock, F.R.C.S.; Jacqueline S. Cargill,
M.B
Infertility after the Pill
B. Eton, F.R.C.O.G
General Knowledge of Cancer
O. A. N. Husain, F.R.C. PATH

Radioactive Bromide Partition Test
R. J. Fallon, M.D794
Temperature Change and Multiple Sclerosis
W. I. McDonald, F.R.A.C.P., and T. A. Sears,
B.SC., PH.D794
Drugs in Infertility
I. D. Cooke, M.R.C.O.G794
Intramuscular Injection and Coagulation
Defects
T. Dyk, M.D795
Asthma Deaths
H. G. J. Herxheimer, M.D795
Fracture of Lippes Loop
J. R. Lang, M.B
Radiology of Swallowed Earthworm
T. Healey, D.M.R.D795 Trichuris trichiuria Infestation
M. F. J. Lowry, M.R.C.P795
Acute Dystonia due to Phenothiazines
X. G. Okojie, F.I.C.S796
Thrombus Formation in Dialysis Membranes
E. N. Wardle, M.R.C.P796
Reorganization of the B.M.A.
W. E. Lewis, M.R.C.G.P796
Plight of Uruguayan Doctors
W. Norman-Taylor, M.D796

Hepatitis Hazard in Clinical Laboratories

SIR,—Further to your leading article on hepatitis hazards in regular haemodialysis (2 December, p. 501) it may be useful to report some preliminary findings from the survey of laboratory staff being carried out under the auspices of the Association of Clinical Pathologists. During the period 1964-70 biochemical technicians had the highest number of cases of hepatitis and the highest attack rate, contrasting sharply with 1971, when no case was reported in this group-conceivably because of their increased awareness and improved technique and facilities. The 31 cases among staff of all types reported in 1970 and 1971 were scattered through the country and showed an even sex distribution, with 58% below the age of 30 years. Encouragingly, none was fatal and only eight required hospital ad-

mission—five of 11 Australia-antigen-positive, one of 10 Australia-antigen-negative, and two of nine untested cases.

A more detailed summary was recently presented at the Royal Society of Medicine, and in due course a more complete report of this continuing survey will be published. Only with the co-operation of numerous members of the A.C.P. has this study been made possible, and I am also grateful for the assistance given by Mrs. M. E. Martin of the Medical Records Department of Glasgow Northern Hospitals and by my secretary, Miss E. H. Simpson.—I am, etc.,

NORMAN R. GRIST

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Changes in Lung Capillary Permeability in Kenal Failure

SIR,—Dr. W. A. Crosbie and others (18 November, p. 388) have shown that there is increased pulmonary capillary permeability to sodium in the pulmonary oedema of renal failure. In their discussion, and in the title of their paper, they imply that this change in permeability is in some way a particular feature of uraemia, albeit a feature that is seen only when the uraemic lung becomes oedematous. In doing so they ignore the work of Bauman et al.,1 who showed an increase in lung capillary sodium permeability in the pulmonary oedema of heart failure, and of Lilienfield et al.,2 who demonstrated an increase in pulmonary capillary thiocyanate permeability in "pulmonary congestion" of cardiac origin. It would seem from these studies that pulmonary capillary permeability increases in pulmonary oedema

associated with conditions other than renal failure. It is very surprising that the authors have not studied patients in pulmonary oedema with normal renal function before attributing permeability changes to unemic

attributing permeability changes to uraemia. Chinard³ has discussed the pulmonary capillary barrier to diffusion of small molecules (such as urea or thiocyanate) and ions. He presents evidence that the permeability of the barrier (which he believes to be the basement membrane and interstitial space) depends upon its hydration. In pulmonary oedema the gel matrix of the basement membrane and interstitium would imbibe water, swell, and become more permeable. Although this would mainly affect the passage of small particles, an increased protein permeability might be expected if the change of hydration was extreme.

If raised pulmonary capillary sodium permeability were a feature of uraemia per se, then one would expect that the lung capillaries of some non-oedematous dialysis patients would show this excessive permeability. However, non-oedematous patients with normal permeability were not found in Dr. Crosbie's study. One patient in whom three separate estimations were made showed a fall of "permeability fraction" as his oedema cleared. If the increased sodium permeability was a consequence of renal failure, then one would not expect to see the permeability return to normal in this way.

In their discussion Dr. Crosbie and his colleagues state that the capillary pressure in the lung and the plasma protein osmotic pressure may be normal in pulmonary oedema of renal failure. They opine that "a change in the permeability of the capillary wall would provide an alternative explanation" for the oedema. The importance of the permeability changes must not be exaggerated, particularly when one remembers that the permeability change could not be demonstrated in the non-oedematous state. Moreover, an increased permeability to ions and small molecules cannot of itself cause oedema in the face of normal capillary hydrostatic and osmotic pressures. Increased capillary permeability is important in oedema formation when it allows plasma proteins to cross the capillary wall. This study has shown no increase in protein permeability and therefore has added little to our knowledge of the aetiology of the pulmonary oedema of renal failure.—I am, etc.,

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Bauman, A., Rothschild, M. A., Yalow, R. S., and Berson, S. A., Journal of Applied Physiology, 1957, 11, 353-361.