



Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.

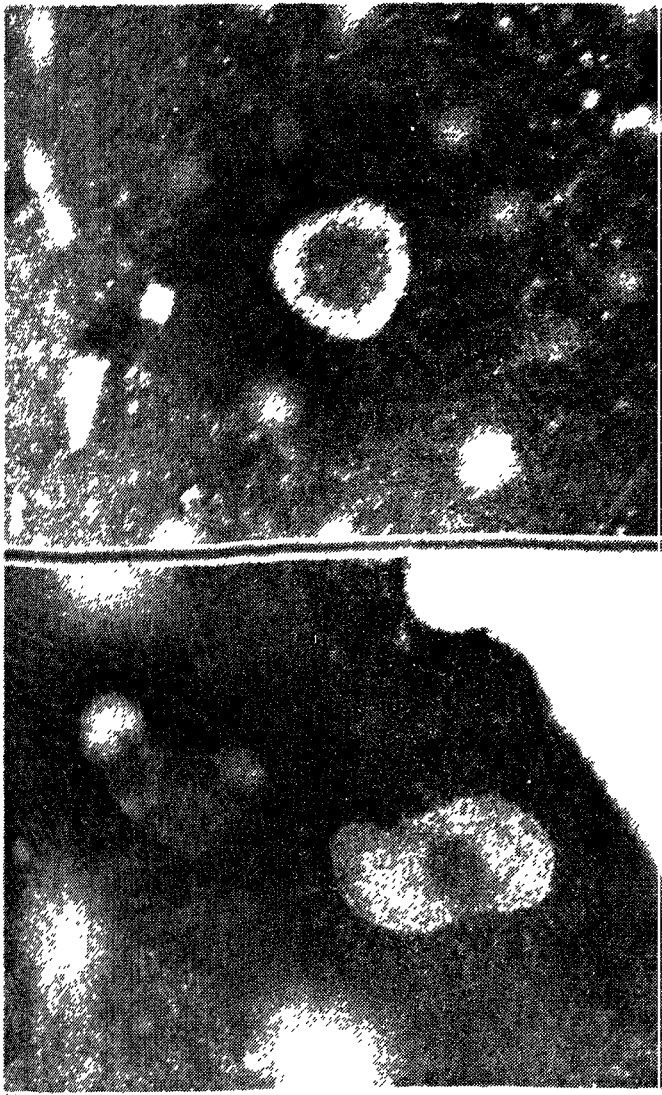
cover all cephalosporins. There is evidence that not all cephalosporins interact with frusemide.³

Medical Department,
Glaxo Laboratories,
Greenford, Middlesex VB6 0HE

R. T. GARRETT
C. H. DASH

CORONAVIRUSES IN TRAINING CENTRE FOR INTELLECTUALLY RETARDED

SIR,—There have been few reports of coronaviruses detected by electron microscopy in human faeces although many laboratories are now examining faeces.⁴ We have found coronavirus-like particles in faeces of 14 of 60 residents sampled in a training centre for the intellectually retarded in Adelaide. Our index case, a 6-year-old boy from the centre, was admitted to hospital with gastroenteritis; *Shigella sonnei* was grown, but electron microscopy revealed coronavirus-like particles as well (figure).



Coronavirus-like particles from faeces.
(x 120 000.)

Most of the residents of this centre live in groups of approximately 30 in modern houses which each contain single and shared bedrooms with communal dining, toilet, and recreational facilities. There is mixing of sexes and ages to provide a family-like atmosphere. The centre has an excellent record of freedom from gastroenteritis. However, the house in which the index patients reside had reported sporadic cases of

diarrhoea in which no bacterial pathogens were isolated. Examination by electron microscopy of faeces from the 32 residents of this house revealed similar coronavirus-like particles in 8. Residents of a second house were then examined, and 6 of 28 were also shown to be excreting coronavirus-like particles. The virus has been demonstrated in the index case on three of four occasions over a period of 3 months. Four or five other excretors were still shedding virus when sampled 2–4 weeks later. Six residents in whom virus was not shown on initial examination were also resampled. Of these, five remained negative, and virus was seen in the other. The ages of those shedding virus ranged from 6 years to 23 years. The sexes of those sampled were equally divided and virus was seen in ten males and four females.

We have previously noted similar virus particles in the faeces of Australian aborigine infants during an outbreak of gastroenteritis in which the evidence pointed to a rotavirus aetiology. There is one aborigine girl resident in the survey houses but faeces from her were negative on two occasions.

Caul et al.⁵ have recorded coronavirus-like particles in faeces during an explosive outbreak of gastroenteritis among Service apprentices. Mathan et al.⁶ have also reported similar particles in faeces of healthy adults and children in Vellore. No apparent association with disease has been established in our series. The finding of persistence of coronavirus-like particles in faeces of residents in this centre suggest that this virus may become endemic in certain closed communities or in crowded societies with lower standards of hygiene.

B. MOORE
P. LEE
M. HEWISH
B. DIXON
T. MUKHERJEE

Institute of Medical and Veterinary Science,
Adelaide, South Australia 5000

HISTIOCYTIC MEDULLARY RETICULOSIS (ROBB-SMITH'S DISEASE) IN RENAL-TRANSPLANT PATIENT

SIR,—The incidence of malignant neoplasms in organ-transplant recipients is increased;⁷ this could be related to the continued immunosuppression or to the antigenic stimulus of the grafted organ. Malignant lymphomas, mainly those of histiocytic nature, are especially frequent in transplant patients. An incidence 150 times higher than normal has been reported.⁸ Cases described as "non-classified lymphomas" or "lymphoreticular malignancy" have also been published.⁷

We have seen a patient who, 3 years after renal transplantation, developed a histiocytic medullary reticulosis (Robb-Smith's disease), a condition which has not been yet described in these patients. He was 30 years old, with advanced membranoproliferative glomerulonephritis. In August, 1972, he was given a kidney from a healthy HLA-identical sister. He remained in good general health and tolerated the graft until February, 1976, when fever, asthenia, anorexia, and slight anaemia appeared. Physical examination was at that time negative but a radiological splenomegaly was suspected. Tests for infection were negative. In March pancytopenia together with an enlarged lymph-node in the left laterocervical region was found. Biopsy revealed partial loss of the node structure and infiltration, predominantly of sinus pattern, by moderately atypical histiocytes with cytophagocytosis (histiocytic medullary reticulosis).

The smear of a bone-marrow aspiration and a bone-marrow biopsy confirmed the diagnosis. Polychemotherapy was started, but his general condition deteriorated and jaundice de-

5. Caul, E. O., Paver, W. K., Clarke, S. K. R. *Lancet*, 1975, i, 1192.

6. Mathan, M., Mathan, V. I., Swaninathan, S. D., Yesudoss, S., Baker, S. J. *ibid.* p. 1068.

7. Penn, I. *Malignant Tumors in Organ Transplant Recipients*. New York, 1970.

8. Hoover, R., Fraumeni, J. F. *Lancet*, 1973, ii, 55.

3. Linton, A. L., and others *Can. med. Ass. J.* 1972, **107**, 414

4. Flewett, T. H., Boxall, E. *Clin. Gastroent.* 1976, **5**, no 2