specialization and peculiarity of pathogenic action of these tumour-inciting viruses.

The foregoing results might presumably be related to the hæmorrhagic disease as caused by the Rous sarcoma in chick embryos[3] being associated with vascular affections.

It is likewise possible that the mechanism of cyst formation approaches to a certain extent normal morphogenetic processes in animals. The morphogenetic correlations of the terminating period of embryonic development may keep under a certain control the cells reproducing under the influence of the virus of the Rous sarcoma, and this may be one of the causes of cyst development. The question is thus raised as to the possible role of viruses in the genesis of some kinds of cysts in humans.

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Treatment of Cancer in Dogs by Intravenous Methylene Blue

The appearance of a report by Holman[1] on the apparently destructive effect of orally administered hydrogen peroxide on rat tumours has prompted me to set on record my own experiences.

Since 1941 numerous cases of neoplasia in dogs have been brought to my small-animal clinic, often in advanced stages of the disease. Generally, biopsies were performed and the nature of the tumour established histologically. Standard treatment involved the intravenous administration of a 2 per cent aqueous solution of methylene blue in doses of 2–10 c.c., repeated on alternate days or at weekly intervals. When practicable, the whole or greater part of the primary growth was removed surgically.

Methylene blue treatment appeared to be without effect on the slowly growing tumours and on carcinomas, but gave encouraging results in the rapidly growing sarcomas, particularly where most of the primary growth could be removed. In such cases the use of the dye was followed by necrosis and sloughing of remaining tumour tissue and complete healing of the wound. A number of cases are in good health and have survived without apparent recurrence of the tumour for up to five years, although at the time of treatment the growth was doubling itself in size every fortnight. Thus, there is evidence that early metastatic conditions may be successfully treated, but where internal organs are extensively affected, dye administration is prone to produce an acute toxæmic state.

There seems to be no doubt that the intravenous use of methylene blue can be a most valuable adjunct to surgery in the destruction of primary sarcomatous growths, and perhaps also of early secondary growths, but the mechanism of its action can only be surmised. In the light of Holman's observations it seems possible that methylene blue, which can function as a hydrogen acceptor, may interfere with the catalase–hydrogen peroxide system and that tumour cells are more sensitive to this kind of metabolic disturbance than normal tissue cells. I do not, of course, claim that methylene blue is necessarily the most effective agent for achieving this effect, but hope that my experience may have helped to identify a weak link in the metabolic processes of the tumour cell and may arouse the interest of investigators better equipped to attack this problem.

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Attempted Control of Ectromelia in a Mouse-breeding Colony

A review of intercurrent ectromelia infection in mouse colonies in Great Britain has been made by Tuffery[1]. During April 1955 a virulent form of the disease became manifest among all three main strains, *R* III, *A* and *CBA*, bred in this laboratory. The establishment and growth of transplantable tumours *in vivo* and *in vitro* concurrently deteriorated, and a connexion with the outbreak of the disease was suspected. In consequence, a programme of vaccination with calf lymph was instituted, as suggested by Lane-Petter[2]. This communication records the results of this procedure carried out over a period of two years.

A satisfactory technique was scarification of a small region on the dorsal surface of the tail with a sterile scalpel dipped in calf-lymph vaccine—diluted five times with McIlvaine's citric acid phosphate buffer at *p*H 7·0 at a concentration of one part to forty-six of distilled water. The vaccinated mice were checked after six days for the typical scab and swelling denoting a positive reactor to the vaccinia virus.

Initially all mice in the colony were vaccinated, but owing to the demands of experimental programmes it was not possible to cull all negative reactors. Breeding mice were replaced as soon as possible by positive reactors and all negative reactors were culled when a sufficient number of positive reactors became available for experimental purposes. All five-week-old mice have now been vaccinated for a period of two years. Fig. 1 illustrates the average monthly

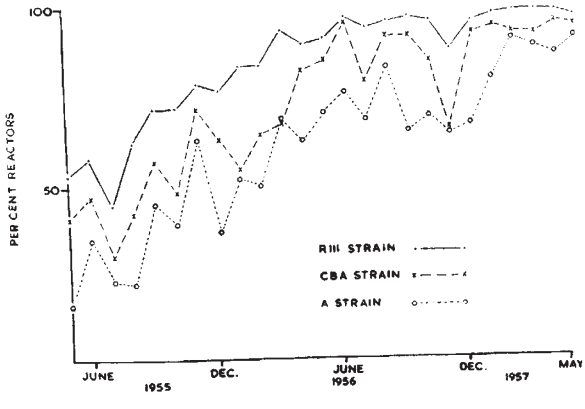

Fig. 1

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