

one of the following methods: toluidine blue, New methylene blue, diazo-coupling with Garnet GBC salt or fast red TR at pH 9.2, treating with 2:6-dibromoquinonechloroimide (indophenol reaction<sup>5</sup>) or with Schmorl's ferri-ferricyanide mixture<sup>6</sup>. The most sensitive histochemical method, though not entirely specific for 5-hydroxytryptamine, was the Schmorl reaction applied to formol-calcium-fixed sections. However, it was often possible to apply more than one technique to the same section and so demonstrate convincingly that the specific staining reactions, described below, do occur in mast cells and not in other types of dermal cells with cytoplasmic granules. The results, which will be published in detail elsewhere, are summarized in Table 1. The methods referred to, except the chromaffin reaction, were all performed on formol-calcium fixed material.

The above findings, together with the results of direct assay (Cass and Riley, unpublished work), indicate that 5-hydroxytryptamine is concentrated in the mast cell granules. The number of positive cells increases during the induction period. A strongly positive reaction is most commonly seen in mast cells at the base of papillomas (Figs. 1 and 2), though a positive mast cell is occasionally seen elsewhere in the treated dermis. It is thus clear that the high level of 5-hydroxytryptamine in precancerous mouse skin is due not only to an increase in the number of mast cells in the area but also to a progressive increase in content of 5-hydroxytryptamine in certain of these cells.

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host was a multiparous mother approximately six months of age. The neoplasm was situated between the muscle layers of the right sternohyoides and sterno-cephalicus muscles and the skin. It was approximately 1 c.c. in volume. This tumour has been designated H-7. An attempt was made to transplant it into the same strain of mouse as the host. The neoplasm was excised and macerated in a sterile mortar, adding an equal amount of normal sterile physiological saline. An injection of 0.1 ml. of the suspension was made into the subcutaneous tissues of the right hind leg of 5 male and 5 female mice. A satisfactory growth was obtained in 6 of the 10 mice of the first generation. At eight weeks tumour tissue was removed from these mice for a second transplantation using aseptic technique. Suspensions of the first-generation tumour found to be microbiologically sterile were injected into 16 male and female mice of the same strain. The growth-rate of the second generation tumour was increased and the tumour-take was 100 per cent. The tumour was removed at six weeks for resuspension and injection into the third generation.

Histologically the tumour presented the classical picture of osteogenic sarcoma with abundant bone formation. It is apparently as difficult to determine the exact site of origin of osteogenic sarcomas in animals as in man. The primary tumour in this case did not seem to have grossly an intimate fusion with bone. For this reason, the actual site of origin of the tumour is uncertain. Studies are at present being made of the cytology, histology and enzymatic characteristics of H-7 as well as its transplantability in homogeneous and heterogeneous host animals, detailed results of which will be published later.

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### A Transplantable Spontaneous Osteogenic Sarcoma observed in the Muscle Tissue of an Albino Mouse

OSTEOGENIC sarcomas attached to bone tissue have been reported in animals of different species. In 1936, Brues<sup>1</sup> described a case of spontaneous osteogenic sarcoma in the jaw of a three-year-old grey rabbit. Barrett *et al.* reported an osteogenic sarcoma attached to the left femur of a C3H female mouse<sup>2</sup>. Osteogenic sarcomas have also been induced by radioisotopes such as radium-226, strontium-90, calcium-45 (ref. 3) and strontium-89 (ref. 4). One case of osteogenic neoplasm arising from muscle tissue has been reported in man<sup>5</sup>. This tumour found in the thigh muscle had developed over a period of ten years and was believed to have followed an abscess in the muscle.

The tumour to be described was found in the soft tissue of the lateral neck region of a full-grown female mouse from our breeding colony. This colony was derived from CF1 mice of Carworth Farms. The

### Treatment of *Leishmania donovani* Infections with Surface-active Agents

'TRITON W.R. 1339', an arylalkyl polyoxyethylene ether of phenol, prepared by Rohm and Haas Co., Philadelphia, is a non-toxic surface-active agent, and was shown to exert a suppressive effect in experimental tuberculosis of mice<sup>1</sup>. 'Macrocydon' is the polyoxyethylene ether containing on average 12.5 ethylene oxide units per chain, formed by reaction of ethylene oxide with a macrocyclic phenol and possesses similar antituberculous activity<sup>2</sup>.

In view of these favourable results obtained, it appeared that the same drugs might be of value in treating other infections, such as kala-azar, in which development of the infecting agent also occurs in the white cells of the host.

Twenty golden hamsters were infected intraperitoneally with a strain of *Leishmania donovani* isolated from an Indian seaman and afterwards maintained by passage in these animals in which the