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the mucosal surface of the intestine with physiological saline, whereas the latter phase was almost unaffected.

4) Intra-venous administration of *p*-ABA produced an effect similar to the latter phase; an increase in pancreatic juice with a transient slight increase in protein output. A similar effect was also observed after the intra-intestinal administration of diluted HCl.

5) Since the initial phase resembles the known effect caused by the intra-venous administration of cholecystokinin-pancreozymin (CCK-PZ), it may be due to an increase in CCK-PZ release from a sort of intestinal endocrine cells. Since the latter phase, which resembles the known effect of secretin, was also produced by intra-venous administration of *p*-ABA, it seems to be due to stimulation of the exocrine pancreatic cells.

6) On these and other results, the mechanism of the CCK-PZ-like effect caused by TIs is discussed in connection with the "negative feedback hypothesis" proposed by GREEN & LYMAN (1972).

PATHOLOGIC DIFFERENTIATION BETWEEN LYMPHOID LEUKOSIS AND MAREK'S DISEASE IN CHICKENS LIGHT AND ELECTRON MICROSCOPIC OBSERVATIONS

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Light and electron microscopic observations were conducted in order to clarify the characteristics of the lesions of lymphoid leukemia (LL) and Marek's disease (MD). The materials investigated were collected from culled chickens (field cases) with visible solid tumors in the liver and the other visceral organs. For histopathological investigation, 26 cases of MD and 14 cases of LL were selected. Diagnosis of MD was based on the findings reported by FUJIMOTO et al. (1971), and that of LL was conducted by comparing the lesions found in chickens (5 cases) inoculated experimentally with avian leukemia virus. Three cases of LL and 7 cases of MD were also investigated electron-microscopically.

The tumors of LL in the various visceral organs and tissues were generally composed of a homogeneous population of either hemocytoblastic lymphoid cells or lymphoblastic lymphoid cells. The hemocytoblastic lymphoid cells were characterized by a homogeneous distribution of polyribosomes in the cytoplasm and the presence of giant nucleoli. The size of the lymphoblastic lymphoid cells

was smaller than that of the hemocytoblastic lymphoid cells. Distinct lymphoid tumors were frequently observed in the bursa of Fabricius, bone marrow, liver, spleen, kidneys and gonads. No significant lesions were seen in the nervous system. It appeared that the pathogenesis of LL is morphologically closely related to the bursa-dependent lymphoid system.

In the lesions of MD, neural involvement was recognized in all cases examined and the lymphoid tumors were extensively distributed throughout the various organs and tissues. In the lymphoid tumors of MD, the author recognized a new type of lesion (T_{II+III} type) (relatively undifferentiated type), in addition to the T_I , T_{II} and T_{III} type lesions named by FUJIMOTO et al. (1971). The T_{II+III} type lesion was an intermediate one between the T_{II} and T_{III} type lesions, and consisted of pleomorphic lymphoid cells varying in size and maturity (T_{II} type lesion) and undifferentiated reticulum cells. The T_{III} type lesion (extremely undifferentiated type) consisted of predominantly undifferentiated reticulum cells. Ultrastructures of T_{II+III} and T_{III} type lesions which had not been reported are presented. Electron-microscopically the undifferentiated reticulum cells were considered as intermediate cells between undifferentiated lymphoid cells and reticulum cells.

**AN ATTEMPT TO IDENTIFY PUTATIVE NEUROTRANSMITTER
SUBSTANCE RELEASED FROM THE NON-ADRENERGIC
INHIBITORY FIBERS IN THE VAGAL SUPPLY TO
THE GUINEA-PIG STOMACH**

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The main purpose of this work is to investigate whether ATP or related compounds would be released following the stimulation of vagal non-adrenergic inhibitory innervation to the stomach.

Isolated preparations of guinea-pig stomach-vagus nerves were perfused with a nutrient medium via the coeliac artery. Purine and pyrimidine compounds in the perfusate were analyzed by means of paperchromatography.

The results obtained are summarized as follows.

1) Hypoxanthine and uridine: a trace of xanthine and adenosine and two other non-adenine compounds were detected in the perfusate, which had been recycled for thirty minutes. In addition to these materials, inosine was found