tained in feline renal cells appeared to be constant between the 5th and 10th passage for those tested. Both strains of VS virus multiplied initially with a titer of $10^{-5}$ but decreased considerably between the 5th and 20th serial passage.

Although the viruses in Group 2 elicited an early CPE in the cultures, they failed to multiply. During the early passages, intranuclear inclusion bodies were demonstrated in cultures infected with the viruses of canine hepatitis and with adeno 3 and 7. This behavior of these 3 viruses is another similarity between canine hepatitis virus and the adenovirus group. Although parainfluenza III (SF-4) virus did not elicit a demonstrable cytopathogenic change in the unstained cultures, both cytoplasmic and intranuclear inclusions were observed in stained preparations on the first passage.

The viruses in Group 3 did not produce a cytopathogenic effect in the feline renal cells, and infective virus could not be demonstrated when the fluid was transferred to susceptible cell cultures.

Our results with the human enteroviruses agree with previously reported data(5), except that cytopathic changes were present in early passages with Coxsackie B-1 through B-5.

*Summary.* The susceptibility of primary feline renal cell cultures to 24 viruses is reported. Of these, infectious bovine rhinotracheitis, vesicular stomatitis, equine abortion, vaccinia, herpes, Sendai, ECHO 10, and adenovirus 4 were shown to produce marked cytopathic effects with multiplication. Canine hepatitis virus, Coxsackie B-1 through B-5, adeno 3 and 7, and parainfluenza III (SF-4) were cytopathogenic for one or more passages but did not multiply. The polioviruses, Newcastle disease, ECHO 4, and Coxsackie A-9 had no cytopathogenic effect on the cell, and there was no evidence of viral multiplication.

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## Acid Hematein Staining of Uterine Neoplastic Tissues.* (26397)

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A cytochemical method for staining phospholipids with acid hematein has been developed(1,2). Using this method to examine normal and neoplastic tissues of mice, rats, and human beings, Hori noted that non-neoplastic cells generally contain acid-hematein-positive substance in varying amounts, whereas solid tumors do not(3,4,5). The reaction also becomes less intensive in liver cells of rats during azo dye carcinogenesis (6) and of mice bearing transplanted tumors (7). The present paper deals with the reaction manifested by non-neoplastic and neoplastic cells of the human uterus.

*Materials and methods.* Uterine tissue specimens were obtained from 18 patients by the conventional biopsy method. They included 2 non-neoplastic cases, 12 squamous cell carcinomas, and 4 myomas. After being fixed with a formol-calcium or formol-calcium-cadmium solution for 6 hours, a portion of each tissue specimen was subjected to the acid hematein test as described in Hori's re-

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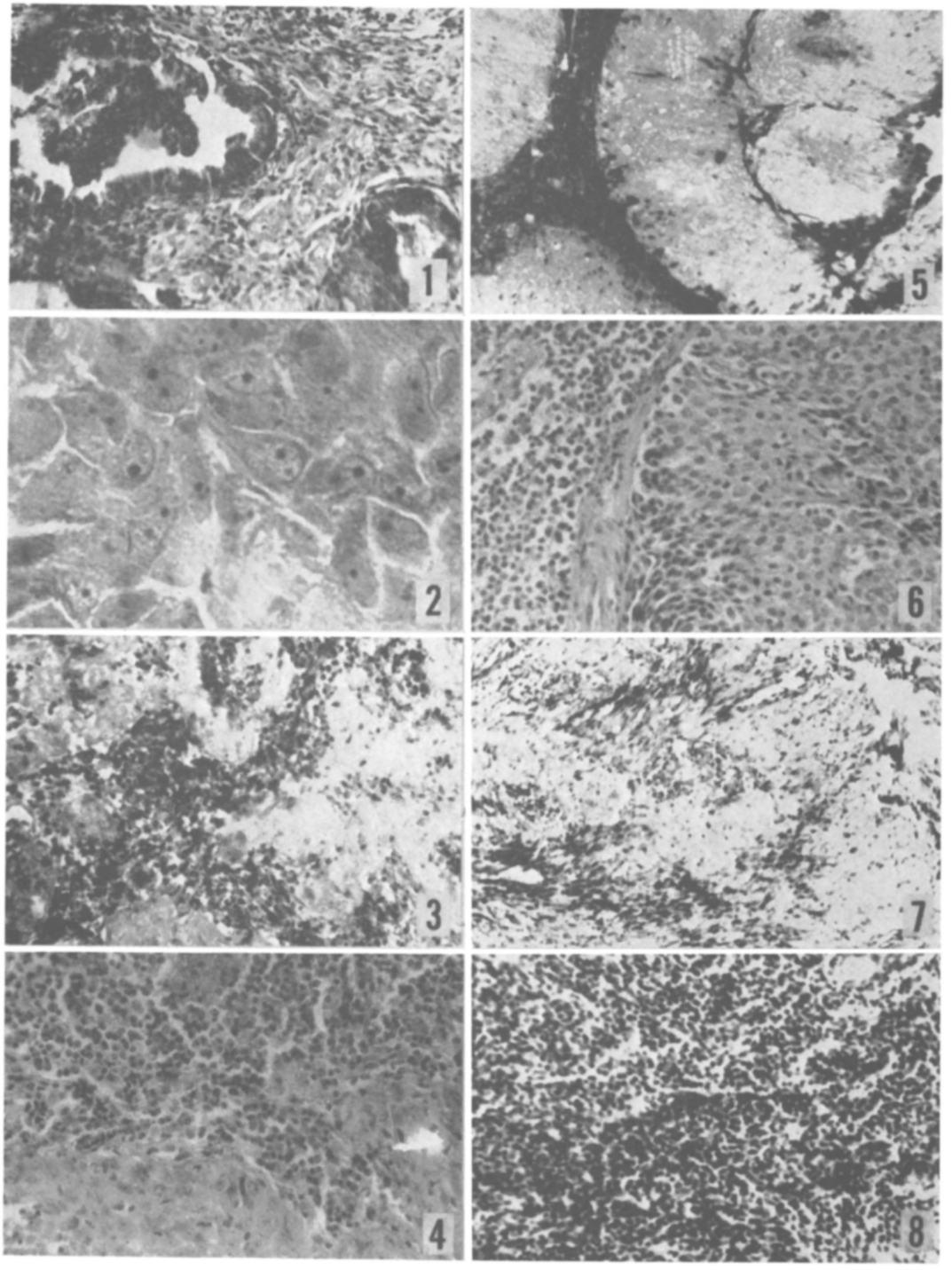


FIG. 1. Endometrium stained by acid hematein method. Note definitely positive result in epithelial cells (×150).

FIG. 2, 3, 5, 7. Uterine epithelioma stained by the acid hematein method. Note negative reaction in neoplastic cells. (Fig. 2, ×700; Fig. 3, 5, 7, ×150.)

FIG. 4, 6, 8. Hematoxylin-eosin preparations made from the same specimens used for those of Fig. 3, 5, and 7, showing tissue structures for comparison (×150).

ports(3), while the other portion was used for hematoxylin-eosin (HE) staining.

*Results.* Histological examinations of 18 HE preparations were carried out to confirm diagnosis. Two non-neoplastic specimens were found to be the myometrium and mucous membrane, demonstrating no atypical elements. Twelve specimens were epitheliomas, including 2 undifferentiated ones and 10 relatively differentiated ones. The remaining 4 cases were myomas.

Of the acid hematein preparations, the non-neoplastic portions showed dark blue or blue-black staining of cytoplasmic substance and nucleoplasm in the epithelial cells (Fig. 1). In some, many fine, deep blue granules were recognized lying at the juxtanuclear area in the cytoplasm. The stromal cells, the nuclei especially, were stained intensively. The myometrium was negative in reaction.

The parenchymal cells of all the epitheliomas were negative in reaction (Fig. 2, 3, 5, 7). The cytoplasm appeared pale yellow; often only the nucleoli were stained (Fig. 2). The stromal cells, however, showed dark staining, especially in the nucleoplasm (Fig. 3, 5, 7). It was often observed that the non-neoplastic epithelial cells in the adjoining areas of the epitheliomas were stained deeply. The myoma cells in all 4 cases were negative in reaction, like the muscle cells of the myometrium.

*Discussion.* It appears that epithelial cells and neoplastic cells of epithelial origin react differently to acid hematein lipoprotein staining, the former being definitely positive and the latter negative. It is interesting that even the non-neoplastic epithelial cells near the epithelioma are sometimes negative in reaction. Further studies with many more cases are needed to confirm the regularity of these findings. However, this particular staining method may serve to supplement prevailing conventional cytological and histological methods in biopsy as well as smear diagnosis of uterine epitheliomas.

*Summary.* The acid hematein lipoprotein staining was used on non-neoplastic and neoplastic human uterine biopsy specimens. Epithelioma cells are conspicuously unstained, while epithelial cells and other tissue cells show a positive reaction.

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## Fatty Acid Composition of Mouse Lipids and Lipoproteins.* (26398)

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Recent advances in gas chromatographic technics have made possible the determination of the fatty acid composition of small quantities of biological lipids. The sensitivity of these technics allows measurement not only of whole plasma fatty acids, but of

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