

plantable and retains its malignancy through 6 successive implantations.‡

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**Production of Sarcoma in Albino Rats as a Result of Feeding Crude Wheat Germ Oil.**

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Subsequent to the work of Rowntree, Lansbury, Steinberg and Anderson,<sup>1</sup> † in which 14 tumors had been observed in 14 rats fed with a crude preparation of ether-extracted wheat germ oil, the Oncologic Hospital group was asked to elaborate this work and to determine and establish the nature of the tumor.

It was found that by increasing the amount of oil fed, the tumor could be produced as early as 60 days. Thus in 34 albino rats of the Wistar and Buffalo strains fed crude wheat germ oil, 100% developed intraabdominal tumors. These tumors have been found in the omentum, in the mesentery, in both small and large intestines, in the area of the uterus and subperitoneally. Many animals have developed multiple tumors in the abdominal cavity. The point of origin thus far has been consistent only in its having been found in the peritoneal cavity. The size of the tumors depends, to some extent, on the duration of the time before the rat is sacrificed. The tumors have been as large as 3x3 cm. There has been no lymphatic extension or metastasis to nodes. The only instance in which another organ has been involved was in one case with direct extension to the liver. If not sacrificed, the tumor becomes large enough to cause death often by intestinal obstruction.

In the Wistar strain, 22 tumors have been successfully transplanted to date. No attempt has been made to transplant the others of this group of tumors, as the animals were found dead in the

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<sup>1</sup> Rowntree, Lansbury, Steinberg and Anderson, *PROC. SOC. EXP. BIOL. AND MED.*, 1937, **36**, 424.

† Neoplasms resulting from the feeding of ether-extracted, crude wheat germ oil.

cage. Of the 260 rats receiving implants in this group, 100% resulted in successful takes and many of these tumors have been retransplanted through 15 successive recipients. If the implants were made intraperitoneally instead of subcutaneously, they grew more readily and did not ulcerate.

Histologically and clinically the tumors have all the characteristics of spindle cell sarcoma.

*Summary.* Sarcomas were produced in all 34 rats by feeding crude wheat germ oil. Tumors were produced in both the Philadelphia Institute for Medical Research and in the American Oncologic Hospital. With increasing amounts of oil the time required for the development of tumors was decreased. These tumors have been successfully transplanted both subcutaneously and intraperitoneally in 260 rats through 15 successive generations. These tumors are all spindle cell sarcomas.