materials by 55 ml. of water, and the compounds were usually removed in about the same amounts. The relatively soluble $NH_4$2,4-D was not removed in greater quantities than 2,4-D, which is of much lower solubility. It seems probable that in a soil 2,4-D or a relatively insoluble 2,4-D salt might be converted to soluble forms by ammonium, sodium, or other ions present in the soil solution.

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Granulosa Cell Tumors in Intrapancreatic Ovarian Grafts in Castrated Mice[1]

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Biskind and Biskind (*1*) reported that granulosa cell tumors have developed in ovaries transplanted into spleens of three castrated female rats. Our previous experiments showed the formation of granulosa cell tumors and luteomas in intrasplenic ovarian grafts in castrated male and female mice (*3*). These studies were based on two principles: (1) the capability of the liver to inactivate ovarian hormones when the hormones circulate through the hepatic portal system, and (2) the increase of pituitary gonadotropins subsequent to castration. It was assumed that the prolonged stimulation, by augmented amounts of gonadotropic hormones, of intrasplenic ovarian grafts was responsible for the neoplastic growths. More recent investigations (*2*) revealed that the development of ovarian tumors in intrasplenic ovarian grafts was inhibited by administration of estradiol benzoate and testosterone propionate. The malignancy of the induced granulosa cell tumors was indicated by the ability to metastasize and to transplant in new hosts. The present experiment, using intrapancreatic ovarian transplantation in castrated mice, demonstrates that splenic tissues do not play a direct role in the pathogenesis of ovarian tumors arising in the grafts.

Male and female mice of A, C_3H, CBA, and C_{57} strains and hybrid mice were used. These were castrated and received, at the same time, an autoplastic or homoplastic ovarian graft in the pancreas. Among the first group of 5 experimental animals, two granulosa cell tumors and one pretumorous growth were found 168 days after grafting. No tumor was noted in two grafts with vascularized adhesions that permitted drainage through other than the hepatic portal system. One tumorous graft in a male mouse (C_3H strain) was 7 x 8 x 10 mm. in diameter; the other, which developed in a female hybrid mouse (AC_3), measured 10 x 11 x 13 mm. in diameter. The uterus of the latter animal weighed 75 mg. at autopsy. The pretumorous graft occurred in a male mouse of the A strain.

Microscopically, the granulosa tumor cells were arranged in a folliculoid pattern showing numerous mitotic figures. Some of the folliculoid structures contained hemorrhagic cavities. Luteinized cells and small necrotic areas were present, and a spicule of bone was observed at the periphery of one tumorous ovarian graft. Major portions of the tumors were separated from the pancreatic tissue by bursa-like spaces lined by germinal epithelium. No metastasis was observed in the liver. The pretumorous graft showed masses of tubular ingrowths from the germinal epithelium, and the transformation of some of the epithelial cells into granulosa tumor cells was noted. Thus, the morphology of granulosa cell tumors induced in the pancreatic site resembled that of the tumors developed in intrasplenic ovarian grafts. The present experiments are interpreted to substantiate further the assumption that overaction of gonadotropic hormones is responsible for the development of the ovarian tumors in mice.

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Differential Phytotoxicity of Metabolic By-Products of *Helminthosporium victoriae*[1]

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The "*Helminthosporium* blight" of oats caused by *H. victoriae* Meehan and Murphy has developed so rapidly that it has attained the proportions of a major plant disease within two years after its discovery. Susceptibility is apparently limited to oat varieties and selections that possess the "Victoria-type" resistance to crown rust (*Puccinia coronata avenae* (Corda) Eriks. & E. Henn.). The unusually fast build-up of the disease has been facilitated by the widespread planting of large acreages to susceptible varieties.

The means by which *H. victoriae* causes necrosis has been the subject of some speculation. In a previous article (*2*) the suggestion was made that the pathogenic action of this fungus involves the production of a toxic substance. Inoculation tests with sterilized mycelium and filtered extracts from cultures have given evidence that a very potent toxin is secreted by the fungus, which is responsible for the characteristic longitudinal foliar striping or discoloration. Data regarding its production and effects are briefly summarized in this paper.

Evidently the basal infection of the oat plant is the only direct manifestation of parasitic action by *H. victoriae*, since the organism has not been isolated from the blighted leaves until after complete necrosis of the tissue. It may be that this

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