

Abstracts

Reports of Research

On Tumor-Producing Chemical Substances. SHABAD, L. M. [A. M. Gorky All Union Inst. of Exper. Med., Moscow, Russia] *Cancer Research*, 5:405-419. 1945.

A review of studies, made chiefly by the author and his associates during the past 8 years, on exogenous and endogenous tumor-producing substances. Among the exogenous agents investigated were 1,2,5,6-dibenzanthracene, 9,10-dimethyl-1,2-benzanthracene, 9-methyl-10-ethyl-1,2-benzanthracene, 3,4-benzpyrene, 3,4,8,9-dibenzpyrene and its -5,10-quinone, 9-methyl-1,2-benzanthryl-10-acetic acid, *o*-aminoazotoluene, *p*-dimethylaminoazobenzene, benzanthrene, tetramethyldiaminophenone, slate tars, industrial oils ("sulfofresol," "emulsol"), and a synthetic estrogen ("polianol") chemically simpler than folliculin. Data are summarized on the ability of these agents to produce tumors at or remote from the site of application, the transplantability of such tumors, the local effects of the agents (with special reference to inflammation), their antigenic action, the correlation between chemical structure and carcinogenesis, and the inhibition of experimental tumors by spleen extracts, spleen itself, and blood. The section on endogenous agents is devoted chiefly to the author's reports on the production of benign and malignant tumors in mice by injection of benzene extracts of the liver, bile, and lungs from persons dead of cancer of diverse type and location (occasionally in liver or lungs), and on the identification of the active agent with the non-saponifiable lipid fraction of such extracts. Theories of carcinogenesis are discussed. The bibliography contains 83 references.—M. H. P.

Bestimmung der Abnahme des 3,4-Benzpyrens aus Paraffindepots bei Mäusen. [Determination of the Decrease of 3,4-Benzpyrene in Paraffin Depots in Mice.] ROSENBOHM, L., and ROSENBAUM, A. [Univ.-Krankenhaus, Hamburg-Eppendorf, Germany] *Ztschr. f. Krebsforsch.*, 53:254-262. 1943. From abstr. in *Chem. Zentralbl.*, I:2098. 1943.

Paraffin depots containing various amounts of benzpyrene were placed in 558 mice of pure strain, and removed after various intervals for determination of the remaining benzpyrene by a method involving fluorescence. Ten days after the subcutaneous implantation of 1,333 γ , of 200 to 266 γ , and of 133 γ of the carcinogen, the percentages remaining in the respective loci were 15, 10, and 4.7. After intraperitoneal injection of the same amounts, 8.2, 12.0, and 3.5%, respectively, were found. Abdominal tumors occurred in 10 of 29 animals that died 100 to 240 days after intraperitoneal injection. After the amount in the depot dropped from 1,333 γ to 200 γ , the level fell to 3 γ in 130 days, though when the original amount was 200 γ , the level of 3 γ was reached in only 30 days. Thus with the high initial amount of 1,333 γ there occurred an

inhibition of continued diffusion, attributed to a preliminary uptake by the surrounding tissue. The incidence of tumors appears to be great if a large amount of implanted benzpyrene diffuses first rapidly, then slowly, from the depot.—M. H. P.

Metabolism of 3,4-Benzpyrene in Mice. WEIGERT, F. [Mt. Vernon Hosp., Northwood, Middlesex, England] *Nature, London*, 155:479-480. 1945.

The metabolism of 3,4-benzpyrene in the mouse was studied with the aid of chromatographic adsorption analysis and absorption spectrography. It is suggested that the hydrocarbon passes through 4 intermediate stages. In the first 2 stages, 1 of the rings is reduced, and the nucleus is therefore no longer completely aromatic (*e.g.* 8,9-dihydroxy-8,9-dihydro-3,4-benzpyrene). In stages 3 and 4 the aromatic nucleus is restored, this fourth stage being represented by 8-hydroxy-3,4-benzpyrene.—I. H.

The Direct Hydroxylation of 1':2':3':4'-Tetrahydro-3:4-benzpyrene. KON, G. A. R., and ROE, E. M. F. [Chester Beatty Research Inst., Roy. Cancer Hosp. (Free), London, England] *J. Chem. Soc.*, 143-146. 1945.

The synthesis of 8-hydroxy-3,4-benzpyrene, which appears to be a metabolic product of the carcinogenic hydrocarbon 3,4-benzpyrene, was attempted by hydroxylation of 1',2',3',4'-tetrahydro-3,4-benzpyrene by means of lead acetate. But the saturated ring was attacked almost exclusively, giving the 1'-acetoxy derivative, and a hydrocarbon that appeared to be 3',4'-dihydro-3,4-benzpyrene.—E. L. K.

The Disappearance of Carcinogenic Hydrocarbons in Autoxidizing Lipids. MUELLER, G. C., MILLER, J. A., and RUSCH, H. P. [Med. Sch., Univ. of Wisconsin, Madison, Wis.] *Cancer Research*, 5:401-404. 1945.

The rates of destruction of 3,4-benzpyrene, 20-methylcholanthrene, and 1,2,5,6-dibenzanthracene were followed fluorometrically after these hydrocarbons were added singly to various lipids and the mixtures exposed to air at room temperature for several weeks. Benzpyrene and methylcholanthrene were rapidly destroyed in oxidizing linoleic acid, and losses of 34 and 84% respectively were noted after 1 week. 1,2,5,6-Dibenzanthracene was relatively stable to this oxidizing agent. Benzpyrene also disappeared, though less rapidly, in ethyl linolate, ethyl oleate, and chromatographed cottonseed oil. The addition of tocopherol to certain of these mixtures delayed the onset of the destruction but did not alter the final result. Benzpyrene was relatively stable when dissolved in tri-caprylin, lard fractions, or mouse carcass fat.

The isolation of 2 of the colored oxidation products of benzpyrene was accomplished by chromatographic adsorption of an autoxidized benzpyrene-linoleic acid

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mixture on activated alumina. These compounds were identified as 3,4-benzpyrene-5,8-quinone and 3,4-benzpyrene-5,10-quinone by mixed chromatographs with the authentic quinones and by their absorption spectra.—Authors' abstract.

The Recovery of Carcinogenic Hydrocarbons from Solution by the Use of Picric Acid. JONES, R. N., and JAMIESON, J. R. [Queen's Univ., Kingston, Canada] *Cancer Research*, 5:341-345. 1945.

Dibenzanthracene, benzpyrene, and methylcholanthrene, 0.5 to 5.0 mgm., can be removed from ethanolic solution by conversion to picric acid complexes. The recovery yields, estimated by ultraviolet spectrophotometry, were 70 to 90% for dibenzanthracene, 30 to 60% for benzpyrene, and 20 to 40% for methylcholanthrene. Satisfactory recoveries have been obtained in the presence of large excesses of stanolax, a neutral mineral oil; from this it may be inferred that the technic is applicable to the extraction of small amounts of carcinogenic hydrocarbons from neutral oils of biological origin.

Fluorescent neutral oils can be obtained from the non-saponifiable fractions of human livers after removal of sterol by crystallization, chromatographic adsorption, and high vacuum distillation. These concentrates when treated with picric acid in the absence of stanolax did not form picric acid complexes; the "adsorbates" reported by Jones and May (*Cancer Research*, 4:303. 1944; abstr. in *ibid.*, 4:389. 1944) are now believed to have been mechanical mixtures.—Authors' abstract.

Healing of Wounds in the Skin of Mice Painted with 20-Methylcholanthrene. SILBERBERG, M., and SILBERBERG, R. [Jewish Hosp., and St. Louis City Hosp., St. Louis, Mo.] *Arch. Path.*, 39:257-264. 1945.

Methylcholanthrene applied to the epidermis of mice before the making of a wound influences the course of regeneration in a way similar to benzpyrene. The application of methylcholanthrene for 2 weeks or for 1 month intensifies proliferation and migration of the epithelial cells, and thus hastens the healing of the wound. But after 3 months of treatment with methylcholanthrene, cell migration is markedly inhibited and wound healing delayed in spite of the greatly increased proliferation of the epidermal cells. Between these two phases there is an intermediate stage in which the effect of methylcholanthrene differs from that of benzpyrene so far as the inhibition of cell migration is only transitory in the case of methylcholanthrene and is subsequently compensated for by rapid epithelization of the wound. The effect of methylcholanthrene on healing of wounds is thus a more quantitatively graded one than that of benzpyrene.—Authors' summary. (J. G. K.)

Tissue Nucleic Acids. 3. The Nucleic Acid and Nucleotide Content of Liver Tissue. DAVIDSON, J. N., and WAYMOUTH, C. [Univ. of Aberdeen, Aberdeen, Scotland] *Biochem. J.*, 38:379-385. 1944.

The content of nucleoprotein, nucleotide, and nucleoside was determined: in the liver of normal male and female rats (a); in the liver of fasting, pregnant, and embryo rats; in regenerating liver; in liver tumors induced in 100 or 150 days by food containing dimethylaminoazobenzene in arachis oil (b); and in the liver of

control rats receiving arachis oil only (c). The water content was higher in (b) than in (a). Nucleoprotein phosphorus in dry liver was higher in (b) than in (c) and higher in (c) than in (a). "In the 100-day tumours the nucleotide concentration is significantly lower on a wet-weight, but not on a dry-weight, basis than that of the controls. No appreciable variations in the nucleoside + free purine fraction were found." About 80% of the nucleic acid in (a) and (c) was ribonucleic acid. The proportion of desoxyribonucleic acid was higher in (b) than in (a).—E. L. K.

Tissue Changes in Experimental Mice Treated with Pentose Nucleotides. PARSONS, L. D. [London Hosp., London, England] *J. Path. & Bact.*, 57:9-20. 1945.

Large ring-like deposits of amyloid appeared around the Malpighian bodies of the spleen in:

(a) mice receiving injections of a commercial preparation, given clinically for agranulocytosis, of the sodium salts of ribonucleotides (8% watery solution with 0.3% cresol) from yeast (referred to below as "nucleotide"); the change was seen after from 17 to 100 days (5 injections weekly); and

(b) CBA mice bearing grafted generations of sarcoma induced in this strain by methylcholanthrene; the change occurred in 93% of the mice grafted.

Amyloid change was not found in normal or in irradiated mice, or, before the development of the tumor, in mice (stock or CBA) receiving carcinogenic compounds (1,2,5,6-dibenzanthracene-9,10-endo- $\alpha\beta$ -succinic acid or methylcholanthrene).

In (a), no tumors were induced. Leukocytosis (up to 62,000) of both polymorphs and lymphocytes occurred, and the former sometimes outnumbered the latter. Lymph nodes showed increase of reticulum cells, of plasma cells, and of myeloid cells; giant cells occasionally appeared. Amyloid change occurred in the liver also. The spleen was of less than normal size. Nucleotide injection did not accelerate tumor induction by 1,2,5,6-dibenzanthracene-9,10-endo- $\alpha\beta$ -succinic acid.

In (b), simultaneous treatment with nucleotide increased the growth of the grafts and greatly lessened the resistance of old CBA mice to these grafts. In grafted mice, nucleotide injection may lessen the incidence of amyloid change; this anomaly is under investigation. The high leukocytosis usually present in the blood of the grafted mice did not seem to be affected by treatment with nucleotides.

The similarity of the amyloid changes in (a) and (b) suggests that in (b) nucleotides may be liberated from the tumor. The investigation is to be extended with the use of pure nucleotides prepared by Professor J. M. Guland. In an addendum Professor H. M. Turnbull describes the staining reactions which show that the substance in question is mouse amyloid.—E. L. K.

The Influence of Diet on the Production of Tumors of the Liver by Butter Yellow. OPIE, E. L. [Rockefeller Inst., New York, N. Y.] *J. Exper. Med.*, 80:219-230. 1944.

It was found that the frequency of the production of tumors by *p*-dimethylaminoazobenzene was directly re-

lated to the amount of fat and the presence of rice in the diet, and to the production of liver cirrhosis by the diet. The presence of fat in the diet hastened the appearance of tumors, and the substitution of rice for sugar in the diet increased the frequency of tumor production. Also it was observed that although *p*-dimethylaminoazobenzene produced tumors in the absence of liver cirrhosis, the frequency of tumors increased with the severity of cirrhosis. The agency by which rice favors the production of hepatic tumors is not yet known.—D. S.

The Influence of Caloric Restriction and of Dietary Fat on Tumor Formation with Ultraviolet Radiation. RUSCH, H. P., KLINE, B. E., and BAUMANN, C. A. [Med. Sch., and Coll. of Agric., Univ. of Wisconsin, Madison, Wis.] *Cancer Research*, 5:431-435. 1945.

The influence of calories on the development of tumors due to ultraviolet irradiation was determined in strain C albino mice, and the effect of the fat in the diet and its relation to the caloric content was investigated at the same time. The amount of ultraviolet irradiation received by the mice was approximately 3.6×10^7 ergs/cm² daily. The animals were divided into 4 groups of 48 each. Two groups received a calculated 6.7 calories per mouse per day, and the other 2 an average of 9.7. One group on the high, and one on the low calorie level were given a low amount of fat in the diet, whereas the 2 other groups were given a moderate amount of fat. At the end of 9 months the incidence of ear tumors in the 4 groups of mice was as follows: 87% in the high calorie-low fat group, 63% in the high calorie-moderate fat group, 24% in the low calorie-moderate fat group, and 7% in the low calorie-low fat group.

The data of this experiment and of others previously recorded suggest that most of the accelerating action of fat on tumor formation can be explained on the basis of an increased caloric intake, but that fat *per se* also appears to increase the rate of tumor formation. The latter effect is particularly evident when the total intake of calories is restricted.—Authors' abstract.

Studies on Cancer. I. The Relationship of Function, Light and Temperature to Growth by Mitosis. BLUMENFELD, C. M. [West. Reserve Univ., and Univ. Hosps., Cleveland, Ohio] *Arch. Path.*, 38:321-325. 1944.

Numerous observations made on 7 litters of Wistar rats indicated that in the young animals there was regularly a diurnal variation of the volume of urine excreted, with the rate of mitosis in the renal cortex varying inversely with this volume. The same animals likewise showed regularly a diurnal variation in the weight of food eaten, and the rate of mitosis in the submaxillary glands varied inversely with this. On the other hand, variations in light and dark for a period of 2 days and small changes in temperature of body or room have no effect on, or relationship to, the diurnal periodicity of mitotic activity in the epidermis of the albino rat. The data seemed to the author to provide a factual basis for the view that function restrains growth.—J. G. K.

Experimental Roentgen Injury. V. Effects on Hematopoietic Reserves and Regenerative Capacity. HENSHAW, P. S., THOMPSON, J. W., and MEYER, H. L. [Nat. Cancer Inst., Bethesda, Md.] *J. Nat. Cancer Inst.*, 5:233-247. 1945.

The additive effects of x-rays in doses ranging from 12.5 to 400 r were studied in C3H male mice. It was found that the number of treatments required to bring the blood lymphocyte level below 4,000 per cu. mm. became less, and the period of recovery became longer, as the experiment progressed. Eventually all the animals developed a persisting lymphopenia, and irrespective of the size of the treatment doses this persisting lymphopenia occurred when the accumulated doses reached 300 to 500 r. These results were interpreted as indicating that the effects of subliminal doses of x-ray are additive, that destruction of lymphocytes occurs with each small dose, that the rate of this destruction must exceed that of lymphocyte production, and that the persisting lymphopenia marks the beginning of lymphoid reserve exhaustion. The remarkable ability of hematopoietic tissue, especially bone marrow, to regenerate was also discussed.—R. A. H.

Effect of X-Rays on the Transmissibility of Fowl Sarcoma in Its Nonfilterable Phase. MISZURSKI, B., PIKOVSKI, M., GOLDBABER, G., and DOLJANSKI, L. [Hebrew Univ., Jerusalem, Palestine] *Cancer Research*, 5:422-425. 1945.

Five out of 10 slowly growing Rous fowl sarcomas were found to be nontransmissible by both Berkefeld and paper-pulp-sand filtrates. After irradiation with doses lethal for the sarcoma cells, but practically harmless to the causative agent, 3 of these 5 tumors could be transmitted, while the remaining 2 could not. The significance of these findings for the understanding of the so-called nonfilterable phase of the fowl tumors is discussed.—Authors' summary.

Methylcholanthrene Papillomas and the Virus Problem. WOLOM, W. H. [Coll. of Physicians and Surgeons, Columbia Univ., New York, N. Y.] *Cancer Research*, 5:420-421. 1945.

Of 131 mice inoculated with extracts of methylcholanthrene papillomas, not a single one developed a tumor.—Author's summary.

The Effect of Progesterone and Testosterone Propionate on the Growth of Mammary Cancer in Mice. HEIMAN, J. [Coll. of Physicians and Surgeons, Columbia Univ., New York, N. Y.] *Cancer Research*, 5:426-430. 1945.

Subcutaneous injections of testosterone propionate and progesterone were given for some 6 months to female mice of the RIII strain. The treated animals were between 2 and 6 months of age. During this age period spontaneous mammary adenocarcinoma rarely appears in this strain. The incidence of these tumors in untreated animals between 6 and 12 months of age ranges between 54 and 90%. This incidence is reduced to 16.6% after progesterone and to 6.2% after progesterone combined with testosterone propionate. Ninety-six injected mice were observed until death or for more than 1 year. Eighteen animals, similarly treated and then inoculated with carcinoma or sarcoma, grew the transplanted tumor. Testosterone propionate and progesterone do not inhibit malignant growth after it is established. These hormones probably initiate involutionary changes in the normal

mammary gland of young females, which interfere with the early stages of abnormal growth.—Author's abstract.

Some Endocrinologic Considerations of Canine Neoplastic Diseases. MULLIGAN, R. M. [Univ. of Colorado Sch. of Med., Denver, Colo.] *Arch. Path.*, **39**:162-171. 1945.

A review of the literature on canine oncology revealed several leads that might be followed in future investigation of neoplasms of the endocrine glands and of the genital tracts of both sexes. These included a syndrome of feminization in male dogs associated with testicular carcinoma, the relation between benign prostatic hypertrophy and castration, the coexistence of changes in the female genital tract with cysts and solid tumors of the ovary, the presence of hyperinsulinism with neoplasms of the pancreatic islets, the problem of the interpretation of proliferation of interstitial cells of the testes, the paucity of neoplasms reported for the pituitary, parathyroid, thymus and adrenal glands, the possible etiologic connection of hormones with venereal sarcoma, and the embryologic and hormonologic aspects of mammary tumors.—Author's summary. (J. G. K.)

The Cytology of the Contagious (Venereal) Tumour of the Dog. JACKSON, C. [Onderstepoort, Union of South Africa] *Onderstepoort J. Vet. Sc. & Animal Indust.*, **20**:97-118. 1944.

From a cytological study of the contagious venereal tumor of dogs, it is shown that the tumor cells are exceedingly rich in lipid globules, a feature that has previously been overlooked because the globules are dissolved out from paraffin sections, and because in frozen sections they are refractory to the customary methods for demonstration of fatty substances. To stain these globules, a specially devised acetic-carbol-sudan method is recommended. Current views—that the tumor is composed of round cells or of reticulum cells—the author believes to depend entirely on post-fixation artefacts. From present conceptions of the structure of large lymphocytes (lymphoblasts), he finds it difficult to identify the tumor cells with these elements, and suggests that the present results afford support for his alternative theory, that the contagious venereal tumor may be an apolar neuroblastoma.—A. H.

Anti-Reticular Cytotoxic Serum as a Means of Pathogenetic Therapy. BOGOMOLOTS, A. A. *Am. Rev. Soviet Med.*, **1**:101-112. 1943.

The treatment of infections, fractures, diseases of the nervous system, and cancer is described.

The cellular elements of the connective tissue have been found by the author and his co-workers to increase the resistance of the body to cancer: the fibroblasts and microphages form a strong line of demarcation around cancer foci, hinder their infiltration of the adjacent tissues, and by growing into the tumors help replace cancer cells with benign tissue, while the macrophages seem to destroy the carcinogenetic cellular elements. These protective reactions are stimulated by small doses, inhibited by large doses, of anti-reticular cytotoxic serum (ACS).

ACS is produced for human therapeutic (subcutaneous) use by inoculating horses with the cells of the spleen and bone marrow from persons who died suddenly without infectious disease. Its use is reported to have considerably

diminished the recurrence rate after operations for gastric and thoracic cancer. In inoperable cancer, ACS has improved the general condition of the patients, sometimes prolonged life, abolished or reduced pain, and led to the disappearance of metastases.

In experiments upon tumor transplantation in animals, although large doses of ACS favored the progressive development of the transplants, small doses greatly reduced the number of takes. A continuation of the experiments revealed the complete disappearance of large "carcinogenous tumors," and a decrease in the number of lung metastases, in mice receiving the serum.

This is a general article without presentation of original data for evaluation.—M. H. P.

A Method of Preparing and Preserving Anti-Reticular Cytotoxic Serum. MARCHUK, P. D. *J. méd. de l'Acad. d. Sc. de la RSS d'Ukraine*, **9**:1175-1189. 1939; *Am. Rev. Soviet Med.*, **1**:113-123. 1943.

Details are given of the preparation, assay, preservation, properties, and dosage of anti-reticular cytotoxic serum for use in investigations of cancer and other diseases in man and the lower animals.—M. H. P.

Anti-Reticular Immune Serum: Its Action Demonstrated by Tissue Culture Technique. POMERAT, C. M., and ANIGSTEIN, L. [Med. Branch, Univ. of Texas, Galveston, Texas] *Science*, **100**:456. 1944.

The inhibiting action of anti-reticular cytotoxic serum (ACS) on the growth of certain tissues, reported by Bogomolets (*Am. Rev. Soviet Med.*, **1**:101. 1943; abstr. appears earlier on this page), has been studied in experiments *in vitro*. The ACS used was prepared by immunizing rabbits against spleen and rib marrow of guinea pigs. It inhibited the cellular outgrowth of adult guinea pig spleen in tissue culture, but not that of chick embryo spleen.—M. H. P.

Some Pharmacological and Biological Effects of the Latex of Ficus Carica L. ULLMAN, S. B., HALBERSTAEDTER, L., and LEIBOWITZ, J. [Hebrew Univ., Jerusalem, Palestine] *Exper. Med. & Surg.*, **3**:11-23. 1945.

Latex from the fig tree, *Ficus carica L.*, given subcutaneously, inhibited the growth of subcutaneously transplanted benzpyrene sarcomas B, 616, and 2192 in rats. An alkaloid fraction (A) of the latex, and a nondialyzable, nonprotein, nonalkaloid fraction (C), injected subcutaneously into rats, rendered them practically nonsusceptible to subsequent subcutaneous transplantation of benzpyrene sarcoma 616. The same fractions, given subcutaneously and intravenously, produced regression of 30 to 50% of intraperitoneal and subcutaneous sarcoma transplants. The unfractionated latex and a globulin fraction had a strongly necrotic action on the skin, and when injected intravenously were very toxic. An alcohol-soluble fraction produced anemia. The susceptibility of benzpyrene sarcoma 616 to the therapeutic action of x-rays, which normally is very low, was increased considerably by subcutaneous injection of fractions A and C.—M. H. P.

Progress in Cancer Research. MORTON, J. J. [Univ. of Rochester Sch. of Med. and Dent., Rochester, N. Y.] *Connecticut M. J.*, **9**:167-177. 1945.

The main advances in cancer research are discussed under the headings: new experimental material; tissue

changes in carcinogenesis; hormonal, enzymatic, and tissue culture studies; effects of light; heterotransplantation; viruses; and studies on human cancer. To the author, the most significant investigations of the last 5 years have been in the production of malignancy *in vitro*; the production of carcinoma in animals from their own intrinsic chemical factors; the hormonal control of some cancers; the work upon heterotransplantation; the modification of viruses by passage in young and alien hosts; additional

discoveries on the milk factor; and the studies on the effects of light. A bibliography of 124 references is included.—M. E. H.

The Problems of Cancer Biology. SPENCER, R. R. [Nat. Cancer Inst., Bethesda, Md.] *J. A. M. A.*, **127**:509-514. 1945.

A general article reviewing many phases of the cancer problem and outlining the present status of cancer control and research.—M. E. H.

Clinical and Pathological Reports

Clinical investigations are sometimes included under Reports of Research

HEREDITY

Neuroblastoma of the Adrenal Medulla in Siblings. DODGE, H. J., and BENNER, M. C. [Univ. of Colorado Sch. of Med., Denver, Colo.] *Rocky Mountain M. J.*, **42**:35-38. 1945.

A report of neuroblastoma of the right adrenal in a brother and sister.—M. E. H.

DIAGNOSIS—GENERAL

Significance of Supraclavicular Signal Node in Patients with Abdominal and Thoracic Cancer. A Study of One Hundred and Twenty-Two Cases. VIACAVA, E. P., and PACK, G. T. [Memorial Hosp., New York, N. Y.] *Arch. Surg.*, **48**:109-119. 1944.

Among 4,365 patients treated for thoracic or abdominal cancers, 122 (2.8%) had metastases to supraclavicular lymph nodes as evidenced by microscopic examination. Of these 122 patients, 73 had involvement of the signal node on the left side, 31 on the right side, and 18 on both sides. Involvement of the right side and bilateral involvement were more frequent in patients with tumors of the thoracic cavity. In 41 patients the supraclavicular metastases were the first indication of a malignant tumor. The percentage of supraclavicular metastases associated with cancer of different viscera varied: lung, 13.2% of 334 cases; esophagus, 7.1% of 210 cases; stomach, 2.6% of 883 cases; ovary, 6.1% of 148 cases; cervix uteri, 1.5% of 336 cases; testicle, 4.8% of 166 cases; and none among 54 cancers of the small intestine, 17 of the gall bladder, and 208 of the urinary bladder. Radium pack or deep x-ray therapy may relieve local symptoms, but the length of life is not appreciably increased.—W. A. B.

RADIATION

The Use of Radon Seeds in the Treatment of Neoplasms. KAPLAN, I. I. [Bellevue Hosp., and New York Univ. Coll. of Med., New York, N. Y.] *Urol. & Cutan. Rev.*, **48**:122-124. 1944.

A brief review.—V. F. M.

Adequate X-Ray and Radium Dosage. ERNST, E. C. [Barnard Free Skin and Cancer Hosp., St. Louis, Mo.] *S. Clin. North America*, **24**:1003-1021. 1944.

An illustrated lecture on: biological radiation effects; roentgen unit research developments; the double cross-arm vaginal radium applicator; radium distribution in

cancer of the cervix; dosage records; comparison of effects of x-ray and radium; and radiotherapy of cancer of the skin, breast, larynx, pharynx, tonsils, and cervix.—J. L. M.

The Evolution of an Improved Transvaginal Speculum. ERSKINE, A. W. [Cedar Rapids, Iowa] *Radiology*, **43**:170-174. 1944.

A description of a new instrument for use in x-ray therapy of cancer of the cervix.—R. E. S.

Carcinoma of the Bladder: An Improved Technique for the Cystoscopic Implantation of Radium Element. MOORE, T. D. [Memphis, Tenn.] *J. Urol.*, **51**:496-504. 1944.

The author describes a method for cystoscopic implantation of radium that permits removal after an allotted time, and he presents histories of 4 cases in which the method was used.—V. F. M.

The Treatment of an Unusual Hemangioma. KAPLAN, I. I. [Bellevue Hosp., and New York Univ. Coll. of Med., New York, N. Y.] *Urol. & Cutan. Rev.*, **48**:290-291. 1944.

The case of a Negro with a huge hemangioma of the lip treated with radium needles is presented, with photographs.—V. F. M.

Roentgen Diagnosis of Bronchiogenic Carcinoma. SHINALL, H. L. [St. Louis City Hosp., St. Louis, Mo.] *Radiology*, **42**:213-219. 1944.

From an analysis of 40 cases of bronchogenic carcinoma in which roentgenographic, clinical, and postmortem studies were made, the author concludes that a diagnosis can be made in the large majority of uncomplicated cases by the finding of a rounded nodular shadow, usually in the hilar region, when this finding is correlated with clinical history.—R. E. S.

Lung Abscess Secondary to Stenosing Bronchiogenic Carcinoma. KRAFT, E. [City Hosp., New York, N. Y.] *Radiology*, **43**:39-47. 1944.

Three cases of bronchogenic carcinoma with secondary lung abscess are reported, with roentgenograms.—R. E. S.

The Roentgenologic Features of Mediastinal Tumors. ROBBINS, L. L. [Massachusetts Gen. Hosp., Boston, Mass.] *Radiology*, **43**:115-121. 1944.

The various mediastinal tumors cannot be exactly differentiated by roentgenological appearance, but certain diagnostic features have been demonstrated.—R. E. S.