ABSTRACTS

EXPERIMENTAL STUDIES; ANIMAL TUMORS


Gye distinguishes between the "remote causes" of cancer, which include the numerous chemical substances, radiant energy, and gross parasites, which are capable of initiating new growths but play no part in the progress of the disease once malignancy has occurred, and the "proximate causes," which are responsible for the properties of malignant cells. After a short discussion of "remote causes," he reviews the evidence that a virus may be the "proximate cause" of malignant growth. The failure to transmit the great majority of tumors used in experimental work by filtrates must be interpreted with caution. A dibenzanthracene tumor of the fowl, though not filterable, contains an antigen which elicits antibodies capable of neutralizing the virus of Rous sarcoma I. Similarly there is serological evidence that the Shope papilloma virus persists when the papillomata have developed into malignant carcinomata, though the latter are not filterable. The final proof that the virus acts causatively in the carcinomata is difficult, but at least it may be said that the negative filtration results do not warrant the conclusion that the papilloma virus is absent. Rous' observations on the action of the papilloma virus on tarred skin suggest that the action of tar is preparatory, affecting the cells in such a way as to render them very susceptible to the virus. It is postulated, as a working hypothesis, that when a tumor is induced in an animal by applying carcinogenic agents the vital change from hyperplasia to malignancy is probably associated with a virus.

L. FOULDS


Three groups of white mice received applications to the back, of one or two drops of a 1 per cent benzene solution of 1 : 2-benzpyrene three times a week. One group served as a control; in a second group large ulcerations were produced on the back by radium ten days after beginning the benzpyrene application, and in the third group burns were produced with the actual cautery forty-eight days after the first benzpyrene application. Multiple papillomata and carcinomata occurred in all the animals, but the rapidly proliferating epithelium in the traumatized mice did not appear to be especially susceptible to the action of the hydrocarbon. In spite of continued applications the wounds healed in twenty-five days, and the tumors in these animals did not arise, except in two instances, in the proliferating epithelium at the margins of the healing ulcers or in the recently formed epithelium over the healed ulcers. References are appended.


This paper presents an analysis of a strain of mice comprising 650 individuals derived from the mating of a male from a high-tumor strain and a female from a low-tumor strain. The material was previously published in French and is abstracted in the Am. J. Cancer 33: 474, 1938.


In previous experiments (Bull. Assoc. franç. p. l'étude du cancer 20: 32, 1931; 22: 438, 1933. Absts. in Am. J. Cancer 16: abst. p. 1, 1932; 20: 644, 1934) the authors produced tumors in rats, mice, and guinea-pigs by means of radioactive materials. They have now extended their experiments to fowls. Thin strips of collodion impreg-
nated with small quantities of radium sulphate were placed in the pectoral muscles and livers of 159 fowls. None of these fowls developed a tumor at the site of radium implantation. In two fowls, killed four years and ten months, and four years and eleven months after the beginning of the experiment there were bony tumors with the appearance of osteogenic sarcoma. One of the tumors was on the keel near the site of introduction of radium into the liver, but the other, situated in the thigh, was widely separated from the implanted radium. Transplantation of both tumors was attempted but failed. It is unlikely that they were spontaneous tumors for this type is uncommon in fowls.

Osteogenic tumors were found also in some guinea-pigs under similar conditions of experiment and under these conditions it was found in unpublished experiments made in the authors' laboratory, that the skeleton becomes radioactive. Comparison is made with the osteogenic sarcomas occurring in workers using radioactive luminous paints (see Martland: Am. J. Cancer 15: 2435, 1931) and it is concluded that the two tumors in fowls probably resulted from the continued deposition of minute quantities of radium in the skeleton.

Photomicrographs are included, and there is a bibliography.

L. Foulds

Production of Malignant Tumors of the Liver by O-Amidoazotoluol, S. Zylberszac.

Tumors of the liver, exactly similar to those obtained by Yoshida, were produced by administering o-amidoazotoluol dissolved in arachis oil to rats fed on polished Carolina rice. Zylberszac concluded, as did Shear (Am. J. Cancer 29: 269, 1937), that production of liver tumors was not dependent on the nature of the solvent nor on the absence of particular vitamins from the diet.

L. Foulds

Production of Ovarian Tumors by Folliculin, C. Champy.

A more detailed account of these observations is given in Bull. de l'Assoc. franç. p. l'étude du cancer 26: 472–482, 1937 (Abst. in Am. J. Cancer 33: 582, 1938).

L. Foulds

Transmission of Tumors by Organs of Sarcomatous Mice Previously Treated with Carcinogenic Substances, G. Gottlieb, M. Plonskier, M. Spritzer, and E. Taschner.
La transmission des tumeurs experimentales par les organes de souris sarcomateuses, traitées préalablement avec des substances cancéigènes, Compt. rend. Soc. de biol. 125: 7–9, 1937.

The growth of transplanted sarcomas was inhibited in mice previously treated with carcinogenic substances. Mice were painted with dibenzanthracene or methylcholanthrene and four months later sarcoma was implanted. Blood and extracts of liver and spleen from 2 mice killed later (one thirty-two days after implantation of sarcoma, the other after an unspecified period) produced rapidly growing transplantable tumors with the histological structure of the parent growth when inoculated into normal mice. Only liver from one mouse, killed forty-three days after implantation, produced tumors. Similar results were obtained in 4 mice in which painting with methylcholanthrene, did not inhibit the growth of the implanted sarcomas. It seemed, therefore, that duration of growth was not the only or the preponderant factor in the transmission by means of blood or organs. This transmission was not observed in control mice without methylcholanthrene [number of controls not stated]. It probably depends on transference of cells, especially since sarcoma cells were demonstrated in one spleen.

L. Foulds

Transplantation of Rat Sarcoma into Mice Previously Treated with a Carcinogenic Substance, E. Taschner, G. Gottlieb, M. Spritzer, and M. Plonskier.

Grafts of the Jensen rat sarcoma grew more frequently and survived longer (up to thirty-three days) in mice treated previously with methylcholanthrene than in normal...
mice. Four serial passages were obtained in treated mice and the tumors so obtained were transplantable into normal mice as well as into rats. [Only 2 to 4 mice were used for each passage. Even if the results were more convincing they would have no bearing on the authors' thesis that carcinogenic substances xert a general action in reducing the resistance of an animal to cancerization.]

L. FOULDS


Much work has been done at the Cancer Institute in Java with a transplantable Cysticercus liver sarcoma of white rats. About 20 per cent of the rats have been found to be resistant to repeated attempts at inoculation of the tumor. Immunity has also been induced by injections of tumor emulsion previously heated to 60° and has been transferred to other animals by parabiosis.

In order to determine whether the spleen might be a factor in producing immunity, 10 rats were given inoculations of tumor tissue in that organ, while 10 controls were inoculated subcutaneously. In each group tumors were produced in 8 animals, but the spleen tumors were on the whole smaller than the others. They showed no tendency, however, to lysis or necrosis, and it is believed that the difference in size was due entirely to local factors, as tumors inoculated in the brain or kidney tissue are also smaller than subcutaneous growths. Next tumor tissue plus spleen emulsion was inoculated subcutaneously in 10 rats, but no difference was observed in the results as compared with 10 controls inoculated with tumor only. In other groups splenectomy was performed and the emulsified splenic tissue injected into normal rats, or the entire spleen was placed in the abdominal cavity of normal rats. In still another series the hilus of the spleen was ligated. In none of these groups, however, was there any difference in tumor growth after subcutaneous inoculation as compared with normal controls.

Experiments were also undertaken with rats that had proved to be resistant to three attempts at inoculation. Mixing a spleen emulsion from the immune rats with tumor tissue did not affect the results of inoculation in normal animals, nor was any effect obtained by injecting spleen emulsion from three to eight days before tumor inoculation or following inoculation. When, however, the entire spleens of immune animals were placed in the abdominal cavities of 20 normal rats, a definite inhibiting effect occurred, but transplanted livers or kidneys produced the same results. When splenectomy was done on immune rats no lessening of immunity was found, nor was it obtained by ligating the hilus of the spleen. Finally splenectomy or hilus ligation was carried out on normal rats, which were then injected with tumor tissue previously heated to 60°. In these experiments just as many animals developed immunity as in the control group.

It thus seems clearly proved that the spleen has no influence either on growth of or immunity to transplants of Cysticercus sarcoma. Probably the immunity is not connected with any one organ, but rather with the organism as a whole.

This work was carefully planned and carried out, a large number of animals being used, and every precaution taken to avoid erroneous conclusions. A good bibliography is given and 8 illustrations are included.

Edward Herbert, Jr.


Twenty-five rabbits were painted with tar twice weekly for seven months, starting seven to eight days after double ovariectomy. Twenty-five normal rabbits were similarly painted. In the castrated rabbits the first papilloma appeared on the thirty-fourth day and 3 carcinomas, confirmed histologically, developed after 62, 151 and 206 days respectively. In the normal rabbits the first papilloma was observed after eighteen days and 5 carcinomas were observed after 21, 64, 69, 155 and 158 days respectively. Castration, therefore, inhibited the appearance and evolution of tar tumors but its
action was not sufficiently intense to outweigh the individual susceptibilities of all rabbits, and tumor nodules were not constantly more numerous or larger in the normal rabbits.

L. Foulks


Repeated injections of sodium perrhenate were made into 5 mice with spontaneous adenocarcinomas of the breast, 4 mice with sarcomas produced by 1 : 2 : 5 : 6-dibenzanthracene, and 1 mouse with a tumor at the site of implantation of a radon tube. Half the mice died within ten days of the beginning of treatment. The survival periods of the remaining mice were within the limits observed for tumor-bearing mice receiving no treatment. There was no cure and no modification of the progress of tumors, which seemed unaffected by the rhenium.

L. Foulks


Emulsions of Rous sarcoma were injected into fowls. There was no appreciable difference between the results of intracutaneous and subcutaneous injections when the doses were large, but more dilute emulsions produced more tumors in the skin than in the subcutaneous tissues. Intracutaneous tumors grew more slowly and about half regressed, producing an extremely solid immunity.

The authors previously reported similar results with mouse sarcoma and Brown-Pearce rabbit carcinoma. See Absts. in Am. J. Cancer 27: 759-760, 1936, and 29: 750, 1937.

L. Foulks


The authors could find no evidence that the immunity to reinoculation conferred by intracutaneous inoculations of the Brown-Pearce rabbit tumor was due to humoral antibodies.

L. Foulks


Intracutaneous inoculations of Brown-Pearce rabbit tumor produced tumors which regressed leaving the animals resistant to reinoculation, but no trace of specific protective substances was found in the blood. Serum from resistant animals, however administered, had no specific effect on tumor growth and in parabiosis experiments there was no transference of resistance between the united animals.

L. Foulks


Rabbits (number not stated) were injected with cultures of vaccinia and fifteen days to three months later they were refractory to implantations of Brown-Pearce rabbit tumor.

L. Foulks


Impressed by the rarity of primary tumors of muscle, Roffo thought that muscle tissue might contain some substance antagonistic to tumor growth. He therefore pre-
pared hydrolysates of heart tissue and tested them on two transplantable rat tumors, a carcinoma and a sarcoma, which had been propagated for twenty-eight years. During this period more than 60,000 tumors had grown progressively and spontaneous regression was never observed. Hydrolysates of muscle injected subcutaneously at a distance from the tumor produced complete regression in almost every rat. [Three tables are given which show regression in 66 out of 69 injected rats and arrest of growth in the other three.] Fresh extracts were ineffective and the curative action is attributed to products of disintegration of muscle tissue. Photomicrographs are included.

L. Foulds


Of these three accounts of the authors' experiments the fullest is that in Bull. Assoc. franç. p. l'étude du cancer.

Seven to ten subcutaneous injections of a solution of colchicine caused regression of Shope warts in 15 rabbits. The warts disappeared in three to five weeks and the rabbits were then refractory to the Shope virus. In another experiment 19 rabbits were used which had a papilloma on each flank. An aqueous solution of colchicine and an ointment containing colchicine were applied repeatedly to the warts on one flank; the warts on the other flank served as controls. The local applications caused rapid and regular regression of the warts. The untreated warts commonly remained stationary or regressed slowly but some continued to grow and two ultimately became malignant. A wart which had incompletely regressed under the action of colchicine (in another experiment) also became malignant. Shope warts are histologically benign but are potentially malignant; it is suggested that they might be described as papillo-epithelioma.

The authors consider that it is worth trying the effects of colchicine, given orally or in local applications, for precancerous lesions and benign tumors of the skin and mucous membranes in man. [The abstractor would refuse, without hesitation, to accept this treatment 'for a lesion which was accessible to orthodox methods.]

L. Foulds


The authors have continued their studies on the isolation and properties of the macromolecular protein obtained by ultracentrifugation from the warty tissue of western cottontail rabbits diseased with the virus of infectious papillomatosis. It has been shown previously that the infectivity of a suspension of the tissue is concentrated in the fraction containing this protein and that the amount of the protein that can be extracted from the tissue is roughly proportional to its infectivity. No such protein has yet been found in the non-infectious warts produced by the virus in rabbits. Studies on the comparison of the pH ranges of virus activity and protein molecular stability have yielded interesting results in the case of the papilloma virus (Proc. Exper. Biol. & Med. 36: 562, 1937), the elementary bodies of vaccinia (Science 86: 331, 1937), and the tobacco mosaic virus protein (J. Biol. Chem. 122: 239, 1937–38).

In a continuation of these studies it is now shown that immediate inactivation of the papilloma virus occurs at those pH values at which the protein molecules fragment. In weakly alkaline solutions there is a gradual loss of viral activity which is not reflected in observable changes in the molecular sedimentation rates. These observations, it is
concluded, are compatible with the hypothesis that the homogeneous heavy protein is the causative agent of infectious papillomatosis in rabbits.

(There is one plate showing sedimentation diagrams of solutions of the papilloma protein. The technic used for the isolation of the protein was described by the authors in Science 85: 201, 1937.)

A. F. WATSON


Levaditi and his collaborators have previously reported that fowl pox virus localized in transplantable mouse tumors, destroying their cells and abolishing their transplantability, but that the same virus had no effect on the growth or transplantability of the Brown-Pearce rabbit tumor, though it localized in the tumors (Compt. rend. Soc. de biol. 124: 711, 1937; Compt. rend. Acad. d. sc. 202: 2018, 1936. Absts. in Am. J. Cancer 31: 504, 113, 1937).

Rabbits are much more resistant than mice to the fowl pox virus and it was impossible to obtain a strain perfectly and constantly pathogenic for rabbits. A partially adapted strain did not affect the growth or transplantability of the Brown-Pearce tumor. It seems that tumor growth is affected when the animal is of a species susceptible to the virus but not if the animal has a natural resistance though it be only partial. L. FOULDS

Lymphogranulomatosis Virus and Tumors, R. SCHOEN. Virus lymphogranulomateux et néoplasme, Compt. rend. Acad. d. sc. 204: 1903–1904, 1937.

The virus of lymphogranulomatosis, injected intracerebrally, localized in a transplantable mouse sarcoma, proliferated there, and persisted through seven successive passages. It had no effect on the growth or structure of the tumor. L. FOULDS


It was previously found (Compt. rend. Acad. d. sc. 204: 1903, 1937; Abst. above) that the virus of lymphogranulomatosis localized and multiplied in transplantable sarcomas of mice. A similar localization is now reported in two spontaneous epithelial tumors in mice. L. FOULDS


Levaditi and Haber (Compt. rend. Acad. de sc. 202: 2018, 1936. Abst. in Am. J. Cancer 31: 113, 1937) found that the fowl pox virus, which is pathogenic for mice, localized and multiplied in mouse carcinoma 63, causing massive necrobiosis. Grafts of these tumors transmitted the virus but did not proliferate. The present authors repeated the experiments with two other transplantable mouse tumors, Crocker sarcoma 180 and carcinoma 2146, and obtained similar results. L. FOULDS


After a few passages in rabbits, a strain of rabies virus obtained directly from a dog showed the same selective affinity for the Brown-Pearce rabbit tumor growing in the anterior chamber of the eye as did the strain of street virus previously examined (Levaditi, Schoen, and Reinié: Ann. Inst. Pasteur 58: 353, 1937. Abst. in Am. J. Cancer 30: 772, 1937). L. FOULDS


Crocker sarcoma 180 and carcinoma 2146 were transplanted into mice which had been rendered syphilitic 78 and 278 days previously. The resulting tumors were removed
fifteen or sixteen days later. Five out of 8 tumors were infective but treponemas were found in only 2 tumors. Sometimes the virulence of the tumor tissue may be due to a rare treponema but usually seems associated with an invisible state of the specific organism. The virulence of the tumor is not due to accidental contamination.

L. Foulds

Histologic Demonstration of Glycogen in a Transplantable Malignant Hepatoma,

A mouse hepatoma was transplanted through 15 generations, comprising 131 CBA mice, in the course of twenty-one months. As previously reported (Am. J. Cancer 28: 112, 1936), the transplanted tumors continued to secrete bile. It is now shown that they retained the power of accumulating glycogen. Enormous numbers of glycogen granules were present within the cytoplasm of the tumor cells. A few isolated cells, especially multinucleated cells, contained little or no glycogen and demonstrable glycogen was reduced in, or completely absent from, dividing cells. It seemed that the tumor cells contained more glycogen than the normal liver cells of the same animal. The hepatoma grows relatively slowly and provides an exception to the general rule that glycogen occurs in rapidly growing tumors, but it presents one of the factors believed to favor the accumulation of glycogen, namely the presence of numerous and delicate vessels in close relationship with the stroma. There are four colored figures.

L. Foulds

Effect of X-Radiation on the Blood and Lymphoid Tissue of Tumour-bearing Animals,

A mouse sarcoma (Mal. sarcoma 1) grew more frequently and more rapidly and reached a larger size in rats which had received general irradiation than in control rats. Grafts into successive generations showed a higher percentage of takes in the irradiated rats. There was a heavy mortality among rats receiving 300–600 r as Clemmesen previously found (Am. J. Cancer 29: 313, 1937). Irradiation causes a progressive fall in the number of red blood cells from the time of irradiation onwards and a leukopenia with diminution of the absolute number of lymphocytes. Fatty change in the liver and kidneys probably resulted from the anemia. The spleen was always reduced in size and the degree of atrophy was proportional to the fall in the blood count. The reticuloendothelial cells of the mesenteric lymph nodes proliferated at the expense of the lymphoid tissue and gave a strong iron reaction; the nodes had the appearance of hemolymph nodes concerned with the phagocytosis of red cells.

Transplanted tumors usually grow badly in ailing animals, but irradiated animals seem to provide favorable conditions. It is suggested that deficiency in oxygen, resulting from the damage to the blood-forming tissues by the irradiation, is one of the factors necessary for tumor growth. In one experiment iron deposits were found in the reticulo-endothelial cells of lymph nodes in mice which developed sarcomas as a result of injections of 1 : 2 : 5 : 6-dibenzanthracene combined with irradiation. Anemia and evidence of blood destruction are being sought in animals with spontaneous growths or receiving injections of a carcinogenic compound.

L. Foulds


Clarkson, Mayneord and Parsons (J. Path. & Bact. 46: 221, 1938. Abst. above) have recently described certain changes in the lymph nodes of animals irradiated with x-rays. In addition, changes were observed in the lymph nodes of animals treated with a derivative of 1 : 2 : 5 : 6-dibenzanthracene.

The Lasnitzkis have observed somewhat similar changes in the lymph nodes of rats some fifteen to eighteen days after the subcutaneous inoculation of the Jensen rat sarcoma. While the nodes of normal rats were found to be almost entirely of a light yellowish color, a large number of those of the tumor-bearing animals showed a
varying extent and degree, a red discoloration. The change occurred in the nodes of all regions, although unequally, and in an irregular manner in different animals. The size of the tumor and the age of the animal appeared to have little significance.

Microscopic examination of the lymph nodes showed that a conversion into more or less pronounced hemolymph nodes had taken place, the normal lymph tissue having to a varying extent disappeared. Its place was taken by dense aggregations of red blood corpuscles, among which a number of particularly large, sometimes pigmented, cells, probably the descendants of normal (non-lymphocytic) tissue cells could be observed. A similar result was observed in the lymph nodes of rats which had been injected with a carcinogenic tar.

The authors conclude that the simplest explanation of the origin of the change in the lymph nodes is that it is due to the action of a chemical substance formed by the growing tumors.

Two photographs showing the microscopic structure of a lymph node from a normal rat and from a rat bearing a fifteen-day-old Jensen sarcoma are included. A.F. Watson


A regular degeneration of the adrenals in the present author's line RIII of mice with a high incidence of mammary cancer was described by Cramer and Horning (Nature 139: 190, 1937). [Cramer and Horning's detailed report (J. Path. & Bact. 44: 633, 1937. Abst. in Am. J. Cancer 33: 284, 1938) was presumably not published when this paper was written.] The degeneration was therefore sought by the author in the available adrenals from tumor and non-tumor bearing mice. Four types or stages of the process are described. Degeneration was found in the adrenals of 23 out of 32 tumor-bearing mice (31 females with mammary cancer and 1 male with cancer of the lung). It occurred in many other cancer lines in addition to RIII but was not specific to the cancerous state, for it was found also in cases of infectious diseases, cystic kidneys, and cystic ovaries. It seems to predominate in females and in aged animals; the youngest animal in which it was present was ten months old but some old animals were free. The nature of the process is obscure and non-cancer lines need investigation before its significance for the etiology of cancer can be determined. L. Foulds


This is a study of the cell percentages in the anterior pituitary of white rats with spontaneous, transplanted, and induced neoplasms, some of which received injections of gonadotrophic hormones or estrogenic hormones while others did not. Rats immune to tumor growth and castrate animals are included. For the results the original paper must be consulted. The literature on the relation of the anterior pituitary to tumor growth is reviewed and references are included.


The author has previously described a serological test for cancer based on the selective migration of tumor cells in the presence of blood from a cancer patient (see Absts. in Am. J. Cancer 23: 142, 1935; 31: 122, 1937). He now describes experiments with mouse tumor S37 showing that this selective migration is prevented when the blood is heated to a temperature of 50 to 54°C for twenty minutes.


The authors record the sudden development among the Albany strain of rats of a high incidence of spontaneous mammary tumors. Previous to 1934 no spontaneous
tumors were observed in this strain. In 1934 and 1935 10 tumors were discovered, and since then 26 (50.9 per cent) of the 51 females in the authors' colony have developed spontaneous breast tumors, chiefly of the benign fibro-epithelial type, though there have also been observed adenocarcinoma, adenoma, and fibroma. At the same time the females of this strain have shown a progressive decline in fertility, though no correlation was ascertained between sterility and tumor development. In a large number of the rats of this strain irregular and atypical vaginal cycles and pituitary changes have been observed. A preliminary report of these abnormalities is included.

The paper is illustrated by photomicrographs and a bibliography is appended.


Two spontaneous uterine tumors in a rabbit are described. The histology of the tumors was complex in that it varied from benign endometrial hyperplasia and highly proliferative areas to fields that were suggestive of adenocarcinoma. No metastases were found in the retroperitoneal lymph nodes or lungs, nor were metastases noted in any of the abdominal organs. Photomicrographs of the tumors and a bibliography are included.


A review of previous reports on the so-called venereal sarcoma of dogs with a description of 8 cases observed by the authors in a series of 1,400 animals. The observations do not differ from those of earlier workers. The condition is most likely a type of lymphosarcoma, occurs on the genital regions of both sexes in various breeds, is most probably transmitted by coitus, and may be transplanted experimentally to the genitalia or subcutaneous tissues of other dogs by scarification or injection of viable cells. A filtrable agent has not been demonstrated. The growth may metastasize regionally, to the subcutis, or the internal organs, but it may also regress and leave a complete immunity. Some cases are cured by excision but the condition is resistant to radiation. Photographs of the tumors and photomicrographs are included. Milton J. Eisen


The authors describe experiments in which carcinogenic compounds and substances which cause proliferation in animal tissue were applied to sunflower seedlings cultivated aseptically by a method described previously (Compt. rend. Acad. d. sc. 203: 629, 1936. Abst. in Am. J. Cancer 33: 585, 1938). It was found that 1 : 2 : 5 : 6-dibenzanthracene is particularly toxic. Benzpyrene produced lesions which were apparently due to hyperplasia of epidermal cells and folliculin produced in one seedling a "reaction néoplasique très nette." L. Foulds


Further technical details are given concerning the aseptic cultivation of seedlings for experiments with B. tumefaciens and carcinogenic substances. See preceding abstract. L. Foulds


Tomato plants were inoculated with B. tumefaciens and on the same day colchicine was applied to them. The immediate effect was to increase the number of tumors
which developed but subsequently the growth of the tumors was greatly retarded. The action was not due to the toxicity of colchicine; it was not specific to colchicine and not related to its chemical structure. An almost identical inhibition of the growth of galls was produced by keeping the growing points of the plants in darkness or by removing the flower buds as soon as they appeared. It is suggested that the action of colchicine is due to a disturbance of polarity in the transport of the "phytohormones" of growth.

There is an excellent bibliography which includes the papers on the action of colchicine in animals.


Cats receiving intravenous injections of a colloidal lead preparation generally remained in good clinical condition without loss of weight or anemia, and the organs of these animals showed slight, if any, structural changes. When, however, roentgen irradiation was given in addition, toxic manifestations ensued and pronounced structural changes in the organs occurred. These were of the same nature as were observed in animals treated by irradiation alone, but were more marked and are attributed to the combined toxic effects of the two agents.

The lead injection brought about significant increases in the lead concentration of most organs and tissues examined. The lead distribution in animals treated with both lead and roentgen ray was essentially the same as that following the administration of lead only, although changes in lead concentration were found in certain organs.

References are appended.


Histolysis was produced by irradiation of the thymic region in young rabbits. The nitrogenous products of histolysis were adsorbed by plasma peptides and were demonstrable by the estimation of nitrogen provided they were first liberated from the peptides.

L. FOULDS

THE TUMOR CELL


A detailed report of studies on characteristic staining capacities of malignant epithelial tumors (Ehrlich and Leupold mouse carcinoma, Brown-Pearce tumor, various human cancers) with silver impregnation methods. After formalin fixation of normal epithelial tissue and impregnation with silver a finely granular intermediary connecting system between cells may be demonstrated. When blastomatous changes of a malignant nature have occurred, the cells gradually lose this boundary layer, and a brown-black finely granular membrane appears about the nuclei. The authors call such cells panariocytes. They occur solely in actively growing portions of a tumor and may be observed only after the use of silver stains.

All living tumor cells do not have this structure. Many revert to an appearance that approaches that observed in normal epithelium. The infiltrating and metastasizing portions of a tumor consist predominantly of panariocytes, while the proliferating portions are made up of cells with a tendency to have an intermediary system. Thus, carcinoma cells would be biphasic, the propagative phase corresponding with the first type of cell, and the vegetative phase with the second. The change from one phase to another is reversible, and cells in different stages of change may coexist in one growth. Since necrobiotic changes develop readily in panariocytes and the continued growth of a
neoplasm depends upon cells capable of propagation, it is conceivable that radiation therapy has a double effect—the production of degenerative changes in the labile propagative cells, and an inhibition in the development of such cells from those in the vegetative phase. Mention is made of a case of squamous-cell cancer treated successfully in which gradual disappearance of panariocytes was noted concomitantly with a return of the vegetative cells to normal. Such reversion of carcinoma cells to normal cells is contrary to the generally accepted doctrine that cancer cells do not return to normal after the characteristic changes of carcinomatous degeneration have developed.

Pseudo-panariocytes of various types must be differentiated from genuine panariocytes. When regressive changes have occurred in cancer cells, silver-staining granules may appear within the nuclear wall. These are called secondary chromopanariocytes. Primary chromopanariocytes are viable cells with a similar structure and they may be observed in benign epithelial tumors. In contrast to true panariocytes these forms are demonstrable with the ordinary nuclear stains. Normal connective-tissue cells may simulate the panariocyte, but they are larger, they occur isolated in the stroma, their form is characteristic of stroma cells, the membrane takes on a blacker hue with silver, and they contain granules stainable with toluidine blue. These differences usually make possible a differentiation of sarcoma from carcinoma cells, but the similarity is at times great. Pseudo-types occur also in inflammatory connective-tissue proliferation, especially in the specific inflammations.

Photomicrographs of the various types of cells are included.

**ETIOLOGY**


In this lecture, Cramer discusses the results and applications of experimental investigations of cancer. Carcinogenic agents induce cancer only after a lapse of time occupying a considerable fraction of the normal life span of the species; during this period the tissues undergo pathological changes and cancer originates in the altered tissue. A normal cell is transformed into a malignant cell by an action from without, but once the transformation has occurred the cancer cell pursues its course without external stimulus. The effect of carcinogenic agents is heavily conditioned by factors—grouped together as "susceptibility"—which reside within the organism. It has been shown that the high incidence of mammary cancer in one strain of mice is due to an endocrine imbalance. An animal highly susceptible to cancer in one tissue is not necessarily susceptible to cancer in other tissues. This susceptibility is a tendency to respond with the development of cancer to carcinogenic stimuli which are perhaps so weak as to be ineffective in the normal average animal. It is limited to one or at the most a few tissues and is inherited; cancer as a disease is not inherited. It is necessary to search now for the two factors—susceptibility and carcinogenic stimulus—which are concerned in different kinds of human cancer.

Statistical investigations reveal a high familial incidence of cancer restricted to one organ, notably mamma, uterus, or prostate. It has been shown recently that cancer of
the mouth, pharynx, and esophagus in women is preceded with surprising frequency by simple achlorhydric anemia, sometimes associated with dysphagia and then known as the "Plummer Vinson syndrome." Cramer believes that similar etiological relationships can be found for cancer in many other organs and that the way to prevention can thus be found. To establish these relationships a "follow-down" system is required. It would seem necessary, therefore, to establish in a few hospitals a separate department, under the control of a physician, through which all patients admitted to the hospital suffering from cancer of the internal organs, especially those which are numerically important, such as the breast, uterus, and digestive tract, must pass for an investigation into their previous medical histories. Further, educational propaganda among the public for earlier diagnosis is less needed than "educational propaganda among the medical profession to establish in their minds that cancer is largely preventable and that every effort should be made to prevent it."

[This paper met with a considerable response in the Correspondence columns of the journal (Brit. M. J. 1: 973, 974, 1024, 1069, 1070, 1128, 1129, 1181, 1938), various etiological theories and means of prevention being suggested.]

I. Fouled

Pregnancy Toxemias and Tumors. New Point of View in the Etiology of Tumors,

Four women from eighteen to thirty years of age showed numerous foci of infection, pregnancy toxemias, and tumors. The tumors were bilateral Krukenberg tumors of the ovaries without demonstrable primary site, a carcinoid of the appendix, a hemangioma of the vulva, and a giant-cell sarcoma of the jaw. In all the cases the children were either especially subject to infections or showed congenital abnormalities. Bud's theory is that the focal infections were the cause of the toxemias as well as of the tumors, through a toxic effect on the nerve plexuses. He also believes that this toxic action was transmitted to the fetuses in utero and made them abnormally subject to subsequent infections. Seven illustrations and a bibliography are included. Edward Herbert, Jr.

GENERAL CLINICAL AND LABORATORY OBSERVATIONS


A review of 153 tumors recorded in the literature as carcinosarcoma and of similar tumors which have come under their personal observation leads the authors to the conclusion that a diagnosis of carcinosarcoma is rarely justified. Only 3 or 4 of the recorded cases can be unquestionably so designated.

The apparently dual nature of these tumors is to be variously explained. It may be due (1) to variations of carcinoma cells, some of which assume spindle shapes and may be interpreted as cells of a spindle-cell sarcoma, a factor particularly true of "squamous-cell carcinomas with transitional features"; (2) to marked anaplasia of the carcinoma cells; (3) to chronic inflammation which either leads to morphologic changes of tumor cells, produces much connective tissue which may be regarded as part of a malignant connective-tissue tumor, or provokes a lymphocytic reaction which may be taken as the lymphosarcoma component of some of these tumors; (4) to the invasion of a benign connective-tissue tumor by a carcinoma. Other instances of so-called carcinosarcomas are believed to be sarcomas which have invaded normal or metaplastic epithelial structures, the latter being interpreted as the "carcinomatous" elements.

Twenty-six photomicrographs and a comprehensive bibliography are included.


Faerber considers it irrational to work on the hypothesis that cancer afflicts cells and tissues of all ages through the same mechanism, when the cancers of infancy may constitute a separate category by virtue of the peculiar metabolic properties of the
In support of this he quotes Cramer (Cancer Review 3: 345, 1928) and Dickens and Weil-Malherbe (Biochem. J. 30: 659, 1936).

Cramer has directed attention to the fact that the retinoblastoma, which appears almost exclusively in infants, and the chorionepithelioma arise from tissues that have a type of metabolism resembling that of tumors. Dickens and Weil-Malherbe have shown that brain and kidney medulla have a high glycolysis. The resemblance between the metabolism of these tissues and that of embryo and tumor may have some connection with the occurrence of neuroblastoma and nephroblastoma in infancy.

In Faerber's opinion, although it is doubtful whether the nephroblastoma arises from the medulla of kidney, these relations are of importance and should be borne in mind by pathologists and workers who hope to unravel the causative mechanism of cancer.

A. F. Watson

Deficiency of an Oxidizing Factor in the Blood of Cancer Patients, E. Rousseau.


A detailed description is given of the extraction from blood of an oxidizing substance which was less by 20 to 30 per cent in cancer patients than in normal subjects. The deficiency was independent of the type of tumor but was related to its state of evolution. Fifty samples of blood were examined, but the proportions of cancer patients and normal subjects are not mentioned.

L. Foulds


In 1927 an adenocarcinoma of the descending colon was removed by partial colectomy from a man aged forty-one. During the operation a hard nodule about the size of a pea was felt on the surface of the right lobe of the liver and enlargement of one or two paracolic nodes was seen. The patient was examined ten years later and no sign of recurrence was found. It was assumed at the operation, and the author still believes it probable, that the liver nodule was a secondary deposit of carcinoma. The mechanism of spontaneous cure of cancer is discussed.

[Spontaneous recovery from cancer is further discussed in an editorial article in the same number of the journal (p. 525). It is remarked that Chamberlain’s case “involves a slight element of doubt”; identification of the small liver nodule as metastatic carcinoma rests on palpation alone.]

L. Foulds


Following a general discussion and a review of the literature, 21 instances of skull metastases are briefly described. The sources of the metastases were carcinoma of the thyroid, 12 times; carcinoma of the liver, 3 times; carcinoma of the breast and glioma of the retina, twice each; multiple myeloma once; and malignant ovarian tumor composed of thyroid tissue once. Twenty-three illustrations and a good bibliography are included.

Edward Herbert, Jr.


Syringeal atheromas of the scrotum seem to be more common in Java than in Europe. In 288 male autopsies they were found three times, an incidence of 1 per cent. The histology and pathogenesis are discussed in detail. Müller leans to the opinion that they are hamartomas.

Five cases are reported of a different kind of subcutaneous tumor. It was found on various parts of the body and attained a diameter of 7 cm. The tumor is a solitary...
cystic growth, histologically benign, containing papillary structures composed of uniform epithelial cells resembling those of the basal layer of the skin. It resembles somewhat the nevus cystadenomatosus papilliferus but the cell elements are more homogeneous. No similar tumors are described in the literature, and Müller believes this to be a new type arising probably from the sweat glands. He gives it the name of subcutaneous papillary cystadenoma.

Five photographs, 2 photomicrographs, and several references are included.

EDWARD HERBERT, JR.


Two cases are recorded—an intramuscular xanthoma in a woman of fifty-one and a giant-cell tumor of the spine following trauma in a man of forty. An exploratory operation in each instance was followed by roentgen irradiation with good immediate results.

The author adds a discussion of giant-cell tumors, a bibliography, and two roentgenograms.


A woman of seventy-six had a tumor of the palm which exhibited the structure of a mixed salivary gland tumor. The author does not believe it necessary to have recourse to the theories of germ or cell inclusions to explain the origin of the tumor. It is to be regarded as epithelial in origin, derived from the sweat glands. The author believes that the growth acquired the structure of a mixed tumor through selective differentiations of the epithelial tissue and modifications of its stroma with metaplasia of epithelial tissue into cartilage. These modifications and metaplasia appear to have some connection with the mucous secretion of epithelial neoplastic cells. Twelve photomicrographs are included and there is a bibliography.


A Javanese woman thirty years old had a pulsating tumor of the right thigh about 8 cm. in diameter. Because of pulmonary metastases demonstrated by x-ray and a hemiplegia presumably due to a brain metastasis, the tumor was believed to be a sarcoma, but the diagnosis was not verified histologically. EDWARD HERBERT, JR.


A boy eighteen years of age had a tumor the size of a child’s head involving the right knee. It had been growing for five years and was largely anterior, surrounding the patella. In places it was necrotic and suppurating. A resection of the knee joint was done and the tumor proved to be a neurinoma or neurofibroma. Two photographs and several references are included.

EDWARD HERBERT, JR.

TREATMENT


This is a clinical lecture describing the general principles of cancer therapy and then taking up in detail the method of choice for each type of tumor. It gives a complete and excellent summary but adds no new material. One plate is included.

EDWARD HERBERT, JR.
TREATMENT

Importance of Roentgen and Radium Therapy in the Modern Treatment of Cancer,

This article states clearly the fundamental principles of radiotherapy and describes the various methods of application with the special indications for each method, but contains no new material. Four photographs are included. Edward Herbert, Jr.


Coutard gives some results of treatment by roentgen rays, radium and roentgen therapy combined, and radium and surgery, in cancer in various sites, as follows: lymphosarcoma of the pharynx, roentgen therapy alone, 46 cases, 34 per cent five-year survivals; epithelioma of the palatotonsillar region, roentgen therapy alone, 66 patients, 32 per cent five-year survivals; cancer of the larynx, roentgen therapy alone, 126 patients, 24 per cent five-year survivals: cancer of the pharynx, roentgen therapy alone, 225 patients, 11 per cent five-year survivals; inoperable carcinoma of the maxillary sinus, roentgen therapy alone, 8 cases, 50 per cent five-year survivals; carcinoma of the uterine cervix treated by radium or roentgen rays alone or in combination, 984 cases, 31 per cent five-year survivals (Lacassagne's statistics, embodied in the League of Nations Report. Abst. in Am. J. Cancer 32: 316, 1938); epithelioma of the tongue, treated by radium combined with roentgen therapy or surgery for the node-bearing area, 382 cases, 18 per cent five-year cures (Roux-Berger's series, reported in detail in Bull. et mém. Soc. nat. de chir. 58: 1343, 1932. Abst. in Am. J. Cancer 21: 145, 1934).

Coutard follows his statistical report by a discussion of methods. In general irradiation by an external source is to be used in cancers made up of differentiated cells, of small volume, and without node involvement. Irradiation by an external source—roentgen rays or telecurie therapy—is indicated in extensive lesions accompanied by adenopathy, when the cells are undifferentiated or only slightly differentiated, and when the vasculo-connective tissue is soft, loose, elastic, non-fibrous, and not penetrated by muscular fibers.

Adenocarcinoma, with few exceptions, is less amenable to irradiation than the stratified epidermoid epithelioma, and should preferably be treated by surgery after moderate external irradiation. Lymph node metastases of highly differentiated epitheliomata of the mucosa are also best treated by surgery.

When both surgery and irradiation are to be employed, Coutard prefers preoperative to postoperative irradiation.


Chaoul's method of concentrated fractionated contact irradiation is described in detail, its chief advantage being that it approximates radium in its effect. Of 42 cases of skin cancer treated in this way all but one showed excellent immediate results, but no follow-up is given. There are no illustrations. Edward Herbert, Jr.


Ninety-three cases of skin carcinoma of various types were treated by Chaoul's method of contact irradiation (see Absts. in Am. J. Cancer 22: 692, 693, 1934; 29: 163, 772, 1937). In 17 cases treatment was not completed. In 13 cases the results were poor. It is concluded that this method is not one that can be applied indiscriminately to all skin cancer, and that in many cases surgery should be used either alone or in conjunction with radiotherapy. Eight photographs are included. Edward Herbert, Jr.

A method is described of irradiation of abdominal cancers through the open wound following removal of the growth, so far as possible, by the Percy galvanocautery. Sheet lead folded over the edge of the incision protects the skin and shields the small intestine, which is packed off with gauze. Some 2500 to 4500 r are administered unfiltered or through various thicknesses of aluminum or copper.

Six cases in which the method has been employed are recorded: (1) a recurrent adenocarcinoma of the colon invading the lateral abdominal wall and retrocolonic space; (2) adenocarcinoma of the sigmoid with attachment to the parietal peritoneum; (3) adenocarcinoma of the rectosigmoid junction, grade 3, with metastases in the lymphatic channels and lymph nodes of the mesentery; (4) pelvic recurrence following removal of adenocarcinoma of the jejunum and an independent adenocarcinoma of the right ovary; (5) rapidly growing carcinoma of the cardia with esophageal extension and metastases to the mediastinal and abdominal lymph nodes; (6) carcinoma of the stomach of the linitis plastica type. In four of the cases there had been no evidence of recurrence, but in only one case had the period of observation exceeded a year.

Two diagrams show the abdominal and perineal methods of approach.


This is one of a series of articles on surgical procedures in general practice. Instructions are given for the treatment of papillomata, angiomata, sebaceous cysts, lipomata, fibromata, chondromata, osteomata, ganglia and bursae. The available methods are excision, enucleation, and destruction by a cauterizing agent; irradiation therapy should always be entrusted to experts. Correct treatment depends on accurate diagnosis and it is imperative that, after removal, every apparently benign tumor, and preferably the whole of it, should be sent for microscopic examination. As a rule, pigmented tumors should be treated by specialists. Removal of innocent tumors must be complete or there will be recurrence and perhaps malignant growth; no neoplasm except lipoma can be trusted to remain innocent. The operations demand as scrupulous attention to asepsis and control of hemorrhage as major procedures, and the closure of wounds, especially on the face, needs the greatest care to avoid unsightly scars.


One thousand cases of cancer are here analyzed to determine the responsibility for delay in treatment. The patient alone was held responsible for 44.3 per cent of the delays; the patient and physician for 18.0 per cent; the physician alone for 17.0 per cent, and in 20.7 per cent there was no delay. The patient was responsible for the delay, either initial or subsequent to consulting a physician, in 62.3 per cent, based on the 940 cases in which a physician was consulted.

Criticism of the physician is based on the type of action taken rather than solely on the time elapsing from the patient's visit to the institution of adequate treatment. In 46.0 per cent of the cases in which the physician was open to criticism, wrong treatment was given; in 29.7 per cent neither advice nor treatment was given; in 10.9 per cent wrong advice was given. Delay in treatment and failure to diagnose within a month accounted for the remainder.

THE SKIN


All basal-cell epitheliomas contain a few pigment-bearing cells, but in only about 6 to 10 per cent are these cells present in sufficient numbers to cause a brownish, gray, or
black color and make possible a clinical diagnosis of pigmented basal-cell tumor. Microscopically the pigment-bearing cells seem to follow the connective-tissue strands throughout the tumor as well as in the adjacent areas and do not appear to be a part of the actively growing neoplastic tissue. None has ever been seen in mitosis.

The authors discuss the various theories that have been offered for the origin of the pigment cells. As concerns their own cases, in which the dopa reaction was not employed, they are unable to express an opinion as to whether these cells were melanoblasts or melanophores.

Clinically pigmented basal-cell tumors have to be differentiated from the malignant melanomas, which they most closely resemble. The pigmentation grossly tends to be less uniform than in the melanomas. Biopsy, however, is the only positive way of establishing a diagnosis. The prognosis and treatment do not differ from those of ordinary basal-cell epithelioma. The authors advocate either radiotherapy or diathermy coagulation once the diagnosis is established.

Four photomicrographs and a lengthy bibliography are included.

Edward Herbert, Jr.


A tumor believed to be a pigment-free malignant melanoma of the popliteal region is recorded. The primary manifestation of the neoplasm was indistinguishable from Paget’s disease. It was of long duration and apparently limited to the epidermis, yet it metastasized and killed the patient. The diagnosis was based on the site of the lesion and on the morphology of the metastases, in which the tumor cells were arranged in cords separated by slender strands of fibrous tissue, an arrangement characteristic of malignant melanoma but not of extramammary Paget’s disease.

Six examples from the literature having similar features are reviewed and it is suggested that these form a group of superficial, slow-growing nevocarcinomas with Paget-like characteristics.

Four photomicrographs are included and a bibliography.


A girl seventeen years of age had a small lesion of the right cheek which had been present for two years. When salves and caustics failed to bring about improvement, it was excised and was found to be a squamous epithelioma. The girl had a very fair skin and had had long exposures to sunlight, which was believed to be an etiological factor. One photomicrograph is included.

Edward Herbert, Jr.


The author’s patient had for three years had lupus of the entire right side of the face, which had been treated with salves, Fowler’s solution, ultraviolet light, and radiotherapy without improvement. Finally at the age of seventeen there appeared simultaneously on various parts of her face several rapidly growing tumors, biopsy of which showed squamous epithelioma. It was not believed that the therapy played any part in their development. The end-result is not given. One photograph and several references are included.

Edward Herbert, Jr.


A man forty-one years of age who had had lupus simplex of the face for eighteen years developed an ulcer of the left cheek. Biopsy showed only granulation tissue. Radiotherapy by Coutard’s method was given but the ulcer became steadily deeper and larger, finally perforating the cheek. Repeated biopsies were negative for malig-
nancy until six months after radiotherapy was instituted, when a spindle-cell sarcoma was found. The patient died four months later. Autopsy confirmed the diagnosis of sarcoma, but there were no metastases, death having been due to a miliary tuberculosis. It is believed that the radiotherapy played no part in the development of the tumor since it had been employed for so short a time. Three photographs, 3 photomicrographs, and a bibliography are included.

EDWARD HERBERT, JR.


Following a general discussion of the blue nevus a single case is reported of a small nevus removed surgically from the wrist of a man thirty-three years of age. The diagnosis was made histologically. One photograph and a bibliography are included.

EDWARD HERBERT, JR.


A case of Kaposi sarcoma is reported in a man forty-four years of age who had his first symptoms two years before he was first seen, and who was under treatment for two years and a half. The diagnosis was made by biopsy. Radiotherapy according to Coutard's method was given without results. Intramuscular injections of antileprol, which is a chaulmoogra oil derivative, were then tried and brought about marked improvement, but a relapse followed. The eventual outcome is not stated. An unusual feature of the case was the presence of skeletal lesions appearing in the x-ray plates as areas of rarefaction. Seven illustrations are included.

EDWARD HERBERT, JR.


The case is reported of a Javanese man, fifty-five years of age, on whose right foot a tumor had been growing for two years. It was found to be entirely subcutaneous in location and sharply circumscribed. It was removed and microscopic examination showed it to consist of large areas of amyloid in a fibrous framework. Whether it represents amyloid deposits in a previous fibroma or whether the basis was an inflammatory lesion could not be ascertained. A similar tumor was reported from Java by Darwis (Geneesk. Tijdschr. v. Nederl.-Indié 72: 795, 1932). This occurred on the forearm of a woman forty years of age and was present for twelve years. The microscopic pictures of the two lesions were nearly identical. One photograph is included.

EDWARD HERBERT, JR.


This is a general discussion of the various methods of treating malignant skin tumors. It contains no new material and there are no illustrations.

EDWARD HERBERT, JR.

THE EYE


Apparently no unquestionable cases of sarcoma of the iris or choroid have been seen in Java among the natives. The few reported cases occurred either in Europeans or Indo-Europeans, or else the race was not stated or the diagnosis was uncertain. Most ophthalmologists replied to an inquiry that they had never seen a case. Certainly the incidence is much lower than in Europe. The reason for this is not apparent, but more reports should be made concerning this tumor among the pigmented races.

EDWARD HERBERT, JR.
Osseous Growth of the Orbit Caused by Torulopsis Neoformans, Simulating Cancer,

A woman aged seventy-five had a tumor of the right orbit. Radiography showed that it was invading bone and a neoplasm of bone was suspected, but material removed by puncture suggested a parasitic disease. The tumor was excised and the cavity curetted; there was no recurrence eight months later. Torulopsis neoformans was identified in the excised growth.

THE BREAST


The author has attempted to study chronologically the malignant changes as evidenced histologically in 8 breast cancers. These changes were recent in 2 cases. Carcinoma developed in the course of a chronic cystic mastitis in 4 cases, in apparently normal breast tissue in 3 cases, and as a complication of fibro-adenoma in 1 case.

Chronic cystic mastitis or mastopathy, as it is named here, is considered very definitely a precancerous state. When malignancy developed in a breast in which this condition was present, the first changes were observed in the walls of the cysts or of dilated excretory ducts. The lining cells proliferated and filled the lumina. The cells become enlarged; they remained for a time in their natural limits, but later ruptured through the basement membrane and invaded the stroma freely. There was considerable round-cell infiltration about the walls of the cysts. The process was very similar in normal breast tissue and in fibro-adenoma, with the exception that the changes occurred in normal acini or tubules or in the cells lining the adenomatous formations.

The author's conclusions were reached by means of observation of three characteristic areas—in newly proliferating tissue immediately adjacent to well developed cancer, in distant portions independent of the malignancy, and in the early cases in tissue in which marked changes had taken place, but which as yet could not be diagnosed as completely developed cancer. The multicentric origin of cancer is stressed. Photo-micrographs are included.


In a series of 130 cases in which radical mastectomy was done for carcinoma of the female breast, mucicarminophilic material was found in all grades but in decreasing amount in those which histologically appeared to be of the higher grades of malignancy. The relative amount of the material was not found to be of significance.

The finding is of chief value in Grade II tumors. In this group the presence of mucicarminophilic material appears to be a favorable sign, for in those without axillary metastases it was found that the proportion of patients living without evidence of disease five to nine years was 56 per cent when the material was absent and 72 per cent when the material was present; with metastases the difference was 11 per cent as opposed to 25 per cent. The author points out, however, that no histologic character yet found carries the weight in prognosis, of such clinical factors as age, extent of disease, and presence or absence of metastases. Graphs and a bibliography are included.


After discussing various schemes of classification of breast cancer the author proposes a plan by which cases are divided into three groups as follows:

Group I: Tumor localized in breast and movable; skin not involved; metastasis not present in axillary nodes.
GROUP II: Tumor localized in the breast and movable; skin not affected or only very slightly edematous or ulcerated; metastases present in axillary lymph nodes but few involved.

GROUP III: Tumor diffusely involving the breast; skin involved (edematous, ulcerated), multiple nodules; metastases to numerous axillary nodes or to other tissue (supraclavicular nodes, lungs, bones, etc.).

A series of 405 cases is analyzed on this basis, and the following conclusions as to prognosis and treatment are drawn.

The early Group I cases with localized, movable tumors in the breast and without axillary metastases should be operated upon but not irradiated. Almost 100 per cent of these patients will survive for five years. This group comprises about 30 per cent of all cases.

The patients in Group II, with moderately advanced, localized, movable tumors in the breast and only a few axillary lymph node metastases, should have radical operative removal of as much of the diseased tissue as possible and irradiation postoperatively. About 50 per cent of such patients will survive five years if operation is the only treatment and at least 75 per cent will survive as long if irradiation is given. This group comprises about 25 per cent of all cases.

The patients in Group III, with clinical manifestations of incurability, should not be subjected to radical surgical procedures. No patient will survive for five years without evidence of cancer. These patients should be treated by irradiation alone to prolong their lives. This group comprises about 45 per cent of all cases.

A bibliography is appended.


This paper is a general discussion of the treatment of cancer of the breast based upon a series of more than 500 cases. While the author acknowledges that the value of preoperative irradiation is still unsettled, he believes that it should be done, but he wisely points out that there are a certain number of patients who have not the mental ability to cooperate for the long period which this requires while others are so panicky when a neoplasm of the breast is suggested that the only thing to do is an immediate operation. He is quite right in his insistence that the skin incision should go very wide of the malignant growth and that if this is done local recurrences will not be seen. He uses 50 mg. of radium inserted in the axilla and another 50 mg. in the region supplied by the internal mammary vessels. The radium is allowed to remain from thirty-six to forty-eight hours, depending upon the condition found at operation and the rapidity of the growth. If at the time of operation involvement of the chest wall is found, more radium is placed at that site. The important statement is made that far more discomfort in breathing and limitation of motion of the arm is caused by attempting to unite the wound than by employing a graft which permits the skin to move on either side of the area to which the graft has been applied.

Trout also believes in postoperative irradiation, though he acknowledges that its value is not yet determined. He thinks, too, that the ovaries should be rayed, and quotes Ahlbom (Acta Radiol. 11: 614, 1930) in support of this position. He believes, also, that it is well to ray the ovaries of those who have mammary cancer after the menopause, but can offer no explanation for the beneficial results which he thinks he has seen. He has never seen a patient with bone metastases cured by radiation a statement with which most radiologists will agree, though the palliative results are excellent.


Eight months after radical mastectomy for a duct-cell carcinoma with axillary metastases and four months after completion of a course of roentgen therapy, a woman of forty-six was seen with tumors on the inner side of each thigh, overlying the adductor muscles. One of the tumors was excised and the diagnosis was metastatic mammary carcinoma. Radon seeds were inserted and the tumors disappeared but subsequently
THE BREAST

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recurred. Metastases also appeared in the axilla and supraclavicular region, and lymphedema of the arm developed. Tumor nodules were present over the entire right thigh, extending to the gluteal region. At autopsy metastatic lesions were found in the mesentery, omentum, right pleura, and pancreas. This case is recorded as demonstrating lymphatic permeation of mammary carcinoma. Photomicrographs are included.


Two case reports illustrated by roentgenograms. In the first case roentgen therapy appears to have checked the growth of the metastatic lesions, to have relieved pain, and prolonged life for one or two years.


A radical mastectomy was done in a woman of sixty-two with a hard tumor in the left breast and enlarged nodes in the neck and axilla. The breast tumor proved to be an adenocarcinoma, but the axillary nodes had the appearance of benign lymphoma. Postoperative roentgen therapy was given to the breast and the nodes in the neck regressed, but within a few months a large node appeared in the left submaxillary area. This also disappeared under roentgen therapy but recurred. The cervical nodes were again palpable and the tonsils became enlarged. Irradiation was followed by rapid regression of tumors in various regions. Death was due to pleurisy four years after removal of the breast tumor. At autopsy lymphosarcomatous lesions were found to be widespread.

A biopsy was done and the tonsillar tissue showed lymphosarcoma. Photomicrographs, a roentgenogram of the stomach, and references are included.


Thirty-three cases of fibro-adenoma were studied: 13 tumors were removed during pregnancy, 10 during lactation, and 10 at varying periods after the end of lactation. Twelve of the 13 patients operated on during pregnancy gave a history of rapid enlargement. Pronounced epithelial proliferation, non-encapsulation at one or more points, with invasion of fat and many mitotic figures were found microscopically in the tumors removed during the first half of pregnancy. During the first third of pregnancy the tumors were characterized by progressively increasing branching and reduplicating of small terminal tubules and proliferation of young connective tissue around them. During the last third of pregnancy some parts of the tumor tissue showed the characteristic changes of late pregnancy which were present in the surrounding breast tissue; in other parts the changes observed during early pregnancy persisted; and there were occasional areas of pronounced epithelial proliferation with duct adenomas. The changes found during the middle third of pregnancy were transitional between those in the first and last thirds. The features seen during pregnancy tended to persist into the lactation period and sometimes rapid growth of connective tissue was maintained so that in one tumor the stroma looked like fibrosarcoma. Changes similar to those in the surrounding lactating breast tissue were found in scattered nodules at the periphery of tumors but in general the tumor tissue failed to respond to lactation and tended to undergo involutional changes, the most characteristic being hyalinization and myxomatous degeneration of the stroma. These involutional changes were most prominent during the post-lactation period, though some of the earlier changes persisted.

The physiological changes of pregnancy and lactation were usually observed at the periphery of the tumors where growth was maximal and the newly formed tissues had not been pathologically changed by previous over-stimulation. The failure of fibro-adenomatous tissue to respond to all phases of pregnancy and lactation to the same extent and in the same manner as normal breast tissue suggests that the tumors are more sensitive to some hormones than to others. The atypical epithelial proliferation seen
in the tumors is a direct effect of estrone and can be reproduced in the rat breast by moderately large doses of estrone applied over a period of several weeks. Fibrosis, as seen in tumors which remain quiescent is the result of prolonged and intense response to estrone. The lactogenic hormone seems to hasten and accentuate the involutional changes.

The rapid growth during pregnancy, the cystic enlargement during lactation, and the associated histological changes may occasion difficulties in diagnosis and, consequently, lead to needless mutilating operations.

There are twenty photographs of gross and microscopic specimens, and details of the individual cases are summarized in three tables.

L. Foulds

THE ORAL CAVITY AND UPPER RESPIRATORY TRACT


For intra-oral and pharyngeal cancer the author advocates radon implantation with block dissection of the neck. Before the adoption of irradiation therapy, the local lesion was treated by excision. Two series of 11 cases each are recorded and compared. In one the treatment of the primary lesion and the neck dissection were done in a single stage, with 2 postoperative deaths (18 per cent) and 4 five-year cures (36.6 per cent). In the other, treatment was carried out in two stages, the interval varying from one to nine months. In this group there was no operative mortality and 6 patients, or 55 per cent, lived more than five years. All these cases were treated between 1930 and 1932. Before 1930 the results were less favorable, being as follows: in 70 one-stage procedures, 24 postoperative deaths (34 per cent) and 16 five-year cures (23 per cent); in 61 two-stage procedures, 3 postoperative deaths (5 per cent) and 28 five-year cures (46 per cent). Thus in 1915 to 1930 the chances were 1 in 5 for a postoperative death and 1 in 3 for a five-year cure; in 1930-32 1 in 11 for a postoperative death, and about 1 in 2 for a five-year cure. The explanation lies in early treatment before a dangerous one-stage operation becomes necessary and in greater discrimination in selection of cases.


Superficial ulcerations of the buccal mucous membranes that do not heal with a few weeks of ordinary treatment should be considered as possibly malignant and a biopsy should be performed. There are no illustrations.

Edward Herbert, Jr.


The author has observed that in cases of epithelioma of the lip without clinical evidence of lymph node involvement, subsequent metastases are invariably limited to the submaxillary and submental regions. In such cases, therefore, block excision of the submaxillary and submental nodes is sufficient. If these nodes are found to be involved, a further block dissection should be performed to the omohyoid junction on the involved side.

The author describes the operative procedure. The mortality is low, the morbidity brief, and the scar not unsightly. Since his series of cases is a recent one, no results are recorded beyond the fact that there was no operative mortality. Reference is made, however, to Figi, whose mortality in 549 cases was only 0.18 per cent, and who found node involvement in only 91 patients, or 16.53 per cent (Surg. Gynec. & Obst. 59: 810, 1934. Abst. in Am. J. Cancer 24: 175, 1935).

A brief bibliography is appended.

Twenty-six cases of cancer of the upper lip without node enlargements were treated by local radium only and recurrences developed in the nodes in but three of them. The author therefore thinks that prophylactic removal of unenlarged submaxillary nodes should be dispensed with in the treatment of cancers of the upper lip provided the patients are carefully watched.

L. Foulds


Block anesthesia was used with complete success for the insertion of radium needles into an extensive epithelioma of the lower lip. The patient was a man aged seventy-seven and no other form of anesthesia seemed advisable. The value of block anesthesia, alone or combined with general anesthesia, is not always recognized.

L. Foulds


A man thirty-four years of age, who had a history of tuberculous arthritis of the finger and tuberculous epididymitis, had suffered for fourteen years with psoriasis. He had also lesions of the tongue, lower lip, and mucosa of the cheeks, which were diagnosed by biopsy as lupus erythematosus. The tongue and cheek lesions were greatly improved by injections of muthanol, but after a year there developed on the lower lip an ulceration which was shown by biopsy to be a squamous-cell epithelioma. Radiotherapy was instituted, but no follow-up is given. Le Coulant regards this case as supporting his theory of the tuberculous nature of lupus erythematosus and possibly also of psoriasis.

Two photographs, three photomicrographs, and several references are included.

Edward Herbert, Jr.


Only about a hundred adamantinomas of the lower jaw have been reported in the world literature. Two additional cases are here described. The first patient was a woman thirty-eight years of age with a tumor which had been growing for three years. A resection was done, a bone graft from the tibia being made. Recovery was uneventful. The second patient was a man sixty-four years of age. His tumor had been present for six years and necessitated removal of the entire half of the mandible, the space being filled with a prosthesis. In both cases good results were obtained. Thirteen illustrations are included, two of which are photomicrographs of the tumors.

Edward Herbert, Jr.


Recurrences are unexpectedly frequent after treatment of carcinoma of the palate by irradiation. At the Manchester Radium Institute malignant ulcerations of the palate were divided into "anterior" and "posterior." Those on the posterior part of the hard palate, spreading on to the soft palate and fauces, were usually cured locally by radium implantations and the failures were due to node involvement. Anterior ulcers were found fairly constantly at what is termed the "typical antral site," at the junction of the middle and anterior thirds of the alveolus. These involved the palate, alveolus, sulcus between alveolus and cheek, and sometimes the cheek. Node involvement was rare, save as a terminal event, but local treatment was often followed by recurrence involving the maxillary antrum. Among 167 malignant ulcers of the palate, 96 were at the "typi-
cal antral site" and 91 of them involved the antrum, whereas in only 1 out of 71 ulcers in other positions was there antral involvement. Only 28 of the 92 cases of involvement were recognized before admission to the Institute; a further 51 were recognized after admission; and 13 were recognized only after recurrence had taken place. X-rays may reveal the lesion of the antrum but a negative report is of little value. Erosion of bone may be detected by exploration with a blunted hypodermic needle, but again a negative result is of little value and the "needle test," though useful, is open to criticism. If both these tests are inconclusive, the statistical probabilities of antrum involvement are so great that treatment should be carried out on the assumption that it is present or it should be excluded by exploration of the antrum by the surgeon. Biopsy is of little value, since the majority of growths are squamous carcinomata whether they involve the antrum or not. The primary origin of growths involving both palate and antrum is of little clinical importance. Contrary to accepted teaching it seems that intraoral ulceration is the commonest evidence of antral neoplasm. It is maintained that lesions at the "typical antral site" should be presumed to involve the antrum unless it is proved that they do not; treatment must include both mouth and antrum. L. FOULDS


A cylindroma of the maxillary sinus was operated on conservatively with the idea that it was not very malignant. Nine months later there was no recurrence, but a year after that the tumor had reappeared and grown to a hopeless size. The necessity for early radical operation is stressed. Two photographs are included.

EDWARD HERBERT, JR.


A woman thirty-two years of age complained of obstruction of the left nostril and repeated severe nasal hemorrhages. Following a ligation of the external carotid artery, operation was done by the sublabial route at the base of the upper gum. Many mucous polyps were removed from the maxillary sinus and the nasal fossa. One of them, while in form grossly resembling a polyp, was blue in color, and microscopic examination showed it to be indistinguishable from a cavernous hemangioma. The patient made an uneventful recovery. Two photomicrographs are included. EDWARD HERBERT, JR.


A man twenty-two years of age with unilateral exophthalmos was found to have a widespread tumor arising from the nasal fossa. Biopsy showed it to be a neuro-epithelioma of the type described by Berger, Luc, and Richard (Bull. de l'Assoc. franç. per l'étude du cancer 13: 410, 1924) as an esthesioneuro-epithelioma arising from the olfactory nerves. Radiotherapy brought about prompt regression, but no follow-up is given. Two photomicrographs are included. EDWARD HERBERT, JR.

Two Tumors of the Neck with Tumors in the Nasopharynx, Kuilman. Twee gevallen van halstumor met tumor in de nasopharynx, Geneesk. tijdschr. v. Nederl.-Indië 77: 494-495, 1937.

A Javanese woman thirty-five years of age had a tumor of the neck which had been growing two years when she developed symptoms referable to the nasopharynx and examination revealed a tumor there. Biopsy showed it to be a reticulo-endothelioma.

A Javanese boy had a large cervical tumor of six months' duration. Biopsy showed that it also was a reticulo-endothelioma and further examination revealed an asymptomatic tumor in the nasopharynx.
These tumors are much more common in the Far East than in Europe and, as in these two cases, the cervical metastases are usually the first clinical evidence of their presence. Two photographs are included. 

Edward Herbert, Jr.


Roentgen study of the pharynx and larynx both with and without the use of contrast media provides a valuable supplement to direct visualization by means of a laryngeal mirror. The entire extent of the tumor is thus demonstrated instead of the visible portion only; some tumors can be discovered that are otherwise entirely invisible, and the method is applicable in certain obese or emphysematous patients on whom direct laryngoscopy cannot be carried out. Also the evolution of the tumor and its response to radiotherapy can be followed. Twelve excellent roentgenograms are included.

Edward Herbert, Jr.


The first half of this article is devoted to an analysis and description of the roentgen picture of the subglottic region in normal persons. Four cases of subglottic epithelioma are then described. Most of these tumors are situated laterally, a few are located anteriorly and an occasional example posteriorly. Since direct visualization is difficult, especially as regards the extent of the growth, the radiographic method is a valuable diagnostic aid. However, a wide experience and long study of the radiographic aspects of the normal larynx are of paramount importance in attempting to interpret these pictures clinically. Twenty-two illustrations are included.

The authors have a similar paper, but without case reports, in Ann. d'oto-laryng. pp. 1100-1123, Dec. 1937.

Edward Herbert, Jr.


Among 42 cases of carcinoma of the pharynx and larynx treated in a five-year period at the Institute of Radiology in Geneva, there were 7 with acute pulmonary complications, all arising in patients with pharyngeal tumors. Two patients had bronchopneumonia, 2 gangrene of the lung, and 3 acute disseminated tuberculosis. These last 3 cases showed a remarkable similarity. In 2 there was evidence of an old fibrous tuberculous lesion before radiotherapy, but fluoroscopic examination showed no activity. In the third case tuberculosis was not suspected. Treatment was by the Coutard method, lasting for a period of from thirty-two to forty-four days. In all three cases marked improvement of the tumor was noted, but in the last days of treatment signs of active tuberculosis developed, rapidly progressing to a caseous pneumonia. All the patients died from two to three months after the termination of the radiotherapy. The diagnosis both of the tumor and of the pulmonary lesions was verified by autopsy. Only one similar case was found in the literature, and there death from tuberculous pneumonia occurred nine months after radiotherapy (Zuppinger: Fortschr. a. d. Geb. d. Roentgenstrahlen, Suppl. 40, 1931).

It is urged that roentgenography precede treatment in all such cases, and that a careful history and sputum examinations be made. In case of even suspicious tuberculous lesions treatment should be so administered that none of the rays reach the upper lung fields.

Six illustrations are included. Edward Herbert, Jr.

This is a comprehensive and detailed description of the various types of laryngeal carcinoma, from the clinical, gross, microscopic, and therapeutic points of view. Much of it duplicates other publications of this author and no new material is reported. Sixteen illustrations are included.

Edward Herbert, Jr.


In a woman forty years of age, complaining of hoarseness and a cough, a laryngeal tumor was found. Part of it was removed by the natural approach through the throat, but laryngotomy for complete extirpation was refused. Microscopically the tumor was a schwannoma. No follow-up is given. Only four similar cases were found in the literature. There are no illustrations.

Edward Herbert, Jr.

THE SALIVARY GLANDS


Among 4737 neoplasms examined at the Cancer Institute in Java over a six-year period, 117, or 2.47 per cent, were tumors of the salivary glands, a somewhat higher percentage than has been reported from European sources. There was no significant difference in the series between men and women or between the left and right side. About 25 per cent were submaxillary tumors, while 75 per cent were of parotid origin. In Europe only 9 per cent are of submaxillary origin and 91 per cent parotid. No explanation of this difference can be given. Also the number of carcinomas was very high, 43 per cent as compared to about 10 per cent in the European literature. The criteria for malignancy were almost entirely histologic, since the opportunities for systematic follow-up of native patients are limited. The high rate of malignancy may possibly be accounted for by the fact that the natives seek medical aid only at an advanced stage of the disease, or when severe pain occurs; most of the tumors were very large. This suggests that there may have been a greater possibility for malignant change in a previously benign tumor.

A fact which may have bearing on the large number of salivary gland tumors in Java is the presence of a bilateral asymptomatic swelling of the parotid which occurs in children and adults. It seems to be more prevalent in certain communities and may be due to dietary insufficiency. It is similar to the parotid swelling that is common in Madagascar, where it is known as “mangy.” It is possible that this condition predisposes to tumor formation. Its histology is not described.

Twelve illustrations and several references are included. Edward Herbert, Jr.

THE THYROID GLAND


This paper is for the most part a review of the recent literature on thyroid tumors, but one example is recorded of a carcinoma of the gland in a girl of fifteen. It had been present and increasing in size for four years. The diagnosis was fetal adenoma, and a subtotal thyroidectomy was done. On microscopic examination the tumor proved to be a malignant papillary cystadenoma. Postoperative roentgen therapy was instituted and six months after operation there was no sign of recurrence. The basal metabolism had dropped from plus 49 per cent to minus 11 per cent. The author states that the most modern methods of protracted radiation therapy appear to have yielded better results than older methods in cases considered resistant to treatment. The record is illustrated by photomicrographs and a bibliography is appended.
Carcinoma of the Lung Producing Symptoms of "Superior Pulmonary Sulcus Tumor,"

A man of fifty entered the hospital in June 1937, complaining of severe pain in the
right shoulder, back, and arm, present for sixteen months and associated with pro-
gressive general weakness. Since childhood he had had a moderate chronic cough with
grayish sputum and there had been no change in the character of the cough during his
recent illness. In February 1936 he began to experience fatigue, with pains high on
the right side of the chest and back, which five months later compelled him to stop work.
X-ray examination of his chest six months later led to a diagnosis of tuberculosis
and he was sent to a sanatorium for five months, but during this period tubercle bacilli
were never demonstrated. A bronchoscopic examination also failed to reveal anything
of significance, but on discharge from the sanatorium the diagnosis was "probable
carcinoma of the right apex." The pain persisted and became intractable. The
patient was unable to use the right hand and at this time he noticed that he perspired
only on the left side of his body. On his final hospital admission the temperature
was 100°, pulse rate 100, and respiratory rate 32. The pupils were small and equal.
Enlarged nodes were palpable above the right clavicle and in the right axilla. The
right side of the chest moved much less than the left on inspiration. Roentgenograms
showed dense clouding in the apex of the right lung, partial erosion of the first and almost
complete erosion of the second rib, and some destruction of the right side of the first and
second dorsal vertebrae. With the exception of unilateral sweating, no other compo-
nents of the Horner syndrome could be demonstrated. A lymph node removed from
the right axilla showed no neoplastic tissue.

At autopsy a large mass was found at the apex of the right lung, which microscopic
examination proved to be a pulmonary adenocarcinoma. Metastases were found in the
left adrenal, left kidney, and periaortic lymph nodes. The fingers and toes were slightly
clubbed. No record is given of examination of the brain.

One roentgenogram, a gross picture of the lung, and a photomicrograph of the tumor
are reproduced. There is also a fairly full bibliography of recent discussions concerning
this syndrome, which the author, together with many others, considers neither a clinical
nor a pathological entity.

Primary Apical Lung Cancer Producing the Symptomatology of a Superior Pulmonary
525–529, 1937.

This is a report of an apical lung carcinoma with clinical and roentgen findings char-
acteristic of the so-called pulmonary sulcus tumors. The tumor occupied the apex of
the right lung and had invaded and destroyed the first three ribs for a distance of 2 or 3
cm. from the vertebral border. The corresponding vertebrae showed invasion and the
soft tissues of the neck were involved. The autopsy findings indicate that the tumor
arose from the mucosa of the terminal bronchioles in the apex of the lung. The authors
do not regard the superior pulmonary sulcus tumor as a specific pathologic entity.
Roentgenograms, photomicrographs, and a bibliography are included.

Primary Carcinoma of the Pericardium, R. E. J. Ten Seldam. Primair carcinoom van

A man forty-two years of age who died with symptoms of cardiac decompensation
was found at autopsy to have a tumor of the pericardium with metastases to the media-
stinal lymph nodes. The pericardium was about 1 cm. thick and there was a hemorrhagic
pericardial effusion. Microscopically the tumor was a squamous epithelioma. No
true epithelial pearls were seen; but structures were present which resembled early pearl
formation. In the discussion of this case the question was raised as to whether it was a
real squamous epithelioma or an endothelial tumor. Two photomicrographs are
included.

Edward Herbert, Jr.

A malignant tumor was found in the anterior mediastinum of a boy aged five who died as a result of asphyxia and venous obstruction. The case presented many of the usual clinical features of thymic tumor but the radiological appearances were not diagnostic. The tumor infiltrated the heart muscle and the lung and pleura on one side. It was composed of a diffuse undifferentiated mass of cells resembling small lymphocytes with scanty stroma and practically no reticulum cells and was diagnosed, histologically, as malignant lymphoma. On account of its position it is possible that the tumor originated in the thymus gland, but the origin could not be stated with any certainty. The pathology, symptomatology, diagnosis, treatment, and prognosis of thymic tumours are discussed.

L. Foulds

THE DIGESTIVE TRACT


In comparative studies of the morphology of the stomach and of the gastric secretion in Malays and Chinese in Java nothing was found to account for the higher incidence of gastric ulcer and gastric carcinoma in the Chinese. References are appended.

Study of the Gastric Mucosal Folds in the Diagnosis of Cancer, B. A. Tanardjian.


Four cases of gastric carcinoma, one in a girl eighteen years of age, are briefly described, illustrated by radiographs showing the mucosal folds of the stomach. By this method the presence of a carcinoma can sometimes be demonstrated by obliteration of the normal folds, when the ordinary method of filling the stomach fails to show any abnormalities. The method is also useful in differentiating between tumors inside and outside the stomach, and should be employed routinely to supplement the more usual technic.

Edward Herbert, Jr.


A man of fifty-five had a gastric polyposis of the type described by Menetrier (Arch. de physiol. norm. et path. 1: 32, 236, 1888) as “polyadénomes en nappe,” with malignant transformation. A subtotal resection of the stomach was done and six months later the patient had gained 10 pounds and was able to work. Roentgenograms, a photograph of the resected portion of the stomach, and photomicrographs are included, as well as a bibliography.

An Unusual Case of Carcinoma of the Stomach in a Javanese, W. Schijveschuurder.


Because of the rarity of gastric carcinoma in the Javanese race, this case is reported. The patient was a man of unstated age, whose only complaints were cough and fever. Later an abdominal mass was felt and x-ray examination showed infiltration of the entire stomach wall. This was later verified at autopsy when widespread metastases were found. Five illustrations and three references are included. Edward Herbert, Jr.


In this statistical study the author includes 54 malignant tumors of the stomach—50 carcinomas, of which 18 (36 per cent) were found to be resectable and 32 non-resect-
able, and 4 sarcomas. The operative mortality for the carcinoma cases was as follows:
for the 18 resectable cases 44 per cent, for the non-resectable cases 46.9 per cent. Of the
fatal complications in the resectable cases peritonitis predominated, while pulmonary
complications showed a high incidence in those cases in which operation was limited to
gastro-enterostomy or exploration.

Only 2 patients in the resectable group were alive and free of recurrence after three
years. Only 3 in the non-resectable group lived as long as a year.

The results in 3 of the 4 cases of sarcoma followed for one, four, and eight years
respectively were excellent. One patient died of recurrence in a year and a half.

A bibliography is appended.


Among 14 cases of intussusception seen over a period of ten years, 4 were due to
tumors: 1 to multiple adenomatous polyps of the jejunum, 1 to multiple lipomata of the
cecum and ascending colon, 1 to a reticulum-cell sarcoma of the ileum, 1 to a melanoma
of the ileum.

The literature on intussusception due to intestinal tumors is reviewed and references
are given. Photomicrographs and photographs of gross specimens illustrate the case
reports.


Two cases of jejunal carcinoma are recorded. In neither case was resection of the
tumor possible. In the first the mass was fixed to the surrounding structures and there
were multiple enlarged nodes in the mesentery. An anastomosis was made around the
lesion and the patient survived a year. Autopsy was not permitted. In the second
case the tumor was at the duodenojejunal junction with adjoining masses of enlarged
lymph nodes; the gallbladder was stony hard, white, and fixed. A biopsy specimen was
removed and a gastro-enterostomy performed. Pathologic examination indicated a
carcinoma arising in the epithelial lining of the biliary ducts. The patient was not
followed.

Roentgenograms but no photomicrographs are included. There is a bibliography.

Ileocecal Tumor, W. M. Pruys. Ileocecal tumor, Geneesk. tijdschr. v. Nederl.-Indië
76: 2859–2860, 1936.

This is a clinical presentation of two cases with typical symptoms of an obstructing
ileocecal lesion. One was an adenocarcinoma, the other a granuloma. There was
nothing unusual in either case. There are no illustrations. Edward Herbert, Jr.

106: 1046–1058, 1937.

A series is reported of 27 microscopically proved cases of squamous-cell carcinoma of
the lower rectum and anus representing 5.7 per cent of 470 cases of carcinoma of all
types in this region. Twenty-three of the patients were women. In practically all
cases some form of local irritation preceded the onset of the disease, as hemorrhoids,
condylomata, fistula in ano, etc. Some of the tumors were visible externally and all
were readily accessible to the examining finger. Metastasis occurred in 24 cases. In
contrast to adenocarcinoma, which tends to upward extension, metastatic spread was
generally in a downward or lateral direction with involvement of the peri-anal skin and
external sphincter muscle, the ischiorectal fossa, the lymphatics of the levator ani and
cocygeus muscles, the pelvic peritoneum, the prostate, the uterine cervix, or the
inguinal nodes. In one case there was a possible lung metastasis. Treatment was
chiefly operative, though 2 of the primary tumors were treated by radium, and palliative
roentgen therapy was given in 6 cases for recurrent or metastatic lesions. Twelve
patients are known to be dead, including 4 who died as a result of the operation; 4
patients had carcinoma when last seen; and 6 were clinically free of disease from a
year and a half to three years and a half after operation. Five were not followed.
Among those clinically well was 1 of the 2 treated by radium implantation. Four patients survived more than five years, but 3 of these are dead (one probably and another possibly of carcinoma), while the fourth has evidence of recurrence.

While primary carcinoma of the lower rectum and anus may in some instances be radiosensitive, operation is necessary for perirectal metastases. Inguinal metastases are amenable neither to surgery nor radiation but may be excised as a prophylactic measure. Excision of the primary tumor should include a wide amount of the peri-anal skin, the sphincter ani muscles, the ischiorectal fat, together with the coccygei and levator ani muscles and the pelvic fascia and pelvic peritoneum laterally to the pelvic walls.


This is a clinical lecture based on two cases of carcinoma of the rectum, the presenting symptom of which was diarrhea. No unusual features were observed. Edward Herbert, Jr.

THE PANCREAS


A series of 34 cases is reported in which, with a single exception, cholecystogastrostomy was done for obstructive jaundice. In the one exception choledochoduodenostomy was performed. In 30 patients the operative diagnosis was carcinoma of the head of the pancreas; in the remaining 4 carcinoma of the common bile duct, carcinoma of the ampulla of Vater (2 cases), and stricture of the common bile duct following duodenostomy and resection of a carcinoma of the ampulla of Vater. Fifteen patients died postoperatively, including 11 of those who were thought at laparotomy to have carcinoma of the head of the pancreas. In 8 of these necropsy was performed. In 4 the diagnosis was confirmed and metastases were found, in spite of the fact that the duration of symptoms did not exceed six weeks. Two of the remaining 4 cases proved to be non-carcinomatous, 1 was a carcinoma of the ampulla of Vater, and 1 a carcinoma of the common bile duct.

Nineteen patients with a diagnosis of pancreatic carcinoma survived operation. The average postoperative survival for the patients with carcinoma of the head of the pancreas was seven months. One patient was known to be alive at the time of the report but a footnote records his death twenty-nine months after operation (see following abstract).


The average duration of life for patients with carcinoma of the head of the pancreas is about seven months after cholecystogastrostomy (see preceding abstract). A case is here recorded, with autopsy findings, in which the patient lived twenty-nine months postoperatively. No evidence of metastasis was found post mortem. A photomicrograph of the tumor is reproduced and references are appended.

THE SUPRARENAL GLANDS


The authors state that there have been recorded only 6 cases of pheochromocytoma or paraganglioma of the suprarenal gland successfully removed, but they do not give
references to these. They add a seventh case. The patient was a woman of twenty-six, who complained of fatigue, throbbing headache, and sweating. A thyroidectomy was done and adenocarcinoma discovered, but the symptoms continued, increasing in severity. Certain cutaneous changes also developed in association with the attacks of headache. The distal phalanges of the fingers and toes would become first white, then purple, and finally an angry red. The distal portion of the extremities and the nose were cold, and there was a redish-cyanotic discoloration of the skin of the ankles, as well as a reddish-purple mottling of the upper and lower extremities. During attacks the blood pressure rose from 140/100 to 280/200. In the course of one of the attacks adrenalin was demonstrated in the circulating blood.

At operation an encapsulated left adrenal tumor, $9 \times 9 \times 6$ cm., was removed. The diagnosis was pheochromocytoma. Improvement followed; the hypertensive crises ceased, and the blood pressure fell to between 125 and 135 systolic and 85 to 95 diastolic.

Roentgenograms demonstrating the value of perirenal insufflation for determining the tumor site are reproduced. A photograph of the tumor and a photomicrograph are included. Only one reference is given.


In a girl of four and a half years, previously well, bruises appeared on the face, followed by ecchymoses of both eyelids. Exophthalmos developed and the abdomen rapidly enlarged. Examination revealed a severe anemia. Death occurred four months after the onset of symptoms. At autopsy the liver was found to be enormously enlarged, occupying the whole anterior aspect of the abdomen. A red, fleshy tumor, twice the size of the child's kidney, occupied the site of the right suprarenal body, merging insensibly into and infiltrating the right lobe of the liver. There were metastases in the orbital fossae. The microscopic picture was that of neuroblastoma. The clinical features would classify it as a combination of Hutchinson and Pepper types, as the early appearance of orbital ecchymoses is typical of the Hutchinson syndrome, whereas the massive liver involvement is more properly a feature of the Pepper type.

A photograph of the child and the enlarged liver are included.


Small adenomata of the adrenal cortex were observed in 38 per cent of 136 necropsies of patients with hypertension as compared with 20 per cent of 564 persons with normal arterial pressure. The author considers the increased incidence in the first group a secondary phenomenon, somewhat comparable with adenoma that may follow cortical hypertrophy in obesity or pregnancy.

**THE FEMALE GENITAL TRACT**


Morton attempted to classify 160 cases of cervical carcinoma (Stages I–III) according to Martzloff's classification, which depends upon the predominance of spinal, spindle, or transitional cells (Bull. Johns Hopkins Hospital 34: 141, 1923). Such a classification, however, was found to be difficult and probably at best inaccurate, as the appearance of the cells may vary with the manner in which the section is cut, the area from which it is taken, and the stage at which the examination is made.

Even if reliable classification were possible it would not be logical to correlate the factor cell type with degree of malignancy, nor with radiosensitivity, nor with curability expressed in terms of five-year cures, because of the multitude of other factors involved in the determination of these conditions.

Photomicrographs and references are included.

In a study of 105 cases of uterine carcinoma and 20 normal controls the fact was verified that in cases of cancer the normal mitogenetic radiations of the blood disappear. If treatment, either operative or radiotherapeutic, is successful, the mitogenetic properties of the blood return to normal. The radiations do not reappear immediately with disappearance of the tumor, but only after a period of five or six months. If recurrence or metastasis occurs, they again disappear. In only 4 of the 105 cases, or 3.8 per cent, did the findings in this respect fail to follow the clinical course. This method of investigation is regarded as a valuable one in the early diagnosis of uterine cancer, and especially as an aid in evaluating the results of treatment. [It may be recalled that recent very thorough investigations have given rise to considerable doubt concerning the existence of mitogenetic radiations.—Ed.]

Edward Herbert, Jr.


The plan of treatment for cervical carcinoma in use at the Pondville Hospital, Massachusetts, combines roentgen and radium therapy. The roentgen therapy is given through four portals over a period of fourteen days, each field receiving a total of 1,500 to 2,000 r measured in air. The radium dosage is 3,000 mc. hours given in two equally divided treatments in the cervical canal only, four days apart, directly after completion of roentgen irradiation.

The authors admit that the weakness of the Pondville method lies in the radium distribution, which is inadequate for widespread growths with large masses in one quadrant of the cervix. Nevertheless, they believe it is preferable to the use of radium alone, as practised in the Massachusetts General Hospital, and present three-and-a-half-year results from the two institutions to support their contention. Of 70 patients treated at Pondville 35.7 per cent were alive and well after that period. The corresponding figure for the Massachusetts General Hospital was 24.6 per cent of 150 cases.

References are appended.

Present Status of Treatment of Cancer of the Uterine Cervix by Means of X-rays and Radium and Our Experience in This Respect, J. L. Molinari and F. Vierheller. El estado actual del tratamiento del cancer del cuello del utero por medio de los rayos x y el radium, y nuestra experiencia al respecto, Rev. Asoc. med. argent. 50: 5–13, 1936.

The authors discuss briefly the physics of radiation therapy and the various modes of treatment of cervical carcinoma. While radium implantation in the center of the tumor is efficacious it is necessary to supplement this with x-ray therapy to reach the more peripheral portions. By following the fractional dose method of Coutard, applying small frequent doses over a considerable period, excellent results are obtained with x-rays alone. The authors employ this method in all inoperable cases; originally they used four fields but this number they have increased to six. In cases previously operated upon or treated with radium locally the dosage is reduced 40 per cent. From 1930 to the end of 1934, 111 cases were treated. Seventy-eight patients or 70 per cent are alive and 30 per cent are dead or lost from follow-up.

Seaton Sailer


During a one-year period 157 cases of cervical carcinoma were treated with a combination of roentgen and radium therapy. The primary mortality was 3.2 per cent. At the end of eighteen months the clinically cured cases were as follows: Group I, 100 per cent; Group II, 71.4 per cent; Group III, 46.2 per cent; Group IV, 11.1 per cent. No further follow-up is given.

Edward Herbert, Jr.

Seventy-two cervical carcinomas recurrent after operation were treated by a combination of roentgen and radium therapy. In 38 cases the recurrence was local, and in this group there were 1 three-year cure, 2 four-year cures, and 3 five-year cures. Among 29 cases with lymph node recurrence, there was only 1 five-year cure. The remaining 5 cases had metastases in various locations and none was cured. From these discouraging results it is urged that primary surgical treatment be carried out with a more careful selection of cases and that the use of primary radiotherapy be extended.

Edward Herbert, Jr.


A method is described which has been found highly satisfactory for applying radium to carcinomas of the vulva, vagina, and cervix. A mould is made of an elastic compound used in dental work, and the needles are embedded in it as required. Four illustrations are included.

Edward Herbert, Jr.


Of sixteen patients with carcinoma of the cervix treated by radium only one was in good health five years later without signs of metastases. One was not traced; the others had all died of recurrences. One photograph is included.

Edward Herbert, Jr.


Five cases are reported. Two were uncomplicated hydatidiform moles cured by curettage and two typical chorionepitheliomas. None of these cases presented any unusual features. The fifth patient, thirty-two years of age, was three months pregnant and gave a strongly positive Aschheim-Zondek reaction in a dilution of 1 to 50. A mole was suspected and curettage was done. Fetal parts were found, but not the entire fetus and no definite evidence of a mole. The strongly positive pregnancy reaction could not be explained. Two photographs are included.

Edward Herbert, Jr.


Intestinal obstruction occurred in a woman of thirty-nine six weeks after a gall-bladder operation. No very definite pathology had been observed at the first operation. A stenosing mass in the terminal ileum was now removed, but the patient succumbed seven days later. Other smaller masses were present on the serosa of the small and large intestine and in the pouch of Douglas. Histologically the tumor-like tissue proved to be endometrial transplants. Photographs of the growths and photomicrographs are included.

Milton J. Eisen


Subtotal hysterectomy and ovariectomy were carried out in a woman aged fifty-one with multiple uterine fibroids and an umbilical hernia. Within the substance of the right ovary was a fibrous-looking nodule about the size of a cherry; histologically it was a tumor of the Brenner type. With one exception previously recorded Brenner tumors were outside the ovary.

L. Foulds

Experiments were carried out with tissue from a granulosa-cell tumor removed from a girl eight years of age who showed pubertas praecox and gave a positive Friedman test. A physiologic saline solution of as little as 0.125 grams of tissue that had been kept in ether for eight months produced a positive reaction in a rabbit. In order to determine whether prolan was actually present in the tumor tissue, or whether some other substance might be present that would activate the rabbit's hypophysis to produce more prolan, an attempt was made to destroy the hypophysis in five rabbits by alcohol injection or electrocauterization. The rabbits after one week's time were injected with tumor extract. All showed positive results, but in four it was found that the hypophysis had not been destroyed. In the fifth rabbit the anterior lobe was reduced to fibrous tissue and probably was incapable of hormone production, which would tend to prove that prolan was actually present in the tumor. Some question still exists, however, as to whether the hypophysis was incapable of activity. To settle the question definitely a better technic must be evolved for destroying the hypophysis in rabbits. There are no illustrations but a good bibliography is appended. Edward Herbert, Jr.


A woman thirty-eight years of age complained of intermittent lower abdominal pain. At operation a chronic appendicitis was found and in addition a small hard tumor of the right ovary, less than 1 cm. in diameter. On histologic examination this proved to be a fibroma composed of dense fibrous tissue. There are no illustrations. Ten references are included. Edward Herbert, Jr.


A Javanese woman fifty years old was seen with an enormous pseudomucinous ovarian cyst which had been growing for six years. It was successfully removed surgically. Before operation the patient weighed 92 kilograms and the cyst weighed 62 kilograms. Photographs of the patient before and after operation are included. Edward Herbert, Jr.


A Javanese woman forty years of age had a tumor of the vulva which had appeared five months previously as a small tumor of the clitoris. An attempt at radical excision was made, but recurrence was prompt and metastases appeared in the vagina and inguinal nodes. Radiotherapy in large doses was without benefit. Microscopic examination showed the tumor to be a polymorphocellular sarcoma. Sarcoma of the clitoris is one of the rarest of tumors, only about a dozen cases having been found in a somewhat incomplete review of the literature. Two photographs, a photomicrograph and eleven references are included. Edward Herbert, Jr.


A tumor situated exactly in the position of Bartholin's gland was removed from a woman aged fifty-three. It contained carcinomatous tissue not sufficiently characteristic to determine the origin of the growth but the author considers that it was most probably a primary cancer of Bartholin's gland. L. Foulds

The author studied serial sections of fibroma of the medulla of the kidney in 110 cases of this growth, which he considers to be a true neoplasm and not a developmental anomaly. The growths were most frequent in the later decades of life, were never encountered in the newborn, and were extremely rare during the early years. They are small tumors, rarely more than several millimeters in diameter, gradually merging into the surrounding renal tissue. They do not contain muscle fibers, but they may enclose remnants of tubules. They are usually located in the outer zone of the medullary pyramids. In one half of the cases there was an associated general increase in the fibrous tissue of the kidney due to arteriosclerosis, nephritis, etc., and it might be surmised that the fibroma represents an abnormality in the connective-tissue proliferation. In some cases fibromata were multiple and in different stages of development. Other benign tumors, as lipoma and cortical adenoma, were found in 5 patients. The author assumes an underlying disposition to tumor development in these cases.

The so-called cortico-medullary hamartoma, consisting of undifferentiated tubules, may be observed in the newborn and in later life. This is most probably not a tumor, but an anomaly depending upon disturbances in the vascular supply.

Photomicrographs and a bibliography are included. Milton J. Eisen


A series of 7 tumors of the renal pelvis is recorded, of which 5 were papillary and 2 sessile. Three of the patients with papillary growths had tumors in other parts of the urinary tract, which is in accord with the general tendency of these tumors to multiplicity. Diagnosis depends largely upon urographic study. Hematuria is usually profuse. It was present in 6 of the series recorded. Renal pain occurred in 5.

Because of the frequency of ureteral involvement, complete nephro-ureterectomy is indicated with removal or destruction of the intramural ureter. The author describes the preferred technic, which involves closed resection of the bladder wall containing the intramural ureter, the so-called funnel operation.

In the series of cases recorded nephrectomy alone was done in 6 cases and in 3 of these ureterectomy was subsequently required for recurrence. In 1 case nephro-ureterectomy was done. Four patients are alive and well, as follows: 1 four years after nephrectomy for papillary carcinoma and four months after secondary ureterectomy; 1 two years and four months after nephrectomy for papilloma and eleven months after secondary ureterectomy; 1 fourteen months after nephrectomy for squamous-cell carcinoma; 1 ten months after nephro-ureterectomy for papillary carcinoma. Of the 3 who died, 1 had a squamous-cell carcinoma, 1 a papillary carcinoma with bone metastases, and in the third the type of tumor was not known. The average survival period for the three was sixteen months after nephrectomy.

The paper is illustrated and references are appended.


Tumors at the apex of the bladder situated near but not necessarily exactly in the mid-line and containing epithelium of intestinal type are believed to originate from allantoic rests in the urachus; they were fully reviewed by Campbell Begg (Brit. J. Surg. 18: 422, 1931; Abst. in Am. J. Cancer 15: 1832, 1931). The present authors quote a subsequent case from the literature and add one of their own.

A man aged twenty-six complained of hematuria; cystoscopy revealed a small projecting tumor at the apex of the bladder. Partial cystectomy was followed by x-ray
treatment, and the patient was well sixteen months later. In view of the frequency of recurrences, sometimes long delayed, a cure cannot yet be presumed. The tumor was mainly within the wall of the bladder, through which it projected at one point. It consisted mainly of congested fibrous tissue infiltrated with plasma cells, but there was a focus of epithelial tissue of intestinal type which, in the authors' view, derived from an allantoic rest. The tumor is described as an adenofibroma. The diagnosis, treatment, prognosis, and origin of these rare tumors are discussed. L. FOULDS

**Neoplastic Cervical Adenopathy Simulating Primary Tumor of the Pyriform Sinus, with Autopsy Showing a Primary Prostatic Tumor**, Z. CHERIDJIAN and T. SCILOUNOFF.


A man twenty-five years of age had a very large tumor in the neck. Biopsy showed it to be a solid carcinoma and it was believed to arise from the pyriform sinus. The prostate was clinically normal and there were no urinary symptoms. The patient died soon after he was first seen and autopsy showed a very small primary carcinoma of the prostate with metastases also to the para-aortic nodes. There are no illustrations. Edward Herbert, Jr.


Two tumors were studied histologically; one was removed from a man aged fifty-eight, who complained of a large hydrocele, and the other was a museum specimen whose provenance is not stated. In addition the authors studied material from three cases previously reported by others. They confirm earlier opinions that the tumors are malignant and are epithelial, originating from the peritoneal serosa. One of the tumors was notable for its polymorphism which, though sufficient to suggest a diagnosis of "mixed" tumor, is readily explained by the potentialities of celomic mesothelium. The tumors closely resemble those of the ovarian peritoneum but there are some differences; they never differentiate towards a frankly epidermoid type as do tumors of the pleura and pericardium. The histological appearances are illustrated by five drawings. L. FOULDS


A Chinese man 23 years of age had a large tumor of the right testicle of five years' duration, evidence of metastases, and cachexia. The Friedman test was positive. Autopsy confirmed the diagnosis. An extract of the original tumor as well as of the metastases gave a positive Friedman reaction. The breasts were enlarged and microscopically showed hyperplasia of the epithelial elements similar to that seen in the breast of castrated male rats when large doses of follicular hormone are administered. A careful histological study of the testicular tumor showed areas similar to a seminoma, others of chorionepithelioma which explained the positive Friedman test, and still others of cylindrical and squamous epithelium, thus establishing the diagnosis of teratoma. Two photomicrographs are included. Edward Herbert, Jr.

**THE NERVOUS SYSTEM**


Roentgenographic changes in the skull that indicate generally increased intracranial pressure may be obtained in cases of brain tumor. The most important are digital
impressions and widening of the diploic veins. Less frequently observed signs are decalcification of areas of bone at the base of the skull, separation of the skull sutures, and displacement of the pineal body. These changes have little value as a means of localization of an intracranial neoplasm. Roentgenograms are included.


In Puusepp's experience in Estonia the glioma group was found to comprise 65 per cent of all brain tumors. A series of 100 cases is reported. The most frequent site was the frontal lobe, the least frequent the temporal. Histologically the series was divided as follows: astrocytoma, 28 cases; astroblastoma, 10 cases; spongioblastoma multiforme, 36 cases; oligodendroglioma, 2 cases; polar spongioglioma, 8 cases; unidentifiable, 16 cases. In 73 per cent of the cases with a slow and progressive course a benign glioma, usually an astrocytoma, was found. Of the cases with intermittent symptoms, 75 per cent showed cystic degeneration. In a majority of the cases with acute, sudden symptoms, malignant tumors were found. The operative results were discouraging. Of the patients with astrocytoma, 79 per cent were clinically cured, but only 21 per cent of these lived five years and only 8 per cent for ten years. In the glioblastoma multiforme group there was no survival for more than two years, the majority of the patients dying after eight or ten months. There are no illustrations.


General remarks to the effect that the clinical signs and symptoms of a glioma are closely related to the histopathological nature of the tumor. There are frequent references to the classification of gliomas made by Cushing and Bailey. The writer describes in some detail a series of 28 cases of glioma studied by him.


The effects of radiation have been studied in 4 cases of glioblastoma multiforme, 1 ependymoma of the fourth ventricle, and 1 medulloblastoma of the fourth ventricle. The treated tumors were compared with untreated tumors; biopsy material obtained before irradiation was compared with autopsy material, and in one instance irradiated tissue was compared with non-irradiated tissue from the same tumor.

In the cases of glioblastoma multiforme which had been irradiated following operation, receiving from 2400 to 12,000 r, the central area of necrosis was more extensive and overgrowth of collagenous connective tissue was more abundant than in 2 untreated control cases, but the growth of the glioma in the periphery had not been arrested by treatment. The ependymoma of the fourth ventricle showed the greatest inhibition of growth; in the peripheral areas alone were isolated nodules of tumor tissue observed. The least effect was observed in the medulloblastoma, only scattered areas of necrosis were present and there was no evidence of overgrowth of mesenchymal elements; extensive invasion of the spinal cord occurred in spite of prolonged irradiation.

There was no evidence that roentgen therapy prolonged the survival period much beyond the average.

The authors have treated 14 patients with radium, but clinically the results appear to be no better than with roentgen rays.

Case records are included, with photomicrographs. References are appended.


A well presented paper, reflecting the title, in which statistics as to age and incidence are followed by a pathological discussion of these tumors. The clinical aspects, outlook,
and a review of the literature follow. The opinions given are those generally accepted. Six case reports are included, presenting both clinical and pathological aspects. All the lesions were verified either at operation or autopsy.


A clinical case report relating the signs, symptoms, and angiographic findings in a male patient of thirty-two years. The man had suffered from generalized convulsive seizures, weakness, headaches, and failing vision. Angiographic studies showed the presence of an hemangioma. Decompression was followed by improvement.

[From a reading of this paper it is apparent that the authors' case is, according to terminology used in this country, an angioblastic malformation rather than an hemangioblastoma. Due to lack of standardized nomenclature the two lesions are constantly being confused. The hemangioblastoma is a true tumor of angioblastic elements, while the angiomatous malformation is no tumor but rather a congenital mass of fairly normally formed blood vessels.]


A well worked up paper presenting the clinico-pathological aspects of 5 cases studied by the writer while with Foerster in Breslau. All 5 cases were verified either at operation or autopsy. There are some 25 illustrations and a review of the literature. The opinions given reflect those generally accepted.


A review of the literature on the much disputed subject of central neurinoma is followed by the presentation of one case report with autopsy findings. A woman of sixty-four showed clinical signs of an intracranial tumor and died without operation. The necropsy showed a sizable growth involving the optic thalamus, crus cerebi, internal capsule, and a portion of the corpus striatum, all on one side. Microscopic studies showed the growth to resemble either a polar spongioblastoma or a fibrosarcoma. The writer remarks that, while the histogenesis of neurinomata is still unsettled, he believes that in his case (a) the proximity of the tumor to the ventricular system suggests an origin from the primary ventricular epithelium, and (b) that the tumor cells proliferated along the lines of Schwann cells.


A clinico-pathological case report together with a review of the literature and a bibliography. There are four illustrations. A man of forty-three, known to have diabetes mellitus had before death developed headaches and other signs of increasing intracranial pressure such as somnolence and vomiting. Necropsy revealed a cystic tumor, 1.5 cm. in diameter, obstructing the foramen of Monro. The lesion had thus produced dilatation of the ventricles. It was firmly adherent to the choroid plexus of both lateral ventricles and proved microscopically to have originated from choroid plexus tissue.


A clinico-pathological case report of a gangliocytoma occurring in the left temporal lobe of a woman of forty-nine years. The writer believes his case to be the forty-
seventh on record. His classification of nerve cell tumors follows that of Foerster and Gagel [see their many previous reports on nerve cell tumors. Absts. in Am. J. Cancer 16: abst. p. 1212, 1932; 19: 225, 1933; 21: 953, 954, 1934; 22: 476, 1934; 23: 229, 1935.]. The outstanding clinical sign in the writer's patient was mental deterioration. The tumor itself is described in detail and there are four illustrations.

EDWIN M. DEERY


Of the author's series of 346 verified intracranial tumors, 62 proved to be meningiomas. Of these latter, 12 were located beneath the tentorium. The clinical aspects, special tests, and operative and pathological findings in these 12 cases are reported in considerable detail. Seven of the tumors occurred in males between the ages of twenty-eight and fifty-six, 5 in women between twenty-eight and forty-seven. Two of the tumors arose from the midline floor of the posterior cranial fossa, 2 in the cisterna magna region, 2 in the cerebellopontile angle, 1 was paramedian, 3 were beneath the cerebellum and lateral, and 2 were described as arising from the supracerebellar fossa. There are 3 illustrations and a bibliography.

EDWIN M. DEERY


This is a report of a frontal lobe meningioma weighing over 90 gm., successfully removed in two stages.

Tumours of the Base of the Brain: Their Relation to Pathological Sleep and Other Changes in the Conscious State, L. B. COX. M. J. Australia 1: 742–752, 1937.

A number of cases are recorded of tumor of the mid-brain, thalamic, and hypothalamic regions with associated changes in the conscious state. These changes included such phenomena as drowsiness and hypersomnia, trance-like conditions, periods of apathy, catatonic states, alterations in disposition, disorientation for time and place, loss of memory, and mental excitement. In some instances removal of the tumor resulted in recovery from the abnormal mental condition.

An attempt is made to explain the conditions of lessened consciousness as a disturbance of a sleep mechanism. On the hypothesis that sleep may result from an inhibitory discharge by way of some mechanism near the base of the brain, it is postulated that in the presence of tumor this is released partially or completely from control and becomes, therefore, hyperactive.

The relation of conditions of exalted consciousness to the excitation or release from control of mechanisms for the expression of the emotions is briefly discussed, and it is indicated that the region of the brain stem, hypothalamus, and basal ganglia may be of importance in the better understanding of the problems of insane conduct.

References are appended and there are illustrations.


A woman of thirty-three years had neurological symptoms which led to a clinical diagnosis of tumor of the temporal lobe. She died following operation, at which no tumor was found. Autopsy showed a syringobulbia with a tumor the size of a marble growing into the base of the fourth ventricle. Microscopically it was a meningioma. One photomicrograph is included.

EDWARD HERBERT, JR.


A clinico-pathological case report relating the development of signs and symptoms in a woman of forty-two, suggestive of an intracranial tumor. Autopsy disclosed not a
brain tumor but tuberous sclerosis. [Given a patient with convulsive seizures, especially of a focal type and without papilledema, craniotomy not infrequently reveals tuberous sclerosis instead of the expected brain tumor.]

EDWIN M. DEERY


The writer calls attention to the many recent reports on pinealomas and adds a further case report to the literature. A man of twenty-six years developed signs and symptoms of an intracranial tumor, but the localization was not clear. Arteriography studies resulted in the diagnosis of a pineal tumor. Autopsy confirmed the diagnosis. The emphasis in this paper is upon the clinical signs and arteriographic studies.

EDWIN M. DEERY

THE BONES AND JOINTS


Two cases of articular osteochondromatosis diagnosed by x-ray are reported, one in the elbow of a woman forty-four years of age, the other in the shoulder of a man forty-eight years of age. In the latter case the diagnosis was confirmed at operation, the tumors consisting of partially calcified fibrocartilaginous tissue. No follow-up is given.

EDWARD HERBERT, JR.


A man twenty-eight years of age had an enormous ulcerated tumor of the right arm. A small hard tumor had been present for fourteen years and had grown rapidly for one year. Amputation of the arm was done and the tumor found to be a chondrosarcoma. There was no evidence of metastasis. X-ray studies showed numerous exostoses in the epiphyseal region in almost all the long bones. No follow-up is given.

Edward Herbert, JR.

Case of Inclusion Chondroma of a Metacarpal Bone Following Trauma, R. A. Money. M. J. Australia 1: 791, 1937.

A man of twenty-two fractured the metacarpal bone of the right index finger. Prompt union took place, but owing to some uncorrected displacement a prominence remained at the site of the injury. Seventeen years later a pathologic fracture occurred and operation revealed a chondroma. It was regarded as having developed gradually since the original injury and as being due to the inclusion and transplantation of one or more cartilage cells from the epiphyseal line at the distal end of the bone into the metaphysis of the shaft.

Edward Herbert, JR.


A three-year-old girl had had a bulging area in the right frontal region since birth. It appeared to be filled with fluid, but spinal drainage was without effect on the size. Aspiration yielded a bloody fluid and operation revealed a fibrous angiom of the skull, which was successfully removed. Photographs show the operative procedure and a photomicrograph of the tumor is included. Other cases recorded in the literature are tabulated and references are given.

A woman twenty-one years of age sustained a pathological fracture of the femur. The radiographic and chemical evidence suggested osteitis fibrosa cystica, but biopsy revealed a fibrosarcoma and the patient died of generalized metastases. From a consideration of this case and others it is concluded that the diagnosis of osseous lesions is not always easy; the chemical and radiographic findings are often misleading since a secondary hyperparathyroidism may be present and bring about false conclusions. A combination of radiographic and chemical findings with the clinical course of the disease and biopsy are often necessary to establish a diagnosis. Eight roentgenograms are included.

Edward Herbert, Jr.


A Javanese woman thirty years of age had a spontaneous fracture of the femur followed by skeletal pains and vomiting. X-rays showed marked decalcification of the bones with cyst formation, and a diagnosis of osteitis fibrosa cystica was made. An exploratory operation was done and a parathyroid adenoma measuring 4 × 2 × 1 cm. was found on the left side. Following removal of the tumor the patient made an uneventful recovery. Four roentgenograms and one photomicrograph are included.

Edward Herbert, Jr.

THE LEUKEMIAS, LYMPHADENOMA, RETICULAR SARCO-EPITHELIOMA, CHLOROMA


Two cases are reported. In a man seventy-four years of age bluish thickenings appeared in the skin of the face and trunk. The blood count was normal, but biopsy showed leukemic infiltration. Before death the blood count became typical of a lymphatic leukemia. Another man, sixty-six years of age, who had a typical lymphatic leukemia was admitted to the hospital in a moribund state with pemphigus-like bullae all over his body. Apparently no microscopic examination of these lesions was made. Three photographs are included.

Edward Herbert, Jr.


Two cases are reported with almost identical findings. The patients were women of forty-nine and fifty-four years with chronic lymphatic leukemia. Both showed leukemic infiltration of the skin of the face and subcutaneous nodules around both elbow joints. One of these nodules was removed in each case and histologic examination showed a dense fibrous tissue with marked leukemic infiltration of the subcutis at the periphery. No similar case was found in the literature. A photograph and 5 photomicrographs are included.

Edward Herbert, Jr.


This is a clinical lecture based on a typical case of acute myeloblastic leukemia in a man twenty-five years of age. An excellent description is given of the clinical, hemato logical, and pathological aspects of this disease, but no new material is added. One colored plate is included.

Edward Herbert, Jr.

A Javanese woman twenty-five years of age was seen with the typical picture of acute leukemia. She died six weeks after the first symptoms appeared. During the three weeks she was under observation the white cell count rose from 25,000 to 95,000, falling before death to 4,000. Differential counts showed from 95 to 99 per cent myeloblasts with a positive oxidase reaction. From 80 to 90 per cent of these myeloblasts showed the presence of Auer bodies in the cytoplasm. No case could be found in the literature that showed Auer bodies in more than 50 per cent of the cells. One photomicrograph of the blood smear is shown.


Gordon (Rose Research on Lymphadenoma, London, 1932. Review in Am. J. Cancer 17: 795, 1933) obtained an agent from lymphadenomatous nodes which produced an encephalitis in rabbits resembling the encephalitis of known virus diseases. Gordon and others utilized the agent in a diagnostic test for lymphadenoma. The agent is not now considered a virus; it has been detected in bone-marrow, spleen, and leukocytes of normal animals. In the present observations, the agent was found in mixtures of mature granular cells and myeloblasts from cases of myelocytic leukemia but not in suspensions composed chiefly of myeloblasts. It was present in lymph nodes from a case of chronic myelocytic leukemia and from a case of myelosclerosis with myeloid metaplasia in the abdominal nodes. Strong positive reactions were obtained in the one case of eosinophilia examined. Weak positive reactions were obtained with normal lymphocytes but none with suspensions of lymph nodes from cases of lymphatic leukemia. Two suspensions of neutrophil leukocytes, from pus, gave positive results.

Tissues from animals were also tested. Chicken bone-marrow and spleen gave positive reactions identical with those produced by human material. Similar results were obtained with mouse spleen, but not with rat spleen or guinea-pig and rabbit marrow. Tumor cells (probably myeloblasts) of a transmissible myelomatosis of mice gave no reaction. Human marrow produced typical reactions in chickens but chicken marrow, though active in rabbits, had no effect in chickens. Probably there is an essential difference between the human and chicken agents. Guinea-pigs were more sensitive to the agent than rabbits and showed defect of vision as an early sign.

There were well marked variations in the microscopic appearances of affected brains, the one constant and conspicuous feature being degeneration of Purkinje cells; the variations were not related to the origin of the agent. The histologic changes provided a more delicate test for the agent than clinical observation.

It is likely that the activity of a node suspension depends on its cell content, and that neutrophil leukocytes are as active as eosinophils, while lymphocytes are slightly active. If this be true, the limitations of the test in the diagnosis of lymphadenopathy are evident.


The authors adopt Géry and Bablet's classification of malignant tumors of lymphatic tissue into (1) reticular sarcoma; (2) dictyocytic sarcoma; (3) lymphoblastic sarcoma (Bull. Assoc. franç. p. l'étude du cancer 24: 615, 1935. Abst. in Am. J. Cancer 27: 826, 1936). In each type some of the cells may show atypical differentiation and in the reticular sarco-epitheliomas they assume a malpighian appearance and may even keratinize. Four cases are described briefly. Reticular sarco-epithelioma of the mediastinum was found in one woman aged thirty-four and in another aged twenty-seven. The same type of tumor was found in the tonsil of a man aged twenty-six and a Ewing sarcoma of bone in a man aged twenty-four. These cases were encountered
within a short period and it is concluded that reticular sarco-epitheliomas are not so rare as supposed. Biopsy should always be carried out, especially since successful treatment depends on early diagnosis. Photomicrographs are included. There is no bibliography.

L. FOULDS

A Case of Chloroma with Associated Cavitation of the Spinal Cord, H. W. S. LAURIE.
M. J. Australia 1: 753-754, 1937.

An eleven-year-old boy was admitted to the hospital with flaccid paralysis of the right leg and paresis of the left. His first complaint had been of abdominal pain three months before. Symptoms referable to the legs were of only three weeks' duration. The bladder was distended and tender; there was deep tenderness in the left loin and over the left side of the abdomen anteriorly; there was also slight tenderness low down in the right iliac fossa. Examination of the nervous system revealed flaccid paralysis of both lower limbs and weakness of the abdominal and intercostal muscles. Anesthesia extended over the whole body up to the level of the eighth thoracic segment. Subsequently there was a serous discharge from the left ear and a left facial paresis developed. Death occurred four and a half months after the onset of symptoms.

At autopsy the left ureter was found to be completely obstructed by a mass of firm green tissue invading the renal pedicle and spreading medially to the spinal column and through the intervertebral foramina. The external appearance of the spinal cord was normal. There were extrathecal masses of green firm tissue irregularly distributed throughout the length of the spinal canal and spreading out through the vertebral foramina and among the paravertebral muscles. This infiltration was most pronounced in the lumbar region. The cord on macroscopic section showed central cavitation commencing in the lower cervical region and extending downwards, increasing in size until in the lower lumbar region the cord was completely destroyed; the sacral cord was normal in appearance.

In addition to the appearances already described in the spinal meninges, there were many small masses of green tissue on the internal surface of the cranial dura. Both lateral sinuses were thrombosed and contained similar green material.

The right and left petrous portions of the temporal bones were honeycombed with green masses which also extended into the middle ear.

The diagnosis was chloroma with cavitation of the cord. Illustrations are included.

STATISTICS


It has long been known that the frequency of various types of cancer differs greatly among different races. Carcinoma of the liver occurs much more frequently in the Javanese and Chinese than in Europeans. Gastric cancer is a rarity among the Javanese in Java, while among the Chinese in the same community it is of common occurrence. Also malignant endothelial tumors of the cervical lymph nodes (reticulum-cell sarcomata) are frequent among the Javanese. [See Bonne: Am. J. Cancer 25: 811, 1935.]

In order to pursue further the question of race and cancer, statistics were studied in Surinam (Dutch Guiana) on the north coast of South America. Here there is a population composed of about 50,000 Creoles, 10,000 Javanese, and 26,000 British Indians or Hindus. In a five-year period 232 cases of carcinoma were seen in the hospital at Paramaribo. The percentage of cancer patients among Creoles and Javanese was about the same, while among the Hindus the incidence was only half as great. This may be explained by the fact that the Hindus usually refuse to stay in the hospital and return to their homes if not cured in a few days. Among the Creoles and Hindus more cancers occurred in women than in men, while among the Javanese the numbers were about equal. Carcinoma of the liver was frequent in all groups, but especially in the Javanese. Uterine cancer showed a high and approximately equal frequency in all three groups.
Carcinoma of the breast was rare in the Javanese and Hindus, but the most common of all types except uterine carcinoma among the Creoles. The Javanese showed no carcinomas of the stomach, and only 3 cases of peptic ulcer were seen among them in the five-year period though a large number of cases occurred among the Hindus. In analyzing the age groups it appeared that the Javanese suffered from cancer at a decidedly earlier age than the other groups.

Although the series of cases is small, yet it does show definite racial differences. Especially as regards carcinoma of the liver and stomach it indicates that the Javanese in Surinam show the same tendencies as in Java.

A short bibliography is appended.

EDWARD HERBERT, JR.


Of a total population of 7,553,010 there were 4,731 males and 5,422 females that died of cancer. Calculated per 10,000 of living inhabitants the mortality was 12.98 for men and 13.89 for women. These figures show a slight increase over those for 1929 (see Abst. in Am. J. Cancer 29: 433, 1937).

MILTON J. EISEN

EDUCATION


In this discussion of means of cancer control the author emphasizes the importance of recognizing and eliminating precancerous conditions. He places the burden of the task on the medical profession and regards professional appreciation of cancer facts and fancies as far more important than lay education. "If physicians are not practising the early diagnosis of cancer," he asks, "what good does it do to advise potential or inquiring patients to consult their physicians?" Similarly he does not favor the development of huge cancer centers. "If the profession will attack cancer in its early stages, there is not the necessity for these large institutions."