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The Treatment of Metastases From Carcinoma of The Breast*

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THE major premise in a decision as to the method and means of treatment to be employed for any cancerous patient should be, "what will give him (or her) the greatest comfort for the greatest period of time?"

Few will object to a subsidiary premise that whenever practicable, the primary tumour should be removed with the very minimum of trauma. This should not only diminish the drain on the individual's metabolism to feed his cancer, but more especially (if properly and skillfully executed) will reduce markedly the possibility for metastases. The success of such a measure will depend on

- (a) How early has the primary been discovered;
- (b) How little manipulation or trauma has the tumour suffered during its growth and the clinical examination;
- (c) How little trauma does it suffer during the surgical removal; and
- (d) How actively is the neoplasm growing or how fragile is its lympho-vascular pattern so that the odd cell or more may be extruded before or during the above stages and establish viable metastatic foci.

At the present time few cases of carcinoma of the breast reach definitive treatment while still in clinical stage I. For classification of cases, I prefer that of Portmann, namely:

STAGE I: *Primary tumour* localized to breast and movable, *skin* not involved, *metastases* not present in regional nodes on microscopic examination.

II: *Tumour* localized to breast and movable, *skin* not affected; few *metastases* in axillary nodes.

III *Tumour* diffusely involving the breast, *skin* involved (oedematous, ulcerated or with nodular implants), *metastases* to numerous regional nodes or distant structures (supra-clavicular nodes, skeleton or viscera).

It is further well known that the ordinary biopsy of a nodular breast very likely will not find an early carcinomatous degeneration involving mammary tissues.

The absolute danger of a biopsy cutting through potential malignant tissue must be generally acknowledged and universally condemned. Some surgeons have suggested that any nodular texture in the breast must be considered suspect, and a sufficient cause for at least large quadrant excision

(when localized) or, better still, complete extirpation of the breast without further ado. Also every one who has seen any number of carcinomatous breasts can recall cases which were believed to be in stage I at operation, but which subsequently presented distant metastases.

The medical profession, in general, tends towards an attitude of either reserved optimism or absolute pessimism in the presence of carcinoma of the breast with or without metastases. With the development of mastectomy, our surgical colleagues have tended to become more optimistic in their fervent hope that upon the more or less radical separation of the patient from the tumour-bearing breast, the danger of metastases and of premature death will be markedly lessened. Subsequently, it was thought that the cancericidal properties of roentgen rays and radium radiation could effect a complete control of the stray malignant cells left in the local tissues or regional drainage areas. In considerable degree this optimism has been warranted, especially on the grounds of the major premise of the greatest good for the longest period of time.

I believe my surgical colleagues and fellow radiologists are quite justified to-day in an attitude of reserved optimism as they approach any case of carcinoma—insofar as that although cancer may not be eradicable, much can be done to ameliorate the distress of the patient.

Regional glandular metastases are the most universal problem. Surgical opinion varies from belief in radical excision of the axillary nodes, and sometimes the supraclavicular extension, to a studied avoidance of interference with the lymphvascular channels outside the breast, carefully removing only the breast and its tumour in toto, and leaving the regional drainage areas to radiation therapy. If one advocates extensive dissection of regional nodes there must be a complete awareness of the possibility of both chronic and disabling oedema of the arm and high probability of spread of the neoplasm due to break down of the natural barriers which are present. Further, one must bear in mind that once the carcinoma has begun to wander from the primary focus, it may travel freely via the blood stream of the lymphatics not only to the axilla and onwards, but also via the subcutaneous, intercostal, internal mammary and epigastric channels. The major direction of this spread will be influenced in some degree by the location of the primary; for instance, a medial quadrant tumour will tend to spread via the internal mammary towards the mediastinum and lung root. If such a case already has axillary nodes involved, there is a high probability that parasternal and mediastinal metastases have been well established.

Although surgical excision of metastatic regional nodes may be successful for a time in some cases, if such spread has occurred, one must anticipate more distant metastases in a high majority of cases. The excision of such nodes, therefore, will rarely lengthen the life of the patient nor afford her greater comfort during the remaining time. It is my firm belief and experience that radiation therapy offers the patient more comfort, if not longer life.

Cutaneous recurrences or metastases in the region of the surgical intervention are undoubtedly due to implanted cells dispersed before or during surgical intervention for removal of the primary. These rarely are single foci, and must be regarded as evidence of dissemination, for which the only hope of control is the irradiation of wide areas. I have, from time to time, succumbed to an innate conservatism, treating only the local area with radium or X-rays. This rarely is successful. The patient sooner or later returns

with other lesions in the immediate neighborhood or on the periphery. Consequently, irradiation of wide fields must be employed.

Metastasis to the thoracic viscera is a portent of early demise. Once involvement of the pleura, mediastinum or lung fields occurs, the prognosis deteriorates sharply. These patients can be relieved, in some instances, with irradiation, but only temporarily. If there is pain from pleural involvement, some relief of the pain may be accomplished with irradiation, delaying the day when analgesics and narcotics will have to be employed. Unless there is pain, I would advocate merely supportive treatment with good diet and rest, for those patients usually slip away in relative comfort, save for their increasing dyspnoea and cough.

Involvement of the central nervous system, as well as the peripheral areas, with symptoms and signs of expanding intra-cranial tumour has been relatively common in my experience, as well as diabetes insipidus from pituitary and para-sellar infiltration. Surgical removal of the intra-cerebral or cerebellar tumour has been worth while in some cases. X-radiation, either with or without surgical removal, has afforded considerable amelioration. Not commonly, there is involvement of the brachial plexus or its major branches, accompanied by some palsy, more usually with pain. Roentgen therapy should be employed in these cases, but I also strongly advocate a section of the spino-thalamic tract for the relief of pain. This will disturb the patient's sense of heat and cold in that extremity, about which they must be cautioned, but to offset which they may train themselves to compensate with the other hand. The physical and psychologic relief afforded is greatly appreciated by the patient and her family.

Other visceral metastases are not uncommon, such as to the uterus and the ovaries, with gynecologic symptoms and signs which may confuse the clinical picture. When such symptoms or signs occur in a patient with a history of carcinoma of the breast, the gynecologist should be consulted and hysterectomy or oophorectomy effected when possible.

Probably the patient with skeletal metastases has been the most commonly distressing experience to every physician and surgeon. Unfortunately, many members of our profession consider the patient with skeletal metastases as totally hopeless, and doomed to misery and death at an early date. Such an attitude is not justifiable, for much can be done to ameliorate the symptoms, and often to considerably repair the damage with resultant great comfort to the patient and the lengthening of useful life.

So far as is known, the frequency (60-65%) and the rapidity of onset of skeletal metastases is not indicated by, nor related to, the histopathological type of carcinoma. The age of the patient is not significant, save that in the younger woman carcinoma of the breast tends to be more anaplastic, more malignant. The rate of growth of the primary, its degree of anaplasia, the location and extent of the neoplasm in the breast, as related to its drainage areas, are more dependable omens of ensuing skeletal involvement.

"The exact date of onset of any cancer is almost impossible to determine," and "the longer the interval between the apparent onset of the primary growth and that of the skeletal metastases, the longer the survival." (Bouchard) It is difficult to rationalize the reason for an appearance of distant skeletal metastases years after the removal of the primary. I have seen such nine and seventeen years subsequent to the mastectomy, these patients having remained apparently well in the interim. Whether such implants were accom-

plished at the time of the original tumour months or years before, and lain dormant meanwhile, or are metastases from other more obscure metastases, no one can say with surety. There is no assurance that metastases will not appear in cases of Stage I—namely, without *pathologic* evidence of regional metastases at the time of operation. Hence, once the patient has had a carcinoma of the breast, she must be diligent, so long as she lives, in observance of the advice to return periodically for check-up, reporting any persistent symptoms. And the attending physician, surgeon or radiologist must not only carry out his examination thoroughly each time, but encourage the patient to return at suitable intervals.

Metastases to the skeleton may be osteolytic, osteoblastic or mixed. There is no direct correlation between cell-type and the metabolic process in bone, as reflected in the dominance of lysis or of proliferative reaction. In general, it can be said that the osteolytic destructive process is the most common (75%); mixed osteolysis with reaction sclerosis next (16%) and sclerosis least (8%). I regard the osteoblastic reaction as evidence of a probably slowly growing tumour with strong defensive power of the surrounding bone. The repair reaction after treatment with irradiation is one of gradual osteoblastic proliferation, whose completeness may be used as a gauge of control of the neoplasm.

Commonly, "neuralgic" or "rheumatic" pains are the first symptoms. As the patient returns for each follow-up examination, especial attention and inquiry must be given to these possible manifestations, particularly as to referred pain, for in our experience pain may precede any X-ray evidence of skeletal damage by weeks to months. In fact, I consider any skeletal pain, persisting over ten days to a fortnight, to justify treatment of the area, regardless of the absence of roentgenographic signs of bone change. This is particularly true, in descending order of frequency, of the spine and hips, lumbosacral spine, ribs, thoracic spine, femur, cervical spine, skull and upper extremity. This pain is aggravated in some proportion when due to lesions in the areas of greater weight-bearing, such as the lower vertebral column, pelvis, hip joints and femur. Pathologic or neoplastic fracture may ensue, and can be avoided if roentgen therapy is instituted in time. The time interval between apparent discovery of the primary tumour and appearance of skeletal metastases varies somewhat, but in general is usually short of four years (34-46 months).

The treatment of skeletal metastases with proper irradiation is often dramatically satisfactory. With adequate therapy, the pain is diminished (often within ten days) to complete relief in over 65% of the cases. At least 25% will repair the damage to the bone and thus be able to carry on a more normal existence. As instances in illustration, one woman who developed a cerebral metastasis (treated surgically and radiologically) and subsequently an extensive involvement of the thoracic spine, was maintained in relative comfort for three years, so that she not only carried on the management of her household, but at times considerable activity in the operation of the home, and saw her son and daughter through some of the critical years of their adolescence.

Another complained of pain in the right knee thirteen years after her mastectomy. She had developed a gross destruction of almost a complete cross-section of the upper mid-femur. This was not only protected from pathologic fracture by prompt treatment, but repaired completely after

irradiation. Subsequently, she lived in relative comfort for almost five years, during which other metastases to the spine, ribs and skin were similarly controlled.

A third patient, much younger and with two small children, sustained a pathologic inter-trochanteric and cervical fracture of her femur. Irradiation effected complete control of the local lesion so well that when her six month check-up date arrived, although there had been a heavy blizzard with consequent snarling of transportation, she trudged gaily through the snow-drifts up the hill to the hospital four blocks from the point where the bus stopped. She was able to continue to manage her home and devote her time to the development of two very young children for over two years, before a multiplicity of metastases, chiefly pulmonary and pleural, forced a short complete invalidism and death.

Another youngish woman repeatedly urges and insists at each follow-up visit that she be permitted to lift heavy ledgers in her occupation as book-keeper. This I continue to prohibit, as well as to try to curb her wish to undertake the labour of housekeeping in her apartment, because it has been only three years since we treated a metastasis in her mid-thoracic spine. Her high corset is also a nuisance to her, especially in warm weather; but she is otherwise comfortable and clinically well.

The above are but a few examples of the results which may be obtained, and of the value of the attempt to maintain the patient in the greatest degree of comfort over the longest period of time.

This "comfort" includes not only bodily ease, but also reduction in the mental and psychologic effect of fear of their disease on the part of the patient and her family. Two of the most important items in "supportive" measures are the maintenance of the courage of the patient and the common-sense sympathetic attitude of the family. The family must at all times bolster the patient's often-lagging courage, and never assume a lugubrious mein in her presence, yet at the same time must save the patient from over-doing physically or avoiding observance of the dicta of her medical advisors. Good diet, adequate rest, orthopedic appliances where useful are, of course, necessary.

In summary, I would emphasize the following points especially:

- (a) Each patient with carcinoma must be considered in the light of what method and means of treatment will offer the most good for the longest period of time.
- (b) Few women with carcinoma of the breast are still in Stage I when the diagnosis is made and proper treatment started. Metastases may be expected, and must be watched for so long as the patient lives.
- (c) Handling and trauma must be minimal in the clinical examination, as well as in the surgical intervention.
- (d) Biopsy through any suspected tissue is dangerous. A wide quadrant excision, if practicable, or simple mastectomy are much safer.
- (e) Regional glandular metastases and cutaneous recurrences are better treated with proper irradiation, due to less probability of further damage than by attempted excision and to the inability to determine the true extent of the regional recurrence.

- (f) Metastases to the thoracic viscera are a portent of deteriorating prognosis. Some temporary relief may be had with irradiation.
- (g) Metastases to the uterus and ovaries are not unusual and may simulate primary neoplasia.
- (h) Central and peripheral nervous system metastases are fairly common, posing as expanding intra-cranial tumours, intra- or extra-theal lesions of the spinal cord or infiltrating about the brachial plexus with neuralgic pain or palsies. Surgical intervention, as discussed above, may afford the patient great comfort. Irradiation is advisable in all.
- (i) Skeletal metastases are common, painful and potentially disabling. Persisting neuralgic or rheumatic pain, often of referred type, must give rise to suspicion. Structural damage may not be demonstrable early on roentgenograms. But adequate X-ray therapy should be given upon suspicion, not waiting for the delayed evidence of structural change. Relief of pain is to be expected in over 60% of cases. Virtually complete repair of bone damage may be expected in 25%, with prolongation of useful life.

Finally, "No case is so hopeless as to warrant discard without a thorough trial of therapeutic irradiation. Results are often astonishingly good, even though they may not be permanent." (Bouchard).

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Krukenberg Tumour

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The recent appearance of a case of Krukenberg Tumour in the Gynaecological Department of the Vancouver General Hospital was of such interest as to suggest a survey of the Hospital's records of recent years. The occasional articles seen in the recent literature have repeatedly stated that the incidence of Krukenberg Tumour seemed to be increasing. However, it would be remembered that in the 22 years which followed Krukenberg's Classic Treatise in 1896, Major's search of the literature reported 55 authentic cases. Fallas brought the survey up to 1929 and found 23 additional cases. Copland and Calvin continued the survey of the literature up to 1943 and added 77 more cases, including 4 of their own.

Included in the 77 cases are 44 cases reported by Leffel, et al, found in the material at the material at the Mayo Clinic from 1908 to 1939. The above figures would suggest the tumour's rarity of incidence rather than its frequency.

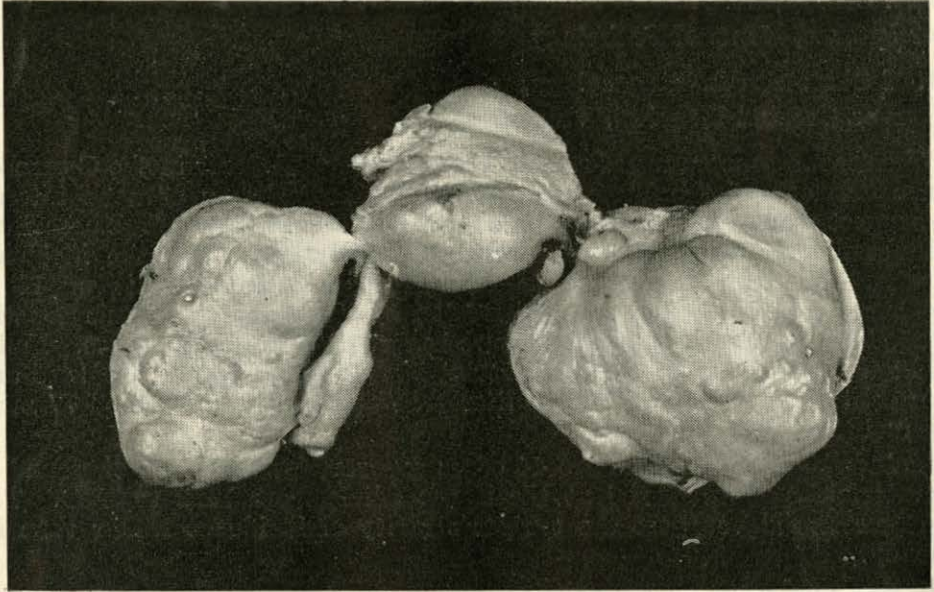
It was somewhat surprising then that enquiry at this Hospital's Records Department uncovered 7 cases occurring in the Hospital during the past 10 years, and 2 more cases reported by the Pathological Department, in biopsy material from outside the city. The answer seems to be that this unusual tumour is probably seen a good deal oftener than it is reported.

It is not the intention of these writers to offer anything new concerning these interesting tumours, but rather to offer their salient features to the average gynaecological surgeon.

Pathology

Fibrosarcoma mucocellulare carcinomatodes was first described by Krukenberg in 1896. He believed it to be a primary neoplasm of the ovary, but was actually unable to determine from which ovarian element the tumour arose. He also failed to point out the close histological resemblance of the tumour to certain secondary ovarian carcinomas, whose initiating lesions are found elsewhere, most commonly in the gastro-intestinal tract. Krukenberg's original description was of "a peculiarly malignant tumour of the ovary, usually bilateral, of considerable dimensions, maintaining the form of the ovary, of myxomatous appearance, occurring in young or old subjects, growing slowly, usually with ascites, sometimes chylous, and eventually fatal

by extension and recurrence." The typical histo-pathological picture of the growth is unmistakable. It is composed of either small groups of mucoid cells, or a diffuse growth of large polyhedral or rounded cells, with mucoid contents compressing the nucleus into a signet-ring form. In the diffuse areas, the cells are intimately mingled with the stroma, suggesting thereby an origin from stroma cells or endothelium. It was on this latter appearance that Krukenberg and his contemporaries based the belief that the tumour originated in the ovary.

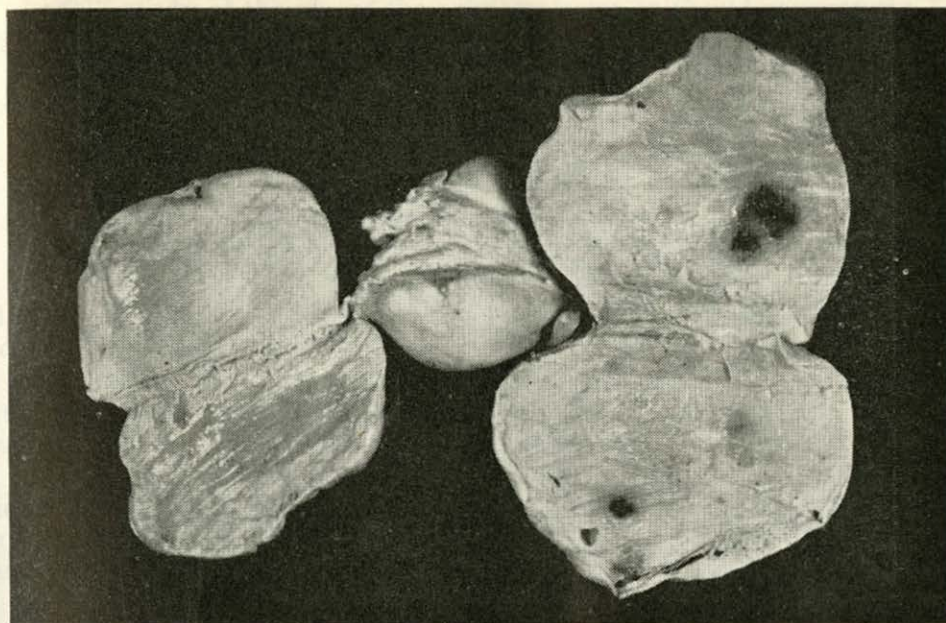


Photograph of the Krukenberg Tumour (half-scale)

This belief is still maintained by some to-day, and with reason, for in certain cases presented by Glockner, Schenk, and Rasthorn, no primary foci were demonstrable at autopsy. It must be borne in mind however, that it is not always possible to demonstrate the primary focus in cases of widespread carcinoma of the abdomen with involvement of the ovary, even when the structure is not that of the Krukenberg tumour. Some investigators claim that when the Krukenberg tumour is primary in the ovary the structure is homogenous throughout and that there are no areas of alveolar or medullary formation such as are found invariably in other primary carcinomas of the ovary.

Ewing, however, after consideration of a series of cases, in which he found by the laborious procedure of serial section, that the alleged primary forms of the Krukenberg invariably yielded areas of a different type, believes that the only pure form of the Krukenberg tumour is secondary to a primary carcinoma elsewhere, usually in the gastro-intestinal tract.

In further support of this belief is the fact that similar signet-ring carcinomata may be found in males with almost as high an incidence as in female.



The same Tumour laid open (half-scale)

The theory of origin held to-day by most pathologists, is simply one of unexplained tissue selectivity, in respect to these metastases, as in the case of other specific tissue affinities.

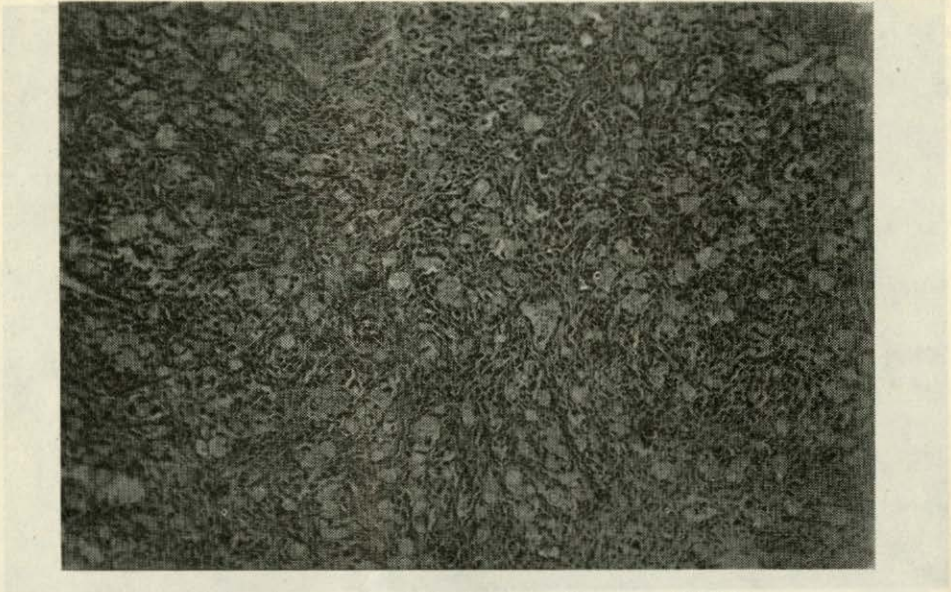
With our present concept of the condition, we are inclined to believe that the primary lesion is in the gastro-intestinal mucosa, arising from the small mucoid cells, deep in the glands, and that the ovarian lesions are the metastatic ones. Whether the initiating lesion in the gastro-intestinal tract is the precursor of the more extensive large and bulky gelatinoid tumours of the stomach and colon is problematical, since no comparable ovarian involvement is found in this latter group.

Because of the nature of the process, there is a high mortality associated with the disease as a whole, although individual cases are still alive, long after the accepted 5 year period of cure (Galt).

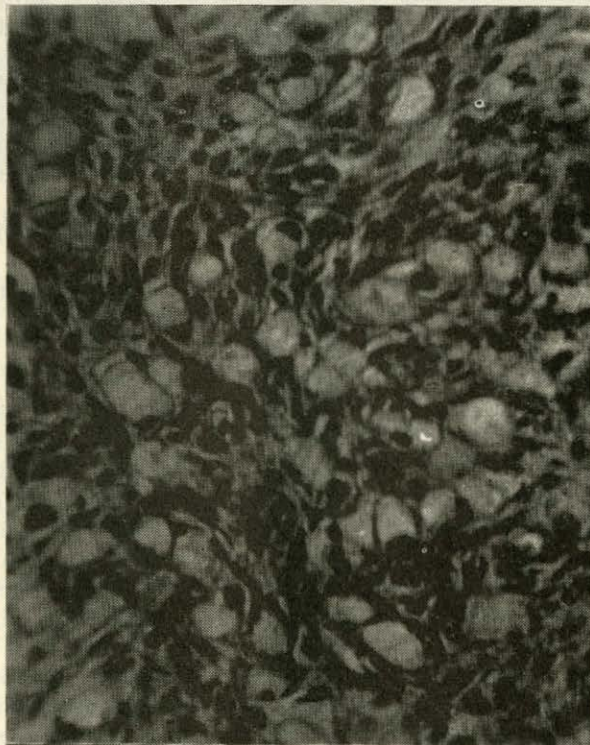
The tumour, then, is generally accepted as a carcinoma, not a sarcoma as was suggested by Krukenberg. The microscopic picture is predominately one of masses, probably epithelial cells, packed with mucus to the extent that the nucleus is pushed to the periphery, presenting the signet-ring shape. It is probable that the absence of these diagnostic signet-ring cells does not deny the diagnosis but rather that the tumour is not sufficiently advanced.

Grossly the tumour is usually, but not always, bilateral. The ovaries retain their smooth surface, perhaps moderately, or upon occasion decidedly enlarged, are free from adhesions, and ascites is present in about half of the cases.

The majority of students of the pathology of these tumours agree that it is secondary to malignancy elsewhere—usually the gastro-intestinal tract, and commonest in the stomach. The tumour may, however, be metastatic from malignancy anywhere in the abdominal cavity—and indeed, perhaps elsewhere.



Photomicrograph of Krukenberg Tumour (X100)



Photomicrograph of Krukenberg Tumour (X400 showing signet-ring cells)

Leffel's study of the site of the primary lesion in the 44 cases at the Mayo Clinic merits recital:

Stomach.....	20	Jejunum.....	2
Recto-sigmoid.....	7	Uterus.....	1
Colon.....	4	Hepatic duct.....	1
Gall-bladder.....	3	Breast.....	1
Caecum.....	2	Unknown.....	3

Involvement was bilateral in 35 cases, unilateral in 9. The degree of malignancy may be misrepresented by the average post-operative life of the 44 cases. It was 3.61 months.

The method of metastatic spread has always been a matter of much controversy. Whether the spread is by the lymph stream, blood stream, direct continuity or by peritoneal sedimentation, is not decided. However, the smoothness of the surface of the ovary, the lack of adhesions, the high incidence of bilateral involvement, and the presence of cancer cells in adjacent lymph nodes suggest the lymph stream as a probable means of metastatic spread in the majority of cases.

A study of our seven cases shows a wide variety in ages, viz. 76, 65, 60, 58, 56, 33 and 30. Gastro-intestinal symptoms were present in every case. Gastric carcinoma was proven in three cases, two at autopsy and one at laparotomy. Four cases left hospital without a proven primary lesion outside the ovary, but each gave a history strongly suggestive of alimentary tract disease. Three cases presented ascites, in four cases there was none.

Three of our cases died in hospital. Three others were dead within six months. The last case only—operated on recently, is alive and well.

The recent case which prompted this investigation follows:

Mrs. H. A.

This 33 year old woman was admitted to hospital on October 8, 1945 complaining of excessive menstrual bleeding. Whereas her menstrual cycle had previously been regular, every 28 days for 4 to 6 days, for the preceding 4 months she had been having periods every 22 days lasting 10 or 11 days with excessive bleeding, with clots and flooding. She had had no particular pain. This irregularity began in June after a miscarriage of a 2 months pregnancy.

Her only other complaint was an occasional attack of indigestion with nausea and bloating after a meal. Her digestive symptoms began about one year ago at which time she had a gastric upset with vomiting of coffee-ground vomitus and passing of black tarry stools. The private physician whom she consulted, had stomach X-rays taken which showed no pathology.

Her past history is otherwise negative and family history is not remarkable. She is the mother of two children, both living and well.

Physical examination revealed a healthy-appearing young woman of about 33 years, in no discomfort. Her heart and lungs were quite normal. Pulse was 80 and B.P. 120/70, temperature 98.2. The abdomen was somewhat distended in the epigastric region. Two masses could be made out in the abdomen, each apparently arising from the pelvis and reaching the umbilicus. The one on the right was somewhat larger than the left; together they seemed

to fill the lower abdomen. Pelvic examination showed the masses to lie one on either side of the uterus and to be moveable with some difficulty. The uterus itself was anterior and moveable and did not seem to be involved in either mass. The impression at that time was that these were bilateral ovarian tumours of possible malignancy. The possibility of Krukenberg tumours of the ovaries from a carcinoma of the stomach was considered but in view of the negative stomach X-rays this was not thought likely.

A laparotomy was performed by Dr. David Collison. Two large masses arising from the region of the ovaries were found. The ovaries were apparently incorporated in these masses as no separate ovarian tissue was located. The masses were fairly well encapsulated and formed large white, smooth, glistening oval tumours. The one on the right extended somewhat over the umbilicus while the one on the left was somewhat smaller. They were firm in consistency and the cut surface was homogenous in appearance. There was no other involvement in the pelvis. The tumours were removed together with the tubes, and a subtotal hysterectomy was performed.

The pathologist, after microscopic study, reported these to be Krukenberg carcinomata of the ovaries, probably secondary to carcinoma in the gastro-intestinal tract.

The patient made an uneventful recovery from the operation. During the post-operative period the stomach and duodenum were examined by X-ray following a barium meal, but these plates were inconclusive because there was flatus in the stomach and the abdomen was too tender for palpation. Gastric analysis was done on the 8th post-operative day; it showed no free Hcl, and a total acidity of 7 units, and plus 2 occult blood.

The patient was discharged from hospital on the 18th post-operative day with the understanding that she was to return to the Outpatient Department for observation. She did not return, however.

Final Diagnosis: Bilateral Krukenberg tumours of the ovaries, probably secondary to a carcinoma of the stomach.

* * * * *

A survey of recent text books in surgery and gynaecology, together with a good deal of the recent literature, has nowhere offered a means of dealing with some of the moot questions which confront the gynaecologic surgeon regarding Krukenberg tumours of the ovary.

In the first place, how is he to recognize a Krukenberg tumour of the ovary *in situ*? Secondly, if he does recognize it, what is he going to do about it?

It is doubtful if very many surgeons will make the diagnosis at operation. The history of alimentary tract disease, together with the appearance of an enlarged ovary or ovaries of solid consistency, free from adhesions, with smooth surface, retaining the outline of the ovary to quite an extent, and accompanied by ascites, should make the surgeon strongly suspicious. The presence of a pathologist at the operating theatre who can examine cut sections of the specimen in the gross, is a very great help but such assistance is available only in large centres.

Should the operator satisfy himself that the problem before him is one of Krukenberg tumour, what should be his course of action?

Thorough palpation of the alimentary tract, gall bladder and uterus should be carried out with special emphasis placed on the stomach. If evidence of gross malignancy be not found then, both ovaries, tubes and uterus should be removed. If evidence of primary involvement be found elsewhere, what then? We believe that in the great majority of cases pan-hysterectomy should be carried out and *nothing else*. Further operative procedures in this highly malignant disease can be carried out later, if and when subsequent study warrants it. Such further procedures will probably be better conducted by a general surgeon.

* * * * *

Leffel's article in the *Annals of Surgery*, Volume 115-102, January, 1942, presents a very complete bibliography of the literature.

Italy, September 1943

J. H. SLAYTER, M.B., B.S.

Bear River, N. S.

I WAS somewhat amazed at receiving a request for a contribution to the BULLETIN and after much hesitation I decided to offer an account of my activities during and after the invasion of Italy in September, 1943. They contributed little or nothing to the war effort but they may present some striking contrasts for the older practitioners who served in the Great War of 1914-1918—who remember trench warfare and for whom I have every sympathy.

At the time of the invasion of the mainland of Italy I was a Medical Officer with a Field Ambulance. We had spent the months of July and August absorbing practical experience and Sicilian dust and were by this time hardened campaigners.

For some days prior to embarkation for Italy proper we were concentrated in an area near Catania on the east coast of Sicily where we rested, re-equipped and organized for an assault landing. We were stripped down to bare essentials, our vehicles and prized personal possessions were water proofed—the latter under individual arrangements—and we were all allotted our tasks for D-Day, with minute instructions as to where and when we should perform them.

On the 2nd September we were piled into trucks and taken to Catania and were eventually loaded into assault craft. That night we sailed up the Straits of Messina with Sicily on our left and Italy on our right. The first part of the journey was quite uneventful but at some time in the early morning half the guns in creation started firing from Sicily in an attempt to "soften up" the enemy. The war correspondents described it as a beautiful sight but personally I thought it rather a boisterous heralding of our approach and having recently survived a torpedoing I felt none too secure in our craft, whose size and armour diminished rapidly as we neared our objective. However, we arrived safely enough at the beach where we thankfully scrambled ashore. My own job was to set up a dressing station in a previously selected house nearby. I had about thirty men and ample medical supplies to care for the expected influx of casualties and routine sick (including malaria and acute dysentery). We worked feverishly and in about one hour were all set to take whatever came along, also we had made contact with both the "forward elements" and the personnel responsible for the sea evacuation of casualties. After the outburst of enthusiastic energy we waited and in the first six hours I had, successfully treated two cases, one an Italian woman who had been bitten on the leg by her excited monkey and the other an officer with a furuncle.

This peaceful invasion, however, lasted but a short time. The Italians offered little or no resistance but the Germans recovered from their previous night's pounding and began to dispute our presence. At about this time my own makeshift dressing station was moved further inland to join up with the balance of the Field Ambulance H. Q. Company in a large school building.

At first we planned only to do emergency work and ship everything with all speed back to the General Hospitals in Sicily but we soon found that evacuation by sea was a slow and dubious affair. For some reason the supply of

empty assault craft returning to Sicily was very limited and in consequence we could get no assurance of a regular time-table for evacuation. Further, we recalled that cases evacuated from Sicily to Malta or North Africa were returned to the fighting Units with incredible slowness—due again to shipping problems. In the light of these considerations we decided to hold everything we could. The A.D.M.S. must have given his sanction to our reversal of instructions because he assisted us greatly in rounding up suitable Italian beds and other hospital equipment to enable us to set up a Field Hospital. The school building was quite good for this purpose. In a matter of 24-36 hours we had a malaria ward, dysentery and general medical wards established. A Field Surgical Unit was attached to us and they contrived their own operating room, etc., in very short order.

Field Ambulances not being designed to hold cases, we found we had not enough medical officers to assign to ward and admitting room duties, etc. However, our old system of employing two or three medical officers in the admitting room, where we saw out-patients and prescribed the first twenty-four hours' treatment for all admissions, covered the situation well since, during slack periods in the admitting room, one or two M.O.'s could go to the wards and make rounds. Life was a bit hectic at times.

The Adjutant was our permanent "bacteriologist." When a suspected malaria was admitted, his first twenty-four hours' treatment was outlined in the admitting room. He was then taken to a special room where the Adjutant took the necessary blood smears for investigation—again all with the aid of captured enemy materials. We were not supplied with microscopes, etc., from official sources as no one apparently had visualized a unit of our type performing this sort of work.

Three or four days later I was sent forward to replace a wounded medical officer of one of the regiments. I was taken as far up a hill road as possible by Jeep, after which I was given rather vague instructions from which I gathered the regiment was "just up ahead." I must admit I enjoyed the first part of my hike. For two months we had been broiled in Sicily; now, with the cool mountain air, pines and real green grass, it was quite delightful. However, after six hours of stamping along with no sign of a war, let alone the regiment, I began to wonder just where I was heading. Around dusk I stopped to acquire some half ripe corn and a few potatoes which I managed to scorch over a fire and sustained life pro temp. At midnight I had the good fortune to meet the Q. M. of the regiment who was taking the rum rations to the men. Being by this time half frozen, it took little persuasion to have my ration then and there.

The regiment's immediate objective was a small town down the other side of the mountain and by the time I reached them, they were well on the way—foot slogging every inch so far as I was concerned.

We were well within sight of the town when I was called to see an engineer who had fallen off a bridge, fracturing his skull. He was in no condition to be treated in an R.A.P. and, as evacuation over the rough roads would have been fatal at that time, I had no alternative but to take him on into the town, with the hope that it might contain an abandoned civil hospital and equipment. Fortunately, as it turned out, a tank brigade had driven through the place a short time previously and had left its Light Field Ambulance supplies and a few men in a large house there. I sent a message to the L.F.A. Commander, explaining my predicament and lack of suitable roads for evacuation

of casualties and he agreed to leave the supplies and men with me for the few days the regiment would be resting in the town.

The L.F.A. men were excellent indeed. They pitched in with all the enthusiasm in the world; unpacked all their equipment and in a matter of two hours we had set up a miniature surgery and three "wards" with a total of fourteen beds (or stretchers). We gave the fracture case supportive treatment and three days later we were able to ship him out in fair condition—he is still alive.

Other sick came along, including an Italian civilian who had been playing with an abandoned hand grenade. He had lost both eyes, had multiple puncture wounds of the trunk and had lost all fingers and half one hand. My emergency surgery and resuscitation were, perforce, rough and ready but he survived, to my surprise, even a period of paralytic ileus during which I wondered how much more an abdomen could possibly distend without bursting.

Shortly after this we were on the road again, scheduled to advance up the spine of Italy—but by this time the normal divisional transport amenities had been established and life became routine if rather nomadic.

Gonorrheal Cervicitis and Trichomonas Vaginalis

MURRAY M. DAVIS, M.D., C.M.

TRICHOMONAS Vaginalis is very commonly found in the vaginal discharges of women admitted to hospital or Venereal Disease Clinics for Gonorrheal Cervicitis. The incidence has been estimated as high as 61 per cent.

This paper presents six cases from the Gynecological Service of the Victoria General Hospital, Halifax, with the following observations regarding the diagnosis and treatment of these two conditions.

(1) It is believed that the occasional case of Trichomonas Vaginalis may give a false positive for the Gonococci with the gram stain.

(2) At least ten consecutive negative cervical smears should be obtained from a case of suspected or treated Gonorrheal Cervicitis before the patient is diagnosed as "cured." In addition the cervix should be free of all mucus and follow up smears should be obtained for at least three months. It is advisable to take these smears just before the onset of the monthly period or immediately following the cessation of the menstrual flow, as this is the time they are most likely to be positive for Gonococci.

(3) Those cases of Gonorrheal Cervicitis in which the cervix still contains mucus and the direct smear shows a high proportion of pus cells after the routine treatment with Sulfa drugs, Penicillin, or both, should have a conization of the cervix performed.

Case No. I

Miss G. M., age 24 years and single, admitted to hospital December 12, 1945.

Complaints:

- (1) Discharge P. V.
- (2) Burning and irritation of vulvae.

History of Present Illness:

This patient was first treated for Gonorrhea in 1940, when, following treatment with Sulfa drugs, she was admitted to hospital for a cauterization of the cervix. Her discharge persisted—profuse, yellowish, irritating, and odorous in character. During the next four years, the patient received "dozens" of courses of Sulfa.

In the summer of 1944, her doctor discovered "Trichomonas Vaginalis" and treated her with picric acid cones and vinegar douches without result.

In October, 1944, patient was admitted to hospital and received 1,000,000 units of Penicillin—20,000 units every four hours.

In February, 1945, patient was again admitted to hospital and received 1,500,000 units of Penicillin—20,000 units every 3 hours and at the same time had a "Bartholin's abscess" incised and a urethral caruncle removed.

The vaginal discharge persisted following the second course of Penicillin with the same characteristics as noted above. Cervical smears taken in July

and October, 1945, were returned positive for "organisms characteristic of the Gonococci."

On admission to the Victoria General Hospital in December, 1945, general physical examination, white blood count, temperature and systemic inquiry were normal.

Pelvic Examination:

Vaginal mucosa slightly reddened with a moderate, tenacious, yellowish discharge present. There was a tender scar just inside the vaginal orifice on the left. Cervix was very slightly reddened but not tender on movement.

Direct Smear:

Loaded with Trichomonads, pus, and epithelial cells.

Treatment:

Routine concentrated anti-Trichomonas treatment. On completion of treatment, seven consecutive negative direct smears were obtained for Trichomonas. The discharge persisted, however, and the eighth direct smear proved positive for Trichomonas. The concentrated treatment was repeated, and seven consecutive negative smears were again obtained for Trichomonas. The discharge almost completely cleared up and the patient's symptoms of burning and irritation of the vulvae disappeared. Seventeen consecutive negative cervical smears for Gonococci were obtained during hospitalization.

Discharged on January 21, 1946; examination revealed a completely normal looking cervix.

Summary:

Here was a case of apparently Sulfa and Penicillin resistant Gonorrhoeal Cervicitis, in which, when the Trichomonads were cleared up, cervical smears for the Gonococci remained persistently negative.

Case No. II

Miss M. W., age 36 years, colored and single, admitted to hospital on January 7, 1946.

Complaints:

- (1) Discharge P. V.
- (2) Itching and irritation of vulvae.

History of Present Illness:

Patient admitted intercourse early in February, 1945. About nine days later, she first noticed a vaginal discharge, yellowish, irritating and odorous in character. This discharge was worse before and after her periods. About a week after the onset of the discharge, she noted a stiffness of the right elbow and down the back of her left leg. The elbow was swollen and inflamed, but these symptoms gradually disappeared.

This patient saw her doctor when the discharge first began. A positive cervical smear was obtained February 19, 1945 "for organisms characteristic of Gonococci," the only positive smear ever obtained. She received two courses of Sulfathiazole and the discharge cleared up in May.

In June, 1945, the discharge returned, yellowish, odorous, and irritating, and a positive hanging-drop smear was obtained for "Trichomonas Vaginalis." A cervical smear taken at the same time was negative for Gonococci.

The patient was then treated for the Trichomonas with vinegar douches, suppositories, and "jelly," from June to November, but the discharge per-

sisted. She received no treatment during the latter part of November and December, and denied any intercourse since early in February.

Temperature, white blood cell count, and general physical examination on admission were normal.

Pelvic Examination:

Lobiae and vaginal walls reddened, irritated; yellowish vaginal discharge with considerable pale mucoid material hanging from the external os. No cervical erosion present. Uterus and appendages essentially normal.

Direct Smear:

Loaded with Trichomonads, pus, and epithelial cells.

Treatment:

Routine concentrated anti-Trichomonas treatment. On completion of treatment, seven consecutive negative hanging-drop smears were obtained from Trichomonas. A gradual improvement was noted in the vaginal discharge and irritation of the vulvae as treatment progressed, until on discharge from hospital on January 23, 1946, there was no irritation present, and the discharge had almost completely cleared up. Fourteen negative cervical smears for Gonococci were obtained during hospitalization.

Summary:

This case emphasizes the necessity for taking routine hanging-drop smears for Trichomonas on all women, presenting themselves with a vaginal discharge regardless of whether cervical smears are positive for the Gonococci.

Case No. III

Miss J. A., age 27 years and single, admitted to hospital December 7, 1945.

Complaints:

- (1) Discharge P. V.
- (2) Irritation and itching of vagina.

History of Present Illness:

On the 17th of July, 1945, patient was admitted to a Venereal Disease Clinic in Halifax; complaining of a profuse, irritating, odorous, yellowish, vaginal discharge. A cervical smear was positive for Gonococci on July 24, and patient then received 705 grains of Sulfathiazole over a period of fifteen days. Cervical smears were negative on August 21 and September 4, but September 11 a positive smear was again obtained. Patient was placed on Sulfadiazine therapy and received 705 grains over a fifteen-day period. A cervical smear was positive on October 10 and, on December 7, 1945, patient was discharged to the Victoria General Hospital for Penicillin therapy.

General physical examination and systemic inquiry, temperature, and white blood cell count on admission were essentially normal.

Pelvic Examination:

Vaginal wall reddened and moderate yellowish-green, foul discharge present. Cervix contained a glob of muco-pus in the external os. Pelvic organs appeared normal.

Direct Smear:

Many pus cells and Trichomonads.

Treatment:

Routine concentrated anti-Trichomonas treatment. On completion of treatment, the direct smears for Trichomonas remained negative for the duration of hospitalization—a total of twenty consecutive smears. Ten consecutive negative cervical smears were obtained before a positive result was reported. The patient was then placed on Penicillin therapy 20,000 units every 3 hours for 300,000 units, following which ten consecutive negative cervical smears were reported.

On discharge, this patient had a slight, non-irritating, non-odorous, vaginal discharge, and the cervix still contained a globule of muco-pus with about 50 per cent pus cells in the direct smear.

Summary:

This case emphasizes the fact that three or four negative cervical smears for Gonococci are useless as an index of cure. Eleven cervical smears were necessary before a positive result was reported. On discharge from hospital this patient still looked suspiciously like a case of chronic Gonorrhoeal Cervicitis, because of the muco-pus in the external os, the high proportion of pus cells in the direct smear, and the inflamed appearance of the cervix. It was advised that weekly cervical smears be taken for three months, and if the patient was returned to the hospital with the same complaints, a conization of the cervix be performed.

Case No. IV

Miss E. B., age 23 years and single, admitted to the Victoria General Hospital December 7, 1945.

Complaints: Nil.

History of Present Illness:

This patient was admitted to a Venereal Disease Clinic in Halifax after being apprehended on a vagrancy charge. A positive cervical smear for Gonococci was obtained on October 23, 1945. The only treatment this patient received prior to admission to hospital was "Vagi-Caps" b.i.d. from October 30 to date of admission.

Pelvic Examination:

Moderate, yellowish vaginal discharge with a globule of muco-pus in the external os. Cervix was slightly eroded. Uterus and pelvic appendages appeared normal.

Treatment:

Because of pre-admission treatment with "Vagi-Caps" this patient received no treatment until six days after hospitalization when smears were first taken for Trichomonads and the Gonococci. It has been found that if a patient has had treatment locally with antiseptics, Trichomonads will not be found up to a week or ten days after such treatment has ceased.

In this case the first three direct and cervical smears were negative for both Trichomonas and Gonococci. The fourth direct smear was positive for the Trichomonas and the patient was placed on the routine concentrated anti-Trichomonas treatment.

On completion of treatment, two consecutive negative cervical smears were obtained for the Gonococci followed by two consecutive positive reports.

The direct smears remained negative for *Trichomonas* for the duration of hospitalization—a total of 18 consecutive negative smears.

This patient was then placed on Penicillin—20,000 units every 3 hours for 300,000 units, following which ten consecutive negative cervical smears were obtained for the *Gonococci*.

Pelvic examination on discharge revealed a suspicious cervix with a globule of muco-pus in the external os, and the direct smear contained 50% pus cells.

Summary:

This case was similar to Case No. III in that despite ten negative cervical smears the appearance of the cervix still suggested a chronic Gonorrhoeal Cervicitis following treatment with Penicillin. The same advice was given on discharge as in Case No. III.

Case No. V

Miss M. G., age 22 years and single, admitted to hospital December 20, 1945.

Complaints:

- (1) Profuse discharge P. V.
- (2) Burning irritation of vulvae.

History Present Illness:

This patient was admitted to a Venereal Disease Clinic in Halifax August 24, 1945, when cervical smears were positive for *Gonococci*. She then received 705 grains of Sulfathiazole over a period of two weeks but smears were positive again on September 21 and October 5. On October 30, patient was placed on Penicillin 20,000 units every three hours for 400,000 units. Smears were again positive for *Gonococci*. On November 13 the patient was discharged from the clinic to the Victoria General Hospital.

On admission to hospital patient was found to be four months' pregnant. White blood cell count, temperature and systemic inquiry were essentially normal.

Pelvic Examination:

Labiae reddened swollen and irritated. Vaginal mucosa inflamed with a profuse yellowish tenacious discharge present and muco-pus in the external os. The cervix was soft, bluish and enlarged with the uterus the size of a four months' pregnancy.

Direct Smear:

An abundance of *Trichomonads* and pus cells.

Treatment:

Routine concentrated anti-*Trichomonas* treatment. The irritation of the vulvae and vagina improved somewhat and three negative smears were obtained for *Trichomonas* and *Gonococci*. The fourth cervical smear was positive for "organisms characteristic of the *Gonococci*" and the patient was placed on Penicillin—20,000 units every three hours for 500,000 units. On completion of Penicillin therapy a direct smear was again positive for *Trichomonas* and the anti-*Trichomonas* treatment was repeated. Two negative cervical smears were obtained for *Gonococci* but the third was positive again, and the patient received 500,000 units more of Penicillin. Three negative

direct smears for *Trichomonas* were obtained following the second concentrated treatment but the fourth was again positive and a third series of treatments was started following which seven consecutive direct smears for *Trichomonas* were obtained.

A total of fourteen negative cervical smears for Gonococci were obtained following the second course of Penicillin.

On discharge the labiae and vaginal mucosa appeared normal. There was a slight vaginal discharge present, whitish in character. The cervical canal contained no muco-pus and the patient had no complaints of burning or irritation of the vaginal or vulvae.

Summary:

This case illustrates the difficulty which may be encountered in treating both *Trichomonas* and Gonorrhoeal Cervicitis. Three series of concentrated anti-*Trichomonas* treatment and a total of 1,400,000 units of Penicillin were necessary before a clinical cure was obtained. The changes in the cervix and vagina normally associated with pregnancy undoubtedly played a great part in the persistence of both infections in this case.

Case No. VI

Miss E. T., a 25 year old Indian girl, single, admitted to hospital December 6, 1945.

Complaints: (1) Discharge P. V.

History of Present Illness:

This patient had considerable treatment for Gonorrhoea before admission to the Victoria General Hospital. A urethral smear was positive for Gonococci on April 11, 1945, and she was placed on Sulfathiazole, fifteen grains every four hours for a total of 720 grains. A cervical smear was positive on April 25.

The first course of Penicillin was started on May 16, consisting of 20,000 units every three hours for a total dosage of 340,000 units. A cervical smear was positive on June 6.

On June 16, a second course of Penicillin was given, 20,000 units every three hours for a total of 500,000 units.

On September 5, a third course of Penicillin was started, the patient receiving a total of 800,000 units. A cervical smear was positive on September 10.

There was also a note on the admission chart that the patient "had been well cauterized."

Physical examination, systemic inquiry, white blood cell count and temperature were normal on admission to the Victoria General Hospital.

Pelvic Examination:

Labiae and vagina were essentially normal. There was a yellowish, slightly odorous, discharge present. The cervix and other pelvic organs appeared normal.

Direct Smear:

Many pus cells and an abundance of *Trichomonads*.

Treatment:

Routine concentrated anti-*Trichomonas* treatment. On completion of this treatment five negative smears were reported for Gonococci and *Trich-*

omonas. The direct smears for Trichomonas remained negative for the duration of hospitalization for a total of twenty-seven negative smears.

On January 3 and 4 two cervical smears were reported positive for Gonococci and the patient was taken to the Operating Room for a conization of the cervix. This operation was unsatisfactory because of a short circuit in the electro-surgical unit and it was felt that a portion of infected tissue had probably been left behind in the upper end of the cervical canal. Positive cervical smears were reported and the patient received 700,000 units more of Penicillin. After two negative cervical smears a third smear was again positive. However, since this was followed by eleven consecutive negative smears and since the cervix was normal in appearance with no discharge present, the patient was discharged.

Summary:

Here was a case of both Sulfa and Penicillin resistant Gonorrhoea. The patient received a total of 2,340,000 units of Penicillin. It was recommended that if the cervical smears became positive again during the three months follow-up, the patient be returned to hospital for a more thorough conization of the cervix.

Trichomonas Vaginalis:

Trichomonas Vaginalis is very easily detected by means of the direct smear. A drop of saline is placed on a slide, a milky emulsion made with a drop of discharge taken from well up in the vagina, and the preparation covered with a cover slip and examined under the high power of a microscope. When taking the drop of vaginal discharge a dry, unlubricated, speculum should be used. Lubricants of oil, glycerine or jelly dehydrate the Trichomonads and render them immobile, thus making the diagnosis uncertain. The characteristic pear-shape and jerky movements of the flagellated Trichomonads is soon recognized and once seen it is difficult to mistake them for anything else in the smear.

The routine treatment for Trichomonas on the Gynecological Service of the Victoria General Hospital is as follows:

- (1) The vagina and cervix are washed with green soap 1:20.
- (2) The cervical canal is swabbed with tincture of iodine.
- (3) Acriflavine 1:1000 is instilled in the urethra with a sterile eye dropper.
- (4) Devegan tabs are inserted into the vagina at night with a vinegar douche in the morning before treatment and in the evening.

This treatment is carried out daily for seven days. Then all treatment is stopped and the intern proceeds to take—

- (1) Smears of the cervix for the Provincial Laboratory.
- (2) A direct smear of the vagina as described above in which the intern searches for the Trichomonas and reports on the progress notes:
 - (a) if Trichs are present; (b) if pus cells are present and in what proportion to epithelial cells, (c) if only epithelial cells are present.

It has been found that if the Trichomonads recur, there is usually an increase in the proportion of pus cells to epithelial cells first, before the Trichomonads are discovered.

Seven consecutive negative smears are obtained after the above treatment. If any of these smears are positive, the treatment is repeated. It is advisable as a follow-up to examine direct smears immediately before or after the next three menstrual periods.

The Gram Stain:

This is the stain commonly used to detect the Gonococci in urethral or cervical secretions. The following facts regarding the efficacy of this stain were obtained from Dr. D. J. MacKenzie, Director of the Public Health Laboratories for Nova Scotia.

The gram stain depends upon the fact that when treated with gentian violet and iodine certain bacteria retain the stain when subsequently treated with alcohol whereas others quickly lose it. The former are called gram-positive, the latter gram-negative. So uncertain is this stain that the laboratory reports smears as positive "for gram-negative organisms characteristic of Gonococci."

There are several factors that may enter into the interpretation of a gram staining. In the first place within certain limits a technician can make bacteria gram-positive or gram-negative by the amount of decolorization performed with the alcohol. If the alcohol is left on the smear for longer than the usual prescribed time gram-positive organisms may become gram-negative, and vice versa. Again, thick smears require a longer time for decolorization, the thin part of the smear may become over decolorized and organisms which are weakly gram-positive may become gram-negative.

Treatment with Penicillin and Sulfa drugs will affect the gram staining picture. It has been noted by the Public Health Laboratory that after treatment with Penicillin, organisms which are ordinarily intracellular (Gonococci) disappear, and are replaced by extracellular organisms which are still gram-negative and are probably Gonococci. Sulfa drugs completely change the staining picture. The shape of the organisms is distorted and it is also possible that the capsule of the organisms may be affected rendering it more or less permeable to the alcohol with the same results as noted above.

It is known that in the male, prostatic secretions may protect the Gonococci, rendering them less permeable to the alcohol so that these organisms which are ordinarily gram-negative are not decolorized sufficiently and become gram-positive.

In the light of the above observations it seems quite possible that *Trichomonas Vaginalis* may in some way affect the capsule of the normally gram-positive intracellular cervical organisms, making this capsule more permeable to the alcohol of the Gram stain. The gram-positive organisms thus become gram-negative resulting in a false positive for "organisms characteristic of Gonococci."

In addition to Case No. 1, which was apparently a case of *Trichomonas Vaginalis* giving a false positive for Gonococci, Dr. H. B. Atlee, head of the Gynecological Service of the Victoria General Hospital, recently had admitted to his office two women complaining of a vaginal discharge. Direct smears for *Trichomonas* and cervical smears for Gonococci were positive. The *Trichomonas* was treated, following which smears were negative for the both organisms. Only three negative cervical smears were obtained for the Gonococci in these two cases but in both instances the husbands were thoroughly

investigated for Gonorrhoea with negative results. Here would appear to be two additional cases of *Trichomonas* giving a false positive for Gonococci.

It is now Dr. Atlee's routine on all women admitted to his office complaining of a chronic vaginal discharge to take a direct smear first. If this is positive for *Trichomonas*, these are cleared up before the cervical smears are taken. If the latter are positive for Gonococci in the absence of *Trichomonas* the case is treated as Gonorrhoea.

Summary:

- (1) *Trichomonas Vaginalis* may occasionally give a false positive for the Gonococci with the Gram stain.
- (2) Some additional fallacies in the Gram stain are noted.
- (3) At least ten consecutive negative cervical smears should be obtained as an index of cure in Gonorrhoeal Cervicitis with an additional follow-up period of three months.
- (4) Those cases of Gonorrhoeal Cervicitis in which muco-pus persists in the cervix despite all treatment should probably have a conization of the cervix performed.
- (5) A routine concentrated treatment for *Trichomonas Vaginalis* is presented.
- (6) All women complaining of a chronic vaginal discharge should have a direct smear taken for *Trichomonas*. If this is positive this infection should be treated before an attempt is made to diagnose Gonorrhoeal Cervicitis.

Abstracts from Current Literature

"FIBROSITIS" OF BACK. Copeman, W. S. C. and Ackerman, W. L.: Quart. Jour. of Med., 1944, 13: 37.

Copeman and Ackerman say that the frequency of fibrositis of the back seen among otherwise healthy young men in the army stimulated their interest in this condition. As a first step, exact measurements were taken of the site of the painful focus in a large number of sufferers and a "pain chart" was plotted. The back of every patient who died in the hospital from any cause was then systematically examined, with special reference to these areas. As a result of this and of subsequent clinical observations and biopsies, conclusions have been arrived at which seem to explain certain cases of "fibrositis." The authors say that their previous observation that the painful points may arise during any pyrexial illness or as the result of trauma was confirmed; also that the subjective pain disappears but that the point often remains and can be detected by tenderness on palpation. It can be reactivated subsequently and may become the seat of chronic pain. The back was carefully dissected in 14 bodies with particular reference to the chief sites of pain. It was found that a basic fat pattern was constantly present even in the most cachectic subjects in whom all other fat was absent. This fat pattern was observed to correspond in shape and situation with the pain pattern. No lesions suggestive of inflammatory reaction were found in any deep fibrous tissue, but abnormalities affecting the lobules of the fat pattern were found on several occasions. The abnormality which seemed most likely to have clinical significance was the herniation of fat lobules through the walls of their investing fibrous tissue. These fat hernias have been classified into three types: the nonpedunculated, the pedunculated and the foraminal. In the nonpedunculated type, fat which lies under a fascial covering, as for instance in the angle of the deep fascia where it splits to invest the sacrospinalis muscle, or along the crest of the ilium, is always under tension and so will bulge into any potential hernial space that may be present either as the result of congenital weakness or as the result of trauma. The pedunculated type has been found and removed in several instances. In these cases the onset of pain was produced by a sudden strain several years previously. It is thought therefore that it is probably a late result of strangulation in a hernia originally of the nonpedunculated type. The foraminal type of hernia was found only along the edges of the sacrospinalis muscles. These areas were exposed in the cadavers, and it was found that the nerves passed out in company with a small artery and vein through a foramen in the deep fascia of the muscle. Over-hanging this was a narrow lateral fold of the fascia so arranged as to occlude the foramen on flexion of the back. In several cases it was seen that this mechanism had apparently proved ineffective and a small tuft of fat lobules had also herniated through the foramen. The authors suggest that the anatomic conditions which they have described represent a comparatively advanced stage in the process and that to explain the minor and less localized degrees of fibrositis it is not necessary to postulate actual herniation of fat tissue. They describe biopsies on 10 selected patients with fibrositis. Their observations at biopsy led them to evolve a technic of treatment which they call "teasing" the nodule. This consists in anesthetizing a small area of skin over the site of the trigger point,

which has previously been ringed with a skin pencil. It is then transfixed with a stout rigid needle, and after injection of 10 to 20 cc. of 1 per cent procaine solution under the greatest pressure possible the point of the needle is swept round deeply in such a way as to undercut the nodule.

WERTHEIM OPERATION FOR CARCINOMA OF CERVIX. Meigs, J. V.: Amer. Jour. of Obs. and Gyn., 1945, 49:542.

Sixty-five patients form the basis for this report. Patients selected for the operation should be young, preferably below 50 years of age and in good physical condition. Obese women should not be chosen. The tumor may involve the cervix in part or entirely; it may advance on the vaginal walls to not over 1 cm. from the cervix. The cervix should be movable, as felt by vagina and by rectum; fixation must mean infiltration beyond the cervix, and, although the lesion can be removed, lymphatics full of cancer cells cannot. Palpation of lymph nodes in the iliac, ureteral or obturator regions is no excuse for not operating if the other reasons for selection are satisfactory. It is exactly in such cases that there is hope for cure by means of radical surgery. The operation is the classic Wertheim or Clark operation, which involves a complete dissection of the pelvic lymph nodes from the bifurcation of the aorta down, plus the removal of the cervix, vagina and parametrium. Meigs prefers to call this operation the Wertheim-Clark plus the Taussig operation. The only really serious and annoying complication is damage to the ureter and consequent ureterovaginal fistula. There was no postoperative mortality. Five of the 65 patients are known to be dead and in 3 of the 5 the lymph nodes had become involved. Of the 53 patients who were free from lymph node involvement only 2 have died. Surgical removal of early cervical cancer is as safe as radiation treatment. The number of fistulas of the ureterovaginal type is still too large, but with a better understanding of the blood supply fewer such calamities are expected. Lymph node involvement is curable by surgery.

NECROTIZING BRONCHOPNEUMONIA. Ackerman, L. V., Wiley, H. M. and LeMone, D. V.: Amer. Jour. Roent. and Rad. Therapy, 1945, 53:281.

Ackerman and his associates maintain that necrotizing bronchopneumonia and necrotizing suppurative bronchopneumonia are more descriptive and accurate terms than aspiration pneumonia. Necrosis of the bronchial walls and suppuration of the lung parenchyma supplied by the involved bronchus or bronchi are invariably present. The distribution is lobular and localized to one or more bronchopulmonary segments. Patients with cancer of the oral cavity are likely to develop this complication, particularly if the lesion interferes with deglutition. The authors present observations on 14 patients with necrotizing pneumonia. Three had primary carcinoma of the tongue, 2 of the lip, 3 of the buccal mucosa, 5 of the larynx and 1 of the gum. Twelve of these patients died after completion of treatment, the shortest time interval before death being three days and the longest period eleven months. The 2 remaining patients, whose clinical symptoms and X-ray findings strongly suggest necrotizing bronchopneumonia are well. Necrotizing pneumonia can occur during, immediately after or relatively late after radiotherapy to cancer of the oral cavity and larynx. The clinical symptoms and signs are typical.

A high pulse rate with a relatively low grade fever is of particular significance. The X-ray appearance is characteristic and the differential diagnosis is not difficult, provided adequate knowledge of the historical and clinical aspects is available. The important preventive measure is carefully planned roentgen therapy, with particular attention to divided dose technic, selection of fields and adequate filtration. If necrotizing bronchopneumonia is diagnosed early roentgen therapy may be effective, but in late cases no treatment will be of value.

CORONARY HEART DISEASE. Levy, L. R.: Bull. N. Y. Acad. of Med., 1945., 21:171.

Levy stresses the diversity of manifestations of coronary heart disease. There may be minimal symptoms and pronounced changes in the form of the electrocardiogram. In the presence of advanced coronary sclerosis a severe emotional strain can induce acute coronary insufficiency and so cause sudden death. The electrocardiogram may be normal less than twenty-four hours before fatal coronary occlusion. There may be striking serial changes in the electrocardiogram indicating closure of coronary arteries in a patient who is ambulatory, active and entirely free from cardiac discomfort. When the symptoms are puzzling and the examination, including the electrocardiogram, reveals no signs of heart disease, the anoxemia test is often useful in affording graphic evidence of a diminished coronary reserve. This consists in permitting the patient to breathe a mixture of 10 per cent oxygen and 90 per cent nitrogen for twenty minutes or until the cardiac pain appears. A control electrocardiogram is taken and records are made at intervals of five minutes while the patient breathes the low oxygen mixture. Measurement of these records shows in patients with a diminished coronary reserve characteristic changes which are not observed when the coronary blood flow is adequate.

BLOOD PRESSURE AND HYPERTENSION IN TOXEMIAS OF PREGNANCY. Barnes, Josephine and Browne, F. J.: Jour. Obs. and Gyn. of Brit. Emp., 1945, 52: 1.

Barnes and Browne analysed the blood pressure of 1,956 women. Often these 915 were nulliparous and 1,041 were parous. There were no statistically significant differences between the mean level of blood pressure in nulliparous and in parous women at any age. There was no significant difference between the percentages of nulliparous and parous women with blood pressures over 120/80 or over 140/90. The number of pregnancies had no demonstrable effect on the main level of blood pressure in parous women. Pregnancy does not cause chronic hypertension. Pregnancy does not aggravate a tendency to hypertension, nor does chronic hypertension develop earlier in parous women. Though hypertension is a common remote sequel of toxemia of pregnancy, it is not caused by the toxemia. A tendency to hypertension often contributes to the severity of toxemia. Toxemia of pregnancy may be regarded as a temporary disorder leaving no permanent lesion. There is therefore no justification for terminating a toxemic pregnancy prematurely in order to protect the mother from chronic hypertension. There is no evidence that pregnancy aggravates hypertension already existing when pregnancy starts. There is

therefore no justification for terminating an early pregnancy in a patient with essential hypertension.

CEREBRAL DISTURBANCES IN ANGIONEUROTIC EDEMA. Ottesen, Estrid: Act. Psych. et Neur., 1943, 18: 487.

Ottesen reports a case of angioneurotic edema associated with convulsions in a man aged 41. The family history was negative as to epilepsy and other nervous and mental disorders and for allergic disease. At the age of 10 the patient suffered from urticaria and at 17 he fell from a height of about 35 feet and injured the left side of his head. The injury produced only mild symptoms and no subsequent discomfort. Six weeks prior to his admission to the hospital he had suffered from a sudden generalized attack of tonic-clonic convulsions accompanied by unconsciousness. He subsequently suffered from three similar attacks, one of which affected only the left side. During the patient's stay in the hospital there was noted the typical angioneurotic edema of the lower lip, the tongue, the right cheek, the right foot, the prepuce and the dorsum of the penis. Diagnosis of angioneurotic encephalopathy was made. Literature records 7 cases of angioneurotic edema associated with convulsions. In 22 additional cases from the literature a number of other symptoms of neurologic interest were described, such as transitory exophthalmos, oculomotor paresis, hemipareses of apoplectiform character, symptoms of increased intracranial pressure and choked disk. The etiology of angioneurotic edema is associated with disturbances of the vegetative nervous system, allergy and heredity. The prognosis is good in the nonhereditary cases. The possibility of angioneurotic edema should be kept in mind when one is faced with an obscure morbid condition associated with cerebral manifestations.

ENDOCRINE ALLERGY. Zondek, B. and Bromberg, Y. M.: Jour. of Allergy, 1945, 16: 1.

Zondek and Bromberg believe that allergic reactions may be due to endogenous allergens produced by endocrine glands. They designate this condition as "endocrine allergy." In certain pathologic conditions related to the menstrual cycle or the menopause, skin reagins to the steroid hormones—estrone, estradiol, progesterone, pregnandiol, testosterone, androsterone or desoxycorticosterone acetate—can be demonstrated by cutaneous tests. Analogous conditions of sensitivity to insulin and chorionic gonadotropin may occur. Allergic endocrine hypersensitiveness may also be demonstrated by the "recurrent test," i. e. by the appearance of a local reaction at the site of a first intracutaneous test, following a subcutaneous injection twenty-four hours later of the allergenic hormone at a new site. When the cutaneous reaction in cases of endocrine allergy is delayed, it often occurs in the premenstruum, viz. at a time coincident with the attainment of maximum hormone level ("retarded test reaction"). Normal subjects injected intracutaneously with serum of patients hypersensitive to estrone yielded positive cutaneous reactions when a solution was given subsequently at the site of the former serum injection (positive Prausnitz-Kuestner test). Serum of patients hypersensitive to estrone may also cause positive cutaneous reactions in normal subjects; this occurs when the concentration of hormonal allergen in the normal subject reaches high values (either physiologically or following injection).

The reagins induced by hormonal allergens are similar to those of allergic reagins in general. Personal and family histories of allergy and high blood eosinophilia are frequent in persons with positive cutaneous tests. Favorable results from desensitization also prove that the disturbances are caused by endocrine allergy. Allergy to endogenous hormones has been observed in women with disorders related to menstruation or the menopause. Pruritus vulvae and various premenstrual disorders may be conditioned by allergy to endogenous hormones. This is also true of asthma, vasomotor rhinitis, angio-neurotic edema and urticaria when they are related to menstruation or the menopause.

E. DAVID SHERMAN, M.D.
Abstract Editor.

Correspondence

Ottawa, January 31, 1946.

Dr. H. G. Grant

Secretary

Nova Scotia Medical Association

Dalhousie Public Health Clinic

Morris Street

Halifax, N. S.

Dear Doctor Grant:

My attention has been drawn to a recent article in the Bulletin of the Nova Scotia Medical Association. This particular extract indicated that under the rehabilitation plan, all veterans were entitled to free treatment for life for any condition. The wording of the extract as it appears in your article is as follows:

Dr. Lynch states that the nine provinces were all represented at the meeting and they were in session for three days and that a number of changes had been made in the set-up. At first it was given out to the public that returned veterans were to be treated for one year after being returned home. That has all been changed; these men are to be treated for life, and veterans amount to 540,000.

This of course, does not present the correct picture. The only veterans entitled to treatment for life, as a right, are veterans in receipt of a war disability pension and they are entitled to life treatment only for their pensioned disability. Other veterans with service in an actual theatre of war are entitled to treatment for life only if they are unable to provide this treatment themselves, but is purely and simply compassionate treatment.

Entitlement to free treatment, with these two exceptions, ends one year after a veteran has been discharged from the armed forces.

In view of the widespread circulation of your publication and the erroneous impression which may be created in the minds of doctors, I would appreciate it if a correction could be run in an early edition.

Yours sincerely

E. B. Reid

Director of Public Relations.

Camp Hill Hospital

Halifax, N. S.

Feb. 21, 1946.

Dr. H. R. Grant

Secretary

Nova Scotia Medical Society

Public Health Clinic

Halifax, N. S.

Dear Dr. Grant:

Your attention is directed to the minutes of the Semi-Annual Executive Meeting of the Nova Scotia Medical Society, 1945, as published in the Nova Scotia Medical Bulletin December 1945 issue.

At that meeting a report dealing with a meeting at Ottawa at which free treatment of veterans was discussed, was presented to the Executive. The report has been brought to the attention of the Director General of Treatment Services for Department of Veterans Affairs, from several sources, pointing out that the published statement contains some inaccuracies which have apparently given rise to some misunderstanding on the part of a number of doctors in the Province. We have been instructed therefore to forward an outline of the entitlements of veterans to medical treatment and to request that equal publicity be given this information.

Briefly put, the following is the information which it is desired to bring to the attention of readers of the Bulletin:

- (1) For any condition existing at the time of discharge for which the veteran is referred to the Department by the discharging medical board, if treatment is instituted within 30 days, the patient receives full service pay and allowances. If the condition is treated within a year after discharge from the service, he receives hospital allowance but not service pay and allowances. After one year the entitlement lapses unless the condition is pensionable.
- (2) For any condition or illness which arises within one year from discharge from service, provided treatment is instituted within 365 days post-discharge, this treatment will be at the expense of the Department for a maximum period of one year.
- (3) Any pensionable illness, arising directly as a result of and aggravated by service, will be treated for the lifetime of the veteran.
- (4) Any illnesses occurring in a veteran undergoing a course of training by the Department with a view to his rehabilitation will be treated, and any treatment necessary to which he is entitled, will be provided by the Department.
- (5) Non-pensionable or acute illnesses occurring in veterans may under certain circumstances be treated when the veteran is financially unable to provide it himself.
- (6) Venereal Disease contracted during service or aggravated by service will be treated.
- (7) Venereal Disease contracted post-discharge or disabilities attributable to misconduct will **not** be treated by the Department.
- (8) No medical care is provided for children or other dependents of service veterans except in exceptional or special cases covered by the War Veterans Allowance.
- (9) Single women discharged from service because of pregnancy will be cared for until after confinement but this does not include care of the child other than normal post-delivery attention.
- (10) The family doctor scheme has not yet been put into effect. Until it is initiated, treatment of veterans still remains in the hands of Departmental Medical Representatives in each area, and hospitalization outside a D.V.A. hospital is allowed only in emergencies or in special cases on authorization of the District Authorities.

When the new scheme is inaugurated, all licensed medical practitioners will receive necessary instructions and details of procedure well in advance.

This Department would appreciate your arranging for publication of the information contained above in an early issue of the Bulletin.

C. MACLEOD, M. D.,

Chief Medical Officer.

Canadian Physicians' Fine Art and Camera Salon.

A Salon of the pictorial art of physicians will be held at the Canadian Medical Association convention this year, in Banff. There will be a combination of both photographic and "fine art." Oil paintings, water colours and etchings, charcoal drawings, pastels and temperas will this year be combined with photography. It will be known as the "Canadian Physicians' Fine Art and Camera Salon."

Keen interest is already being evidenced by those who have heard the Camera Salon has been extended to combine these arts and the sponsors, Frank W. Horner Limited, are prepared for a large exhibit.

Arrangements have been made to have all work judged by prominent artists, right on the scene at Banff, and the hanging of accepted pictures will take place concurrently with the convention. Presentation of plaques will be made by Dr. T. C. Routley, General Secretary of the Canadian Medical Association. The plaques will be bas-reliefs of the head of Sir Frederick Banting, himself a noted artist, with a suitable inscription; they will be presented to the prize-winning doctors in the photographic and "fine art" field.

Entry forms for submitting pictures to this exhibition will be mailed shortly from Montreal to physicians throughout the country.

Personal Interest Notes

THE marriage took place at St. John's (Stone) Church, Saint John, N. B., on February 16th of Miss Barbara Louise Sieniewicz, daughter of Doctor T. M. Sieniewicz and the late Mrs. Elizabeth Sieniewicz of Halifax and Lieutenant Cyril Melbourne Kincaide, son of Mr. and Mrs. George M. Kincaide of Saint John. Lieutenant Thomas H. Patterson, R.C.A.M.C. of Belleville, Ontario, was the groomsman. The bride is a graduate of the Halifax Ladies College, of Dalhousie University, and is a member of Pi Beta Phi Fraternity. For the past year she has been associated with the department of biology at the University of New Brunswick. During the absence of her father, who was in charge of medicine at No. 7 Canadian Medical Hospital, overseas, from 1941-1945, she made her home with her aunt, Miss Barbara Dobson, Saint John. Lieutenant Kincaide is a graduate from the Saint John High School, and received his M.D.,C.M. from Dalhousie University in May of this year, and is a member of the Phi Chi Fraternity. At present he is attached to No. 7 District Depot, Fredericton.

Dr. Harvey D. Hebb, former Surgeon Lieutenant Commander with the R.C.N.V.R., has been appointed to the surgery staff of the Christie Street Military Hospital, Toronto.

Doctor and Mrs. D. K. Murray of Liverpool left the middle of February to spend a few weeks in New York.

The **Bulletin** extends congratulations to Doctor and Mrs. C. C. Stoddard (nee Jean Tays) of Halifax on the birth of a son on February 11th; to Doctor and Mrs. A. D. MacDonald (nee K. L. MacDonald) of Dartmouth on the birth of a daughter, Elizabeth Anne, on February 26th; to Doctor and Mrs. W. H. Frost at Halifax on the birth of a son, Ian Merritt, on March 2nd; to Doctor and Mrs. F. J. Barton (nee Mary Gillis) of New Waterford on the birth of a daughter on March 10th; to Doctor and Mrs. C. H. Young (nee Pauline Gates) of Dartmouth on the birth of a daughter on March 10th; to Doctor and Mrs. C. H. Reardon of Halifax on the birth of a son on March 12th; and to Dr. and Mrs. J. R. MacLean of Halifax on the birth of a son on March 2nd.

Mr. and Mrs. A. E. Stoddard of Halifax celebrated their 50th wedding anniversary on February 18th. A most enjoyable reception was held at their home attended by some 250 of their friends. Also present were ten of their eleven children. Miss Zardie Stoddard, a daughter, of Winnipeg, was unable to attend. The immediate family present included Grace (Mrs. Scott Burgess); Jennie (Mrs. C. W. Dowell); Joan, Marguerite (Mrs. Laurie Black); Alfred, Edgar, Fulton, Borden and Doctor Carl C. Stoddard, all of Halifax, and Carmen Stoddard, Montreal.

Major Mervyn Aldridge arrived recently from the Canadian Booth Hospital in Montreal to take over the post of Superintendent of the Grace Maternity Hospital, to succeed Major Marion Neill who was gone to Grace Hospital in Ottawa to take charge of that institution. Major Aldridge is a

native of England, and has 26 years as a Salvation Army officer to her credit, most of it in hospital work. Her initial training in nursing was received at Grace Hospital, Winnipeg. She was for five years in charge of the Grace Hospital, Vancouver, and was also at the Grace Hospital in Calgary.

The marriage took place at Digby on February 9th of Miss Phyllis Jean, only daughter of Doctor and Mrs. W. R. Dickie and Doctor Claude Fraser Keays, son of Mr. and Mrs. William D. Keays of Newcastle, N. B. The groomsmen were Captain James Keays, M.D., who recently returned from overseas. Mrs. Keays is a graduate of Acadia University, and Doctor Keays graduated from Dalhousie in May of this year. They are at present spending their honeymoon in Florida.

The 33rd annual meeting of the Dartmouth Victorian Order of Nurses was held in the High School Assembly Hall on February 19th, and was one of the most successful and interesting yet held. A feature of the meeting was a splendid address given by Doctor R. O. Jones, Psychiatrist, of Halifax, who declared that mental health was to-day a major problem in Canada. A vote of thanks was extended to the speaker by Doctor A. G. MacLeod and Doctor H. A. Payzant.

Doctor J. B. MacDonald, who was discharged from the armed forces in December, after serving in Canada, Newfoundland, England and Holland, has returned to his practice in Stellarton.

En route to visit his old home in Whycomagh in February, Doctor A. A. Macdonald, travelled from Neil's Harbour, where he is in charge of Buchanan Memorial Hospital, to Briton Cove over two mountains, Smokey and Broad Cove, a distance of forty miles, with horse and sleigh, in the record time of four and three-quarter hours.

Doctor J. F. Nicholson, who was discharged from the armed forces last November, and who formerly practised in Sherbrooke, has taken over the practice of Doctor W. W. Patton in Glace Bay, who has gone to the Pacific coast on vacation.

Doctor and Mrs. J. E. Hiltz left Halifax early in February for Shelburne. Doctor Hiltz, former acting superintendent of the Victoria General Hospital, is now Medical Superintendent of the Roseway Hospital, the former Naval Hospital at Shelburne, now taken over by the Department of Public Health for the province. Doctor Hiltz met with a painful accident later in the month when returning to Shelburne from a visit to Halifax, when his car skidded on the icy highway and went into the ditch. He was taken to the Dawson Memorial Hospital at Bridgewater where an X-ray examination revealed a fractured collar bone. The following morning, accompanied by Mrs. Hiltz, who escaped uninjured, he resumed his journey to Shelburne.

Doctor Clarence L. Gosse recently announced the opening of his office at 142 Morris Street, Halifax, and is restricting his practice to Urology. He has been appointed to the visiting staff of the Victoria General Hospital and is part time Urologist for the D.V.A.

Dr. John F. L. Woodbury has opened an office at 170 Oxford Street, Halifax.

Obituary

Doctor John J. Cameron

A FEW weeks ago, the public press of this province, in announcing the passing of Dr. John J. Cameron, paid well deserved tribute to his long life of service, both as a doctor and man of affairs. The *Casket*, of Antigonish, devoted a column of its space to the richness of his life and labors in the medical field, and in the public and social life of the community. The *Casket* writer referred to his passing as the last of the "Old Doctors" of the Antigonish district. With few rapidly diminishing exceptions, the statement stands for the whole province. They were the Old Guard, who in widely distributed areas met the problems of practice, and dealt with them where they found them. They had to be resourceful, and they were. No hospitals, no trained nurses, no cars—just themselves, and what they could improvise to meet the worst emergency. Of such were the difficult conditions of Dr. Cameron's earlier years in practice. In a reminiscent mood one evening, I recall his telling how, after a long drive at night on bad roads, he found himself at the bedside of a boy with acute osteo myelitis of the femur. The boy was in a bad way; immediate drainage of the bone was indicated. The proper instruments for the operation were absent. The Doctor found a carpenter's brace and bit in the house, sterilized it in a pot of boiling water hanging on the crane in the fire-place, and baring the suspected area of bone, bored deeply into the shaft. He was rewarded by a gush of pus; drainage was established and the little fellow set on the way to complete recovery.

Dr. Cameron was in the prime of young manhood when he started practice in Antigonish. I remember him well. Magnificent physique, strong, clear mentality and deportment, he was in every sense the real Scottish highlander at his best. It was no surprise to any of us that in a short time he acquired a large practice in town and countryside. He married Eva Macdonald, a charming lady, daughter of the late Justice Hugh Macdonald, who in other times took a leading and prominent part in the political and judicial affairs of the Dominion and Province. Mrs. Cameron survives her husband, with their two daughters and one son, Dr. Lister. The death of another son, Dr. Owen, a few years ago, brought sorrow to the family.

Dr. Cameron was born at Salt Springs, Antigonish Co., took his pre-medical course at St. Francis Xavier and his medical degree at Bellevue Medical School, now the Medical Faculty of New York University. Two of his classmates in medicine who graduated with him, in 1889, were John W. MacKay, of New Glasgow, and George David Stewart, of Malagash, N. S., all Nova Scotians of outstanding ability. After adequate internships, Cameron and MacKay returned to their native province to practise, the former to Antigonish, the latter to New Glasgow. Stewart made a bid for fame as a surgeon in New York, and in time reached the pinnacle of his hopes, with an international standing in his specialty. Cameron remained the sound, general practitioner throughout, modernizing and developing his methods as the great, new auxiliaries of hospitals, trained nursing and advancing science made straighter and brighter the way of the doctor. His labors done, he has now followed his old classmates to the eternal shore.

Dr. Cameron always held that a sound medical profession, with its strong auxiliary, public health, was a nation's best asset. To this end, he supported in word and deed organized medicine, particularly all provincial societies. He was a past president of the Nova Scotia Medical Society, provincial Health Officers' Association, and for over twenty years served as a member of the Nova Scotia Medical Board. His interest in public welfare brought him, in earlier years, into active politics. I remember him mostly, in this phase of his activities, as a strong lieutenant and ardent friend of Sir John Thompson, who, it might be remembered by the older ones, performed the miracle of bringing Antigonish into the Tory ranks, temporally of course, but not the less miraculous for that. He was a good speaker, and wrote with literary vigor and clarity. Behind a somewhat stern appearance and bearing he was kindly and considerate, and possessed that most valuable asset of the doctor, namely, a sense of humor. Never demonstrative, but a good friend; and, although little in touch with him for some years, I always regarded him with feelings of mutual friendship. He has finished the course; he has kept the Faith. My personal sympathy goes to Mrs. Cameron and family, and this, I am sure, is shared by all the readers of the *Bulletin*. *Nunc vale, care frater et amice, atque in aeternum ave.*

George H. Murphy

The end came suddenly for Dr. Ellen M. Morse of Detroit, Michigan on February 12th, 1946 after eight weeks of struggle for life from the shock and injuries received from burns in December. She had recovered enough to be allowed to get up, but the effort was too much. She died almost immediately from a heart attack on her first day out of bed.

After her education in Nova Scotia schools she entered and graduated from the Teachers' Collège of New York state. After teaching there a few years she trained for a nurse and qualified as R.N. carrying on her duties in New York city for two years. Finally, she graduated from the Womens Medical College of New York. Receiving her M. D. degree she went to Detroit and began a partnership with Dr. Elizabeth Newcomb in that city until the death of the latter. For over thirty years from the same office she was busy with a large practice among women and children in Detroit. Many of her friends and former patients expressed their sympathy by calls, letters and flowers.

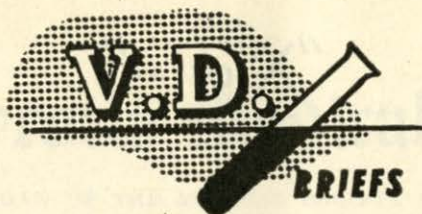
Her sister, Mrs. Pearl Shaffner accompanied the remains from Detroit to Lawrencetown, Nova Scotia. The funeral was held in the Baptist Church there and conducted by the Rev. W. A. Harper, whose remarks, the music by the choir, solo by Dr. Stone of Bridgetown and beautiful flowers made an impressive service. Burial was in the family lot in Fairview Cemetery. Surviving members of the family are Dr. L. R. Morse, Lawrencetown, Dr. D. G. Morse, Haney, B. C., Mrs. Pearl Shaffner and Walter Morse of Lawrencetown. Two other members of the family, Dr. W. R. Morse, former Medical Missionary to China and Dean of the Medical School of Union University, Chengtu and Rosamond Morse Wallace, wife of the late Rev. L. F. Wallace, passed away some years ago.

The death occurred at Saint John, N. B., in January, of Doctor Wilfred Murray MacDonald, after a lengthy illness. Doctor MacDonald was born

in 1892, a son of Edmund and the late Jennie (Murray) MacDonald, of Sydney Mines. He received his medical degree from Dalhousie in 1916, and was a veteran of both Great Wars. He took post-graduate work at the New York Post-Graduate Hospital, also in London and Edinburgh. He practised two years in Pictou and nine years in Westville before going to Saint John. Active in fraternal and church activities, Doctor MacDonald was a member of Portland Lodge, A.F. & A.M., of St. Andrew's Society and was an elder of the Church of St. John and St. Stephen. Besides his father and his wife, the former Catherine Munroe, of Westville, he is survived by one daughter, Lorna, at home, two sisters and two brothers.

Doctor Angus Allan Murray, who was born at Mount Thom, Pictou County, on April 13, 1877, died on February 9th, at the Winnipeg General Hospital. Doctor Murray was a son of the late John and Jessie Murray, Mount Thom, and went West as a young man in 1902. He had gained for himself a very considerable reputation in bone surgery, not only in Winnipeg where he conducted his practice, but had difficult cases from several other provinces in the Dominion. The doctor was a great friend and helper to those unfortunates suffering from limb deformities. The doctor had been in ill health about a year, and an invalid since July, 1945. The late Mrs. Murray predeceased him in June 1938. He is survived by his father, two sons, one daughter, three brothers and two sisters. Doctor Murray remained very much attached to his native province and especially Pictou County, and during recent years had been an annual visitor.

The BULLETIN extends sympathy to Doctor D. S. McCurdy of Truro on the death of his mother, Mrs. Nancy Christie McCurdy, who died on January 21st, at the age of 89; to Doctor R. G. Wright of Elmsdale on the death of his father, Mr. Herbert Graham Wright, who died on February 15th, at the age of 57; and to Doctor Philip Weatherbe of Halifax on the death of his brother, Mr. Karl Weatherbe, who died in Montreal on March 7th, in his 73rd year.



Cases of Venereal Disease Infections Reported by the Provincial Health Departments to the Dominion Bureau of Statistics During the Year 1945

	Gonorrhoea	Syphilis	Ratio Gonorrhoea/Syphilis
Prince Edward Island...	42	34	1.2
Nova Scotia	1,176	664	1.7
New Brunswick	1,079	413	2.6
Quebec	5,106	6,037	0.8
Ontario	8,224	4,930	1.6
Manitoba	2,336	622	3.7
Saskatchewan	1,685	410	4.1
Alberta	1,881	599	3.1
British Columbia	3,708	1,569	2.3
Canada	25,237	15,278	1.6

During 1945, 25,237 cases of gonorrhoea and 15,278 cases of syphilis were reported by provincial health departments to the Dominion Bureau of Statistics. This compares with 21,033 cases of gonorrhoea and 15,911 cases of syphilis reported in 1944. The ratio of gonorrhoea to total syphilis was 1.6 to 1 compared with a ratio of 1.3 to 1 for 1944.

The experience of the three Armed Forces in Canada from 1940 to 1945 reveals that the ratio of gonorrhoea to total syphilis in Canada for that period was approximately 6 to 1. It is apparent, therefore, that reporting of gonorrhoea by physicians in Canada is very inadequate. There is reason to suspect that syphilis is not being reported completely.

We know definitely that 15,278 cases of syphilis came to attention. Admitting that the ratio of gonorrhoea to syphilis was 6 to 1, it is estimated that in 1945 there were at least 90,000 cases of gonorrhoea in Canada. Of these, only 25,237 were reported by physicians.

There has been during the year 1945 a slight improvement over the preceding year in the reporting of gonorrhoea.

The above are preliminary figures and are subject to revision.

"X or --"

February 4, 1946

Dear Miss.....

Enclosed please find this here tape which you put on my little girl. I am sending it to you for to have it red. It do look to me as if it were something terrible she got. Please let me hear what is rong with her as I am worried nearly sick to death that my other 8 kids will ketch it.

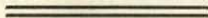
I don't know why she should get it because she is a good girl and minds what I yell at her. She don't play with thekids as people say they have something which aint good to have.

As her worried mother I remain

Yours trooly

(Mrs.).....

P.S. Her name is Mary.



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