

Experiences with Frost Bite and Allied Conditions Amongst Torpedoed Merchant Seamen

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GREAT wars have always awakened fresh interest in the prevention and treatment of the effects of cold and dampness on the extremities. During Napoleon's campaign in Russia, thousands of men were lost in the retreat from Moscow. The soldiers did not suffer as much in the dry, cold, snowy weather, as when sudden thaws occurred. The feet then became swollen, painful and gangrene developed. During the Great War of 1914-1918 there were 84,000 casualties in France from trench foot. Many amputations eventually had to be done and the loss of man power to the army was serious. Better care of the feet, such as removal of constricting agents, e.g. puttees and tight boots, caused a great diminution in the number of cases. The soldiers were taught foot drill whilst serving their time in the trenches. They were instructed to rub each others feet daily with whale oil until it was entirely absorbed and then put on dry socks and rubber boots. The incidence of trench foot in subsequent winters practically disappeared.

Our experience with this condition occurred during the winter of 1941-42 with torpedoed merchant seamen admitted to the Halifax Infirmary. During November, December and January, fifty cases were under care. They had been exposed on the North Atlantic for periods of from one to eighteen days in life boats which were frequently shipping water, and in many cases the men were in the water before being picked up by the boats. They were often scantily clothed as they had to leave their ship in a great hurry. Firemen escaped as they were clad in the stoke-hold. The crews represented all the United Nations, Chinese, Russian, Greeks, Scandinavians, North and South American, and men from the British Commonwealth.

The mortality rate was high in the boats and those who arrived at hospital were an example of the survival of the fittest. In many cases after ten days in the boats, over half of the crew died and were buried at sea by their shipmates, as long as they were still capable of such exertion. We noted that the mortality rate was particularly high amongst the Chinese and South Americans. They gave up hope of being rescued and did not make any effort to stimulate their failing circulation.

Of the fifty cases admitted to the hospital, two died, one within an hour of being admitted and the other a few hours later. The majority of cases had spent twenty-four to forty-eight hours in a rescue ship before being admitted. Two cases developed an acute mania as a result of the severe mental strain to which they had been subjected. Twelve men required amputation, three of one or more toes, five Symes amputations, one being a bilateral, two cases of amputation in the middle third of both legs and two requiring bilateral supracondylar amputation. Five primary guillotine amputations were performed for uncontrollable infection, secondary amputations being done after infection has completely subsided.

Early in 1942 all exposure cases were admitted to Camp Hill Hospital for investigation by the Navy and the National Research Council. The cases

were studied by Surgeon Commander D. R. Webster, Surg. Lieutenants J. L. Johnston and F. M. Woolhouse. I saw their cases quite frequently and was much impressed by their scientific investigation of the changes in skin temperature and the results of their Dry Refrigeration treatment. Surgeon Lieut. Johnston is to be congratulated on the remarkable coloured photographs which he took of the different stages of immersion foot and the effects of treatment. About two hundred and fifty cases came under their care. Of these, twenty-one required amputation, six being confined to the toes. Twelve Symes amputations were done, two double amputations in the middle third legs and one supracondylar. Guillotine amputations were done in 25% of the cases to control infection. I personally amputated over half of these of the cases.

VARIETIES OF FROST BITE

1. True frost bite.
2. Immersion foot.
3. Shelter foot.
4. Trench foot.

TRUE FROST BITE

Although cold is the most important etiological factor, its importance has been unduly stressed, the damage is chiefly done by subsequent heat. The early application of warmth increases the danger of gangrene, by causing a marked increase in vaso dilatation and subsequent transudation of serum and blood in the skin and subcutaneous tissues. Trauma is to be avoided. Rubbing causes injury to the superficial layers of the skin and allows infection to gain entrance. This is a most serious complication and increases the danger of gangrene developing and often necessitates guillotine amputation.

In addition to cold, inadequacy of the circulation plays an important part. Long hours of immobility on the hard seats of the life boats, causes pressure on the back of the thighs and impairs the venous return. Tight fitting boots impair the circulation and cause further aggravation when the limb begins to swell. Cold winds removes the warm layer of air over the body.

The lack of vitamins in food may play a part in causing exudation of serum from the blood vessels.

Our airmen are susceptible to cold at high altitudes on account of the anoxia and diminished cardiac efficiency.

The early appearance of frost bite is a white cadaveric colour due to vaso constriction caused by the release of adrenalin. Liberation of histamine, an amino acid, produced by the damaged cells of the epidermis, causes a vaso dilatation.

Four of our cases presented an unusual condition on admission to hospital. On palpation of their limbs, ice could be felt crackling. They had been subjected to almost zero temperature for five days. Vesicles commonly form containing clear or blood-stained fluid. The extravasated blood in the subcutaneous tissue may give the deceptive appearance of massive gangrene, leading to an unnecessary amputation by the inexperienced surgeon. The early anaesthesia followed by paraesthesia and pain is due to pressure on the nerves by exudation in their sheaths. It is evident that the application of heat or entrance of infection greatly increases the risk of gangrene.

IMMERSION FOOT

This is closely related to frost bite and is of greatest importance in the war at sea. The feet present a very similar appearance to those recovering from frost bite, but there is one striking clinical difference, that they suffer much more intense pain. Prolonged immersion in sea water above freezing will cause this condition. Surgeon Commander Webster saw an interesting series of American sailors who had been torpedoed in the Caribbean Sea. These men were immersed in water between 60-70° F. yet subsequently developed the typical oedema, discolouration and bleb formation of their feet, some even going on to gangrene. Our cases were exposed to a much lower temperature, 34-36° the freezing point of salt water being 28°F. It has been claimed that if mariners kept their feet in the sea water that they would escape frost bite, but only to develop immersion foot. Water has a detrimental effect because the superficial layers of the skin become macerated, heat is more rapidly conducted away from the skin and the removal of oil from the skin renders the latter more susceptible to the effects of cold.

SHELTER FOOT

This variety was described after the air blitz on London during the winter of 1940-41. People sought shelter in cold, damp, underground railways and sat for hours on hard benches. The combination of cold, damp air and pressure of hard seats, along with the inactivity, caused painful swollen feet.

TRENCH FOOT

This is well known to those who served in France in the last Great War and has been described. Shelter and Immersion Foot are closely related.

PREVENTION OF FROST BITE AND ALLIED CONDITIONS

When exposed, tight boots, garters, etc. should be removed. The feet should be well rubbed with oil until it has been absorbed. Every attempt should be made to exercise the feet and legs at least once an hour.

One piece rubber suits have been issued to the mariners to slip on after being torpedoed. These suits will prevent their clothes from becoming wet and preserve a warm layer of air over the body. Unfortunately in a sudden emergency the men may not have time to put them on.

On being rescued, heat should not under any circumstances be applied to the feet and hands. They should be kept away from stoves and radiators. Posturing is of great importance. They should be made stretcher cases to diminish the amount of exudation from the vessels.

TREATMENT

Methods of treatment and the results obtained, naturally vary with the severity of the condition. Mild cases will go on to recovery.

I had the privilege of observing the treatment of a large series of Frost Bite and Immersion Foot at Camp Hill Hospital by the Naval Surgeons who instituted dry refrigeration treatment. The rationale of the new method appears sound. The dry cold causes a vaso constriction thus diminishing the transudation of fluid and blood, which is the chief cause of subsequent gangrene. It very strikingly diminishes the pain from which these patients suffer unduly. F. M. Allen of New York has written several interesting articles on the effects of cold in rendering strangulated loops of bowel more viable and also combatting severe infections of the extremities. The cooling of the tissues acts by lowering

metabolism, prevents the growth of bacteria and absorption of their toxins. It relieves pain and diminishes shock. If an amputation should be necessary, a tourniquet is applied for a few hours, in addition to the refrigeration. The limb can then be removed painlessly, without an anaesthetic. This may have a useful application to war surgery.

Cold was applied by three methods—

(1) Dry refrigeration, in which ice bags were first carefully dried. The extremities were thoroughly cleansed and sponged off with alcohol. Special care was taken of the skin between the toes. The feet were wrapped in sterile towels and the ice bags applied to the outside. They were covered by cellul-cotton and a large waterproof sheet. The ice bags were renewed every four hours. A fall of 6°C. was noted in the skin temperature.

(2) In less severe cases the feet were exposed in the draught of an electric fan and cold water was sprayed on with an atomizer.

(3) In slight cases the feet were exposed to the cool air of the ward.

Swelling and pain were at once diminished. The swelling promptly returned if the ice bags were not renewed. Many of the mild cases, if the air in the ward was warm, would move their beds to an open window and allow their feet to protrude through to the outside air.

The treatment that we followed at the Infirmary was to keep the feet elevated on pillows, cleanse the skin carefully and apply a dressing of glycerine and alcohol.

Amputation should not be considered until several weeks have passed and nature has failed to establish a collateral circulation. The diminished metabolic processes of tissue, caused by refrigeration may sustain life of the limb during the interval. Many cases on admission presented an appearance of gangrene, due to extravasated blood in the tissues. After a period of time superficial tissue would slough and then be covered by clean granulations.

Infection is prone to occur. A spreading cellulitis with high fever was commonly seen. In some cases sulfonamides had a marked beneficial effect. We found guillotine amputation particularly useful for localized gangrene and infection in the feet. At a later date Symes amputation could be performed. It is important to prevent pressure on the heels as scar tissue here makes a poor flap for a Symes.

We had a number of amputation stumps referred to us from Newfoundland for the fitting of artificial limbs. These were all Lisfranc's or Chopart's. They are poor stumps as the tendo achilles tends to draw up the heel and the patient suffers undue pressure on the scar at the end. The only amputation that should be done in the foot, apart from toes, is the Symes. If it is properly performed with a close fitting heel flap to the horizontally sawn ends of the tibia and fibula, just above the flare of the mallioli, the end results are excellent. If necessary the patient can walk directly on the end of the stump, e.g. get out of bed to go to the toilet without putting on the artificial limb. Dr. Gallie of Toronto relates how he was put out of a squash tournament by a player with a Symes amputation. Dr. Gallie was a noted athlete at the time.

If the loss of tissue prohibits a Symes amputation, then the leg should be amputated six to seven inches below the knee joint. The fibula should be sawn three-quarters of an inch shorter than the tibia. The nerves should be gently pulled down and severed. We have given up crushing the nerves and injecting the proximal end with alcohol. The skin flaps should not be cut too long. The resulting scar should be posterior to the end of the stump. An amputation

should never be done in the lower one-third of the leg, because the skin flaps have a poor circulation and are liable to become cyanosed and ulcerate when an artificial limb is worn.

The next best site for an amputation is supracondylar. This is end bearing and gives a very useful stump, especially for a man who has to earn his living working in the standing position. Dr. Gallie reports that in 2500 amputations as a result of the last war, the supracondylar is superior to the below the knee amputation. He has pointed out that a great many below knee stumps, develop painful pressure sores and eventually it is necessary to reamputate in the supracondylar region.

We have used an emulsion of sulfanilamide and sulfathiazole for applying to the ends of the amputation stump, when the possibility of infection was present. It has been particularly useful for reamputation after a guillotine. These reamputations should never be hurried. We wait for several weeks until oedema in the soft tissues has subsided and the end of the stump is covered with healthy granulations.

The most important point in the after treatment is to bandage the stump tightly with a crepe bandage, to hasten the shrinkage of the muscles without any insertion. The neighbouring joints should be exercised and flexion deformity prevented.

Those who escape amputation may be troubled with cold, painful feet for many months. Thrombosis in the smaller arteries is the probable cause of this disabling condition. The question arises as to whether this type could be benefited by a lumbar sympathectomy. Investigation as to the effect of paravertebral block on spinal anaesthesia, and then noting the change in the skin temperature, is of great value in deciding whether such an operation will be of value. Dr. J. C. White, Neuro-Surgeon to the Massachusetts General Hospital, Boston, investigated a number of cases at Camp Hill and the Infirmary, as to the advisability of recommending lumbar sympathectomy.

CONCLUSION

1. A great deal can be done to reduce the ill effects of frost bite by avoiding warmth to the extremities on being rescued.
2. Dry refrigeration promises to be the best initial treatment.
3. The most favourable sites for amputations have been pointed out.
4. Infection is a very serious complication and often necessitates a guillotine amputation. Chemotherapy is of great value in combating the infection and also for applying to end of the stump.

Cervical Ribs and the Scalenus Syndrome

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THE scalenus anticus syndrome is that combination of symptoms and signs which result from pressure on the brachial plexus and subclavian artery in the region of the scalenus anticus muscle insertion into the first rib.

Duncan and Morton in the *Annals of Surgery*, state that the scalenus anticus syndrome is "one of the commonest causes of pain and unexplained vascular changes in the upper extremity". The scalenus syndrome is interesting since so much can be done for the victims of this condition by simple measures which often give an immediate, spectacular (and permanent) cure. There are so many diseases whose cure is almost as severe as the disease. In many clinical cases where there is a cervical rib, section of the scalenus anticus muscle alone gives a cure without resection of the cervical rib. Again, while the demonstration of a cervical rib by X-Ray often helps in diagnosis, it is well known that the syndrome is more often found in the absence of a cervical rib, when the following may be demonstrated: an enlarged seventh cervical transverse process, an abnormal first rib, a fibrous band, or, in the absence of the above bony abnormalities, an abnormal scalenus anticus muscle alone.

Etiology.

(1) *Embryology.* The developing upper extremity comes off as a limb bud which is at right angles to the long axis of the body. This limb bud carries with it six spinal nerves and blood vessels which later become the brachial plexus and the subclavian vessels. When humans stand up, the arms are pulled downwards and the brachial plexus and subclavian vessels, being outside the thoracic cage, hang down over the first rib actually grooving it by pressure. Just in front of these grooves is the insertion of the scalenus anticus muscle. If a cervical rib is introduced either behind or under the brachial plexus or subclavian vessels, pressure on these structures is only increased. Similarly, if the scalenus anticus muscle is abnormal, it also can compress these structures against the first rib. In foetal life ribs are temporarily present on the seventh cervical and all the lumbar vertebrae. It is interesting to note that lumbar ribs are normal in gorillas and occur in man more often than do cervical ribs.

(2) *Age and Sex.* The reason we do not get this syndrome in children is commonly thought to be that with each advancing year the shoulder girdle drops, due to regressive changes in the muscles. In Donald and Morton's series of 21 cases the ages were from 15 to 54 years, with an average of 37. There were 14 females and 7 males.

(3) *Trauma.* Trauma is often the exciting factor in the onset of the scalenus syndrome. Many cases have been reported following a fall on the shoulder or following an anaesthetic where the arms were not postured properly.

Halstead and Rea reported on 525 clinical cases of cervical ribs, mostly collected from the literature. They found 360 showed symptoms of pressure; of these 235 had nerve symptoms alone; 106 had nerve and vascular symptoms; 19 or 5.3% had purely vascular symptoms and of these, six had gangrene of the fingers.

Symptoms.

The symptoms may all be explained by the anatomy of this region and are due to pressure on the subclavian vessels and the brachial plexus.

The following is a list of symptoms:

Pain in the upper extremity.

Weakness of the upper extremity.

Finger cramps.

Tingling or coldness of the fingers.

Areas of hyperaesthesia or hypoaesthesia in the hands.

Atrophy of the hand muscles.

Tremor of the fingers.

All these symptoms are relieved by elevation of the arm and rest; conversely they are exaggerated by physical exertion.

Certain important points in the diagnosis will, it is hoped, be brought out by a discussion of the more important symptoms.

Pain. The cardinal symptom is pain of a dull aching character. Two important points in diagnosis are that it is usually worse at night and that elevation of the shoulder in a forward direction relieves it. The reason for this increase in severity in the prone position is that the shoulder (and therefore its vessels and nerves) is brought forward against the scalenus anticus. In 18 out of 21 cases reported by Donald and Morton, the pain was worse at night. The shoulder is the most frequent site of the pain, generally over the posterior aspect. In this series of cases the pain was in the following positions: posterior aspect of the shoulder 12, side of the neck 8, arm 6, forearm 2, arm and forearm 3; of 7 cases with pain in the hand 4 had a median nerve distribution and 3 an ulnar distribution.

Another characteristic is that extension and abduction of the arm increases the pain. These patients find that sleeping with the arm supported on a pillow in adduction with the elbow flexed is the most comfortable position.

A further analysis of Donald and Morton's series follows.

Numbness.

Numbness was present in 12 out of 21 cases. In four, this followed the ulnar distribution; one had both the ulnar and median distribution and in one the entire hand was involved.

Signs.

1. Tenderness on pressure over the scalenus anticus—all cases.
2. Changes in blood pressure in the affected arm.
3. Bony prominence in the supraclavicular space.
4. Sensation changes in the hand.
5. Diminution or absence of the radial pulse.
6. Weakness and atrophy of the hand.
7. Trophic changes in the fingernails and bones of the hand.
8. Cyanosis of the fingers.
9. Numbness.
10. Changes in the reflexes of the arm.
11. Skin temperature lowered in the affected arm.
12. Gangrene of the fingers (rarely).
13. Supraclavicular bruit (rarely).

Blood Pressure.

A change in blood pressure in the affected arm is quite a constant finding. Of 18 cases in which the blood pressure was taken in both arms, there were 12 which showed a change; in 6 the average diminution was 15 while in 5 cases the average rise was 8. In the cases which showed no changes in blood pressure, the symptoms and signs were neurological.

In the majority of cases the radial pulse was obliterated or greatly diminished by turning the patient's head towards the affected side, and having her take a deep breath, or by pressure over the scalenus anticus insertion. It must be emphasized that this is not a pathognomonic sign since it is found in a number of normal individuals.

Trophic Changes.

The nails on the affected hand are often ridged either in a longitudinal or a transverse direction. Sometimes the nails are flat. The fingers are sometimes atrophied. An X-Ray of both hands often shows trophic changes in the bones of the affected side, sometimes when inspection reveals no change.

Neurological Signs.

(a) Sensation. There was diminution of pain and temperature in 9 out of 21 cases. Of these, 4 showed these changes in the distribution of the median nerve, 2 were ulnar in distribution and 3 had both. Numbness was present in 12 out of 21 cases.

(b) Reflexes. In 7 cases out of 18 patients examined, there were definite changes in the triceps, biceps or supinator reflexes. In 4 cases one or more of these reflexes was absent.

Tenderness on pressure over the scalenus anticus was present in all cases of this series. It often reproduces the exact type of pain distribution of which the patient complains.

X-Ray.

AP and lateral plates of the cervical spine should always be taken in patients suspected of the scalenus anticus syndrome. They may show a cervical rib, an enlarged transverse process of the seventh cervical vertebra or sometimes an abnormal first rib, all of which may be associated with the syndrome. If no bony abnormalities are shown and the clinical picture is strong enough, one is confronted with the pure scalenus anticus syndrome.

Lateral films are valuable in that they often show a cervical rib as a shadow running diagonally across the body of the seventh cervical vertebra; this often assumes the form of a tadpole. The lateral also shows the height of the pleura in front of the spine; this is very important from a surgical view-point, since in these cases the pleura is usually much higher than in normal individuals.

Complications.

It is important to observe untreated cases of the scalenus syndrome, with or without cervical ribs, for long periods after the diagnosis has been made since there are serious complications which may develop.

Gangrene is the most serious complication. Halstead and Rea reported on 525 cases of cervical rib. Of these, 6 had gangrene of the fingers. Donald and Morton report a case of cervical rib with gangrene extending to a few inches below the elbow joint.

Aneurysm and thrombosis of the subclavian artery distal to the point of pressure are two other serious complications of cervical ribs.

Long continued pressure by a cervical rib or abnormal scalenus on the brachial plexus brings about a chronic aseptic inflammatory reaction, which, if continued long enough, leads to permanent fibrosis. This permanent injury of the brachial plexus is of course almost as tragic as gangrene of the fingers.

Differential Diagnosis.

The following conditions are the main considerations in the differential diagnosis:

Angina Pectoris	Pernicious Anaemia
Coronary Thrombosis	Raynaud's Disease
Subacromial Bursitis	Tumours at the apex of the chest.
Infectious Neuritis	Syringomyelia
Arthritis of the spine or shoulder	Congenital deformities of the cervical spine.

Treatment.

(a) Conservative. Surgical treatment is not indicated in the milder case of the scalenus anticus syndrome. What these cases need most of all is an explanation of their symptoms. Most of them have an associated neurosis, often exaggerated by a puzzled practitioner saying "It might be your heart or lungs" etc. Rest and a correction of faulty posture, elevation of the shoulder and "stick out your chest and throw back your shoulders", help these patients. They should be advised to rest the affected arm on a pillow in an adducted position at night, if they are not already doing so themselves. They should be advised to refrain from actions which cause pain. Such simple measures, together with the clearing up of the neurosis by explanation usually helps mild cases so that they can carry on without surgery. These cases should be kept under observation in case serious complications should later develop.

(b) Surgical. Formerly surgical treatment of cervical ribs consisted only in resection of the offending rib, which is a formidable operation both for the patient and the surgeon. A good proportion of cases with the scalenus anticus syndrome with cervical ribs are cured simply by section of the scalenus anticus muscle. In cases of the syndrome, without cervical ribs, the majority of cases are cured by simple section of the scalenus anticus muscle. Those cases without cervical ribs which are not cured after scalenotomy have had irreparable damage done to the brachial plexus. Even so, one is certain this damage will not progress and that any serious vascular complication such as gangrene will not develop.

It is felt when a cervical rib has been demonstrated together with the scalenus anticus syndrome, one should section the scalenus anticus first and if there is no improvement after several months, resection of the cervical rib is indicated. In a few cases however, it is obvious at operation that the cervical rib is causing the pressure; these should have the rib resected as well as division of the scalenus anticus. When a cervical rib is found accidentally (as in a routine X-ray of the chest) and there are no symptoms, authorities advise that these patients should not be told of the rib since they may develop a neurosis.

Operation.

The incision bisects the angle formed by the sternomastoid and the clavicle. The sternomastoid is then divided in its outer half. The phrenic nerve is iso-

lated as it runs forward on the scalenus anticus and the muscle is divided by passing an aneurysm needle through parts of the muscle from its medial surface laterally. The site of section of scalenus anticus is two inches above its attachment to the first rib since the pleura often rises behind the muscle and sometimes one inch above the first rib. It is easy to go too far medially in getting down to the muscle. Silk is better than catgut because there is less tissue reaction. There are no drains used. One must beware of the thoracic duct on the left side.

Operative Results.

Fourteen out of sixteen cases which had section of the scalenus anticus were free of symptoms. (Donald and Morton).

Summary

(1) The scalenus anticus syndrome is an important cause of pain in the upper extremity.

(2) The chief complaint is pain in the shoulder or arm, worse at night.

(3) In most cases there is an associated neurosis.

(4) The most important sign is tenderness over the scalenus anticus; this is present in all cases.

(5) The complications of the scalenus anticus syndrome, gangrene of the fingers and fibrosis of the brachial plexus are very serious and disabling.

(6) Section of the scalenus anticus muscle is not a severe type of surgery.

(7) Results of section of the scalenus anticus have been in most cases immediate and favorable. There is no disability from this operation.

(8) Lateral X-rays of the cervical spine should always be taken, since they often show cervical rib and the height of the pleura, as well as ruling out other causes of pain in the upper extremity.

CASE REPORTS

(1) Mrs. J. W., white, female, aet. 54, complained of pain in the left arm in the mid-point of the humerus, "in the bone" for one year. Came on immediately after assisting in an attempt to shovel a car out of snow and then having to walk two miles in a blizzard. Any exercise makes the pain worse but especially holding anything in left hand, knitting, mixing bread or putting on coat. The pain is gradually getting worse, beginning late in the afternoon and increasing until long after midnight when she finally gets to sleep. It is a dull ache most of the time, becoming a sharp pain on moving. It is made worse on being startled or annoyed. Rest helps the pain and her most comfortable position is with the arm adducted and the elbow flexed.

Soreness of left shoulder has been present for four months. This soreness is only present in the skin over a lump above the collar bone. This is not present every day but is worse since examination one month ago (pressure on scalenus).

Numbness of left hand for four months. This numbness extends over the entire hand which feels as if it were asleep all the time. It comes on every morning and lasts for half an hour. It is made worse by the same things that exaggerate the pain.

The left hand has been swollen for five months. This occurs daily and is worse on being nervous.

The left hand has been blue on its dorsum in a triangular area between the ulnar styloid and heads of the third and fifth metacarpals. This is relieved by raising the arm and is made worse by pressure on the hand as in mixing bread.

Dropping things for five months. This is a daily occurrence. She has little difficulty with large objects but is always dropping small things.

Pain under the left breast for three years has followed overworking or getting tired. There is no pain on physical exertion, even on running up stairs. Because of this pain she has been worried about Angina Pectoris.

The remainder of the history is essentially negative.

P.x.: Nervous pale woman.

Neck: Lump palpable in left anterior triangle. Pressure on this mass produced her pain (following this her pain was worse for three weeks.).

Shoulder: All movements free. No tender points. Pain on extension and abduction only.

Blood Pressure: Left 154/98. Right 158/108

Hands: Left ring and little fingers are smaller than their opposites. No trophic or circulatory changes. No weakness.

C.N.S.: Reflexes and sensation normal.

Heart: Clear to clinical examination including functional tests.

X-ray: Bilateral enlarged transverse processes of 7th cervical spine, more marked on the left. No other bony abnormalities.

Diagnosis: Scalenus anticus syndrome with enlarged transverse processes of the 7th cervical spine.

Treatment: Advised conservative treatment for a period of a month under observation. Given Aspirin Co. with Cod. gr. $\frac{1}{4}$ p.r.n. and Phenobarb. gr. lss h.s. and gr.ss t.i.d. At the end of two weeks she insisted on operation. Scalenotomy was performed with almost complete relief immediately. At time of writing, 9 months after the operation, the patient is relieved of all her symptoms.

** The blood pressure in this case dropped 20 points prior to operation, but the difference persisted.

(2). Mrs. V.A.C., white, female, aet. 44,

Pain in the left shoulder began one year ago at the middle of the anterior border of the trapezius and radiated first upwards into the base of the skull and made her neck quite stiff. One week later it radiated downwards into the shoulder and in one month into the upper arm. It gradually worked down into the ring and little fingers. This pain was worse in the daytime but kept her awake after driving her car. The pain came on one week after she had finished quilting, at which she had been working two to three hours a day twice a week for two months. Any use of the arm made the pain worse, but quilting, driving a car and (less) knitting were the worst forms of exercise, in this regard. The pain was helped by flexing the elbow and adducting the arm. She sleeps on her back and finds it most comfortable to cross her arms across her chest. The pain is a dull, heavy ache which is continuous, but following driving, it becomes

sharp and darting. Any movement increases the pain but it is still worse on abduction and extension at the shoulder, especially so, doing work over her head.

Pain in the right shoulder came on ten months ago. It began along the anterior border of the trapezius radiated into the base of the skull and then down to the tip of the shoulder. It has never radiated into the arm on this side. The same things aggravate or relieve the pain as on the left side.

There has been no history of trauma.

Px.: Intelligent white female. Not nervous, but is very anxious to find out the cause of her pain.

Blood pressure: Right 118/70 Left 128/70.

Hands: Left. No atrophy. Ring finger nail is ridged longitudinally; this was not present before onset of the pain, and it was never injured. There is a definite hypoaesthesia over the distribution of the ulnar nerve. Right. Normal except for hyperaesthesia of ulnar distribution.

C. N. S. Slight diminution of triceps and biceps reflexes on left side.

X-Ray: Bilateral cervical ribs, more marked on the left side.

Treatment: Advised conservative treatment under observation. She has given up knitting, quilting and driving her car. There has been much improvement since she found out what caused the pain. She is not nervous now and feels she can carry on without the operation. She has been under observation for 10 months since the diagnosis was made.

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Universities: Real and Unreal*

I WANT to talk to you this morning about one of the greatest things in the world—books. We are to-day at war with certain madmen who do not believe in great things, and whose first object in life has been to destroy university libraries, book shops—books. They must have heard, somehow, of the saying: "The devil has never had a chance: God has written all the books." One of our own Dalhousie professors had collaborated, for years, with a German professor, in scientific research. In the year Hitler came into power, our professor again visited his German friend. The German said to him: "It is no use. They came and flung my books into a bonfire in the front of the house—all the books that had been written by Frenchmen, and Englishmen, and Jews. Go away, my friend, to any part of the world where such things are not done. Germany and the science of Germany are lost."

I made an enquiry, the other evening, in the Medical Faculty about the present cost of books to students in the first and second years of Medicine. I was told, at first, that \$25.00, or at the most \$35.00, would buy all the books a student needed. I was surprised by this statement; and disappointed, when I was given to understand that books meant only technical, text-books. Text-books are not books. There was a time when students in the Arts Faculty allowed a much larger sum than \$25.00 to \$35.00 for the indispensable minimum of the cost of books. Some of these were text-books, some were books of reference and lexicons, but some were real books. And in those days, twenty-five cents would procure a book which to-day costs ninety.

In lamenting this tendency to read fewer books, I hasten to add that that is not quite your fault. I shall return to this matter later. And I am glad to add too, that the Medical Faculty decided to increase by nearly \$50.00 certain scholarships for the purchase of books.

Now, some of you here, to my knowledge are readers. Those of you who are not could begin to-day or to-morrow to lift yourselves from your present plight. This is one of the few university towns in Canada still possessing a book-shop. Do not tell me that you are so poor that you cannot buy a book or two once a month. Students are no poorer now than they were formerly. And do not tell me that you are so busy studying that you have no time to read the great books. Even in war-time Canadian students are no busier than were Canadian students during a former war. And what studies, pray, can you be pursuing, that are so important as to shut you out from the great minds of the world? We who teach you here have tried to make ourselves proficient, in our various ways; but none of us would presume to detain you from the immortals, who are much greater than we.

Yes, I talk of the *great* books, and the *immortal* writers, and I am not stopping over any of the rest, for the moment at least. But I do not wish to be petulant and narrow, and say that you will have time now, and later, only for the first-rate things. Indeed, if I knew that someone had skipped this talk of mine to read Stephen Leacock's latest book, I should be very pleased. But then again, bits of that book may be immortal, too. Neither shall I dogmatise about the first book, or the sort of book, you should buy. It might

*From an address to the members of Dalhousie University, by President Stanley, October 6th, 1942

be an old book like Plutarch's *Lives* (which thousands of Canadian school-boys used to think fascinating), or it might be a brand-new book like Leacock's *My Remarkable Uncle*. It might be a novel: Tolstoi's *War and Peace* comes into my mind because two new students I met the other day spoke of it when Russia came into the conversation: one was reading it, and the other had read it. Or it might be Matthew Arnold's poems.

Now all these suggestions are of books that are both cheap and easily accessible. Let me interrupt myself here to say that in this respect at least you live in a fortunate time as well as in a fortunate country. There are men in this room who remember the publication of cheap reprints of the world's literary masterpieces as an innovation. You really could give yourselves the great experience I have been trying to describe to you—travels in the realms of gold—if you confined yourselves to such a series as the *Everyman's Library*. I am limiting my remarks, you see, again for lack of time, to books in English. The collection I have just named contains all, or nearly all, the English classics, and a great many English translations of foreign books.

But, of course, there are very important, very great books, which you could not easily buy. Even our modern English and American publishers are not infallible—e.g., the complete works of Matthew Arnold, one of the greatest of modern poets, and one of the great critics of all time, have long been out of print. Still, you could get, in two volumes of the *Everyman's Library*, enough of his prose and verse to form a judgment on my praise of him. And there are great books which, in a curious way, go out of men's minds—to say nothing of publishers' minds—over long periods. There are fashions in reading as there are fashions in women's head-dress and hair-dress. Now, here is an example of what membership in a university may do, even for a man who is educating himself by skipping university lectures to read great books. There are some of us older people, here, who have given considerable attention to the study of United States history. What Canadian to-day can fail to be interested in the present situation in the United States? But it seems to be so vast, and complicated, and baffling. Suppose one of you—having read, let us say, André Siegfried's little book: *America Comes of Age*, or for any other reason, wishes to try to spell out the riddle. Is there any master-key to all the locks? Goldwin Smith wrote succinctly about the United States. Lord Bryce dealt with it at length. There was a Frenchman much earlier than Siegfried; and these writers are all excellent. The Americans have written tens of thousands of books about themselves—and some of these books are among the best known books in all the world: Lincoln's *Speeches*, for example, and the books of Mark Twain. But there is an American book, seemingly little read at present, even by Americans, and hardly known to Canadians, which in a dozen ways explains the United States of to-day as does no other book (known to me). It is the *History of the United States, 1801-1817*, by Henry Adams. Let me give you a small sample of the enlightenment that a Canadian might derive from that book. Most Americans and all Canadians and Englishmen seem to believe that a League of Nations was a whim of Woodrow Wilson. Adams sets forth, with great circumstance, the fact that a League of Nations (for Europe and America) was promulgated in 1801 by President Jefferson. It is very strange that this book of Adams should so have gone out of knowledge. His autobiography, *The Education of Henry Adams*, was almost a best-seller in Canada and England as well as in the United States. A novel of his, called *Democracy*, was a veritable best-seller,

for decades, in the United States. But that novel was published anonymously, and only in recent years was the secret divulged. There is no accounting for tastes, the proverb says. The autobiography, called rather perversely, *The Education of Henry Adams*, is a perverse book, a baffling book, a book indicating immense disappointment with life, and not an easy book to read. Yet millions read it. The history is straight-forward, easy to read and even fascinating. It is hard to find even historians who have read it.

Is it worth while, in hard and perilous times, to raise such a question? I am not sure. But I do feel sure that, if universities were abolished, if their Arts Faculties, were abolished, such questions would never be raised, and such books would never be mentioned.

May I be autobiographic for a moment or two? When I was a school-boy, a high-school-boy, there were none of us ignorant of Burke's *American Speeches*. In an earlier day, in the lower school, and in the family too, a large part of education consisted of reading aloud. A child, before he was seven, might have read aloud whole books of the *Bible*, *Robinson Crusoe*, and endless amounts of verse. That was through no merit of his own. All children were brought up that way. You see it was regarded as physical training, as well as mental. On the mental side any mispronunciations we made, were corrected. And, at the beginning of each reading task, we might be asked the meaning of certain words we had read last time. In the interval we had looked them up in the dictionary. But reading aloud was good physical training too: you had to stand up straight, throw out your chest, and practice deep breathing. The great offence was to "break" a sentence by pausing for breath in the middle of it. Now, by the early high school stage it was perceived that bits of Burke's speeches were most fitting for this sort of declamation. For his long sonorous sentences you had to breathe deeply indeed. And these selections cast over us a spell. I can remember, as though it were yesterday, when I, a student in high school, bought the *American Speeches* of Edmund Burke. In paper covers they cost me ten cents. I soon knew them by heart. Not until many years later did I know that two very great men, Lord Morley and Henry Nevinson, pronounced these speeches to be the greatest manual of government in existence.

The mention of these books—Henry Adam's *History of the United States* and Burke's *Speeches*—leads one on inevitably to a general remark. Despite its greatness, and the greatness of its theme, Adams' book is, after all, a special sort of book, as compared with the speeches of Burke. Let me put it negatively. A man could be a good citizen of any free country, Switzerland or Sweden, let us say, who had never read Adams. But the writings of Burke are so essential to freedom, and citizenship, so essential to life, that no one anywhere can safely miss them. One of the greatest sentences ever framed by man is a sentence of Swift—a sentence Nevinson was fond of quoting: *Government without the consent of the governed is the very definition of slavery*. Commit that sentence to heart, if you do not know it already, and meditate on it while you live: *Government without the consent of the governed is the very definition of slavery*. Well, Burke's writings are an exposition of that theme; and no matter how many university degrees a man may accumulate, he is illiterate if he has not read Burke.

Now all the books I have mentioned up to this point are both easy and delightful reading. But there are great books which almost demand your reading, which I should hesitate to describe as both easy and delightful. Some

of these books are philosophic, some are scientific, some are mathematical, some are historic. One or two I can think of are a combination of these various human interests. I think, for example, of the great four volumes by Theodore Merz, on the *History of European Thought in the Nineteenth Century*. In a way it is easy to read, and, if you have any curiosity about how men think and discover, it is also delightful. But the very vastness of the theme makes the mastery of the book a formidable task. It is not a book with which to while away the idle hour. Yet I have never known of anyone taking up that book who did not become utterly absorbed in it and read it to the end.

Again do not imagine that by a hard book I mean a dull one. The books of F. H. Bradley are not dull; they glitter and sparkle with brilliance, but their subject matter, philosophy, is not an easy subject. All the books I have named this morning would make a reader think. But philosophy, even when Bradley writes it, makes you think very hard, and very continuously, and that is a very painful process—unless, that is, you are in good mental condition. Football, too, is a hard game, but I never hear players complaining of it as painful if they are in good physical condition.

But this would be an endless lecture if I attempted to cover the whole field of reading. I content myself rather with offering you these few suggestions. There are three points, however, which I wish to make before I conclude:

In the first place some of our great books have left their mark on all the subsequent books. You will miss the full enjoyment and full meaning of our modern literature unless you have read, and read with some attention, the King James Version of the *Bible*. Shakespeare, again, not only produced masterpieces: he left a stamp on our language and on all our subsequent books. You have heard, perhaps, of the university graduate who was induced, late in life, to read Hamlet. He said, "It's a good yarn, but too full of quotations."

Again, our English literature, like our English language, is woven of many strands. A short cut to learning the English *language* is to learn two or three other languages. And it will multiply your enjoyment of our English literature too. But that's a subject for another lecture, all by itself—so I pass on.

Finally, let me ask you to consider a thing Thomas Carlyle said: "The true University of these days is a Collection of Books." He meant, of course, *if you read the books*. And he meant, very manifestly, some hard books, and some in foreign languages. But let all that go. The point I want to make is this: the comparison is set up between *real* universities, and *unreal* universities. On Carlyle's test, most so-called universities to-day are not real universities. Their members do not read books in the sense in which I have been using the word throughout. They do not steep themselves in the great thinkers and discoverers and creators. No, they read, for examination purposes, anthologies and books about books. Real and unreal; book and text-book. Is it worth thinking over?

Good morning, good health, good fortune to each one of you.

Case Reports

An unusual case of Haemangio-endothelioma of the retroperitoneal haemolymph nodes or so-called retroperitoneal Angio-sarcoma

THE following case presents some important points in the differential diagnosis of abdominal pain or colic. A young white male (A. O.), aged 26 years, on May 18, 1942, while at rest without warning was suddenly taken with a severe pain in the left hypochondrium, described as radiating down to the testes and through to the back and reaching its maximum intensity in a few minutes. Such attacks recurred both day and night and varied from a slight to an unbearable pain, often with nausea and vomiting. Because of these attacks he was first admitted to the Victoria General Hospital, where a careful examination of the genito-urinary tract was made. Cystoscopic and pyelographic examination by the retrograde method proved essentially negative, except for the fact that a flat antero-posterior X-ray plate revealed a vaguely defined opacity in the region of the left renal pelvis and a smaller opacity in the course of the right ureter at the level of the ischial spine. Pyelographic examination showed the latter opacity to be outside the line of the right ureter while the position of the one on the left side was not further clarified. The patient was discharged with a report of negative findings in the kidneys, ureters and bladder. Urinalysis showed 4 or 5 red blood cells to the high power field.

On June 2, 1942, the patient was admitted to the Halifax Infirmary on account of the recurrent attacks of abdominal pain previously described. His total non-protein nitrogen was 48 mgms. per 100 cc. and the urine still only revealed occasional red cells. On one occasion he had a slight haemoptysis. The blood pressure ranged between 140/90 to 150/96. Physical examination did not disclose any further abnormality.

On account of the negative urological findings a diverticulitis of the colon was considered a possibility but X-ray examination demonstrated no evidence of any organic disease. Only some spasm of the sigmoid colon was noted. On 8th June, 1942, gross blood appeared in the urine and the total non-protein nitrogen dropped to 27.82 mgms. per 100 cc. Cystoscopic examination on June 12, 1942, gave the following results: "X-ray examination of the kidneys via the retrograde method shows both kidneys to be well filled with the dye. The pelves and calyces appear to be normal. The right ureter is normal. The upper third of the left ureter is deviated slightly outwards suggesting the possibility of some extrinsic lesion in that area which is causing the ureter to be displaced. The right and left kidneys, however, are normal in size, shape and position."

Following this last cystoscopic report laparotomy was performed by Doctors J. V. Graham and F. G. Mack. On opening the peritoneum a large localised reddish mass was found lying medial to and partly covering the left kidney. The mass was somewhat soft and from it blood was aspirated. It was felt that a biopsy was too great a risk on account of the possibility of an uncontrollable haemorrhage, so the abdomen was closed.

A working diagnosis of retro-peritoneal tumour was made. The abdominal incision healed, but on July 1, 1942, he started to complain of headache and

suddenly on July 6th developed symptoms of a massive cerebral haemorrhage and died in a few minutes. The autopsy was performed the same day by one of us (R.P.S.) and the following were the findings:

The body is that of a white male and shows a recently healed midline abdominal surgical incision.

Pleural Sacs: There was some recent fibrinous pleurisy in the right but nil of note in the left.

Lungs: Both were extensively infiltrated by reddish rather rounded malignant metastases varying in size from a pea to a walnut (piece for section).

The posterior mediastinal glands were much enlarged along the course of the Aorta, forming just below the root of the lungs an egg-sized mass (piece for section).

Pericardial Sac contained a slight excess of slightly blood-stained serous fluid.

The Heart was much enlarged and probably weighed about 18 instead of the normal 10 ozs. Both right and left ventricles and auricles were somewhat dilated and hypertrophied but especially those on the right side, the tricuspid valve admitting four instead of the normal three fingers and thus showing a relative incompetence. There was no valvular lesion and the Aorta appeared healthy as well as the coronary arteries, though the former may have been somewhat compressed by the metastases in the posterior mediastinal chain.

The Bronchial Lymph Nodes were also infiltrated but to a much less extent.

Peritoneal Sac: The omentum was slightly adherent to a large tumour mass situated to the left of the midline, posterior to the pancreas, whose body and tail were stretched over it, and to the duodenum. This mass was adherent to the duodenum and to the hilus of the left kidney and was situated retroperitoneally. It measured $4\frac{1}{2}'' \times 3'' \times 3''$ and in its upper portion had a pinkish necrotic character and in its lower portion appeared to consist of dilated blood vessels and haemorrhagic areas. It appeared to originate from the haemolymph glands. The left adrenal and kidney lay posterior to it. Areas were taken for histological examination.

The Stomach showed a few minute early metastases in its outer wall and it contained some altered blood, but otherwise appeared normal.

The Oesophagus showed no special change. No varices were seen at its cardiac end.

The Intestines showed no special change.

The Liver was large and showed some congestion and fatty change.

The Spleen was enlarged to twice its normal size, was soft, congested, haemorrhagic in areas and toxic.

The Gall-bladder was normal.

Pancreas: one small rounded haemorrhagic metastasis at the tip of its tail.

The mesenteric lymph nodes were all somewhat enlarged and pea sized, having a yellowish appearance but the glands in the vicinity of the stomach and common bile duct were apparently infiltrated by the tumour.

Adrenals: nil of note.

Kidneys: right was somewhat enlarged, congested and possibly fatty. It did not otherwise appear diseased and showed no metastases.

Left was definitely enlarged and adherent at its hilus to the main tumour mass. It appeared similar to the right kidney. The pelves were normal but the left somewhat distorted.

Ureters: right nil.

Left was pushed towards the left and stretched by the larger tumour mass.

Urinary Bladder nil.

Brain: In the right lobe of cerebrum just anterior to the pre-central gyrus was a large haemorrhagic mass which showed two portions, one similar to the tumour in the lymph nodes and the other pure blood clot. This had burst into the lateral ventricle and the whole ventricular system was filled with blood, which had evidently spread through the foramina in the IVth ventricle, so that there was a diffuse haemorrhage in the large cisterns of the subarachnoid space over mid-brain, pons and medulla at the base of the brain.

Histological Examination

Main Retroperitoneal Mass in Haemolymph Glands consists largely of haemorrhage, necrosis and dilated blood vessels but in a few areas large rounded and spindle-shaped cells in alveolar-like masses are visible as well as a few syncytial masses with dark nuclei. Such an appearance corresponds to a diffuse endothelioma or haemangio-endothelioma originating in the lymph nodes.

Post-Mediastinal Glands: The cellular picture here is much more clearly demonstrable as the haemorrhage and necrosis are less.

Lungs: The metastatic deposits are evidently blood borne and show a similar appearance. In places it is not unlike a chorio-carcinoma.

Mesenteric lymph nodes only showed some lymphoid hyperplasia. No metastases.

Liver: Chronic venous congestion and some fatty infiltration. No metastases.

Spleen: Some congestion and haemorrhages into the pulp. No metastases.

Kidneys: Some chronic venous congestion and cloudy swelling. Nil else of note.

Brain—two portions from suspected tumour area in right cerebrum: No tumour cells were seen, only haemorrhage.

Pathological Diagnosis

1. Haemangio-endothelioma of haemolymph glands or so-called Angio-sarcoma.
2. Metastases to lungs, posterior mediastinal glands and pancreas.
3. Terminal massive cerebral haemorrhage.

Discussion

A retroperitoneal tumour may belong (1) to the sympathetic nervous system.

Benign. Paraganglioma or Phaeochromocytoma, ganglio-neuroma or neurofibroma.

Malignant. Neuroblastoma or Sympathicoblastoma but such are not nearly so vascular nor show the pleomorphism of the cells.

(2) to the sarcoma class (a) particularly liposarcoma of adult type or reticulo- or lympho-sarcoma.

(3) to the diffuse endothelioma of the lymph nodes group which is closely related to haemangio-endothelioma. The latter was formerly called angio-sarcoma.

(4) a simple lipoma, fibroma, etc.

(5) *Metastatic Deposits:*

A. *From an Embryoma of Testis* either embryonal adenocarcinoma or chorion-epithelioma. Clinically the testes were quite normal.

B. *From a Seminoma of testis.*

C. *From a Malignant Melanoma.*

The primary situation in the haemolymph glands, vascularity and pleomorphism and alveolar arrangement of the cells which are large, rounded and spindle-shaped with a few multinucleated syncytial masses, all point to a diagnosis of a malignant haemangio-endothelioma or angio-sarcoma. The massive cerebral haemorrhage may have resulted from the erosion of a blood vessel as a result of a metastasis or spontaneously. Unfortunately the histological sections failed to clear up this point.

We are indebted to Drs. H. K. MacDonald, J. V. Graham, F. G. Mack and W. Roy, for their respective findings.

S. T. LAUFER, M.D., and

RALPH P. SMITH, M.D., D.P.H.

Halifax, Nova Scotia

The following facts are in relation to two cases which occurred in one family in the city of Halifax during the past summer.

This family had a pair of parrakeets which they used for breeding purposes, and another pair were hatched and raised during the summer and to all intents and purposes at the present time appear to be quite well, whereas the original pair both have died through some mysterious illness, as well as a canary in the family, and a second canary took sick and was forwarded for examination.

The first girl (L.), age 15, took sick on *July 12th* with a history of having about ten days previously been on a picnic where she drank some water from a brook and that night was sick at her stomach, with vomiting. Apparently completely recovered the next day, she was well until she awoke on the morning of *July 12th* with a pain sub-sternal in character, and a fever. She was seen by me the following morning and her temperature was running around 102° F. There was lack of appetite and general feeling of malaise.

Physical examination showed nothing in the chest, and no cough. She was simply put on a light laxative and nothing further in treatment was ordered.

July 17th—patient still running high temperature; physical examination negative. She was taken in and fluoroscoped and nothing special seen in the lung fields. Referred to another doctor because of a systolic murmur and for continued pain around the heart. The feeling was that the murmur was functional in character, and nothing organic could be found. Physical examination again was negative. Patient had a blood count 10,500.

On *July 22nd* patient was X-rayed. X-ray plates showed shadow in the mediastinal area, and she was re-X-rayed on *July 28th* in oblique and transverse positions which showed a distinct enlargement of mediastinal glands, and patient this time had a slight cough with an occasional highly tenacious white sputum; the Widal was done on *July 23rd* and was 1 in 20. for B. typhosis. Blood culture taken at the same time was reported negative, on *July 30th*, as well as stools, for typhoid; white counts still slightly over 10,000. She was put on sulphathiazol 7½ grains Q4H. Her temperature slowly came down

to normal, having reached at one time 104.4° F., and on *August 10th* she was allowed up for a short time.

On August 13th she had a recurrence of her temperature and pain, and again was in bed for a period of ten days, and her temperature again subsided and for a period of two weeks was normal. She then had a slight temperature up to 100° F. for a period of three or four days. Blood culture again repeated on August 14th was again negative for *B. typhosis*. During the time she was running the fever, her appetite was very poor but returned as her temperature became normal.

During this period from July 12th to September 1st she lost seventeen pounds in weight. Condition now appears to be quite normal and she has already regained considerable of her weight.

The second girl (M.), age 17, left home for holidays in the country shortly after her sister first became ill, and did not return until the latter part of August, when she returned to school early in September and on September 9th developed similar symptoms to her sister's when temperature ranged as high as 103.2°. The fever in this case did not last longer than two weeks and her pain was of the same character as that of her sister's. She had a slight cough but we were never able to get any sputum. Blood count in this case showed 9,500. She dropped about five pounds in weight during the two weeks she was ill; has had no recurrence of her fever and now appears to be quite well.

The history of the parrakeets is that early in July one of the parent birds took sick and died just shortly before the girls became ill. These two girls alternated week about in the cleaning of the cage. The second parrakeet became ill and died one month later, and the canary died some time during the latter part of August. The second canary became ill about the same time.

These two cases appear to be definitely allied with the illness in the birds, and parrot fever, or *pysittocosis*, was thought to be the cause of their fever.

Blood agglutination in both cases was done and has proven negative, by Dr. McNab in Toronto, and, so far, no report has been received in his examination of the second canary.

Acute Pneumonitis, or Virus Pneumonia

This is an acute respiratory disease characterized in most cases by a definite rather sudden onset similar to that of influenza. Mild cases may show no elevation of temperature, while more severe cases may have an initial sharp rise to as high as 104°, gradually dropping to normal, usually by the third or fourth day. Cough appears early and is usually quite troublesome. It may be dry or moderately productive, and may be present for some time after physical signs have disappeared.

Physical signs are few, or absent. Percussion may reveal a small area of diminished resonance with diminished breath sounds. A few rales may be heard. These signs, if present, usually disappear within the first week of illness. However, if there are present in the lungs definite areas of consolidation, these may be recognized during the first week by changes in the breath sounds and percussion note, and by X-ray. In these cases rales and rhonchi usually appear during the second week, and may persist for some time.

The diagnosis is confirmed by X-ray and in some cases this provides the only clue to the nature and extent of the lung involvement. Findings may vary from increased hilar shadows to definite areas of consolidation extending

into the periphery of the lung, and seem to bear little relation to the constitutional symptoms.

The blood picture during the first few days is normal. A leucocytosis usually appears after the first week, and may reach 20,000 during convalescence. This may lead to diagnostic errors if an X-ray is not taken.

Examination of the sputum shows generally a mixed respiratory flora without predomination organisms.

Occasionally these cases will show a positive Kahn reaction with negative Eagle test. In the absence of specific infection, this becomes negative within two months.

The sulphonamide drugs do not hasten recovery, and frequently are poorly tolerated.

According to Smiley et al in the J.A.M.A., May 13, 1939, this disease was probably first described by the Medical Department of the U. S. Army during the last war. X-rays were taken of 1,000 cases of influenza of average severity in one camp. 25% showed on physical examination persistent rales at the bases. Patchy areas of consolidation were noted in the X-ray films of these cases. Since then it has been described by many others, and animal inoculation with the filtrate has differentiated the virus from that causing influenza. The more frequent use of X-ray in recent years has led to its recognition in many cases not acutely ill, which would otherwise have been called a common cold or mild influenza. It is difficult and perhaps impossible to differentiate, on clinical grounds, the group not due to the influenza virus.

During the months of November, December, January and February, of 167 cases of acute respiratory disease admitted to this hospital, 51 were diagnosed as pneumonitis. Thirteen were diagnosed as broncho-pneumonia, and eighteen as lobar pneumonia. The remainder were cases of acute bronchitis and influenza not showing X-ray evidence of pneumonitis.

Some of these cases of pneumonitis were acutely ill on admission. Others had no complaints, or complained only of a slight cough or a mild cold. Other were picked up on a routine X-ray before discharge for other medical or non-medical reasons. Those showing peribronchial patchy infiltration must be differentiated from an exacerbation of bronchiectasis.

Weakness and loss of weight were the two things most frequently complained of during convalescence. Losses of ten to fifteen pounds were not infrequently reported. Hospitalization varied from fourteen to forty days, and most cases required a period of convalescent leave before returning to duty.

The virus seems to show no pariality between the two lungs. No cases of equal involvement of both lungs were seen. However, X-rays frequently demonstrated extensive involvement of one lung with minimal involvement of the other. In at least three cases the infection was confined chiefly to one lung on admission, as demonstrated by X-ray, but appeared in the other lung during convalescence. There were no deaths, and complete clinical recovery has occurred in every case. There is apparently no residual chronic cough.

The following case is illustrative: The patient was acutely ill. There were no physical signs in the chest. Examination of sputum showed a mixed flora with no predominating organism X-rays of the lungs established the diagnosis.

J. J. Rostek, age 40, was admitted to hospital March 26th, complaining of headache. This had been present frequently for past two or three months, but attacks were mild and of short duration. Present attack had lasted four

days, and on evening before admission he had a definite chill. No history of pneumonia, pleurisy or frequent colds. No chronic cough. No hospital admissions since enlistment 20 months ago.

Physical examination was entirely negative. Temperature reached 102° shortly after admission, and ran an irregular course, settling to normal within a week, when the headache disappeared.

Kahn and urinalysis were negative.

He developed a slight productive cough which disappeared within two weeks.

Examination of the sputum revealed a mixed flora of staphs., diphtheroids, and pneumococci with no predominating organism.

X-ray of the sinuses was negative. X-ray of the lungs on the third day revealed a bilateral pneumonitis. This had satisfactorily resolved by the eleventh day.

Patient was allowed up on the eighth day, and was discharged on the fifteenth day.

J. A. LANGILLE, CAPT., R.C.A.M.C.

Paroxysmal Hemoglobinuria

I am presenting a case of paroxysmal hemoglobinuria due to late syphilitic infection. This condition is a rare chronic manifestation exhibiting recurrent paroxysms of hemoglobinuria, and characteristic constitutional symptoms. The blood of patients who suffer from this disease contains in latent form a specific hemolysin which becomes active when the blood is chilled and produces the attacks.

This case was of a soldier aged 25 years. He had always enjoyed good health, was the father of four healthy children and denied a history of venereal disease. In September, 1940, he had an appendectomy. At this time his blood was found to be 4 plus positive Kahn. Anti-syphilitic treatment was instituted. After recovery from his operation he was given 3 weeks convalescent leave. Shortly afterward, following a night bivouac in November when he was chilled, he developed a pain in the right groin. He had frequency, nocturia, but no dysuria. He noticed that the urine then passed was a shade darker than red ink. Five days later when on guard, his feet got chilled, he had a pain in the right groin and voided dark red urine 4 or 5 times. A few days later this sequence of events occurred again and he reported to his M.O., who sent him to hospital. A flat X-ray film showed no evidence of disease in the urinary tract. A cystoscopic examination showed a normal bladder, normal urethral orifices from each of which clear urine was spurting. The left catheter reached the kidney pelvis, the right did not, due to some obstruction half way up. Sod. Iodide was injected. The X-ray was negative for urinary tract pathology. While waiting for the first films to be developed, red urine appeared from the right urethral catheter. The operator did not consider this to be due to trauma.

Nothing else was done at this time except to continue to give the patient some arsenic and bismuth treatment. He was symptom free for about nine months. Then when on beach patrol one night he became chilled and had a recurrence of his previous symptoms of pain, frequency and red urine. He was then admitted to hospital again on Aug. 28, 1941. As before, examination showed no urinary tract lesion. Laboratory tests showed normal blood sugar,

N.P.N., urea nitrogen, uric acid and creatinine. Kidney function tests normal and 12 routine urinalysis were normal. Complete blood examination was normal except for a plus 4 positive Kahn.

With this history a presumptive diagnosis of paroxysmal hemoglobinuria was made, and in order to prove this diagnosis it was necessary to show that the patient's blood serum contained a hemolysin capable of hemolysing red blood cells that had been exposed to cold, (Donarh—Landsteiner Reaction).

The following tests were done by Capt. J. B. MacDonald, R.C.A.M.C. (A.F.):

1. Patient's feet immersed in ice water for 10 minutes, blood then taken had an icteric index of 12. (Normal is 4 to 6).
2. Arm immersed in ice water—icteric index 6.
3. Patient was ducked in ice water—icteric index 9.
4. Patient immersed in tap water for 20 minutes at 55 deg. F.—icteric index 9.
5. 5 c.c. patient's blood in test tube immersed in ice water until it clotted, then warmed to 37.5 deg. C.—hemolysis occurred, (this is a normal reaction).
6. 5 c.c. patient's blood immersed in test tube in water bath at 37.5° C. until it clotted. Tube then placed in ice water for one hour and then allowed to return to room temperature—hemolysis occurred. This is an abnormal reaction indicating presence of a hemolysin.

The last two tests were repeated with blood drawn from a patient whose blood was known to be recently Kahn negative. Blood in the first tube hemolysed, blood in the second tube did not hemolyse. Both tests in the control were thus normal.

Conclusion—As the patient's blood contains a hemolysin, which produces hemolysis when the blood clots at body temperature, is chilled and then warmed again, therefore the patient has paroxysmal hemoglobinuria of the Donarh-Landsteiner type.

Hemoglobinuria occurs also in the following conditions:—

1. After the exhibition of certain chemicals, such as Potas. Chlorate, Naphthol. or the inhalation of Carbon Monoxide, Carbon Bisulhid, Arseniurated Hydrogen or Naptha vapour.¹
2. Sometimes as a result of certain infections, e.g. Syphilis, Malaria, Yellow Fever, Enteric Fever, Oraya Fever and sometimes associated with the *Clostridium Welchii*.²
3. Transfusion with the wrong type of blood.²
4. Fabism, (Idiosynersy to the bean *Vicia Fabis*, (Italy).²
5. In pregnancy and the puerperium.²
6. From burns or frost bite.²
7. After muscular exercise, resulting in exercise hemoglobinuria.²
8. In hemolytic anemias of the Marchiafava—Micheli, or Lederer types. The former is a type of nocturnal paroxysmal hemoglobinura not caused by Syphilis, in which the increased Ph of the blood tends to cause hemolysis, but in which the fundamental abnormality resided in the Red Blood Cells.³
9. In paralytic hemoglobinura, the cause of which is unknown.²
10. It is said to occur in 6% of cases diagnosed as Raynaud's Disease and rarely in Angio-neurotic Oedema and Hensch's Purpura.¹

In the type of paroxysmal hemoglobinuria which our patient has, it should be noted that only hemoglobin appears in the urine, although there may be an occasional microscopic Red Blood Cell.

The prognosis of syphilitic Paroxysmal hemoglobinuria is good, and anti-syphilitic treatment relieves the attacks.⁴

JOS. H. GROVE, CAPT., R.C.A.M.C.,(A.F.)

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*Tuberculous Cervical Lymphadenitis

Three cases were presented.

The first case. Man, age 21, This man was well until one month before admission when he developed lumps in right submaxillary and submental region. These lumps were painless and became progressively larger. Examination of the rest of the body was negative. These glands were not tender, were about 1 to 3 cms. in diameter and they were discrete. His past history was not remarkable—he had no familial or personal history of tuberculosis. He was born and raised in Kentville, N.S.

X-Ray of the neck showed calcified deposits corresponding in position to the enlarged glands. X-Ray of the chest showed calcified areas in left apex. His urine and Kahn were negative. His blood picture showed a slight Schilling shift to the left. His sedimentation rate was 19 mm. fall in the first hour—a definite increase.

This case was presented as a problem in diagnosis as the patient refused biopsy. A diagnosis of tuberculous cervical lymphadenitis was made on the history, clinical examination, X-Ray findings and blood picture.

In considering the differential diagnosis—acute and chronic inflammation due to the staphylococcus and streptococcus, syphilis, secondary tumours, infectious mononucleosis, Hodgkin's disease, lymphosarcoma and chronic lymphatic leukaemia were considered.

This man is being transferred to the Sanatorium.

The second case. Man, age 21. Admitted with complaints of pain and swelling of left side of neck for four months. Examination showed enlarged lymph glands along anterior border of left sternomastoid muscle and in submental region. Rest of examination was negative. This man has a brother with tuberculosis of lungs—contact ended eighteen months ago.

A biopsy of the submental gland revealed an early simple tuberculous lymph gland. The glands along the sternomastoid muscle decreased in size during two weeks in the hospital. The biopsy incision healed neatly. This man is being transferred to the Sanatorium.

*Presented at meeting of the Halifax Medical Society, April 15, 1942.

The third case. Man, age 22. Admitted to Halifax Military Hospital complaining of a lump on left side of neck which he had noticed for about a month. Examination revealed a lump along the anterior border of the left sternomastoid and another along the posterior border of the same muscle. The rest of the physical examination was essentially negative.

X-Ray of the lump revealed a small density in the right lung about 2.8 cms. in diameter about the level of the fourth interspace.

A block dissection of the glands of the left side of the neck was carried out. At operation it was found that most of the deep cervical lymph glands along the sternomastoid muscle were involved and matted together, although not readily palpable pre-operatively. All these glands were removed and the wound closed tightly. Healing was excellent. This man is also being transferred to the Sanatorium.

The merits of Sanatorium treatment alone, and of operative treatment combined with Sanatorium treatment were discussed in the three cases.

Major Janes also presented a case of fracture of the clavicle treated by the insertion of a Kirschner wire and no other fixation. Movement in a few days was thus possible with comfort and the end-result showed a shoulder with normal contour and with full range of movements.

Fractures of the clavicle cause serious disability for military service. It is unusual for a man to be fit to carry a pack or a rifle after such an injury. It is felt that the treatment described will render men who have sustained such injury fit for all military duties.

E. C. JANES, Major, R.C.A.M.C.

J. E. LEDDY, Capt., R.C.A.M.C.

Personal Interest Notes

DR. and Mrs. G. W. T. Farish of Yarmouth returned home early in November after spending several weeks visiting in Montreal.

Dr. S. G. MacKenzie of Truro spent sometime in Montreal recently where he took a course in Chemical Warfare given by the Faculty of Medicine at McGill University.

Dr. Florence Murray, for many years medical missionary in Korea, gave a graphic description of the life, character and habits of the Koreans in a talk to the Young Business and Professional Women's Club in Halifax on November 18th. Dr. Murray explained the vast difference between the Koreans and Japanese in their characteristics and mode of living.

Dr. and Mrs. J. J. Cameron, and their daughter, Miss Zina, of Antigonish, spent an enjoyable three weeks in New York during the month of October.

Dr. Clarence Young of Pictou was a patient recently at the Victoria General Hospital in Halifax following an operation on his knee. He is now making a satisfactory recovery at home.

Dr. Margaret Gosse of Halifax, addressed a representative group of citizens of North Sydney and Florence in October regarding blood donor services. Dr. H. J. Martin, head of the Sydney Mines Committee presided. Doctors Martin, W. T. McKeough, L. R. Meech and J. S. Munro also spoke at the meeting.

Dr. and Mrs. J. J. Carroll of Antigonish visited Montreal and Toronto during October.

The appointment of Lieutenant-Colonel G. R. Forbes as District Medical Officer, M.D. 6, was announced on October 28th by military headquarters in the district. A veteran of the last war in the King's Own Hussars, enlisting at the age of sixteen, he is a popular Maritimer, and formerly O.C. of Aldershot Military Hospital and Sydney Military Hospital, R.C.A.M.C. Born in Stewiacke in 1899, he studied at Sydney Academy and Dalhousie University, before enlisting in 1915. He was at the front three years and with the army of occupation in Germany. He returned to Dalhousie to take his Bachelor of Science in 1923, and his medical degree in 1926. He then served in Kentville as general practitioner until the outbreak of this war. He enlisted in November, 1939, as a Captain, and was O.C. at the Aldershot Military Hospital from November, 1939 to January, 1941. In September of that year he went to Sydney, and in May of this year went back to Aldershot as O.C. In the spring of 1940 he was promoted to Major, and in May, 1941, to Lieutenant-Colonel.

The BULLETIN extends congratulations to Dr. and Mrs. F. W. Morse (Sheila Winfield) of Lawrencetown, Annapolis County, on the birth of a

daughter, on November 16th; also to Dr. and Mrs. J. Emmett Donahoe (Christene Claire MacDonald) of Montreal on the birth of a daughter on October 22nd.

Lieutenant Robert W. Begg, R.C.A.M.C., graduate of last year's medical class, has entered a United States army camp to train as a "para-trooper". He will qualify as a medical officer in the battalion. A peace-time Lieutenant in the Prince Edward Island Highlanders (N.P.A.M.) Begg attempted to enlist at the opening of the war, but was required to complete his medical studies because of the need of doctors in the armed services.

Dr. L. M. Morton addressed the Yarmouth Hospital graduating class at the exercises at Zion United Baptist Church on October 27th. Dr. D. F. Macdonald led the graduating class in the recital of the Florence Nightingale Pledge. The graduates were Miss Alice Attis, Yarmouth, Miss Evelyn Clattenburg, Brooklyn, Queens County; Miss Kathleen Bennett, Canning; Miss Margaret Wambolt, Caledonia, Queens County; Miss Kathleen MacKenzie, Lockeport and Miss Phyllis Sawler, Kingston. Following the exercises the class, nurses and friends were entertained at a dance at Milo Boat Club. The Hospital Board extended this feature of the day to the group.

The appointment of Dr. Henry Ernest Kendall of Windsor, as Lieutenant-Governor of Nova Scotia was announced in Ottawa on November 18th by Prime Minister King. Dr. Kendall succeeds Hon. F. F. Mathers, who, for personal reasons, asked to be relieved of the duties of that office. Dr. and Mrs. Kendall plan to take up residence in Halifax about the first of December.

Obituary

THE death occurred at Donkin, Cape Breton, on October 30th, of Doctor John McKiggan, following an eight months' illness. Dr. McKiggan was born at McNabb's Cove, Richmond County, in 1891, and received his early education there and at St. Peter's, and then entered Dalhousie University receiving his M.D., C.M. in 1921. For the next six years he was associated with the late Senator John A. McDonald, M.D., at St. Peter's. In 1927 he moved to Port Morien as an associate with Dr. W. W. Patton and when the latter relinquished his practice about twelve years ago Dr. McKiggan succeeded him. He is survived by his wife and two children, and a sister. Dr. F. G. MacAskill of Glace Bay is a cousin.

Doctor Arthur Birt, a former widely known Halifax physician, died at Wolfville on November 19th, after a lengthy period of illness, in his seventy-seventh year. His death removes one of the best known of the medical men, who though a man of quiet tastes, won general recognition for his outstanding qualifications and many friends by his fine personal qualities. He was a consulting specialist whose counsel was frequently sought during his long practice, and as news of his death spread among members of his profession words of high tribute were spoken by his colleagues, who looked upon him as one of the most highly trained of their calling.

A native of England Dr. Birt was an honour graduate in medicine of Edinburgh University in 1887, and practised in England for a number of years, serving on the staff of one of the large mental institutions there. He was one of the first to use thyroid extract in the treatment of diseases of the thyroid gland.

He came to Canada thirty-five years ago, and was a charter member of the Royal College of Physicians of Canada. He practised in Bridgewater for years with the late Doctor Rehffuss. He also practised in Berwick, and later for a considerable period in Halifax as a consulting physician.

The late Dr. Birt was conversant on many subjects, was always reading, and kept up to the latest developments in medicine. He is described by medical acquaintances as having been a "pure internist". He was interested purely in medicine, rather than surgery. He specialized in diseases of the nervous system, and his services were much in demand. His medical associates speak of him as having been possessor of a brain of outstanding power. He retired from practice several years ago due to ill health.

Dr. Birt served as a ship's doctor in his early days and made quite a number of trips to the Orient. He was unmarried and is survived by one sister, Miss L. M. Birt, living in Liverpool, England, where he was born. He is also survived by two nieces living in England. His mother, Mrs. Louisa Birt was one of the original founders of the Liverpool Sheltering Homes, England, which institution sixty or seventy years brought children to Nova Scotia under the guidance of the late General Laurie of Oakfield. This institution brought many children to Nova Scotia, Quebec and Ontario under an immigra-

tion scheme fostered by the Dominion Government. The funeral was held in Halifax.

The BULLETIN extends sympathy to Doctor D. J. MacMaster of Antigonish on the death of his brother, Rev. Dr. John Francis MacMaster, which occurred on October 23rd at Mabou.

The BULLETIN also extends sympathy to Dr. Hugh MacLean, Dal. '28, on the death of his mother, Mrs. H. B. McLeod, at Truro on November 16th. Dr. MacLean who had a medical practice in Moncton is now overseas with the R.C.A.M.C.

FIVE THOUSAND GLASS EYES

Came From Unique English Factory Last Year

German prisoners are among the thousands who have been given glass eyes by a unique Government factory in the north of England.

It issued 5,000 eyes last year, and close upon 600 of them went to civilians who had lost an eye in the air raids. The factory supplies the Navy, the Army and the R.A.F.; the Allied Forces including the Poles, the Fighting French, the Norwegians and the Czechs; the A.T.S., the W.A.A.F.'s and other women's Services. They have even sent eyes out to the troops in the middle East.

The factory was working in a small way in peace time for men who had lost an eye in the last war. They used to get their glass from Germany. It is made in Britain to-day.

The glass comes to the factory in long tubes and rods. A glass tube is heated over a gasburner; the worker blows through it and makes a bulb in the middle, one end is snapped off, and work on the eye begins.

The bulb is again heated as are rods of coloured glass which are pressed upon the bulb to form the pupil and iris. Crystal glass is worked in for the cornea and little red veins are marked out with tiny strands of red glass.

It is often a difficult job to match up the colouring for there is no standardization. Each eye depends upon the patient himself.

Glass eyes are coming in for renewal at the rate of 250 a week.

COSSACK CAVALRY ON THE DON

Getting Big Supplies for Wounded Horses from London

Russia's war horses are getting a steady flow of veterinary supplies and equipment from Britain's Royal Society for the Prevention of Cruelty to Animals. The Society has already raised £15,000 towards the £40,000 needed to meet the requests made by the Soviet Government through the British Ambassador.

To date the Soviet Army Veterinary Corps has received 1,500 kilogrammes of drugs and dressings. Round about 1,000 veterinary surgeons' wallets complete with instruments and drugs have been dispatched and 1,000 more are on the way. Field chests costing £18 apiece have gone out and the latest batch of supplies included microtomes, syringes, and 17 field microscopes. The drugs sent are for dressing burns, removing tape worms, healing up wounds, and combating fever.

The Russian Army has an excellent system of dealing with its sick and wounded horses, but its large supplies are being drained and the Soviet Government have asked for 5 outfits for veterinary hospitals, which will include special veterinary tents and lighting apparatus, each costing £1,000.

The Royal Society are getting the money for them.

Facts from the Royal Society for the Prevention of Cruelty to Animals, Jermyn Street, London, S.W.1.

AGAR AND THE WAR

The war has cut off importations of agar-agar, which normally come from Japan. The War Production Board has frozen all stocks of agar in order to protect the requirements for bacteriologic culture medium use of the Army, Navy and civilian hospitals and laboratories.

This W.P.B. control of agar stocks made it necessary for Mead Johnson & Company to discontinue the manufacture of "Pectin-Agar in Dextrin-Maltose," a product which has been used by the medical profession for the treatment of diarrhoea in infants.

Fortunately, Mead Johnson & Company have another product, Casec, which gives good results for the same purpose. Physicians who are not familiar with Casec are invited to write for samples and descriptive literature to Mead Johnson & Company, Evansville, Indiana.

PHYSICIANS WANTED

There are doctors urgently needed in the districts of Upper Stewiacke, Colchester County and Maitland, Hants County. Any doctors interested in locating in either one of these districts can get further information through the Secretary.

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