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THE EARLY HOSPITAL HISTORY OF CANADA,  
1535-1875, A. D.

BY

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I. *French Régime.*

The early hospital history of Canada is the history of the country itself; it is the tale of heroism and of martyrdom, of Indian massacre, of famine, fire and pestilence, of colonization, of war and of civilization.

The houses of the sick in this country, as in older civilizations, were called *Hotel, Hospice, Hôpital*, without discrimination, and each one endeavoured to fulfil the combined mission of modern institutions bearing the same names.

In the earliest days of the country they were built of logs, the chinks filled in with clay, the rooms planked and the roofs covered with bark. They were of necessity surrounded by palisades and fortified with cannon, for, "in all Canada, no man could hunt, fish, till the fields, or cut a tree in the forest without danger to his scalp. The Iroquois were everywhere and nowhere. A yell, a volley of bullets, a rush of screeching savages—and all was over."

The immediate neighbourhood of these primitive houses of the sick was utilized for a burying-ground, where the nuns themselves interred those of their order—and they were many—who did not survive its hardships. Here also were buried the hospital sick or any others who died in the colony. Nearby was to be found the vegetable garden and barnyard, which, too frequently, constituted their only source of subsistence. In describing the two chief communities, Parkman says: "It is difficult to conceive a self-abnegation more complete than that of the hospital nuns of Quebec and Montreal. In the almost total absence of trained and skilled physicians the burden of the sick and wounded fell upon them.

Of the two communities, that of Montreal was the more wretchedly destitute, while that of Quebec was exposed, perhaps, to greater dangers. The nuns died, but they never complained. Removed from the arena of ecclesiastical strife, too busy for the morbidness of the cloister, too

much absorbed in practical benevolence to become the prey of illusions, they were models of that benign and tender charity of which the Roman Catholic Church is so rich in examples."

The first white man to behold Quebec was Jacques Cartier, the Breton Navigator, who spent the Winter of 1535 on the banks of the St. Lawrence under terrible conditions. On the banks of the St. Charles he planted the symbol of the Christian religion, and the following spring he returned to France with the few of his company who had survived the scurvy. In 1541 Jacques Cartier again visited Canada, taking shelter at Cap Rouge, where Roberval had previously fortified himself in a vain attempt to establish a stronghold.

With the passing of Cartier and Roberval, a silence, lasting over half a century, fell upon the whole region from Stadacona to Hochelaga. Even the Iroquois abandoned their villages. Sixty years later, when Champlain sighted Cape Diamond, he found only solitude and the ruins of the fort left by Cartier. In this year, 1608, Champlain laid the foundations of the City of Quebec. The first building was called "l'Abitation"; it was erected on the river-front, near the site of the present church of Notre Dame des Victoires, and it served as a temporary residence for the Governor as well as for a store-house for supplies from France and for furs bought from Indians. An original drawing of l'Abitation by Champlain's own hand still exists and has been reproduced in his works.

With Champlain's company was a doctor named Bonnerme, who died within the year (1608) of either scurvy or dysentery.

Up to 1615 the colony consisted of the fortified post and a few cabins about the palisades; the entire population was less than fifty persons, chiefly traders, for the fear of death unshriven contributed to tentative settlement only.

During this year Champlain re-visited France and brought back with him four Recollet Friars, who speedily raised their altar and celebrated the first Mass ever said in Canada.

Soon after the arrival of the priests, the first settlers with their families came to Quebec. Among them were Abraham Martin (after whom the Plains of Abraham were named), Pierre Desportes, Nicolas Pivert, and Louis Hébert, an apothecary, who followed Champlain from Port Royal.

It is interesting here to note that the first resident medical man of whom we find authentic record was Adrien Duchesne, a surgeon of Dieppe. He must have emigrated previous to 1620, since in that year he was among the residents to meet Madame Champlain when she reached Quebec.

Duchesne appears to have enjoyed a monopoly of the practise from Quebec to Three Rivers, for a period extending over several years.

The year 1621 is marked by the building of the Recollet Convent on the banks of the St. Charles, destined later to become the General Hospital of Quebec. In 1625 three followers of Loyola joined the colony.

The next important acquisition was the surgeon, Robert Giffard, who, with his family, arrived in 1627. He later became the first visiting surgeon to the Hotel Dieu; he was evidently the medical authority in the settlement and must have been a man of importance in his own country, since he was followed to Canada by over three hundred families from Perche and Normandy.

When, on the 19th July, 1628, the British, under Sir David Kirke, took Quebec, Champlain was conveyed to England, both Recollets and Jesuits were sent back to France, among other prisoners taken was Giffard. By the Treaty of St. Germain-en-Laye, in 1632, Canada was restored to the French. That year the Jesuits returned, also Surgeon Giffard, and the following year saw Champlain return as Governor of the colony.

In 1634, Giffard was granted the Seigneurie of Beauport, where he built a substantial stone residence, which place, more than two hundred years later, became the Beauport Asylum.

Giffard, after playing an important rôle in the settlement of the colony, died in 1668. By 1635 Quebec was only a village, with a few houses. Eighty persons, including the clergy, constituted the population.

At this time the Letters, or "Relations" of Father Le Jeune, the Jesuit Superior, who had joined the colony with others of his order in 1632, were exciting wide-spread interest in France. They were passed from hand to hand in the Court, universally discussed in ecclesiastical circles, and the conversion of the savages had become a popular subject for prayers, devotions and fasts.

With the acumen which has ever characterized his order, Le Jeune saw far into the future. He wrote: "If we had a hospital here, all the sick people of the country and all the old people would be there. If a monastery like Dieppe were in New France, the charity of the Sisters would do more for the conversion of the savages than all our journeys and all our sermons."

In response to this appeal, the Duchesse d'Aiguillon, niece and heiress of Cardinal Richelieu, lady-in-waiting to Queen Marie de Médicis, resolved to establish a hospital in New France. The Duchesse and Richelieu together gave 22,000 livres for this purpose.

They obtained in 1637, from the Company of One Hundred Associates,

a concession of eight arpents of land in Quebec for a monastery, and a fief of sixty arpents called Ste. Marie, outside the settlement. Six workmen were immediately sent from France with orders to clear the land and prepare for building.

Under the guidance of her spiritual adviser St. Vincent de Paul, the Duchesse d'Aiguillon proceeded to the Hotel Dieu at Dieppe. This institution had been founded in 1155; it was controlled exclusively by the Sisters of St. Augustin, the oldest purely nursing order of nuns in existence; they had rigid rules, were entirely responsible to the clergy, and were practically cloistered.

From this Community three young nuns were chosen by ballot to sail to New France to open a Hotel Dieu under the direction of the Jesuits. The Sisters were to be called "Hospitalières de la Miséricorde de Jésus."

On the morning of the 4th May, 1639, some Ursuline nuns from Tours, with Madame de la Peltrie, joined the Hospitalières at Dieppe. They, too, were coming to New France. Together the Communities attended Mass that day and said farewell to their native land, and together they embarked for the New World.

After an eventful voyage, they reached Quebec on the 1st August. At the water's edge the entire populace, with Montmagny, the Governor, met the Sisters. The Hospitalières, who take precedence of all other communities, stepped ashore first, followed by the Ursulines and Madame de la Peltrie, their Canadian foundress. The little procession walked up the hill (now Mountain Hill) to the Church of Notre Dame de la Recouvrance (burned 1640), where a thanksgiving service was held. The Hospitalières were received into a house in the Upper Town, owned by the Company of One Hundred Associates, and the Ursulines walked back down the hill to take shelter in a rude building on the wharf, where they had landed.

The next day the Sisters inspected their land. The workmen, who had been sent from France months before, had not arrived; the land was swampy and overgrown with brushwood; to clear it and erect a building before winter would be impossible. Therefore, they decided to remain where they were already housed, and they accordingly set out such stores and furnishings as were available.

Hardly were their beds set up, than the Indians, among whom small-pox was prevalent, arrived in such large numbers that temporary sheds and wigwams were put up for them around the nuns' house. The mortality among them was great. The disease increased. Winter, with all its hardships, was upon them. Water was no nearer than the river below the cliff; for meat they were dependent upon *l'original* (moose), which

the Indians brought in from the hunt. Clothing there was none. The dead Indians' furs were kept to cover the sick. Finally, all three nuns succumbed to illness, and the Jesuits had to take their place in caring for the sick. Smallpox raged throughout the cold weather, and every disease incident to filth followed. To add to the difficulties of the Sisters, the Indians became troublesome and dissatisfied, and called the temporary hospital "the House of Death."

Towards Spring, finding the hills too steep to carry up their canoes, the savages removed themselves to Sillery, three miles distant. When in their own villages they found the smallpox had carried off even more victims than in "the House of Death," they returned, penitent, to beg the Sisters to remove also and take up their abode in a house near Sillery, which had been erected by Noël de Bruyard, a Knight of Malta. The Hospitalières decided to await the will of their foundress in this matter. At this crisis, however, the temporary hospital was mysteriously burned, so forcing the nuns to avail themselves of the offered shelter at Sillery. Here they attended the needs of the sick and the aged and taught the Indian children.

The next Winter there was so much scurvy that their house and neighborhood was again over-crowded with the sick, and even the chapel was filled. In visiting filthy Indian wigwams, the Sisters' white habits became hopelessly soiled, and they obtained permission to dye them with butter-nut juice.

While these Quebec nuns were working out a perilous existence, strange things were happening in France. At La Flèche, in Anjou, dwelt one Jerome le Koyer de la Dauversière, receiver of taxes. One day, while at his devotions, he heard an inward voice commanding him to become the founder of a new order of hospital nuns; he was further ordered to establish on the island called Montreal, in Canada, a hospital or Hotel Dieu, to be conducted by these nuns. But Montreal was a wilderness, and the hospital would have no patients. Therefore, in order to supply them, the island must first be colonized. Dauversière was greatly perplexed.

Again, there was at Paris a young priest, Jean Jacques Olier, afterwards widely known as the founder of the Seminary of St. Sulpice. He was praying in the ancient church of St. Germain des Près, when, like Dauversière, he thought he heard a voice from heaven, saying that he was destined to be a light to the Gentiles, that he was to form a society of priests and establish them on the island called Montreal, in Canada, for the propagation of the true faith. While both he and Dauversière were totally ignorant of Canadian geography, they suddenly found themselves "in possession, they knew not how, of the most exact details

concerning Montreal, its size, shape, situation, soil, climate and productions."

They met one day at Meudon, near Paris, as if by a miracle, ecstasically embraced like old friends, called each other by name, and took a walk in the forest nearby to communicate the details of their visions and to suggest plans for their fulfilment.

They proposed to found at Montreal three religious communities:—one of secular priests, to direct the colonists and convert the Indians; another of nuns to nurse the sick, and a third of nuns to teach the Faith to the children, white and red.

But, first, they must make a colony, and to do so must raise money. Olier had pious and wealthy penitents; Dauversière had a friend devout as himself and far richer, who, anxious for his soul and satisfied that the enterprise was of God, was eager to bear part in it. Olier soon found three others; the six together formed the germ of the Society of Notre Dame de Montreal.

Among them they raised the sum of seventy-five thousand livres (equivalent to about as many dollars at the present day), and then they secured the title to the Island of Montreal.

The title assured, they took steps to put their plans into operation. First, they would send out forty men to take possession of Montreal, entrench themselves and raise crops; then they would build a house for the priests and two convents for the nuns. Meanwhile, Olier was to inaugurate a seminary of priests, and Dauversière to form a community of nuns in France.

The company was soon formed. It was composed of forty-five devout men and women as patrons of the colony, which was to be consecrated to the Holy Family, and to be called Ville Marie de Montreal. To act as its Governor and as the representative of the Association, a Christian knight and soldier was selected, Paul de Chomedey, Sieur de Maisonneuve.

In the Spring of 1641, Maisonneuve and a small group of strong and courageous men gathered at Rochelle to sail for New France. They were joined by Jeanne Mance, with her maid-servant and the wives of two of the sailors. Miss Mance was then thirty-five years of age. Her father, a merchant of Nogent-le-Roi, had been dead a year, and she was now casting about to see by what means she could put into execution her determination, taken long since, to cross over to New France to engage in the work of a pioneer. She had not heard of the new colony of Montreal, but one of Le Jeune's letters had found its way into her hands, and she, like all devout ladies of France, was fired with ambition to minister in some way to these New World barbarians.

After a tedious voyage across the Atlantic, the new Company arrived at Quebec in August, 1641. The lateness of the season caused them to abandon the hope of reaching Montreal that year, and they were obliged to spend the winter at Quebec. They proved to be both unexpected and unwelcome guests to the Quebec colony.

They were given shelter for the winter by Monsieur Puyseau at Sillery, and we read of Mlle. Mance plodding to the town, five miles away, to visit Mme. de la Peltrie at the Ursuline Convent, which, by this time, was established on its present site.

On the 17th of May, 1642, a pinnace, a flat-bottomed boat, moved by sails, and two row-boats, approached Montreal. All on board raised in unison a hymn of praise. Montmagny, the Governor, was there to deliver the Island, on behalf of the Company of One Hundred Associates, to Maisonneuve, representative of the Association of Montreal. Here, too, were Monsieur Puyseau and Father Vimont, Superior of the Missions; for the Jesuits had been prudently invited to accept the spiritual charge of the young colony. Madame de la Peltrie, who hoped to establish a branch of the Ursulines in Ville Marie, was also a member of the party.

The scene is thus described by Parkman: "Maisonneuve sprang ashore and fell on his knees. His followers imitated his example; and all joined their voices in enthusiastic songs of thanksgiving. Tents, baggage, arms and stores were landed, and an altar raised.

Now all the company gathered before the shrine. They kneeled in reverent silence as the Host was raised aloft, and when the rite was over the priest turned and addressed them. . . . Then they pitched their tents, lighted their bivouac fires, stationed their guards, and lay down to rest. Such was the birthnight of Montreal."

"In the morning they fell to their work, Maisonneuve hewing down the first tree, and laboured with such good will that their tents were soon enclosed with a strong palisade and their altar covered by a provisional chapel, built in the Huron mode, of bark. Soon afterwards their canvas habitations were supplanted by solid structures of wood, and the feeble germ of a future city began to take root." Mme. de la Peltrie, finding no scope for her project, returned to Quebec.

Some time elapsed before the Iroquois discovered Ville Marie, but at length ten fugitive Algonquins, chased by a party of them, made for the friendly settlement as a safe asylum. "From that time forth the colonists had no peace; no more excursions for fishing and hunting, no more strolls in the woods and meadows." The men went armed to their work and returned at the sound of a bell, marching in a compact body prepared for an attack.



In August, 1643, d'Aillebout arrived from France, bringing news of an "unknown benefactress," who had given 42,000 livres for the building of a hospital. This "unknown" later turned out to be Madame Bullion. It was true that a hospital was not needed; no one was sick at Ville Marie, but the colony had been established in order that a hospital might be founded.

The hospital, therefore, was built on the street afterwards called St. Paul Street, surrounded by a palisade, and part of the garrison was detailed to defend it. The building was sixty feet long and twenty-four feet wide, with a kitchen, a chamber for Mlle. Mance, others for the servants, and two large apartments for the patients. It was amply provided with furniture, linen, medicines, and all necessaries, and had also two oxen, three cows, and twenty sheep. A small oratory of stone was built adjoining it. The enclosure was four arpents in extent.

There, on October 8th, 1644, Miss Mance took up her abode and awaited patients. Soon there was no lack of them, for blood and blows and scalps were rife at Montreal. The woods were full of Iroquois, and when not caring for wounded Frenchmen, Miss Mance was kept busy by the wives and children, who went to the hospital for refuge while the men fought the savages.

At Ville Marie it was usually dangerous to pass beyond the ditch of the fort or palisades of the hospital. "Sometimes a solitary warrior would lie concealed for days, without sleep and almost without food, behind a log in the forest or in a dense thicket, watching like a lynx for some rash straggler. Sometimes parties of a hundred or more made ambuscades nearby and sent a few of their number to lure out the soldiers by a petty attack and a flight. The danger was diminished when the colonists received from France a number of dogs, which were trained to recognize the Iroquois and give the alarm. Then the nuns rang the belfry to call the inhabitants together.

The little colony of Ville Marie was not very prosperous at first. By 1648 there were forty houses and two hundred and fifty persons. Maisonneuve and Mlle. Mance constituted its sole vitality. When funds and interest flagged, it was Mlle. Mance who went to France to stir up the zeal of the Company. There, in 1647, we shall leave her for the present.

By 1648 the Jesuits had pushed their way as far as Sault Ste. Marie, and established a Mission for the Hurons. There they built a hospital, to which Indian women, as well as men, were admitted. We find no mention of nuns as nurses. The hospital was destroyed, within the year, by the Iroquois, who burnt the mission station.

During this time several of the Quebec nuns had died, and others from France had augmented their numbers. After five years at Sillery, the constant Indian attacks forced them to abandon that site and take shelter within the city while they put up a building on their own land. Workmen were scarce, and then, as now, not too expeditious. So the nuns themselves, aided by two lay brothers, dug the foundations and carried water to mix clay. Help, in the shape of workmen, finally came from France.

By 1646 both monastery and chapel were built. The nuns were at last under their own roof on the site they have occupied ever since, and they then resumed their white habit—never to give it up again.

In this year the Hotel Dieu gave relief to forty-six French and one hundred and twenty Indians.

Soon this building was too small. In 1658 a larger one was opened, and the following year the Hospitalières extended hospitality, on his arrival from France, to Monseigneur de Laval, who, in 1674, became the first Bishop of Quebec.

Throughout 1660 Quebec was besieged by the Iroquois. Both Hospitalières and Ursulines were obliged to shelter at night in the College of the Jesuits.

The year 1665 saw the arrival of the first regular troops in Canada—the Carignan Regiment. With them came ship fever. The Hotel Dieu received over one hundred sick soldiers in one day. Huguënots were numerous among these troops, and to see them die without professing the true faith was one of the greatest trials of the Sisters.

By 1690 the population of Quebec numbered 1,400 persons, and “there was a sufficiency of doctors, notaries, and architects.”

On October 10th, in this year, the community was rudely disturbed. A fleet under Phipps was anchored in the harbor. Frontenac was recalled from Montreal. His presence quieted the panic, but the bombs of the invaders rattled in the city. Twenty-six shells were picked up in the hospital courtyard in one day. Soldiers came from all over the colony. They took up the floors of the hospital to build city fortifications. The well-known response of Frontenac to Phipps’ messenger finally saved the situation:—“Go, tell your master I will answer him from the mouth of my cannon!” The execution of this threat saved the day. The fleet sailed away on October 21st.

We leit Mlle. Mance, in 1647, in France. She visited Dauversière at La Flèche, where he had inaugurated the Sisterhood of St. Joseph, and where the first nuns had, in 1644, taken their vows. She saw also the

"unknown benefactress," and obtained from her financial aid. Then she returned to cheer the sinking hearts of the colony.

Maisonneuve, in 1654, went to France and returned with increased funds and one hundred workmen. This year the Hotel Dieu was rebuilt.

In 1657 Mlle. Mance fell on the ice and broke her arm, which was set by the Surgeon Bouchard, with such poor result that it remained useless until the following year, when she again went to France and was miraculously healed by touching the casket containing the heart of Monsieur Olier.

The return voyage was made on the St. André, which had served two years as a hospital ship. With Mlle. Mance were three priests (Sulpiciens), and six nuns of the Order of St. Joseph from La Flèche, a result of the scheme devised fifteen years before by Olier and Dauversière during their walk in the woods of Meudon. Three of the nuns were to start a school and three were hospital nuns, one of whom was skilled in pharmacy.

The St. André was infected with ship fever. Many of the Company died on the voyage, and were buried at sea; nearly all fell ill. When the vessel reached the port of Quebec, Laval saw no necessity for a new order of nuns in Canada, and detained them. After much bickering, they received permission to proceed to Montreal, the journey occupying fifteen days. In the meantime they had infected Quebec with typhus.

At Montreal the nuns were received in a room over the hospital, twenty-five feet square, containing a closet for stores and clothing. The room was made of planks; after a storm the snow was removed with shovels, and their coarse brown bread froze on the table before them.

Up to the time of the arrival of these Sisters, Mlle. Mance, with three servants, had taken entire charge of the hospital. She now gave over the care of the sick to the Sisters, remaining herself Directress of the Institution.

For years they suffered greatly from poverty and hardships. The money given by Mme. Bullion had been entrusted to de la Dauversière for investment. He proved unfaithful to the trust, and so the community was reduced to extreme want. Poverty and sickness were not the only trials of this heroic Sisterhood. In 1661 the Iroquois became so troublesome at Montreal that the inmates of the Hotel Dieu had to take shelter in the fort.

Approaching the shore, where the City of Montreal now stands, one would have seen, about 1670, a row of small compact dwellings, extending along a narrow street, called St. Paul Street, parallel to the river. On a hill at the right stood the windmill of the Seigneur, built of stone

and pierced with loop-holes to serve in time of need as a place of defence. On the left, in an angle formed by the junction of a rivulet with the St. Lawrence, was a square bastioned fort of stone. Here lived the Military Governor appointed by the Seminary and commanding a few soldiers of the Regiment of Carignan. In front, on the line of the street, were the enclosure and buildings of the Seminary, and, nearly adjoining them, those of the Hotel Dieu or hospital, both provided for defence in case of an Indian attack. In the hospital enclosure was a small church opening on the street. In the absence of any other it served the whole settlement.

And so the Hotel Dieu played its part in the development of the colony. Jeanne Mance died in 1673, having bequeathed her heart to the chapel. She is described as a "woman of sound sense, excellent judgment and wise sympathy." Her name is revered to-day in the house she founded, and her good deeds are recorded in the history of New France.

In Montreal another institution was established in the year 1688 by the Superior of the Sulpiciens. It was called the General Hospital, and was built on St. Normand Street, where is now the Customs House. It was in charge of an Order of lay brothers. For a time prosperity reigned, but fifty years after its foundation it was in a state of ruin.

In 1701 was born a young Canadian woman, afterwards known as Mme. d'Youville, who was destined to repair the fortunes of this fallen house. She began her life's mission when a young woman by mending clothes and visiting the poor in the General Hospital. In 1747, with three other ladies as helpers, she undertook the charge of the hospital.

Madame d'Youville at first met with great opposition, but overcame all obstacles, and, in 1745, receiving Episcopal sanction and rule, established a new order of nuns, who adopted a grey and black habit.

After this we find the General Hospital spoken of as the Hospital of the Gray Nuns.

Mme. d'Youville died at the age of seventy-one. The Order of Nuns founded by her has spread throughout America. They are usually called Sisters of Charity or Grey Nuns.

It was stated previously that the Recollets in Quebec, in 1621, had built their convent on the banks of the St. Charles. This property was purchased in 1692 by Monseigneur St. Valier (who, in 1688, had become the second Bishop of Quebec), and was given by him to some nuns from the Quebec Hotel Dieu to found what was called the General Hospital of Quebec. It was described as the finest building in all Canada. Here, in 1713, St. Valier took up his abode, and here he died some years later.

In 1717 a separate building was erected for the insane in connection with the Quebec General Hospital. This is the first reference to any special care for the insane in Canada. In 1743 a new and larger hospital building was erected, and throughout the dangers and epidemics of the country the doors of the General Hospital were ever open.

In the years 1776 and 1777, nine hundred died in this hospital of ship fever.

At Three Rivers, in 1697, Monseigneur St. Valier, out of his own personal property, founded, "in perpetuity," another Hotel Dieu, with six beds, for indigent poor, and gave it into the care of the Ursulines. This hospital also shared in the epidemics and misfortunes of the country.

Port Royal (now Annapolis) was founded by Champlain in 1604, and in 1629 became the earliest garrison in Acadia. From the earliest days of its settlement there was a hospital outside the fort, called St. Jean de Dieu. Haliburton states that in 1744 it was the most imposing building in Annapolis. It has long since disappeared.

Originally the territory known as Canada consisted of the Provinces now called Quebec and Ontario. Acadia consisted of Nova Scotia and New Brunswick, with some adjacent land, and the rest of the country was known as the North West. Some fifty years before Canada was finally ceded to the British, Acadia had been conquered by Nicholson (1710), and formally transferred to the British Crown in 1713 by the Treaty of Utrecht, when Cape Breton was returned to the French. Subsequent to Utrecht the French built a fort at Louisburg, Cape Breton.

The original plan of the fort included a hospital, to be attended by nuns like the hospitals at Quebec and Montreal, but in 1716 five Brothers of Charity of St. Jean de Dieu, came out from France and endeavoured to establish a hospital at Dauphin (now St. Anne's), but soon removed to Louisbourg. The Brothers filled the offices of superior, surgeon, dispenser, nurse, and chaplain, respectively.

After the final occupation of the British the old hospital continued for a while, but the oldest inhabitant to-day in Cape Breton remembers it only by name.

These several institutions constituted the hospital world of Canada during the French régime. The annals of all of them are replete with accounts of conflagrations, epidemics, and sieges. The Hotel Dieu at Quebec was twice burned, the last time in 1755, when nearly all the original documents were destroyed. The Montreal Hotel Dieu was destroyed by fire in 1695, 1721, and in 1734. The General Hospital of

the Grey Nuns in Montreal was burned in 1745 and 1765, and the Hotel Dieu at Three Rivers in 1806.

Scurvy and smallpox were prevalent in the early days of the colony. There seem to have been distinct exacerbations of the smallpox in 1703, 1732, 1733, and 1755. Typhus came with almost every ship. Specially violent outbreaks took place in 1658, 1665, 1685, 1756, and 1758.

A plague, called the "Disease of Siam," made its appearance in 1711, 1718, and 1740. It is supposed by some to have been bubonic plague, others believe it to have been an infectious form of meningitis. The deaths from this cause were many. In short, every condition caused by filth, poverty, and hardship was with them in those early days, and many times the young colony was nearly wiped out.

During the first fifty years there seems to have been a scarcity of doctors, particularly at Montreal, though in Quebec, from the very beginning, the colony was never without medical men. Two among the many are particularly worthy of mention—Dr. Gauthier, who discovered the merits of the winter-green plant, which bears his name, "*Gaultheria Procumbens*," and Michel Sarrazin, who was noted as a surgeon and whose special study of animals and plants is even to-day regarded as authoritative.

On the 30th of July, 1759, at Quebec, the entire community of the Hotel Dieu and Ursuline Convents, with the exception of seven nuns, were installed, with beds and provisions, inside the walls of the General Hospital. The British, under Wolfe, were besieging the city. For two months, until the siege was raised, this institution sheltered over eight hundred persons.

An interesting story is told in this connection:—"One of Wolfe's officers was wounded in a skirmish preliminary to the Battle of the Plains. He was picked up by a French soldier and taken to the General Hospital. Two days later, the French sent an officer with a flag of truce to the British lines, requesting that the effects of the British officer be sent to him at the hospital. At the same time Indians gave an account of his rescue and condition. Wolfe was much moved, and sent £20 to the French soldier by whose kindness his captain had been saved. Two days later, another flag of truce came from the town, the bearer of which returned the money to Wolfe, as the Marquis de Vaudreuil declined to accept money on behalf of his soldiers who simply carried out the order given to them. Wolfe took advantage of the opportunity to address a letter to Mme. de Ramesay, Directress of the General Hospital, thanking her for the attention paid to the wounded officer, and assuring her that if fortune favoured his arms he would extend his protection to her and

to the community. This promise was faithfully carried out, when, three weeks later, the British entered Quebec." (Dr. Doughty in "The Cradle of New France.")

In the Battle of the Plains, on the 13th of September, 1759, Wolfe died victorious, and Montcalm received a mortal wound. Shortly before his death, Montcalm penned a letter to Townshend, surrendering Quebec, and asking shelter for his sick and wounded.

General Murray was in charge within the walls, and he extended to the *Hospitalières* the courtesy promised by Wolfe, as well as rations and other necessaries.

After the capitulation was signed, a procession of black-robed nuns, slowly and with bowed heads, wended their way from the General Hospital, through St. Roch's and up Palace Hill.

The city was barely recognizable, everywhere cannon ball and fire had left their traces. Dwellings were unroofed, walls felled, roads obstructed by fallen masonry, and pavements covered with broken glass, which cracked under their feet and reflected the glowing sun.

British soldiers guarded the gates of the city, the ramparts, and public places.

The inhabitants, an unhappy throng, sad and silent, with dishevelled clothing, wandered among the burnt and plundered houses. Through this the Sisters passed to find their convents destitute, plundered—used as garrisons by the British. Their farms also were laid waste and their cattle gone.

The wounded were received in the hospitals and convents, the churches were full. Temporary buildings were erected on the Island of Orleans. For a whole year the Ursulines kept sick soldiers inside their convent walls and cared for them. Scurvy broke out, and the *Hospitalières* at the Hotel Dieu nursed the sick and wounded, patched their own torn bedding, made clothes for the soldiers, knit stockings for the Highlanders and converted the dying, all at the same time.

From Three Rivers Sisters came to help in Quebec. At Montreal they were busy caring for the wounded and for those who had scurvy.

Soon after the conquest, the Americans, unable to invade Canada in insurrection, resolved to conquer her. Two armies were directed, one upon Montreal, via Lake Champlain, the other upon Quebec. This, the fifth siege of Quebec, began early in December, 1775. Lord Dorchester was then Governor.

To add to the distress of the people, smallpox broke out amongst the inhabitants as well as the soldiers, and again the services of the nuns

were taxed to the utmost. During the bombarding the nuns took refuge from the shells in a vault of their monastery. In spite of the death of Montgomery the siege continued until spring, when the Americans retired before the superior forces of the British.

For a period of twenty-five years the British troops were garrisoned within the walls of the Hotel Dieu. It was not till 1784, when the British fortifications and barracks were in readiness for the military, that the much-trying nuns were left in possession of their own monastery.

Three Rivers also played an important rôle in 1775. American soldiers, afflicted with scurvy, were received into the Hotel Dieu—so many that they filled the chapel. To this day may be seen in the convent American bills issued to the nuns, which, after the war, were not redeemed by the United States. The history of the Hotel Dieu of Three Rivers proudly states that, during this episode, a Company of Irish soldiers lined up before the convent and cheered the Ursulines.

In 1776 the Americans, under Wooster, had possession of Montreal and were marching to Three Rivers. Hearing that the English were in possession at Three Rivers, Wooster fled to Sorel, leaving four officers at the Hotel Dieu.

On the 8th of June, one and a half miles from town, a battle between seven thousand English and two thousand Americans was fought, which lasted two hours. The wounded of both armies were brought into the Hotel Dieu. England had enlisted the services of a Brunswick regiment. Their commander, Riedesel, passed the winter of 1776 in Three Rivers, and the Hotel Dieu was used as a military hospital.

During the war of 1812, this hospital again figures in receiving the wounded and sick.

Of these pioneer hospitals, the two in Quebec remain to this day on their original site. The archives of the Hotel Dieu are among the most valuable records of the country, and the chapel contains some rare masterpieces and relics. At Three Rivers the Sisters of Providence opened a new hospital in 1864, and, as it was found best to have only one in the city, the historic Hotel Dieu of the Ursulines was closed. In Montreal the neighbourhood of the Hotel Dieu became so thickly built that it was necessary to remove to a new locality. In 1859 the present extensive premises on Pine Avenue were erected. In 1861 the remains of the deceased Sisters were removed from the old chapel to the present site. The Grey Nuns, in 1871, removed their convent from St. Normand Street to Guy Street.

With the 18th century passed the heroic age of the Canadian Nursing



Orders. The era of peace and civilization, if less romantic and picturesque, has brought for them at least less perilous times.

## II. *British Régime.*

The earliest hospital established under British rule was at Halifax.

The fort of Louisburg was taken by Pepperell in 1745, and returned by the Treaty of Aix-la-Chapelle three years later; it was then reinforced. By this time the British settlements in Acadia consisted only of a small garrison at Annapolis and a feebler one at Canseau. To offset Louisbourg, the British, in 1749, established a military station at Chebucto. To this post from Great Britain were sent out soldiers, sailors, mechanics, tradesmen, farmers, labourers, women and children—in all, 2500 persons, thus founding Halifax.

The following year, 1750, the first public hospital was established there on the 19th of March. It stood north of the present site of Government House.

In 1765 were two hospitals in Halifax called the Red and the Green. Both were situated at the water's edge. In 1766 the Red Hospital was granted to the city as an almshouse and was used as such until 1800, when it was torn down to permit of the building of Government House.

In 1834, during the cholera outbreak, Dalhousie College was used as a pest-house. It was afterwards burned and a new College building erected.

*Military Hospitals*:—Information regarding military hospitals is vague and fragmentary at the present time. There are documents extant, however, relative to such an institution at Kingston prior to 1790.

The earliest hospitals for soldiers were of course the established institutions at the various towns and posts. At Annapolis and Louisbourg there were hospitals established shortly after the garrisons, and they served not only the garrisons but any sick in those places.

Between the years 1759-1814 temporary field shelter must have been erected wherever the wounded were not near enough to the established hospitals to be taken to them. At Quebec, in 1759, the British took possession of the city hospitals and convents and erected field shelter outside the city as well as on the Island of Orleans. Shortly after the occupation of the British, garrisons were established throughout the country and by 1793 military hospitals existed in Sorel, Montreal, Kingston, York, Fort George at Fort Niagara, Amherstburg and probably elsewhere.

In 1826, a fine military hospital was built in Quebec. For some years past it has not been used, but it has recently been opened up again. In

1826 also, Colonel By erected a military hospital in Ottawa; it contained twenty beds and stood where the western block of the Parliament buildings now is.

Toronto originally had one at the corner of Yonge and Front Sts. which disappeared. A new one exists in Stanley Barracks.

Halifax has a well-equipped hospital with one hundred beds, built during the Crimea, (about 1854).

Kingston, Fredericton, St. Johns, P.Q., all have military hospitals more or less old.

*Malbaie Disease*:—In 1773 the attention of the Government was called to a horrible scourge which ravaged the country. It was called Malbaie Disease, and was said to have been brought to Baie St. Paul by a detachment of Scottish troops. Owing to the habits of the "habitants" it spread until the whole province was affected by it.

In 1786 Lord Dorchester, then Governor General, took steps to distribute remedies throughout the country by the medium of the "Curés" and "Seigneurs." The scourge was finally stamped out. The exact nature of this disease was the subject of much correspondence between the Government and medical men among whom difference of opinion existed as to diagnosis.

*Montreal General Hospital*:—After the war in Canada of 1812-1814 with the States, after disbandment of the armies in 1815, when Waterloo broke the power of Napoleon and settled the peace of Europe, there was a great influx of emigrants into Canada from Great Britain and Ireland. The winter closing of the great water-ways prevented new arrivals from going far West. Quebec, Montreal and Kingston were crowded with emigrants, starving, sick and with no means of support.

The Montreal Female Benevolent Society was founded in 1816. Through its efforts in this year, a four room house was taken on Chaboillez Square and was called "The House of Recovery." The first doctor in charge was Dr. T. P. Blackwood, a retired army surgeon. In 1812 a large house, capable of accommodating twenty-four patients was hired on the north side of Craig St. near Bleury; this was called Montreal General Hospital.

In 1820 the land on which the front of the present hospital stands was bought. (It was then called Marshall's Nursery.) The corner stone was laid June 6th, 1812, with Masonic honours and the following day the hospital was ready for use with accommodation for seventy patients. The buildings cost \$24,000. In January, 1823, His Majesty George IV. granted a Royal Charter.

In 1866 the land opposite the hospital was bought, and the old build-

ings on it removed; it has been kept as one of the "lungs" of the hospital ever since.

In 1822 a School of Medicine was organized in connexion with Montreal General Hospital, called Montreal Medical Institution. In 1828 this became the Faculty of Medicine of McGill University.

In 1832 cases of cholera were received in the hospital. In three months three thousand died of it, or one-tenth of the entire population of the city.

In 1869 one hundred and fifty cases of smallpox were treated in the Montreal General Hospital. At this time the hospital consisted of the present building on Dorchester Street, the Reid and Richardson wings, and the fever hospital. There were two house surgeons, a matron and nurses of sorts. The garret was occupied by employées and nurses. The wards were small, holding less than twelve beds. The Training School was started in 1875. (*The Canadian Nurse*, March, 1906.)

*Toronto General Hospital*:—In 1819 certain lands in York, (which town in 1834 became Toronto) were granted by the Crown, in trust to four persons, for hospital and park purposes.

In that year appeared in the Upper Canada Gazette the following notice:—"Proposals for building by contract a Brick Hospital in the town of York will be received at the Post Office, by William Allan, Esq., where a Plan, Elevation and particular description of the intended Building may be seen and any information respecting it obtained. Proposals to be given in within one month from this date. York, 24th November, 1819."

This original York hospital was built on King Street, near John Street. In 1832 it was described as "in successful operation and affording to the students daily opportunities of observing diseases and their treatment."

Later that portion of the original grant intended for the support of a hospital, was vested in three gentlemen, who were known as the Trustees of the Hospital Endowment. They were not incorporated.

In 1847 an act was passed incorporating the Trustees of the Toronto General Hospital. This act was modified in 1876 and again in 1906.

Shortly after 1847 the present main building on Gerrard Street was erected. To it have subsequently been added several additions.

*Kingston General Hospital*:—At Kingston, in 1812, a few citizens banded themselves together under the name of the Kingston Compassionate Society with the object of relieving the distress and suffering of emigrants. The Society's work increased and in 1821 was taken over by the Female Benevolent Association which, in 1833, appealed to

the Legislature of Upper Canada and obtained a grant of £3,000 towards the erection of a hospital. The contracts for the work were let in 1833, and the building was completed in 1834, but owing to lack of means the interior was unfinished until 1837 when a further grant of £500 was received from the Government.

During the rebellion of 1837-8, Colonel Bonnycastle was instructed to procure a suitable building for a military hospital, and on his advice the building recently completed for a General Hospital was used for a Military Hospital from May, 1838, to June, 1839.

In 1841, at the request of Lord Sydenham, the building was changed to some extent and the United Legislature of Canada met there until 1844. In this year the Female Benevolent Association received permission to send their sick poor to the hospital, and a small grant was made by the Legislature for maintenance.

Up to the year 1856 the building was under the control of a Board of Trustees consisting of the Mayor of the City of Kingston, Judge of the District Court, Warden of the Midland District, Sheriff of the Midland District, and three Aldermen. The first meeting of the Board of Governors under the new charter was held November 5th, 1856.

*Marine Hospitals*:—At Quebec in 1831 the Marine and Emigrant Hospital was erected at a cost of £23,000. It was intended for the reception of mariners and persons coming by sea who might be afflicted by disease. It occupied a site opposite where Cartier landed three hundred years before. It accommodated 362 patients. The corner stone was laid by Lord Aylmer, then Governor-General. Among those actively interested in the institution are found the names of Hammond Gowan, Esq., Dr. Morrin and Dr. Hall, an eminent surgeon. After the death of Dr. Hall the hospital became demoralized and its supervision was undertaken by Dr. James Douglas, a gentleman of the "old school" who had come to Quebec in 1826 after a varied medical experience in Edinburgh, London, India, the United States and elsewhere, and whose name is associated in Quebec with many medical reforms.

Dr. Douglas in his "Journal" describes the institution as follows:—  
"The Marine and Emigrant Hospital, as a school of practical surgery, was second to none on this continent. Several circumstances tended to make it so. There was a large fleet engaged in the timber trade, the ships were comparatively small, seldom exceeding 500 tons; they were loaded by the seamen, and by the hired emigrants directed by and superintended by a stevedore. There was no steam, and none of the modern appliances for hoisting in and stowing away the heavy timber, which was about the only cargo then shipped. The consequences were,

that great numbers of fractures were admitted to the Hospital, as well as many which had occurred in the crowded emigrant ships during the spring passage out."

The first medical lectures ever given in Quebec were at the Marine and Emigrant Hospital, beginning on the first of May, 1837, '38, '39. They were given by Dr. Douglas and Dr. Painchaud. Following the typhus epidemic of 1847-48, conditions at the hospital again became unsatisfactory and Dr. Douglas soon afterwards retired from active practice.

As the shipping industry passed from Quebec to other ports the hospital gradually fell into disuse. It was closed about 1878. The Canadian Government subsequently instituted a system of Marine Hospitals which includes all sea-ports.

*Quarantine*:—From 1800 to 1832 various epidemics affected localities, but none during that time seem to have invaded the whole country.

Early in the nineteenth century cholera had originated in the East; by 1832 it had reached London. With every vessel the pestilence was expected in Canada. The Government took the precaution of opening a quarantine station at Grosse Isle, thirty miles below the port of Quebec. Temporary buildings were erected. The station was under military control with military medical officers, two companies of regulars to do police and orderly work and artillery with three mounted cannon to prevent ships from passing.

On the 8th of June the cholera reached Grosse Isle. It went by leaps and bounds throughout Canada. Within three months 4,000 persons died in Quebec alone. Since then there have been four outbreaks in Quebec Province, (1834, 1849, 1852, and 1854.)

At Grosse Isle, as matters passed from Imperial to Colonial Government, military medical officers and men were replaced by civilians. The station came under the control of the Federal Government. Stations were also opened in 1832 at Halifax and St. John, N.B. Later on quarantine stations were opened at Victoria, B. C., Chatham, N. B., Sydney and Louisbourg, C. B., Charlottetown, P. E. I., and Vancouver, B. C.

*Leprosy*:—Two Norwegian sailors from a barque called the "Florida" landed in 1815 at Caraquette, Gloucester County, N. B. Later, two women living at Tracadie and Néguaak respectively, who had washed their linen, became lepers. The disease became endemic among the French settlements on the River Miramichi and the shores of the Baie des Chaleurs and in parts of Cape Breton.

In 1844 a hospital was built for these lepers on Sheldrake Island,

near the mouth of the Miramichi River. In 1849 the institution was transferred to Tracadie, N.B., and in 1868 placed in charge of the Hospitalières of St. Joseph, from Montreal. The Lazaretto was at first Provincial but at Confederation became the property of the Federal Government.

The Grey Nuns, in 1840 established a hospital called the Hotel Dieu at St. Hyacinthe, P.Q., which has since attained to large dimensions. This same Order were the pioneers in hospital work in the North West. On April 25th, 1844, three Grey Nuns left Montreal in canoes for the far off Red River Settlement. They reached St. Boniface, opposite Winnipeg, on June 21st. There they immediately took charge of the sick and established the first hospital in the North West.

In 1845 the Hotel Dieu at Kingston was founded by the Religious Hospitalières of St. Joseph from the Hotel Dieu of Montreal.

The same year the General Hospital at Ottawa had its beginnings in a frame building on the North side of St. Patrick Street near Sussex Street. It was established by the Grey Nuns from Montreal.

*Ship Fever*:—The horrors of 1847, caused by the failure of the potato crop, frightful famine and the ensuing typhus which made Ireland desolate, can never be forgotten. Hundreds of thousands fled for refuge to America, many died on shipboard while others landed on the shores of Canada only to succumb to the pestilence. Thousands died at Grosse Isle, at Quebec and at every port along the water ways. The hospitals were overfilled and temporary sheds were erected to shelter the victims. In Quebec a private hospital was opened by Drs. Douglas and Racey who anticipated the outbreak. It was on the Beauport beach and accommodated masters of vessels and cabin passengers who objected to going into crowded public hospitals.

During the outbreak this place became over crowded and consequently the "dwelling house and premises of the old breweries" at Beauport were leased. 165 cases of typhus were cared for in these buildings. Only four died. The fee charged was \$4.00 per diem.

On June 17th, at Point St. Charles hundreds were dying unaided. Three sheds 200 feet long and 50 feet wide were built. The Grey Nuns went to aid the sufferers. In the open space between the sheds lay the inanimate forms of men, women and children. More arrived day by day. Death was there in its most appalling form. On June 24th, two young nuns were stricken with ship-fever, more followed hourly until thirty lay at the point of death. Seven died. Overcome with fatigue those remaining were obliged to withdraw. Then the Sisters of St. Joseph from the Hotel Dieu took their place. In September the Grey Nuns resumed their

heroic task at the sheds and continued their charitable labours not only during 1847-48 but also later when the cholera in 1849 replaced the typhus.

At this time the only route for the transportation of emigrants to the Canadian West was by Ottawa through the Rideau Canal which had been opened in 1832. Over three thousand emigrants reached Bytown. With them the typhus.

The first patients were taken to the Grey Nuns' Hospital. Later the Government built sheds for their reception. The nuns continued to care for the fever stricken. The rate at this time paid by the Government was 12s. 6d. a week per head. (Canadian Monarchist, May 30th, 1856.)

Before the erection of the special sheds, any improvised shelter had been utilized, such as sheds, tents, or upturned boats. Three hundred died in Bytown.

The County of Carleton General Protestant Hospital was the outcome of the fever epidemic. Many desired a hospital under the control of the public, to be supported by a public subscription.

This resulted in the formation of a Board whose efforts were rewarded in 1850 by the erection of the stone building on the lot at the North West corner of Rideau and Wurtemberg Streets. The Board was incorporated in 1851. In 1854 Bytown became Ottawa. The original building, until 1875, served as the General Hospital, it was then used as a Contagious Diseases Hospital until 1903, when the city opened a new Isolation Hospital. In 1907 the old building was torn down.

Other important Canadian hospitals founded previous to 1875 were:—The General Hospital, Hamilton, 1850; General and Marine Hospital, St. Catharines, 1865; Jeffrey Hale Hospital, Quebec, 1865; General Hospital, Winnipeg, 1871; Victoria Hospital, London, 1872.

*Hospitals for the Insane:*—Little is known of the condition of the insane during the French régime, and for seventy-five years after the establishment of British rule they were cared for in almshouses and gaols.

The city of St. John, N.B., in 1835 converted a building erected as a cholera hospital into an asylum. Later, in 1848, the present St. John Asylum was opened. Next came Toronto in 1841. The old York gaol, then, recently abandoned, was fitted up and served until 1850, when the patients were transferred to the present Toronto Asylum, which for twenty-two years was the field of labour of Dr. Joseph Workman, to whom is due much of the best in the Canadian system of caring for the insane.

In Quebec, in 1845, Dr. Douglas leased the estate at Beauport consisting of the old Seigniorial Manor house built by Robert Giffard in 1634, on which estate there were large commodious stables and outhouses.

These were rapidly transformed into temporary quarters. In 1850 a special building was erected.

For twenty years Dr. Douglas laboured for the amelioration of conditions among the insane. In 1865 the asylum changed management. The Grey Nuns from Montreal, in 1893, took charge of the institution which is now their private property.

In 1847 Prince Edward Island erected an asylum, and in 1852 the Sisters of Providence took up in a small way the work which has since developed at Longue Point, a few miles east of Montreal.

In 1856, in Kingston, the stable of an old mansion was fitted up. In 1862 the present building, called Rockwood, was opened. In 1877 it became a Provincial establishment. In 1858 Nova Scotia began the creation of a system of County asylums.

London Asylum was opened in 1859 in the old military barracks at Fort Malden on Detroit River. In 1870, the present hospital at London being completed, the patients were transferred. In 1871 the first Manitoba asylum was established at Fort Garry in a storehouse of the Hudson Bay Company. It was later transferred to Selkirk. The year 1872 witnessed the birth of the British Columbia institutions in a wooden building on the Songhees Indian Reserve, outside Victoria. Later, in 1878, a new asylum was erected on the mainland near New Westminster.

The history of many new institutions and improvements for the care of the insane, as well as of the expansion and development of the hospital idea throughout this country, subsequent to 1875, does not come within the scope of this paper, and in the already extensive field I have attempted to cover it has been impossible to consider more than the merest outline.

In conclusion, I wish to express my thanks to the many who have assisted me by giving information, otherwise unobtainable, and in particular to Dr. A. G. Doughty, C.M.G., Dominion Archivist, not only for suggestions but for having accorded the privilege of access to the archives.

#### REFERENCES:

- Parkman, Francis—*The Jesuits in North America in the Seventeenth Century.*  
 Parkman, Francis—*The Old Regime in Canada.*  
 Parkman, Francis—*La Salle and the Discovery of the Great West.*  
 Parkman, Francis—*History of Montcalm and Wolfe, Vol. I, II, III.*  
*The Jesuit Relations and Allied Documents.*  
 Nutting and Dock—*History of Nursing, Vol. I.*  
 Caniff, William, M.D.—*The Medical Profession in Upper Canada, 1783—1850.*  
 Papper, Mary S.—*Maids and Matrons of New France.*  
 Laroche-Heron—*Servants de Dieu en Canada.*  
 Dionne, N. E.—*Serviteurs et Servantes de Dieu en Canada.*  
 Fallon, L'Abbé Michel Etienne—*Mémoires Particuliers pour servir à l'Histoire de l'Eglise de l'Amérique d Nord.*  
 Parker, Gilbert—*Old Quebec.*



- Doughty, Arthur George—The Siege of Quebec, and The Battle of Plains of Abraham.
- Doughty, Arthur George—The Cradle of New France.
- Doughty and Dionne—Quebec Under Two Flags.
- Casgrain, L'Abbé H. R.—Histoire de l'Hôtel Dieu de Québec.
- Casgrain, L'Abbé H. R.—Histoire de la Mère Marie de l'Incarnation, Première Supérieure des Ursulines.
- Richandeau, Abbé P. T.—Vie de Marie de l'Incarnation, Ursuline. History of The Ursulines.
- History of The Ursulines at Three Rivers, Vol. I.
- Dupuy, M. Paul—Ville Marie.
- Sandham, Alfred—Montreal, Past and Present.
- Douglas—Journal and Reminiscences.
- Ramsay, Rev. D. S.—Life of Mme. d'Youville.
- Leblond—Vie de Mlle. Marie.
- Halliburton—History of Nova Scotia.
- Gesner—History of New Brunswick.
- Canada Français, p. 595 (1889).
- Roy, J. Edmond—Histoire du Notariat au Canada, Vol. I. pp. 8 to 23, and Vol. II, p. 346.
- McCrae, John, M.D.—A Canadian Hospital of the Seventeenth Century, Montreal Medical Journal, July, 1906.
- Burgess, T. J. W., M.D.—The Insane in Canada, Reprinted from Proceedings American Medico-Psychological Association, April 18-21, 1905.
- Burgess, T. J. W., M.D.—Abstract of a Historical Sketch of Canadian Institutions for The Insane. From American Journal of Insanity, Vol. LV, No. IV, 1899.
- Birkett, Herbert S., M.D.—A Brief Account of The History of Medicine in The Province of Quebec, from 1535 to 1838. Medical Record, July 25, 1908.
- Shepherd, F. J. I., M.D., L.D. (Edin.), F.R.C.S.E. (Hon.) Montreal General Hospital—A Short Historical Retrospect. The Canadian Nurse, March, 1906.
- Abbott, Maude E. R. A., M.D.—An Historical Sketch of The Medical Faculty of McGill University, Montreal Medical Journal.
- Small, H. Beamont, M.D.—Medical Memoirs of Bytown. Delivered before the Ottawa Medico-Chirurgical Society, Nov. 5, 1903, and printed by order of the Society.
- Annuaire de l'Hôpital St. Joseph des Trois-Rivières, P. Q., 1906-07.
- Annual Report, Toronto General Hospital, 1906.
- Queen's Quarterly, 1907.
- Annual Report, Kingston General Hospital, 1906-07.
- Histoire de l'Hôpital Général de Québec.
- Archives of the Hotel Dieu at Quebec.

## REPORT ON CASES OF TYPHOID FEVER TREATED IN THE MONTREAL GENERAL HOSPITAL IN 1909.

BY

A. H. MACCORDICK, M.D., and R. E. POWELL, M.D.

During the year 1909 there were 201 cases of typhoid fever treated in the wards of the Montreal General Hospital.

Considering the general condition of the hospital patients as a whole, the complications and the mortality, the disease seems to have been of a more severe type than that in some of the previous years. It must be remembered, however, that observations on the condition of those in the hospital might tend to exaggerate the apparent severity of the disease taken as a whole throughout the city, as the epidemic being so widespread and the hospital accommodation inadequate, only the more

severe cases were admitted. 144 of these were males and 57 were females. These numbered according to the following ages:—

From 5 - 10 years	.....	22 cases
“ 10 - 20 “	.....	40 “
“ 20 - 30 “	.....	100 “
“ 30 - 40 “	.....	29 “
“ 40 - 50 “	.....	7 “
“ 50 - 60 “	.....	1 “

The total time spent in the hospital was 1020½ weeks, or an average of 36.4 days for each patient. All of these except ten at some time gave the Widal reaction, it being first found in the following order:

From the 5th to the 10th day	.....	25 cases
“ “ 10th “ 15th “	.....	123 “
“ “ 15th “ 20th “	.....	14 “
“ “ 20th “ 25th “	.....	13 “
“ “ 25th “ 30th “	.....	7 “
“ “ 30th “ 40th “	.....	1 “
“ “ 40th “ 50th “	.....	4 “
“ “ 50th “ 60th “	.....	2 “
“ “ 60th “ 70th “	.....	2 “

2 There were 65 bile cultures taken in all:—

26 of these were positive between the 5th and 10th day

8	“	“	“	“	10th “	15th “
3	“	“	“	“	15th “	20th “
3	“	“	“	“	40th “	50th “

during relapse.

13 of these were negative between the 5th and 10th day

9	“	“	“	“	10th “	15th “
3	“	“	“	“	15th “	20th “

3. The Spleen was first palpable in 90 cases in 5 - 10 days

“	“	“	“	17 “	10 - 15 “
“	“	“	“	13 “	15 - 20 “
“	“	“	“	11 “	20 - 30 “

It was enlarged but not palpable in 35 cases, and was not enlarged in 34 cases. In one case it was enlarged for the second time during relapse.

4. Rose spots were present in 116 cases.

They appeared in 68 cases from the 5th - 10th day

“	“	33 “	“	“	20th - 15th “
“	“	9 “	“	“	15th - 20th “

In 31 cases there were no spots.

In 6 cases the spots reappeared during relapse.

The average white cell count in adults was 5,400; the maximum being

12,500 and the minimum 2,000.

The average count in children below 12 years of age was 14,700.

The average maximum temperature was 104; the highest being 107 2-5, and the lowest in any one case being 101 4-5.

The complications were as follows:—

From the 5th to the 10th day.

- 1 had pleurisy.
- 1 had broncho pneumonia.
- 3 had lobar pneumonia.
- 1 had retention of urine with no apparent anatomical lesion.
- 7 had severe abdominal pain.
- 1 had acute peritonitis and was operated on for suspected perforation.
- 1 had perforation.
- 14 had bronchitis.

From the 10th to the 15th day:

- 3 had epistaxis.
- 1 had hæmorrhage.
- 1 had severe urticaria.
- 1 had acute suppurative otitis media and general septicæmia.
- 4 had incontinence of urine.
- 1 had phlebitis with recurring rigors.
- 1 had rigors and bronchitis.

From the 15th to the 20th day:

- 4 had hæmorrhage.
- 1 had retention of urine.
- 8 had acute suppurative otitis media.
- 1 had myocarditis with acute dilatation.
- 4 had lobar pneumonia.
- 1 had periostitis.
- 5 had phlebitis.
- 1 had acute cyst of the broad ligament from which a pure culture of bacillus typhosus was obtained.

From the 20th to the 30th day:

- 2 had Cheyne-Stokes' respiration.
- 1 had acute dilatation of the heart.
- 3 had broncho pneumonia.
- 2 had perforation.
- 3 had cutaneous hæmorrhages.
- 1 had thrombosis of the femoral and iliac arteries with gangrene of both legs.
- 1 had splenic infarct.
- 1 had acute appendicitis.

- 1 had pyelo-nephritis due to *b. typhosus*.
- 1 had acute endocarditis.
- 3 had cholecystitis which subsided.
- 1 had cholecystitis with seven perforations of the gall bladder.
- 10 had tympanitis.
- 4 had phlebitis.
- 15 had slight nerve deafness.
- 2 had furunculosis.
- 2 had severe diarrhoea.
- 1 had acute tonsillitis.
- 1 had acute mania following delirium.

*From the 30th to the 40th day:*

- 3 had phlebitis.
- 1 had ischio-rectal abscess.
- 2 had furunculosis.
- 3 had erysipelas, followed in one by streptococcic septicæmia.
- 1 had osteomyelitis.
- 2 had pneumonia.
- 1 had acute mastoiditis.
- 1 had acute mania (child of 12 years.).
- 1 had pulmonary infarct.
- 1 had acute otitis media.
- 1 had severe acute nephritis.

*From the 40th to the 50th day:*

- 1 had meningitis due to *b. typhosus*.
- The urine in 112 cases showed the following:  
Spec. Grav. 1008-1020.

Acid

Albumen present in small amount.

Casts present.

In 57 cases the urine was normal.

The *Erlsch* reaction was found only in 31 cases; the average time of its appearance being the 12th day.

Delirium was present in 43 cases. The average time when it appeared being the 16th day.

There were 21 deaths or 10.49 per cent. Of these

1 had Cheyne-Stokes' respiration and marked toxæmia.

6 had pneumonia.

1 had meningitis.

1 had thrombosis of the femoral arteries and gangrene of both legs.

1 had acute suppurative otitis media and general septicæmia.

1 had erysipelas and streptococcus septicæmia.

1 had hæmorrhage and renal abscesses.

6 had perforation.

1 had perforation and hæmorrhage.

2 had toxæmia.

### *Analysis of Fatal Cases.*

*Case I.*—J.G., age 21, adm. Oct. 5, in the 10th day of his disease, complaining of headache and weakness. He was extremely toxic. The pulse weak and temperature ranging from 103-105. On the 23rd day he had a small intestinal hæmorrhage, followed during the next 2 days by 9 hæmorrhages, some of which were profuse, death occurring on the 25th day.

The autopsy revealed:

Extensive ulceration of the lower third of the ileum, some of the ulcers extending through the mucosa, submucosa and muscular coats.

*Case II.*—G.M., age 25, adm. Oct. 7, on the 9th day of his illness, with headache, abdominal pain, feverishness and weakness. His temperature ranged from 103-106. Respirations 22, pulse 88. His white cell count showed 12,400 leucocytes, and a bile culture gave the *b. typhosus*. On the 16th day he developed a severe bronchitis. On the 21st day he had two profuse hæmorrhages. The breathing became markedly laboured, and on the 25th day he died.

Autopsy revealed:

Extensive hyperplasia of the Peyer's patches but only a small amount of intestinal ulceration. He had broncho-pneumonia, and the kidneys were riddled with multiple abscesses from which pure culture of the typhoid bacillus was obtained.

*Case III.*—E. S., age 26, adm. Aug. 26, on the 15th day of the disease. He had severe headache, diarrhoea and abdominal pain. He was very pale and toxic and at times was slightly delirious. The temperature ranged from 104-105. On the 21st day he was suddenly seized with sharp severe pain in the right iliac region, followed in a few minutes by rigidity of the abdominal muscles and tenderness. The pulse ran up to 104 and the temperature dropped to 96 in two hours. He was operated on and a perforation found 35 cm. from the ilio-cæcal valve. He died three days later with general peritonitis and acute nephritis.

*Case IV.*—G.J.M., age 32, adm. Oct. 4, on the 23rd day of the disease, with dizziness, headache, weakness and diarrhoea. His pulse was very weak and he showed marked degree of toxæmia.

The Widal was positive. White cells 4,000. He had rose spots, and the spleen was palpable. The urine showed albumen and casts, with

a few red blood cells. The Ehrlich reaction was also present. On the 40th day he had small cutaneous hæmorrhages over his body, and had a small hæmorrhage from the intestine. On the 54th day he was noticed to be somewhat restless and irritable, and he died on the 55th day.

Autopsy revealed:

Extensive intestinal ulceration; early broncho-pneumonia, and acute meningitis, a pure culture of bacillus typhosus being obtained from the exudate.

*Case V.*—J.T., male, age 32. Was adm. Dec. 11, in the 14th day of his disease. He had been in bed for two weeks with sore throat, weakness and feverishness. On his admission his temperature was 104. Pulse 120, and respiration 34. The spleen was palpable, and there were many rose spots. The left lower lobe was consolidated. Two days later the whole left thbrax became dull, and he developed a pleuro-pericardial friction on the left side. He died on the 18th day.

At autopsy he was found to have:

Typhoid ulceration of the intestine; left lobar pneumonia with acute pleurisy.

*Case VI.*—E.L., male, age 22, adm. Dec. 16, in the 16th day of disease, with headache, diarrhœa and weakness. Temperature 105, respirations 30, and pulse 120. He had abdominal pain and distension continuous. Shortly after admission he became delirious and very restless, requiring a watchman. On the 18th day he had a profuse hæmorrhage and lapsed into deep coma. He had given a positive culture on the 16th day, had numerous rose spots, and the spleen was palpable. On the 24th day, shortly before death, he vomited, and the abdomen became more distended, but owing to the coma no tenderness or pain could be made out.

Autopsy revealed:

Extensive typhoid ulceration; general peritonitis; perforation of the ileum 8 cm. from the ileo-caecal valve.

*Case VII.*—M.M., male, age 30. Was adm. on Dec. 8th, in the 4th day of his illness. He had severe headache, pain in his left side, and was very toxic. On admission a blood culture was positive. He had numerous spots, but the spleen was not enlarged. The temperature was 104. The white cells numbered 11,407, and he had incontinence of urine. He developed consolidation of the left lower lobe, gradually became comatose, and died on the 16th day.

No autopsy was obtained.

*Case VIII.*—A.O., age 30, male, adm. April 20, in the 14th day of his illness, subsultus, weak pulse and bronchitis, which later develop-

ed into broncho-pneumonia. The spleen was palpable, and he had numerous rose spots. Temperature 106. Pulse 100. Respirations 30. He had an alcoholic history. He gradually sank and the breathing became Cheyne-Stokes in character before death.

Autopsy revealed:

Extensive ulceration of the intestine: broncho-pneumonia and acute pleurisy.

*Case IX.*—C.S., a Chinaman, aged 26, adm. May 9th, in the 14th day of his disease, with headache and weakness. On the 16th day he became delirious, the neck stiff, and the knee jerks increased. The Widal was positive on admission, and the white cells 7,000. The delirium became more marked, and he died on the 19th day.

Autopsy revealed:

Typhoid ulceration of the intestine and congestion of the lungs.

*Case X.*—J.C., male, age 25, adm. Sept. 15, on the 5th day of the disease, with rose spots, enlarged spleen, and a marked toxæmia. On the 10th day a positive culture was obtained, and on the following day a positive Widal. Temperature 104; white cells 2,500. On the 25th day he had severe abdominal pain and tenderness in the right iliac region. He was operated on and a perforation found 10 cm. from the ileo-cæcal valve.

The urine showed a fairly large amount of albumen, with granular casts and red blood cells. He gradually sank and died on the 40th day.

*Case XI.*—W.H., age 28, adm. January 24, 1909. Positive Widal. White count 4,200.

January 26.—Had convulsion, jaundice. Tenderness over gall bladder. Retention of urine. Abdominal distention.

February 4th.—Right basal pneumonia. Acute delirium. Jaundice. Slight hæmorrhage from bowels.

February 9th.—Condition much worse. Right cardiac enlargement. Right lower lobe completely involved. Pulse barely palpable. Patient died in afternoon.

No autopsy.

*Case XII.*—J.J., age 20, adm. March 16, 1909. Died March 26, 1909. Admitted with typical typhoid. March 21st, developed cough, dyspnoea and evidence of lobar pneumonia at right side, rusty sputum. White count 4,000. Involvement of lung crept up to apex on right, and patient became cyanosed. Dilatation of right heart. Death from cardiac failure.

Autopsy showed right lung pneumonic; healing ulceration of ileum; acute nephritis; myocarditis.

*Case XIII.*—H.J., age 31, adm. Sept. 12th. Typical typhoid. Ab-

dominal condition good. Four days after admission had sudden sharp abdominal pain. Distension, obliteration, liver dulness. Leucocyte count elevated from 5,060 to 9,000.

Operation on the 21st day—two perforations, one old, walled off against right posterior wall of abdomen—another fresh, both about 2 inches from cæcum. Bowels gangrenous—4" resected—anastomoses done. Patient left table in fair condition. Died September 21st of general peritonitis—fresh ulceration around last perforation. Anastomoses perfect.

*Case XIV.*—F.W., adm. 3rd week. Very toxic. Oct. 14, 1909. Three severe hæmorrhages. Very severe pain. Patient pulseless and toxic. Perforation diagnosed. Pneumonia of left base. Same evening patient had well marked sign of peritonitis. Condition would not permit of operation.

*Case XV.*—M.S., age 50, adm. in 2nd week of typical typhoid. On 22nd day gangrene of right foot began with great pain and tenderness of leg. By October 22 condition had spread to thigh, and right femoral was pulseless. Temperature very intermittent. Maximum 104. No rigours.

Attempt to remove thrombus from femoral unsuccessful on October 22nd.

November 5th.—Right leg amputated. November 7th.—Septicæmia. Temperature 103. Pulse 136.

November 8th.—Gangrene of left foot. Died November 10th with gangrene of left foot and leg. Post-mortem showed thrombosis of the femoral and external iliac arteries.

*Case XVI.*—A. P., age 27, adm. 21st day of disease. Ran very severe course. Hæmorrhages very severe 3rd week. Congestion of both lungs. Acute delirium and death from toxæmia.

No post mortem obtained.

*Case XVII.*—A.D., age 17. Ill for 11 days. Delirious. High temperature. Typical typhoid. On admission very delirious. Dying of severe toxæmia. No complications.

Autopsy showed: ulceration of ileum and cæcum; infarction of spleen; necrotic mesenteric lymph nodes.

*Case XVIII.*—W.L., age 9. Ill for 11 days. Marked delirium on admission, with white count 10,000. Had several severe rigours. Acute suppurative otitis media.

Patient became weak—comatose. Died 15th day of disease.

Autopsy showed: double suppurative otitis media. Brain and membranes normal. Cloudy swelling of all organs.

Death due to severe toxæmia.



*Case XIX.*—H.E., age 32. Ran very mild course. Small hæmorrhages on 25th day followed in 6 hours by signs of perforation.

Operation revealed perforation 12 inches from cæcum. Pelvic peritonitis. Patient died in 24 hours.

Autopsy showed : sutured wound of bowel well closed; no leakage; general peritonitis.

*Case XX.*—G.A., age 24, adm. Nov. 15th. Mild typhoid. Had a relapse on 32nd day. Severe hæmorrhage from bowels 38th day.

Developed erysipelas of face and streptococcie septicæmia shown by blood culture.

Patient died after severe collapse on December 13th.

*Case XXI.*—D.C., age 24, male, adm. Jan. 11, 1909. Typical typhoid—7th day of disease, temperature maximum 102½. Had acute abdominal pain on the morning of January 13th, 1909,—9th day of disease. Developed rigidity of lower right abdomen and great tenderness. Operated on within 24 hours. Progress good for ten days, abdomen soft, no complaints. Temperature remittent, 99°-102°.

Developed acute suppurative parotitis on January 26th (22nd day), and abdomen showed signs of abscess formation with free drainage through site of operation wound.

On January 28th, incision was made in right parotid and a great deal of pus and blood escaped: culture. Condition rapidly became worse and patient died on February 1st (24th day).

Autopsy showed: typhoid: acute suppurative parotitis; general peritonitis.

On considering these figures, we find the majority of those afflicted were young adults at the most important time, at least for themselves, of their lives, and at the time when many left wives and families with out support, often having had to give up situations.

On multiplying the total number of days in the hospital, 7,143, by \$1.75, the amount it costs to keep a patient in the ward for one day, we find a total sum of \$12,500.00 expended.

We see, that in 26 cases we obtained the typhoid bacillus by the bile culture between the 5th and 10th days, and in 8 cases between the 10th and 15th days, making a total of 31 positive cultures before the 15th day or before the Widal usually appears.

The bile medium is made by using 2-3 ox bile and 1-3 bullion with 1 per cent. glucose.

Our method has been to insert the needle of a small glass syringe into the median basilic or cephalic veins, draw off about 1 cc. of blood, expel all but a few drops into a bile tube, and with the remaining

drops (which are an accurate sample of the patient's blood) we did a white cell count and filled a Widal tube.

After 6 to 10 hours incubation of the bile tube, transplants are made on agar slants and the resulting growth, if any, is examined for typhoid. The length of time taken for a definite report being 24 to 36 hours.

The culture is also of extreme value to distinguish a relapse in the disease from other complications which may arise. When we see the death rate to be 10.49 per cent., and when we consider the list of complications, the permanent disabilities which must necessarily follow, and the enormous cost in time and financially, surely our epilogue must be that there is an evil at work in our city against which the most drastic measures should be taken.

### A CASE OF EUROPEAN HOOK-WORM DISEASE—"ANKYLOSTOMA DUODENALE."

BY

RALPH E. POWELL, M.D.

S. F., male, aged 29, admitted to the Montreal General Hospital December 18th, 1909.

*Complaints.*—"Sick in stomach and chest."

*Personal History.*—Born in Italy where he has lived as a farmer, working with bare feet, until four years ago. Came to Canada in 1905, and has been here ever since. No previous illness. Works as a labourer.

*Family History.*—Negative.

*Present Illness.*—Began in February, 1909, with blood streaked expectoration, no cough. Had severe pain across epigastrium and over right costal border. Severe night sweats. Bowels were very constipated. This condition kept up until October, 1909, when he became so weak that he stopped work. He attended the outdoor department on one occasion in October and was then lost track of; no diagnosis was made at that time. Symptoms remained constant. Patient had lost 20 pounds from February until December. Pain persisted. Weakness and loss of energy became exaggerated and patient was admitted on December 18th.

*Condition on Admission.*—T. 98°, P. 64, R. 20. Small, well developed Italian. Intelligence very low. Evident loss of weight, though patient is still well nourished, weighs 125 lbs. Mucous membrane pale.

*Respiratory System.*—Bloody muco-purulent expectoration—no cough. upper respiratory passages are clear. Thorax is symmetrical in outline. Expansion poor, 2 cm. Left lung is normal. Right lung shows normal fremitus. Resonance is impaired below level of 9th spine behind.

Breathing is vesicular but accompanied at extreme apex and base by numerous crepitant rales.

*Circulatory System.*—Is normal except for moderate anæmia. Red cells 4,300,000. White cells 14,200. Hamoglobin 70 per cent.

*Digestive System.*—Is negative except for severe abdominal tenderness over upper region and accentuated over region of pylorus. (No occult blood in stools).

*Genito-Urinary System.*—Is normal.

Patient ran a slight febrile course for one month, max.  $99\frac{1}{2}^{\circ}$ , when temperature became normal. Von Pirquet cutaneous tuberculine test negative. Subcutaneous test up to 4 mgm. was negative. Sputum did not contain tubercle bacilli. Physical signs of chest became normal.

*February 9th.*—Appetite was very poor. Patient had lost five pounds since admission. Intelligence became even lower than on admission. There was intensely stupid expression about the face and a desire to sleep most of the time. The anæmia was progressive.

*On February 9th* red cell count was 4,000,000, white cells, 18,200, hamoglobin 65 per cent. Differential count showed:—Polymorphonuclear 40 per cent., lymphocytes 13.2 per cent., large mononuclear 10.2 per cent., mast cells .8 per cent., eosinophiles 30.3 per cent., transitional and unclassified 5.5 per cent.

Stools showed occult blood with benzidene.

The eosinophilia pointed to some parasite disease and to that end the stools were examined and the ova of Hook-worm were found. The size favouring the American species 33-63 microns.

*On February 14th.*—Two doses of thymol were given in two hours followed by saline purge. Severe hook-worm of European type or *Ankylostoma Duodenale* were recovered. The males measuring 9-10 cm. long. The females 13-14 cm. long. The buccal cavity contained the characteristic double set of turned teeth. The ovula of the female was situated in the caudal third of the worm. The caudal extremity of the male shows the typical forked dorsal ray.

Unfortunately the result of the anthelmintic treatment could not be followed as the patient became suspicious of the wholesale attention he was receiving. He returned two months after discharge having gained ten pounds and had no complaints. He could not, however, be induced to remain.

I have to thank Dr. Wolbach, pathologist of the Montreal General Hospital for his assistance in finding and diagnosing the species of ovum and parasite in this case.

## "CLIMACTERIC HÆMORRHAGES."

BY

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Gynecological Pathologist at Royal Victoria Hospital.

My subject for this paper has been entitled "Climacteric Hæmorrhages." Loosely taken, it might be thought to include all the diseases which lead to unnatural hæmorrhages at the time when menopause might be expected. Strictly speaking, it applies only to that disease which makes itself manifest at the climacterium, and is known under the varied nomenclature of chronic metritis, fibrous uteri, fibroid uterus, hypertrophied uterus, hæmorrhagia myopathica, etc., etc.

It is with the subject in this restricted sense that I wish to deal to-night. It is one that has interested me for years, one upon which I have spent a few years of research in the hope of eventually finding a truly scientific and plausible explanation for its obscure etiology and symptomatology. It is to this that most of my paper will necessarily be devoted, and I trust, Mr. President and Gentlemen, that you will pardon me if, at times, portions of my paper may take on something of the nature of the didactic.

There is probably no disease in gynæcology that is so little understood, both by general practitioner and gynæcologist, as that of chronic metritis. The reason, perhaps, lies in the fact that clinically it is difficult of diagnosis and that many textbooks omit it completely. In the first five recent textbooks that came to hand a few days ago, three made no reference to it whatever, one but a short note, though the fifth dealt with the subject at some length. From this it must not be inferred that the disease is an uncommon one; on the contrary it is, in my opinion, the most common cause of intractable hæmorrhage at menopause, not even excepting cancer. Last Monday four such cases came under my notice at the outpatient department of the Royal Victoria Hospital.

Let me begin by asking the question.—What is chronic metritis? It is a disease of the uterus that makes itself manifest at the time when menopause should set in; hence it begins usually between the ages of 35 and 45 years. It is characterized by but one pronounced symptom,—hæmorrhage,—excessive, often jeopardizing the life of the patient, and intractable to all therapeutic measures. It occurs in parous woman and on physical examination the characteristic signs are an enlarged, indurated uterus.

Before taking up the subject in detail, I would like to pass in short review the views of the previous authors. In this way a better grasp of the salient points of the disease and of the details which have been the cause of so many different tenets will be afforded. The first scientific work to appear upon chronic metritis was the monograph by Scanzoni, (1) in 1860. Scanzoni contended that the disease was always secondary to acute infection. Hence, he recognizes two stages in the progress of the pathological process, namely, the infiltrated, soft œdematous stage, and the indurative stage. The first is a necessary antecedent of the second. I cannot better compare his views than by saying that his stages are like those in acute and chronic inflammation of all other organs. He, himself, compares the process with hypertrophic and atrophic cirrhosis of the liver. In 1867 Seifert (2) and later his pupils, called the writings of Scanzoni into question and contended that subinvolution of the uterus is the chief factor in the production of chronic metritis. Writers up to this time had drawn their conclusions from naked eye examinations of their specimens, but in 1868 the microscope, though with low magnifying powers, began to be widely used. The chief subject of debate during the next few years was what tissue was responsible for the considerable hypertrophy of the uterine wall as found in chronic metritis. Finn (3) and later, Klebs (4) found that the size was due chiefly to muscular hypertrophy. Birsch-Hirschfeld (5), on the other hand, contended that it was due to a marked hyperplasia and hypertrophy of both muscle and connective tissue. Of course, there was still another view possible, that the enlargement was a true fibrosis, and it was not long before strong advocates were found in von Klob (6), Kiwisch (7), and Virchow (8).

In 1870 Olshausen (9), began to show the great therapeutic value of the curette in menorrhagia and methorrhagia, and with it began the careful microscopical examination of the endometrium obtained by this means. The result was that the interest of the gynecological world was centered upon the endometrium, and its pathological changes were held responsible for all unnatural hæmorrhages.

The pendulum had to seek its level, and in 1888, just twenty years after the last work, Cornil (10), laid stress upon the fact that there were cases that resisted the curette, hæmorrhage continuing in spite of all treatment, and that in such cases he found the arteries of the uterus sclerosed and there was a true fibrosis of the uterine wall. Ten years later the most scientific paper published up to that time, appeared from the pen of Reinicke, in which he pointed out for the first time that there is a primary chronic metritis characterized by fibrosis of the uter-

ine wall without any signs of inflammation either in the uterine wall or in the endometrium.

And so the polemic has gone on to the present day. In the last three years a revival of interest has taken place without, however, being productive of much elucidation.

Let me now take up at some length the pathology of chronic metritis, together with its aetiology. In a paper by Dr. Garrow and myself (11), read before the British Medical Association, we divided cases of chronic metritis into two distinct classes: first, simple, or uncomplicated chronic metritis, and second, complicated chronic metritis.

To this division I would strictly adhere as it offers great advantages both clinically and pathologically.

In simple uncomplicated metritis the uterus is symmetrically enlarged and indurated, but the uterus is the only pelvic organ appreciably affected, whereas in complicated metritis various associated lesions of the adnexa, parametrium and perimetrium, coexist with the metritis, and in all likelihood have sprung from the same causal agent.

If we now examine uteri excised for uncontrollable hæmorrhage at menopause, we find that the organ has retained its normal outline, but is considerably larger than normal. The degree of enlargement is very variable, but is always above the normal size. The largest specimen that has come under my notice measured four inches in depth, three and three-eighths in breadth, and two and three-quarter inches in thickness. In simple cases the peritoneal surface is normal. The cervix is usually proportionately enlarged and usually contains many Nabothian cysts. The body is usually more globular than normal owing to the great thickness anteroposteriorly. On section, the cut surface is pale, anæmic, and white, shiny strands form a dense network, in the meshes of which a darker, less shiny tissue is seen. This interlacing of strands of tissue grows more marked as one recedes from the peritoneal surface towards the middle third of the uterine musculature, and they grow proportionately finer. In the outer third the lighter and darker strands, which we may now interpret as connective tissue and muscular tissue, respectively, tend to divide the uterine wall into layers. A thick white band of tissue is nearly always to be found underlying the whole of the peritoneal surface of the uterus. The vessels on the cut surface always project markedly above the surrounding tissues as if the tissues retreated about them, or that the vessels themselves were under pressure. The mucosa may be variously affected, thickened almost to being diffuent, normal, or even atrophic. The tissues cut with greater difficulty than do those of the normal uterus.

In complicated cases various lesions of the adnexa and parametrium may be added to this pathological picture. In microscopical sections of the uterine wall, extending from mucosa to peritoneum, and stained with Weigert's elasid stain, followed by hæmatoxylin, and then by Van Gieson, we find the elastic tissue stained black, the muscle yellow, the fibrous tissue red, and the nuclei purple. In such a section one is struck by the large amount of elastic tissue that is present. This increase in elastic tissue is found chiefly in the middle third of the uterine wall, about the large veins and arteries which abound in this region. But though widespread here, it is by no means limited to this area. The vessels of the inner third are also surrounded by a large amount of elastic tissue which by its arrangements and bizarre shapes about the vessels, seems to serve no definite purpose. The connective tissue and muscular elements do not seem to have lost their relatively normal proportions, but the muscle cells enveloped in such thick meshes of elastic tissue seem to have departed in variable degrees from their normal healthy appearance.

Heretofore, uteri were not studied carefully with the Weigert stain for elastic tissue and as a consequence hyaline degeneration of muscle was a prominent pathological finding in all sections of chronic metritic cases, the reason being that sections stained with hæmatoxylin and cosin, or with Van Gieson and hæmatoxylin show perivascular and extravascular masses of hyaline substance stained either pink or yellowish pink, and sparsely dotted with nuclei. These have, heretofore, been invariably interpreted as hyaline degeneration of muscular tissue. These same sections if stained with Weigert's elastic tissue stain will show that this hyaline substance is not hyaline degeneration of muscle, but is dense elastic tissue.

If we now ask the question, What is the origin of this overgrowth of tissue? we ask the crucial question of this difficult subject. Let me state that the whole subject revolves about the involution of the puerperal uterus. In my opinion a woman may have an unlimited number of children and if her recoveries are complete and involution is rapid she will never suffer from chronic metritis. Chronic metritis finds its one great etiological factor in subinvolution. So the causative agents in the production of chronic metritis are numerous. Yes, just as numerous as are those which operate in bringing about subinvolution. I would like to make the statement still more emphatic and claim that every case of prolonged subinvolution will, without exception, pass over into chronic metritis unless treated systematically and energetically.

I have never seen a true case of chronic metritis in a virgin. By

this I do not mean in a nulliparous woman, but I mean in a virgin. In the former class, i.e., the nulliparous patients, repeated slight abortions may take place without amenorrhœa and without the knowledge of the patient, and there is no more fruitful source of chronic metritis than abortion, just as there is no more frequent cause of septic trouble than abortion. Shaw (12), in a paper of three years ago, says he has seen several cases in virgins, and that they do not differ microscopically from those in the parous woman. But we have only to note that Shaw's only stain was Van Giesen, which gives no differential staining to the elastic tissue which is the all important structure. Granted, then, that subinvolution, or defective sequelæ of pregnancy are the causative agents in chronic metritis, how can the microscopical picture be accounted for?

A triple process is at work, though when thoroughly analysed the three resolve themselves into one. If we study a uterus undergoing involution we find that it builds for itself a complete new system of arteries throughout its whole walls during involution, and this takes place not only after the first, but after each and every pregnancy. The vessels that supplied the placenta are replaced completely by a new system. The old and very large vessels which supplied the placenta atrophy and during its atrophy it builds for itself out of its constituent elements a new and smaller vessel in its lumen. I regret that I can touch but lightly upon this interesting topic in the time allotted. In this placental area the disproportion in size between the old and the new vessel is very great, so that the old wall lies completely outside and beyond the new one which it surrounds. In vessels which have to undergo such enormous reduction in size the changes are readily understood, whereas in the extra-placental portions of the uterus the reduction in size which the vessel must undergo is not so great, so that the old vessel may impinge in varying degrees upon the outer portion of the media of the new one that is contained within its lumen, and a portion of the media of the old vessel may be retained to form part of the muscular wall of the new one.

In the first type, that is, in the subplacental areas, the old vessel ought to undergo complete destruction and absorption, and in the extra-placental portions the old vessels will undergo varying degrees of atrophy and disappear, as much of them being retained as is necessary to complete the new vessel wall. The least resistant tissue of the old vessel to destructive processes can be abundantly shown to be the musculature, and the more resistant is the elastic tissue, and among elastic tissues the elastica interna of the arteries is very resistant. Now, if the involution of the uterus is rapid and normal in a young woman, both these



types of tissue in the wall of the old vessel undergo rapid degeneration and absorption and leave no trace of their former existence. But, if involution is slow and retarded; if chronic disease has sapped the vitality of the patient; if acute disease has supervened during the puerperium, or if the most frequent causes, sepsis and retained products, have come into operation, remarkable and far reaching changes take place in the uterine wall. To put the matter tersely, structures that ought to have been destroyed owing to their no longer having any function to perform, remain in various stages of degenerative change, and the rule applies with all its vigor that the most highly specialized tissues suffer the most and the less specialized the least.

But the rule has also a second application which adds a great deal to our understanding of the process, and that is that the same causative factors which inhibited the degenerative and absorptive processes also inhibit regeneration of tissue, and in the same ratio, that where the most highly specialized cannot be regenerated a less specialized can be reproduced; that is, where muscle regeneration is impossible, elastic tissue regeneration is possible. Hence it is that in chronic metritic cases the uterus contains a great deal of the old vessel wall that should have been absorbed. Its musculature has almost completely disappeared, but its elastic tissue have undergone tremendous hypertrophy. The new vessel which has been formed contains varying degrees of deficiency of muscular tissue and a corresponding degree of overgrowth of elastic. In other words, where nature cannot regenerate a highly contractile tissue like muscle it supplies the next best, namely, elastic tissue.

In the reduction of the veins a somewhat similar process is at work. Hence it is that in diseased conditions which bring about subinvolution the result is a hindrance to the normal changes which take place in the uterus, and the end-product is a large uterus containing a superabundance of muscle and fibrous tissue and a relatively large amount of perivascular elastic tissue.

Marchand (13), and Jores (14), have clearly shown that, generally speaking, the 35th year of age marks an important turning-point in tissue regenerative powers of the individual. I would go still farther and say that, roughly speaking, the twenty-fifth year introduces a much more important turning-point. In the early years of life muscle is readily regenerated; to wit, how the heart hypertrophies and compensates in the young, but how injurious the same strenuous exercises of youth become to the athlete over 25 years. In children and young adolescence the arteries increase their media to meet the demands of the increasing blood pressure. At a certain time in life, roughly speaking

25 years, muscle regeneration becomes less active, but elastic tissue development is now in the ascendant, and at 35 years elastic regeneration grows less and less marked and the less specialized fibrous tissue comes into play and is found to step in where the others and more highly specialized tissues fail. To me the Jores and Marchand conception is a grand one which throws a new light upon the whole subject of arteriosclerosis. In early years of life arteries increase their strength by hypertrophy and hyperplasia of the muscular media or by repeated layers of muscle and delicate elastica interna between the intima and media. These are known as the hyperplastic layers of Jores, and take place in all arteries to meet the demands of increased blood pressure. After 25 years of age regeneration of muscle becomes less and less complete, but the increase in strength of the vessel wall is now made up with increasing greater amounts of elastic tissue, until after 35 years even this specialized resilient tissue is no longer producible and the less specialized fibrous tissue begins to make its presence felt. So true is this, that I have found even in children of six to ten years of age, who have suffered for years with chronic rheumatism and chronic nephritis, muscle regeneration was almost at a standstill under such diseased conditions, and the strengthening of the vessel walls to meet the increased blood pressure was almost wholly by elastic tissue.

So it is with the uterus. In the normal young woman, filled with the vigour of health, there is complete destruction of tissues that no longer have a function to perform and a complete regeneration of muscle and a complete return to the virgin state. But how seldom the puerperium runs its course with all these favourable circumstances! In 80 uteri of parous women that I cut and examined during my work in Berlin, there were but two that returned to such a normal state that I think even the most experienced microscopist would fail to detect the difference between them and the uteri of the virgin. If, then, complete return to the normal state is so seldom in the young woman, it is a very rare finding in the woman who bears children after 35 years. The older the woman the less complete is her return to the normal, and women, as men, are as old as their arteries. Hence it is that women who are predisposed to arteriosclerosis will be strongly predisposed to chronic metritis. This is quite in accordance with our experience of cases at the Royal Victoria Hospital. From this it will be readily gathered that there are two types of arterial sclerosis in the uterus, just as there are two types in the ovaries. These are a functional sclerosis and a true arteriosclerosis.

Therefore, the causative agencies which produce subinvolution oper-

ate in bringing about chronic metritis. Moreover, the long continued and hotly contested battle between the advocates of infection and those of non-infective agencies has ceased, and both sides have won their point. That the causative factor may lie in the uterus, such as retained products, puerperal infection, etc., one can readily understand; in fact, herein will lie the chief cause of subinvolution. That the active agent can also lie outside the uterus and yet be pelvic is seen in cases of tuberculosis of the adnexa; and still further, that it may be still more remote and yet operate, not through infection, but through diminished vitality, or toxæmia, is seen in acute as well as chronic diseases.

Many works have been produced to show—and here, Gentlemen, there is unanimity of opinion—I say many works have been produced to show that acute disease supervening during the puerperium, places a “block” upon involution, and the arrest of involution will be proportionate in its completeness with the severity of the infection. That infection alone in the virgin, or nullipara, be it gonorrhœal, or tuberculous, cannot give rise to true metritis I am fully convinced, for in my experience the uterus of a virgin, or nullipara suffering from tuberculosis or gonorrhœal disease, is in the first stages enlarged somewhat but is soft and œdematous, but in the later stage is always small, indurated and fibrous.

The changes in the endometrium in chronic metritis will depend, as you can readily understand, upon the source of the causative agent, whether the trouble begins in the uterus or whether it lies extrapelvic.

As to the causes of the hæmorrhages many explanations have been advanced, none of which as yet seem thoroughly adequate. Reinicke attributes this symptom to the lack of contractility of the vessel walls; Theilhaber and Meyer (15), to the lack of power of the musculature of the uterus to contract and retract and thereby arrest the hæmorrhage. This weakness they attribute to the inhibitory influence of the fibrous tissue. The question is a difficult one and it seems that, from a functional point of view, to separate the uterine walls from the uterine musculature is quite unjustifiable.

To me it appears that the uterine contractions and retractions play the all-important part in the arrest of hæmorrhage at labour and during menstruation, otherwise the flow of blood at menstruation and after labour would be continuous instead of being intermittent. But I think also, that we must assume that the thick muscular walls of the arteries have a controlling influence in arresting hæmorrhages from the uterus. If we admit this, and I think we must, we must also admit that in chronic metritis, where both the arterial system is so loaded with elastic tissue and the uterine muscle fibres so inhibited by non-contractible

elements, the controlling influence of both these great factors will be partially or completely lost. It would be an impossibility to even guess at the relative importance of these two controlling factors, for no two cases need be alike. In this one, the arterial system would be most at fault; in that one, the vessel less and the uterine musculature more culpable.

In Dr. Gardner's and my own work, we considered another important factor in the hæmorrhage of chronic metritis, and that is ovarian function or ovarian secretion. Here, Gentlemen, we are treading upon dangerous ground. My own modest opinion is as follows: In the milder grades of chronic metritis the hæmorrhages amount to menorrhagia only; in the graver types metrorrhagia more or less intermittent comes on; in the gravest cases metrorrhagia is constant.

In all cases the organ at fault is the uterus. I mean the uterus broadly speaking, not limiting the meaning to either musculature or vessels. In the milder cases, where the loss of blood amounts only to an increase at menstruation, the uterus cannot control the amount of blood brought to it at the menstrual pelvic congestion when all the organs are so engorged with blood. In the graver cases of metrorrhagia the uterine walls are so diseased that hæmorrhage takes place quite independent of the menstrual pelvic congestion; that is, when the blood supply to the pelvis is at its minimum. When looking over the literature, I find that where ovariectomy had been performed for the relief of chronic metritis, a certain percentage of cures takes place. It is in the milder cases that the cures are found, because the exciting cause of pelvic congestion is removed by the removal of the ovaries. But when hæmorrhage continues independent of menstruation,—in other words, where metrorrhagia is pronounced—the result of ovariectomy was not encouraging. Hence we may sum up in a few words that the part played by the ovaries in the production of the hæmorrhages of chronic metritis is simply the marked exacerbations of the hæmorrhages brought about by the pelvic congestion incident to menstruation. But the cause of the unnatural discharges of blood must be sought in the uterus.

*Symptoms and Signs:*—The one prominent symptom, for which these patients seek relief, is hæmorrhage. But let me state most emphatically that not all cases of chronic metritis are necessarily bleeders. The menstrual flow may not be disturbed in the slightest. The condition under such circumstances is generally discovered accidentally. When hæmorrhage becomes a symptom, it may be a slight increase over the normal amount or it may be very profuse menorrhagia. As a rule, the increase in the quantity of blood lost is a slowly progressive one and

may pass eventually through all the stages of menorrhagia, then intermittent, and finally constant metrorrhagia. The loss of blood may be alarming and leave the patient weak and almost exsanguinated. The blood is of a very dark colour and almost free from mucus. As a rule there is no pain whatever, except possibly a slight dragging pain in the back. Leucorrhœa is very variable, but, as a rule, a very minor symptom. The patients are multipara, usually between 35 and 45 years of age. I have never seen hæmorrhage from chronic metritis supervene once menopause had been definitely established; hence it is always before menopause. It is especially common in women who have had repeated abortions or septic puerperal troubles. I cannot pass on without a word about the frequency of chronic metritis in women who have had repeated abortions and have frequently borne dead and macerated syphilitic children.

On physical examination, chronic diseases of the other systems are frequently found, and especially to be mentioned are arteriosclerosis and nephritis. The perineum and vagina show signs of multiparity; the cervix is almost invariably involved in the same pathological state as that of the uterus. It is large, cartilaginous in consistence, and contains numerous Nabothian cysts. Lacerations are common. The uterine body is larger than normal and is very firm. It is nearly always markedly tender to pressure and not infrequently the whole of the genital tract is involved in this hyperalgesic state. In uncomplicated cases the uterus will be freely movable and lie in an otherwise healthy pelvis. But in complicated cases it may be associated with all degrees of chronic involvement of adnexa, perimetrium and parametrium.

*Diagnosis:*—The disease which offers the greatest difficulty in diagnosis is the case of a submucous fibrous polypus of the uterine body, which enlarges the uterus but does not destroy its normal outline. Let the tumour be the size of a pigeon's or hen's egg and the diagnosis cannot be other than tentative until operation. Under such conditions the symptoms and physical signs are exactly alike.

From chronic endo-metritis it is usually distinguished by the age of the patient and by the softness of the uterus.

In cancer of the uterine body the consistence of the uterus is not so firm; moreover, cancer of the body occurs most frequently in nulliparous patients.

From subinvolution the condition is readily differentiated by the history of recent pregnancy or abortion, and by the softer consistence of the organ.

However, there will be many cases in which nothing but the *urette*

will clear up the diagnosis, and, Gentlemen, in the curette we have an infallible diagnostic means. In chronic metritis the uterine cavity is always found very capacious. The tip of the curette moves about in the uterine body as if in a large empty space. The chief diagnostic sign lies in the fact that in true chronic metritis the curette brings nothing but thin blood away, and the uterus, instead of relaxing, as the normal uterus does under the curette, presents resistant walls which are firm, and the curette gives out a rasping sound when drawn with pressure over the uterine mucosa. This, Gentlemen, is without doubt the diagnostic sign of greatest value.

*Treatment*:—Treatment will resolve itself into, prophylactic, palliative and operative.

The prophylactic treatment will be directed towards the prevention or removal of all the conditions which leave the uterus in a state of subinvolution. That is, a more careful routine examination of the placentas and membranes to see that everything has come away; careful asepsis,—and later a careful examination into the causes of a prolonged lochial discharge; and finally, a careful examination of patients some weeks after labour to ascertain that conditions are normal. A persistent retroversion after labour I look upon as a very frequent cause of subinvolution and later of chronic metritis. But in spite of the greatest care, in spite of ideal treatment, there will be a goodly percentage of cases develop from causes over which the physician has no control.

Palliative treatment will consist in rest, both physiological as well as physical, and the use of the various echolics and hæmostatics. Among these may be mentioned, ergot, stypticine, ergotine, suprarenal, viscum album, and gelatine. The most I can say for these therapeutic measures is that I have seen little or no effect except that rest alone will bring about. Massage and tonics are indicated and not infrequently return of general strength is associated with a diminution of the loss of blood.

Operative treatment may be divided into minor operative measures, and the radical cure. Inasmuch as chronic endometritis may be associated with the chronic metritis, and inasmuch as when present the diseased endometrium will tend to increase the hæmorrhage, and, moreover, owing to the fact that an associated endometritis cannot be diagnosed except by means of the curette, curettage for the relief of chronic metritis has found warm advocates. In certain types of cases doubtless the results are very great, namely, just in those cases where the endometrium is markedly hypertrophic. Shaw and Donald (16), advocate its use in all cases and claim good results. But what they call

results are very doubtful results indeed. In one of my own cases, which they take as indicative of the beneficial results of curettage, the woman was worse after curettage and nearly bled to death on several occasions before a bettering of the hæmorrhages took place exactly two years after curettage.

The course to be adopted will differ with the class of patient with whom we have to deal. My own feelings are that among the leisure classes the patient may be advised to undergo a curettage and repair of the cervix in the hope of an improvement of the symptoms. But the surgeon must never neglect to tell the patient that he is adopting a less severe measure in the patient's interest, but a measure that is not always followed by success. If the curette yields but a little or no endometrium the chances of improvement are indeed very slight and hysterectomy under these conditions is imperatively demanded. The results from hysterectomy are sure and satisfactory. As to whether the procedure will be abdominal or vaginal will depend entirely upon the nature of the case and the ability of the surgeon.

#### *Bibliography.*

1. *Scanzoni*.—Krankheiten der weiblichen sexualorgane, Bd. i, s. 360.
2. *Seifert*.—Prager Vierteljahrschrift, xxiii, 1-4, 1866.
3. *Finn*.—Centralblatt f. med. Wissenschaft, 1868, s. 564.
4. *v. Klebs*.—Handbuch der patholog. anatomie.
5. *Birsch-Hirschfeld*.—Lehrbuch der patholog. anatomie.
6. *v. Klob*.—Path. anatomie der weiblichen sexualorgane.
7. *Kiwisch*.—Klinische vorträge, 4 auf. i, s. 580.
8. *Virchow*.—Die Krankhaften Geschwülste, 1863.
9. *Olshausen*.—Arch. f. gynecologie, 1870.
- 10.—*Cornil*.—Anatomie patholog. des metrites. Journal des Connaissances Médicales, Juin, 1888.
11. *Gardner and Goodall*.—British Medical Journal, Nov. 3, 1906.
12. *Shaw*.—Journal of Gyn. and Obst. of British Empire, Feb. 1907.
13. *Marchand*.—Verhandlungen der Gesellschaft für Pathologie, 1902.
14. *Jores*.—Wesen und Entwicklung der Arteriosclerosis. Weisbaden, 1903.
15. *Theilhaber and Meyer*.—Die Ursachen der Præclimacterischen Blutungen. Arch. f. Gyn., Bd. lxii, s 415.
16. *Donald*.—Jour. of Gyn. and Obst. of British Empire, Feb., 1907.
17. *Goodall*.—Amer. Jour. Obst. (December, 1909) Arch. f. Gynäkologie; Dec. 1909; Studies from Royal Victoria Hospital.

## THINGS NEW AND OLD.

BY

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### *Enlarged Lymph Glands as a Symptom of Pott's Disease.*

Probably the most interesting observation made during the winter of 1909-1910, at either of the clinics with which the writer had the pleasure of being associated, is that in the diagnosis between dorso-lumbar Pott's disease and hip disease, an enlargement of the inguinal and iliac lymphatic glands must be sought as a symptom of the former.

Tuberculous lumbar lymphatic glands have long been recognized by orthopædic surgeons as a cause of Pott's disease. Lumbar Pott's disease may be the cause of tuberculous lumbar and iliac glands.

In early cases of hip disease it is most unlikely to see a bilateral or even a unilateral enlargement of the lymph glands, whereas in lumbar Pott's disease and in tuberculosis of the sacro-iliac such a unilateral enlargement is, the writer thinks, common, and a bilateral enlargement is certainly not uncommon in the experience of the writer.

This statement is strengthened by a study of the lymphatic system. The lumbar region has a most profuse lymphatic supply. This is associated with the iliac lymph glands, and these in their turn are associated with the inguinal glands. On the other hand, the hip joint seems to have a very limited number of lymphatics. Many anatomical textbooks fail to mention any supply at all. The writer believes that the lymphatics of the hip joint enter the deep inguinal glands. An interesting point was brought out in a talk with Dr. F. J. Shepherd, who believes that although the deep inguinal lymphatic glands may be enlarged in sympathy with an enlargement of the superficial lymphatic glands the converse is unlikely. These statements certainly tend to strengthen the clinical observation which is the subject of these lines, but, in spite of this confirmation, the observation is submitted with caution, not as a statement of belief that enlargement of these glands is, in the diagnosis between hip and spinal disease, an infallible guide, but that such should be looked for as favouring tuberculosis of the lumbar glands and, perhaps, the vertebra, when such diagnosis is in question.

In conclusion, the fact that the inguinal glands are frequently palpable in children is brought to your notice, and that enlargement, therefore, must be associated with other signs before tuberculosis of the glands can be suspected.



### *The Plaster Jacket.*

From a practical point of view, one of the most valuable innovations made during this winter is the plaster-splint-jacket which will now be described.

A plaster jacket is usually applied to give rest. Rest is best assured in lesions of the spine by hyperextension of that column. It is easy to get hyperextension and it is easy to apply plaster in the hyperextended position, but how often does a plaster jacket maintain its form until it is dry. It is felt that it does so but rarely in adult cases or in children who cannot be controlled, consequently we have been using a combination of a plaster brace, or splint, and a jacket. The patient is placed in the corrected position. A Hergott or other plaster splint is moulded over the spine. This is then thoroughly dried and strengthened with a couple of irons moulded at a smithy into the shape of the plaster. It is then carefully padded with felt and applied to the patient's back where it is held in position by two or three plaster bandages. If these bandages are applied in the proper place one may cut out as much of the front or sides of the jacket as is desired as long as one assures that the spine is held fixed in its position of correction to the brace which has been prepared for it.

Fig 1. It is felt that this will, perhaps, be considered the easiest jacket to apply and the surest jacket that we can employ. In the past, when it became necessary to apply a plaster jacket for Pott's disease of the cervical region, namely, to apply a plaster jacket which would include the head and neck, the work was often begun in dread, because the task was a hard and long one, even if the method described by Gallic\* was pursued; and the probability was that when the operator returned to the hospital on the day following this operation, he would find that the patient had been permitted to break the jacket at the neck, its most vulnerable point. To-day the application of such a jacket is undertaken with confidence,—confidence that the corrected position of the patient will be maintained by the splint and that the jacket will be of much more comfortable and effective nature than those in the past applied under other conditions.

### *A New Splint for Lumbar Pott's Disease.*

Great difficulty has been experienced in devising some scheme for the treatment of simple tuberculosis of the lumbar vertebræ, and of hip diseases in which there are one or more sinuses complicating the trouble. It has been said already that rest is the first principle of

\* New York Medical Journal, 3rd July, 1909.



FIG. 1. THE PLASTER-SPLINT JACKIEP.

Note the edge of the plaster splint appearing behind the ear and shoulder. The edge of this is bound with adhesive plaster.

treatment and that this is best assured by hyperextension. Of all regions in the spine that in which hyperextension is most easily assured is the lumbar region,\* and yet there is no jacket or purely spinal brace which can be trusted to maintain this. In the past some form of treatment in a position of recumbency has then been necessary, but what form has always been the problem.

The surest way to maintain hyperextension of the lumbar spine is by the application of a plaster spica. This, in the case of older children and adolescents, is the most effective treatment, but in the case of very young children or adults, it is an almost impossible form of procedure. In the former, because of one's inability to keep the patient clean, and in the latter, because not only of the irksomeness of the plaster, but because it is absolutely necessary, that we should keep a constant watch over the abdomen of an adult, whose spine is in a position of hyperextension. This latter statement is made advisedly. The writer remembers two young men who were treated for Potts' disease of the lumbar region in spicas, both of whom lived many miles away from the place of residence of the surgeon who applied the plaster. One developed some pain and tenderness underneath his spica. Two or three days after this occurred the rural practitioner in charge of him telephoned about it, saying that the patient was apparently very indisposed. The consultant advised immediate removal of the plaster. The patient died two days later. The diagnosis made by his attendant was appendicitis. If the diagnosis was correct, and, perhaps it is open to question, certainly the plaster spica did not conduce to the proper observation of the patient. The second patient also died a few months after the application of the jacket. He also in the country, far from the residence of his consultant. The story told of his death suggested pulmonary embolism, but no post mortem examination was made, and no medical man was present at the last. Both of these deaths may be coincident only to the disease and its treatment, but one cannot help feeling that the surgeon who applied the plaster would have been happier if he had felt that the country practitioner in each case had had greater opportunities to watch his patient than was possible while the latter was imprisoned in plaster of Paris.

The writer has learned, also, of a patient who died from ileus following hyperextension. What this ileus was due to has not been suggested, but paralysis of the bowels seems possible from the retention of a position so foreign to that ordinarily assumed.

Mr. Robert Jones' custom of employing a double Thomas hip splint

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\*See Montreal Medical Journal.

used in the recumbent position for the treatment of lumbar Pott's disease is a good one, and for the above reasons is especially suited in the cases of very young children and adults. There is no reason why such a splint should not be bent to assure hyperextension as well as ordinary fixation, but a much simpler method of assuring hyperextension and with it fixation in this class of patients is by employing a modification of the gas pipe frame originally suggested by Dr. Bradford of Boston.

Fig. 2. At the writer's clinics it is the custom to prepare a splint frame of gas pipe of varying diameter. This frame is divided into three portions, a body portion and two leg portions. These, as is seen in the accompanying illustration, are abducted from each other. When looked at from the side this frame is seen to form with the table a triangle, the apex of which is placed at the seat of the disease, consequently all the vertebræ above that affected lie in an inclined plane, exactly opposite to the position of all the vertebræ which lie beneath the diseased area, which also lie in an inclined plane. You will notice that the head and foot extremities are raised in order to give a basis from which to get extension. The frame is lined with canvas and the patient is fixed to it by means of a canvas apron. This frame assures fixation of the patient and will be found useful not only in these cases of Pott's disease of the lumbar vertebræ but in certain cases of cervical Pott's disease, and, indeed, wherever immobilization is desired in the treatment of a patient in whom it is necessary to be able to expose all parts.

#### *A Brace for Congenitally Dislocated Hips.*

The brace which is now presented is for the retention of a reduced congenitally dislocated hip. It was devised last November or December.

It is very well known that after the reduction of a congenitally dislocated hip the head often tends to slip into an anterior position. Whitman, of New York, laid special emphasis on this fact saying, that the head of the bone must be sought lying under the artery, and that, on the slightest suspicion of its slipping to the outside of this vessel the position of the patient's extremity must be changed. Watching for an anterior displacement has been difficult when the patient has been treated by a plaster applied in the ordinary frog position. Even if a window has been cut over the head of the femur the normal relationship of the parts is so disturbed that it is difficult to realize exactly how the case is progressing. Plaster of Paris is also disadvantageous in that we cannot see what is taking place under it. Pressure sores, and even gangrene may be hidden from view underneath this dressing. Besides these disadvantages the question of cleanliness must be remembered. How



Fig. 2. A NEW SPLINT FOR LUMBAR POTTER'S DISEASE. Note that the splint forms with the table a double inclined plane which assures hyper-extension. The head and foot extremities are raised in order to give a basis from which to get extension.



**FIG. 3. A BRACE FOR CONGENITALLY  
DISLOCATED HIP.**

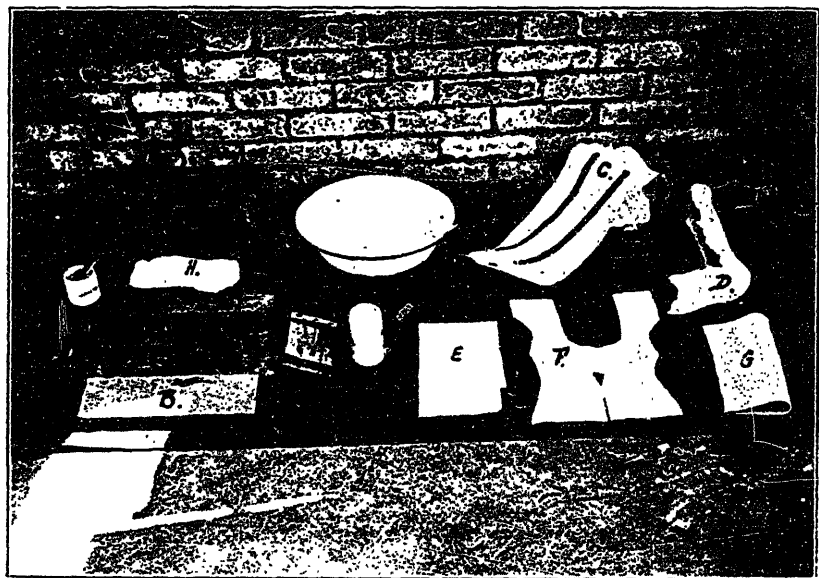


FIG. 1. A and B are the plaster box both open and shut. C is the plaster splint. D is a Hergott splint. F is the plaster bib used to control the head and neck in such jackets as that pictured in Fig. 1.

frequently all of us have had to take the risk of losing all that we have gained in an operation by having to change a plaster which has been soiled by the patient.

Fig. 3. The brace which is devised to take the place of a plaster of Paris dressing is a very simple one. It is really very like the double Thomas hip brace, having, like it, both a thoracic and two thigh and calf bands, and being made of much the same material, but, as you see, the relationship borne between the body portion and those of the extremities is considerably altered.

#### *The Plaster Box.*

Another suggestion made during the winter of 1909-10, is that such a box as that already shown and described in the Boston Medical and Surgical Journal, of March 3rd, 1910, should be adopted in our clinics.

This box (See Fig. 4, A & B) is for the preparation of plaster casts of the foot. It facilitates the preparation of a cast as a model on which to make a foot plate or brace for a patient suffering from weak, chronically strained or flat feet. Fig. 4.

All the preceding have been new and more or less original suggestions. Two other things of interest are now laid before you. These are not new, but are, however, of such usefulness that the writer may be forgiven for drawing attention to them.

#### *The Hergott Splint.*

There has been recently reintroduced a very old form of splint, namely, that of Hergott, who was, I think, a Parisian. This splint was brought to the writer's notice by Doctors Mercier and Parizeau in the Notre Dame Hospital here.

Its preparation is very simple. First, a pad is made by taking eighteen layers of crinoline and sewing them together. This pad is then immersed in a cream of plaster of Paris, and applied to the injured member, being held to it until it is dry, by an ordinary cotton or, preferably, a gauze bandage. When this bandage is removed the plaster is seen to have set and we have a light and durable splint which is particularly suitable for the treatment of fractures. Your attention is drawn to this splint as it is so much easier to apply than is plaster of Paris on a roller bandage.

#### *The Van Arsdale Splint.*

In the past, Canada has been wonderfully free from rickets, but, as our foreign population has been increasing, this affection is becoming very much more common.



In walking through the wards of a hospital not long ago a child who presented the typical signs of rickets, being treated by that form of vertical extension or suspension for that form of fracture of the femur, which is so common in that affection, was noticed. It is suggested that in suitable cases the form of treatment now in vogue in the clinics with which the writer is associated, namely, the triangular splint of Van Arsdale, which was described in the *Journal of the American Medical Association* of December 18, 1899, by Esdant, will be considered.

The writer has been using this form of treatment for some time, and the only difficulty which has been met with has been the inability to maintain the hard splint properly opposed to the anterior surface of the patient's body: Then, again, the rounded thigh to the straight splint. This treatment has, consequently, been slightly modified. The patient has a long, rudder-shaped Hergott plaster applied to his abdomen and thigh. This, when dried, is used as a support in which to maintain the triangular splint, which, in its turn, assures the integrity of the plaster. The application of this splint is very well shown in the photograph accompanying this note, Fig. 5, which is taken of a child who is suffering from such fracture, and who is now presented after four or five weeks' treatment to show the efficacy of this form of immobilization.

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FIG. 5.

THE

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## CANADIAN MEDICAL ASSOCIATION.

For the 43rd annual meeting of the Canadian Medical Association, Toronto, on the 1st, 2nd, 3rd, and 4th of June, transportation arrangements are in force on the standard certificate plan, with the exception of British Columbia where the regular summer tourist rate will prevail. All intending delegates should consult with their ticket agents when purchasing first class transportation to Toronto as to rates, dates of sale of tickets, time limits, and routes. For these purposes the Association and the Canadian Dental Association are coupled; and fare will be single for going and returning if three hundred are present at the two conventions holding standard convention certificates, between Halifax and other Eastern points and Laggan and Coleman, B.C. The first general session will be held on the afternoon of the first day, when the President-elect, Dr. Adam H. Wright, Toronto, will be installed in office and the opening ceremonies will take place. Following this, there will be a report of the Milk Commission by the chairman, Dr. Chas. J. Hastings, Toronto, and addresses by Dr. Evans, of Chicago; Dr. North, of New York; and others. On the evening of the first day, Dr. Herringham, of London, England, will deliver the address in medicine, which will be followed by the discussion on Dominion registration. The sections which have exceptional programmes will meet in the forenoons. On the afternoon of the second day, Thursday, there will be an excursion to Niagara Falls, and a dinner at the Clifton House. The address in surgery will be delivered Friday afternoon by Dr. Murphy,

of Chicago, followed by a symposium on ex-ophthalmic goitre, and at 5.30 p.m. the annual meeting of the Canadian Medical Protective Association will be held. Friday evening the address in obstetrics will be given by Dr. Henry Coe, of New York, followed by a symposium on the psycho-neuroses. A general session will be held Saturday forenoon and about eleven an excursion will be taken to Guelph to visit the Ontario Government institutions.

### HEALTH IN THE WEST INDIES.

Sir Rubert Boyce has published a book which is the result of two journeys made, in 1905 and 1910, to the West Indies in order to advise means for the prevention of yellow fever in the British possessions there. He has compiled some very interesting information from the records of disease in the British West Indies. It is most instructive to compare the old records with those of the present day. In 1802, at Fort Charlotte, near Nassau, in the Bahamas, the 7th Fusiliers lost 220 men out of 300 within a few weeks; in the following year yellow fever broke out once more among the remainder of this regiment and almost every man died. At the present time the West Indies are looked upon as a health resort. This enormous alteration has been brought about by the change in conditions which has killed off the mosquitoes transmitting yellow fever. In his book "Mosquito or Man," Sir Rubert has reviewed with great fullness the means by which mosquito-borne disease can be prevented and the methods by which mosquitoes can be destroyed. In the present volume he confines himself to the results which the application of these measures has achieved in the colonies visited by him, and he contrasts the conditions which existed before their enforcement with those which obtain at present.

Attention is repeatedly drawn to the fact that the introduction of a pipe-borne water supply has often been one of the most important factors in reducing the incidence of malaria and yellow fever, because its existence makes it unnecessary for the inhabitants of the town to store water, and hence, the number of collections of water in which mosquitoes may breed has been greatly reduced.

Examples of the legislation enforced in several tropical communities for the prevention of mosquito breeding are given in the appendix. In the body of the work Sir Rubert makes suggestions concerning the form which sanitary regulations should take in tropical countries. One of the most important, of course, is that it should be illegal for mosquitoes to be allowed to breed upon the property of any household. Atten-

tion is drawn to the absolute necessity of obtaining public recognition of the importance of such measures and of securing the active co-operation of the citizens in their maintenance. People who live in the tropics must learn to understand that a single, uncaptured, infected *stegomyia*, capable of transmitting yellow fever, is far more dangerous to them than any mad dog could be.

Public men, and the clergy of all denominations, can do much towards spreading a knowledge of the methods of prophylaxis against mosquito-borne disease; but the successful sanitation of a tropical town must always depend upon the appointment of an efficient and well trained medical officer of health, in whose care shall be placed the responsibility for maintaining the public health of the community by which he is employed.

Attention is drawn to the enormous economic importance of the new hygiene of the tropics. Costly quarantines are no longer necessary, and the loss of life and the dislocation of business, caused by an epidemic of yellow fever can no longer occur.

An extremely interesting point is well shown by the incidence of cases of yellow fever in the Barbadoes; that is, that the negroes who have not been exposed to infection by yellow fever in their childhood, are just as susceptible to that disease as are Europeans. It has consequently been shown, once again, that negroes have no race immunity against yellow fever. A passing allusion is made to the existence of ankylostomiasis, and to the methods of preventing and treating this disease. The existence of plague on the Pacific Coast of America is mentioned, and warning is given of the danger lest it be introduced by way of Venezuela into the British West Indies.

While the book should be read by everyone who is interested in the sanitation of the tropics, it will prove of particular value to those living in the British West Indian possessions which were visited by the author because the local conditions have been described, and sometimes criticised in detail.

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#### THE PROFESSOR OF ZOOLOGY.

As successor to Professor E. W. MacBride, in the Strathcona Chair of Zoology, the Governors of McGill University have appointed Mr. Arthur Willey, F.R.S. Dr. Willey comes to the University highly recommended by such authorities as Sir E. Ray Lankester, K.C.B., Professor Adam Sedgwick, Imperial College of Science, London, and Professor J. Graham Kerr, University of Glasgow.

Professor Willey, who is at present Director of Colombo Museum, and

Marine Biologist, has a long line of distinctions, scholastic and otherwise to his credit, which we summarize for convenience of record.

1889: First visit to Peloro Faro, near Messina, at the instance of Professor E. Ray Lankester (University College, London), assisted by a Royal Society grant, to collect material for the study of the development of amphioxus. 1890: Second visit to Peloro Faro under the same auspices to continue the same work. 1891: Matriculated at the University of Feriburg-in-Breisgau. 1891-2: Table of British Association at the Marine Laboratory, Plymouth; and at the Stazione Zoologica, Naples. 1892-4: Tutor in Zoology, Columbia College, New York, under Professor E. B. Wilson. 1894: D.Sc., London. 1894-9: Balfour student of the University of Cambridge (three years extended to five years). 1899-1901: Lecturer on Biology at Guy's Hospital Medical School (succeeding Professor E. A. Minchin and followed by Mr. Richard Assheton). 1901: Three lectures on amphioxus, etc., at the Royal Institution (January 17th, 24th and 31st). 1902: Fellow of the Royal Society of London, and before this time (1899) Life Member of the Cambridge Philosophical Society. 1902 to date: Director of the Colombo Museum. 1902-7: Lecturer on Biology at the Ceylon Medical College (relinquishing this appointment to take up the next). 1907 to date: Marine Biologist to the Ceylon Government. Honorary Appointments: M.A. Contab., 1898; Corr. Member of the New York Academy of Sciences, 1897; Emeritus Lecturer, Ceylon Medical College, 1907; Vice-President Ceylon Branch, Royal Asiatic Society. Principal Publications:— 1891: Later Larval Development of Amphioxus; for review see *Nature*, 1891, vol. 44, July 2, pp. 202-4. 1894: Amphioxus and the Ancestry of the Vertebrates; Columbia University Biological Series; for review see *Nature*, 1895, vol. 51, March 7, pp. 433-4. 1898-1902: Zoological results based on material from New Britain, New Guinea, Loyalty Islands and elsewhere, collected during the years 1895 to 1897; for review see *Nature*, 1905, vol. 71, March 2, pp. 411-12. 1901: Articles "Amphioxus" and "Balanoglossus." *Encyclopedia Britannica*, 9th edit. Supplement. 1903 to date: "Spolia Zeylanica"; a quarterly publication issued at his initiative by the Ceylon Government.

#### THE MCGILL REUNION.

A reunion of the graduates of McGill University in the Faculty of Medicine is planned for June 6th and 7th, 1910, upon the occasion of opening of the new medical buildings and the annual convocation for conferring degrees. Invitations have been sent to all graduates, and a large attendance is already assured. The class reunions will be a fea-

ture of the ceremonies. All but a few of the forty-five years represented by the alumni have already arranged for them.

Following is the programme:—

Monday, June 6.—Informal luncheon at the McGill Union by members of teaching staff of the medical department to the graduates in medicine.

Afternoon.—Convocation in Royal Victoria College.

Evening.—Opening of new building. *Conversazione* given by the Governors of the University.

Tuesday, June 7.—Morning and afternoon—clinics and demonstrations in hospitals and laboratories. Private entertainments.

Evening.—Banquet tendered by the members of teaching staff of the medical department to the graduates in medicine.

Class Reunions—At times to be arranged.

The Governors have arranged a *conversazione* and the Governor-General will attend the banquet and luncheon.

There is also a ladies' committee, which will entertain the wives and daughters of the reunionists.

The following committees have been appointed:—

Dinner.—Dr. G. E. Armstrong, Dr. J. G. Adami, Dr. W. W. Chipman and Dr. W. L. Barlow.

Publication.—Dr. J. C. Simpson, Dr. J. G. Adami, Dr. A. Macphail and Dr. J. L. Todd.

Class Reunions.—Dr. J. W. Scane, Dr. J. A. Henderson, Dr. W. M. Fisk.

Finance.—Dr. H. S. Birkett, Dr. A. Hutchison, Dr. A. C. P. Howard, Dr. J. G. McCarthy and Dr. W. G. Turner.

*Conversazione*.—Dr. R. F. Ruttan, Dr. J. G. Adami, Dr. W. W. Chipman.

Lunch and Reception.—Dr. F. G. Finley, Dr. J. A. Hutchison.

Special Convocation and Addresses.—Dr. J. Bell, Dean F. J. Shepherd, Dr. W. W. Chipman, Dr. E. W. Archibald.

### TUBERCULOSIS IN ANIMALS.

It seems desirable that the public should be given opportunity to know what the International Commission on Control of Tuberculosis Among Domestic Animals is doing, as the commission represents indirectly the Canadian and United States Governments. The last session, held in Detroit, was devoted largely to reports. There were present representatives of Canadian and American breeders, Canadian and United States Departments of Agriculture, American and Canadian vet-

erinarrians. The following reported:—Committee on Education and Legislation; Committee on Location of Tuberculosis in Cattle; Committee on Dissemination of Tuberculosis; and the Committee on Disposition of Tuberculous Cattle. The Committee on Education and Legislation made a partial report presenting a critical study of experience of certain States in their efforts to deal with this problem. The purpose of this was to present full information for the Commission concerning mistakes and failures, and comparative successes of communities that have undertaken serious work with tuberculosis.

The Committee on Location of Tuberculosis in Cattle presented their report under such headings as "Provision for Notification"; "Location by Tuberculin Test"; "Location of Infected Herds Through Meat Inspection Service"; "Most Important Sources of Animal Tuberculosis."

The Committee on Dissemination of Bovine Tuberculosis presented its study under such headings as "Introduction of Disease into the Herd"; "Dissemination by Feeding to Calves"; "Dissemination by Contact at Shows"; "Dissemination by Placing Healthy Animals in Contaminated Stables"; "Dissemination by Transportation of Healthy Animals in Infected Cars"; "Dissemination by Pasture Exposure." The discussion on this report gave considerable attention to the problem of tracing back from the killing floor to the infected farm with a view to detecting the diseased herds and concentrating control work as much as possible on diseased herds.

The Committee on Disposition of Tubercular Cattle reported concerning the necessity of accepting tuberculin for diagnosis as a fundamental; the necessity of voluntary co-operation; and the superiority of voluntary co-operation to measures of compulsion. This committee considered the feasibility of the Bang and Ostertag methods of dealing with tubercular herds under American conditions. It also made recommendations concerning the relation of indemnity to final disposition of carcass; the principle of carcass salvage; the obligatory disposal of all clinical cases; and a study of the conditions which should determine the disposition of reacting cattle.

A very considerable amount of discussion on this report was given to the question of remuneration for owners, and particularly as to whether this should be regarded as a temporary or as a permanent provision in tuberculosis control work. A number of members held that it must necessarily be considered as a useful preliminary and temporary measure.

Careful consideration was given to the possibility of making either



the Ostertag or Bang method of dealing with tuberculosis in the herd, or a combination of the two, feasible in America and Canada for grade herds. This is intended to find some method more economical than slaughter for as many herds as possible. The next meeting of this International Commission will be held in Ottawa.

M. H. R.

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### THE INTERNATIONAL ASSOCIATION OF MEDICAL MUSEUMS.

In connexion with the Congress of American Physicians and Surgeons at Washington, D.C., on May 3rd and 4th next, a meeting of a smaller body is to take place that promises to be of so much interest as to be worthy of the editorial comment. The International Association of the Medical Museums is not affiliated with the Congress, for this is formed only of *national* societies, but it meets in conjunction with this body for the convenience of the members. This association, which had its origin in a suggestion made by the late Prof. Wyatt Johnston, was organized in 1907 by the joint action of the late Dr. James Carroll, curator of the Army Medical Museum, Washington, D.C., Prof. M. G. MacCallum, of Baltimore, and Dr. Maude E. Abbott, curator of the Pathological Museum, McGill University. It aims at the development and the fostering of the museum idea, at the improvement of museum technique and arrangement, the development of the system of museum teaching, and the establishment of an international system of exchange of specimens. It is an association of institutions rather than of individuals, and although any person interested is admitted to membership on election and the payment of the annual fee, the vote is confined to those members officially accredited to museums or laboratories as their voting representative. The inception of this association has been greeted with real enthusiasm both at home and abroad, as supplying a need that has been felt, and its membership now numbers officials of nearly all the leading medical museums throughout the world. The programme of the coming meeting, on May 3rd and 4th next, is so representative, and of so much interest that it illustrates better than words can do, the growth and rapid development of this youthful association, the successful future of which is now assured. It is but just to state that its successful organization is due almost entirely to the initiative, energy and capacity of Dr. Abbott, and that the credit of establishing the association on a secure basis belongs, therefore, in a large degree to the medical museum of McGill University.

PROGRAMME OF THE THIRD STATED MEETING INTERNATIONAL ASSOCIATION OF MEDICAL MUSEUMS.

*New Williard Hotel, Washington, D.C., May 3rd and 4th, 1910.*

PART I.

*Tuesday, May 3rd, 2.30 p.m.*

TRANSACTION OF BUSINESS:—

Reading of Minutes; Election of New Members; Changes in Constitution; Election of Officers.

REPORTS:—

Secretary's Report with statement of Exchanges made, and publication of new specimens requested.

DISCUSSION:—

"On the methods of making this Association of the greatest value to its members, and on the development of the International System of Exchange." Led by Major F. F. Russell, Army Medical Museum.

"On the advisability of establishing an European Section." Led by Prof. J. G. Adami, McGill University, Montreal.

"On the feasibility of establishing an Index Pathologicus."

Dr. Maddox, Cleveland, and Dr. Maude E. Abbott, Montreal.

"On methods of preservation of specimens in which natural colours have been retained. Effects of light, heat, etc., on these."

PAPERS:—

Further remarks on the preservation of anatomical specimens with natural colours. Illustrative specimens will be on view at the Army Medical Museum. By Prof. Edmond Souchon, Tulane University, New Orleans, La.

Note on methods of preparing permanent specimens of the anatomy of the middle ear and accessory sinuses of the nose. Illustrated by specimens. Dr. Hamilton White, Montreal.

Note on the preparation of specimens of miliary aneurysms of the cerebral arteries by the Schuttel method. Dr. Ludwig Pick, Berlin, Germany. Presented by the Secretary.

PART II.

*Wednesday, May 4th, 2.30 p.m.*

DEMONSTRATIONS AND PAPERS upon points of interest in connexion with Museum teaching, technique. or arrangement, as follows:—

On the value of public Medical Museums, and on the possibility of establishing such a museum in each of the larger cities. Prof. W. G. MacCallum, College of Physicians and Surgeons, New York.

On the teaching of Pathology by Kaiserling specimens. Dr. Guthrie McConnell, St. Louis, Mo.

On the teaching of Pathology by the Case System. Supplemented by gross and microscopic specimens. Dr. Thomas Ordway, Bender Hygienic Laboratory, Albany, N.Y.

On the teaching value of enlargements of Microphotographs. Prof. A. S. Warthin, Ann Arbor, Mich.

Exhibition of series of micro photographs illustrating the principles of tumour classification. Prof. F. B. Mallory, Boston, Mass.

On the value of Lumiere polychrome photographs for demonstration and reproduction purposes. Dr. Harvey R. Gaylord, New York Cancer Laboratory, Buffalo, N.Y.

Demonstration of specimens illustrating the preservation of the results of research for medical museums:—

(a) Specimens showing experimental work on the production of the normal placenta. Prof. Leo. Loeb, University of Pennsylvania, Philadelphia, Pa.

(b) Specimens showing results of experimental pneumonectomies in rabbits. Dr. E. M. von Eberts, Montreal.

On the permanent tagging of Museum specimens. E. L. Judah, McGill University.

Demonstration of a metal mold of a glass dish for mounting Kaiserling specimens in gelatin. Dr. J. H. Hewitt, Georgia State Sanitarium.

Demonstration of the gelatin method of mounting specimens, with illustration of some new points. Dr. Joseph Kaufmann, Montreal.

### Reviews and Notices of Books.

NEUMANN'S "CEREBELLAR ABSCESS." By RICHARD LAKE, F.R.C.S.  
H. K. Lewis, London 4/.

Under this title, a very good translation of Neumann's monograph on otitic cerebellar abscess has been published. The work is based on the study and analysis of 196 cases of cerebellar abscess of otitic origin collected from the literature from 1900 to 1905 and observed in the Politzer clinic during the same period. Statistics of other authors are given by way of comparison, and on general lines are found in agreement with the present series. It was found that the relative frequency of cerebellar and temporal lobe abscesses was about 1 to 2. As regards the source of infection it is usually a chronic suppurative otitis complicated by the development of cholesteatoma; in about one-tenth of the cases the infection followed an acute otitis.

The chief interest, perhaps, centres about the diagnosis which is dealt with at some length, and in a clear and comprehensive manner. A serious difficulty in diagnosis is the presence of some other intracranial involvement such as an extradural abscess or sinus thrombosis. In a fairly large proportion of cases the cerebellar abscess is a sequel to a suppurative labyrinthitis which may in itself give rise to the symptoms of cerebellar involvement, or, on the other hand may mask its presence. In such a case the careful functional examination of the labyrinth is of the greatest importance and may be the key to the diagnosis. The greatest assistance is obtained, also, by the study of the character of the nystagmus and its variation as the disease progresses. In a doubtful case, where labyrinthitis is present and cerebellar abscess suspected, Neumann points out that a diagnosis is often impossible, and, therefore, advises dealing with the labyrinth only at first, and waiting for a time before exploring the cerebellum. Where the cerebellum is explored he advises a free incision rather than an exploratory puncture and aspiration. Not a few cases have been diagnosed at operation, and these cases, come upon during the latent period, give, of course, the best prognosis.

As regards prognosis, the statistics show a very good proportion of cures considering the grave nature of the lesion (about 25%). It is of course, to be remembered that cured cases are more apt to get into the literature than those ending fatally, however, the cases drawn from the Politzer clinic showed the same proportion, namely, 7 cures in 28 cases. The work has been most carefully prepared, and the translation is most satisfactory. We, therefore, warmly recommend it to all interested in the subject.

E. H. W.

**MEDICAL DIAGNOSIS. A MANUAL FOR STUDENTS AND PRACTITIONERS.**

By CHARLES LYMAN GREENE, M.D. Pages 725, 7 colored plates and 248 illustrations. Third edition. Price \$3.50 net. P. Blakiston's Son and Company, Philadelphia. 1910.

As its name implies, the work is mainly intended for students and practitioners, and the fact that the book is now through the press for the third time is, in itself, evidence of its merit. All through this edition, which has been considerably re-written and re-arranged, one can see that the author has taken great pains to deal at some length with the most important and most practical of modern clinical methods, while nearly all of the most recent diagnostic procedures of value have received some attention. The coloured plates are good, but a large number of the illustrations are only fair. For its size, the book presents this vast subject in a very useful and practical manner.

**MANUAL OF MIDWIFERY.** By HENRY JELLETT, M.D., ETC. Published by Ballière, Tindall & Cox, London.

This second edition of Jellett's work, containing the teaching of the Rotunda Hospital, at Dublin, is quite up to the standard of its predecessor. It has been improved by the addition of a new series of drawings of the anatomy of the pelvis in relation to the subject in which the Dublin School has deservedly become famous, and also by the addition of good plates illustrating the mechanism of labour. An excellent and useful change which has been introduced is gathering together into one group the chapters on acute yellow atrophy of the liver, pathological vomiting of pregnancy, and eclampsia under one head, which is very appropriately termed "The auto-intoxications of pregnancy." The chapters on the actual cutting operations which may be required in order to effect delivery have been brought well up to date, and the use of scopolomine-morphine anæsthesia during labour is clearly described and intelligently discussed, the author being very conservative in his praise of the method. The book is well written and illustrated, the illustrations being clear and convincing, and the publishers' work is admirable with one exception. That exception is the binding which is not in keeping with the excellent material which the author has provided for its interior. Even with this defect, which after all is not of vital importance, Dr. Jellett's book can be recommended to both student and general practitioner; and the author is to be congratulated on his production.

**THE PROPAGANDA FOR REFORM IN PROPRIETARY MEDICINES;** Sixth Edition: Containing the various exposés of nostrums and quackery which have appeared in *The Journal of the American Medical Association*. Price, Paper, 10 cents; Cloth, 35 cents. Pp. 292. Illustrated.

This book presents in convenient form most of the exposures that have appeared in *THE JOURNAL* of the American Medical Association showing fraud either in the composition of various proprietary preparations or in the claims made for them. Many preparations of the "patent medicine" type have been subjected to analysis and the results appear in this volume. The book will prove of value to the physician in two ways: It will enlighten him as to the value of many of the so-called ethical preparations on the market; and it will put him in a position to answer intelligently questions that his patients may ask him about some of the widely advertised "patent medicines" on the market. After reading the reports published in this book physicians will realize the value and efficiency of simple scientific combinations as compared with many of

the ready-made proprietary articles. The volume is a sad commentary on human credulity.

**SPA TREATMENT.** By NEVILLE WOOD, M.D., M.R.C.P. Messrs. Adlard and Son, London, 1910.

Readers of *The Practitioner* will remember a Special Number which was edited by Dr. Neville Wood, in July, 1908, and contained an account of many health resorts with indications of the benefits which might arise from treatment at those places. The present monograph of 58 pages appears to be a summary statement of the observations made at that time. By actual count 57 European Spas are referred to, some in terms which are not entirely complimentary, especially when the author is dealing with some of the French watering places. There is a gentle current of satire running through the book, which broadens out occasionally into humour, as where Schlangenbad is recommended as particularly soothing to the ill-tempered. It is said to be much patronized by near relatives of medical men. The impression left upon one's mind by a reading of this book is that the best spas are those which have the best physicians.

**THE NURSE'S GUIDE TO PRESCRIPTION WRITING.** By J. G. H. Published by E. & S. Livingstone, Edinburgh, 1910.

We must confess to a lack of understanding of this book, small though it is. It appears to be quite useless.

**ANATOMY AND PHYSIOLOGY FOR NURSES.** By LEROY LEWIS, M.D. Second edition. W. Saunders Company, Philadelphia, 1910. Canadian Agents, The J. F. Hartz Company, Toronto.

A book published by Saunders, which has gone into a second edition, must have its value and its devotees. Dr. LeRoy Lewis has conferred upon South Bend, Ind., a distinction somewhat similar to that which Burnley owes to James MacKenzie. The second edition is a more complete work of anatomy than the first, as, "in response to a general demand among those who have used the book a chapter on the male organs of generation has been added." We cannot refrain from the comment that nurses who depend for information entirely upon this chapter will be quite inadequately instructed. The anatomy, even of organs less highly specialized, cannot be learned from a book. However, it is proper that this zeal for knowledge should meet with encouragement.

**THE POCKET CLINICAL GUIDE.** By JAMES BURNET, M.A., M.D., M.R.C.P.E. John Currie, Edinburgh, Scotland, 1910.

We mention this book of 140 pages, measuring  $2\frac{3}{4}$  x 4 inches, and

weighing less than 2½ ounces, merely because it is an expression of the extreme degree of folly to which the making of "digests" may attain. A physician who is so ignorant as to need this book is too ignorant to use any book to advantage.

**SYMPTOMS AND THEIR INTERPRETATION.** By JAMES MACKENZIE, M.D., M.R.C.P., Physician to the West End Hospital for Nervous Diseases, London, author of "Diseases of the Heart," etc., etc. Toronto: D. T. McAjnsh & Co., 297 pages, illustrated, price \$2.25.

A careful reading of this book conveys the impression that the practice of medicine is a business which is not to be undertaken lightly. The author disproves so many things which have been matters of settled belief that one is disposed to wonder how much of reality yet remains. Dr. Mackenzie has gone to the facts. For him any other authority does not exist. Indeed, "the authorities" fare badly in his hands. His method is a reversion to the old school of experience, not of animals in a laboratory, but of patients in their beds. Pain is a universal experience, and he begins with the manifestations of it. He establishes the fact that the visceral organs are non-sensitive in themselves but cause pain reflexly in the most unexpected places, that is, if one does not understand the distribution of the cerebro-spinal nerves. He assures us, too, that the serous membranes, the peritoneum included, are all insensitive, with the single exception of the tunica vaginalis, and that because this membrane is supplied by a twig of the genital branch of the genito-crural nerve. Physicians who speak of "tender" ovaries, livers, testicles, would do well to revise their nomenclature as well as their habit of thought. Dr. Mackenzie has demonstrated by his own career that the highest place in medicine belongs to the physician as apart from the "laboratory worker," and that the lessons of experience may not be neglected. In 1878 Dr. Mackenzie graduated from Edinburgh University, and was immediately appointed assistant to the Professor of Clinical Medicine. In 1879 he resigned that position and took up general practice in Burnley, a town in the north of England. Here he remained for 28 years as a general practitioner. During all this time his closest attention was given to the subject of "symptoms," very many of his cases being under observation for a number of years. In 1907 he removed to London, where his fame as a diagnostician had already preceded him, and where, in less than two years, he brought out through the Oxford Press, his great work "Diseases of the Heart," already reviewed in these pages.

A HANDBOOK OF MEDICAL DIAGNOSIS IN FOUR PARTS. By J. C. WILSON, A.M., M.D., Professor of the Practice of Medicine and Clinical Medicine in Jefferson Medical College and Physician to its Hospital; Physician to the Pennsylvania Hospital; Physician-in-Chief to the German Hospital. Octavo of 1,435 pages, with 408 text illustrations and 14 full page plates. Publishers: J. B. Lippincott Company, Philadelphia and London. Charles S. Roberts, Montreal, Canadian agent.

Dr. Wilson's new book, to use his own words in the prefatory note, "is the outcome of many years devoted to work in the wards with the controlling side lights upon bedside diagnosis afforded by the clinical laboratory, revelations at the hands of surgical colleagues in the operating theatre and confreres in pathology in the post-mortem room, the frequent opportunity of seeing unusual and grave cases in consultation, and long experience as a teacher."

The book is divided into four parts "with a view of simplifying the arrangement of the topics in a Department of Medicine which have attained large scope and insistent importance. Briefly one may mention the headings of these parts:—

Part I. (53 pages) deals with medical diagnosis in general; Part II. (336 pages) the methods and their immediate results; Part III. (216 pages) symptoms and signs; Part IV. (808 pages) the clinical applications.

In the first part devoted to general conditions of medical diagnosis, the author discusses the direct and indirect methods of diagnosis, medical topography, examination of the patient, and case taking. This is carried out in a clear and concise manner with abundant illustrations both verbal and diagramatic.

The second part opens with a few pages describing medical thermometry and chart making. Before taking up the methods of examination of the different systems, details of which occupy the largest portion of this section, physical diagnosis is defined and described. In introducing this part of his subject, the author makes, among others, two very important statements which may be repeated here: "More errors in physical diagnosis arise from want of system than from want of knowledge. \* \* \* a long apprenticeship in the post-mortem room is an essential preparatory course for good work at the side of the bed."

That portion of the work devoted to symptoms and signs, comprising the third part, contains a clear yet brief discussion of the various general symptoms and signs common to diseased conditions of each system.

The fourth part, over 800 pages—considerably over one-half the



book—is taken up with the clinical applications of the teachings in the former part of Dr. Wilson's excellent work. Part IV. is a Practice of Medicine with the treatment left out. "Clinical applications" might have been written, quite as well, we think much better were the definitions of disease and the etiology of disease and details of symptomatology left out entirely. Again, we urge that the complications and sequelæ of a disease can afford but little aid in the diagnosis of that malady save in a few instances.

We have already spoken of Dr. Wilson's book as an excellent work. It is original in its plan. It is well illustrated with original plates and photographs appearing for the first time. The whole book speaks of the author's wide and careful observation in the clinic, laboratory and post-mortem room, and of his high appreciation of the needs of the student and the practitioner. Without discussing details such as the omission of this test or that sign, valued highly by some and less by others, we are convinced that Dr. Wilson has written an excellent work which will prove most helpful to both student and practitioner.

W. F. H.

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## Medical News.

### THE ANNUAL MEETING OF THE CANADIAN MEDICAL ASSOCIATION

The annual meeting of the Canadian Medical Association will be held at Convocation Hall, University Grounds, the first four days in June. As usual, various manufacturers and agents will have exhibits displayed for the inspection of the Canadian Medical Profession.

The Waterbury Chemical Company, Limited, Toronto, Canada, will not only have an exhibit in the rotunda of the building in which the meetings will be held, but also wishes to announce that they will take great pleasure in receiving at their laboratory, 34 Beverley Street, any one who would care to call or is interested in investigating the well known products of this Company.

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### MILK COMMISSIONS.

The fourth annual meeting of The American Association of Medical Milk Commissions will be held at the St. James Hotel, St. Louis, on Monday, June 6, 1910.

The programme committee reports that the following have agreed to be present and contribute:—Dr. M. P. Ravenel, of the University of

Wisconsin; Prof. W. A. Stocking, Jr., of Cornell University; Commissioner R. A. Pearson, Albany; Assistant Surgeon-General Kerr, Washington; Dr. E. C. Schroeder, United States Department of Agriculture; Dr. Henry L. Coit, Newark; Dr. Collins H. Johnston, Grand Rapids. Among the subjects thus far assigned are:—"The Essentials Underlying the Production of Clean Milk," "The Bacterial Content of Milk from Cows Continuously Stabled," "The History, Development and Statistics of Milk Charities in the United States," "The Advantages, the Limitations and Some of the Results of Milk Charity Work," "The Production of Certified Milk." The president is Samuel McC. Hamill, M.D., 1822 Spruce Street, Philadelphia, and the secretary Otto P. Greier, M.D., 124 Garfield Place Cincinnati.

### CANADIAN MEDICAL ASSOCIATION 43RD ANNUAL MEETING.

#### *Provisional Programme.*

The place of meeting of each session will be plainly marked on the plan at the entrance to Convocation Hall, and admission to each will be by ticket only.

The exhibits of the various sections, and by leading manufacturers of articles of interest to the profession, will be placed in the approaches to Convocation Hall and the Official Bureaus of the Association.

The Queen's Hotel will be the headquarters of the Association. Delegates should make reservation immediately.

The fee for membership is \$5.00. Pay to treasurer, Dr. H. B. Small, Ottawa, at any time. New members should apply at meeting when registering for Application for Membership forms. They must be recommended by two members of the Association. The transportation arrangements apply to them as to members.

On the afternoon of Thursday, 2nd June, there will be an excursion by steamer Turbinia to Port Dalhousie; thence by electric railway to Niagara Falls. Refreshments on boat; dinner at the Clifton House; returning to Toronto in evening. There will also be an excursion by special C.P.R. train to Guelph, as guests of the Guelph Medical Society, to visit the Ontario Government institutions, and other points of interest, leaving Toronto at 11 a.m. on Saturday.

The General Secretary, Dr. George Elliott, 203 Beverly St., Toronto, will be pleased to furnish promptly any further information required.

The annual meeting of the Canadian Medical Protective Association will be held on Friday afternoon at 5.30 p.m., when its president, Dr. R. W. Powell, Ottawa, will submit his annual report.

This discussion will be introduced by Dr. Roodick on the evening of the first day, following the address in medicine.

In addition to the Presidential Address, there will be one in Medicine by Dr. Herringham, of London, England; one in Surgery by Dr. J. B. Murphy, of Chicago, and a third in Obstetrics by Dr. Henry C. Coe, of New York.

The Milk Commission will report on the afternoon of the first day, and several leaders in this field from the United States will contribute to the discussion.

Two Symposia have been arranged, to which the various sections will contribute: one on Exophthalmic Goitre, the medical aspect of which will be treated by Prof. McPhedran, of Toronto; the Surgical by Prof. F. J. Shepherd, of Montreal; and the Pathological by a physician from New York; and another on Psycho-Neuroses, of which Drs. J. J. Putnam, of Boston, August Hoch, of New York, W. Hattie, of Halifax, and Ernest Jones, of Toronto, will each present various aspects.

Medical Education will be dealt with by Prof. J. C. Connell, of Queen's University, Kingston.

All of the above will be given in the Convocation Hall during the afternoon or evening sessions before all the members.

There will be Sections in Medicine, Surgery, Obstetrics, and Gynecology, Pathology, Pediatrics, and Diseases of the Eye, Ear, Nose and Throat. These will be held each forenoon. Most extensive programmes have been prepared for each, some seventy papers in all being already promised. These Sections in Medicine, Surgery, Obstetrics and Pathology will each hold three morning sessions, commencing at 9.15 on Wednesday the first day of June. The attention of members is especially called to the hour of meeting so that there may be no disappointment. The section of the Eye, Ear, Throat and Nose, and the Section on Pediatrics, will each hold one session only, viz., Thursday the second of June.

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### **Society Proceedings.**

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#### **MONTREAL MEDICO-CHIRURGICAL SOCIETY.**

The eleventh regular meeting of the Society was held Friday evening, March 4th, 1910, Dr. W. Grant Stewart, President, in the chair.

#### **LIVING CASES: INJURIES TO THE BRACHIAL PLEXUS.**

D. A. SHIRRES, M.D., exhibited five cases which he had under treatment. These cases will be discussed at length in a paper which Dr. Shirres is now preparing on this subject.

WESLEY MILLS, M.D. I think we all agree that these are very interesting practical cases and they serve also the additional purpose of raising problems for discussion. There is nothing like always having something which calls for solution. The explanation that occurred to me first of all is the possible one, in regard to some of these cases, of primary degeneration. It has been found that section of the nerve not only leads to Wallerian degeneration but also to a primary degeneration which is marked especially in the cell bodies. Now, if these cell bodies actually die of course the whole neurone must perish. In my experiments I found, with others, that the character of the injury had a good deal to do with the degree of degeneration in the body of the cell; the amount of shock determined whether the cell actually died or not. Mere section did not lead to the actual death of many cells in certain individuals, but pulling out the nerve—evulsion—did cause widespread death of cells. Now, fracture is a violent thing, and if the nerve is injured this occurs in a very severe form; there seems to be a kind of shock. The question of ascending neuritis did not occur to me, but I should say that that was in these cases probable. Some years ago I had a fractured humerus myself and it caused a good deal of trouble for a long time. There was a certain amount of atrophy of muscles and a good deal of pain and tenderness, so that I am satisfied that there was neuritis in this case. According to the notions that are most prevalent in English-speaking countries at present the principal part in the regeneration of a nerve is taken by the central neurone. I must say that in some of these cases that have existed long without operation, and when after the best surgery there is no result, the facts seem to point to the importance of the peripheral part of the neurone in regeneration; and I am inclined to think that we have come to believe a little too strongly in the neurone doctrine which presents many difficulties in practice and people are a little too much inclined in England and on this side of the Atlantic also, to give insufficient weight to the influence of the external sheath in regeneration. And these practical cases that do not respond to surgery seem to me to rather emphasize the importance of this peripheral part, otherwise, why should there not be regeneration after any length of time; that is to say, if the whole thing was dependent upon the central portion that remains.

A. LAPHORN SMITH, M.D. Dr. Shirres is to be congratulated upon his untiring energy and perseverance in these difficult cases. With his treatment he gets the muscles ready so that if the nerve ever came down there would be something to work upon. Sometimes his work would cover a whole year before he would be rewarded by success.

D. A. SHIRRES, M.D. I certainly agree with Dr. Russell that we get an ascending neuritis quite frequently; we have always three or four cases in the course of the year, but they are usually not traumatic, that is very common, but in the case like that of a splint I cannot think of any septic condition being present which would be a cause. It is an established fact that degeneration not only goes downwards but it may go upwards, as Professor Mills states. In the case of the man with the leg removed we found the cells in the anterior column of the spine degenerated. I am probably optimistic in regard to the value of electrical treatment by galvanism in peripheral diseases, and only recently a well known surgeon told a patient of mine that "it was no use," but that patient was soon able to prove to him that it had been of great value, and these cases I show to-night are a pretty positive demonstration of its value.

W. GRANT STEWART, M.D. We are indebted to Dr. Shirres for bringing this very valuable series to show us to-night. I think we all learn a great deal from seeing the actual cases, and we have to thank Dr. Shirres for the trouble he has taken to show these interesting cases.

#### TWENTY-FIVE YEARS' ADVANCE IN ABDOMINAL SURGERY.

A. LAPHORN SMITH, M.D., read the paper of the evening.

A. L. C. GILDAY, M.D. There have been great advances in abdominal surgery, as everyone knows, even during the last ten years. One of the striking things is the large proportion of cases with small hæmorrhage. We used to see operations where two or three assistants were kept busy with sponges swabbing up the blood while the operator was looking for arteries which he had lost sight of, and which had been cut. Now the arteries are tied before they are cut and that is one of the advances. Another thing is the improvement in the operating room, the long sleeved gowns, rubber gloves, etc., which are all sterilized. But I still think that we are only at the beginning of our operative work, and the knowledge which we have attained will be materially added to in the next ten years.

WESLEY MILLS, M.D. I have listened to Dr. Smith in this Society for the past twenty-five years, and I do not know that during that time I have ever heard him give as condensed, as pregnant, or as woolly satisfactory an address as this. I have not always been able to agree with Dr. Smith, but to-night I am sure we are all pleased with the way he has presented this subject, so simply, without undue use of technical terms, and following general principles. I think, perhaps, Dr. Smith has a little over-stated ~~some~~ things. For instance, I would not like to be operated on out in the snow. I have always felt that one of my great-

est enemies in both normal and abnormal condition was cold, and I think it is very important to keep the patient warm. I dare say Dr. Smith does too, but it did not appear so from his remarks. As a patient I feel very keenly upon some points upon which Dr. Smith has touched, for example the question of drinking water. Dr. Smith will remember how patients used to be starved for water, but nobody knows what this experience is until he has gone through it. Again, there is the question of anæsthetics. I had an experience which really supports what Dr. Smith has said about the quantity of anæsthetic. This misfortune was not due to any defect on the part of the anæsthetist, who was a very admirable man. I had this anæsthetic in my ordinary ward room because it was thought that the operation would be a very trivial one though it really lasted nearly an hour. Now, all this time I had been breathing the anæsthetic, and as I was left in that same room which was not properly cleared of the anæsthetic I was receiving it all day long more or less and with disagreeable results. With regard to the nurse, Dr. Smith has hinted at the psychological principles which underlie experience—that one does not have to speak when a thing is wanted, that such wants are anticipated and that it is best to have the same person. But I do not think I would like, as a general rule, to have the ordinary person about one for such a long period, say, as Dr. Mayo had his nurse assistant. My experience has been that the older nurses are not the best, and I think the success of some of the younger nurses is due to their high ideals as evidenced by the thoroughness with which they act, the anxiety they displayed if everything does not go well and their close attention to the smallest details.

GRANT STEWART, M.D. I think we have to thank Dr. Smith for this very excellent, concise and yet full account of the advances of surgery in the past 25 years. We cannot all go back 25 years, but some a good part of it, and we can quite corroborate what Dr. Smith has said. We all have seen Dr. Smith operate and we know what a dextrous operator he is, and he is thoroughly competent to speak on this subject. One point he mentioned, about waiting for symptoms, reminded me of a case of a young lady tobogganing on Fletcher's Field between 5 and 6 o'clock a few weeks ago. She felt some pain over the epigastric region and came home. About 7 o'clock she had a most severe epigastric pain, and I saw her then; pulse 100; there was vomiting; no pain over the appendix or lower abdomen, but the whole abdomen felt like a board. I had one of the surgeons see her and he made an incision over the region of the stomach and examined it very carefully but could find no perforation. While he was doing this we noticed the appearance of

some dark material which appeared to be blood. (She was a young woman, aged 30, and had just menstruated the previous month.) On observing this it was thought that it came from lower down in the abdomen. A second incision was made over the hypogastric region and there was found a ruptured cyst over the region of the broad ligament in the left side and the bleeding point discovered. He removed the cyst and with a good deal of difficulty checked the bleeding. The patient made a good recovery, and has been well since. This case bears out very well Dr. Smith's remarks that we should not wait to make a diagnosis, but make an exploratory incision. In this case it saved the girl's life, as I hardly think any one could have made a diagnosis from her symptoms, of the condition which actually was found.

A. LAPHORN SMITH, M.D. I wish to thank you for the kind remarks which have been made. I did not have time to say anything about shock, but I might say now that a great advance has been made during the last twenty-five years, so that it is rarely seen now after abdominal operations. Shock was often a misnomer as it was really made up of several different things. First, it was often due to hæmorrhage—the blood pouring out steadily during a long operation until there was no fluid left for the heart or lungs to work on. In other cases there may have been very little hæmorrhage but the vital depression was due to prolonged anæsthesia. Chloroform, or, indeed, any anæsthetic administered for several hours would give even a healthy man shock. Then there was the chilling of the patient with wet towels intended to be hot but which quickly became cold evaporating lotions. But perhaps the greatest advance in avoiding shock was that by means of the Trendelenberg posture; the majority of abdominal operations are now performed without handling the intestines, and, indeed, in many cases without seeing them. The handling and exposure of the intestines caused real shock, through the great sympathetic. Twenty-five years ago it was the rule; now it is quite the exception. The administration of strychnine for several days before the operation was another advance; it diminishes the calibre of the bowel and expels gas so that the intestines drop out of sight as soon as the peritoneum is opened.

I also did not have time to mention the great advance of the rectal enema of normal salt solution as a means of avoiding shock. When there is no pressure in the radial there is very little in the aorta, and as the heart only gets its nourishment through the coronary artery and as the coronary artery only receives blood when the pressure in the aorta is high, we are devoting a great deal of attention now to replacing the blood and heat lost by the operation by rectal enemata of hot normal salt solu-

tion allowed to flow very slowly into the bowel, sometimes all through the operation and nearly always for several hours afterwards, and with remarkable results not only in avoiding shock but in saving the patient from the intolerableaching and thirst from which they used to suffer. I am having an original research made of my last hundred laparotomies to show that there has been very little if any fall of temperature or rise of pulse after the operation.

#### PATHOLOGICAL SPECIMENS.

O. S. WAUGH, M.D. I have here to-night a few specimens that we have had from autopsies of the last few weeks at the General Hospital. The first is a heart from a case of chronic myocarditis as a result of chronic arteriosclerosis of the coronary arteries. The calibre of the vessels is greatly diminished and at the site of their origin the vessels are almost occluded. In the left ventricle the wall is very thin in one place, there being almost an aneurysm of the heart, and at this site there is a rather large mural thrombus. The heart is very much enlarged.

The second specimen is from a case of streptococcic septicæmia. At autopsy there were found multiple mural thrombi of both ventricles. A few of the thrombi are visible here. There was also an acute malignant endocarditis.

The third is a child's heart showing also multiple mural thrombi with infarction in places. The thrombi are situated in both ventricles in this case; this case also showed infarction of the spleen and kidneys.

There are two lung specimens, one from a man who was struck by an engine. He was very much bruised; there was a compound fracture of the tibia; his scalp was very much torn right down to the calvarium, but showed no fracture of the skull. At autopsy, on examination of his right lung there was a rupture through which the finger could be inserted. At either side of this rupture the visceral pleura seemed to be intact, but you can see underneath the pleural surface the rupture of the lung substance extending for about  $\frac{1}{2}$  to 1 cm. but not extending through the pleura. On careful examination there was no sign of fracture of the rib and no sign of external thoracic injury. The rupture of the lung and the pleural cavity full of blood was all that were found.

The other case was that of a boy who had been caught in an elevator and crushed. The history is not very clear, but at autopsy he had bruises about the neck and back of shoulders. There was marked cervical emphysema of the right side of neck and face, and on opening the thoracic cavity the left chest was apparently normal. There was a fracture of the 1st, 2nd and 3rd ribs posteriorly, just outside their articular surface with



the vertebra. On the right side there was a chronic obliterative pleuritis, the visceral and parietal pleuræ were very firmly adherent to one another. There was a fracture of the 2nd, 3rd and 4th ribs posteriorly, similar to that on the left side and also a rupture of the right bronchus. The explanation was offered at autopsy that this rupture of the bronchus was caused by the sudden continued pressure on the right side of the chest, the obliterative pleuritis causing that lung to move with the chest at the same time putting severe tension on the bronchus, which ruptured.

D. F. GURD, M.D. I would like to know the age of the patient from whom the first specimen was taken.

O. S. WAUGH, M.D. The patient was aged about 58, and there was no brachycardia.

A. H. MACCORDICK, M.D. This case was a male, aged 58. He was admitted to the Montreal General Hospital in August, 1909, complaining of weakness and pains in his left arm and leg. He gave a history of venereal disease and had used alcohol to excess. There was no family history of nervous disease. On admission he had marked weakness of his left arm and leg. There was complete anesthesia of the whole left side with loss of taste and smell. The field of vision was markedly contracted. The pulse was weak, regular and of high tension. The cardiac dullness was considerably increased and the aortic sound accentuated. He had well marked Dupuytren's contraction of the left hand. The urine was of low specific gravity, contained a considerable amount of albumen with granular and hyaline casts. He gradually improved and when discharged, five months later, could walk fairly well. He again lapsed into his intemperate habits and died suddenly one month later.

#### HOOK-WORM DISEASE.

R. E. POWELL, M.D.

A report of this case appears in the present number of the JOURNAL.

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