

Men and Books

OSLER, NOW A VETERINARIAN!*

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"The incessant concentration of thought upon one subject, however interesting, tethers a man's mind in a narrow field."—SIR WILLIAM OSLER.

SIR WILLIAM OSLER's life presents many facets. There are perhaps over one thousand articles and books written in analysis and eulogy of this man, with the result that most of the facets are very well polished. There remains, however, one small surface which has collected some dust and it is this surface I wish to polish.

In words of praise, Osler has been variously described as teacher, clinician, naturalist, pathologist, bibliophile, parasitologist, physiologist, morbid anatomist, historian, comparative pathologist and so on. I will not extend the list by calling him a veterinarian, but I would like to indicate Osler's veterinary activities, particularly in Montreal, and comment on the Montreal Veterinary College and why Osler might fairly be called a veterinarian.

Aside from two excellent articles by Mitchell¹ and Cameron,² little has been written about Osler's veterinary activities. Cushing³ makes several short references to these interests in his biography of Osler, but nothing is to be found in most of the writings. One might almost be led to believe that his part in Canadian veterinary growth was negligible, which, of course, is far from being true.

Sir William's famous remark⁴ that "the effective, moving, vitalizing work of the world is done between the ages of twenty-five and forty" might be applied to his productive veterinary years. It was during his Montreal period, between the ages of 25 and 35, and the following five years at Philadelphia, that Osler afforded veterinary medicine his interest.

But the pattern for his interest in comparative pathology was set long before he arrived in Montreal. As a young student at Trinity College, Weston, Ontario, he came under the influence of its headmaster, Rev. W. A. Johnson, an ardent naturalist and botanist. By the time Osler arrived at Toronto to study for the ministry in 1867, he had acquired an avid interest in natural history, particularly the entozoa. He continued these interests as a theological student, beginning a notebook in which he recorded the entozoa which he found in the Toronto area.

When Osler entered the Toronto Medical School, he had already become a close friend of Dr. James Bovell, through their mutual friend, Reverend Johnson. Dr. Bovell, also a keen naturalist, no doubt played a large part in forming Osler's ideas with regard to the ubiquity of disease in both man and animal. In many ways he was Osler's prototype for the Montreal era to come, for aside from his duties as professor of pathology and physiology at the Toronto School of Medicine, Bovell served as lecturer on the staff of the Ontario Veterinary College. Osler's first contact with veterinarians was brought about through Bovell's en-

couragement to pursue his studies of internal parasites in dissecting rooms of the newly built veterinary college on Temperance Street, Toronto. His notebook on entozoa lists parasites found in man, domestic animals, and in a variety of bird, fish and wild animal species. It appears that even at this early age (21 years) he was a keen observer. This is illustrated by the following notation, where he identifies not only the species but also the locale in the intestinal tract.

"22/1/70. From a slut, six months old, also got from a butcher's shop, 39 *Tænia elloctica*, 25 *Ascaris*. In this dog there was but one species of *Tænia*. The *Tænia* were collected towards the ileum, while the *ascaridæ* are usually in the duodenum and beginning of jejunum. Of the 39 *Tænia*, I obtained 18 with heads etc. . . ."⁵

One of his human entries is interesting in that it suggests the antihelminthic properties of ethanol.

"27/2/69. The family of a Mr. Getz in Hamilton, consisting of himself, wife and daughter, partook of an uncooked ham. All three were laid up with the disease. Miss Getz died first; in her the parasites were numerous and unencysted. Mrs. Getz died some two weeks after her daughter; in her they were just beginning to be encysted. The husband was attacked but not so severely and escaped, most probably from being drunk for some days at the commencement of the attack."⁵

When he moved to Montreal to complete his medical course in 1870, Osler was preceded by many changes in the local veterinary scene that would subsequently influence him and the veterinary profession itself. Some four years before Sir William arrived in Montreal there came from Toronto a progressive veterinarian by the name of Duncan McEachran, who had migrated from Scotland to Canada in 1862, after graduation from the Royal Dick Veterinary College, Edinburgh. Once settled in the Toronto area, he was called upon by a fellow classmate, Sir Andrew Smith, to aid in the formation of the Ontario Veterinary College, the first such college in North America. His move to Montreal, four years later, was precipitated by differing views regarding veterinary education. McEachran was eager to continue in the field of veterinary education and he was not long in Montreal before he had obtained the aid of Sir William Dawson, principal of McGill College, and of Dr. George Campbell, dean of the Medical Faculty, in founding the Montreal Veterinary College. His first lectures were held in a room on Coté Street and subsequently on Rue St-Jacques⁶ (both streets now in downtown Montreal). Here the students attended classes in anatomy, therapeutics and obstetrics. Along with the students of the McGill medical faculty, also located on Coté Street, they attended classes in botany, chemistry, physiology and histology. In 1875, at McEachran's own expense, a building was erected at 6 Union Avenue, just above Dorchester Street, which became the permanent home of the Veterinary College until its demise in 1903.

Little is known of Osler's veterinary associations during the period of his medical training at McGill, viz. 1870-72. While McEachran was at the Ontario Veterinary College in Toronto, he became a close friend of Dr. Bovell, and it is likely that Osler met McEachran soon after his arrival in Montreal, through their mutual friend. At a later date, McEachran writes of Osler,⁷ "My acquaintance with him dates from his arrival in Montreal," and goes on to take the credit for

*Presented to the Osler Society of McGill University, Montreal, March 31, 1960.

introducing Osler to Montreal social life. "On my suggestion he became a Member of the Microscopic Club. This Club was of a combined scientific and social character . . . [and this was, I think, his first introduction as a young man to Montreal social life]."

Osler returned to Montreal in 1874, after two years of postgraduate training abroad, and upon the retirement of Professor Drake, he was appointed the professor of the Institutes of Medicine at the age of 26. He became associated with the Montreal Veterinary College shortly after his return from England, and took a keen interest in the veterinary students. Dr. McEachran writes,⁷ "Needless to say that the personal interest he took in our boys was of great value to them and of immense assistance to me; his genial manner, kindly disposition and thoroughness of instruction endeared him to the hearts of pupils and fellow teachers and did much to establish the reputation of the school for thoroughness and sincerity of purpose." He lectured mainly in the subjects of physiology and helminthology. A suggestion of how the veterinary students fared in comparison to their medical confreres is given in the closing report of the school for the session 1876-77:⁸

"The examinations in the primary branches, consisting of zoology for the first year and chemistry and physiology for the second year students, are conducted by the professors of McGill University, being the same as that passed by the medical students. It is satisfactory to notice that several of the veterinary students stand near the top in the percentage of marks, especially in physiology.

"The results of the examinations are as follows: . . . Physiology—William Osler, M.D., Professor. Out of eight, only five presented themselves and passed. Mr. Baker especially obtained a very high percentage of marks, being fourth out of thirty competitors.

It is interesting that the Mr. Baker mentioned in this report was the father and grandfather of two prominent practising Montreal veterinarians.

Osler was able to bring his famous "bedside teaching" methods to the stables. In an article reporting successful transmission of the tapeworm *Tænia saginata* to a calf, Osler gives as his reasons for the experiment:⁹ "In order to procure specimens of measly veal, and to afford the students of the veterinary college an opportunity of studying a [clinical] case of cestode tuberculosis. . . ."

McEachran and Osler shared similar views concerning the education of medical scientists. Their harmony in this regard was no doubt responsible for the encouraging progress of the veterinary school. McEachran⁷ once wrote of Osler, "In our views on what medical education should be, we fully agreed that medical science was a general science divisible into branches, of which the first was what embraced its application to the human family and the second to domestic animals in particular and would rightly include all vertebrates; reduced however to human medicine and comparative medicine."

They both considered it essential that, regardless of which branch of medical science was to be their métier, the students should be students of general medicine and their course of instruction should embrace both comparative anatomy and pathology. Osler¹⁰ urged his medical students to follow this precept in an inaugural address at McGill:

"Five subjects will mainly occupy your attention: anatomy, physiology, chemistry, materia medica and

botany. . . . Botany will be useful to you chiefly as an introduction to materia medica; it is thought necessary that you should be fully acquainted with the structure and organization of plants the better to appreciate the medicinal virtues of certain of them. . . . Those who like can take up the structure of animals, zoology and comparative anatomy, instead of botany; and I have been surprised that so few men do so, for the grasp of principles obtained in a careful study of the form and nature of animals and the bearing of this upon human anatomy and physiology, is more valuable, in my opinion, than the benefit derived in the study of materia medica from a previous course of botany."

As a professor of medicine, with its obligations, Osler still found time to follow his own advice. McEachran⁷ writes, "He was as much a student as ever and was frequently to be found at work in the dissecting room studying comparative anatomy. He made many instructive post-mortem demonstrations on all breeds of domestic animals in pursuance of his studies in comparative pathology."

Whether it was due to the new veterinary building or to the arrival of Osler, the enrolment of the school increased. During the session 1874-76, before Union Avenue, only seven students were in attendance. In the following years there was a steady increase in enrolment, so that by 1878 there were 30 students, among whom were several Americans and French-speaking Canadians.^{11, 31}

It appears that even the Quebec government was pleased with their progress, for in the Third Quebec Parliamentary report there appears the following paragraph:¹²

"The report of the Montreal Veterinary College is very favourable to that institution, showing the animals who had received surgical aid to be 1664 horses, 50 cows, 1 sheep, 1 pig, 116 dogs and 5 cats. It is recommended that a grant of \$2000 be asked from the Government for the appointment of a French lecturer to the College."

Up to the year 1876, the veterinary graduates received, after three years of study, a diploma from the Montreal Veterinary College. McEachran was eager to have the legislative power to grant degrees. Under a solicitor's notice in *The Gazette*¹³ appeared a statement that the Montreal Veterinary College would apply to the Legislature for an act of incorporation with the power to grant degrees in veterinary surgery. The bill, however, was never read, and it was not until 1889, when the college became a faculty of McGill University, that a degree was granted its graduates.¹⁶ At Osler's suggestion, the faculty was appropriately called the Faculty of Comparative Medicine.⁷

From the time of its inauguration in 1875, one of the Montreal Veterinary Medical Association's most active members was William Osler. The bi-monthly meetings are recorded in *The Gazette*, Osler's name appearing frequently. One week it was "Dr. Osler exhibited an immense tumour from the abdomen of a horse," or "The cases were interesting and their pathology was fully explained by Dr. Osler."¹⁴ His first paper in Montreal on a subject of comparative medicine was presented to this group; it was entitled "The relation of animals to man", and in it he elaborated upon the Darwinian theory, with the aid of skeletons.¹⁵

In 1878, his veterinary colleagues elected him vice-president of their Association. They were obviously pleased with his contributions, for in the following year he was made president. Osler continued to be their

spokesman when, in 1881, he travelled to England as an official representative of the college to the British National Veterinary Congress.¹⁸

He was not above accepting monetary recognition for his veterinary work. The following note appears in *The Gazette*:¹¹

“. . . Mr. McEachran entertained the examiners, successful students and professors to supper in the evening, when a very pleasant time was spent; and Dr. Osler was the recipient of a very complimentary address, accompanied by a purse of \$100, to aid him in scientific research. . . .”

Although their personalities were quite different, Osler and McEachran became very close social and professional friends. At one time Osler⁷ wrote to his friend, “You are one of my oldest and best friends and I owe a great deal to you for your kind encouragement in my early days.” McEachran was not of an investigative turn of mind, but he was keenly aware of the need for scientific veterinary investigation. He made the facilities and the necessary encouragement available to Osler in his pursuits in comparative pathology.

Osler contributed some ten scientific papers pertaining to veterinary medicine in addition to numerous editorial comments on animal disease. Most of the papers were oriented towards helminthology.

One of his earlier papers was “Verminous bronchitis in dogs”,¹⁹ presented to the Montreal Veterinary Association. Osler had been asked by Principal McEachran to aid him in the investigation of a disease colloquially known as “husk” or “hoose”, which had broken out among the pups at the Montreal Hunt Club. (It is unfortunate that no record of this is made in the 1877 minute book of this club.)²⁰ Owing to the distance from the city the kennels were visited only sporadically, but Osler arranged to have one case brought to the infirmary for study. During the post-mortem examination of eight dogs he discovered small round worms in the bronchioles to which he gave the name *Strongylus canis bronchialis*. Unfortunately Osler misclassified the parasite, and it was later called *Filaria osleri*. However, in 1921, Maurice Hall of the United States Bureau of Animal Husbandry felt that “as it has none of the distinctive characteristics of *Strongylus* in even the broad sense . . . and *Filaria osleri* is so remote from the type species”, he proposed a new genus in honour of its discoverer and so the parasite is now known as *Oslerus osleri*.

His interests were not confined to helminthology. After an outbreak of so-called pig typhoid in Quebec, during the winter of 1878, Osler attempted to elucidate the etiology of the condition. There was much controversy as to the cause. Some continental pathologists believed it to be a form of anthrax; others would have it the swine counterpart of human typhoid. Osler, it appears, was already acquainted with the literature on the subject, which would make one suspect that his medical reading was not entirely confined to human medicine. He writes:²¹ “Having in the course of my reading become acquainted with this unsettled state of the matter, I gladly, at Principal McEachran’s suggestion, investigated a local epizooty which had broken out near Quebec in a drove of 300 hogs.”

His investigations were quite extensive and he carried out many forms of transmission experiments. He visited the pig-pens daily, closely inspecting the animals for clinical signs. He is to be admired for his

persistence. The close inspection of five 50-lb. pigs is in itself a difficult task, but to record as he did, twice daily, their rectal temperature is nothing short of admirable.

He concluded that the disease was in no way associated with either typhoid or anthrax, but was of a dysenteric nature. In retrospect, his conclusions were correct. From his excellent clinical, gross, and microscopical descriptions, one can now diagnose what is generally considered to be hog cholera. It was not until 25 years later that the etiological agent was found to be a filterable virus.

During the 1880’s, the people of Montreal were well aware of the dangers of consuming diseased meat, and were cognizant of the questionable local public health measures in preventing this meat from reaching the butcher shops. In an article entitled “An investigation into the parasites in the pork supply of Montreal”,²² Osler found little to praise in our local inspection methods. He writes:

“In the interests of public health, it is a matter of great importance that the food supply of cities should undergo strict supervision, with a view of excluding possible sources of disease. In this country, the department of the civic governments relating thereto cannot be said to be conducted on model principles. Speaking of Montreal, meat inspection consists in the examination of the carcasses of all animals exposed for sale or killed at the abattoir, and its superficial character is clearly shown by the results of this examination.”

The results did much to reassure the consumer with regard to parasites in their pork supply, but little to encourage them to buy sausages, for he continues,

“The Highland Shepherds are stated to eat without ill effects the flesh of animals which have died of anthrax. In the case of pork it is not so much the flesh of salted meat which has been known to produce sickness as when it is made into sausages and brawn (head cheese). . . . This is not surprising to any one who has watched their manufacture. . . . Odds and ends go for mince meat, and too often, bits of old meat which is just beginning to turn. The experience is only too common of tasting in a mouthful of sausage the disagreeable flavour of a morsel which is high. . . .”

With the aid of a veterinary student, he examined 1037 hogs in the Dominion Abattoir, a formidable task, considering that sections of each diaphragm were compressed between glass and examined with a magnifying glass. The results are interesting. Four out of 1000 hogs showed evidence of trichina tubercles, 76 were infested with the larval stage of the pork tapeworm of man, and 31 hog livers contained echinococcus cysts. (Montrealers will be gladdened to learn that the incidence of the last two is now virtually negligible, but surprised to find that the incidence of trichina remains the same.)

Veterinarians were not the only ones to benefit from Osler’s interests in comparative pathology. His active role in the veterinary school provided him with many specimens of interesting animal pathology, which he presented at the meetings of the Montreal Medico-Chirurgical Society. It is interesting that no complaints were registered by the doctors regarding the odour, for on one occasion the split head of a horse suffering from glanders was shown,²³ and on another, the paunch of a cow presenting numerous examples of

Amphistoma conicum,²⁴ a fluke not uncommon in the region at that time.

In the spring of 1884, Osler sailed for Europe. While he was in Berlin, revisiting hospitals at which he had studied, he arranged to spend two afternoons of each week in a Berlin abattoir. He remarks,²⁵ "Owing to the elaborate system of inspection, both ante- and post-mortem, [it] offers one of the best fields in Europe for the study of comparative pathology and helminthology." The knowledge he garnered from the Berlin system of meat inspection might well have been destined for advice to our local abattoirs, but this was not to be so. With a flip of a coin, the decision to accept the medical professorship at Philadelphia was made.

While in Philadelphia, he still remained in close contact with the veterinary profession. He contributed several unsigned editorials to the *Philadelphia Medical News*²⁶⁻²⁹ on various aspects of animal disease. The Philadelphia Pathological Society took the place of the Montreal Medico-Chirurgical Society and again Osler added interest to their meetings with his contributions on animal pathology.

The pressure of other interests likely accounts for the absence of any significant published veterinary works after he left Philadelphia. He did, however, later draw upon his experiences in the veterinary field to sprinkle his book "The Principles and Practice of Medicine"³⁰ with many examples of comparative pathology.

In conclusion, I should like to comment upon the lost field of comparative pathology and suggest that the amateur or part-time researcher can still participate profitably in it. Osler would no doubt take exception to the commonly made remark that "no significant major contribution can now be made by the amateur or part-time researcher". Think of such examples of naturally occurring human disease analogues as fowl gout, canine rheumatoid spondylitis, pregnancy toxæmia of the ewe and canine eczema, and consider Osler's opinion expressed in his opening address to the Montreal Veterinary College in 1876:¹⁵ "Enough has, I think, been said to show the close relationship, as far as anatomical structure and development goes, between man and animals. You will not be long students before you find out that similarity in animal structure is accompanied by a community of disease, and that the 'ills which flesh is heir to' are not wholly monopolized by the 'lords of creation'."

The author wishes to thank the Osler Library, the McGill Medical Library, the *Montreal Gazette*, the *Montreal Star* and the McCord Museum for their kind co-operation. Dr. C. B. Baker, Dr. S. Salisbury and Dr. R. Fortune were very helpful.

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MEDICO-LEGAL

SURGERY ON VARICOSE VEINS

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IN INCOMPETENT hands surgery on varicose veins may become major—major in character and major in the disastrous results that follow it.

The surgical treatment of varicose veins seems always to have been considered a minor operation. Doctors regard it as such, and hospital classification of surgical procedures reflects their opinions. The Canadian Medical Protective Association, an organization to which doctors report, be it noted, only matters that have given rise to complaints by patients, is concerned about the increasing number of reports of mishaps, large and small, connected with this so-called minor procedure. The following remarks are not an attempt to weigh the procedures or to pronounce on their effectiveness; they are merely a report of, and some suggestions on how to avoid, some bad results.

In the past five years 11 doctors have reported to the Association that mild complications or actual crippling have been claimed by patients after vein surgery.

In all but one case there was ample justification for the patient's complaint. In this one case a patient complained that, presumably because of mild wound infection, there was excessive scarring after vein ligation.

In one other case the ill result, though serious, may properly be considered an accident: two days after vein stripping, which was skilfully performed, gas gangrene appeared. Only its prompt recognition and proper treatment saved the patient's life and her leg. No blame could be laid on the doctor for the severe, permanent crippling of the patient's leg. He had no reason to suspect, and without the suspicion no means of foretelling, what proved to be true, that the patient harboured *Clostridium welchii* on her skin.

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