inoculated healthy trees—ash, wild cherry, elm, and others, and six months later these trees were found infected by canker. Rabbits fed with cultivations obtained from the fungus cultivated from human cancer developed round ulcers of the stomach, and similar ulceration occurred in rabbits fed with cultures obtained from tree-cankers. Filtrates from cultures of the fungus from human cancer killed animals when from 15 to 20 grams per kilo of body weight were injected into the veins; filtrates from cultures from tree-cankers when rather larger doses were used. After heating the filtrates were less toxic, but it was stated that they produced an elevation of temperature in persons suffering from cancer, but not as a rule in healthy persons. To a solution of the soluble products of a cultivation of *N. ditissima* MM. Bra and Mongour propose to apply the term nectrianine.¹ Subcutaneous injections of as much as 5 c.cm. of this liquid are stated to produce no effect in healthy animals, but in animals or human beings affected with cancer its injection is followed in two or three hours by a rise of temperature of 1° to 3° C. The fall of temperature, which occurs in a few hours, is accompanied by sweating, copious excretion of urine, and profound sleep. This reaction may fail if the cancerous affection is far advanced, and tends to decrease in severity after the first injection. The therapeutic action was tested in the wards of Dr. Durand in Bordeaux in patients suffering either from inoperable cancer or from recurrence after palliative operation. In 14 cases of uterine carcinoma the subcutaneous injection of 4 c.cm. daily was followed by arrest or diminution of the metrorrhagia and the pain was greatly relieved, but there was no improvement in the general condition, and as soon as the injections were stopped the symptoms which had been relieved returned. It was thought, however, that while the treatment was continued the tumour ceased to increase in size and become harder. Similar results were obtained in a case of epithelioma of the face. In 2 cases of cancer of the stomach the injections were followed by cessation of the hæmatemesis, the appetite improved, and the epigastric tumour diminished in size. None of the patients gained weight and one lost. MM. Bra and Mongour consider that they are entitled to say that the injections produced some beneficial effects upon the local condition. The treatment is therefore in the earliest experimental stage, but any person who wishes to employ it can, we are informed, obtain the material from Messrs. Zimmermann, 9 and 10, St. Mary-at-Hill, London, E.C.

¹ Jour. de Méd. de Bordeaux, February 25th, 1900.

BRITISH MEDICAL TEMPERANCE ASSOCIATION.—The annual meeting of this Association was held on June 12th at the Examination Hall, Victoria Embankment, after a reception by the President (Professor Sims Woodhead) and Council of medical and scientific delegates to the World's Temperance Congress which was being held in the same building. The annual report, which was read by the Honorary Secretary (Dr. J. J. Ridge), showed an increase both of members and student-associates, the total membership being now 487 and 515 respectively. The report contained a suggestion that as it had been demonstrated that our soldiers could do harder and more continuous work without alcohol than with it, the rum ration should be abolished. It was announced that a Manchester branch had been formed, of which Dr. A. T. Wilkinson had been elected President, and Dr. Gray Clegg Honorary Secretary. Drs. Legrain and Boissier, of Paris, were elected honorary members of the Association. Previous to the meeting a demonstration, illustrated by lantern slides, was given by Dr. Ridge on the effect of alcohol on vegetable and animal cell life.

ROYAL ALBERT HOSPITAL, DEVONPORT.—On June 9th Princess Henry of Battenberg laid the foundation stone of the new wing of the Royal Albert Hospital, Devonport. The vote of thanks to Her Royal Highness was moved by Admiral C. Cardale, and seconded by Mr. J. May, F.R.C.S., Consulting Surgeon to the hospital.

A TAX ON MEDICAL PRACTITIONERS IN MISSISSIPPI.—The Mississippi State Legislature has recently passed a Bill imposing the following annual graduated tax on all medical practitioners in that State: Practitioners in towns of 3,000 or more inhabitants, 10 dollars (£2); in towns of less than 3,000, 5 dollars (£1); in country districts 2.50 dollars (10s.).

HOSPITAL REVENUES AND THE WAR EMERGENCY.

By Sir HENRY BURDETT, K.C.B.

It gave me great pleasure to see Mr. Timothy Holmes's article in the BRITISH MEDICAL JOURNAL of March 10th. Mr. Holmes, after a most useful life as a hospital surgeon, on joining the consultant staff, rendered good service to his hospital, St. George's, by accepting the office of Treasurer, the duties of which he has filled with great distinction and benefit to that institution. I venture to think that it would be well for the hospitals if more medical men when they join the consultant staff on their retirement from active duty were to devote themselves to the administration of the affairs of the hospital where they have spent the best part of their lives.

The Reserve Funds.

Mr. Holmes's protest as to my statement with reference to reserve funds of the London hospitals as a whole is one which I had anticipated by writing a full statement concerning each of the London hospitals which is now in the printer's hands, and will be published immediately in this year's issue of my *Hospitals and Charities*. I have fully anticipated Mr. Holmes's criticism in the chapter referred to, and need not therefore pursue the subject further here.

Damaging Appeals.

Mr. Holmes next asks what do I mean when I say "that the financial position of the London hospitals can be made secure if the old bad system of making out a case by muddling the figures is given up of deliberate purpose by each institution." Mr. Holmes has misapprehended my meaning, which had nothing to do with the system on which London hospitals' accounts are now published, seeing that they are all kept upon the uniform system which is universally admitted to be the best form of account-keeping for hospitals. I was not referring to the accounts, but to the appeal literature which many hospitals issue every year as a part of the business of raising money from the public. I noticed, for instance, that on several successive years practically the same appeal, with the same figures, was issued by one large general hospital, although those figures had little to do with the circumstances of the hospital in certain of the years during which the appeal was made use of for the purposes of raising money. I want the public to understand, as the larger givers to hospitals I am thankful to note do now understand, that in examining an appeal on behalf of a particular hospital it is usually safe to set aside those which are appallingly heartrending in the urgency claimed for the imposing figures which they contain. In other words, the best hospital appeal to-day is undoubtedly one which contains a plain statement of fact to the effect that so much money has been received, so much money is asked for, and that if that money is forthcoming, then such and such work will be undertaken and carried through with the fullest efficiency. The reports of the various hospitals are sound enough nowadays, but the appeal literature of some of them should be suppressed in the best interests of the institutions to which they relate. I do not mention the few hospitals I have especially in mind, because my purpose is not to criticise individual institutions, but to try and persuade the conductors of every hospital to reform their appeal literature by calling to their aid the assistance of a few energetic men of business, and so to secure that they shall have a much better return as the result of these appeals in the future.

The Expenditure of St. George's Hospital.

Mr. Holmes next goes into an interesting dissertation upon the expenditure of St. George's Hospital. I have had the privilege and pleasure of inspecting that hospital twice in the last three years, and I am bound to say, as a result of those inspections, that I know no institution where money has been better laid out than it has been at St. George's, or where the net result is more satisfactory or creditable to those responsible for the expenditure upon new works and reconstruction. I should say that this expenditure at St. George's was absolutely justifiable, and that nobody with any sound knowledge of hospital affairs would question the truth of this statement. St. George's Hospital may be regarded as occupy-

ing an intermediate position between the super-economical and the relatively lavish institutions judged by their expenditure as a whole.

Taking the four main heads of expenditure which I quoted by way of illustration, we have first to deal with that of medical appliances, instruments, dressings, etc., denominated "Surgery and Dispensary" under the uniform system of accounts, including out-patient expenditure. The figures given below show that, whereas the expenditure under this heading per occupied bed at St. George's in 1893 was £10 10s., in 1898 it had increased to £13 10s.—an increase of about 30 per cent.—basing the calculation upon the average number of in-patients treated daily during each of those years. This increase is considerable, having regard to the fact that there appear to have been more out-patients treated at St. George's Hospital in 1893 than there were in 1898.

I give below, for the purposes of comparison, a table showing the average expenditure on "Surgery and Dispensary" per bed occupied at St. George's and five other hospitals with medical schools in the years 1889, 1893, and 1898:

Expenditure on Surgery and Dispensary including Out-Patients.

	Year.	Average Number of Beds Occupied	Number of Out-Patients.	Expenditure on Surgery and Dispensary per Bed Occupied.
St. George's	1889	316	26,450	£ 11 10s.
	1893	323	34,406	10 10s.
	1898	308	26,371	13 10s.
Guy's	1889	419	42,031	11 10s.
	1893	411	53,649	13 10s.
	1898	424	105,672	12 10s.
King's College	1889	163	18,016	15
	1893	185	23,308	14 10s.
	1898	179	23,353	13 10s.
London	1889	622	109,839	13
	1893	656	125,094	14 10s.
	1898	656	176,786	17 10s.
University College ...	1889	179	36,417	15 10s.
	1893	186	47,003	18
	1898	158	44,806	20 10s.
Westminster	1889	175	24,774	8 10s.
	1893	176	24,217	11 10s.
	1898	179	23,991	12 10s.

From the foregoing figures it would appear that between 1889 and 1898 at Guy's Hospital the expenditure on these items has remained practically stationary, with an upward tendency at St. George's, although the out-patients of Guy's Hospital are very considerably higher in 1898 than they were in 1893, whilst at St. George's Hospital there has been a decrease. It will be observed that the largest increase has taken place at the London Hospital, where the expenditure has risen from £13 per bed occupied in 1889 to £17 10s. in 1898; the out-patients have, however, increased in 1898 compared with 1889 by no fewer than 67,000.

At King's College Hospital, where tremendous efforts have been made during the last few years with remarkable success to reduce expenditure without any decrease in efficiency, the expenditure per occupied bed was £15 in 1889, £14 10s. in 1893, and £13 in 1898, the out-patients having only increased by about 50 in the latter year compared with 1893.

At University College Hospital there has been an increase, but the figures are not fairly comparable owing to extensive structural alterations in recent years.

At Westminster Hospital the expenditure was £8 10s. in 1889, £11 10s. in 1893, and £12 10s. in 1898, the out-patients being about 200 fewer in 1898 than they were in 1893.

My suggestion in regard to the expenditure on surgery and dispensary and the waste referred to are matters within my own observation during my inspection of various hospitals, and where existent, can, I know, be stopped by the authorities if they will only take sufficient trouble to ensure that this is done.

The Increased Cost of the Nursing.

As to the increase in the nursing and the number of nurses employed, Mr. Timothy Holmes's figures show that the cost

of the nurses at St. George's was under £4 per bed in 1869, and that it increased to £11 10s. in 1899, that is, an increase in the cost of nearly 200 per cent. I have not the figures in an identical form for other hospitals at hand at the moment, but some idea of the greater increase in the cost at certain hospitals may be gathered from the following statement:—At the London Hospital in 1878 the occupied beds there were 590, the number of nurses employed 152, or, roughly, 1 nurse to every 4 beds occupied. At the present time the occupied beds average 656 and the number of nurses 302, which is about 1 nurse for every 2 beds. At St. George's Hospital in 1878, with 299 occupied beds there were 76 nurses, or 1 for every 4 beds; in 1898 there were 131 nurses to 307 occupied beds, or 1 nurse to every 2 1/2 beds. At King's College Hospital in 1878 there were 175 beds occupied and 52 nurses, or 1 for every 3 1/2 beds; in 1898 there were 179 occupied beds and 77 nurses, or one for every 2 1/2 beds. At Guy's Hospital, with 500 beds occupied in 1878, there were 128 nurses, or one to every 4 beds; in 1898, with 424 beds occupied, there were 222 nurses, or one to less than 2 beds. At Guy's, it is curious to note, that whereas the probationers have increased three and a-half times, the number of nurses, including lady pupils, and also the sisters, are practically identical in the two years taken, although a period of 20 years has elapsed. At Westminster Hospital in 1878, with 140 beds occupied, there were 37 nurses, or one nurse to every 4 beds; in 1898, with 179 beds occupied, there were 66 nurses, or one nurse to every 3 beds.

It will be observed from the figures quoted that the increased cost of the nursing proper should not exceed 100 per cent. in view of the nurses employed, but, as Mr. Holmes points out, the modern nurse necessitates the employment of a troop of ward maids, entailing a large expenditure, which makes the growth in nursing expenditure something like 200 per cent. compared with what it was 25 years ago. I admit that much of this expenditure is necessary, because the sum allowed formerly for the nursing department was totally inadequate in every way. What I want settled, however, is an average maximum sum per occupied bed, as the recognised unit of expenditure upon the nursing department, and that this should be adopted by every well-regulated hospital, so as to prevent any further large increase in the sum devoted to nursing in the hospitals of this country. I honestly believe you cannot make nurses more efficient or more comfortable than they are on the whole at the present time, and it is well that this should be formally recognised by settling each year the sum which each hospital may properly devote to its nursing department.

A Misuse of Hospital Funds.

I must rigidly adhere to my fourth point, that "every well-administered hospital should refuse to devote any portion of the revenue and the funds which have been entrusted to its managers for hospital purposes to the purposes of medical education or the medical school." I question altogether Mr. Holmes's proposition that a medical school is a source of constant revenue to a hospital. A medical school means a constant change in the resident medical officers, and it is well known that it takes at least a year for any young medical man to learn how to economically manage his department, so that the hospitals with medical schools have to stand the racket of continuously teaching young qualified men their work, and especially their administrative work. I consider the arrangement in regard to St. George's Hospital mentioned by Mr. Holmes would be perfectly legitimate providing the medical school paid say 4 per cent. on the sum originally estimated as the cost of the building and upon all further sums which may be expended on improvements. This, with a sinking fund, would make the expenditure an ordinary investment, and I certainly think the school should pay a proper interest on all reserve funds which the hospital may invest as a matter of business in the erection of school buildings or the purchase of land.

The Expenditure on New Buildings.

As to Mr. Holmes's remarks on the expenditure on new buildings, I purposely referred to the hospitals of the Metropolitan Asylums Board because they represent the latest and most costly specimens of hospital buildings within the metro-

politan area. I did not intend to confine my remarks, however, entirely to London, and as the cost of hospital buildings and sites has gone up everywhere throughout the country, I am of opinion that it is essential that the whole question should be reconsidered on its merits, with a view to a large reduction on the sum now spent on new buildings for hospital purposes everywhere. My point has practically nothing to do with existing hospitals occupying old buildings and sites which have been devoted to hospital purposes for a century or more. I was merely dealing with the item of extraordinary expenditure on new buildings, especially where a hospital has to be rebuilt upon a new site. I need not, therefore occupy your space by labouring this point.

The Reconstruction of the Older Hospitals.

I do not think, having studied the expenditure in St. George's Hospital as I have already said, that any competent critic could reasonably object to any material part of it. It is one of the most gratifying facts connected with the metropolitan hospitals that the authorities of the older institutions have become alive to the necessity of reconstruction and refurnishing, and it would be an immense gain if the War Office could be induced to devote a reasonable sum to the reconstruction, reconstruction and refurnishing of the military hospitals in the United Kingdom which at the present time strike an intelligent visitor with feelings of dismay owing to their shabby and neglected condition. Probably the shabbiest, worst-furnished, and most-neglected interior of any hospital building in these islands is that portion of old Greenwich Hospital occupied by the Seamen's Hospital Society. I know that some eminent gentlemen who recently visited the wards there were so shocked at the appearance they presented that they were unanimously opposed to a large sum being paid to its credit. The Trustees of Greenwich Hospital ought to pull down the present buildings, with the exception, perhaps, of Somerset Ward, and arrange with the Seamen's Hospital for the erection thereon of a modern hospital. The present state of affairs is becoming a scandal, and must ultimately bring discredit upon everybody concerned.

TROPICAL AND SUB-TROPICAL DISEASES IN CANADA.

REPORT BY PROFESSOR ADAMI.

WE have received from Professor Ray Lankester, F.R.S., Director of the Natural History Department of the British Museum, the following interesting report on the occurrence of malaria and other tropical or sub-tropical diseases in the Dominion of Canada, addressed to the Secretary of State for the Colonies by Dr. J. G. Adami, Professor of Pathology in McGill University, Montreal, on behalf of the Medical Faculty of that University:—

Molson Pathological Laboratory,
McGill University,
Montreal,

October 24th, 1899.

To the Right Honourable Joseph Chamberlain,
Secretary of State for the Colonies,
Downing Street, London, England.

SIR,—Copies of your circular letters addressed to the Government of this Dominion have by them been forwarded to the Medical Faculty of our University, and I am directed to have the honour to answer those circulars on behalf of our body.

CLIMATE.

Naturally from its position in the North Temperate Zone, and stretching from that into the Arctic Region, Canada affords little opportunity for the study of the diseases termed "tropical." Nevertheless, while thus situated, it has to be remembered that the climate is what is termed "Continental," and that, while the mean temperature for the whole year is low, for some weeks, not to say months in summer, the temperature rises to a great height, much higher than is usual during the same months in Great Britain. It thus follows that certain of the diseases more characteristic of subtropical regions are not entirely prevented from affecting the more southern portions of the

Dominion. As a matter of fact, however, these have never gained any foothold, nor can it be said that the incidence of disease in the Dominion to any appreciable extent varies from that met with in the Old Country.

MALARIA.

With regard to malaria, in which you, Sir, manifest special interest; just as in Great Britain even to the middle of this century cases occurred with considerable frequency, more especially in the Fen district and in Lincolnshire (so that I have personally met with those in Cambridge who can remember the time when it was deemed unsafe to have the windows overlooking marshy land open of an evening for fear of malarial infection), so here in Canada during times within the memory of old inhabitants I am informed that malaria was not infrequent along the St. Lawrence, even in the neighbourhood of Montreal.

Now, however, it is only in the most southerly portion of Canada, namely in the peninsula of Ontario, between the Great Lakes, that malaria is met with, and there not to any great extent. So far as I can learn members of the genus *Anopheles* are still present; some other conditions, however, than the presence of the hosts of the malarial micro-organism would seem necessary for the persistence and propagation of the malarial germ. And when the extraordinary abundance of lakes and large bodies of water throughout eastern Canada is called to mind, and the relatively small proportion of the country that has undergone full drainage and full cultivation, the gradual disappearance of the disease becomes a problem difficult to solve. For myself, during the seven years I have been Pathologist to the two largest hospitals in Montreal in succession, I have come across but one case of malaria in one who had not been out of the country; this was in an old Red Indian who came from Ontario.

Taking into account the enormous numbers of mosquitos present throughout Canada during the early summer months, and the fact that the further north one goes into Labrador or into Alaska the greater becomes their number, until in some regions, during the months of June and July, it is almost impossible to live on account of them, Canada should supply a very good ground for the study of the relationship of mosquitos to the conveyance of more than one form of disease.

We have forwarded your communications, including the pamphlet on "How to Collect Mosquitos," to the Montreal Natural History Society, believing that certain members of that Society will gladly aid in collecting the various forms of Canadian mosquitos and forwarding them to the British Museum.

DYSENTERY.

Of other tropical diseases there is little to be said; we occasionally meet with cases of dysentery due to the *amoeba coli*; I, however, know of only one case in which this disease occurred in a native who had not been outside the limits of the Dominion. It is possible that in the southern part of Ontario investigations will show this disease to exist.

CHOLERA NOSTRAS.

Summer diarrhoea, or cholera nostras, is much more common and more fatal in the large towns in Canada than it is in the British Isles—a fact to be explained, I am inclined to think, by the rapid and very considerable rise of temperature in the summer months.

TYPHOID FEVER.

Throughout the northern part of North America typhoid fever is very prevalent; judging, however, from the relatively low rate of mortality in Montreal—namely, a little over 4 per cent.—either the treatment here is more efficacious, or the disease is of a milder type than that met with in Europe and in the tropics.

In the Rocky Mountains there are frequent epidemics of low febrile conditions, often possessing local names, such as Red River fever, and classified together under the term "mountain fever." Recent observations show that these, judging from the results of the serum reaction, are but forms of typhoid fever. That special form of disease of the American diagnostician—typho-malarial fever—has not made its entrance into Canada; in fact, it is now thoroughly discredited in the United States and recognised as being purely typhoid or enteric fever.