

Annual report of the Medical College of Bengal : fourteenth year, session 1848-49 / under the immediate control and superintendence of the Council of Education.

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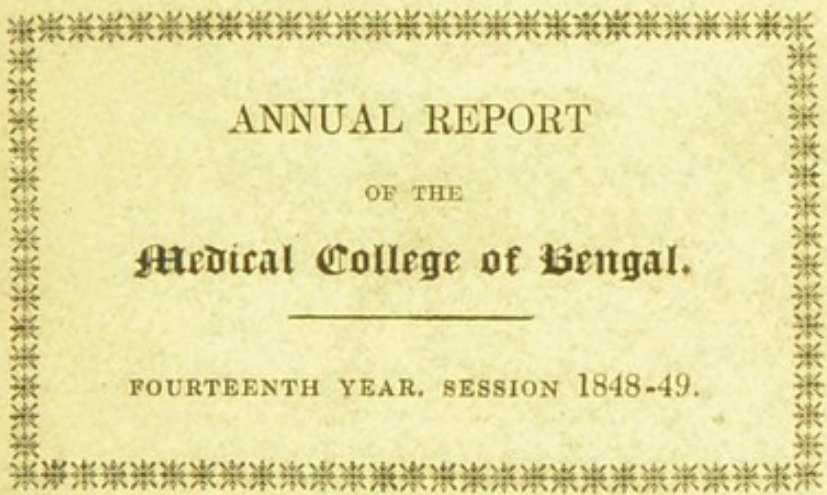
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ANNUAL REPORT

OF THE

Medical College of Bengal.

FOURTEENTH YEAR. SESSION 1848-49.



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ANNUAL REPORT
OF THE
MEDICAL COLLEGE OF BENGAL.

FOURTEENTH YEAR. SESSION 1848-49.

UNDER THE IMMEDIATE CONTROL AND SUPERINTENDENCE OF THE
COUNCIL OF EDUCATION.

CALCUTTA:

J. C. SHERRIFF, MILITARY ORPHAN PRESS.

1849.

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ANNUAL REPORT

OF THE

MEDICAL COLLEGE OF BENGAL.

FOURTEENTH YEAR—SESSION 1848-49.

Under the immediate control and superintendence of the Council of Education.

President.

The Hon'ble J. E. D. Bethune, .. { *4th Ordinary Member of the Supreme
Council.*

Members.

The Hon'ble Sir J. W. Colville,	<i>2nd Puisne Judge, Supreme Court.</i>
H. M. Elliot, Esq.,	<i>Secy. Govt. of India, Foreign Dept.</i>
F. J. Halliday, Esq.,	<i>Secy. Govt. of India, Home Dept.</i>
C. Beadon, Esq.,	<i>Secy. to the Board of Customs, Salt and Opium.</i>
J. Grant, Esq.,	<i>Surgeon, Apothecary General.</i>
J. Forsyth, Esq.,	<i>Surgeon, Secy. Medical Board.</i>
Baboo Russomoy Dutt,	<i>Commissioner Court of Requests.</i>
Baboo Prosunno Coomar Tagore,	<i>Govt. Vakeel, Sudder Dewanny.</i>
Baboo Ramgopaul Ghose,	<i>Merchant.</i>

Member and Secretary.

F. J. Mouat, M. D.,

Assistant Surgeon, Bengal Army.

COLLEGE COUNCIL.

H. H. Goodeve, M.D., F.R.C.S.	H. Falconer, M.D., F.R.S.,
J. Jackson, M.B., F.R.C.S.	(absent on duty.)
H. Walker, Esq.	A. C. Macrae, Esq., Offg. for Dr.
R. O'Shaughnessy, Esq., F.R.C.S.	Falconer.
Allan Webb, Esq.	Andrew Robertson, Esq.
F. J. Mouat, M. D., F.R.C.S.— <i>Member, Secretary and Treasurer.</i>	

INSTRUCTIVE ESTABLISHMENT.

ENGLISH DEPARTMENT.

<i>Professor of Anatomy and Physiology,</i>	H. Walker, Esq.
<i>Ditto of Descriptive and Surgical Anatomy and</i>	} Allan Webb, Esq.
<i>Curator of the Museum,</i>	
<i>Assistant Demonstrator of Anatomy,</i>	} Dwarkanath Bose, M. R. C. S.
<i>Professor of Chemistry and Practical Pharmacy,</i>	
<i>Ditto of Botany,</i>	A. Robertson, Esq.
<i>Ditto of Medicine and Clinical Medicine,</i>	Dr. Falconer.
<i>Ditto of Surgery and ditto Surgery,</i>	Dr. Jackson.
<i>Ditto of Midwifery,</i>	R. O'Shaughnessy, Esq.
<i>Ditto of Materia Medica and Medical Juris-</i>	} Dr. F. J. Mouat.
<i>prudence,</i>	

MILITARY CLASS.

<i>Superintendent and Teacher of Ana-</i>	} Pundit Madusuden Gupta.
<i>tomy and Surgery,</i>	
<i>Teacher of Medicine and Materia</i>	} Sub-Assistant Surgeon Sib Chun-
<i>Medica,</i>	

MALE HOSPITAL.

<i>Physician,</i>	Professor Jackson.
<i>Surgeon,</i>	Professor O'Shaughnessy.
<i>House Surgeon and Apothecary, ..</i>	Mr. George Daly, G. M. C. B.

FEMALE AND LYING-IN HOSPITAL.

<i>Physician,</i>	Professor H. H. Goodeve.
<i>Resident Surgeon,</i>	Dr. Gopal Chunder Seal.*
<i>Officiating,</i>	} Sub-Assistant Surgeon Prosunno Coomar Mitter.
<i>Goodeve Scholar,</i>	

OUT-DOOR DISPENSARY.

<i>Superintendent,</i>	Mr. George Daly.
----------------------------------	------------------

The following is a list of the pupils in the English Class at the close of the Session:

Stipendiary Students,	41
Robertson Scholar,	1
Free and Ceylon Students,	46
Subordinate Medical Department,	9
Total	97

* On service with the Army of the Punjab.

Of the natives, seven are Mahomedans, and the remainder Hindus.

Of the latter there are, { 13 *Brahmins.*
11 *Boidos.*
26 *Coistos.*
2 *Weavers.*
4 *Barbers.*

In the Military Class there are ninety-eight pupils upon the full monthly pay of five Rupees, ten pupils from Assam, and nine from Arracan, making in all one hundred and seventeen.

Of these, eighty-eight are Mahomedans, twenty-two Hindus, five Buddhists and two Christians.

Of the Hindu Students there are, { 9 *Brahmins.*
6 *Chuttries.*
5 *Coistos.*
2 *Kahars.*

Eighty-five of the pupils are natives of the North-Western Provinces, and thirty-two of Bengal.

The following tabular statement shews the attendance of the pupils of the Medical College, during the Session 1848-49:

CLASS.	Number of lectures given.	Number of students attending.	Total present at all the lectures during the Session.	Ditto absent during the Session.	Daily average.		REMARKS.
					Present.	Absent.	
Anatomy and Physiology, }	140	63	7,258	1,562	51.84	11.15	The causes of absence were, sickness chiefly, in some cases leave for the performance of religious ceremonies — among the absentees, are marked also those who attended, but arrived too late to have their names entered in the roll called at the beginning of each lecture.
Descriptive and Surgical Anatomy, }	100	59	4,396	1,504	43.96	15.4	
Medicine,	100	45	4,189	311	41.89	3.11	
Surgery,	102	36	3,378	294	33.11	2.88	
Midwifery,	82	32	2,387	237	29.10	2.89	
Chemistry,	103	58	4,844	1,130	47.29	10.67	
Botany,	61	59	2,883	716	47.26	11.73	
Materia Medica,	87	35	2,907	138	34.55	1.38	
Medical Jurisprudence, . . }	43	32	1,313	63	30.53	1.45	
The daily average attendance of the Military Class residing in the College, was							

Statement of the number of bodies brought to the College for dissection and operations during the Winter Session 1848-49:

Dissections.	In November 1848,	108
	December "	129
	January 1849,	131
	February "	112
	March "	85
	Total, . . .	565
	Number of bodies dissected,	220*
	" used for operations,	91
	" of which no use was made, } in consequence of rapid putrefaction, . . . }	254
	Total . . .	565

Expenses of Institution.	The cost of the Establishment from January to December 1848, was ..	64,545	5	9
	The charges of the Ceylon pupils, †	2,386	7	4
	Chemical Department,	312	11	0
	Museum and Dissecting Departments,	1,476	1	4
	Medical College ditto,	3,364	5	0
	Stipends to Students,	4,008	0	0
	Book Allowance,	840	0	0
	Contingent charges for the same period viz.,	10,001	1	4
	Total, Co.'s Rs.	76,932	14	5

Changes in Establishment. The only change in the Establishment of the College during the past year is the appointment of Dr. Gopal Chunder Seal to the Resident Surgeoncy of the Female Hospital, with the additional duty of lecturing to the Hindustani Class on Medicine. Dr. Seal was unable to perform the latter duty, in consequence of being ordered to join the Army of the Punjab.

Sub-Assistant Surgeon Prosunno Coomar Mitter was appointed to officiate as Resident Surgeon during the absence of Dr. Seal.

The designation of Professor Webb has been changed from that of Demonstrator of Anatomy and Professor of Surgery

* In the last year's report, the number of bodies dissected is stated to have been 500 : that being the number actually brought to the College. It ought to have been explained, that the number made use of for operations, and those rejected on account of rapid decomposition last year, should have been deducted from the total amount received, namely 500. The remainder would have given the correct number actually dissected.

† Paid by the Government of Ceylon.

to the Military class, to that of Professor of Descriptive and Surgical Anatomy.

The title and privileges of a Professor, with a seat in the College Council, have been bestowed upon Mr. Andrew Robertson, the Lecturer on Chemistry.

Medical College Hospital. In May 1848, Major Goodwyn submitted to the Council of Education a plan and estimate for a Fever Hospital in connection with the Medical College.

As it formed part of a general design for a new college, the whole plan was submitted to Government; and, with reference to the correspondence on the subject, which had then extended over a space of three years, the Council strongly and earnestly recommended the early supply of additional hospital accommodation, with or without reference to the question of building a new College.

In reply to this, Mr. Halliday, then Secretary to the Government of Bengal, intimated to the Council of Education, that, in addition to the old and new Fever Hospital subscriptions, amounting to one hundred and three thousand rupees, (Co.'s Rs. 1,03,000) the Right Hon'ble the Governor of Bengal felt himself justified in adding a further sum of 1,07,771-13-1, for the purpose of building a large Hospital in connection with the Medical College, viz. 57,771-13-11, the balance in the hands of Government, on account of the proceeds of Lotteries for the improvement of Calcutta; and a sum of 50,000 rupees munificently placed at the disposal of the Supreme Government for public purposes by Pertab Chunder Singh.

His Lordship desired to know whether the aggregate sum of 2,10,771-13-11 rupees was sufficient to secure the requisite quantity of ground and erect a suitable building in the immediate vicinity of the College.

The Council were at the same time informed, that that plan should be selected which gives the best and most extensive accommodation at the lowest rate; and that, of those then submitted to Government, the plan of Messrs. Burn and Co. seemed the most suited to the end in view.

To this the Council replied that the funds were sufficient for the purpose, and that they were satisfied of their ability to accomplish all that was required, if entrusted with the execution of the task.

The plan selected by the Council, in consultation with the College authorities, is a modification of that originally submit-

ted by Messrs. Burn and Co., which, with those forwarded by Major Goodwyn and others, was mislaid or lost.

The chief changes introduced were in improving the ventilation of the wards, securing additional accommodation for the resident officers, and providing a clinical theatre. Arrangements were made at the same time for placing an out-door Dispensary, on a very extended scale, upon the ground-floor.

The ground and buildings adjoining the main road were immediately purchased and cleared, and the foundation stone of the building laid, with Masonic honors, by the Right Hon'ble the Governor General of India, in presence of a large concourse of spectators.

The following inscription was placed on the foundation plate:

IN THE REIGN OF
HER MOST GRACIOUS MAJESTY
Victoria,
THE FOUNDATION STONE

OF

The Medical College Hospital,
WAS LAID WITH MASONIC HONORS,

BY

The Right Honorable
JAMES ANDREW, EARL OF DALHOUSIE, KT.
PAST GRAND MASTER OF SCOTLAND,

ASSISTED BY

JOHN GRANT, ESQ.,
PROVINCIAL GRAND MASTER OF BENGAL AND ITS TERRITORIES,

Supported by a Numerous and Respectable Convocation of the Craft,

In the presence of the Hon'ble J. E. D. BETHUNE, President, and the Members of the Council of Education, and a large assembly of the

INHABITANTS OF CALCUTTA,

On Saturday the Thirtieth Day of September,

A. D. 1848.

A. L. 5848.

This Hospital is founded for the relief of the Sick Poor of all Classes and Creeds in the City of Calcutta, and particularly for those afflicted with Epidemic Disease.

Council of Education.	Council of the Medical College.
The Hon. J. E. D. Bethune, <i>President.</i>	H. Falconer, Esq., M.D., F.R.S.
J. W. Colvile, Esq.,	J. Jackson, Esq., M.B., F.R.C.S.
H. M. Elliot, Esq.,	H. H. Goodeve, Esq., M.D., F.R.C.S.
C. Beadon, Esq.,	Allan Webb, Esq.
J. Grant, Esq.,	H. Walker, Esq.
J. Forsyth, Esq.,	R. O'Shaughnessy, Esq., F.R.C.S.
Russomoy Dutt, Esq.,	Fred. J. Mouat, M.D., F.R.C.S., <i>Member</i>
Prosunnocoomar Tagore, Esq.,	<i>and Secretary.</i>
Fred. J. Mouat, M.D., <i>Member and Secy.</i>	

MESSRS. BURN AND CO., *Architects.*

[ON THE REVERSE OF THE PLATE.]

The money for building this Hospital was raised partly by public Subscriptions through the Municipal and Fever Hospital Committee and the Council of Education, which produced Rupees 1,03,000. A further sum of Co.'s Rs. 1,07,000 was contributed to this purpose, of which 50,000 was a munificent donation for the benefit of the City by Rajah Pertab Chunder Singh, and the remainder was the balance of a sum of money raised by Lottery for the improvement of Calcutta. Part of the ground on which it stands, of the value of Rs. 12,000, was generously given by Baboo Mutty Lol Seal.

Some difficulty has been experienced in procuring the remainder of the ground, in consequence of the exorbitant prices asked by the proprietors. All title-deeds and pottahs are examined by the Hon'ble Company's Attorney, and the building will be superintended by the Civil Architect.

In consequence of objections having been raised to the name adopted for the building, as well as the purposes to which it is to be applied, the following statement is published for general information.

On the 25th of October 1843, Dr. Mouat addressed a private note to the late Chairman of the Fever Hospital and Municipal Committee, stating that he was informed that certain funds, belonging to the Committee, were then lying idle, and that, as the limited accommodation afforded by the existing Medical College Hospital compelled the authorities of that Institution to send away numerous sufferers, from *Fever, Dysentery, and other severe and dangerous diseases*, he thought that the design of the Fever Hospital Committee could be carried out, in the original spirit of those who subscribed the funds, and requested permission to wait upon Sir John Grant, for the purpose of explaining his views in detail.

The interview was granted, and the whole subject discussed at length with Sir John Grant, who admitted that the funds at his disposal were not adequate to erect and maintain a separate Hospital; but that it would be necessary to ascertain the views of Government, before any proposal for the disposal of the funds could be entertained. In the event of the Government declining to assist the Committee, he was disposed to concur in Dr. Mouat's opinion, that the only means of employing the funds profitably and properly would be by expending them in adding to some existing Hospital. He mentioned, however that, as a prior proposition of a similar nature had been made by the Governors of the Native Hospital, it would require to be disposed of, before Dr. Mouat's proposal of building an addition to the Medical College Hospital could be entertained.

On the 26th of April 1844, Sir John Grant addressed the Secretary to the Medical College, mentioning the steps taken up to that time, and the refusal of the Government to contribute to the proposed object, with other matters, ending with an enquiry, whether "if the money at their (the Committee's) disposal were expended in the erection of a *large Native Hospital or Fever Ward* adjoining the Medical College, the Officers of that Institution would undertake to afford to the patients which such ward was capable of receiving, the requisite supplies of provisions and medicines, medical and other attendance necessary to their treatment."

This proposal was submitted to the Professors of the College, who consented at once to afford every aid and attendance required, and the Government, when applied to, agreed to provide the medicine and establishment if the funds were disposed of in the manner mentioned.

On the 6th of August 1844, Dr. Mouat announced the presentation of a piece of ground by Baboo Muttyloll Seal, as a site for the proposed Hospital, provided the funds for its erection were placed at the disposal of the College. To this Sir John Grant replied that, "so soon as the plan is finally approved by the Council of Education and Municipal Committee, the funds at the credit of the latter, in

Vide p. 13, No. IV. A. Appendix K. to Third Report of Municipal and Fever Hospital Committee.

No. 1036, No. IV. A. p. 14 *op. cit.*

Vide No. IV. C. No. 220 of 8th May 1844, p. 15 *op. cit.*

No. IV. D., No. 343 of 11th July 1844, p. 15, and No. IV. D., p. 16, *op. cit.*

No. IV. C., No. 400 p. 16.

P. 16., *op. cit.*

the hands of the Union Bank, will be made applicable, from time to time, to defray the expense of the building, in such manner as shall be thought most expedient." The resolutions of the Committee upon the subject were forwarded with the Chairman's letter.

The Council of Education raised an additional subscription, by an appeal to the public, ultimately amounting to 40,000 rupees. Plans and estimates were called for, submitted, and forwarded to Government; but, from various causes, chiefly arising from the question of removing the whole of the Medical College to another position, having been submitted to the Government, nothing definite was done until March 1847, when Sir John Grant again enquired the intentions of the Council of Education; stating that, if he did not receive such answer as should enable him to make over the funds to them, he should take the opinion of the Committee upon the propriety of vesting them in Government Security.

In reply to this, the causes of the delay were explained, and an offer was made to take over the funds in trust, and to guarantee, not only that they should be strictly devoted to the

Appendix K. pp. 26, 21. purposes for which they were collected, and that the structure should be ornamental to the city, as well as constructed with every modern improvement advisable and desirable, but that the Council would spare no effort in their power to cause the design to be carried into effect as early as possible.

In the whole correspondence with the Committee there is nothing to indicate that a pledge was given to call the Hospital, the *Fever Hospital*, or to devote it exclusively to the treatment of Fever. Such was never the intention of the Council of Education, and of this Sir John Grant was well aware, as the Secretary to the Council had frequent interviews with that gentleman, in which he was given clearly to understand that the *funds were required to make an addition to the Hospital of the Medical College*, and not to build a separate Hospital for a special purpose.

That Sir John Grant was fully aware of this, is evident from the following passage, taken from his Circular printed at page 13 of Appendix K. to the Committee's Third Report.

"The Members present were of opinion that this specific undertaking by the Government of Bengal, to provide attendance and necessaries for the patients, which the Hospital to be erected from the fund in the hands of the Committee may be capable of containing, and the circumstance of the bene-

volent and generous grant of land by Baboo Muttyloll Seal, which leaves the whole of the fund at the disposal of the Committee applicable to the expense of building only, place it without question, that this is the most advantageous application of the fund, with the view of carrying into effect the benevolent purposes of the subscribers, and which therefore justify the Committee in *applying it to the making an addition to the Hospital of the Medical College*, rather than to the Native Hospital, to which, if the origin of the subscription alone were considered, it would no doubt appear more natural to have appropriated it."

In one of the interviews referred to, shortly before he left India, and about the time he sent a series of queries to the Secretary of the Medical College, which will be found in Appendix K. to the Committee's third report, Sir John Grant enquired whether the fever patients were to be isolated and placed in separate wards, as in the Royal Infirmary at Edinburgh. He was told that it was not necessary to isolate the cases of the Endemic and Epidemic fevers of this country, as they were not contagious, and could therefore be placed without danger in the General *Medical Wards*; but that provision would be made to separate cases of Small-pox, should that disease again become Epidemic in this city.

To all of this Sir John Grant raised no objection; he only stipulated that the Medical and Surgical Wards should be separate, and not intermixed, as in the present College Hospital, and that obstetric cases should not be in the same Wards with those of women and children suffering under general disease. These opinions he recorded also in page 2 of the Committee's Third Report.

The name of *Fever Hospital* appears to have been originally used by Mr. J. R. Martin, and, even at its origin, to have given rise to misapprehension; as it is stated in page 2 of the First Report of the Fever Hospital and Municipal Committee that "in Mr. Martin's *explanatory note*, he desired to state to the Governors that it was not contemplated, in his former note, to limit the benefit of the institution proposed under the name of a "Fever Hospital" *solely to Fever, but to extend it to all Medical cases whatsoever.*"

Again, in October 1846, at page 7 of the same Report, the Chairman of the Committee, in writing to the Governor of Bengal, speaks of the proposed Institution, as "a Native Fever Hospital for the treatment of the *prevalent diseases* of the country."

In the introduction to Appendix A. of the First Report, page 1, and in recording the proceedings of a special meeting of the Governors of the Native Hospital, from which the first appeal to the public for funds to build a *Fever Hospital* emanated, the design is stated to be to supply the want of an "Institution uniting the advantages of Medical advice and of attention to the personal comforts of the native population of Calcutta and its suburbs, labouring under *Fever, Dysentery, and other disorders incident to this country.*"

From the foregoing statements, it is abundantly evident that neither the original proposer of, nor the subscribers to the so called *Fever Hospital*, contemplated its devotion to the sole object of treating fevers. The name of *Fever Hospital* is applied in Europe to Institutions which are devoted *exclusively* to the treatment of contagious diseases. These are very rare in this country; and, for such as do occur, separate Hospitals are not necessary. The only contagious disease in fact, which, from its frequency and extent, requires to be taken into consideration, is Small-pox; and, for this, provision will be made in the detailed arrangements of the Hospital now building.

But, assuming the name to have been well chosen and appropriate, it could scarcely be applied to an existing Institution, of which it forms only a component part. To merge the major in the minor would not only have been an unusual proceeding, but to have called that a *Fever Hospital*, which was intended for a General Hospital in its most extended sense, would have been a complete misapplication of the term, and to have devoted it exclusively to one class of disease, would have rendered it nearly useless for the more extended Clinical purposes contemplated in attaching it to the Medical College.

The 60,000 rupees paid over by the Municipal Committee will be more than represented by the amount of the prevalent fevers of the country that will be treated in the Hospital and Dispensary now in course of erection. In times of Epidemics, the whole available space will be devoted to their relief.

The building will be ornamental to the city, and constructed with every modern improvement deemed desirable. Its erection will be completed as rapidly as can be consistently accomplished with reference to its durability.

The above circumstances comprise all that the Council pledged themselves to perform, and this pledge they consider they have so far faithfully fulfilled and redeemed.

The funds transferred to the Council were made over by the Union Bank chiefly in Company's new 5 per cent. paper,

which was at once lodged in the hands of the Government Agent. The funds already in the possession of the Council, with the exception of a small sum of which the time of loan had not quite expired, had been vested in Government Security some time prior to the transfer of the Old Fever Hospital subscriptions by Sir John Grant. The whole are lodged in the hands of the Government Agent.

The other circumstances which have been commented on, and which therefore require notice, are the omission of the names of Sir J. P. Grant and Mr. Martin, from the plate deposited in the foundation stone, and the absence of the Municipal and Fever Hospital Committee from the ceremony of laying that stone.

In regard to the latter circumstance, the Committee was considered to have closed its official
 Third Report, page 24. existence on the 30th of October 1847, when the Members resigned their appointment. No public notification has since been given of the revival or reconstitution of that body.

The inscription on the foundation plate was merely intended, as customary on such occasions, to record the *actual* circumstances connected with the ceremony of laying the foundation stone and not to furnish a History of the building. The funds afforded by the Municipal Committee formed but one fourth of the sum assigned for the building. To have commemorated the services of Sir J. P. Grant and Mr. Martin, by name, in connection with the sum transferred, would have rendered it necessary to have recorded an abstract statement of the history of the Fever Hospital Committee, for which the ceremony of laying the first stone of the building did not appear to the Council to afford the fittest opportunity.

At an early period of the correspondence with the Municipal Committee, it was resolved by the Council of Education to place a Tablet in a prominent part of the building, on which should be recorded the names of the various gentlemen connected at different times with the Committee, together with a brief statement of the labours of the Committee and the Funds raised by them for a Fever Hospital.

It was also determined to name Wards after distinguished benefactors, and donors of sums of ten thousand rupees and upwards; and, among the names suggested, were those of Sir John Grant, Mr. J. R. Martin, Pertab Chunder Singh, Suttachurn Ghosal, and Muttyloll Seal.

It is still the intention of the Council to carry out the design mentioned above.

Medical College Rules. During the past year the Rules of the Medical College underwent complete revision by the College Council and Council of Education.

The chief changes introduced were in the course of study, and mode of conducting the various examinations of the Institution.

They received the sanction of Government, and will be published in the Appendix to the General Report on Education in the Bengal Presidency.

Library. The following is a general return of the Library of the Medical College during the year 1848.

Number of Volumes in the Library on the 1st Jan. 1848,	4,162
Added during the year,	540
	4,702
Destroyed to such extent as to be unfitted for the purpose of study or reference,	
	81
Number of Works in store on the 31st December 1848,	1,224
Number of Volumes in store, ditto,	4,702

SUBJECTS OF THE WORK.

Anatomy and Physiology,	715
Surgery,	457
Medicine,	1,358
Chemistry,	248
Materia Medica,	1,068
Medical Jurisprudence,	60
Botany,	107
Midwifery,	76
Miscellaneous,	613
	4,702

A sum of four hundred rupees was sanctioned from the book allowance of the College, to bind a large number of valuable works belonging to the Institution.

Goodeve Scholarship. In the Annual Report of the late General Committee of Public Instruction for 1840-42, at the 10th page, it is mentioned that Dr. Goodeve intended to found a Midwifery Scholarship of 16 Rupees a month, for the best student of the Midwifery class. The terms in which the scholarship is held, and the various gainers of it are contained in the succeeding published reports of the Council of Education. The scholarship allowance was paid by Dr. Goodeve monthly.

In March of the present year, Dr. Goodeve placed in the hands of the Council the sum of 3,600 Rupees in Government

Securities, for the perpetual maintenance of his scholarship, leaving all arrangements for its general management to the Council of Education, and expressing a wish that it should be awarded only to matriculated students of the Medical College, who are *bonâ fide* Natives of India, of Hindu or Mahomedan parentage, as long as such young men can be found in any way eligible to perform the duties of the office.

The thanks of the Council were returned to Dr. Goodeve for this additional proof of the interest exhibited by him in an Institution, which is already so much indebted to him, and the funds were placed in the hands of the Government Agent, payable to the order of the Secretary to the Medical College for the time being, to be devoted to the perpetual maintenance of the Goodeve Scholarship.

Dacca Senior Scholar.

In accordance with the permission granted by the Government to all Colleges in Bengal, to hold one of their Senior Scholarships in the Medical College, as mentioned in the General Education Report for 1847-48, pp. 100-102, Mr. M. DeSouza, the most proficient senior scholar of the Dacca College, has joined the Medical College, in connection with which he will continue to draw his scholarship allowance upon the terms mentioned in the report above referred to.

Student Apprentices.

On the 15th of June 1848, pursuant to the notice issued on the subject, twelve student apprentices joined the Medical College, and were directed to attend the lectures prescribed in the regulations regarding them. In July, it was ascertained that four of them were incompetent to follow out the course of instruction from defective education; they were accordingly removed from the Institution, and placed at the disposal of His Excellency the Commander-in-Chief. The various apprentices in the Presidency Division were examined for the purpose of filling up the vacancies thus caused, and one selected, the remainder being found unqualified.

The immediate superintendence and messing of the apprentices was entrusted to Staff Serjeant Ryan, of the Regiment of Artillery, a steady Non-Commissioned Officer, selected by the Commandant of Artillery, in obedience to the orders of His Excellency the Right Hon'ble the Commander-in-Chief.

The Secretary to the Medical College, under whose immediate orders he is placed, reported his perfect satisfaction with Serjeant Ryan's conduct during the year.

The general conduct of the student apprentices, subsequent to the departure of the four removed from the College, was satisfactory. At the suggestion of the Council of Education, each student apprentice was supplied by Government, with the text-books of the classes he was required to attend, and an advance, recoverable by instalments from their pay, was sanctioned for the purchase of clothing and necessaries.

Out-Door Dispensary.

Mr. Daly, House Surgeon, in charge of the Out-Door Dispensary, reports that the attendance of the Military class employed on duty there as compounders, clinical clerks, and dressers, has been very satisfactory; thirty-six of the senior students were employed there during the past year for a period of three months each, in addition to the duties assigned them as compounders and dispensers in the Male and Female Hospitals for periods of similar duration. All the minor surgical operations were performed by the students themselves, under the superintendence and instruction of Mr. Daly, who states that their zeal, attention and general proficiency in each department was in the highest degree gratifying and praiseworthy.

An important addition to the means of clinical instruction for students of every class has been made at the Out-Door Dispensary during the year, in the Establishment of an Ophthalmic Ward, under the superintendence of Professor O'Shaughnessy, who administers relief to a large number of patients, both European and Native, on alternate days of the week. The return of the Ophthalmic complaints treated during the year embraces almost every variety of eye disease, and thus the students have been afforded a convenient opportunity of receiving a more extended and practical course of instruction in Ophthalmic Surgery, while by the increased number of patients of this class resorting to the Dispensary its charitable usefulness has been very much increased.

Arracan Students. With reference to Major Bogle's proposal to educate Native Doctors for special service in the Province of Arracan, mentioned at page 99 of the Education Report for 1847-48, eleven natives of various parts of the province were sent up to study in the Medical College. They are lodged and treated in every way upon the same footing as the students of the Military class, and are subjected to the same discipline. From their very imperfect acquaintance with Hindustani, it was found impossible to permit them to enter at once upon the professional studies of the class, and a Munshi was entertained to teach them to read and write that

language; the boys themselves expressed a decided preference for English, and were with some difficulty persuaded to pay any attention to Urdu. They have been taught English daily for two hours by Staff Serjeant Wood, who discharged this duty without remuneration, in a creditable and pains-taking manner. Two of the lads, who were married and left families in Arracan, returned to their homes, the conduct of the rest has, at all times, been quiet and orderly; their good humour and perfect freedom from all prejudices of caste render them an interesting addition to the Institution.

English Class, Anatomy and Physiology. In the class of Anatomy and Physiology 140 lectures have been given. In that division of the course which treats of General Anatomy, the tissues and structures which cannot be seen with the naked eye, were demonstrated by the aid of the microscope, and the whole course was illustrated by the use of diagrams.

Dissections have been carried on with great assiduity in the dissecting room. This is partly owing to a better arrangement of the lecture hours, whereby more time is allowed for practical Anatomy: and in part also, it is presumed, in consequence of the substitution of superintendence by the Professor of Anatomy, for superintendence by the senior pupils as monitors.

The 2nd and 3rd year students and one volunteer from the first year students, were examined in Anatomy and Physiology for honors. The remainder of the first year students underwent a less severe examination in Anatomy alone, and were classified according to the value of their written papers and dissections.

Medicine. The Professor of Medicine reported that the conduct of the students during the past year has been most exemplary—he has never had to complain of inattention during lectures, and in his morning visit to the Hospital, he has always observed several of the final and fourth year students diligently availing themselves of this additional means of acquiring practical knowledge. The regularity of all the pupils in the Hospital at noon, and their attendance upon clinical instruction has been uniformly good.

The only change which the Professor has reported is that the lectures on the Principles and Practice of Medicine have been completed in the summer term, instead of being carried through both terms of the Session as heretofore, which has allowed more time to the students during the cold season, for attention to their clinical duties, dissections, &c.

Surgery. No change was made in the course of study in this branch during the past year. The Professor reports most favorably of the progress of his class. The students were regular in their attendance upon the lectures, most zealous in the performance of their Hospital duties, and many of them availed themselves fully (notwithstanding the inconvenience to Hindus to be present at 8 o'clock in the morning) of the opportunities of studying Ophthalmic Surgery, which the "Dispensary for diseases of the Eyes," lately established in connection with the College Hospital, now so amply provides.

Materia Medica. The Professor of Materia Medica reports that no change has taken place in his course or system of lectures, and that he is satisfied with the conduct of the students of his class.

Medical Jurisprudence. The Professor of Medical Jurisprudence states, that the second part of his course was given during the winter season of the past session; that it consisted of forty-three lectures, and embraced the consideration of all questions connected with Forensic Medicine, not included in the department of Toxicology. The students generally were attentive, industrious, and in the periodical examinations of the class, with few exceptions, exhibited a creditable acquaintance with the subject matter of the lectures.

Chemistry. The Professor of Chemistry reports, that the number of days on which he had delivered lectures, during the past Session, was one hundred and three, as ascertained from the monthly lists of the class, and that he had every reason to be satisfied with the attention and good conduct of the students.

Botany. The Professor of Botany reports—

"Instead of the course having been restricted to the minimum number of 50 prescribed in the rules, upwards of 60 lectures were given, and on the Saturdays generally, microscopical demonstrations, often extending from 11 A. M. to 1 P. M., so that had the roll been called a second time, which properly, perhaps, ought to have been done, in order to distinguish the more zealous and attentive students, the lectures would have exceeded 70 in number."

"During the course, I had every reason to be satisfied with the progress of the pupils, especially in Structural and Physiological Botany. All the tissues and structures described to them, were carefully exhibited under the microscope, and some of the pupils attained a remarkable and highly creditable dexterity, in applying the instrument as a means of research. For example, some of them were able to exhibit the circulation within the cells of the hairs on the filaments of *Tradescantia* and the parallel grooves upon the walls of the cells, one of the severest vegetable tests of the

powers of a microscope. I do not consider it necessary to particularise names, as the merits of the pupils will be made known in a more regular manner during the examinations.

“With regard to Systematic Botany, although the principles were taught during the course, the progress of the pupils was less marked as compared with the other divisions of the subject. In consequence of a misapprehension on my part, lasting till the end of the course, of the orders issued by the Council of Education in Resolutions IX. and XI. of the Meeting held on the 29th July, I unwittingly informed the pupils that the conveyance allowance for taking them to the Botanic Garden was withdrawn. The consequence was that none of them visited the garden till close upon the termination of the course, when some few came at their own expense. These visits were soon discontinued, partly I believe from the Superintendent not having been able, consistently with the other calls on his time, to be so much with them as they expected.

“Either an arranged garden near the College, or access to the Botanic Garden is indispensably necessary to enable the pupils to study Systematic Botany.

“A good hand book or text book of Indian Botany is much wanted for the class, and there is a prospect of this want being in some measure supplied, at no very remote period, by a work now in progress, of which I have had intimation.”

The increase in the number of pupils attending the Botanical class, and the inadequacy of the allowance to take them all to the Garden, as well as the discontinuance of the Government boat to the Professor of Botany, were brought to the notice of the Council, with a recommendation that increased means should be provided to enable the pupils to visit the Garden. The great additional outlay that would have been incurred rendered it impossible, in present financial circumstances, to recommend this proposal to the consideration of Government. Beside this, the Council coincided in the views of Mr. McClelland, respecting the disadvantage arising from the great distance of the garden from the College, and in his opinion that “the class can never be in an efficient state until a small garden containing all the plants referred to in the lectures of the Professor be formed in the immediate vicinity of the College.”

The Council hope hereafter to be able to form such a garden, to supersede the necessity of the students proceeding so great a distance for instruction, and to enable them at all times to have access to a general systematic garden upon the plan mentioned by the late Mr. Griffith.*

Upon the recommendation of Dr. Falconer, an application has been addressed to the Hon'ble Court of Directors for a

* General Report on Public Instruction for 1843-44, p. 56.

collection of dry specimens of all the plants used in medicine for the use of the Medical College.

In consequence of the absence on duty in the Tennasserim Provinces of the Professor of Botany, Dr. Macrae, the Civil Surgeon of Howrah, was appointed to conduct the Botanical examinations of the College.

Midwifery Class and Lying-in Hospital. Dr. Goodeve reports, that, having resumed charge of the Midwifery Professorship and the Lying-in Hospital on his return to India, in March last, he was much gratified with the progress made in this department under the management of Dr. Duncan Stewart, who so ably filled the chair of Obstetric Medicine during Dr. Goodeve's absence in Europe. The class of students were in excellent order, and the increasing confidence of the native community in the practice of European Science for the treatment of their female relatives, during labor, was rapidly extending the utility of this branch of instruction in the College, as shewn by the frequent demand upon our graduates for advice and assistance during parturition, and the skill displayed by the young men in the management of these cases.

The improvements in the Lying-in Hospital, which have been introduced by the acting Professor, aided by the devoted care and judicious arrangements of the religious ladies, who, for some time took charge of the wards, have rendered this Institution conspicuous for cleanliness and good order, and at the same time greatly increased its efficiency in every respect.

During the past year 67 women have been admitted into the Hospital; 59 delivered, and 8 remain in expectation of labor.

The deliveries are 4 more than in the last year's report, and nearly double the number in the first two years after the establishment of the Institution in 1842.

The following is an abstract of the cases:

Patients delivered naturally,	54
Ditto ditto by forceps,	3
Ditto ditto „ perforation,	1
Ditto ditto „ version,	1
	<hr/>
Total,	59
	<hr/>

Of these 55 recovered and 4 died.

Of the 59 children born, there were 28 boys, 31 girls. Of the whole number 39 only lived. Of the remainder, 6 were

still-born and 14 subsequently died. The large portion of deaths is accounted for by the number of infants who were prematurely born and were diseased before birth.

Death amongst the women can only be assigned to the labor itself. In one case, a patient was brought into Hospital after having been some days in parturition, and subjected, unsuccessfully, during many hours, to the ignorant and violent efforts of the native midwives, the result of which was extreme exhaustion and fatal inflammation occurring before the patient's admission into the Hospital, where she was immediately delivered by embryotomy. The other three deaths were the consequence of fatal diseases totally unconnected with pregnancy or parturition, and incurable in any circumstances.

The frequent resort to operation amongst so few deliveries arose from the circumstance of so many of these patients having been previously in labor for a long period, at their own homes, before seeking assistance in the Hospital, which they would not resort to until the mischievous attempts of the native nurses to relieve them had proved unavailing.

It is satisfactory to record that none of the women, who throughout their whole labor were treated in the Hospital, suffered in any way during parturition. They were all delivered rapidly, without assistance, and speedily recovered, except the cases above mentioned, whose deaths are otherwise accounted for.

Although anæsthetic agents were not employed in the natural cases generally, they were occasionally used with marked advantage, and all those cases which required manual assistance to promote delivery, were treated under their influence. Chloroform was the medicine used in every instance except one, in which Ether was given, because none of the former fluid was at hand. On all these occasions the patients were delivered without consciousness, and in none was the slightest bad symptom perceptible as the result of the hypnotic agent. On the contrary, the mortality in the cases operated upon under their influence was unusually and remarkably small.

In regard to the Hospital Staff, Dr. Goodeve reports that Dr. Gopal Chunder Seal, who returned with him from Europe, was appointed, shortly after his arrival here, to the office of Resident Surgeon, and fulfilled the duties of the appointment with great credit to himself and advantage to the Hospital, until he was ordered to join the Army of the Punjab in October. His place was then occupied by Babu Prosunno Coomar Mitter, the original House Surgeon of the Institution, who assisted so materially in its establishment. The conduct of

this young man since resuming his former duty has been most exemplary.

Dr. Goodeve also speaks in high terms of the intelligence, industry, and good character of Nobin Chunder Bose, the present Midwifery scholar.

The care, economy, and good management of Mrs. McGregor, who has fulfilled the duties of matron, since the departure of the Nuns, is mentioned with much commendation.

The students upon the whole have been attentive and zealous to avail themselves, as far as they could, of the opportunities afforded them in the Hospital; several of them have attended numerous cases of labor, and have acquired a very competent knowledge of Practical Midwifery. They have also been attentive at lecture, and answered fairly at the annual examination of the class.

English Class. The Professor of Descriptive and Surgical **Descriptive Anatomy.** Anatomy reports that, in conformity with the new regulations, he gave one hundred Lectures or Demonstrations of Anatomy during the past Session, the summer course being exclusively devoted to descriptive anatomy, and the winter course to surgical or regional anatomy. He reports his entire satisfaction with the conduct and attainments of his class; the diligence and assiduity of the students at Lecture being highly commendable.

Hindustani Class, Anatomy. The Anatomical acquirements of the Hindustani Class, as displayed in their dissections throughout the Session, and in their examinations at the end of it, were highly satisfactory, and equal to those of the same class in former years.

Hindustani Class, Surgery. The Professor of Surgery has much pleasure in reporting the result of his examination of the Military class.

Thirty-three students presented themselves for final examination, and thirty-one were considered qualified in Surgery.

The Professor begs leave to bring to the notice of the College Council, that during the past year the students of this class have been most regular in their attendance in the hospital. Accompanied by the Pundit, Madusuden Gupta, the native lecturer on Surgery, they followed the Professor in his rounds, and the clinical remarks addressed by him to the English class, were translated by the Pundit into Hindustani on the spot.

In this way they had every opportunity afforded them of becoming practically acquainted with almost every variety of surgical disease.

They learned in the hospital to dress wounds, set fractures, reduce dislocations, and treat ulcers. They also saw and assisted in the management of patients after the operations of lithotomy, amputations, hernia, cataract, &c., &c., and they were from time to time examined by the Professor of Surgery on all the cases under treatment in the wards.

The result of this system has been most satisfactory, and the students passed a much better practical, as well as oral examination this year, than on any previous one since the last change in the chair of Surgery.

Hindustani Class, Materia Medica. The Professor of Materia Medica reports, that he had examined the students of the Military Class several times during the past Session, and that he had reason to be satisfied with the general intelligence and orderly behaviour of the class. Their acquaintance with the subject was as extended as can be expected in the absence of any text book on Materia Medica, and the consequent dependence of the pupils upon the notes taken in the lecture room. In accordance with the suggestion of the Professor, Babu Shibchunder Kurmocar had not only exhibited to the students the tests by which various medicinal substances are identified, but had succeeded in making the majority of them acquainted with the changes produced by the action of various re-agents, and the means of ascertaining the purity of most officinal preparations. Of the thirty-three candidates, who presented themselves for final examination, all but one were qualified for the public service, and several answered correctly nearly every question asked, and identified at once every drug exhibited to them.

Hindustani Class, Descriptive Anatomy. As respects the Hindustani class, Professor Webb reports, that instructions in practical surgery were given by him during the summer session, chiefly in exercises upon the living body; whilst during the winter session these were superseded by exercises on the dead subject: so that every student was repeatedly made to take part as assistant in the various operations of Surgery.

The students of the Hindustani class this year entered upon their exercises in practical surgery, with higher attainments in anatomy than at any former period. They can now comprehend clearly, and practice expertly the duties of assistants in surgical operations.

A grant of condemned surgical instruments from the Company's Dispensary was found very useful to them in their

exercises on the dead subject, for many of the senior students could act as principals in Surgical operations.

Diploma Examinations of the Military Class.

The diploma examinations of the Military Class were conducted by the Professors of Anatomy and Physiology, Descriptive Anatomy, Medicine, Surgery and Materia Medica, each in his own department.

The results are recorded below in a tabular statement.

The following is the order of merit in which the candidates were classed.

First Class.

- | | |
|------------------------------|-------------------------|
| 1. Dyah Singh. | 6. Shaik Jaun Ullee. |
| 2. Nujuf Ullee. | 7. Sadoolla Khan. |
| 3. Romee Khan. | 8. Ukbur Ullee. |
| 4. Shaik Rumzaun Ullee, 3rd. | 9. Mungul Sing. |
| 5. Nuseeb Khan. | 10. Shaik Atta Hossain. |

Second Class.

- | | |
|-------------------------------|---------------------------|
| 11. Meer Jafur Ullee. | 22. Emdad Khan. |
| 12. Shaik Rumzaun Ullee, 1st. | 23. Meer Zoolfiqur Ullee. |
| 13. Ditto Ullee Oollah. | 24. Syed Emam Ullee. |
| 14. Ditto Rumzaun Ullee, 2nd. | 25. Shaik Rohim Buksh. |
| 15. Meer Keramuth Ullee. | 26. Saduck Hoosain. |
| 16. Dursun Loll. | 27. Shaik Abdool Guffoor. |
| 17. Mirza Rujub Ullee Beg. | 28. Mahomed Hossain Khan. |
| 18. Syed Unwar Ullee. | 29. Bhikoo Singh. |
| 19. Shaik Kurreem Buksh. | 30. Shaik Alfoodeen. |
| 20. Kadum Ullee Khan. | 31. Emam Buksh. |
| 21. Meer Ahmud Ullee. | 32. Goury Sunker. |

The gold medal for general proficiency was awarded to Dyah Singh, a student from Assam.

List of Students of the Military Class for final examination in the Medical College.

Number.	Names.	Date of Admission.	Number of times absent, &c.				Duties performed by them as Dressers.	
			Absent.	Sick.	Leave.	Total.	Hospital.	Out D. Dy.
1	Sadoolla Khan,	March 1845,	1	1	0	2	11	4
2	Goury Sunker,	Ditto,	6	2	0	8	6	12
3	Meer Jafur Ullee,	Ditto,	0	37	0	37	10	6
4	Shaik Rumzaun Ullee, 1st,	June 1845,	2	6	0	8	14	4
5	Ditto Ullee Oollah,.....	Ditto,	0	0	0	0	4	20
6	Ditto Rumzaun Ullee, 2nd,	Ditto,	0	0	0	0	6	4
7	Meer Keramuth Ullee,	Dec. 1845,	0	0	0	0	0	0
8	Dursun Loll,	April 1846,	0	0	0	0	8	4
9	Mirza Rujub Ullee Beg,	Ditto,	0	0	0	0	4	4
10	Shaik Alfoodeen,	Ditto,	6	1	5	12	11	3
11	Ditto Rumzaun Ullee, 3rd,	Ditto,	0	15	0	15	14	0
12	Ditto Atta Hossain,	Ditto,	0	29	0	29	14	0
13	Syed Unwar Ullee,.....	June 1846,	0	2	0	2	6	5
14	Kurrem Bux,	Ditto,	1	1	0	2	8	3
15	Kadum Ullee Khan,	Ditto,	0	10	0	10	7	5
16	Meer Ahmud Ullee,	Sept. 1846,	0	0	0	0	6	5
17	Emdad Khan,	Ditto,	0	0	0	0	4	4
18	Meer Zoolfigur Ullee,.....	Aug. 1846,	0	2	0	2	4	3
19	Syad Emam Ullee,.....	Ditto,	0	0	0	0	6	3
20	Romee Khan,	Ditto,	0	0	0	0	0	0
21	Shaik Ruhim Bux,	Ditto,	0	1	0	1	0	0
22	Saduk Hossain,	Ditto,	0	3	0	3	6	3
23	Abdool Guffoor,	April 1846,	2	0	0	2	0	0
24	Nuseeb Khan,	Augt. 1846,	0	7	0	7	6	3
25	Mahomed Hossain Khan,	April 1846,	0	0	0	0	5	0
26	Shaik Jaun Ullee,	Ditto,	0	7	0	7	6	3
27	Nuzuff Ullee,	Ditto,	0	2	0	2	6	3
28	Bheekoo Sing,.....	Ditto,	0	2	0	2	5	3
29	Meer Hyder Ullee,.....	Augt. 1846,	9	4	0	13	8	3
ASSAMESE.								
30	Dyah Sing,	Augt. 1846.	0	0	0	0	4	7
31	Ukbur Ullee,	July 1846.	0	11	0	11	6	3
32	Mungul Sing,	Ditto,	0	0	0	0	7	3
33	Emam Bux—Free Student,	Ditto,	0	0	0	0	0	0

Result of the Final Examinations of Students of the Military Class of the Medical College.—Session 1848-49.

Number.	Names.	Subjects of Examination.				REMARKS.
		Anatomy and Physiology, Practical and <i>vivá voce</i> .	Surgery, Practical and Oral.	Medicine.	Materia Medica and Chemistry.	
1	Sadoolla Khan,	Qualified, ...	Qualified, ...	Qualified, ...	Qualified, ...	Passed.
2	Goury Sunker,	Qualified, ...	Qualified, ...	Qualified, ...	Qualified, ...	Passed.
3	Meer Jafur Ullee,	Qualified, ...	Qualified, ...	Qualified, ...	Qualified, ...	Passed.
4	Shaik Rumzan Ullee, 1st, ...	Qualified, ...	Qualified, ...	Qualified, ...	Qualified, ...	Passed.
5	Ditto Ullee Oollah,	Qualified, ...	Qualified, ...	Qualified, ...	Qualified, ...	Passed.
6	Ditto Rumzan Ullee, 2nd, ...	Qualified, ...	Qualified, ...	Qualified, ...	Qualified, ...	Passed.
7	Meer Keramuth Ullee,	Qualified, ...	Qualified, ...	Qualified, ...	Qualified, ...	Passed.
8	Dursun Loll,	Qualified, ...	Qualified, ...	Qualified, ...	Qualified, ...	Passed.
9	Mirza Rujub Ullee Beg,	Qualified, ...	Qualified, ...	Qualified, ...	Qualified, ...	Passed.
10	Shaik Rumzan Ullee, 3rd, ...	Qualified, ...	Qualified, ...	Qualified, ...	Qualified, ...	Passed.
11	Atta Hossain,	Qualified, ...	Qualified, ...	Qualified, ...	Qualified, ...	Passed.
12	Syed Unwar Ullee,	Qualified, ...	Qualified, ...	Qualified, ...	Qualified, ...	Passed.
13	Kurream Bux,	Qualified, ...	Qualified, ...	Qualified, ...	Qualified, ...	Passed.
14	Kadum Ullee Khan,	Qualified, ...	Qualified, ...	Qualified, ...	Qualified, ...	Passed.
15	Meer Ahmad Ullee,	Qualified, ...	Qualified, ...	Qualified, ...	Qualified, ...	Passed.
16	Emdad Khan,	Qualified, ...	Qualified, ...	Qualified, ...	Qualified, ...	Passed.
17	Meer Zulfiqur Ullee,	Qualified, ...	Qualified, ...	Qualified, ...	Qualified, ...	Passed.
18	Syed Emam Ullee,	Qualified, ...	Qualified, ...	Qualified, ...	Qualified, ...	Passed.
19	Romee Khan,	Qualified, ...	Qualified, ...	Qualified, ...	Qualified, ...	Passed.
20	Shaik Rohim Bux,	Qualified, ...	Qualified, ...	Qualified, ...	Qualified, ...	Passed.
21	Saduck Hossain,	Qualified, ...	Qualified, ...	Qualified, ...	Qualified, ...	Passed.
22	Abdool Guftoor,	Qualified, ...	Qualified, ...	Qualified, ...	Qualified, ...	Passed.

Result of the Final Examinations of Students of the Military Class of the Medical College.—Session 1848-49.

Number.	Names.	Subjects of Examination.				REMARKS.
		Anatomy and Physiology, Practical and <i>vivá voce</i> .	Surgery, Practical and Oral.	Medicine.	Materia Medica and Chemistry.	
23	Nuseeb Khan,	Qualified, ...	Qualified, ...	Qualified, ...	Qualified, ...	Passed.
24	Mahomed Hossain Khan, ...	Qualified, ...	Qualified, ...	Qualified, ...	Qualified, ...	Passed.
25	Shaik Jaun Ullie,	Qualified, ...	Qualified, ...	Qualified, ...	Qualified, ...	Passed.
26	Nuzuff Ullie,	Qualified, ...	Qualified, ...	Qualified, ...	Qualified, ...	Passed.
27	Bhikoo Sing,	Qualified, ...	Qualified, ...	Qualified, ...	Qualified, ...	Passed.
28	Shaik Alfoodeen,	Qualified, ...	Unfit,	Qualified, ...	Qualified, ...	Rejected.
29	Meer Hyder Ullie,	Qualified, ...	Qualified, ...	Qualified, ...	Qualified, ...	Passed.
30	Dyah Sing, Assamese,	Qualified, ...	Qualified, ...	Qualified, ...	Qualified, ...	Passed.
31	Ukbur Ullie,	Qualified, ...	Qualified, ...	Qualified, ...	Qualified, ...	Passed.
32	Mungul Sing,	Qualified, ...	Qualified, ...	Qualified, ...	Qualified, ...	Passed.
33	Emam Bux,	Qualified, ...	Qualified, ...	Qualified, ...	Qualified, ...	Passed.

FRED. J. MOUAT, M. D.,

Secretary.

Medical College, Calcutta the 2nd April, 1849.

Diploma Examination: English Class,

The Diploma Examination of the English Class was conducted by Surgeon J. Forsyth, the Government Examiner, assisted by the following gentlemen as assessors:*

Senior Surgeon J. Grant, Apothecary General.
 Surgeon W. Montgomerie, Garrison Surgeon, Fort William.
 Surgeon A. Chalmers, M. D., Presidency Surgeon.
 Surgeon D. Stewart, M. D., Presidency Surgeon.
 Surgeon H. Chapman, Presidency Surgeon.
 Surgeon J. Esdaile, M. D., Presidency Surgeon.
 Asst.-Surgeon F. P. Strong, Civil Surgeon, 24-Pergunnahs.

Subjoined is a tabular statement of the candidates who presented themselves for Diplomas, with the results of their examinations. Ten passed and two were rejected.

The Gold Medal for general proficiency was awarded to Nobinkristo Bose.

* Senior Surgeon S. Nicholson, was prevented by sickness, and Dr. R. M. Thomson by death, from performing the duties of assessors.

No.	Names.	Age.	Caste.	Date of Admission.	No. of times absent since their admission.	REMARKS.
1	Nubogopaul Ghosaul, ...	21	Brahmin,...	1st February 1844,...	3 days,...	{ Clinical Clerk 7 months and Dresser 5 months, gained 5 Certificates of Honor, attended 10 cases of labour.
2	Kollydoss Nundy,	21	Coisto, ...	Ditto,	8 ditto, ..	{ Clinical Clerk 12 months and Dresser 6 months, gained 3 Certificates.
3	Radanath Chuckerbutty,	22	Brahmin,...	Ditto,	7 ditto, ..	{ Clinical Clerk 7 months and Dresser 5 months, gained 3 Certificates.
4	Sib Chunder Bysack,	23	Weaver,...	1st April 1844,	1 ditto, ..	{ Clinical Clerk 12 months and Dresser 6 months, gained 2 Certificates, attended 3 cases of labour.
5	Nobinkristo Bose,	21	Coisto, ...	Ditto,	13 ditto, ..	{ Clinical Clerk 6 months and Dresser 4 months, Female Hospital 3 months, gained 4 Gold Medals, 9 Certificates, and Sir H. Maddock's Prize.
6	Nobin Chunder Bose, ...	24	Ditto,.....	Ditto,	12 ditto, ..	{ Clinical Clerk 4 months and Dresser 4 months, gained 1 Gold Medal, 3 Certificates and Good-eve Scholarship.
7	M. Covington,.....	24	Christian,	17th June 1844,	12 ditto, ..	{ Clinical Clerk 15 months and Dresser 12 months, gained 3 Silver Medals and 4 Certificates, attended 5 cases of labour.
8	E. Loftus,.....	22	Ditto,.....	Ditto,	15 ditto, ..	{ Clinical Clerk 17 months and Dresser 6 months, attended 4 cases of labour.
9	W. J. Ellis,	22	Ditto,.....	May 1844,	23 ditto, ..	{ Clinical Clerk 10 months and Dresser 8 months, attended 4 cases of labour, gained 1 Gold Medal and 3 Certificates of Honor.
10	J. Anthoniz,	24	Ditto,.....	Ditto,	20 ditto, ..	{ Clinical Clerk 6 months and Dresser 6 months.
11	T. Thomas,	23	Ditto,.....	Ditto,	30 ditto, ..	{ Clinical Clerk 12 months and Dresser 9 months.
12	Fukeer Chund Bose,	25	Coisto, ...	February 1843,	40 ditto, ..	{ Clinical Clerk 8 months and Dresser 6 months.

Result of the Final Examination of the Students of the English Class in the Medical College—Session 1848-49.

Number.	Names.	Written Examination.	Practical Anatomy.	Practical Surgery.	Anatomy and Physiology.	Chemistry.	Botany.	Medicine.	Surgery.	Midwifery.	Medical Jurisprudence.	Materia Medica.	Result.
1	Nubogopaul Ghossein	Good	Qualified	Qualified	Qualified	Qualified	Qualified	Qualified	Qualified	Qualified	Qualified	Qualified	Qualified.
2	Kolly Doss Nundy	Good	Qualified	Qualified	Not qualified	Qualified	Qualified	Qualified	Qualified	Qualified	Qualified	Qualified	Qualified.
3	Radanath Chuckerbutty	Good	Qualified	Qualified	Qualified	Qualified	Qualified	Qualified	Qualified	Qualified	Qualified	Qualified	Qualified.
4	Sib Chunder Byasack	Good so far as it goes	Qualified	Qualified	Qualified	Qualified	Not qualified	Qualified	Qualified	Qualified	Qualified	Not qualified	Qualified.
5	Nobin Chunder Bose	Indifferent	Qualified	Qualified	Not qualified	Not qualified	Qualified	Qualified	Not qualified	Qualified	Not qualified	Qualified	Not qualified.
6	Nobin Kristo Bose	Very good	Qualified	Qualified	Qualified	Qualified	Qualified	Qualified	Qualified	Qualified	Qualified	Qualified	Qualified.
7	M. Covington	Indifferent	Qualified	Qualified	Qualified	Qualified	Qualified	Qualified	Qualified	Qualified	Qualified	Qualified	Qualified.
8	E. Loftus	Indifferent	Qualified	Qualified	Qualified	Qualified	Not qualified	Qualified	Not qualified	Qualified	Qualified	Qualified	Not qualified.
9	W. J. Ellis	Good	Qualified	Qualified	Qualified	Qualified	Qualified	Qualified	Qualified	Qualified	Qualified	Qualified	Qualified.
10	J. Anthoniz	Indifferent	Qualified	Qualified	Qualified	Qualified	Qualified	Qualified	Qualified	Qualified	Qualified	Qualified	Qualified.
11	T. Thomas	Indifferent	Qualified	Qualified	Qualified	Not qualified	Qualified	Qualified	Qualified	Qualified	Qualified	Not qualified	Qualified.
12	Fukeer Chund Bose	Fair	Qualified	Qualified	Not qualified	Not qualified	Qualified	Qualified	Qualified	Qualified	Qualified	Qualified	Qualified.

CALCUTTA,
The 3rd April, 1849.

J. FONSYTH, Surgeon.
Govt. Examiner.

Sub-Assistant Surgeons. In the Annual Report of the College for 1846-47, the causes of the falling off in the disposition of the Native youth for the study of Medicine and Surgery were pointed out, and means were suggested by the Council to prevent this by bettering the condition of the Sub-Assistant Surgeon after his admission to the public service. The question was referred by Government to the the Hon'ble Court of Directors, who replied in a Dispatch, No. 14 of 1848, dated the 4th of April, after referring to the recommendations of the Government that the scale of allowances to Sub-Assistant Surgeons, should be increased after different terms of service, viz.:

Under 7 years' service,	Rs. 100	per mensem.
7 years and under 14,	„ 150	„
14 and upwards,	„ 200	„

That they accede to the recommendation of the Government, and that it is always their desire to provide for the fair remuneration of all classes of their servants, and especially of those whose employment must depend on educational success, the result of diligent study and of intellectual powers. The Dispatch goes on to state—

“We are aware that Sub-Assistant Surgeons must frequently be required to perform duties of an important nature, involving a necessity for great practical knowledge of their profession, as well as for skill in its application. The tests which are now established at the Medical College appear to be sufficiently high, to prevent the admission of men of inferior abilities, and it may therefore be confidently presumed that after obtaining his Diploma, the Native Student is well fitted for the duties of his profession.

“We shall not now discuss the question of the usefulness of the Sub-Assistant Surgeon, if placed in an independent position. There can be no doubt, that his services are very valuable under European Superintendence. The Lieut.-Governor of the North Western Provinces writes on this subject as follows :

““In the Medical as in all other Departments, Native Agency is of the highest value when it is vigilantly superintended. The Sub-Assistant Surgeons in charge of Dispensaries under the immediate eye of Assistant Surgeons, and with the prospect of good native practice in large towns, are most highly useful. In order to the continuance of so useful a body of servants, regarded only as an aid to our present medical establishment, we are inclined to extend every reasonable encouragement.

““The desirableness of encouraging Natives to overcome their prejudices against educational advancement, and to distinguish themselves in the attainment of that knowledge, the acquisition of which may conduce to their usefulness as Members of Society no less than to their own moral improvement, cannot indeed be too highly estimated. Nor should it be forgotten that the exhibition of talent, and of the reward which its diligent cultivation ensures to the Native Student, will be likely to prove a salutary incitement to emulation among other classes of our servants.

“The permission which you have given to the Committees of Public Instruction at Agra, Delhie, and Benares respectively, to offer to the holders of Senior English Scholarships in the Colleges at those places, the option of proceeding to Calcutta for the purpose of studying medicine in the Medical College, and of retaining their stipends while so employed, in addition to the usual College allowance, has our sanction. These liberal conditions will, we hope, tend to overcome the prejudice which the Natives of the N. W. Provinces are said to entertain against residence in Bengal.”

“It will be judicious to follow the suggestion of the Council of Education that cases of distinguished merit may be rewarded by immediate advancement to the higher grades of salary. In the constitution of a new service, it is especially important to let it be known that mere seniority cannot be regarded as constituting so strong a claim to consideration, as high attainments, whether the result of eminent talent or of laborious industry. A laudable spirit of rivalry will thus be engendered among the Native Students; and, though the difficulty of obtaining superiority be enhanced, the position of the whole body of students will be improved and elevated by the competition.

“The eminent success, which has attended the young men who have lately completed their medical education in this country under the conduct of Dr. Goodeve, makes us feel anxious that no opportunity should be lost of inducing Native youths to pursue similar studies, while we are sanguine as to the success of their exertions.”

In connection with the Despatch above noted, the following rules were prepared by the Medical Board, and published in the Government Gazette of the 27th January 1849.

1. Students of the first class of the Medical College of Bengal, in obtaining the Diploma of the College, shall, if they desire it, be admitted to the public service in the rank of Sub-Assistant Surgeon.

2. Sub-Assistant Surgeons shall be classed in three ranks; the third rank to be the lowest or junior.

3. All Sub-Assistant Surgeons shall serve seven years in each of the two junior ranks, excepting in those instances in which the merits of the individual, as described in Rule 12, shall be considered to entitle him to promotion to a superior rank at an earlier period.

4. On obtaining the Diploma of the Medical College, the Graduate will, by the orders of Government, be placed at the disposal of the Medical Board, for employment in the public service, and from the date of the Government order, his rank of Sub-Assistant Surgeon of the third rank, shall be held to commence; but he will not be considered as having claim to his salary as such, (that is at the rate of 100 Rupees per month) until he has actually joined the station to which he may be appointed, and entered on the duties assigned to him.

5. The following shall be the scale of allowances for each rank:

Under seven years' service,	Co.'s Rs. 100
Seven years and under fourteen,	„ 150
Fourteen years and upwards,	„ 250

6. Sub-Assistant Surgeons, on completing each of those septennial periods, shall appear before a Committee, composed of three Medical Officers, for examination as to their continued proficiency in the practical branches of their profession, viz., Practice of Medicine, Surgery, and Midwifery; as to their acquaintance with its past and current literature; and with the later improvements or discoveries on all points connected with their duties.

7. The Sub-Assistant Surgeon, on completing his septennial period, shall report the same to the Superintending Surgeon of the Division in which he may be serving, who will obtain the orders of the Officer commanding the Station itself, or the one nearest to it, where three resident Medical Officers may be available for the assembly of the above Committee; the Superintending Surgeon himself serving on the Committee, at Stations where, as at Dacca for example, the number of Medical Officers present may be insufficient without him.

8. The Committee will forward their Report to the Superintending Surgeon of the Division for transmission to the Medical Board, whose duty it will be to submit it for the orders of the Government.

9. Should the Report of the Committee be favorable, the promotion of the Sub-Assistant Surgeon will be notified in Government orders, and he will receive the salary of his new rank, from the day succeeding the date on which he may have completed his last septennial period.

10. Should the Report of the Committee on the other hand be unfavorable, the Sub-Assistant Surgeon will continue in the lower rank and on its allowances, for the period for which the Committee may deem fit to remand him to his studies, and to the more diligent discharge of his duties.

11. Should the Sub-Assistant Surgeon still fail, at the close of that probationary period, to afford to the Examining Committee satisfactory proof of proficiency and diligence, his case will be submitted in the manner prescribed in Rule 8, for the consideration and orders of Government, as to his removal, or otherwise, from the rank of Sub-Assistant Surgeon, or from the public service.

12. Mere seniority will, in no instance, constitute in itself a claim to promotion, and it is distinctly to be understood that high attainments "whether the result of eminent talent or of laborious industry," persevered in for a reasonable time, will give such claim at any time intermediate to the septennial periods; and the Medical Officer under whom a Sub-Assistant Surgeon may be serving, or the Superintending Surgeon himself, in case the Sub-Assistant Surgeon may be holding an independent charge, shall consider it to be his duty to bring every instance of distinguished merit under the notice of the Medical Board, accompanied by a statement of the particular circumstances, which he may consider as entitling the individual to early promotion, to enable them to judge of the expediency, or otherwise, of recommending the case to the favorable consideration of Government.

The Hon'ble Court have ruled that Sub-Assistant Surgeons shall not at any time, be admitted to the benefit of the Rules under which pensions are granted to the Members of the Uncovenanted Service."

Since these rules were passed Babu Madusudun Gupta, and Sub-Assistant Surgeon Shibchunder Kormokar have been promoted to the first and second ranks of Sub-Assistant Surgeons respectively.

FRED. J. MOUAT, M. D.

Secretary.

Council of Education,

Calcutta April 7, 1849.

APPENDIXES.

APPENDICES

Appendix A. No. I.

Annual Return of Diseases treated in the Medical College Male and Female Hospitals, from 1st January to 31st December, 1848.

Nos.	DISEASES.	Remaining.	Admitted.	Total.	Discharged cured.	Died.	Remaining.	REMARKS.
1.	Zymotic Diseases,	60	1203	1263	1120	102	41	
	Sporadic Diseases—							
2.	Of uncertain and variable seat,.....	9	171	180	170	7	3	
3.	Of the Nervous System,.....	7	112	119	106	11	2	
4.	Of the Respiratory Organs,	5	76	81	58	18	5	
5.	Of the Organs of Circulation,	0	5	5	3	2	0	
6.	Of the Digestive Organs,	7	129	136	113	16	7	
7.	Of the Urinary Organs,.....	1	16	17	16	1	0	
8.	Of the Organs of Generation,	11	60	71	62	2	7	
9.	Of the Organs of Locomotion,	9	134	143	133	0	10	
10.	Of the Integumentary System,.....	7	162	169	157	0	12	
11.	Poisoning, Asphyxia, Injuries, &c.,.....	14	323	337	304	15	18	
	1.							
1.	Measles,	0	0	0	0	0	0	
2.	Diarrhoea,	0	13	13	13	0	0	
3.	Dysentery,	18	291	309	253	46	10	
4.	Cholera,	0	110	110	73	37	0	
5.	Ague,	10	98	108	104	0	4	

Nos.	DISEASES.	Remaining.	Admitted.	Total.	Discharged.	Died.	Remaining.	REMARKS.
6.	Remittent Fever,	16	409	425	390	19	16	
7.	Common Continued Fever,	2	135	137	131	0	6	
8.	Erysipelas,	0	8	8	8	0	0	
9.	Syphilis,	14	139	153	148	0	5	
	2.							
10.	Inflammation,	0	63	63	63	0	0	
11.	Hemorrhage,	0	4	4	4	0	0	
12.	Dropsy,	2	41	43	38	3	2	
13.	Abscess,	0	24	24	24	0	0	
14.	Mortification,	0	5	5	2	3	0	
15.	Purpura,	5	13	18	18	0	0	Nearly all cases of Sea Scurvy.
16.	Scrofula,	0	4	4	4	0	0	
17.	Carcinoma,	0	3	3	3	0	0	
18.	Tumors,	2	14	16	14	1	1	
	3.							
19.	Apoplexy,	0	2	2	0	2	0	
20.	Paralysis,	0	3	3	3	0	0	
21.	Convulsions,	0	6	6	2	4	0	{ All cases of { Idiopathic 4. Fatal 2. Tetanus, ... { Traumatic 2. Ditto 2.
22.	Epilepsy,	0	16	16	16	0	0	
23.	Insanity,	1	4	5	5	0	0	
24.	Delirium Tremens,	6	81	87	80	5	2	
25.	Brain, &c., Diseases of,	0	0	0	0	0	0	

	4.	38	42	37	0	5
26. Bronchitis,	4	38	42	37	0	5
27. Pleurisy,	0	16	16	16	0	0
28. Pneumonia,	0	2	0	0	2	0
29. Asthma,	0	5	0	5	0	0
30. Phthisis,	1	15	16	0	16	0
5.						
31. Aneurism, ...	0	1	1	0	1	0
32. Heart, &c., Diseases of,	0	4	4	3	1	0
6.						
33. Enteritis,	0	4	4	3	1	0
34. Peritonitis,	0	6	6	0	0	0
35. Tabes Mesenterica,	0	0	0	0	0	0
36. Ascites,	2	18	20	17	3	0
37. Hernia,	0	1	1	0	1	0
38. Colic or Ileus,	0	16	16	16	0	0
39. Hæmatemesis,	0	0	0	0	0	0
40. Hepatitis,	0	26	26	16	7	3
41. Jaundice,	1	16	17	17	0	0
42. Spleen, Diseases of,	4	42	46	38	4	4
7.						
43. Diabetes,	1	1	2	2	0	0
44. Stone,	0	6	6	5	1	0
45. Stricture,	0	9	9	9	0	0
8.						
46. Childbirth,	11	50	61	53	1	7
47. Uterus, &c., Diseases of,	0	10	10	9	1	0

{ Nearly all occurring among Native Portuguese Christians.

Of the right subclavian.

Nos.	DISEASES.	Remaining.	Admitted.	Total.	Discharged.	Died.	Remaining.	REMARKS.
48.	Rheumatism,	9	134	143	133	0	10	
	9.							
	10.							
49.	Carbuncle,	0	6	6	6	0	0	Including Ichthyosis,
50.	Ulcers,	7	133	140	128	0	12	Lepra Vulgaris,
51.	Fistula,	0	13	13	13	0	0	Herpes Zoster,
52.	Skin, &c., Diseases of,	0	10	10	10	0	0	Purpura Hemorrhagica, ..
	11.							Bullæ,
53.	Violent Deaths,	0	0	0	0	0	0	
54.	Causes not specified,	0	0	0	0	0	0	
55.	Wounds, &c., Accidents,	4	234	238	124	4	10	
56.	Fractures,	10	67	77	61	8	8	By Arsenic,
								Acconite,
								Datura,
								Cannabis Sativa, ..
57.	Poisoning,	0	22	22	19	3	0	Opium,
								Liquid Hartshorn, ...
								Nux Vomica,
								2. Fatal 1.
								3
								9
								2
								4. Fatal 2.
								1
								1
	Total,	130	2391	2521	2242	174	105	

FRED. J. MOUAT, M. D., Secretary.

Medical College, Calcutta, January 1, 1849.

Appendix A. No. II.

Table of Admissions and Deaths in the Medical College Hospital, for the year 1848.

MONTHS.	EUROPEANS.						NATIVES.						REMARKS.
	Admitted.		Discharged.		Died.		Admitted.		Discharged.		Died.		
	Medical Cases.	Surgical ditto.	Medical ditto.	Surgical ditto.	Medical ditto.	Surgical ditto.	Medical ditto.	Surgical ditto.	Medical ditto.	Surgical ditto.	Medical ditto.	Surgical ditto.	
January 1848,	62	18	55	21	6	0	74	33	76	37	3	3	Of the Deaths among Natives— 24 were from 1 to 2 days in Hospital. 20 were from 2 to 7 days in Hospital. 10 were from 7 to 14 days in Hospital. 5 were from 14 to 20 days in Hospital. 6 were from 20 to 40 days in Hospital.
February	65	22	54	23	8	0	67	36	69	36	3	3	
March	66	18	56	22	9	1	65	37	66	34	2	1	
April	68	23	60	20	11	1	68	34	75	32	2	2	
May	74	26	62	24	10	0	74	35	72	36	3	0	
June	75	25	64	21	9	0	72	38	74	38	2	1	
July	78	26	65	24	11	0	76	35	73	38	6	0	
August	76	25	61	18	8	0	69	34	66	37	4	2	
September	74	24	58	25	9	0	68	33	68	35	3	3	
October	75	23	60	24	8	0	72	35	70	37	4	2	
November	74	24	55	19	9	0	65	33	73	35	4	2	
December	73	25	52	21	9	0	64	35	66	35	6	1	
Total,	860	279	702	262	107	2	834	418	848	430	45	20	

FRED. J. MOUAT, M. D., Secretary.

Medical College, Calcutta, January 1, 1849.

Appendix A. No. III.

Return of Surgical Operations performed by Professor R. O'Shaughnessy, F.R.C.S., in the Medical College Hospital, during the year 1848.

Nature of Operations.	Number.	RESULT.		REMARKS.
		Died.	Cured.	
Amputation at the shoulder joint,...	1	1	0	{ Extensive injury of the elbow joint from the bite of a horse. The patient, a Hindu lad, 12 years of age, underwent primary amputation of the arm, but it was afterwards found necessary to amputate at the shoulder joint in consequence of a denuded state of the bone high up. Died from irritative fever and sloughing of the stump 5 days after the operation.
Ditto of the arm,.....	2	0	2	
Ditto of the leg,	3	1	2	{ Severe compound fracture of the leg, primary amputation objected to by the patient and resorted to on the 10th day, as a last resource, under very unfavourable circumstances.
Ditto of the foot,	2	0	2	
Lithotomy,	6	1	5	{ The fatal case occurred in an old man aged 65 with debilitated constitution ; sank under the effects of passive hemorrhage on the 5th day after the operation.
Operation for strangulated hernia,	1	1	0	
Excision of large encysted tumors } from the hand,	1	0	1	
Ditto ditto from the neck,	1	0	1	
Ditto ditto from the shoulder,	1	0	1	
Ditto ditto from various other parts } of the body,	5	0	5	

Ditto cancerous tumor of the eye,...	1	0	0
Ditto ditto of the heel,	1	0	1
Ditto ditto of the lip,	1	0	1
Ditto hypertrophied scrotum,	3	1	2
Operation for necrosis of the tibia, Ditto for the removal of large } polypous tumor from the eye, ... }	4	0	4
Ditto ditto from the nose,	1	0	1
Operations for cataract,	3	0	3
Ditto for fistula lachrymalis,	31	0	31
Ditto " harelip,	4	0	4
Ditto " fistula in ano,	2	0	2
Ditto " fistula in perineo,	5	0	5
Ditto " hydrocele,	4	0	4
Ditto " phymosis,	20	0	20
Luxations of the shoulder joint } reduced,	16	0	16
Ditto of the hip joint ditto,	6	0	6
Ditto of the clavicle ditto,	4	0	4
Minor operations,	2	0	2
Fractures set up,	60	0	60
	67	8	59
Total,	258	14	244

{ The fatal case occurred in an old man of weakly constitution, who sank under the effects of diarrhoea 13 days after the operation.

{ The deaths were all occasioned by various internal injuries exclusive of the fractured limbs, being chiefly accidents on board of Ships and falls from the tops of houses.

All the capital operations, and some of the more painful minor ones were performed while the patients were under the influence of Chloroform. It succeeded, in every instance, in rendering the patients insensible to pain. It is in every respect, preferable to all other Anæsthetics I am acquainted with. I regard it as an invaluable boon to those who require, and to those who perform Surgical operations.

(Signed) R. O'SHAUGHNESSY, F. R. C. S.,
Professor of Surgery.

Medical College, Calcutta, January 1, 1849.

FRED. J. MOUAT, M. D., Secretary.

Appendix A. No. IV.

Annual return of Diseases treated in the Out-Door Dispensary of the Medical College, from 1st January to 31st December, 1848.

Nos.	DISEASES.	Remaining.	Admitted.	Total.	Discharged.	Relieved.	Abscinded.	Died.	Remaining.	REMARKS.
1.	Zymotic Diseases,	43	5692	5735	5559	0	145	0	31	
2.	Of uncertain or variable seat, ...	16	3179	3195	2974	118	73	0	30	
3.	Of the Nervous system,	2	171	173	49	95	29	0	0	
4.	Of the Respiratory Organs,	5	780	785	684	95	0	0	6	
5.	Of the Digestive Organs,	10	1382	1392	1353	25	0	0	14	
6.	Of the Urinary Organs,	0	76	76	76	0	0	0	0	
7.	Of the Organs of Generation, ...	0	302	302	302	0	0	0	0	
8.	Of the Organs of Locomotion, ...	13	1867	1880	1816	52	0	0	12	
9.	Of the Integumentary System, ...	13	2422	2435	2419	0	0	0	16	
10.	Poisoning, Asphyxia, Injuries, &c.,	12	1163	1175	1163	0	0	0	12	
	1.									
1.	Diarrhoea,	0	247	247	247	0	0	0	0	
2.	Dysentery,	6	678	684	532	0	145	0	7	
3.	Ague,	5	717	722	717	0	0	0	5	
4.	Remittent Fever,	2	526	528	525	0	0	0	3	
5.	Common continued Fever,	14	1876	1890	1883	0	0	0	7	
6.	Erysipelas,	0	48	48	48	0	0	0	0	
7.	Syphilis,	16	1600	1616	1607	0	0	0	9	

8.	Inflammation,	5	1476	1481	1405	48	13	0	15	15	Chiefly Hydrocele.
9.	Dropsy,	4	573	577	569	0	0	0	8	8	
10.	Abscess,	4	879	883	878	0	0	0	5	5	
11.	Mortification,	0	32	32	32	0	0	0	0	0	
12.	Scrofula,	3	57	60	58	0	0	0	2	2	
13.	Tumors,	0	162	162	162	0	0	0	0	0	
	3.										
14.	Paralysis,	2	74	76	39	23	14	0	0	0	
15.	Epilepsy,	0	55	55	0	55	0	0	0	0	
16.	Insanity,	0	42	42	10	17	15	0	0	0	
	4.										
17.	Quinsy,	0	215	215	215	0	0	0	0	0	
18.	Bronchitis,	2	308	310	304	0	0	0	6	6	
19.	Pleurisy,	0	108	108	108	0	0	0	0	0	
20.	Asthma, ...	3	92	95	0	95	0	0	0	0	
21.	Lungs &c. Diseases of,	0	57	57	57	0	0	0	0	0	
	5.										
22.	Teething,	0	66	66	66	0	0	0	0	0	
23.	Worms,	0	115	115	115	0	0	0	0	0	
24.	Ascites,	2	28	30	25	0	0	0	5	5	
25.	Hernia,	0	25	25	0	25	0	0	0	0	
26.	Colica or Ileus,	0	130	130	130	0	0	0	0	0	
27.	Stomach, &c. Diseases of,	3	500	503	503	0	0	0	0	0	
28.	Hepatitis,	2	167	169	164	0	0	0	5	5	
29.	Jaundice,	0	48	48	48	0	0	0	0	0	
30.	Spleen, Diseases of,	3	303	306	302	0	0	0	4	4	
	6.										
31.	Stricture,	0	76	76	76	0	0	0	0	0	
	7.										
32.	Uterus, Diseases of,	0	302	302	302	0	0	0	0	0	
	8.										
33.	Rheumatism,	13	1707	1720	1708	0	0	0	12	12	
34.	Joints, &c. Diseases of,	0	160	160	108	52	0	0	0	0	

} Chiefly cases of Dyspepsia
{ from deranged bowels.

Nos.	DISEASES.	Remaining.	Admitted.	Total.	Discharged cured.	Relieved.	Absconded.	Died.	Remaining.	REMARKS.
9.										
35.	Carbuncle,	0	30	30	30	0	0	0	0	
36.	Phlegmon,	0	200	200	200	0	0	0	0	
37.	Ulcer,	6	1268	1274	1265	0	0	0	9	
38.	Fistula,	0	85	85	85	0	0	0	0	
39.	Skin Diseases,	7	839	846	839	0	0	0	7	Principally cases of Psora, Herpes, Lepra Vulgaris and Elephantiasis.
10.										
40.	Causes not Specified,	2	121	123	121	0	0	0	2	Including Dyseceæ, Neuralgia, Odontalgia.
41.	Contusions,	3	169	172	166	0	0	0	6	
42.	Wounds,	4	286	290	288	0	0	0	2	
43.	Fractures,	1	75	76	74	0	0	0	2	
44.	Dislocations and Subluxations,	0	30	30	30	0	0	0	0	
45.	Burns and Scalds,	2	182	184	184	0	0	0	0	
Total,		220	33768	33996	32620	700	434	0	242	

FRED. J. MOUAT, M. D.,
Secretary.

Medical College, Calcutta, January 1, 1849.

Appendix A. No. V.

Return of Minor Surgical Operations performed at the Out-Door Dispensary of the Medical College, during the year 1848.

NATURE OF OPERATION.	Number.	RESULT.			REMARKS.
		Died.	Unknown.	Cured.	
Amputations of fingers and toes,	9	0	0	9	
Ditto of hypertrophied prepuce,	7	0	0	7	
Encysted and other tumors excised,	35	0	0	35	
Tapping for abdominal dropsy,	10	0	0	10	
Ditto for hydrocele,	389	0	0	389	
Fistula laid open,	85	0	0	85	
Abscesses opened,	996	0	0	996	
Teeth extracted,	542	0	0	542	
Operation for phymosis,	85	0	0	85	
Ditto for paraphymosis,	47	0	0	47	
Ditto for onychia,	110	0	0	110	

NATURE OF OPERATION.	Number.	RESULT.			REMARKS.
		Died.	Unknown.	Cured.	
Ditto for ranula,	3	0	0	3	<p>Many of the more painful operations were performed while the patients were under the influence of Chloroform, and in no instance was its exhibition attended with the slightest ill effect. On the contrary it produced the happiest results, giving the patients confidence by affording them the ready means of obtaining an entire immunity from pain. They now seek Surgical relief with the greatest readiness, where formerly they were deterred from doing so by a dread of the knife or the pain of an operation.</p>
Luxations of the shoulder joint reduced,	10	0	0	10	
Ditto of the wrist joint,	0	0	0	0	
Ditto of the thumb,	2	0	0	2	
Ditto of the clavicle,	5	0	0	5	
Ditto of the lower jaw,	6	0	0	6	
Prolapsus ani reduced,	8	0	0	8	
Venesection and arteriotomy,	260	0	0	260	
Catheters passed for retention of urine,	120	0	0	120	
Setons introduced,	36	0	0	36	
Foreign bodies extracted,	20	0	0	20	
Incarcerated hernia reduced by taxis, ...	25	0	0	25	
Fractures put up,	75	0	0	75	
Total,	2885	0	0	2885	

FRED. J. MOUAT, M. D., Secretary.

Medical College, Calcutta, January 1, 1849.

Appendix A. No. VI.

*Return of Eye Diseases treated at the Ophthalmic Ward of the
Out-Door Dispensary of the Medical College, by Professor R.
O'Shaughnessy, during the year 1848.*

DISEASES.	Remained.	Admitted.	Total.	Discharged cured.	Relieved.	Absconded.	Remaining under treatment.	REMARKS.
Acute ophthalmia,	5	195	200	193	0	7	0	
Chronic ophthalmia,	0	66	66	25	21	19	1	
Interstitial abscess of the } cornea,	0	24	24	13	0	9	2	
Ulcer of the cornea,	0	21	21	16	0	5	0	
Sloughing cornea,	0	13	13	9	0	4	0	
Vascular cornea,	0	5	5	5	0	0	0	
Opacity of the cornea, ...	0	23	23	8	11	3	1	
Wounds of the cornea, ...	0	3	3	3	0	0	0	
Inflammation of the in- } ternal tunics,	0	34	34	26	2	6	0	
Pustular ophthalmia,	0	12	12	10	0	1	1	
Catarrhal ophthalmia, ...	0	9	9	8	0	1	0	
Purulent ophthalmia,	0	3	3	2	0	1	0	
Cataract incipient and } mature,	0	106	106	30	69	1	6	
Amaurosis,	0	2	2	0	2	0	0	
Pterygium,	0	13	13	8	3	2	0	
Impaired vision,	0	14	14	3	0	11	0	
Prolapsus iridis,	0	5	5	3	0	2	0	
Staphyloma,	0	4	4	1	2	0	1	
Dislocation of the lens } into the anterior cham- } ber,	0	1	1	1	0	0	0	
Closed pupil,	0	5	5	3	1	1	0	
Hemeralopia,	0	1	1	1	0	0	0	
Trichiasis,	0	1	1	1	0	0	0	
Nyctalopia,	0	2	2	1	0	1	0	
Glaucoma,	0	1	1	0	1	0	0	
Entropium,	0	4	4	2	1	0	1	
Obstruction of the nasal } duct,	0	10	10	4	4	0	2	
Ecchymosis,	0	2	2	2	0	0	0	
Hordeolum,	0	2	2	2	0	0	0	
Cancerous ulceration of } internal canthus,	0	1	1	0	1	0	0	
Total,	5	582	587	380	118	74	15	

FRED. J. MOUAT, M. D., *Secretary.*
Medical College, Calcutta, January 1, 1849.

Appendix A. No. VII.

Tabular Statement of the number of patients treated at the Out-Door Dispensary of the Medical College, during each month of the Year 1848.

Number.	Months.	1848.	REMARKS.
			Of the numbers mentioned in the preceding column there attended in 1848.
			Once, 3935
			Twice, 3218
			Thrice, 2394
1.	January,	1305	Four times, 1744
2.	February,	1075	Five times, 1493
3.	March,	1216	Six times, 1169
4.	April,	1363	Seven times, 939
5.	May,	1411	Eight times, 729
6.	June,	1294	Nine times, 591
7.	July,	1195	Ten times, 387
8.	August,	1588	Eleven times, 257
9.	September,	2181	Twelve times, 146
10.	October,	1281	Oftener, 32
11.	November,	1552	
12.	December,	1573	
	Total,	17034	Total, 17034

FRED. J. MOUAT, M. D., *Secretary.*

Medical College, Calcutta, March 17, 1849.

Appendix B. No. I.

EXAMINATIONS.

Questions for Final Students.

SURGERY.

Describe minutely the anatomy of the ankle joint. Mention the several directions in which dislocation may take place and the signs of each.

State in detail the effects on the various parts composing or connected with the joint of simple dislocation, outwards and inwards, of the lower or distal end of the tibia. Describe the method of reducing each dislocation and the after treatment. Mention the time ordinarily occupied by the cure in the most favorable circumstances.

Describe the local and constitutional effects of a compound dislocation of the ankle joint, the difficulties which most frequently oppose its reduction, and the best mode of overcoming them.

Detail the local and other conditions which would in such a case lead you to doubt the possibility of saving the limb, and should its removal be resolved on, say at what point you would amputate and state your reasons for preferring that point.

PRACTICE OF MEDICINE.

What is the pathology of dropsy, and what are its predisposing and exciting causes generally? Enumerate the diseases upon which dropsy often supervenes and the causes which ordinarily give rise to accumulation of fluid in the abdominal cavity in particular. State the nature and properties of the effused fluid.

Mention other conditions and forms of disease with which abdominal dropsy may be confounded, and the signs by which it may be distinguished from them.

What are the indication of cure of dropsy generally, with reference to the causes enumerated and the most appropriate plans of treatment? Mention a few of the most useful medicines, the rationale of their operation, their doses, and the best form of exhibiting them.

Test Examinations.

ANATOMY AND PHYSIOLOGY.

1. Describe the surgical anatomy of the perineum.
2. Give the manner of attachment of all the muscles to the os innominatum.

CHEMISTRY.

1. State what are the compounds of nitrogen with oxygen, their equivalents, composition, properties, mode of preparation, and tests?

2. State the properties of the sulphates of protoxide and peroxide of iron, and also of the mixture of the two, the tests which distinguish these salts from one another, the properties and composition of the protoxide and peroxide of iron, and the theory of what takes place in the action of hydrochloric acid on metallic iron.

MATERIA MEDICA.

1. The preparation, tests, and uses of nitric acid.
2. The circumstances and cases in which anæsthetic and narcotic agents are inadmissible.

PRACTICE OF PHYSIC.

1. Sketch the local and constitutional phenomena of inflammation.
2. Mention the usual symptoms of simple continued fever—state them in the order of occurrence, and describe the different plans of treatment for fever when it affects the head, the chest, or the abdomen.

SURGERY.

1. Give the history of fracture of the base of the skull in respect to the mode of its occurrence, the symptoms which may accompany it, and the result.
2. Describe the operation of tracheotomy, its dangers, and difficulties.

MIDWIFERY.

1. What are the anatomical relations between the mother and the fœtus at the 8th month of utero-gestation?
2. What are the causes of protracted labor?

MEDICAL JURISPRUDENCE.

1. Give the certain and the uncertain signs of death, the former in detail.
2. State in detail the proofs by which it can be decided that a child was born alive, as ascertained from the condition of the circulating and respiratory organs.

Honor Examinations.

ANATOMY AND PHYSIOLOGY,

1. Describe the movements of the different parts of the alimentary canal, and the changes which the food undergoes in its passage through it.
2. State the composition of the blood, and the structure of the blood corpuscles.
3. Give the nerves which supply the spermatic cord and scrotum.
4. Describe the structure and relations of the membranous portion of the urethra.

CHEMISTRY.

1. Give an account of the states in which caloric or heat exists in bodies, the modifications which take place in these states by the changes of form which bodies undergo, the modes in which caloric is communicated from one body to another, and the general effects produced by an increase or abstraction of caloric upon these bodies.
2. Give the properties of iodine, its tests, and the different processes by which hydriodic acid is obtained from it, together with the tests by which that acid is recognised.
3. Mention the composition, properties and manner of preparation of the oxides of mercury, and the tests by which the salts of these different oxides are distinguished from one another as well as from other substances.
4. State what are the properties of antimony, what are its combinations with oxygen, and its distinguishing tests.
5. Give the best mode of preparation of chloroform, the theory of the process, its properties, composition, and tests.
6. Give the properties of zinc, of its compounds with oxygen and chlorine, and its tests.
7. State what are the properties of potassium, what are its oxides, their modes of preparation and tests?

BOTANY.

1. Describe the elementary organs of plants, and mention the parts of the plant in which they are severally found.
2. What is the structure, mode of growth, and office of the root?
3. What are the several kinds of stem?
4. Describe a simple leaf, naming its varieties.
5. Describe a compound leaf.
6. Describe the different kinds of inflorescence, and name an example of each kind.
7. What is the structure, office, and mode of insertion of the stamen?
8. Describe the pistil with the parts composing it.
9. What is the structure of the seed, and what are the names of the principal varieties?
10. What are the characters of the four sub-classes into which DeCandolle divides the exogenous plants?
11. What are the characters of the Leguminosæ and its principal divisions.

MATERIA MEDICA.

1. The preparation, tests, characters, uses, and doses of the sulphate of copper.
2. The general uses of purgatives in the treatment of disease.
3. The preparation, properties, tests and uses of iodine, with an enumeration of its officinal compounds, and the special employment, as well as dose of each.
4. The botanical characters of the *Aconitum Ferox*, the preparations of aconite, and the diseases in which they are used, with the dose of each.

PRACTICE OF PHYSIC.

1. Describe the principal organic diseases of the stomach, including the anatomical characters, and diagnostic symptoms.
2. Enumerate the varieties of colic, explain the causes, pathology, and treatment of each.
3. Describe the symptoms, ordinary course, and treatment of erysipelas of the face.
4. Enumerate the morbid conditions of the urine, and the signs physical and chemical, by which they are recognized. Explain their pathology, specifying the diseases, primary or secondary, on which they depend.

SURGERY.

1. What are the different varieties of ophthalmia? Describe their characteristic appearances and appropriate treatment.
2. What are the symptoms of iritis? Detail the different forms of that disease, and the effects produced by it on the eye, if unskillfully or unsuccessfully treated. How is inflammation of the internal, to be distinguished from inflammation of the external tunics of the eye.
3. Describe the operation of amputation at the ankle joint. State its supposed advantages over amputation below the knee.
4. What are the causes, symptoms, and treatment of infiltration of urine in the perenium?

MIDWIFERY.

1. What are the different varieties of uterine hemorrhage, their causes, and treatment?
2. What do you infer from uterine hemorrhage being arrested during a pain, and what from its continuance chiefly during a pain?
3. Describe the operation of *Turning*, its dangers, and the circumstances under in which it is required.

MEDICAL JURISPRUDENCE.

1. The proofs of a wound having been inflicted during life.
2. The evidences of recent delivery in the living and in the dead subject, with the relative and absolute value of each sign.
3. The various modes in which death may be produced by asphyxia, with the distinctive characteristics of each.
4. The characters of general, moral and intellectual mania.

A N S W E R S

OF THE

MOST PROFICIENT STUDENTS.

The answers are reprinted *verbatim* from the MSS. of the students, every error of grammar and fact being retained.

Readers in Europe must remember, that the answers of the native students are not only written in a given time, but also in a foreign language, with which all of them are imperfectly acquainted when they begin the study of medicine; literary excellence, therefore, cannot be expected in them.

Appendix B. No. II.

ANSWERS OF FINAL STUDENTS.

1st.—The ankle belongs to the class of ginglymoid joints, and is formed by the articulation of the lower ends of the Tibia and Fibula, the two long bones of the leg with the foot, or rather the astragalus, one of the bones entering into the formation of the foot. The concavity on the lower ends of the Tibia and Fibula corresponds with the convexity observable on the upper part of the astragalus behind its neck. The lateral barriers of this joint are formed by the *maleoli internus* and *externus*, which project downwards from the lower and internal part of the Tibia, and the lower and external part of the Fibula respectively, and overlap the astragalus on its sides, the ligaments which bind these bones together are 3 in number;—the anterior and the two lateral ligaments. The first arises from the lower edge of the Tibia and Fibula and is inserted into the neck of the astragalus; and the two lateral ligaments arise from the *maleoli internus et externus* respectively, and are inserted into the sides of the astragalus, and thence prolonged to the sides of the calcaneum or the heel-bone, which is placed and articulated with the astragalus below. The synovial membrane of the joint consists of two folds; lining 1st the extremity of the bones, and then reflected upon the internal surface of the ligaments. There are also certain muscles which combine to keep the joint in close approximation with the foot. There are the tibialis anticus, and peroneus longus anteriorly, and the gastrenemius and soleus posteriorly; the two sets balancing the action of each other, and thereby tend to preserve the healthful state of the joint and the proper level of the foot, preventing the undue elevation or depression either of the toes or the heel.

The joint is liable to dislocations in four different direction, viz. anteriorly, posteriorly, and laterally on either side. The symptoms denoting the occurring the first of these dislocation (of the Tibia and Fibula forwards) are,—in addition to the ordinary sign of dislocation such as deformity, impairment of motion, pain, &c.,—an undue elongation of the heel and a corresponding diminution of the foot anteriorly, and direction of the toes downwards, produced by the contraction of the gastroneums and soleus muscles. In dislocation backwards, of course, an opposite state of the parts prevail; that is to say, the heel is diminished in length, which renders the anterior portion of the foot portionally longer. The toes in this form of dislocation are directed upwards. The lateral dislocations of the ankle joint, are always or almost always complicated with fracture of one of the bones of the leg, in consequence of the maleoli; as already stated, opposing barriers to it on either side. Thus the outward dislocation is attended with fracture of the internal maleolis and dislocation on the opposite direction, most frequently with fracture of the lower fourth of Fibula. In the first of these dislocations there is an unnatural projection formed externally by the lower end of the Fibula, and the outline of the foot is more internal than it ought to be. With these there exists also inversion of the foot. In dislocation inwards on the other hand, eversion of the foot is the result; a considerable swelling is formed inward by the lower end of the Tibia. Of course in these disloca-

tions, there are present, besides these special symptoms, others common to dislocation in every situation,—pain, deformity, loss of motion, unnatural swelling, &c. &c.

The effects of the dislocation of the Tibia inwards and outwards on the parts entering into the formation of the ankle joint, have been already stated in part; and the liability to be complicated with fracture with the inferior fourth of the Fibula, and the internal maleolus respectively already alluded to. They are also liable to be attended with rupture of the internal and external lateral ligaments of the joint; laceration of the maleolar arteries, and of the other soft part which it is surrounded by.

To reduce the dislocation of the Tibia inwards it is necessary to seize hold of the *foot* and FORCIBLY INVERT it, at the same time drawing it downwards, so as to enable the Tibia to slip into its natural situation. After reduction has been effected it is necessary to apply a forked splint along the inner side of leg, and extending a little below the level of the the plane of the foot. Then apply a bandage only to the upper and lower parts of the leg, keeping the middle of it perfectly free; for as has been already stated this dislocation is attended with fracture of the inferior fourth, and if bandage be applied to the middle of the leg, that will press the broken ends of the last named bone upon the outer surface of the Tibia and thereby prevent their proper union. To reduce the other dislocation—that of the Tibia outwards, manipulations of an opposite nature are made use of; viz. the foot is seized and forcibly everted and at the same time drawn downwards with the one hand—while the leg is fixed by an assistant;—and direct coaptations are made to push the Tibia to its natural position. After reducing this dislocation, splints are applied on either aspect of the leg, and kept there by a bandage properly applied. Besides, in both these cases, the patient should be kept quietly in bed; the bowels should be kept open, and no motion allowed until the attendant fracture has united. The average time occupied in the recovery of these cases under favourable circumstances, may be stated to be about 6 weeks.

The local effects of compound dislocations of the ankle joint consist of bruises and lacerations of the soft parts, which surround it, and protrusion of the bones especially of the maleoli through the external wound; with subsequent inflammation, and suppuration of the parts involved, more especially of the synovial membrane lining the interior of the joint; and the constitutional effects consist primarily of the shock which the system receives in consequence of the accident in the shape of a general depression of its vital powers; or the results which are subsequently produced upon it by the reaction of the local inflammation and suppuration of the part primarily subjected to the injury. Sometimes immediately after the reception of the injury a state of temporary delirium is produced; but this is nothing more than a particular manifestation of the shock which is received by the system at large, and more particularly by the centre, of the nervous system.

The difficulties which most frequently oppose the reduction of the compound dislocation of the ankle joint consist in the opposition which is offered to the return of the bone through the wound, which caused its protrusion; to overcome this difficulty two modes of practice are recommended, either to dilate the wound in the soft parts; or cut off a piece from the bone, so as to render it easily returnable through the already existing wound.

Preference, however is given by modern surgeons, to the latter mode of procedure, because the former increases the dangers of intensity of inflam-

matory action, which in a joint like the ankle is much to be dreaded even in a less degree.

The circumstances which would lead one to doubt the propriety of saving the limb, are extensive laceration of the surrounding soft parts; the comminution of the bones entering into the formation of the joint; profuse suppuration threatening impending hectic, which is likely or certain in the end to bear down the vital powers of life, and terminate ultimately in the death of the patient. Sometimes an already exhausted and debilitated state of the patient's constitution which is not likely bear well the effects of the inflammatory and suppurative which are likely or certain to attack the joint after the accident may lead us, as to entertain the doubt in question.

The part of the leg in which amputation should be performed, supposing such a measure were fixed upon, varies a little according to the circumstances in which the patient is placed in life. Perhaps it may, at the first sight appear, to be somewhat extraordinary, that there would such things as a rich man's operation, and a poor operation, and Surgery would not look upon all men, however placed in life, whether in high or low circumstances with a similar eye. The truth is that Surgery does not merely regard the present comfort and safety of its objects, but looks forward with a prospective eye to their future convenience and well being. Accordingly in the opulent man who can afford an artificial leg she chooses as the site of operation in the leg—provided of course she has the choice of the whole limb, as she must have in the injuries under present consideration,—as low down as possible, because the more of the natural limb is left behind, the more manageable will the artificial portion, worn on it, be. On the other hand in the case of the poor not capable of affording an artificial limb, and who is merely to use a piece of wood as the substitute for his leg; the preferred site of operation, is about 4 inches below the knee; for if performed lower down, not only no object will be thereby fulfilled, but the length of the limb left behind will form a source of positive inconvenience to him, by causing an unseemly projection behind, while the knee rests on his wooden leg, that (the knee) being the part by which the motions of the latter are most easily regulated.

2nd. The pathology of dropsy is generally considered to be a disturbance of the natural and healthy relation, which exists between the processes of absorption and exhalation. In the healthy state of the corporeal functions, the amount of exhalation which takes place from the various tissue, is barely enough to moisten their surfaces, the superfluous portion being always removed by absorption; but when, this relation is disturbed, when exhalation increases, or absorption is in abeyance, the exhaled fluid is not removed; it consequently accumulates either in an internal cavity or in the meshes of the areolar tissue, and gives birth to dropsy in its various forms. A difficulty, however, has been raised to this view of the subject on the ground that absorption so far from being in a state of abeyance during the existence of dropsy, is then perhaps in an unusually active state; and the generally emaciated state of dropsical patients is referred to in proof of the fact. But the difficulty vanishes when the subject is viewed in its true light—the only light in which it ought to be viewed;—and the function of absorption considered in its various bearings. Modern physiology has disclosed to us the important fact that it is not the absorbents, properly so called, which alone perform the function of absorption. The veins have an important part in the process. That while the former remove from the different parts of the body, the effete parts of

nutrition, the veins carry away the fluid exhaled by the different tissues of the body. It is necessary, however, to bear in mind that in order that the veins may absorb, they must be in some degree empty; for if they are already filled it is not possible that they would absorb more. Again if they are unusually full they will give out and exude a portion of fluid contents. Bearing these facts in view, we can readily understand and explain the causes of dropsical accumulations, as to how they are produced by the disturbed relation between exhalation and absorption. And this being the case, the causes of dropsy resolve themselves into whatever tends to disturb this relation, either by increasing and exciting the circulation of a part, and so causing increased exudation from its vessels; or keeping its veins in a state of unusual engorgement, cause them to give out a portion of their contents, and prevent them from performing their share in the function of absorption. When dropsy arises from the first of the ways mentioned it is termed to be active, and when from the other, it is termed passive. From a review of the above it would appear, that the causes of dropsy must vary according as they are of the active or the passive form. The former is very often the result of inflammation, more especially of the serous membranes; thus inflammation of the peritoneum is known to be a frequent cause of ascites, and inflammation of the pleura of hydrothorax. For the production of active dropsy however, it is not essential that the state of true inflammation would be reached. It is enough that arterial or active congestion exists, any how induced; hence we find that most of those causes which tend to disturb the state of circulation, by stopping an accustomed discharge, and thereby laying a greater stress upon the internal circulation, very frequently operate as causes of active dropsy; as an instance, it may suffice to mention how frequently dropsy—the active form of it—results from suppressed perspiration, in consequence of the application of cold to the surface.

The latter or passive form of dropsy is most frequently the result of some mechanical obstruction to the return of venous blood; and this obstruction may exist either in the central organ of circulation in the lungs, or in some part of some large venous trunk. The obstruction may be produced by disease of the valves of the heart, by hepatisation or some organic disease of the lungs, and when such is the case, the resulting dropsy is general and involves the whole system. Or the obstruction may reside in some of the abdominal organs, as for example the obstruction to the portal vein, which sometimes is caused by schirrus or malignant state of the liver, and produce local dropsy of the abdomen or ascites. Or the obstruction may be in consequence of some abnormal growth, as a tumor pressing upon a vein; the same effect is sometimes produced by the pressure of the gravid uterus on the veins of the lower extremity.

Diseases of the kidneys very often produce dropsies of both active and passive forms. Bright's kidney is a most common cause of it. What would have passed away as urine from the system, accumulates in consequence of the diseased state of its secreting organs, and dropsy in some of its forms is the result. Arising from this cause, the dropsy generally assumes the form of anasarca.

The diseases which give rise to dropsy have in part been stated in the course of the above remarks; and I do not think it to be necessary to go over them again; but there are other diseases which have dropsy as one of their sequelæ, and among the more important of these I may mention scarlet fever, measles, pulmonary phthisis, scrofula producing especially dropsy of the head (chronic hydrocephalus), and in fact all those exhaust-

ing diseases, which tend to produce passive congestion by inducing languor of circulation.

The causes which most frequently give rise to abdominal dropsy, are acute and chronic peritonitis, obstruction to the portal circulation by organic diseases of the liver; enlargement of the spleen, and sometimes the sudden cessation of a habitual diarrhoea or dysentery; checked perspiration will also very often give rise to it.

The effused fluid is of the nature of common serum, sometimes containing in it a few flakes of lymph; especially when the dropsy is the result of inflammation. If the dropsy is the result of urinary diseases, it is said sometimes to possess an urinous smell and perhaps some of the constituents of the urine.

The affection for which abdominal dropsy is most likely to be mistaken is ovarian dropsy; but a correct diagnosis will be arrived at by attending to the history of the case, for the ovarian dropsy begin on one side, and does not distend the abdomen so uniformly as ascites. Sometimes pregnancy is mistaken for dropsy, as was done in the case of Queen Mary of England.

The great indication of treatment in dropsy is to carry out the accumulated fluid and prevent (if possible) its re-accumulation. When dropsy is of the active form and the result of inflammation or active congestion, and is attended with perhaps with febrile symptoms, a full pulse, hot skin, flushed face &c. the indications of treatment are similar to those of inflammation, adopted of course in a modified form, and they may be fulfilled by bleeding, purging, alterative doses of mercury, &c. &c.

In the passive forms of dropsy too, it must always be our paramount object to remove the cause if possible, but since this is not always in our power, we merely endeavour to attack the most prominent symptom of the disease and attempt to evacuate the accumulated fluid, either by means of the kidneys, the bowels, or the skin; the circumstances of each particular leading us to prefer any one of these channels in preference to the others. Thus for instance when the kidneys are in a healthy state, they offer perhaps the most eligible channel to carry out the fluid accumulation; but should the disease be connected with disease of the kidneys themselves, certainly it would be a very irrational practice, to lay further stress upon organs already diseased. In such a case then we try to carry out the fluid through the bowels; or should any irritation exist in them, we endeavour to carry it out by the skin in the form of perspiration.

The remedies which we administer for the purpose of carrying out the fluid are diuretics, hydragogue cathartics, and diaphoretics respectively.

As some of the most important of the 1st of these classes of remedies may be mentioned.

Squill.	Turpentine.
Colchicum.	Nitrate of potash.
Digitalis.	Acetate of potash.
Nitric ether.	Broomtops, &c. &c.

They may be exhibited singly or in combination, the latter is generally the preferable mode, for then their effects are promoted and assisted by the combination.

The following substances may be very advantageously combined.

Nitrate of potash.
Acetate of ditto, $\bar{a} \bar{a}$ ʒi.
Nitric ether, ʒij.
Muriated tinct. of iron, \mathfrak{m} xv.

Vinum scilloe, ℥ij.

Camphor mixture, ℥viiij.

and of this mixture the patient may take ℥i three times a day.

Among the hydragogue cathartics, some of the most important are

Elaterium.

Colocynth.

Scammony.

Jalap, &c. &c.

Gamboge.

There also may be variously exhibited; as for example

Elaterian, gr. $\frac{1}{8}$.

Ginger.

Gentian, (ext. of) $\bar{a} \bar{a}$ gr. ij.

made into 2 pills.

And exhibited—say—on alternate days.

Of the diaphoretics, some of the most important are.

Tartar emetic.

The warm water bath.

Dover's powder.

The hot air bath, &c. &c.

This system may be put in the following way :

The patient may take

Tartar emetic, gr. $\frac{1}{2}$.

Dover's powder, gr. vi.

Three times daily, and may occasionally have the warm bath.

Some times the purgatives may be very advantageously combined with the diuretics as in following prescription.

Calomel.

Ext. of colocynth, $\bar{a} \bar{a}$ gr. v.

Squill, gr. ij.

Ft. pill ij.

To be taken at night and followed in the morning by

Compound jalap powder, ℥i.

Squill, gr. ij.

Digitalis, gr ss.

(Ft. pill.)

NOBINKRISTO BOSE.

Answers of General Students.

ANATOMY.

(1.) The movements of the alimentary canal may be classed under the following heads. 1st those concerned in mastication 2 those in deglutition, 3 movements of the stomach, and 4 movements of the intestines.

i. The movements that are involved in the process of mastication are principally those of the lower jaw—They are up and down and lateral in their nature—The lower jaw is elevated chiefly by the temporal muscle and depressed by the digastricus: it is moved *forwards* by the anterior fibres of the Temporal and Masseter muscles, the pterygoideus internus and lastly and above all the pterygoideus externus; and *backwards* by the posterior fibres of the Temporal and the Masseter.

(2.) The movements in deglutition may be divided into 3 stages—the 1st consisting in the passage of the food to the anterior palatine arches,

the 2nd in its passage from the latter to the pharynx, and the 3rd and last stage in its passage from the pharynx through the œsophagus, into the stomach. In the 1st stage the mouth is closed and the tongue raised against the hard palate. The second stage is very complicated. In it, just as the food has passed the anterior palatine arches, the palatoglossus muscles of the two sides contract and are drawn in like side-curtains which together with the uvula close the openings into the mouth and the posterior nares, now the food may pass into the larynx—this is, however, prevented by the tongue being brought backwards by the styloglossus muscles, and the larynx raised against its under-surface by its proper elevators. When all this is accomplished, the stylo-pharyngei act and dilate the pharynx sideways, and the food passes down along an inclined plane into the pharynx. Now commences the 3rd stage—in it the constructor muscles of the pharynx, and the longitudinal and circular muscular fibres of the œsophagus (the latter especially), act and the food is thereby brought down into the stomach to undergo some of the most important changes that take place in the process of digestion.

(3.) *Movements of the stomach.* These principally consist 1 in the passage of the food from the cardiac extremity into the great cul de sac or the splenic end of the stomach, and from the latter and along its great curvature to its pyloric end, and 2 in its return from the pyloric, along the lesser curvature, to the cardiac end. These varied movements are effected by the muscular coat of the stomach, which consists of longitudinal, transverse or circular and oblique fibres. While the process of digestion is going on, the stomach assumes a sort of hour-glass shape, it being constricted in the middle by the contraction of its circular fibres—It is also provided with a sort of sphincter muscle in its cardiac orifice, this is formed by its oblique fibres and prevents the reflux of the food into the œsophagus.

(4.) *Movements of the intestines.* After undergoing certain changes in the stomach, the food passes into the intestinal canal and in its passage along it excites what are called peristaltic movements in the different parts with which it comes in contact. The apparatus that effects these movements is the muscular coat of the small and large intestines, which consists of longitudinal fibres externally and circular, internally.

Now for the changes, the food undergoes in the different parts of the alimentary canal. These may be described in the following order 1 changes it suffers in the mouth, 2 in the stomach and 3 in the intestinal canal.

(1.) In the mouth, the food is *first* triturated by the organs of attrition, the teeth, and *then* mixed with the Saliva. These two processes are respectively called mastication and *Insalivation*, the former is purely mechanical in its character, and the latter involves certain changes in the food which are not well understood.—It has been found by experiments that the Saliva has the power of converting starch into sugar, and it may in virtue of this property be of some use in digestion. That it effects any chemical changes in the food is, however rendered improbable on the ground of the very short time, the latter is acted upon the Saliva. There is no doubt I believe as to the fact of this secretion being essential to digestion—Spallanzani has found by several experiments that the same food, which is easily digested by the gastric fluid when it has been previously imbued with the Saliva, is hard of digestion when it has not been so treated.

(2.) The changes the food undergoes in the stomach are solution and chemical change. They are effected by the gastric fluid which is secreted

by the simple follicles of the stomach. This fluid consists of a peculiar organic substance called the *pepsine*, and a free acid which has been found by the chemical analysis of Duglison, Prout and Beaumont to be hydrochloric acid in the case of the human gastric juice. In the stomach the food is changed into *chyme*.

(3.) In the duodenum the chyme is principally acted upon by the pancreatic juice and the bile. What changes each of these effects in the food are not well understood. This much is known that they, especially the bile, are essential to the elaboration of the chyle. It has been found by experiment that when the bile-duct, the ductus choledochus, of an animal is tied and a hole bored through its abdominal parietes for the passage of the bile out of the body, it dies of inanition, in the same space of time in which it would breathe its last had it not been provided with any food whatever. In the rest of the intestines, the food is mixed with the various secretions that are poured forth by the Peyer's glands (*solitariae* and *agminatae*), Lieburkühns follicles, and the solitary flask, shaped glands of the large intestine. Nothing certain is known with regard to the changes that these fluids effect in the food.

(2.) The Blood consists of a solid and a fluid portion. The solid part is made up of the red and colourless or lymph corpuscles, and the fluid of the liquor sanguinis. The latter consists of serum having fibrin dissolved in it. The following table shows the composition of the blood in one view.

Blood	{	Red and white corpuscles		}	clot or the cras-
		Liquor sanguinis	{ febrin		samentum
			{ serum		

The blood-corpuscles are disc-shaped bodies which are depressed in the middle on either surface. They are oval in the fishes, reptiles and amphibia, and in the mammalia including man (excepting the camelidæ) circular. In the invertebrata, excepting the annelidæ, they are colourless while in the higher classes of animals they are red. They are nucleated, but in the red globules of man no nucleus has been yet discovered. Their structure generally speaking is this—most externally an envelope, internally a nucleus and between these two the colouring substance which consists of 2 parts viz. *Hæmatine* or *Hæmatosine*, and *Globuline*.

(3.) The spermatic cord is supplied with nerves derived from the spermatic plexus and the ilio-inguinal branch of the Lumbar plexus. The nerves of the scrotum are supplied by the genito-crural and ilio-inguinal branches of the lumbar plexus and by the superficial perineal branch of the internal pudic and some branches of the Lesser Ischiatic. The internal pudic and the Lesser Ischiatic nerves are derived from the sacral plexus.

(4.) The membranous part of the urethra is composed of mucous membrane internally and fibrous membrane externally? no erectile tissue enters into its structure. It intervenes between the prostatic and the bulbous portion of the urethra. It is less than an inch in length. It has above it the sub-public ligament and anteriorly and at the sides, Cowper's glands. It is embraced on all sides by the compressores urethra muscles, which arise each of them by a tendinous point from the ramus of the Pubis and split at its sides into 2 slips one of which passes above and the other below it and thus enclose it. This portion of the urethra perforates the triangular ligament.

CHEMISTRY.

1st Answer.—Caloric exists in bodies in two states, in one of which it is readily known by our sense called sensible caloric, and in the other it cannot be known being combined with the body so as to be imperceptible, in this state it is called latent. The modifications which take place by the changes of form which undergo is this, that in some the latent heat may be rendered sensible by the change of that body in which the caloric existed in the latent form, and sensible heat might be rendered latent by the change of form of a body in which heat or caloric existed in the sensible form. Heat or caloric is communicated from one body to another either by contact or by radiation. Bodies which were previously solid might be converted into liquids and in some cases into vapours or gases by an increase of caloric. By abstraction of caloric the contrary of these effects are produced, that is gases and vapours may be liquified, and liquid are converted into solids.

2nd Answer.—Iodine is a greyish black solid which is converted by heat into a purple vapour; it is very sparingly soluble in water, a pound of water dissolving not more than a grain of iodine, It has a very disagreeable smell and a nauseous, astringent and bitter taste its specific gravity is 4.945. It melts at 108. Iodine is poisonous.

The test of iodine is that it gives a blue color with starch; in solutions supposed to contain iodine it is tested by adding first distilled water to the solution then either a little sulphuric acid or chlorine, and inserting a piece of paper, rubbed with starch paste, between the liquid and the cork of the viol, when either the chlorine or sulphuric acid combines with the substance with which iodine was united, and the iodine is set free and colors the starch blue.

The processes by which hydriodic acid is prepared are the following.

1st it is prepared by heating one part of phosphorous with sixteen of iodine in a tube and stratified with moistened sand or powdered glass, or by dissolving in a small portion of iodine of potassium as much as iodine as it will dissolve in a tube and then adding fragments of phosphorous in small pieces; these two processes yield it in a gaseous state. The liquid state can be prepared by passing a current of the gas through water or by passing sulphuretted hydrogen through water in which iodine is suspended or by the action of sulphuretted hydrogen on iodide of barium in solution. This acid is decomposed by chlorine and bromine, which set free iodine.

Hydriodic acid gives a fine scarlet color with a salt of peroxide of mercury, with bichloride of platinum a yellow precipitate, with nitrate of bismuth deep brownish red precipitate.

3rd Answer.—Mercury forms two oxides with oxygen the protoxide and peroxide; the *protoxide* is composed of one of mercury and one of oxygen; it is prepared by rubbing in a mortar, protochloride of mercury with aqua potassæ in proper proportions $ko \times hgel = clk \times hgo$: there is formed protochloride of potassium and protoxide of mercury are formed the protoxide of mercury is a black powder, it forms salts with acids, it is recognised by the following tests. Its salts give with alkalies a black precipitate, with hydrochloric acid a white precipitate which is calomel, with sulphuretted hydrogen a black precipitate. Peroxide of mercury is composed of one of mercury and two of oxygen; it is prepared by the action of nitric acid on metallic mercury with the aid of heat, when it appears as a red powder, or by the action of potash or liquor potassæ on

perchloride or bichloride of mercury. It is a red powder, with hydrochloric acid or solution of common salt it produces corrosive sublimate, with hydriodic acid a fine scarlet precipitate of periodide of mercury, and with sulphuretted hydrogen a dirty yellow precipitate of bisulphuret of mercury which is a hydrate, and with ferrocyanide of potassium a white precipitate of bicyanide of mercury. Both the oxides of mercury are reduced to the metallic state by prolochloride or protoxide of tin when added to their solutions.

4th Answer.—Antimony is a metal of an iron grey color and metallic lustre, its specific gravity is 8.9, it is the chief ingredient of type metal, it burns with a white flame when heated in air or oxygen gas, producing sesquioxide of antimony.

Antimony forms three compounds with oxygen, sesquioxide antimonious acid and antimonic acid; sesquioxide of antimony is a white powder insoluble in water but soluble in acids with which it forms salts. Antimonious acid is also a white powder soluble in water. Antimonic acid is also a white powder, it forms salts with bases called antimonates, the antimonious acid forms salts called antimonites of all these oxides, the sesquioxide is the most important as being the basis of tartar emetic, which is a double tartrate of potash and sesquioxide of antimony. The test by which antimony is distinguished from all other substances is the brownish orange color produced by sulphuretted hydrogen, when that gas is transmitted in solutions containing antimony.

6th Answer.—Zinc is a metal of a bluish white color and highly metallic lustre, it is slowly tarnished on exposure to the air, it is a malleable metal of inferior tenacity, it burns with a white light, its specific gravity is about 7; It can be beaten into very thin leaves, it melts at 450 and its boiling point is not much higher than that of mercury. It forms only one oxide with oxygen called the protoxide, it is of a white color, it forms salts with acids. It gives with alkalies a white precipitate, with alkaline carbonates also a white precipitate, with hydrochloric acid or a soluble chloride a gelatinous white precipitate of chloride and with sulphuretted hydrogen when the solution is neutral and a white precipitate. With chlorine zinc forms the chloride of zinc which is a protochloride; it is a white opaque semisolid body. Its distinguishing test is the white precipitate given by sulphuretted hydrogen in neutral solutions of zinc which is better produced by hydrosulphuret of ammonia; it also gives a white precipitate with ferrocyanide of potassium.

7th Answer.—Potassium is a metal of a white color with a slight tinge of blue, it is lighter than water its specific gravity being .895: when exposed to the air it is rapid oxidised by the oxygen of the air being converted into a white body or compound, which is the oxide or potash; it is therefore kept in the naphtha a liquid containing no oxygen; when thrown on surface of water it decomposes it, combining with the oxygen and setting free the hydrogen, with so much disengagement of heat as to set fire to the hydrogen, the hydrogen burning causes also the potassium to, and the globule swims above until it is entirely converted into potash, the same phenomenon occurs when the potassium is exposed in a small hollow on the surface of a piece of ice, which is immediately liquified. Potassium is a soft metal Potassium forms two oxides with oxygen, the protoxide and the peroxide. The protoxide is formed by the action of oxygen when potassium is exposed to the air or in oxygen gas; it is now converted into the hydrated protoxide which is prepared as follows. Two parts of pure carbonate of potash are dissolved in 20 parts of boiling

water and one part of slaked lime, which is converted into a kind of cream by being previously slaked with boiling water in a covered crucible, is gradually added to the boiling solution, the mixture being allowed to boil a minute or two after each addition; when the whole of the lime has been added it is boiled for five minutes, after which it is taken from fire and the flask or tube of iron, which ought, to be more deep than wide being covered up with its lid, is allowed to stand for 24 hours in a cold place, when if the above directions have been properly followed $\frac{1}{2}$ of the liquid can be decanted off quite pure and colorless and by rapidly boiling this liquid in an iron or silver vessel we may obtain the solid hydrate perfectly pure and colorless. The use of slaking the lime with hot water is this that it falls to so fine a powder that every particle of it acts, and by adding the lime gradually and constantly boiling the solution the carbonate of lime assumes a very dense form and settles perfectly, to the bottom of the retort, but if the lime be added all at once the carbonate of lime assumes a very bulk form from which hydrate can with difficulty be obtained. By allowing the liquid to stand for 24 hours in a cooled place covered with the lid, we avoid filtration and the bringing of the potash in contact with the atmosphere from which it actually absorbs carbonic acid. In the above process care must be taken to keep up the original quantity of water because with less water the hydrate actually takes back the carbonic acid from the lime. From the decanted liquid the solid hydrate may be easily obtained—by boiling it rapidly down in an iron or silver vessels till the residue follows like oil, it is then poured out on a clean iron plate, and on cooling is broken in small pieces, and kept in well stopped vessels; when the hydrate is pure it does not effervesce when a gas is passed through it.

Peroxide of potassium composed of one of potassium and three of oxygen, is prepared by passing oxygen over potash, heated to redness. The tests are these insolutions containing potash, it is detected by giving with bichloride of platinum a brownish yellow precipitate of a double chloride of potassium and platinum, but ammonia also gives a similar precipitate if present with bichloride of platinum, so it is necessary to ascertain whether ammonia is present or not, if it is then expel by heat. Hydrofluosilicic acid causes a white precipitate, an alcoholic solution of carbazotic acid caused a yellow precipitate, an excess of tartaric acid causes after a time a flaky white precipitate, which is hastened by rubbing with a glass rod the sides of the vessel. Hydrofluoric acid also causes a white precipitate, and perchloric acid also causes a precipitate in solutions containing potash.

ABDUL HUMEED 2ND.

BOTANY.

The following are the elementary tissues which enter into the composition of a plant—

- | | | |
|--------------------|---|----------------------------------|
| 1 Cellular tissue, | } | a Pleurenchyma or woody tissue, |
| 2 Vascular tissue, | | b Bothrenchyma or pitted tissue, |
| | | c Trachenchyma, |
| | | d Laticiferous tissue. |

1. Cellular tissue consists of vesicles which are originally round but assume, in course of time, a variety of forms from the different degrees of pressure to which they are subjected in consequence of their mutual apposition. The following are some of its varieties—1 Conenchyma when the

cells are conical; 2 Oenenchyma, when they are oval; 3 Muriform; 4 Colpenchyma; 5 Cladenchyma and so forth. This tissue acquires the name of *Parenchyma* when the cells are applied to each other by their faces; and *Prosenchyma*, when they placed end to end. It is found in the pith, bark, stipules, leaves and their modifications the bracts and the floral parts, and lastly the root.

(2.) *Vascular tissue.* (a) *Pleurenchyma* consists of elongated cells placed end to end. It is either simple or *glandular*: the latter variety is characterized by glandular projections on the inner surface of the tubes, and occurs abundantly in the coniferæ. It is strong and hence it is of so great use to man. It is found in the wood of the stem, the inner layer of the liber, the root, and lastly the leaves and their various modifications—the stipules being included among them.

(b) *Bothrenchyma* or pitted tissue consists of elongated cells placed end to end—their inner surface has the appearance of being riddled full of holes.

There are 2 forms of *Bothrenchyma* viz. *Continuous* and *Articulated*, the very names of these imply their structure. This tissue occurs in the wood and its prolongations.

(c) *Trachenchyma* consists of membranous tubes having fibres spirally coiled up within them. Its chief varieties are spiral vessels and ducts.

The spiral vessels are either simple or compound, the former consist of membranous tubes having each of them a single spiral fibre within them, and in the latter form of the tissue, they severally contain a number of spiral fibres. Compound spiral vessels occur chiefly in the monocotyledonous, such for instance as the Musaceæ, Zingiberaceæ and so forth.

The Ducts are either closed, annular, reticulated or scalariform. The closed are simply spiral vessels the fibres of which cannot be unrolled. The *Annular* are spiral vessels in which the growth of the tube is so much more rapid than that of the fibre that the latter is broken up into distinct rings. The *reticulated* are spiral vessels in which the growth of the fibre keeps pace with that of the tube in some parts, while in others it is so much slower than the latter, that the fibre gives way and forms distinct rings. Lastly the scalariform ducts consist of angular tubes having transverse bars running from one side to the other, but not quite reaching the angles. This variety of the ducts characterizes the Ferns.

Trachenchyma occurs in the medullary sheath and all its prolongations. It is absent in the root and in most Cryptogamic plants.

(d) *Laticiferous tissue* consists of anastomotic canals which contain within them what is called the latex—this a milky-looking fluid. This tissue occurs in the bark.

(2.) The structure of the root varies according to the different classes of vegetables to which it belongs. Thus, for instance, in the lowest classes of acotyledonous plants, it consists exclusively of cells, while in the highest orders, as the Lycopodiaceæ and Ferns, it presents fibro-vascular bundles. In the endogens, its structure is similar to that of the stem only that it has no spiral vessels, and no stomata in the cutis. In the exogens, it differs from the stem in having no pith, no medullary sheath, and consequently no spiral vessels and lastly no stomata in the cutis. The root has no power of giving birth to normal leaf-buds. It grows by its extremities, which are called spongioles or spongelets. These consist of lax cellular tissue and are devoid of the epidermis. The chief office of the root is to absorb nutriment from the soil. It also seems to fix plants in the earth, and in several cases as a reservoir for the superfluous quantity of their nutriment.

(3.) The several kinds of stem are the acotyledonous, monocotyledonous, and dicotyledonous. The stem is also divided into the 2 classes of aerial and subterranean. The chief varieties of aerial stems are the runner, the sucker, the offset, the vine and the pseudo-bulb, and those of the subterranean stems are the cormus, the tuber, and the creeping stem.—

(4.) A simple leaf is that in which the lamina is entire or if it be divided, its lobes are not articulated to the midrib.

(5.) A compound leaf is that in which the lamina is divided by fissures extending to the midrib and the lobes are articulated to the latter, or as is by the primary veins the case in the Aurantiaceæ, in which the midrib consists of different portions which are united to each other. The lobes of a compound leaf are called leaflets or *folioles*, and the primary veins which are given off by the midrib to each of these leaflets, if they continue undivided for a certain length are termed *petiolules*. The different varieties of a compound leaf depend upon its palmate or pinnate nervation. In the latter case the leaflets have a pinnate arrangement on either side of the midrib—A Pinnate leaf is said to be paripinnate when it has no terminal leaflet, and imparipinnate when it has one. When each of the leaflets of a pinnate leaf is sub-divided into lobes having a pinnate arrangement, the leaf in that case is said to be *bipinnate*. There are a great many other forms of a compound leaf which it is useless to attempt describing in so short a time. I shall now conclude by mentioning a variety of a Compound leaf having a palmate nervation—viz. the ternate, it consists of 3 leaflets.

(6.) The different kinds of inflorescence may from the order in which the flowers open be divided into two classes, centripetal or indefinite, and centrifugal or definite. The various forms of inflorescence of the centripetal class are as follows.

a. *Raceme* consists of a central axis called the *Rachis* from which are given off branches on either side each of which supports a single flower at the top. It is also a condition of the raceme that the branches or pedicels be of equal length throughout.

b. Spike differs from the Raceme in the flowers being non-pedicellate.

c. Spadix is a spike wrapped up in a spathe—In this variety of inflorescence the flowers are closely packed on a fleshy axis.

d. *Amentum* is a modification of the spike. It falls off in a piece and in it the flowers are destitute of the calyx and corolla their place being taken up by bracts, ex. Amentaceæ.

e. *Corymb*, is a variety of the *Raceme* in which the pedicels are of unequal length and the flowers arranged on the same plane.

f. Panicle differs from the Raceme in the primary branches given off from the *Rachis*, dividing into secondary branches which support the flowers. It is called deliquescent, when the rachis is so far divided that it has lost the character of a central axis.

g. *Thyrse* differs from the panicle in the Pedicels being very short.

h. *Capitulum* consists of two kinds viz. the Anthodium and the hypanthodium—The Anthodium consists of several florets arranged on what is called the receptacle. ex. Compositæ. In the Hypanthodium the receptacle is hollowed into a cavity which contains the florets in it. ex. Fig, *Dorstenia*.

i. Umbel is either simple or compound. Simple umbel consists of a number of pedicels radiating from a point and supporting flowers at their top. A compound umbel is that in which the pedicels of a simple umbel are each of them sub-divided into a number of radiating branches at the top of which the flowers are placed. ex. Umbelliferæ.

Now for the centrifugal varieties of inflorescence.

a. Cyme is a corymbose pannicle, the flowers of which open in what is called the Centrifugal order i. e. from above downwards—the terminal flower opening previous to the axillary ones.

b. *Glomerule* is a compound capitulum in which the flowers open centrifugally. ex. Urticeæ, Junceæ, Chenopodiaceæ.

c. Fascicle is a Corymb the terminal flower of which opens first. ex. Sweet-William.

d. Verticillaster, is a cyme with very few flowers.

e. Helicoid cyme is a one-sided Raceme.

f. Fasciation consists of tufts of flowers arranged on the surface of a phylloid branch. ex. Coxcomb.

(7.) The stamens consist of two parts, the filament and the anther—The filament is analogous to the petiole of leaves. It consists of a few fibrovascular bundles enclosed in a sheath of cellular tissue. It is not an essential part of the stamens—the anther may exist without it. The ANTHER is analogous to the lamina of a leaf. It consists generally of two *loculi* and the *Connective*—the latter representing the mid rib of the leaf—The loculi consist each of them of two unequal valves which are united to each other along a line situated on the *face* of the anther. This line is called the *suture*, on making a section of an anther, we find each loculus divided into two compartments by a ridge usually running transversely from the connective, nearly but not quite to the suture. The loculi lodge the pollen-grains, each of which consists of two coats, an external and an internal, and a fluid called the *fovilla*. The coats are severally called the extine and the intine—the former of these is raised up into ridges which by their anastomoses give a reticulated appearance to the surface of the pollen-grain—the latter is very elastic and presents a singular phenomenon when the pollen-grain is acted upon by a drop or two of dilute nitric acid—It is this—it projects into a tube or gutter. This is termed by the French Botanists the *Boyeau*. The other constituent of the pollen-grain is, as I have already said, the *fovilla*. This consists of a fluid having mucilaginous and starch granules and oil-globules floating in it. It becomes very much concentrated a little before the dehiscence of the anther.

The stamens are either inserted upon the receptacle when they are called *hypogynous*; upon the corolla; upon the calyx, when the term *perigynous* is applied to them; or together with the calyx upon the ovary, when they are termed *Epigynous*.

The office of the stamens is not yet fully ascertained; according to some vegetable physiologists, they are the male organs of plants, but according to others, Schleiden and Endlicher especially, their function is similar to that of the ovaria of animals.

(8.) The pistil is the central organ of a flower, and is made up of Carpellary leaves. It consists of three parts viz. the ovarium, the style, and the stigma. The *ovarium* constitutes the *germen* of the old botanists. It lodges the ovula within it. It is either simple or compound. A simple ovarium is formed by the infolded lamina of a single carpellary leaf, and a compound of several. A simple ovarium has two sutures, a ventral and a dorsal, the former corresponding to the line where the margins of the Carpellary leaf meet, and the latter to the mid rib of the Carpellum. A Compound Ovarium may consist of as many cavities as the Carpellary leaves of which it is constructed or it may be 1-celled. In the former case we find inside it what are called *dissepiments*—These are formed by the infolded sides of every two contiguous carpella.

The *style* is the prolongation upwards of the infolded lamina of the Carpellary leaf. It consists of a cellular sheath having enclosed within it fibro-vascular bundles, which are arranged in a circle on its inner surface. The cavity of the style is filled up by a loose, soft and humid cellular tissue. This is called the conducting tissue. It plays a very important part in the process of fecundation. The style arises from the organic apex of the ovary, and its place as regards geometrical apex of the ovary is determined by the position of the organic. It may either be apicular, lateral, or basilar,—in the latter case it acquires the name of the *gynobase*. In a compound ovarium the number of the styles corresponds to that of the Carpella.

The stigma is formed by the expansion of the lax cellular tissue at the point where the canal of the style opens externally. Its outer cells acquire the shape of diminutive papillæ, hairs, and so forth.

In compound ovaria, its position is alternate with that of the dissepiments. An apparent anomaly to this rule is found in the poppy tribe—here the divisions of the stigma are opposite to the dissepiments—this appearance is occasioned by the divisions being formed by the adhesion of two half-stigmata,—in this tribe of plants—the stigmata being each of them bifid.

(9.) The seed is the ripe ovulum. It consists of two coats and the embryo: the outer coat or testa is formed by the blending of the *primine* and the *secundine*, and the inner by the sac of the amnios and the nucleus. When the albumen exists, it forms one of the constituent parts of the seed. Its position is next to the embryo. The names of the chief varieties of the seed are the ortho-tropous, camphylostropous, camptotropous, anatropous, and amphitropous.

(10.) In the following table are given the chief characters of the 4 subclasses into which De—Candolle divided the Dicolyledones.

1. Thalamifloræ,	}	Stamens hypogynous.
		Fruit apocarpous.
2. Calycifloræ,		Stamens perigynous and epigynous.
3. Corollifloræ,		Stamens inserted upon the corolla.
4. Monochlamydeæ,		No corolla, only calyx.

II. Characters: flowers rosaceous or papilionaceous. Stamens diadelphous and 10 or more, perigynous or hypogynous, fruit a legume. Leaves alternate or opposite, and stipulate.

1. Division—Papilionaceæ—*characters*. Papilionaceous flowers, stamens perigynous.

2. Division Cæsalpineæ—flowers rosaceous, stamens perigynous.

3. Division Mimosæ—stamens hypogynous.

The Acacias such as the *Acacia Arabica* and the *Catharto-carpus Fistula* are, as far as I recollect just, now, some of the important medicinal plants belonging to this class. From the *Acacia Arabica*, gum Arabic is obtained and from the *Catharto-carpus fistula* a valuable purgative. Sandal-wood is also derived from a plant of this order whose botanical name I dont at present remember—it is, however, of no medicinal use.

CHUNDER COOMAR DEY.

PRACTICE OF PHYSIC.

Answer to question 1st.—The principal organic diseases to which the stomach is subject is 1st cancer of that organ—In this disease the person is

subject to great dispendency and lowness of spirit, pain in the region of the precordia, the appetite fails, when food is taken in, it is quickly or after some time thrown up; this depends upon where the cancer is situated, if it be in the pyloric extremity of that organ, of course it is not so quickly ejected, but in other situations it is just the contrary and the stomach is sometimes as sometimes not to permit the smallest particle of any kind of food or drink to remain with it—should the cancer have ulcerated its way through all the coats of that organ, of course the patient dies either from collapse or peritonitis. The anatomical characters found after death are the presence of cancer; it is usually of the size of a shilling piece and generally situated at the pylorus or near it—The edges around it are dark-colored, having a gnawed appearance and mostly circular; they are usually elevated at their bases, thickened and indurated—

The water brash is another variety in which we sometimes meet with an abnormality in this organ—There are discovered in it just beneath the epithelium little vesicles containing a white serous fluid; but this is not often the case—This is a variety of dyspepsia common in Scotland.

The other abnormalities observed in this organ, though rarely, are hypertrophy and atrophy of its coats but more particularly the mucous and muscular; to the last variety of these is probably due the occurrence of its rupture,—softening however and gelatinization of the mucous coat is more common. It is usually seen when alkalies are used in excess and is very common in intemperate individuals—I am not aware that any alteration of the coats of the stomach have been observed in Bulimia, this disease I believe depends more upon an altered condition of the gastric juice.

The stomach may again be changed with regard to its form and size, thus I have seen it enormously distended so as to fill up a great portion of the abdominal cavity, and in other cases I have observed it reduced to the size of a distended bladder its coats being thick and hard.

Hæmorrhage from the stomach and of a fatal nature has been known to occur, but I do not believe that in these instances any morbid alteration in the vessels has been seen—the disease, I believe depending more upon an hæmorrhagic diathesis.

Fungus Hæmatodes I am not aware has even been seen in this organ as it has in the bladder.

These are all the organic disease I can at present call to mind—inflammation, irritation, and neuralgic pains of the stomach I look upon more as functional diseases.

Answer to question 2d.—The varieties of colic are the lead colic and the common.

The causes of lead colic is by the absorption of lead into the system—the blood takes it up and supplies it to the nerves where it acts as a poisonous agent.

Common colic results from the accumulation of fœces in the intestinal canal. It may also depend upon spasm of the nerves unconnected with this.

The treatment of the latter consists in clearing out the primæ viæ—sometimes it is found impossible to do this either by purgatives or injections, and in these cases it often succeeds by drawing off a few ounces of blood.

When it arises from a painful affection of the nerves themselves it is best relieved by a full dose of laudanum as ʒ; or by the sulphate of alum combined with opium—

In lead colic it is necessary that the patient should keep away from the cause of it. His system requires to be strengthened his bowels and other secretion kept open and clear; for this purpose alteratives, and change of air are requisite.

When there is any degree of inflammation connected with colic, of course in combination with the above we use antiphlogistic measures as V. S. leeches to the belly, fomentations &c. &c—

Answer to question 3d.—The symptoms of erysipelas when it attacks the head and face are of a very grave nature—They are local and constitutional—There are however two varieties of this disease in which the nature of the symptoms vary considerably viz., the cutaneous (that which has its seat only in the epidermis and cutis vera) and the phlegmonous (in which the disease extends deeper into the subcutaneous cellular tissue) of course in the latter variety the symptoms will be of a more aggravated form.

The symptoms locally present are redness and heat of the skin—the skin is tense and shining and great pain is complained of in the part—We do not observe much swelling in this variety of the disease. There is a great degree of tension experienced. On placing the finger on it firmly, a pale dimple is observed but this is quickly filled up—In the phlegmonous variety there is a dark purplish color of the skin; this is owing to the congestion of the vessels, there is a great degree of swelling and this extends to a great distance, so as to disfigure the individual altogether. The eyes are almost or nearly from the great swelling and effusion in the eye-lids; the ears are enlarged and the head in general appears larger than natural—On placing one's finger on it it pits and blanches but this some time after disappear. These are the local symptoms but the constitutional ones are more grave—There is a great degree of stupidity and drowsiness observed and to this succeeds delirium—The natural functions of the various organs are more or less deranged; thus the stomach is in many instances irritable, there is no appetite, the bowels are confined, there is heat of skin, the pulse is increased in tone and frequency and there are in general fits of rigors and other symptoms of high inflammatory fever—Of course very many of these symptoms will not be seen in simple cutaneous erysepelas, but there is invariably a great or less degree of stupor observed.

When the disease has advanced on to the suppurative stage, more alarming symptoms present themselves, a succession of rigors which are very severe and last longer in point of duration—the pulse sinks and becomes soft, small, and slow, the stupor advances on to coma, the sphincters give way—the respiration becomes stertorous and all the other symptoms of cerebral congestion occur; sometimes convulsions present themselves. Locally we observe a crepitation on pressure—the parts soon lose their vitality,—become cold, darker in color—lose their sensibility—phlyctance appear and in a word all the symptoms of mortification take place—The skin sloughs away and death soon overtakes the hapless patient.

Our treatment of erysipelas is antiphlogistic—As however it occurs mostly in persons addicted to intemperance we are obliged to be very cautious and not carry it on too far. The lancet is seldom used but when it is more with the view of making an impression upon the system than with the desire of abstracting blood. When it occurs in persons of a plethoric tendency whose habits are regular, and who are not enfeebled by age or other causes of course, in these we fearlessly use the lancet. In

these latter we draw away a large quantity of blood by placing the patient in a recumbent posture and make a small opening. In persons of irritable habits where we have determined on bleeding we cause the patient sit up and make a large orifice in the vein; having done this we use our purgatives—Of these, the mercurial purgatives are principally used—We next give tartar emetic in doses sufficient to create nausea—When this is obtained we still continue its use but in smaller doses, by this means the various secretions of the body are made to go on in a healthy state which materially aids the recovery of the patient.

Locally we employ the nitrate of silver—This is either pencilled around the edges of the inflammatory blush of erysipelas for the space of an inch or else a solution of it is sponged over the whole surface of it—Fomentations are also employed—but leeches and the applications of cold are dangerous—The former by inducing suppuration and ulceration and extending the inflammatory surface and the latter by its being apt to induce metastasis of the disease to the membranes of the brain. When suppuration has occurred which we know as before said, by crepitation, rigors &c. we make several longitudinal incisions into the scalp and let out the pus—Even where the swelling and tension is great, it would be advisable to have recourse to it. If in the first instance the disease has arisen from a wound and there are any sutures or foreign matter in it of course these must by all means be taken away.

When this stage also has occurred and the patient's is sinking we must support his strength with stimulants, such as carbonate of ammonia; wine &c. opium cannot be employed with any degree of safety and in place we are obliged hypnotics as hyosciamus &c. should symptoms of effusion occur give calomel in gr. ij. doses combined with antimony and we employ mercurial inunction—We may place the feet in warm water and apply a blister to the nape of the neck, but this last remedy is very dangerous and apt to aggravate the complaint.

In this disease our chief dependence is placed 1st in antiphlogistics and the application of caustic externally and when the inflammatory symptoms have subsided, on stimulants.

Answer to question 4th.—The various morbid conditions of the urine are these, the presence of lithate of ammonia—the presence of various phosphates, particularly the triple phosphate of ammonia and magnesia—the presence of exalate of lime—the presence of saccharine matters—the presence of albumen and the absence of urea—the presence of phosphate of lime in cases of diseases of the bone, as in mollities ossium, and the presence of blood, chyle, mucus, or pus mixed with the urine.

When lithate of ammonia is present in the urine it is known by the deposit of a brick-dust sediment termed the lateritious sediment—This when dried is seen in the form of small beautiful shining crystals—which strike a bright red with nitric acid—The solution of it in urine has a decided re-action on litmus paper.

This condition of urine is seen at the termination of fevers and other inflammatory diseases when they go off suddenly—It is most abundant in individuals who lead intemperate lives and partake of such food in which acid predominates or is generated in the system, as acid or unripe fruits, &c. The pathology of it is this—the lactic acid which is thus introduced into the system unites with the urea of the ammonia and forms lithate of ammonia, which is eliminated from the system through the kidneys.

The diseases which are attendant on it are dyspepsia and other forms of gastric disease—The diseases which occur secondarily from it are gravel the formation of stone which may form in the pelvis of the kidney, in the ureters or the bladder—It may thus give rise to inflammation, abscess, or ulceration of the kidney, ureters, or bladder.

The next morbid alteration is the triple phosphate of ammonia and magnesia—This is known by the urine being of a turbid white color and depositing a white sediment—It occurs in debilitated individuals, in persons who work hard and take insufficient nourishment, and in individuals of nervous irritable temperament.

Its pathology is this—phosphate of magnesia is naturally present in healthy urine—In debilitated individuals whose nervous system is overworked, phosphorus is given and this unites with the ammonia in urea and forms with the phosphate of magnesia the trifling phosphate of ammonia and magnesia—I am not aware of the diseases it may give rise except those mentioned or the formation of stone.

The next alteration is the presence of oxalate of lime—this occurs in the urine in the shape of little white crystals which are detectible with the microscope—The urine again is clear and a film may be seen over it having these crystals floating on its surface—I am unacquainted with its pathology: it occurs generally in those who indulge in saccharine substances and who partake of large quantities of vegetables containing starch. It is probable that the sugar unites with the nitric acid present I believe in the gastric juice, and this unites with the lime that is present in the blood—the diseases it may give rise are the same as the phosphatic and lithic diathesis.

The presence of grape sugar in the urine is the next alteration that calls our attention—It is known by the sweet taste of the urine—when the urine is evaporated or passed through a cloth or even when it is left in a vessel little crystals of grape sugar are seen adhering to the edges of the vessel; when the urine is exposed to heat and moisture it quickly passes into fermentation and becomes putrid.

The pathology of diabetes is this: the starchy and other matters which are taken up by the system are converted into sugar and this circulates through the blood and is eliminated by the kidneys instead of being converted to the nourishment of the various tissues of the body—the diseases it is liable to give rise to are those arising from inanition—Thus the various tissues become gradually absorbed but more particularly the adipose and the cerebro spinal system failing to receive the nourishment necessary to its support at last sinks.

When albumen exists in the urine it is known by the chemical tests characteristic to it—These are 1st heat—by heat the minutest portion of albumen coagulates 2d.—Nitric acid—this thrown down albumen also in the solid form—3rdly its non-precipitation with acetic acid—These tests must severally be applied as the various chemical compounds present in the urine defeat our attempts to detect its presence—Its presence can be detected also by the aid of a powerful microscope—The fat globules in the epithelium cells which is cast off at each passage of the urine, are seen hypertrophied and occupying a larger space than in the healthy condition—I have seen them in a specimen shewn to me by Professor Walker, but it was in the fat cells of the kidneys of a man who died of Brights disease in the hospital.

The pathology of albuminuria is similar to that of diabetes The albumen which is taken up by the assimilative powers are not applied to the wants

of the system but by a peculiar mal-adjustment is thrown by the kidneys. The disease by which it is occasioned is that of diseased kidney termed Bright's kidney—congestion takes place in this organ and the urine which flows takes away with it a quantity of albumen, sometimes a quantity of blood flows away with it—It is curious to observe that in this disease albumen is observed in large quantities only at the commencement and eventually it decreases—It is however to be known that the presence of albumen in the urine is not always indicative of Brights' disease—its *persistence* only tells us that it arises from it—Another fact connected with it is that the urea is left in the circulating system and the solid ingredients of the urine decrease from 68 parts to 14 or even as low as 6 parts.

The secondary disease which it gives rise to is Anasarca; together with this there is an unnatural paleness of the blood—the red corpuscles having sensibly diminished—this is usually connected with disease of the heart—Patients with this complaints usually die from coma, but they may also die of inanition without coma.

When phosphate of lime is present in the urine—it is known by its being whitish and turbid and by the usual chemical tests of that substance—it is owing to perverted absorption—the phosphate of lime which is given off towards the nourishment of the osseous system instead of applied to that purpose passes off through this channel—Mollities ossium is the disease which this state of the system gives rise to.

The presence of blood constitutes the disease called Hematuria—The blood flows away through the membranous walls of the tubuli uriniferi—It is known by its color and the usual tests of blood which are 1st that with ammonia it forms no change—2ndly by boiling it changes its red color for a dirty brown. It is also recognised by being clotted at times and by the tests of iron and of its other ingredients—The blood may not however pass through the kidney—but it may come away from the ureters or from the coats of the bladder or from fungus hematoies in it—The presence of blood in the urine may be caused by the presence of stone in the kidney, ureters, or bladder.

When chyle is given off it is known by a whitish jelly being deposited—its pathology is similar to that of albuminuria. I am not aware if it gives to any disease excepting those arising from inanition.

When mucus is present in the urine it is known by its depositing aropy-like sediment it may arise from various diseases of the bladder or urethra as cystitis, catarrh of the bladder, the presence of stone in it, gonorrhœa &c. &c.

Pus may also be found in the urine—This may arise from absorption of pus—in abscesses of any of the abdominal organs but more particularly the liver, from disease of the bladder or by metastasis as from a stump &c. It is brought to the kidneys by the blood.

H. WILKIN JONES.

MIDWIFERY.

Answer to the question 1st.—Uterine Hæmorrhage is one of the most dangerous and fearful complications to which the females during gestation and after delivery are subject. There are two varieties of uterine hæmorrhage: one occurs during gestation, either before or during parturation, and another after delivery. That which occurs during gestation is divided into *accidental* and *unavoidable* Hæmorrhage.

I.—ACCIDENTAL HÆMORRHAGE.

For this kind of Hæmorrhage, the placenta is in its ordinary situation, or it may be at any part of the uterus, except at the cervix, in which case it would properly come under the head of placenta previa, or unavoidable Hæmorrhage. The immediate cause of the hæmorrhage, is either the entire or the partial separation of the placenta from the uterus. The amount of Hæmorrhage is said to depend upon the extent of the surface detached: but this is not true, for we sometimes have fatal Hæmorrhage from a small bleeding surface. Again the separation of the placenta may take place in the centre to a great extent while it may be firmly attached by its circumference to the walls of the uterus. In this case blood will be poured in the central cavity of the placenta, in small quantity, without escaping externally.

Causes.—Violent shocks, such as blows and falls; sometimes a slight shock, are causes of accidental Hæmorrhage. "I was, says Dr. Churchill, lately called to a patient, labouring under accidental Hæmorrhage from a violent fit of laughter." Over exertion, fatigue, violent coughing, violent straining, lifting heavy weights, uterine plethora, excessive action of the utero-placental vessels, and the spasmodic action of that part of the uterus to which the placenta is attached, are the other causes of accidental Hæmorrhage.

Symptoms.—If the Hæmorrhage be great, then syncope is the immediate consequence, in which case the bleeding for a time is arrested: but when the patient rallies a little, the flooding recurs and syncope is repeated. During the syncope the whole body becomes blanched, and covered with cold sweats; the pulse becomes quick, small and fluttering; the countenance sinks and becomes cadaverous, and before Death hastens her to the grave, intolerable restlessness, uneasiness, and jactitation are observed.

Diagnosis.—It is of the essential importance, that a medical practitioner will be able at once to distinguish, between the accidental and unavoidable Hæmorrhage, because the treatment which is applicable to the one is inapplicable to the other. There are three points, in which the two varieties remarkably differ, and by which we can distinguish the one from the other. 1. In accidental Hæmorrhage we have always some definite external cause, and its occurrence is irregular and accidental; whereas in unavoidable Hæmorrhage, the only exciting cause is the expansion of the os uteri, and the time of its occurrence has some regularity. 2. In accidental Hæmorrhage during the interval, the blood flows freely, but during the pains it is stopped. In unavoidable Hæmorrhage, the blood which flows during the interval, is greatly augmented, during the uterine pains.

3. In accidental Hæmorrhage the os Uteri is free, closed by membranes only, and is of equal thickness all round. In Unavoidable Hæmorrhage the os Uteri is more or less covered by the placenta, and if the latter has reached only to one side of the os uteri then the thickness is to be perceived only at that side.

Treatment.—The indications of our treatment must be drawn from the period of pregnancy, from the state of the os Uteri, and from the amount of hæmorrhage. If the woman have not arrived at her full period, and if the os Uteri be not dilatable, and the amount of hæmorrhage be not great, then there is no immediate danger of the patient. As we cannot deliver the patient immediately we must temporize, we must try all the

means within our command to stop the hæmorrhage. To accomplish the latter object we will pursue the following treatment we: must keep the patient in a horizontal posture and in a cool room; we must not allow any person to remain in the room to talk with her, or to disturb her in any way. Quiet both bodily and mental is absolutely necessary. All sources of irretation, distress and anxiety must be avoided by the patient, and stimulants of all kinds must be withheld from her. We will give the patient internally either opium gr. i and sugar of lead gr. ii in combination, tincture of opium 30 drops in every second hour. Sulphuric acid and gallic acid in 10 drops doses at every second hour are recommended by many persons. If the patient be thirsty, then give her cold water as much as she can take with nitrate of potash. The external remedies which we will employ in this case are cold to the vulva suddenly applied, and cold injections. If the Hæmorrhage be not stopped by these means then we will use the plug.

If the Hæmorrhage be so great, as to threaten the life of the patient and if the os uteri be not dilatable, then we will rupture the membranes in which the child is wrapped up. This rupture brings on the uterine pains and the child is delivered. If it is not, then we will administer ergot of rye, which according to Dr. Ramsbotham not only makes the feeble and inefficient pains strong and powerful, but brings them into actual existence when they are altogether wanting. If the ergot of rye be not sufficient then we will perform the operation of turning. But if the head of the child be within reach and there is sufficient space in the pelvis, then forceps must be used.

II.—UNAVOIDABLE HÆMORRHAGE.

In this kind of Hæmorrhage the placenta is situated either partially or wholly over the mouth of the uterus. It was formerly supposed, that the placenta was originally situated at any part of the uterus, except at the os uteri, by the uterine contractions it falls down, being separated, to the mouth of that organ. Paul Portal was the first person, who discovered the fact, that placenta is sometimes situated at the mouth of the uterus. For the clear elucidation of the attachment of the placenta to the os Uteri we are indebted to Dr. Rigby of Norwich.

Cause.—The only cause for unavoidable Hæmorrhage is the expansion of the os uteri.

Symptoms.—Three weeks before labor, the Hæmorrhage generally begins, being coincident exactly to the period of the commencement of the dilatation of the os uteri. After its occurrence for the first time, the Hæmorrhage remains in a state of suspension for a week, and then it recurs. Again it stops, and again it recurs; this way the flooding goes on till labor actually commences, and the life of the mother is threatened.

Diagnosis.—It has already been pointed out in treating the accidental Hæmorrhage treatment. The indications of treatment must depend upon the state of os uteri, and upon the amount of Hæmorrhage. If the os uteri be not dilatable and the Hæmorrhage be not excessive, then the same plan of treatment must be followed as is recommended in accidental Hæmorrhage. But if the os uteri be dilatable, and the Hæmorrhage be alarming, then the operation of turning is generally recommended. Dr. Radford however, strongly advises us not to perform the operation of turning, because it is attended with great danger to the mother, but to separate the placenta by the hand. The circumstance that led Dr. Radford to suppose, that the separation of the placenta by the hand would be

attended with success, is that in many cases of unavoidable Hæmorrhage, the spontaneous separation of the placenta stopped the Hæmorrhage. This plan of treatment is now generally followed, because the mortality on the part of the mother is considerably less, than in turning. Dr. R. Lee speaks against this method, because he says the Hæmorrhage is not sometimes stopped, and the mortality on the part of the child is greater than in turning. If the child be not delivered by the detachment of the placenta, then give to your patient ergot of rye either in the form of powder, decoction, tincture, or extract. If this be not sufficient then apply the forceps. We are sometimes called to a patient, where although we may accomplish the delivery, yet the woman died from want of blood. In this case, transfusion of blood is recommended by Dr. Blundell. It is generally done by means of a tube and syringe. The tube should be introduced into the median or any vein of the woman, and a quantity of liquid blood drawn from another healthy woman, should be poured gently by inserting the pipe of the syringe into the tube. This is a dangerous proceeding; it has succeeded 14 times in the hand of Dr. Blundell, but it has failed great many times. The syringe must be properly exhausted of its air and warmed.

HÆMORRHAGE AFTER DELIVERY.

Cause.—Want of the uterine contraction, arising from the atony of the uterus, or from a cause not known to us.

Treatment.—Firm pressure upon the abdomen, or upon the aorta; cold water applied suddenly upon the face or poured from some height upon the abdomen, so as to produce a shock; electricity applied to the abdomen, application of the child to the breast and cold water applied suddenly upon the vulva are the external means used in checking Hæmorrhage after delivery. The internal means are ergot of rye, ice in the vagina, and the introduction of the forefinger to the os uteri so as to produce titilation. The internal means must not be tried, unless the external means fail.

Answer to the question 2nd.—When the Hæmorrhage stops during pain, it is an accidental Hæmorrhage; and when it continues or rather aggravates during pain, then it is an unavoidable Hæmorrhage.

Answer to the question 3rd.—Before performing the operation of turning, it is necessary that the bladder and rectum of the patient be thoroughly evacuated, otherwise there may be the danger of vesico vaginal and recto vaginal fistula. The patient should be left on her left side, with her knees drawn up. If she be plethoric, bleed the patient, to obviate the tendency to subsequent metritis or peritonitis, if she be not, then keep her under the influence of anæsthetic agents—such as laudalium, ether or, chloroform—After doing this things, you oil your hand and fore arm, and warm them.

You then introduce your hand in a conical form through the vagina, through the os uteri and between the membranes in which the child is wrapped up and the walls of the uterus, up to the fundus. After having arrived at this point, you rupture the membranes there, and search for the feet of the child. If you can get them it is good and well, if you dont get them, then you better look for the knee or the breech. If you do not get 2 feet, but one, then it will answer your end very well. After having grasped the foot or feet of the child firmly, you draw down the child. The cautions that you will take in introducing your hand up to the fundus are the following:—1. You will introduce your hand in a conical form. 2. The hollow of your hand should be towards the membranes and the

back of the hand towards the parietes of the uterus. 3. When the pains come on, your hand, which was before conical, should now lie flat upon upon the body of the child, for by the contractions of the uterus, your hand will not only suffer from pressure, but that there is great danger of the rupture of the uterus. 4. Take care that the membranes do not break by your awkward manipulation, for if they do and the liquor amni escape, than the operation of turning becomes the most difficult.

When the foot of the child escapes through the lower outlet, it is generally tyed by a cord, for should the foot recede, it may be drawn down by the cord—When the breech of the child appears, the perincum of the mother must be supported to prevent laceration. When the umbilical cord appears, it must be drawn down a little and removed as much out of the pressure as possible. When the chest appears, but the superior extremities are the great impediments to delivery, then they must not be drawn down, if you do then dislocation or fracture may occur, but must be drawn in front of the child. When the head appears with the face towards the symphysis pubis, then the face must be turned towards the hollow of the sacrum.

The dangers of the operation of turning, are metritis, peritonitis, inflammation of the soft parts, and rupture of the uterus. Hence in every case of turning, to prevent the attack of inflammation the patient is kept for some days under the influence of calomel and dover's powder.

The circumstances under which the operation of turning is performed are the following:—

1. In the presentation of the superior extremities.
2. In accidental and unavoidable hæmorrhage.
3. In rupture of the uterus. If the head of the child be in the cavity of the pelvis then forceps are to be used, but if the child have fallen into the abdomen, then the operation of turning through the rent of the uterus is to be performed.
4. In funis presentation. But the operation of turning must be deferred until the treatment which is generally adopted in funis presentation fails.
5. In plural birth. If the second child be not delivered $\frac{1}{2}$ an hour after the delivery of first child, then rupture the membranes in which the 2nd child is, and if 2 hours after the rupture of the membranes the 2nd child is not delivered, then, perform the operation of turning. This is recommended by Dr. Collins of Dublin.
6. In convulsions. In this case the operation by forceps and the operation of craniotomy are to be preferred.

DINO NATH DAS.

MEDICAL JURISPRUDENCE.

ANSWER 1ST.

The proofs of a wound having been inflicted during life will depend upon the circumstance of its being an incised or a contused wound.

The characteristics of an *incised* wound produced during life, are

1. The presence of hemorrhage.
2. Arterial character of the hemorrhage.
3. The presence of coagulated blood.
4. A swollen and tumified state of the surrounding parts.
5. Sanguineous infiltration into the surrounding tissues.
6. The everted state of the margins of the wound.

7. The presence of any one of the effects of inflammation.
Now I shall take each of these in detail.

1. *The presence of hemorrhage.*—Hemorrhage is an invariable consequence of a wound produced during life but with one exception only viz. the case of a lacerated wound, for instance when an extremity is violently torn way by the wheel of an engine, owing to the nature of the injury upon the coats of the arteries—allowing them to contract and retreat within their sheath, and by favoring the coagulation of the blood; hemorrhage may also take place from a wound produced after death, but it is in general scanty compared to the abundant hemorrhage of a vital wound—when it is profuse, it will easily be seen to be owing to division of a large vein, so that this in itself and taken alone, is not a characteristic of a vital wound.

2. *The arterial character of the hemorrhage.*—This will be shown by the blood being of red color as distinguished from the dark color of venous blood—by examining the wound and finding that an artery is divided shown by the open state of its mouth—by the presence of blood on the surrounding parts being deposited in *spots*, owing to the blood having been poured forth in jerks or as its called *per saltum*: a wound in the dead body may be attended with hemorrhage and that even abundant as was shown above, but it is said to be very seldom, if ever, arterial; it is generally venous—and venous blood may, but only in one case, be mistaken for arterial viz. when it has been exposed to the air for some time, by which the *dark* color is changed into *red*. Therefore the arterial character of the hemorrhage is considered to be a very good indication of a vital wound.

3. *The presence of coagulated blood.*—This shows the presence of life in the blood, for coagulation is considered an act of life—and consequently of the life of the individual to whom the blood belongs, therefore it is argued that the blood can never coagulate when once the life of the body has departed; this is in its essence true—but we find that the blood apparently, has a greater tenacity for life—as our every day experience shows us in the coagulation of the blood after venesection, when it is removed from the *living* body—therefore we must not be surprised to find coagulated blood in the case of a wound produced after death, but still, it must be before the animal heat has left the body, for after this the blood, as it were, completely dies—So that when we find coagulated blood in a wound it shows positive proof either that the wound was produced during the life time of the individual, or *within a short* time after his death.

4. *A swollen and congested state of the surrounding parts.*—A wound of a post mortem origin can never I believe, give rise to a swollen state of the surrounding tissues—as this is a vital change and quite incompatible with death, therefore, this is considered another valuable sign.

5. *Sanguineous infiltration into the surrounding tissues.*—The remarks made just before will apply to this condition also.

6. *The everted state of the margins of the wound.*—This is altogether a vital process and dependent upon the elasticity of the skin—this elasticity is an essential property of skin in the animal body—it departs with the life of the individual and therefore can never take place after death; but it may, like most of the other organic properties, be manifested while the body retains its animal heat—however if I mistake not 10 *minutes* is the limit of its duration after death. Consequently we are justified in asserting that the everted state of the margins of the wound, is a positive sign of the vital nature of the wound with the single exception of its produced *within* 10 minutes after death and no one, but a person with a malicious intent would produce a wound such a short time after death.

7. *The presence of any one of the effects of inflammation.*—Chiefly adhesion, suppuration or mortification—if any of these are present it is beyond all doubt a positive proof, that the wound was inflicted during life—and not only that, but also that the individual must have lived for a certain time—for I believe the first can never take place within 24 hours—and the last within 40 or 50 days—and none of these changes can take place after death even although the wound be produced during life—

II. We come to the characters of a *contused* wound—this essentially consist in the presence of

Ecchymosis.—This a colored state of the skin produced by the effusion of blood from the rupture of minute vessels. It is not an invariable consequence of contused wounds—it varies in its time of appearance—in its phenomena—and in its disappearance. Its phenomena consist in its change of color—being first blue, then yellow, purple, violet, and green, until it disappears altogether: it varies in its extent—in the place also in which appears—It may be simulated after death by the livid discoloration of the skin—by the effects of disease, as scurvy, purpura, &c., by congestion of the skin produced after death by position—and by what have been called *vibices*—i. e. lines or streaks of discoloration around the back, &c. and the change in the color may also be produced after death in a subject dying from anasarca. The only true distinction, therefore, between ecchymosis as the result of a wound either before or after death—is that in the latter the *true* skin is never affected—the ecchymosis is confined only to the epidermis—and the surrounding tissues are never implicated; in the case of disease we will find marks of ecchymosis also in the internal mucous membranes, which are never seen in cases of external wounds.

Therefore ecchymosis taking it altogether, is a very good sign of a wound produced during life.

ANSWER 2ND.

1.—*Signs of delivery in the living subject.*

They depend upon.

1. The state of the female, as regards her countenance, &c.
2. The state of the breasts.
3. The state of the abdomen.
4. The state of the external organs of generation.
5. The expulsion of any substance from the cavity of the uterus as moles, hydatids, &c.

1. *Of the state of the female.*—A woman that has been recently delivered is easily recognised by her countenance and the color of her face—for in her we evidently see the effect of some great change, and her very expression will be very indicative of something brooding in the mind, especially in a suspicious change where she wants to hide her guilt: she is also very pallid, much dejected in spirit notwithstanding all her endeavors to buoy them up, she is naturally very weak from the effects of the labor: of course these signs will be more marked the earlier we see her after delivery; it is said that they may be caused by disease, and so they may, but still there is something so characteristic that an acute observer will never fail to suspect its cause, and, therefore, it is considered a valuable sign when the person is brought before us *recently* after delivery.

2. *The state of the breasts.*—Immediately after delivery we find the breasts of a female, well developed, round and prominent; the characteristic areola is also very distinctly seen, and in most cases they contain milk or a serous fluid resembling milk—the nipple is also prominent and well developed. When all these signs co-exist together, it furnishes very strong

proof of the presence of delivery, but any *one* of these taken separately will not, since the breasts may be enlarged, so also may the nipple, and the areola may also be formed from the presence of any foreign body in the cavity of the uterus, as moles, tumors, &c. But I should think that nature in such a case, would never attempt to form milk, when she knew it would be of no use—so that, as above stated, *all* the changes in the breast must be combined to be of any service as a valuable sign.

3. *The state of the abdomen.*—When we feel the abdomen of a woman recently delivered, we find it in a state of contraction, hard and swollen (provided it be a case of natural labor) and this is very characteristic. But it is seldom that we have such an opportunity, for we are generally called after the lapse of some days—and then we find the abdomen in a relaxed and flaccid condition—the skin may be also in a somewhat wrinkled and folded condition, and it is very yielding on pressure. This is good sign of delivery but not a positive sign, as these changes will also take place when the uterus has expelled moles, hydatids or tumors: in such a case the examination of the expelled substances will guide our judgment.

4. *The state of the external organs of generation.*—When we are summoned to a case of recent delivery, we may expect to find a swollen and congested state of the vulva—blood may be effused—and in a case of difficult delivery the parts may be lacerated and the perinæum injured; the nature and cause of these changes cannot be mistaken. But when we do not see a woman until some days after delivery, all these changes will have disappeared and we shall have no proof of delivery except the presence of the *lochia* which may continue to be discharged even after a fortnight or a month: this, the presence of the *lochia* will furnish us with positive proof of delivery—There is one point however to be remembered viz. that although we may find the *hymen* entire, we are not to suppose that delivery could *not* have taken place, for there are well authenticated instances of the contrary. But I was just about omitting to mention the result of a manual examination, for if we introduce our hand, we shall find, but only in the case of recent delivery that we can easily introduce our finger in the cervix of the uterus—and we feel the *os uteri* to be in a lax and dilatable condition—and on proceeding we find the uterus enlarged, and if any of the membranes be left behind we shall easily recognise it. As before stated we are to expect these condition only in a case of recent delivery.

5. *The expulsion of a blighted ovum, moles, hydatids, &c., from the cavity of the uterus—now—*

1. *Of a blighted ovum.*—When a substance supposed to be a blighted ovum is given us for examination, it should be carefully washed and handled, and minutely examined to detect the presence of an immature fœtus or of the fœtal membranes; when we have satisfied ourselves as to its nature—if we find that it is an ovum—it is an undeniable proof of delivery.

2. *If it be a mole.*—And we are satisfied as to its nature, we are *not* justified in asserting it to be a case of delivery—for moles may be produced from other causes besides conception.

3. *If it be an hydatid.*—It is now almost universally asserted that it *must* have been the result of conception, and therefore we must pronounce it to be a case of delivery; but there will be one circumstance which it will be our duty to mention—viz. that the hydatid may be formed from membranes the result of a previous and justifiable conception: this Dr. Guy has very properly insisted upon, for if we suppose the female to have

married and conceived, and her husband to have died within a few months after marriage and she after a period of nine or perhaps twelve months, to have brought forth this hydatid—we are not to suppose that it was the result of a new and unlawful conception, for it is very probable that the ovum had died in the womb, and thus served as a focus for the formation of an hydatid. In such a case our assertion would very much implicate the character of perhaps an innocent and respected female.

All these signs taken together will furnish undeniable and uncontrovertible proof of delivery in the living female; each one taken separately will be open to objections as has been shown, but they will each in their own value, materially assist us when the circumstantial evidences are strong.

Now of the signs of delivery in the dead subject these are—

1. The state of the uterus, and
2. The state of the ovaries.

Of the 1st.—*The state of the uterus.*

This will also depend upon the time elapsed since delivery. If we see an uterus of a female said to be *recently* delivered of a child, we should expect to see it much enlarged, its internal surface congested and more or less covered with blood, and moreover we should find the remains of the attachment of the placenta, indicated by a torn state of the uterus in the place of usual attachment, with more or less coagulated blood—and perhaps small portions of membrane. The *size* of the uterus will depend upon the age of the foetus, and upon the time since delivery: in the case of a full grown foetus, and a recent uterus, it will be from 9 to 12 inches in length, and about an inch in thickness—after a week it will be about 6 inches in length an half an inch in thickness, after a fortnight I believe it is said nearly to resume its original shape and size.

2. *Of the state of the ovary.*—This consists in the presence or absence of the *corpus luteum*.

If we examine an ovary of a woman who has been delivered of a child, we shall find it somewhat enlarged and considerably congested, but this enlargement and congestion does not extend throughout the ovary—it is more marked at a certain spot, this spot appears, *raised, enlarged,* and more *vascular*; if we cut into it we find a *cavity* also somewhat congested, and a *cicatrix*—the cavity will differ in size, depending upon the period since delivery—this spot is called the *corpus luteum*: to be a *true corpus luteum* it must contain a cicatrix and cavity, and the presence of coagulated blood. It may be mistaken for other appearances, but these it is said, are its essential characteristics—Its *value* as a sign has given rise to a great deal of discussion; it was asserted to be owing to other causes besides conception, as menstruation—&c.—it was said to be not an invariable effect of conception, and again it was alleged that it could not be distinguished from other appearances called *false corpora lutea*, and above all it was said to be present also in the *virgin* state quite independent of conception.

But I believe Dr. Montgomery has, after a series of careful experiments and extensive observation, satisfied the majority of the medical profession as to its infallibility and extreme value, and has also proved it to be a constant accompaniment of conception—and conception only—and has also proved that no false corpora lutea can be mistaken for it.

But its value as a sign disappears after a period of five or six months after delivery, for then all traces of it are lost.

ANSWER 3RD.

Death from Asphyxia may be produced from the following causes—viz. Any mechanical obstruction to the passage of air to the lungs under this head will come.

1. Death from hanging.
2. Death from drowning.
3. Death from strangulation.
4. Death from the inhalation of narcotic and other gases, these will act by excluding the atmosphere.
5. Death from the result of inflammation blocking up the larynx and trachœa as in acute laryngitis and croup.
6. Death from the result of foreign bodies in the air passages—or from the presence of mucus as in bronchitis—from effusion of serum as in œdema of the glottis &c.

II. From any cause paralysing the muscles of respiration as pressure upon the medulla oblongata—as may take place in hanging producing paralysis of the phrenic nerve &c.

III. From pressure on the lungs themselves—whether it be air, blood, serum, or lymph.

We have only to do with the 1st cause, and that of only the first four of its divisions.

1st. *Of death from hanging.*—The proofs of hanging having been the cause of death are—

1. The external appearances.
2. The internal appearances.

The 1st I shall divide into two viz.

1. All other appearances besides the 2nd of the marks of a cord.

Now 1. of all the external appearances besides the marks of the cord.

These consist in a swollen and congested state of the face—large protruded and injected eyes—swollen congested and protruded state of the tongue—and an open state of the mouth, with a consequent depressed state of the lower jaw. In the neck besides the marks of the cord we may find effusion of blood deep into the cellular tissue and muscles, laceration perhaps of some of the muscles. Also there may be laceration of muscles, and we may, but in a few cases find fracture of the odontoid process—I notice the 2nd the MARK OF THE CORD separately, because when present it is a certain sign of death from hanging, but it is not an invariable sign it may be absent owing perhaps to the loose state of the ligature; it will differ in different cases as to its form, size, shape, situation, &c.

Now of the *internal appearances.*

1. *In the brain*—we find more or less congestion—the puncta vasculosi may be more or less marked, and there may be also extravasation of blood—thus distinguishing from death by drowning when that takes place from pure asphyxia.

2. *In the lungs* we find nothing very characteristic of hanging—so also in the *heart*, for the appearances seen in them are also common to cases of death from drowning; they are a congested state of the lungs, empty state of the left cavities of the heart, and a full state of the right cavities.

3. *In the stomach and alimentary canal* it is said that in hanging we very often find the stomach exceedingly congested and its mucous membrane quite red—also the presence of extravasated blood; we find also the mucus lining of the intestines much injected and of a purple color—these

appearances will serve to distinguish it from death by drowning, but to confound it with the effects of poisoning.

4. In cases of hanging it is said that the organs of generation in the male will often be found injected and congested, and even in some cases the penis has seen to be in a state of erection. These appearances will distinguish it from drowning.

II. *Of death from drowning.*

Its signs I shall also divide into external and internal.

1. *Of the external signs*—They are a pale and soft state of the whole skin—a pale state of the face just contrary to what takes place in hanging—complete softening of all the tissues in cases of long immersion, in which case also the face will be swollen, so that the features will not be recognised—Then the presence of mucus or froth or of both in the nostrils and mouth. This will not invariably be present owing to the body having been immersed too long or having been exposed to the air too long; lastly in cases of long submersion we shall also find the presence of adipocres.

2. *The internal appearances*, are, the presence of mucus and froth, in the trachœa, bronchi or lungs, the presence of water in the lungs, and the presence of water in the stomach—these signs are of no value whatever. They are often absent in cases of real drowning and when present may take place after death has occurred, but the presence of water in the stomach will be of some use when it is of the same nature as the water of a particular lake or river and when it contains substances that exist in the bed of the tank, lake or river, for very obvious reasons; this reminds me of another sign which I have omitted to mention in its proper place—viz. the presence of foreign substances in the hand, chiefly when they correspond to substances existing at the bed of the river, &c.

3. *Death from strangulation*—The appearances presented by death from strangulation resemble very much those enumerated under the head of death from hanging—for they only differ in this respect that in hanging the constricting force is the weight of the body, whilst in the other case, the fingers or other bodies are the constricting forces—Besides in death from strangulation, we may observe the impressions produced by the fingers.

4. Asphyxia from narcotic gases as in cases of death from chloroform, ether, carbonic acid, &c., the signs of death will be observed only internally—viz. in the heart, lungs, and brain. In this way they may be distinguished from death in drowning and hanging both which are attended by external appearances, besides the internal ones. The internal post mortem appearances will resemble very much those enumerated in death by hanging.

ANSWER 4TH.

The character of *general moral mania*—are—it consists in changes in the moral characters of the individual. Thus if he be naturally very passionate he may become very mild and docile, or on the contrary his passion may increase; vice versa, if he be naturally of a mild disposition. Then again there is a change in the objects he likes, for he is generally very much attached to things and persons, that in his sound state he never cared a straw for, or he may treat with the utmost abhorrence and disgust, those persons to whom he is connected by natural ties as a wife, a son or daughter, mother or father, &c.

Then again he may be humble and unassuming when in his senses, but in a state of mania he is very ambitious, proud and ostentatious: he may

fancy himself, as is related of a medical student, the King of England, Secretary of State, &c. &c., or he may be convinced in his own mind that he is the Saviour, as was actually the case in an enthusiast; such forms the general characters of general moral mania—I have no time to enter into details.

2. The characters of general intellectual mania consist in a change of the memory, judgement reasoning, perceptions, &c., also in a perversion of the senses. The individual altogether, perhaps loses his memory, he forgets what has happened a few months ago—his judgement may be perverted—he is not aware that in committing murder he is an offender of the law, but tries to justify his acts, numerous other examples may be illustrated in proof of the loss of reasoning—&c. But the perversion of the senses is very remarkable in some instances: he hears all sorts of noises in his ears, he mistakes external sounds for very familiar voices, supposes the object of his fancy to be singing to him, is sure that his father is commanding him—&c. &c., again in the taste—in our lectures a case was related of a maniac fancying every thing he eat to resemble porridge in its taste—in the case of sight, he perhaps sees devils, huge precipices, deep pits, fancy ghosts—&c. &c. If I had time, I could give a number of other illustrations.

J. KEARNEY.

SURGERY.

Question 1st.—What are the different varieties of Ophthalmia, describe their characteristic appearances, and appropriate treatment?

Answer.—The first and mildest variety of Inflammation attacking the outer tunics of the eye is that commonly known as a cold in the Eye, or what is technically termed *Conjunctivitis* or catarrhal Ophthalmia—this attack is generally consequent on a cold or slight injury, or extraneous matters getting lodged in the eye. The usual appearances of it are, at first the patient complains of a gritty feel as if a particle of sand or some such matter was lodged in the eye, between the globe and the lids, this sensation is so persistent that he constantly keeps rubbing his eyes, and cannot be persuaded to the contrary; this progresses on with a degree of stiffness of the Palpebræ, pain of a trivial nature along the brow, slight intolerance of light, lids secrete a kind of shiny mucus which causes the lids to adhere, as will also be seen filling up the inner Canthi with lachymation: on looking into the organ by raising the lids they will be found vascular and red along the palpebræ, the conjunctiva of that portion of the Eye being alone affected—while the globe is free and bright,—this simple attack of inflammation affecting the eye is of so trivial and amenable a nature, that the treatment of it is very simple and the disease readily subdued.

The *treatment* of such a case would be, if the disease is disposed to run high to apply a few leeches around the Eye, fomentations of warm water, which may be medicated if necessary with poppy heads. The stomach and bowels should be attended to, as sometimes the whole mischief lies there, and a dose of calomel and colocynth given at bed-time, and followed in the morning by a black draught (senna) will act so beneficially as to completely remove the disease without any further treatment. Sometimes however this wont answer and the attack emerges into its chronic form, when you are recommended to employ astringent drops as the arg: nitras gr. ij or iv. of this in an ℥j. of water is the best form in which you can apply it, dropping a small quantity of the solution twice or three times a day—

or the sulphate of Zinc drop may be employed in the same strength as the former—or if these do not seem to answer, a stimulating drop as the *vinum opii* with spirits of wine which I have frequently seen employed with great benefit.

The second form I shall allude to is that variety which often leads to a destruction of the eye when not timely treated—and this is *Acute Ophthalmia*; now this affection generally shows itself in the form of simple conjunctivitis, but is of a more virulent nature, rapidly spreads on to attack the other portions of the conjunctiva, till it spreads its influence over all.

Characteristic appearances: this usually make its appearance like catarrhal ophthalmia with pain and stiffness in the lids, redness and vascularity of the conjunctiva palpebræ but it does not here stand, but increases affecting the conjunctiva sclerotica, the vessels of which membrane are found to enlarge, and anastomose freely with one another, and of a bright red appearance surrounding the cornea—possessing mobility, which is not the case with inflammation of the internal tunics; the pain now becomes extreme in the brows and cheek bones, and the light irritates and hurts the patient's eyes, tears flow down in great abundance along the cheeks communicating a hot and burning feel—this uneasiness is much increased during the night, and a secretion of mucus results which glues and fixes the lids at their margins, the constitution often sympathises with the affection, there is fever present, with headache, disordered bowels, heat of skin, and in fact all the symptoms of a common attack of Pyrexia. A case very similar to this was under my charge in the Hospital, presenting the very symptoms I have above alluded to—however this may not be the end of the attack, for if it is not actively treated, it may lead on to worse consequences! the cornea may become implicated, become red and vascular, going on to the effusion of lymph or formation of abscesses, bursting into the anterior chamber and producing Hypopion, or into the posterior destroying the organ of vision in that way, by setting up adhesions by effusion of lymph between it and (the cornea) and the Iris—a case of this nature I have under my charge in the Hospital where the inflammation has gone on to the formation of a small ulcer in the cornea. In addition to the Inflammation attacking the cornea it may spread to the internal tissues and produce all its worst consequences there, threatening complications of the Iris and obliteration of the Pupil with a total destruction of the eye.

Such being the course of the symptoms, the treatment of this affection will be antiphlogistic from the beginning. If you see the case during its height, the immediate measures to be adopted are bleeding and purging &c. The bleeding should be effected by means of 6 or 8 leeches applied to the lower lid, but it might be asked why not to the upper, but the reason is simple, the difficulty in preventing the Hæmorrhage—to this should be added a good and effectual purge of calomel and colocynth, followed by a senna draught or compound Jalap Powder. Fomentation to the eyes constantly being applied—this will constitute the treatment, coupled with rest and protection of the eyes from any excitement as exposure &c. with low and unstimulating diet. If now the inflammation subside, putting on the appearance of a chronic attack you are to have recourse to a different plan as that of astringent and stimulating remedies—the remedies resorted to in such a case are the same as what I stated in the first affection viz. Nitrate of silver drops which I think is the most soothing and effectual of the whole—or the sulphate of zinc, or sulphate of copper may all be used as it may be deemed proper

to the Surgeon—If the eye present a want of action, the stimulating drops as the *vinum opii* with the spirits of wine as mentioned above may be employed—but in addition to all these, counter-irritation is a very useful remedy in the latter stages of the disease, this can be effected by means of *Acetum Cantharidis* applied not to the orbit, but behind the ear of the affected eye—this I have seen act very beneficially in many cases.

However should the inflammation proceed on to attack the internal tissues as I have alluded to, your treatment will in such case be very different, for your object will now be to prevent the effusion of coagulable lymph and the destruction of the Eye, therefore you would administer cal: and opium as gr. ij of the former with opium gr. j—and with this you may combine Tarter Emetic $\frac{1}{4}$ gr if much arterial action be present—but it must be remembered that any excess of arterial action set upon the complication of those tissues should be unhesitatingly put a stop to by the application of leeches and the administration of Drastic purgatives.

The constitution of the patient should be another point borne in mind, as this will mutually alter your treatment: if he be of a scrofulous taint the orthodox remedy of Iodine should be persevered in the form Hydriodate of potass with Dover's powder—gr. iij of the former to gr. X of the latter is a good combination or Ipecacuanha in the room of Dover's powder—a case of this variety I have under my charge now in the Hospital who is undergoing this plan of treatment.

Chronic Ophthalmia may be another variety affecting the eyes—this may be a consequence of the acute attack or come on gradually with an asthenic arterial action—the appearances of this variety is the low arterial action, the vascularity of the conjunctive which is not of that florid color as the acute but of a dirty brownish hue, with a secretion of ropy and sticky mucus gluing the lids together, the constitution disturbance is generally very trifling if any, the patient simply complaining of the lachrymation and other discomforts which an inflammation of this kind generally gives rise to—there may be a certain degree of chronic pain in the head or orbits which the patient will generally not complain if unasked—the cornea may in such a case be also affected or remain clear and bright.

The treatment appropriate to this variety will be of a stimulant and astringent nature to give tone and action to the vessels of the conjunctive which are languid and relaxed—but in some cases a slight degree of arterial action may be present although not of a nature equal to acute ophthalmia and in such cases you may be obliged to apply a few leeches and administer a purgative to repress the action, but this is an exception and not to be looked on as the rule in such cases.

But the remedies are the stimulating drops as the *vini opii*, or the zinc, or the nitrate of silver—or the oxymuriate of mercury recommended by Mackenzie composed of gr. j of oxymuriate of mercury (or the Bichloride) to ℥viii. of water, this dropped into the eye in the usual manner—the acetate of lead is also recommended but objections are raised against its use from the tendency the lead has to accumulate and irritate the organ ultimately, especially if an ulcer or sore of any kind exists—a common consequence of this disease I might here allude to viz. that of *Granular Conjunctiva*, this is a state of the conjunctiva rendered so by inflammation of a low and asthenic action—it is not like the granulations of an ulcer, but simply an enlargement of the papillæ—it is a very troublesome consequence and causes irritation to the eye-ball and lachrymation—with a certain amount of chronic inflamma-

tion of the conjunctiva sclerotica—the remedies for such a state are the excision of the granulated surface with a knife as recommended by some surgeons—or to repress or cause absorption of the granulation by caustics as the nitrate of silver—or what is very often recommended Guthrie's Ointment composed of Arg: nitrat gr. x. to ℥i. of Lard well rubbed up, and a small portion of it applied to the surface of the lids by means of a camel hair pencil, which will very soon assume a white appearance it being nothing more than the slough, when you are to wash it of and keep the eye from exposure—besides this the oxymuriate of mercury is recommend as a caustic—and lastly sulphate of copper in its crystalline form rendered smooth by friction, and applied to the surface of the granulations a portion of which becomes dissolved by the tears and exerts its astringent and caustic power—this last remedy I have frequently seen employed, and answer the purpose remarkably well.

The next class of ophthalmia which I shall allude to is the PURULENT VARIETY, these are the most intractable form of inflammations that the eyes are subject to, from their rapid course and destructible termination. They are divided into 3 varieties—1st Purulent Ophthalmia of Infants, 2nd Purulent Ophthalmia of adults or the Egyptian—and 3rd Gonorrhœal Ophthalmia, or that arising from a specific origin.

1st. The *Purulent Ophthalmia of Infants*: this generally shews itself about the third day after birth, being caused generally by the contact of irritating and filthy discharge from the vagina of the mother. The characteristic appearances of this variety are very unmistakeable—they begin with redness and soreness of the palpebra, intolerance of light, the discharge of a muco-purulent secretion from the eyes, the intolerance of light, causing the little infant to bury its head in its nurse's arms, the eyes are closed, and the child becomes very restive, this marks the first stage of the attack; but the disease not being treated or subdued in its course it runs on rapidly to its worse consequences, the whole of the conjunctiva becomes affected, the secretion becomes changed into a *pure purulent or pus like character*, the conjunctiva sclerotica becomes infiltrated and bulges out round the cornea, establishing *Chemosis*; this is in some cases so great that the cornea becomes completely enclosed so as not to be perceptible, the effusion and congestion having gone on to so great an extent as to enclose in the cornea: the eyes will now be found to be so firmly closed as if by spasms, and the light so extremely intolerant as to cause the infant to bury his face the more in the nurse's arms, and be very restless and render it a piece of the greatest difficulty to examine the eyes, which is to be affected by placing a thumb on each lid and drawing them assunder—when you can judge from the appearance of the eyes the state to which the disease has progressed; but the great *Chemosis* and effusion renders it a matter of the greatest difficulty in some cases to decide to what an extent the disease has gone on—this now can only be judged of by the appearance of the discharge—now the disease having progressed on to this extent it may either end in the destruction of the eye, by causing ulceration of the cornea, or sloughing and the escape of the humours &c. or it may run on to the 3rd stage or that of a more favourable kind being the gradual disappearance of all the symptoms and hence called the stage of decline—If this stage sets in, the worse consequences will subside and the patient by degrees resumes his former sight and use of the eye.

I do not enter into any detail symptoms but merely give the characteristic phenomena of the disease, as such I consider to be required of by the question.

In the next place I proceed to give the plan of treatment, which must be of the most determined and forced description for I repeat again that the destructive nature of the disease being such as to have run through its course to the complete destruction of the eye in so short a time as 24 hours—If you meet with the case in the beginning say in its 1st or even 2nd stage ere any destruction of the eye has taken place, your object will be to repress arterial action which can be done by local bleeding only, and this very cautiously practised from the dangers which are prominent from the abstraction of blood in a young infant—The rule in such cases are to apply *one* leech to the lower lid, but if the child be a plethoric and healthy one you may employ *ij*—and this is to be regulated according to the age increasing one for every year,—The next thing you would do is to administer purgatives, this you must also recollect are to be of a mild nature—Castor oil in doses of a \mathfrak{z} j. are very useful, or Rhubarb and Magnesia or any such purgatives—after having subdued their action you administer mercurials which is the next good indication to prevent the formation of lymph, its effusion, and the absorption of that which is already effused, or you may give gr. j of Calomel with $\frac{1}{4}$ gr. of opium watching it's effects, until some change is effected in the eye or the system affected, and you would then leave off the administration of Calomel and give a milder mercurial to keep up the action as the Hydrarg Cum Creta doses of from *ij.* to *v.* gr. apply counter irritation behind the ears as the *Liguir lytta*. Keep the child from all irritation or stimulus of light—Keeping the eyes well washed and clear which should never be neglected as the secretions are able to render the eye worse, for such purpose fomentations are very applicable; some recommend cold water, but I have been taught to use warm from its more soothing and laxing effects—Again in some cases to obviate the effects of the Chemosis which would cause pressure on the cornea and its destruction, you are recommended to scarify the part and let out all the effused scum—When all these objects are fulfilled and the disease advanced to its 3rd stage, you are recommended to adopt the stimulating plan by means of the astringent and stimulating drops as recommended in the other form of Ophthalmia—*I* mean the dropping in of nitrate of silver, or sulphate of zinc &c. but suppose the disease has progressed on to the destruction of the eye all remedies are of no avail and little or nothing can be done for the eye, save poultising and the other soothing applications to prove the healing up of the cicatrix which is left from the collapsed eye.

The 2nd variety of this disease is the *Purulent Ophthalmia of adults or the Egyptian*—This is characterised by the severe inflammation attendant on it and the rapid destruction of the eye in a very short space of time—The attack like the one just described, originates in the palpebral portion of the conjunctiva, runs on to involve the whole eye, leading to extensive Chemosis, implication of the cornea and the destruction of the eye, the secretion which I think is the most characteristic of the disease, its purulent nature, with the rapid course it runs and the excessive effusion and bulging of the conjunctiva. Another very characteristic feeling of this affection, is the bursting feel the patient experiences, and the flowing of scalding tears down his cheeks which he complains of at the beginning, with the great intolerance of light. Some authors describe the Egyptian as a distinct disease, insomuch as they say it is of a mere virulent and an active a nature.

Such in short being the characteristic nature of this affection the treatment of it will be purely antiphlogistic at first—If the patient be a

plethoric individual you may bleed him to the verge of syncope, or until he states that the bursting feel has left the eye—to this you add the application of leeches along the lower lids as vj or viij to each eye, administer tartar emetic to keep the action of the heart low, in nauseating doses as gr. $\frac{1}{4}$ administered every hour or 2 hours, apply fomentations and protect the eye from the irritating influence of the light; you pour in your cal: and opium in dose of gr. ij. to the former and j of the latter every 3 hours to prevent the effusion of lymph and the other bad consequences—but ere you do this, you should administer Purgatives of a drastic nature such as colocynth and aloes, followed by a senna draught or compound jalap powder. If the echymosis be very great, make use of scarrification—and continue your calomel till the system is effected by it—when administer alteratives as blue pill gr. v. every night or hydrarg cum creta gr. x.—In the second stage you would resort to counter irritants—and astringent and sedative drops, to which I have before alluded.

The 3rd variety is that of *Gonorrhæal Ophthalmia*, the characteristic appearances of this, are that it arises by a specific origin, affects generally only one Eye, is more destructive and virulent in its nature, and according to some authors (Wharton Jones) it affects the Conjunctiva of the globe of the eye, and not the Palpebral like the other varieties.

The treatment of this variety is the same as the Egyptian, attending to it with great promptitude from its very rapidly causing destruction of the eye—Some have described a fourth variety from the peculiarity of the constitution viz. the *Scrofulous*; this is characterised by the taint of the constitution, the extreme intolerance of light which exists in this variety with the other symptoms of Purulent ophthalmia—It is treated in a similar way to the others, only attending to the constitution and carefully administering Mercury—for which some recommend turpentine—the hydrate of potass with Sarsaperilla will be of avail in this variety—administered in small alternate doses to improve the system.

Another variety of *Ophthalmia* still remains to be described, and that is *Pustular Ophthalmia*; this is an effect of the acute attack, and appears in the form of small pustules containing a fluid like pus covering the sclerotic—in other respects it is the same as the Chronic ophthalmia, and the treatment of it will be the same.

Answer to Question 2nd. This disease is divided into 3 varieties the Idiopathic, Arthritic, and Syphilitic—and some have described a fourth as strumous, but this is merely a consequence of the constitutional taint. *Iritis* is generally characterised by the following symptoms: the patient complains of pain of an acute nature seated in the Orbits, Cheek bones and Temples—Intolerance of light which is very great if the patient is of a scrofulous taint—the constitutional sympathies are also generally well marked in these cases; there will be an amount of fever and constitutional disturbance—but let us at once advert to the most striking and characteristic Phenomena of this disease: on examining the Eye it will be found to have undergone a remarkable change, the colour of the Iris will be changed from a blue to a green, a brown to a muddy black and so on, its brilliancy and lustre will have vanished, it no longer being able to refract the rays of light, this of course is to be determined by comparing the two eyes—but what is still more striking and unmistakable, and that is the pink zone round the Cornea; this will, by close examination present straight lines of blood-vessels shooting round the cornea, and around which they are so numerous, as to give rise to the pink appearance of the zone, these are deep seated and do not anastomose like those of the superficial tissues—and are per-

fectly immovable: these three appearances then I think form the most characteristic appearance of the disease—the pupil will be found *irregular* in the idiopathic form, but *pulled up to the inner angle* towards the nose in the syphilitic variety—in the Rheumatic the effusion of lymph is more abundant, which will be found blocking of the pupil—again in this form you have the *white ring* between the *Cornea* and the *Pink Zone*, which is considered by some authors as very characteristic of it—these symptoms may gradually grow were the sight of the patient becoming impaired, the other tissues may now become implicated as the Retina which will give rise to the peculiar symptoms of *flashes of light* shooting in the axis of vision—With these you may have *muscæ volitantes* or other ocular spectra, and hence Iritis cannot with propriety be regarded as a separate and distinct disease—for those symptoms which I have first described are generally present from the beginning.

The effects which their disease may effect in the eye is unskillfully treated in the *occlusion* of the *pupil* by lymph—adhesion of the Iris to the Crystalline Lens producing *Synechiæ Posterior*—or adhesion of the *pupil anteriorly* to the cornea and obliteration of the *Anterior Chamber* called *Synechiæ Anterior*—or it may go to the formation of abscesses, which may burst anteriorly and produce Hypopion—or Paralysis of the Retina from the non-supply of the stimulus of light as long as the disease lasted.

Inflammation of the *internal tissues* are distinguished from the *external*—1st by the discolouration of the tissues which are deep-seated—2 the straight and immovable vessels which are seen in the deep tissues and the bright Pink hue the Iris loosing it's colour and brilliancy and it's power of refraction—3 the pain of which is also referred to by the patient as being deep-seated of the organ—4 the loss of vision and other spectral illusions are the Diagnostic marks.

Answer to Question 3rd.—This operation of the *ankle joint* first performed and instituted by Dr. Symes, consists in placing your patient in the usual method of amputations, assigning an assistant to hold the leg firm and steady, the patient put under the influence of Chloroform, another assistant compresses the Femoral Artery as it emerges below Poupart's ligament, a third keeps in readiness, to hand the Instruments, which are a small Catlin and saw—with the other Artery Forceps ligatures &c. &c. you now begin the amputation by grasping the foot to be removed with your left hand, and beginning an incision from one mæoli to the other across the Dorsum of the Foot or rather over the joint, which lays it open—Another incision you make by beginning at the point you left of and next carrying it round the sole of the foot to meet the extremity or the point from whence you began—having so far proceeded, the next step will be to dissect of the flap of skin and adipose substance from the heel and having done that you sever the Foot from the articulation by dividing through all the ligaments after which your assistance gives you the saw and you saw off the ends of the Tibia and Fibula—the reflected heel or skin will now serve as a perfect and comfortable covering for the ends of the bones—the arteries to be secured are the anterior and posterior Tibial with the Peroneal, which are of any consequence.

The supposed advantages of this operation over amputation below the knee-joint are, that the patient has still a leg left upon which he can walk as the thick skin of the heel forming the covering of the amputation will act as a cushion—this is I think a very good reason for resorting to this in preference to amputation below the knee—again other Artificial or Mechanical means are more easily adjusted in an amputation of this sort—as the use of a wooden foot &c.

Question 4th.—Cause, symptoms and treatment of infiltration of urine in the Perineum?

Answer.—The causes of Infiltration of urine in the Perineum may be from *stricture*, which so completely blocks up the flow of urine, as at last to cause rupture of the urethra in that region giving rise to all the bad consequences of such infiltration—again urine may be extravasated by the effects of an *abscess* situated in the Perineum finding it's way through the urethra—the Presence of *Calculi* in the urethra acting like a stricture—*Enlarged Prostrate* preventing the flow of urine, in the same way, wounds in the Perineum may also give rise to such effusion by wounding the urethra in that region.

Symptoms of such an extravasation will depend on the manner in which the extravasation has resulted, as if by abscess, it's presence will be known by all the symptoms common to one, or the presence of *Calculi*, or strictures which previously had caused retention of the urine—however such being the signs as the cause in which the infiltration has resulted—the *constitutional* symptoms will show themselves as irritative fever, and other bad constitutional disturbances—by this accident the local symptoms will be that of Inflammation, formation of abscesses, &c. which will warn you that something serious has occurred—If there is an abscess resulting from Infiltration, you will generally be able to recognise it by grasping the urethra, about the glands Penis and desiring your patient to force his urine out of the Bladder when if their be urine present, it will by flowing into it from the opening in the urethra communicate an impulse—Again by enquiring into the case, if it has been one of retention, the patient will have been suddenly relieved by this giving way of the urethra in the Perineum—on feeling the parts they will present somewhat of an œdematous and infiltrated feel—the peculiar ammoniacal odour given from the patient is also sometimes looked to as a suspicious symptom—If the symptoms be obscure all along, in opening the abscess the peculiar ammoniacal odour or that of urine will be given off and at once convince you of the nature of the accident.

Treatment.—If there be a stricture your object will be relieve or remove the stricture by dilitation—having of course given exit first to the infiltrated urine by means of a free puncture—the abscess will be treated in the same way as an ordinary one by Pōultice &c—but the principle object will be to remove the cause of the infiltration when it will be perceived that the abscess and sloughing of the perineum will improve accordingly—I saw a case of this kind in the Hospital who had infiltration of urine in the Perineum leading to the formation of the abscess which was opened by a lancet, the cause of the Infiltration was a permanent stricture, the daily treatment adopted was the passage of the Catheter to dilate the stricture, and by this means the abscess healed gradually as the urine flowed through its natural passage freely—the abscess being treated simply by Pōultices &c—The constitution should also be attended to as there are generally patients of a low and cachectic habit—suffering from continual irritative fever, this of course to be remedied by the exhibition of purgatives improving the system by tonics as Quinine in the form of the mixture &c.—the accridity of the urine may be subdued by the administration of the Alkaline mixture of Soda &c.

JAMES J. DURANT.

Appendix C.

PRIZES AND CERTIFICATES OF HONOUR.

Anatomy and Physiology.

Gold Medal and First Certificate,

CHUNDER COOMAR DEY.

Rustomjee Medal and Second Certificate,

JAMES HINDER.

Silver Medal and Third Certificate,

MAHOMED JAUN.

CERTIFICATES OF HONOUR.

4th, G. H. Daly. | 5th, Brijonath Bundoo.

Botany.

Gold Medal and First Certificate,

CHUNDER COOMAR DEY.

CERTIFICATES OF HONOUR.

2nd, G. H. Daly. | 3rd, Ram Chunder Sen.
4th, A. J. Meyer.

Chemistry.*Gold Medal and First Certificate,*

ABDOOL HUMEED 2ND.

CERTIFICATES OF HONOUR.

2nd, Nilmadhub Mookerjee. | 3rd, Abdool Humeed 1st.

4th, Jogendronarain Sen.

Materia Medica.*Gold Medal and First Certificate,*

NOT AWARDED.

CERTIFICATES OF HONOUR.

2nd, J. Kearney,	} Equal.	5th, J. J. Durant.
3rd, Ameenudin,		6th, Bholonath Doss.
4th, H. W. Jones.		7th, Cally Coomar Doss.
8th, Muttyloll Gupto.		

Practice of Physic.*Gold Medal and First Certificate,*

H. W. JONES.

CERTIFICATES OF HONOUR.

2nd, James Durant. | 3rd, Bholonath Doss.

4th, J. W. Marganout.

Clinical Prize,

MADHUBLOLL SHOME.

Surgery.*Gold Medal and First Certificate,*

J. J. DURANT.

CERTIFICATES OF HONOUR.

2nd, J. Kearney.	4th, H. W. Jones.
3rd, Bholonath Doss.	5th, Ameenooddeen.

Dresser's Prize,

C. RADDOCK.

Midwifery.*Goodeve Scholarship* DENONATH DOSS.*Gold Medal and First Certificate,*

BHOLONATH DOSS.

CERTIFICATES OF HONOUR.

2nd, C. Raddock, <i>Equal with</i>	3rd, J. J. Durant.
<i>the Gold Medal or 1st Certificate.</i>	4th, H. W. Jones.
5th, Chunder Coomar Bose.	

Medical Jurisprudence.*Gold Medal and First Certificate,*

JAMES KEARNEY.

CERTIFICATES OF HONOUR.

2nd, Bholonath Doss.	3rd, Cally Coomar Doss.
4th, J. J. Durant.	

MILITARY CLASS.

Gold Medal for General Proficiency,

DYAH SINGH.

Silver Medal for General Proficiency,

BHOWANEE DEEN TEWARY.

Silver Medal for Anatomy,

AHMUD YAR KHAN.

Prizes of Books.

Prem Chund. | Mirza Hingun.

