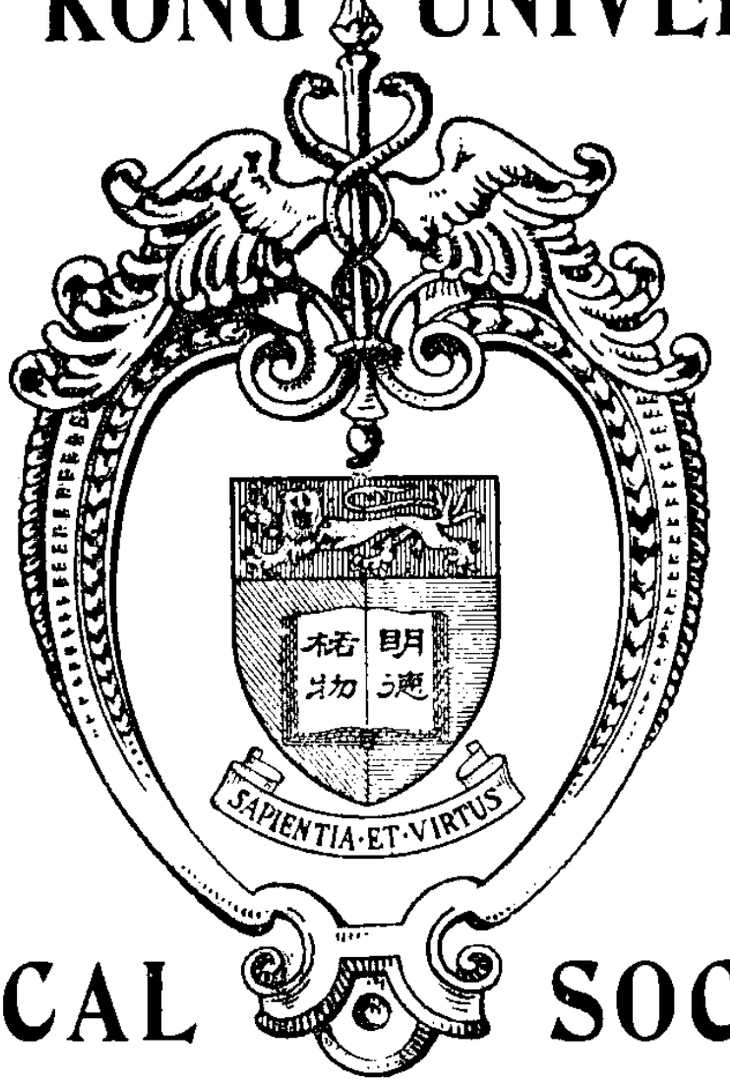
THE CADUCEUS

JOURNAL OF THE HONG KONG UNIVERSITY MEDICAL SOCIETY



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JOURNAL OF THE HONGKONG UNIVERSITY MEDICAL SOCIETY.

Vol. 11 February, 1932. No. 1

All medical papers and other scientific contributions intended for the Journal, and all books for review and magazines in exchange, should be addressed to the Editor. "*Caduceus*," Hong Kong University, Hong Kong.

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CLINICAL REPORT OF THE TSAN YUK HOSPITAL AND OF THE MATERNITY BUNGALOW, GOVERNMENT CIVIL HOSPITAL. BEING THE WORK OF THE SCHOOL OF MIDWIFERY OF HONG KONG UNIVERSITY.

by

Professor R. E. Tottenham, M.D.

Drs. D. K. Pillai, S. K. Lam and Miss P. C. Lai.

Special Features of the Report.

Record Number of Maternity cases.

For the year ended 30th April .....

1927	826
1928	1576
1929	1811
1930	1616
1931	1841

Low Morbidity rate ..... 3.9 %

Low Mortality rate ..... .32%

Low Operation rate ..... one operation to every 24.5 patients (repair of lacerations excluded).

During the year ended April 30th, 1931, 1384 maternity cases were admitted to the Tsan Yuk Hospital, and 590 to the Government Civil Hospital (under our care).

Of these 1974 cases, 1841 were delivered, of whom 629 were primiparae, and 1212—multiparae. The number of infants born alive was 1773.

Dr. Pillai was in charge of the Department from May to December 1930, while the Professor was on leave.

Under the present regulations each student is attached to this Department for a period of 6 months, during which time he attends cases in the labour wards; and as there is no shortage of patients, students are able to attend from 30 to 50 cases or more, of labour during their 6 months Ward Clerk duty. These students also attend the Out-patient dispensaries held twice weekly, and have opportunities for examining a large number of patients. They also see the routine work of the gynaecological wards, and are responsible for taking the histories of the patients.

Morbidity.—This year we have been fortunate in having a very low morbidity rate, unquestionably the health of the hospital has been improving during the past few years, in the Government Civil Hospital we are am indebted to the Principal Matron for meeting our wishes with regard to placing an experienced Sister in Charge of the Bungalow, and we have to thank Sister Lace for the great improvement which has taken place, during her time. According to the B.M.A. standard, the combined morbidity rate of the two hospitals was 3.85%.

(Tsan Yuk ..... 3% Bungalow ..... 4.7%)

Mortality.—At the Tsan Yuk Hospital out of a total of 1,292 cases there were two deaths, and at the Maternity Bungalow of the Government Hospital there were 4 deaths out of 549 cases; giving a total mortality of .32%.

The causes of death were as follows—(See Table XXI)

1. *Puerperal Sepsis. Pyæmia.* Patient was examined before admission to hospital. Had a rise of temperature and pulse on admission, and rigors during the third stage of labour. The rigors continued, associated with delirium, until the 13th day, when she died. *P.M.* Multiple abscesses were found in the uterine muscle, broad ligament, neighbourhood of the kidney, and in the liver.

2. *Myocarditis, hypostatic congestion* of both lungs. Death occurred on the 3rd day.

3. *Peritonitis* following operation for full term extra-uterine pregnancy. Death took place on the 12th day.

4. *Myocarditis.* Patient developed heart failure on the 4th day.

5. *Septicæmia, puerperal insanity.* Macerated fœtus, fœtid lochia patient died on the fourth day.

6. *Eclampsia, Acute mania.* Patient was mentally somewhat abnormal after delivery. She became very excitable on the 6th day, and died on the 7th day.

Forceps.—The forceps were applied 45 times, or in about 2.5% of cases. The indications were :—

Staff Group 1931.

Delay in the second stage of labour	37
Eclampsia	3
Contracted pelvis	1
Accidental Hæmorrhage	2
Albuminuria	1
Occipito posterior	1

All the mothers recovered, but two infants were born dead; in one of these cases no fœtal heart was heard before forceps were applied, in the other case there was contraction of the pelvic outlet. In all straightforward cases the students are taught to apply forceps in the left lateral position; and to use the dorsal cross-bed, only in cases in which difficulty is anticipated.

Placenta Prævia.—During the year there were 13 cases, all the mothers recovered;—five infants were born alive. Out of these 13 cases, only two patients carried their infants to full term. Bi-polar version is the method of treatment usually adopted, during the last four years we have had 45 cases without a maternal death, but the fœtal mortality rate is unfortunately high. This must not be blamed entirely to the method of treatment adopted, because the fœtus is so often premature that it is a poor operative risk. There were two cases of central placenta prævia in which pregnancy was sufficiently near full term to make us consider alternative treatment in the interests of the baby. Their particulars are:—

L.K. age 37, para. 9, central placenta prævia, period of pregnancy 37 weeks. On examination the fœtal hand was found protruding through the cervix.

C.H. age 39. para. 10, period of pregnancy—full term. The patient had been bleeding for three days before admission to hispital.

In both these cases Cæsarean section seemed to be definitely contra-indicated on account of the risk of infection.

Accidental hæmorrhage.—There were in all 9 cases; of which two were concealed, two combined, and five external. One of the mothers died on the fourth day from myocarditis, and three of the infants were born dead. During the past few years we have been greatly impressed with the number of apparently normal cases in which the expulsion of the placenta is accompanied by old blood clots; the patient usually gives no history of faintness or other symptoms suggestive of a slight attack of concealed hæmorrhage.

Most cases are treated by rupture of the membranes, followed by the administration of pituitrin. In one case the vagina was plugged in order to control the bleeding.

Cæsarean section.—This operation was performed twice, both mothers recovered; one infant was delivered alive, and one was macerated. In both case the indication was the same, namely atresia

of the vagina due to dense cicatricial tissue. In South China, atresia is one of the commonest absolute indications for cæsarean section.

The atresia is invariably due to trauma, and the instrument responsible for the injuries is a sharp hook which belongs to the Chinese domestic scales, or balance. When a case of difficult labour occurs in a Chinese village, the local untrained midwife employs the hook for the purpose of extracting the fœtus, and the type of injuries which result may be easily imagined. When the stricture is situated in the lower third of the vagina, it may be possible to deliver the fœtus by the natural route, but when the obstruction is in the middle or upper third, it usually seems to be absolutely impossible to deliver a living baby, (and sometimes a dead one) without seriously damaging the patient.

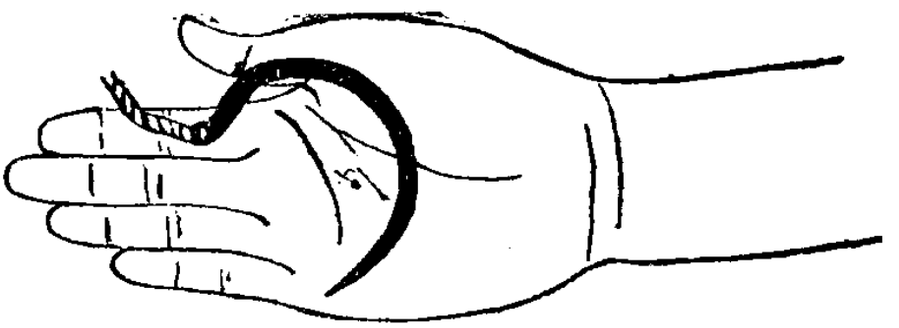


Illustration shows the kind of hook used as mentioned above. The hook as compared with the size of the palm of the hand.

Eclampsia.—This year we have to report a series of seven cases with one death. This patient died on the 7th day of the puerperium, from acute mania. Dr. Tweedy's treatment is carried out in detail, with the exception that the initial dose of morphia is seldom repeated. If further sedatives are indicated, ether in olive oil is given per rectum. This treatment was adopted in 1927 and we think that on the whole the substitution of rectal ether instead of repeated doses of morphia has been justified. The only true eclamptic death in which we were interested during the last four years, we saw in consultation outside our own clinic. It was a very severe case associated with intra-cranial hæmorrhage, and Dr. Pillai who saw the patient and was present at the post mortem is of the opinion that the condition of the brain precluded recovery.

DESTRUCTIVE OPERATIONS ON THE FŒTUS.

1. Perforation of the fœtal abdomen. One case. The obstruction was due to ascites.

2. Craniotomy. One case. Indications—Eclampsia, delayed labour, dead fœtus, contracted pelvis.

3. Decapitation. One case. Indications—Neglected shoulder, dead fœtus, threatened rupture of the uterus.

Full Term Extra-uterine pregnancy.—Dr. Pillai had two cases during the time that the Professor was home on leave; he describes them as follows:—

C.A.C. Aged 30, para. 2.

History.—The patient was operated upon for an extra-uterine pregnancy about 3 years ago.

During this pregnancy she attended the out-patient department complaining of attacks of irregular hæmorrhage (4 in all); but there were no other noteworthy symptoms. At this stage the physical signs suggested a case of anterior development of the uterus. The patient did not attend tht ane-natal clinic regularly although advised to do so; —some three months later she was admitted to hospital,—in labour.

On examination the fœtal head was found at the bottom of Douglas' pouch, the cervix was displaced upwards and forwards, and was not dilated. The patient was watched for a few hours, but as there was little change, Dr. Pillai decided to deliver her by Cæsarean section, believing that the case was one of anterior development, although most careful examination had been made.

Operation.—On opening the abdomen the condition suggested that there had been a pregnancy in the horn of a "uterus unicornis." It was difficult to say whether the cornu ruptured early or late in pregnancy,—the upper part of the sac was densely adherent to the small intestine, omentum, and transverse colon. The omental vessels were enormously dilated and appeared to run into the sac. On attempting to explore the abdomen very severe hæmorrhage occurred, and it was extremely difficult to ligature any of the omental vessels because of their exceedingly thin walls, which were easily torn. The sac was opened in an area that was most free from vessels, and the fœtus delivered, alive. The placenta was separated piecemeal, but the hæmorrhage was severe. In attempting to remove a part of the sac with the membranes, the intestine (to which it was adherent) was slightly torn. The sac cavity was partly obliterated by suture, and hæmorrhage controlled by a firm gauze plug. About two pints of blood seem to have been lost during the operation.

The patient died on the twelfth day after operation. *Post Mortem.* There was free chocolate coloured fluid in the peritoneal cavity. The sac was adherent to the peritoneum, and coils of intestine. The portion of intestine which had been wounded and repaired by suture at the operation—was found to be leaking, the sutured area having ruptured.

Cause of death —— peritonitis.

.....

L.M. Age 38, married 18 years, first pregnancy.

History.—Patient complained of swelling of the abdomen for 9 months, and that there had been no menstruation for 46 weeks. The

abdominal swelling was decreasing in size, fœtal movement had been felt some time previously, but had ceased. From the history the case suggested a condition of missed labour.

On examination, no fœtal heart could be heard, but fœtal parts were recognisable, the swelling of the abdomen was the size of an eight month's pregnancy.

The cervix was dilated and the uterus explored, but found to be empty, the case therefore appeared to be one of extra-uterine pregnancy. Patient had a slight rise of temperature 101°.

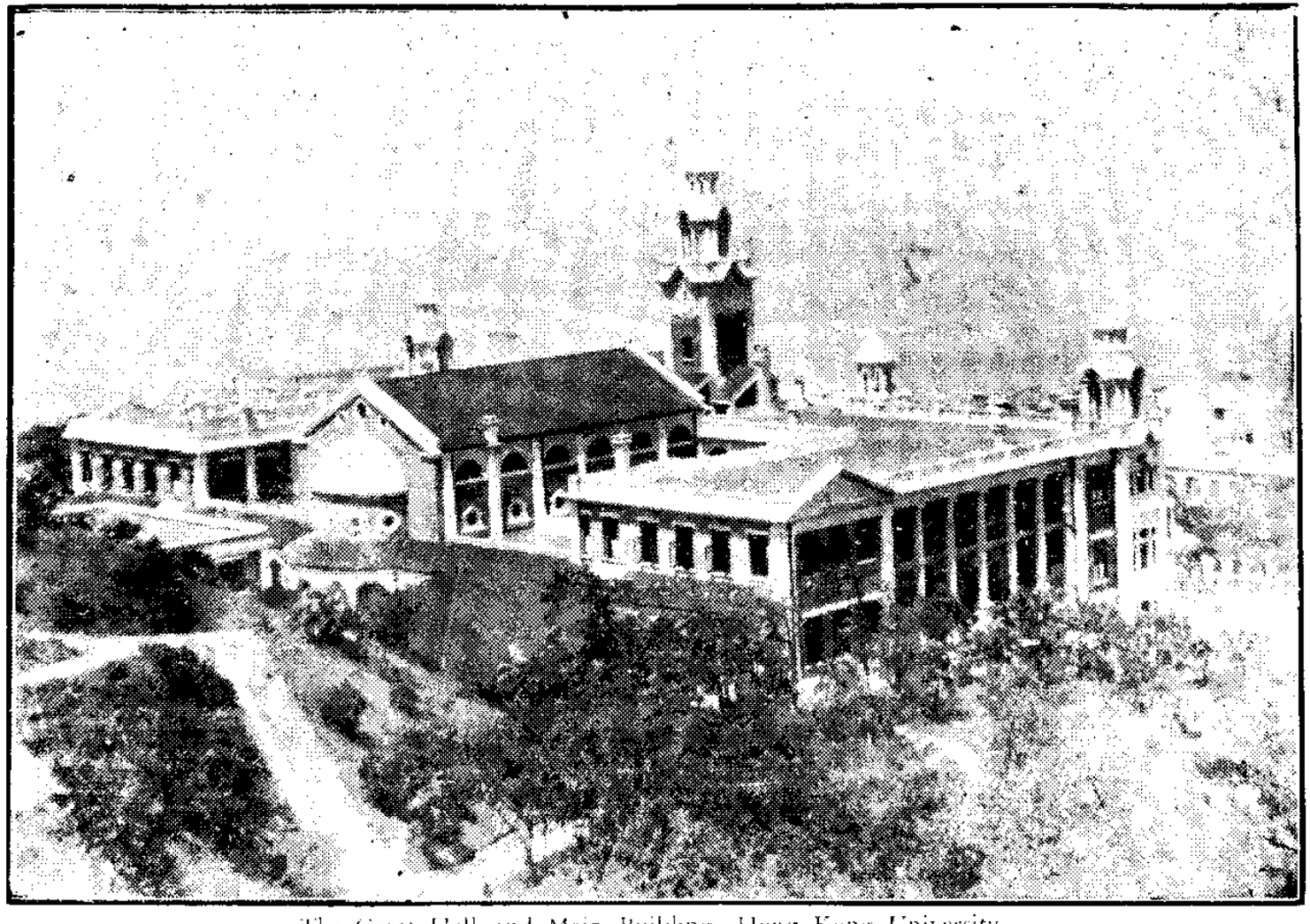
Operation.—The abdomen was opened and the fœtus delivered weighing 3 lbs. macerated. The placenta had shrunk to about ⅙ of its normal size, and was bloodless. The uterus was displaced to the left by the sac which appeared to be partly formed by the left tube. As much of the sac as possible was removed, and the cavity obliterated by sutures, and the abdomen drained above and below.

The post-operative convalescence was uneventful.

General death rate of Hong Kong from all causes. The general mortality rate for all classes, and nationalities was 15.14 per thousand (1930). This rate is not a true index of the health of the Colony, because (according to the Medical & Sanitary Report 1930) "the desire of the Chinese to expire in their native towns or villages in in the midst of their relations and the consequent exodus of many who feel death approaching, the number of deaths recorded is considerably lower than would be the case had all who contracted disease here remained until the end."

Table No. I.—*STATISTICS OF MATERNITY DEPARTMENT.*

Nature and number of cases treated:	*T.Y.H.*	*G.C.H.*
Total admissions	1384	590
Total deliveries	1292	549
Multiparae	828	384
Primiparae	464	165
Presentation:		
Vertex normal rotation	1243	515
V. 1	788	296
V. 2	394	210
V. 3	17	7
V. 4	44	2
Vertex face to pubes	5	10
Face	1	1
Breach	30	24
Transverse	3	2
Twins	10	3
Miscarriage	7	7
Hæmorrhages:		
Placenta Praevia	7	6
Post Partum	26	15 (second'y)
Accidental	3	6



The Great Hall and Main Building, Hong Kong University.

Abnormalities:		
Prolapse of hand	1	1
Hydramios	1	1
Eclampsia	2	5
Hydatidiform mole	2	—
Albuminuria:		
Slight to moderate	242	54
Considerable	8	5
X-Ray Diagnosis	—	2
Operations:		
Suture of perineal lacerations:—		
Complete	—	2
Incomplete	215	109
Multiparae	37	12
Primiparae	178	99
Suture of Cervical lacerations	—	4
Forceps	30	15
Destructive Operations on Foetus	1	2
Bipolar version	7	8
Internal version	2	—
Manual Removal of Placenta	5	1
Caesarean Section	2	—
Table No. I.	*T.Y.H.*	*G.C.H.*
Laparotomy for Extrauterine pregnancy	—	2
Accidental Complications:		
Puerperal Ulcer	8	1
Dysentery	2	—
Asthma	1	—
Beri-beri	2	1
Epilespsy	1	—
Puerperal Insanity & Septicaemia	2	—
Septicaemia	—	1
Enlarged spleen	1	—
Bony Ankylosis	—	1
Haematoma of vulva	—	1
Strangulated Hernia Male infant	—	1
Intra-uterine strangulation of foetus	—	1
Congenital abnormality	—	1
Leprosy	—	1
Mitral disease, Exophthalmic Goitre with symptoms	—	1
Influenza and Bronchitis	—	1

Pleurisy	—	1
Pneumonia	—	1
Dengue fever	—	1
Dyspnoea and Hypostatic pneumonia	—	1
Mitral Regurgitation	—	1
Cracked nipple	—	1
Scabies	1	—
Hookworms	2	—
Phthisis	1	—
Cystitis	1	—
Breast abscess	1	—
Malaria	1	—
Morbidity, B.M.A. Standard:		
Average, one in	33.1	21.2
Percentage	3%	4.7%
Mortality:		
Total	2	4
Average, one in	646	137
Percentage	.15%	.73%
Left Hospital Against Advice	428	5

Table No. II.—*INFANT STATISTICS.*

	T.Y.H.	*G.C.H.*
Total Births	1285	542
Alive	1243	530
Dead:—	49	25
Premature	5	8
Full Term	21	9
Macerated	23	8
Children born alive who died in hospital	18	8
Abnormalities:		
Hare lip and cleft palate	2	—
Hare lip	1	1
Double hare lip	1	—
Ulceration of eyelids	1	—
Ascites	—	2
Club foot	—	1
Complications:		
Ophthalmia Neonatorum	4	1
Melaena	—	1
Cerebral Haemorrhage	2	2
Cephal Haematoma	1	—
Hypospadias	—	1
Anencephalus	1	—

Table No. III. *Pelvic Presentation.*

Para	Total	Dead Children	Remarks
G. C. H.			
Primiparæ.	6	——	Extended legs 3 cases
Multiparæ.	18	Full term 2 Miscarriage 1 Premature 6 Macerated 1	Placenta praevia 5 „ Foetal ascites 1 case
T. Y. H.			
Primiparæ.	9		
Multiparæ.	21	Premature 5 Full term 2 Macerated 3	Prolapse of uterus 1 case Induction of labour (Phthisis) 1 „ Placenta praevia 1 „ Delayed 2nd stage 1 „

Table No. IV.

Placenta Praevia.

Name	Age	Para	Variety	Period of Pregnancy	Presentation	Result to Mother	Result to Child	Remarks
G. C. H.								
L. K. (206)	30	9	Central	37 weeks	Breech	A.	D.	2 fingers os. Bipolar version.
L. L. Y. (275)	21	1	Marginal	32 weeks	Vertex	A.	D.	Patient was brought in by ambulance in a moribund state with a history of hæmorrhage, and extremely pale. Treated for shock. On vaginal examination os was found fully dilated, hand presenting low and placenta marginal.
L. W. (303)	23	3	Central	26 weeks	Breech	A.	A.	2 finger os. Bipolar version ¼ c.c. pituitrin given. 26 weeks foetus extracted alive—lived for a few hours.
U. S. C. (349)	29	5	Marginal	35 weeks	Breech	A.	A.	2 fingers os. Bipolar version live infant. Patient came in with a history of bleeding. Placenta was felt close to the internal os. Vertex was presenting. Foot brought down.
T. N. (351)	31	8	Marginal	28 weeks	Breech	A.	A.	Admitted with ruptured membranes. Transverse pres. 4 finger os. Bipolar version, ¼ c.c. pituitrin injected, premature live infant extracted.
Lakila. (400)	33	6	Central	28 weeks	Vertex	A.	D.	Hæmorrhage for 2 days before admission. 2 finger os. Bipolar version. ¼ c.c. pituitrin injected.

Table No. IV. *Placenta Praevia.—(Continued).*

Name	Age	Para	Variety	Period of Pregnancy	Presentation	Result to Mother	Result to Child	Remarks.
T. Y. H. F. Y. M. (335)	39	7	Lateral	36 weeks	Vextex	A.	D.	Os admits whole hand. Edge of placenta felt near internal os. Bipolar version. P.P.H. Uterus plugged. Breast saline 2 pts. given.
T. S. L. (374)	23	3	Marginal	32 weeks	Breech	A.	D.	Placenta praevia diagnosed. Bipolar Version.
Y. Y. (514)	21	2	Central	27 weeks	Transverse	A.	D.	Prolapse of right hand. Membranes ruptured Os dilated. Bipolar Version. Spontaneous still-birth, pulse 140. Marked anæmia.
C. H. (42)	39	10	Central	Full term	Vextex	A.	D.	Bleeding for 3 days before admission. Bipolar Version. Os admits 2 fingers. P.P.H. Uterus plugged.
L. K. Y. (742)	24	2	Central	32 weeks	Breech	A.	D.	Had Hæmorrhage two days before admission Os dilated to about 2 fingers. Head presenting. Bipolar version.
S. M. (930)	20	1	Lateral	Full term	—	A.	D.	Spontaneous, delivery P.P.H. Uterus not very hard. *Treatment* Uterus plugged. Breast saline 2 pts. Camphor and Ernutin injected.
W. K. (299)	20	1	Lateral	34 weeks	Vextex	A.	A.	Hæmorrhage for 4 days before admission. On admission os dilated to 2 fingers. Membranes intact. Bipolar version: saline 2 pints.

Table No. V.

Accidental Haemorrhage.

Nsme	Age	Para	Period	Variety	Result to Mother	Result to Child	Presentation	Remarks.
G.C.H.								
L. C. S. (5)	33	8	36 Weeks	Concealed & Revealed	A.	A.	Vertex 1	Forceps applied. Live infant extracted. P.P.H. hot vaginal and intrauterine douche given. Cervix stitched.
A. K. K. (30)	26	2	37 Weeks	Revealed	A.	A.	Vertex 2	Pain started at 12.15 p.m. bleeding at 4.15 p.m. pain was not so severe. Bleeding was stopped by plugging. ⅓ of placenta covered by old blood clots.
M. S. (317)	27	3	33 Weeks	Revealed	A.	A.	Vertex 1	Admitted with history of sanious discharge. On admission bright hæmorrhage—in labour, urine clear. No placenta felt. Membranes ruptured and binders applied. ¼ of placenta covered with blood clots.
W. S. (354)	35	4	Term	Concealed & Revealed	A.	A.	Vertex 2	Bleeding in the first stage of labour. 2 inj. of ¼ c.c. pituitrin given at intervals. Membranes ruptured high up. Bleeding stopped.
Y. S. M. (378)	25	2	39 Weeks	Revealed	D.	D.	Vertex 1	Admitted with history of slight hæmorrhage, normal delivery in hospital with slight hæmorrhage in the 2nd and 3rd stage. 2nd day after delivery, rise of temperature and pulse. Stimulants given 4th day temperature and pulse normal. Sudden heart attack and died in ½ hr. pt. had weak heart and marked anæmia. Heart failure from myocarditis.
L. N. (424)	24	2	35 Weeks	Concealed	A.	A.	Vertex 1	Pt. started labour on the 26th at 9 a.m., in good health, no history of hæmorrhage or fainting attacks. Live child delivered normally in 3rd stage, huge blood clots the size of 2 fists was expelled. Placenta was found to have an impression less than ⅓ caused by blood clots.

Table No. V. *Accidental Haemorrhage.—(Continued).*

Name	Age	Para	Period	Variety	Result to Mother	Result to Child	Presentation	Remarks.
T.Y.H.								
K. M. (987)	32	8	8 months	Concealed	A.	D.	Vertex 3	Patient brought in. in a collapsed condition—pulse very feeble limbs cold. Abdomen tense. Os 2 fingers dilated. Treatment Breast saline, membranes ruptured, Pituitrin and morphia injected. Baby born at noon Large blood clots followed the placenta. Pituitrin 1 c.c. injected. Patient bled again and was suffering from shock. Uterus and vagina plugged. Restoratives given.
T. D. (1157)	40	6	8 months	Revealed	A.	D.	Vertex 1	Profuse hæmorrhage before admission. Os dilated to 2 fingers. Membranes artificially ruptured. ¼ c.c. pituitrin injected. Large blood clots followel the delivery of placenta.
Y. P. T. (1104)	40	5	Full term	Revealed	A.	D.	Vertex 4	Os size of a dollar. Membranes artificially ruptured. Pituitrin ¼ c.c. was given.

Table No. VII.

Application of Forceps.

INDICATIONS	Number of Case		Result to Mother				Result to Child				REMARKS
			Recovery		Dead		Recovery		Dead		
	T.Y.H.	G.H.C.	T.Y.H.	G.C.H.	T.Y.H.	G.C.H.	T.Y.H.	G.C.H.	T.Y.H.	G.C.H.	G. C. H.
Delayed Second Stage	27	10	27	10	—	—	26	9	—	1	1. Nervous patient ½ gr. morphia and repeated. 2. Congenital abnormality. Septum of ant. vag. wall connecting the cervix to vagina, delaying dilatation of os and delivery (Foetal distress). 3. Due to contraction of pelvic outlet (Transverse 3½) Foetal distress marked moulding of head and caput. 4. Large infant.
											T. Y. H.
Eclampsia	1	2	1	2	—	—	1	2	—	—	1. Puerperal ulcers (3 cases). 2. Manual removal of placenta with loss of blood during 3rd stage (2 cases).
Flattened pelvis	—	1	—	1	—	—	—	2	—	—	In labour for 22 hrs. head not fixed. Case X-rayed No. 342. Membranes ruptured, head fixed. High forceps applied(live female infant extracted. Tear of vag. and perineum.
Concealed and Revealed Accidental Hæmorrhage	—	2	—	2	—	—	—	2	—	—	Albumen +. Normal delivery of a live infant-feeble. Torn cervix stitched.
P. O. P.	1	—	1	—	—	—	—	—	1	—	No foetal heart sound heard.
Albuminuria and Rapid pulse	1	—	1	—	—	—	1	—	—	—	

Table No. IX.

Number of Pregnancy of Patients in whom Forceps were applied.

PARA.	**Number of Forceps Cases.**		
	T.Y.H.	*G.C.H.*	*Grand Total.*
1	27	9	36
2	2	1	3
3	—	3	3
4 and over	1	2	3
Total	30	15	45

Age of Patients in whom Forceps were applied.

AGE.	**Number of Forceps Cases.**		
	T.Y.H.	*G.C.H.*	*Grand Total.*
17—25	18	5	23
26—30	8	4	12
31—35	3	5	8
36 and over	1	1	2
Total	30	15	45

Table No. X.

Destructive Operation of the Foetus.

Name	Age	Para	Indication	Operation.	Remarks.
G. C. H. M. Y.	22	1	Disproportion between head and pelvis. Obstructed labour, os ½ dilated. No fœtal heart sound heard.	Craniotomy.	Crainotomy under general anæsthesia; torn perineum repaired, I.U.D. given. Patient had one slight fit, a few minutes later, had another severe fit, artificial respiration was performed. Eclampsia treatment was given.
C. W. S.	33	7	Fœtal ascites obstructing labour.	Perforation of abdomen.	Patient admitted from another hospital with the child born up to the axilla with both hands and head presenting outside the vulra. Infant's kidney and intestines absent. Mother had general œdema albumen +++
T. Y. H. W. K.	26	2	Theatened rupture of uterus, neglected shoulder presentation.	Decapitation.	On admission the os was fully dilated with prolapse of cord and arm. Bandls ring high uterus in tonic contraction—threatened rupture of uterus.

Table No. XI.

Morbidity, B.M.A. Standard.

	MAY		JUNE		JULY		AUGUST		SEPTEMBER		OCTOBER		NOVEMBER	
	T.Y.H.	G.C.H.	T.Y.H.	G.C.H.	T.Y.H.	G.C.H.	T.Y.H.	G.C.H.	T.Y.H.	G.C.H.	T.Y.H.	G.C.H.	T.Y.H.	G.C.H.
Total Deliveries..	86	33	95	46	126	49	122	46	116	51	136	45	144	70
Cases Morbid.....	3	1	5	3	3	—	5	6	5	2	3	1	1	2

	DECEMBER		JANUARY		FEBRUARY		MARCH		APRIL		TOTAL		GRAND TOTAL
	T.Y.H.	G.C.H.	T.Y H.	G.C.H.	T.Y.H.	G.C.H.	T.Y.H.	G.C.H.	T.Y.H.	G.C.H.	T.Y.H.	G.C.H.	
Total Deliveries..	104	49	142	49	74	31	77	36	90	44	1292	549	1841
Cases Morbid.....	1	1	3	3	3	2	3	1	6	4	4	26	67

	G.C.H.	T.Y.H.	GRAND TOTAL
Total number of morbid cases..	39	26	67
Total average morbidity	23.1	21.1	28.3
Total percentage morbidity	3%	4.7%	3.5%

Table No. XII.

Comparative Morbidity in Primiparae and Multiparae.

Primiparae	MAY		JUNE		JULY		AUGUST		SEPTEMBER		OCTOBER		NOVEMBER	
	T.Y.H.	G.C.H.	T.Y.H.	G.C.H.	T.Y.H.	G.C.H.	T.Y.H.	G.C.H.	T.Y.H.	G.C.H.	T.Y.H.	G.C.H.	T.Y.H.	G.C.H.
Total Deliveries..	32	9	25	12	40	18	40	18	38	13	62	15	53	19
Cases Morbid.....	2	1	3	2	1	—	4	5	1	1	3	1	—	3

Primiparae	DECEMBER		JANUARY		FEBRUARY		MARCH		APRIL		TOTAL		GRAND TOTAL
	T.Y.H.	G.C.H.	T.Y.H.	G.C.H.	T.Y.H.	G.C.H.	T.Y.H.	G.C.H.	T.Y.H.	G.C.H.	T.Y.H.	G.C.H.	
Total Deliveries..	35	21	45	11	30	8	39	13	37	9	466	165	631
Cases Morbid.....	—	1	1	2	1	1	2	1	5	2	23	20	43

	T.Y.H.	G.C.H.	GRAND TOTAL
Total average morbidity primiparae .. .. one in ..	20·2	8.2	14.6
Total percentage morbidity primiparae	4.9%	1.2%	6.8%

Table No. XII.—(*Continued*)

Comparative Morbidity in Primiparae and Multiparae.

Multiparae	MAY		JUNE		JULY		AUGUST		SEPTEMBER		OCTOBER		NOVEMBER	
	T.Y.H.	G.C.H.	T.Y.H.	G.C.H.	T.Y.H.	G.C.H.	T.Y.H.	G.C.H.	T.Y.H.	G.C.H.	T.Y.H.	G.C.H.	T.Y.H.	G.C.H.
Total Deliveries.	54	24	70	34	86	31	82	28	78	38	74	30	91	51
Cases Morbid.....	1	—	2	1	2	—	1	1	4	1	—	—	1	—

Multiparae	DECEMBER		JANUARY		FEBRUARY		MARCH		APRIL		TOTAL		GRAND TOTAL
	T.Y.H.	G.C.H.	T.Y.H.	G.C.H.	T.Y.H.	G.C.H.	T.Y.H.	G.C.H.	T.Y.H.	G.C.H.	T.Y.H.	G.C.H.	
Total Deliveries..	69	29	77	38	41	23	48	23	53	35	826	384	1210
Cases Morbid.....	1	—	—	1	2	1	1	—	2	2	16	7	23

	T.Y.H.	G.C.H.	GRAND TOTAL
Total average Morbidity multiparae .. .. one in ..	51.6	54.6	52.6
Total percentage Morbidity multiparae	1.9%	1.8%	1.9%

Table No. VIII.

Extra-genital causes of Morbidity.

	T.Y.H.	*G.C.H.*
Dengue fever	—	1
Influenza and bronchitis	—	1
Pneumonia	—	3
Cracked nipple	—	1
Hydramios	1	—
Puerperal ulcers	3	—
Puerperal Insanity	2	—
Phthisis	1	—

Table No. XIV. *Laparotomy for Extra-Uterine Pregnancy (Full term).*

Name	Age	Para	Nature of Operation	Indication	When Performed	Result to Mother	Result to Child	Remarks	Date
G. C. H.									
C. A. C. 352	30	2	Laparotomy.	Extra-uterine pregnancy. Full Term.	Term.	Died	Alive 4 lbs.	Died on the 12th day following operation. Peritonitis due to intestinal leak.	5-12-30
L. M.	38	1	Laparotomy.	Pregnancy. Extra uterins	46 weeks?	Alive	Dead. Macerated.	Foetus weighed 3 lbs. 6 oz.	23-9-30

Table No. XV.

Caesarean Section.

Name	Age	Para	Nature of Operation	Indication	When Performed	Result to Mother	Result to Child	Remarks	Date
T. Y. H. (430)	41	3	Coesarean section.	Stricture of vagina due to 1st labour.	3-6-30	Alive	Alive	The 1st labour took place in the country. The 2nd labour, a caesarean section in the Tsan Yuk Hospital because of stricture of Vagina. This is the 3rd labour caesarean section done on admission. Full term baby. Mother and child well on discharge.	3-6-30
W. T.	37	7	Caesarean section. extra peritoneal.	Vagina narrowed by scar. There is a large Urethro-Vaginal fistula.	On Adimission	Alive	Died	Brought in by a Government midwife from an outlying island. Had been in labour for 2 days. Membranes ruptured 10 hrs. before admission. On admission hand prolapsed into the Vagina History of previous pregnancy:— 1. Preg. 5 months. Miscarriage. 2. Full term baby lived some years. 3. Difficult labour, foetus extracted by hook. 4. Miscarriage. 5. ,, 6. ,,	10-1-31

Table No. XVI.

Eclampsia.

Name	Admitted	Age	Para	Condition on Admission	Urins	Number of Fits			Treatment	Result to		Remarks	Period of Pregnancy
						Before labour	During labour	After labour		Mother	Child		
G.C.H.													
M. Y. (64)	10-6-30	22	1	Obstructed labour. Os ½ dilated.	+	2	—	—	Oxygen—5 oz. mist B.B. per rectum. Rectal ether 1 oz. morphia gr. ⅙. B.B. 5 oz. per os.	A.	D.	Maternal distress. Disproportion between head and pelvis. Perforation and craniotomy done. Had 2 fits. After treatment no further fits. 8th day normal puerperim. 9th day rise of temperature with rigor — Hot vaginal douche and salicylates given. Uterus high lochia normal.	Term
Y. P. M. (339)	16-11-30	28	1	Patient had a fit, and was morbid.	++	9	—	2	Forceps applied under ether.	A.	A.	During pregnancy at the fifth month patient had typhoid. In the 7th month had nephritis.	39 weeks
T. K. (340)	17-18-30	17	1	In a comotose condition.	++	9	—	—	Routine treatment	A.	A.	Patient had 9 fits at home with a pulse rate 146 and temperature 103°. Patent had to be treated with scopolomine and morphia. — Spontaneous delivery 3rd day after delivery, rigor, and parotid abscess-incised. Transferred to Gynaecology ward on the 10th day for dressings and ear-syringing. Breast abscess, incised and drainage.	37 weeks

Table No. XVI.

Eclampsia.

Name	Admission	Age	Para	Condition on Admission	Urine	Number of Fits			Treatment	Result to		Remarks	Period of Pregnancy
						Before Labour	After Labour	During Labour		Mother	Child		
G.C.H. C. Y. (420)	19-1-31	21	1		+++	—	—	—	Uterus douched and plugged. Injection of pituitrin 1 c.c. given, ergot. Uterus plugged.	A.	A.	Secondary post-partum haemorrhage, on the 8th day after delivery.	Term
Maito (470)	23-2-31	30	3	Os dilated membranes intact.	++	7	—	1	Routine treatment Vagina & Uterus were plugged. Pituitrin 1 c.c. given. Ernutin 6 c.c. Saline 1 pint 2 ozs. under-breasts. Foot of bed raised and patient treated for shock.	A.	A.	*Twins.* Patient had one fit lasting 4 minutes, 2nd fit lasting 2 minutes. Placenta expressed. Cervix torn on left side.	39 weeks
T.Y.H. L. Y. S. (1233)	7-12-30	22	1	Brought in unconscious	++	4	—	—	Rectal washout, oil ether 1 oz. paraldehyde 1 oz.	R.	D.	Patient remained quiet for 6 days, but was not quite clear mentally. There was blood in the urine. Died on the 7th day after labour Acute mania, dilated heart.	Term
C. Y. L. (642)	28-7-30	22	1	Brought in unconscious Os fully dilated.	+++	2	—	—	Rectal ether 1½ oz. Stomach and rectum washed out.	A.	A.	Patient had fits at home. Had morphia given by outside doctor.	Term

Table No. XVII. *Operative Cases showing Morbidity.*

Name of Operation	Number		No. of Mobidity		Percentage		Average		Remarks
	T.Y.H.	G.C.H	T.Y.H.	G.C.H.	T.Y.H.	G.C.H.	T.Y.H.	G.C.H.	
Forceps	30	15	5	4	16·6%	27%	1 in 6	1 in 3·8	**T. Y. H.** 2 cases had puerperal ulcer. One case had oedema. One case had hookworms. **G. C. H.** One case sepsis treated. One case eclampia.
Suture of Perineal Laceration.	215	111	10	2	47%	18%	1 in 21·5	1 in 55·5	
Suture of Cervical Laceration.	—	4	—	1	—	25%	—	1 in 4	
Bipolar Version.	7	8	1	1	14·2%	12½%	1 in 7	1 in 8	**T. Y. H.** Sent in with a plug in vagina. No visible haemorrhage. Had P.P.H. uterus plugged. **G. C. H.** Admitted with a temperature 99 and pulse 138 of very slow tension. Face and whole body was pale. On vaginal examination os was found fully dilated. Head presenting low and placenta at the margin.
Manual Removal of Placenta.	5	—	1	—	20%	—	1 in 5	—	Delayed 3rd stage with haemorrhage. Uterus plugged. Hookworms eggs found in faeces. Treated with oil of chenopodium (1½ c.c.).
Induction of Labour.	1	—	1	—	10·0%	—	1 in 1	—	Camphor and Ernutin injected.

Table No. XVIII.

Duration of Stay in Hospital of Morbid Cases.

	T.Y.H.		G.C.H.	
Less than 10 days 28	cases including	1 death.	14 cases including	2 deaths.
10 to 19 days 10	—		12	—
20 to 29 days 1	—		—	—
—	—		—	—
Total 39	1		26	2
—	—		—	—

Table No. XIX

Duration of Temperature.

	T.Y.H.		G.C.H.	
Less than 5 days 38	cases including	1 death.	23 cases including	— death.
5 to 9 days 1	—		2	1
10 to 19 days .....—	—		1	1
—	—		—	—
Total 39	1		26	2
—	—		—	—

Table No. XX.

Highest Temperature Charted.

	T.Y.H.		G.C.H.	
Below 100 .....—	cases including	— death.	— cases including	— death.
100 to 100.9 3	—		4	—
101 to 101.9 15	—		10	1
102 to 102.9 11	—		9	—
Over 103 10	1		3	1
—	—		—	—
Total 39	1		26	2
—	—		—	—

Table No. XXI. *Mortality.*

Name	Age	Para	Admitted	Delivered	Died	Cause of Death	Remarks
T.Y.H.							
K. S. (950)	19	1	9-10-30	11-10-30	15-10-30	Puerperal Insanity and Septicaemia.	Liquor amnii very offensive (before delivery). The smell persisted for 3 days. Patient was insane the day after delivery. Morphia gr. ⅙. Hyoscine gr. 1/100 injected. 15.10.30. On examination on the 4th day very foul discharge seen coming out of the uterus. Puerperal ulcer was also present. Patient was unconscious, restorative given. Patient died that night.
L. Y. S.	22	1	7-12-30	7-12-30	14-12-30	Acute Mania. Dilated	Patient had 3 fits before admission, brought in unconscious Had one fit after almission. Eclampsia was treated. Patient remained quiet for 6 days, but was not quite clear mentally. There was blood in the urine and probably there was cerebral haemorrhage. Died on the 7th day after labour.
G.C.H.							
L. C. (342)	21	1	3-12-30	3-12-30	5-12-30	Pulmonary Embolism?	Normal premature delivery. Heart attack on third day and died.

Table No. XXI. *Mortality.*

Name	Age	Para	Admitted	Delivered	Died	Cause of Death	Remarks
G.C.H.							
T. L. (173)	21	1	28-8-30	29-8-30	10-9-30	Puerperal sepsis.	Ten days before admission patient was examined by a handiwoman, and again 4 days before delivery. Admitted with a temperature and pulse. Dry tongue and lips, had several rigors during and after the 3rd stage, repeated rigors and mental the next day. Patient grew worse and deliverious at times, and died on the 13th day. Post Mortem Findings. Abscesses in uterine musculature. Abscesses in right broad ligament. Right perinephric abscesses. Minute abscesses in liver.
L. O. (176)	22	2	31-8-30	31-8-30	3-9-30	Hypostatic Congestion of both lungs.	History of illsess for 6 months, general oedema, puffy face and myocardial degeneration. In spite of digitalis and strychnine patient died on the 3rd day.
C. A. C. (352)	30	2	3-12-30		17-12-30		Full term extra-uterine pregnancy. Peritonitis due to intestinal leak.
Y. S. M. (378)	25	2	24-12-30	25-12-30	28-12-30	Heartfailure from myocarditis.	Almitted with history of slight haemorrhage. Normal delivery. Slight bleeding on 2nd and 3rd. Stages. 2nd day after delivery rise of temp and pulse. Stimulants given. 4th day with normal temperature and pulse. Sudden heart attack and died ½ hour. Patient had weak heart and marked anaemia.

Table No. XXII.

Indiction of Labour with Stomach Tube.

	T.Y.H.	*G.C.H.*
Number of cases successful	1	1
Total number of cases	1	1

Twilight sleep. Refer to No. 545.

	T.Y.H.	*G.C.H.*
Total number of cases	—	1
Successful	—	1

Table No. XXIII.

Duration of Stay in Hospital.

	T.Y.H.	*G.C.H.*
Total number	1292	549
From 3 to 5 days	.54%	.91%
6 to 8 days	90.2%	89.27%
9 or more days	9.3%	89.27%

Table No. XXIV.

Wassermann.

	T.Y.H.	*G.C.H.*
Total taken	—	545
Number of positive cases	—	13
Number of negative cases	—	532

GYNÆCOLOGICAL REPORT.

During the year there were 304 admissions to the wards (206 to the Tsan Yuk, and 98 to the Government Hospital). The total number of operation was 196.

Our Clinic is in urgent need of Radium for the treatment of Malignant disease, which is very prevalent among the Chinese community. Many patients could be persuaded to come into hospital for radium treatment, who would not consent to operation.

Our thanks are due to Dr. Montgomery, and the Board of Governors of the Matilda Hospital for their courtesy in lending us some of their radium whenever it is not in use. Owing to their generosity we have been able to treat a few patients for whom under other circumstances nothing could have been done.

Ovarian Cysts.

There were 19 cases of New Growths of Ovary, five of these were malignant. Of the five malignant tumours, two proved to be inoperable. There were no deaths. In one case a cyst contained pus from which a pure culture of streptococci was obtained.

With regard to many parts of Asia, it must be pointed out that women of the lower classes only submit to operation when all forms of native quack medicine have been tried without avail. The consequences are that when the patients come to hospital the cysts are usually in a much more advanced stage than is commonly seen in Europe, many of the benign cysts are densely adherent, and in some cases the new growth reaches enormous proportions.

Benign Cysts that are larger than an 8 months pregnancy are usually exposed through a small abdominal incision, and then removed, after tapping, in preference to making an incision from the pubes to the ensiform cartilage. I was very glad to see that Professor Beckwith Whitehouse was in favour of tapping this type of cyst, because my views on the subject were criticised in a recent review.

When dealing with the very large, and densely adherent benign cyst, we find that it is often easier to tap it first, and then draw the cyst wall inch by inch up into the wound, tying off and dividing the adhesions as they appear; rather than to attempt to separate the adhesions while the cyst is still intact.

Myomata.

In the case of myomata, as in ovarian cysts, patients postpone coming to hospital as long as possible. This explains the reason why many surgeons working in the East are rather anxious when operating in these cases. The patients, when they ultimately reach hospital, are anaemic and debilitated, and altogether poor operative risks.

During the year there were six cases of uterine myomata. in four, the tumour were removed by subtotal hysterectomy, there was one vaginal myomectomy. There were no deaths.

In one case the tumour was impacted in the pelvis causing pressure symptoms. The largest tumour removed was the size of a football.

Prolapse.

There were 18 cases of uterine prolapse, in eight cases the uterus had completely descended (procidentia). There was no mortality. In most cases of procidentia, especially when the patient is under 40 years of age, we perform the operation of Vaginal Suspension of the uterus, approximately as described by Cullen, together with shortening of Mackenrodt's ligaments by Alexandroff's method. Some of our patients have returned to us and been easily delivered of live babies. Cases of incomplete prolapse are treated according as the physical signs suggest. Most of our prolapse patients are women who work very hard, either coolies who carry heavy loads, or boat women who toil at the oar for many hours each day—therefore an operation calculated to give strong support is indicated.

Extra Uterine Pregnancy.

There were in all nine cases of Extra-Uterine pregnancy, all of whom were operated upon. In four of these cases the operation was undertaken for pelvic hamatocele. There were no deaths.

Chorionepithelioma.

There was one case of chorionepithelioma which occurred as a sequal to an hydatidiform mole. Total Hysterectomy was performed.

Table No. I.

Statistics of Gynaecological Department.

	T.Y.H.	*G.C.H.*
Number of admissions	206	98
Number of operations	76	93

Table No. II.

Nature and Number of Operations.

	T.Y.H.	*G.C.H*
Vulva :—		
Bartholin Cyst	1	1
Hymen—plastic operation	1	—
Perineum :—		
Perinaeorrhaphy	1	7
Perinaeorrhaphy for complete tear	1	—
Bladder :—		
Fistula	1	—

Urethra :—		
Abscess	1	—
Caruncle, excision of	1	1
Calculus	—	1
Fistula	1	—
Plastic operation	1	—
Vagina :		
Atresia of vagina	1	—
Uterus :—		
Curettage	29	11
Prolapse	10	8
Ventro-suspension (abdominal)	1	11
Hysterectomy (subtotal)	—	5
Hysterectomy (Total)	2	—
Abortion	—	6
Myomectomy	-	2
Cervix :—		
Trachelorrhaphy	1	1
Amputation	2	1
Myoma removal of	2	—
Polypus	—	2
Dilatition	—	1
Inflation of tube	3	1
Tubes and Ovaries :—	*T.Y.H.*	*G.C.H.*
Marsupialization of Cyst	—	2
Ovariotomy	4	15
Salpingectomy	—	4
Salpingostomy	—	3
Inflation with curettage	2	—
Extra-uterine gestation	7	2
Oophrectomy	1	—
Miscellaneous :—		
Excision of inguinal glands	1	—
Exploratory Laparotomy	1	1
Ascites	1	1
Inguinal adenitis	—	1
Shortening of round ligaments	—	1
Removal of tissue for section	—	1
Excision of a cancerous ulcer on perineum	1	—
Carcinoma of cervix treated with Surgical Diathermy and Radium	—	2

Table No. III.

Nature and Number of Cases Treated Without Operations.

	T.Y.H.	*G.C.H.*
Refused operation	33	1

Pregnancy with abdominal pain	3	—
Pregnancy with asthma	1	—
Pregnancy with coryza	1	—
Pregnancy with oedema	1	—
Pregnancy with fever	1	—
Pregnancy with leucorrhoea	1	—
Pregnancy with gonorrhoea	1	—
Vulvitis	8	1
Carcinoma of cervix	9	4
Threatened miscarriage	—	1
Abortion	—	1
Ovarian cyst	1	—
Ovarian cyst with kidney tumour	1	—
Inoperable carcinoma of vaginal wall	—	1
Appendicular abscess	—	1
Prolapse	—	1
Puerperal sepsis	—	1
Retroversion (pessary)	3	—
Retroversion and salpingitis	9	—
Salpingitis	3	4
Gonorrhoea	19	1
Pernicious vomiting	—	1
Cystitis	3	—
Erosion of cervix	8	—
Laceration of cervix	5	—
Endometritis	1	—
Colic	1	—
Puerperal ulcer	3	—
	T.Y.H.	*G.C.H.*
Perinaeorrhaphy, after treatment of	1	—
Threatened abortion	1	—
Infantile uterus	1	—
Gumma	1	—
Leucorrhoea	1	—
Metrorrhagia	1	—
Ulceration of legs	1	—
Pelvic cellulitis	1	—
Beri-beri	2	—
Urethral caruncle	1	—
Subinvolution	1	—
Gastritis	1	—
Syphilis	1	—
Retroversion with heart disease	1	—
Cirrhosis of liver	1	—
Vesical calculus	1	—

Table No. IV. *Hysterectomy.*

No.	Name	Age	Date	Disease	Operation	Result	Remarks
	G.C.H.						
134	Y. C. Y.	30	16-4-30	Uterine Fibroid	Subtotal Hysterectomy	Recovery	Interstitial fibroid becoming submucous. Weight of tumour 6 lbs.
139	H. Y.	46	19-5-30	(Uterine Fibroid) Fibromyoma	Subtotal Hysterectomy	Recovery	Tumour size of a football.
203	M. S.	49	3-12-30	Uterine Fibroid	Subtotal Hysterectomy	Recovery	Uterus enlarged to size of foetal head. Tumour impacted in pelvis, uterine arteries distorted by irregular growth of tumour.
225	Y. K.	44	25-2-31	Uterine Fibroid	Subtotal Hysterectomy	Recovery	Mucous membrane is thickened, shows hyperplasia of glandular elements. Underlying muscle shows a good deal of interstitial fibrosis as well as several small collections of encapsulated fibrous tissue. Hyperplastic glandular endometritis and intramuscular fibroids.

Table No. IV. *Hysterectomy.—(Continued)*

No.	Name	Age	Date	Disease	Operation	Result	Remarks
	T.Y.H.						
78	A. L.	39	22-5-30	Hydatid mole undergone Malignant change	Hysterectomy	Recovery	Uterus shows invasion with a chorionepithelial growth.
70	L. P. H.	35	15-5-30	Cancer of cervix	Schauta's Vaginal Hysterectomy	Recovery	Tissue shows in one part infitttration with a growth of the columnar cell tpye. An ulcerating patch in vaginal vault size of a dollar.
257	C. I.	48	19-3-31	Myoma	Sub-total Hysterectomy	Recovery	Uterus enlarged to the size of 6 months pregnancy Hard swelling. Tumour weighing 3¾ lbs. Omentum adherent to top of tumour and tumour itself was very vascular. Much oozing during operation.

Table No. V. *Miscellaneous Operations.*

No.	Name	Age	Date	Disease	Operation	Result	Remarks
	G.C.H.						
144	L. S.	45	11-6-30	Submucous polypi and urethral caruncle	Removal of polypi. Excision of caruncle	Recovery	A lump of size of hen's egg hanging down into vagina. Caruncle at orifice of urethra.
234	T. A. H.	18	17-4-31	Urethral calculus	The stone was dislodged from urethra into bladder. It was then crushed. Some fragments are taken out by forceps and others evacuated	Recovery	Patient still complains of incontinuance of urine at night, due to the fact that the urethra had been dilated by the stone.
158	L. C.	29	14-7-30	Myoma	Myomectomy a single fibroid was evacuated with difficulty. Sac was partially excised	Recovery	Fibroid size of large foetal head. Both ovaries cystic.
159	L. H.	45	14-7-30	Myoma	Tumour was twisted off its pedicle and uterus curetted and plugged	Recovery	Tumour size of a small hen's egg.

Table No. V.—*(Continued)* *Miscellaneous Operations.*—*(Continued)*

No.	Name	Age	Date	Disease	Operation	Result	Remarks
	G.C.H.						
192	I. K.	28	3-11-30	Fixed Retroverted Uterus	Left hydrosalpinx size of an orange excised. Left haematoma of ovary, size of a walnut-partial excision. Right eystic ovary and enlarged tube, size of an orange-excised.	Recovery	Omentum adherent to pelvic structures.
193	T. Y. C.	25	3-11-30	Small retroverted Uterus	Uterus freely movable, replaced and suspended. No tube thickening	Recovery	——

Table No. VI. *Ovariotomy.*

No.	Name	Age	Date	Disease	Operation	Result	Remarks
	G. C. H.						
147	L. H.	36	16-6-30	Malignant Ovarian cyst	Double ovariotomy. Larger cyst contained 12½ pints of fluid.	Recovery	Asymmetrical swellings size of a full term pregnancy.
148	T. K.	47	18-6-30	Ovarian cyst	Ovariotomy	Recovery	Cyst size of a football. Tapped and mucous fluid evacuated. Cyst delivered through incision. Found to be right ovarian cyst with caecum and appendix adherent near the pedicle.
149	C. B. S.	62	23-6-30	Ovarion cyst	Ovariotomy	Recovery	Cyst delivered whole about size of a football.
152	N. Y. M.	39	30-6-30	Ovarion cyst	Ovariotomy	Recovery	Tumour size of a large football and freely movable. Fluid evacuated 1½ pints.
153	L. T.	21	30-6-30	Ovarion cyst	Ovariotomy	Recovery	Cyst tapped quantity 8 pints. Multilocular cyst. Chocolate coloured fluid.
154	F. T. H.	28	7-7-30	Ovarian cyst	Ovariotomy	Recovery	Cyst was multilocular.

Table No. VI.—*(Continued)* *Ovariotomy.*

No.	Name	Age	Date	Disease	Operation	Result	Remarks
163	F. L.	55	29-7-30	Papillary cystadenoma	Ovariotomy.	Recovery	Cyst size of a large football. Anterior surface of cyst wall firmly adherent to anterior abdominal wall.
184	W. W. C.	51	29-7-30	Double ovarian cysts	Ovariotomy.	Recovery	Left sided ovarian cyst size of two fists. Right ovarian cyst size of a foetal head impacted in the pelvis.
190	I. S. F.	31	20-10-30	Double ovarian cysts	Ovariotomy.	Recovery	Left ovarian cyst size of a foetal head. Right cyst was broad ligament cyst.
216	C. Y. S.	22	19-1-31	Suppurating ovarian cyst Adherent	" Marsupialisation " Drainage of ovarian cyst	Recovery	Typhoid. Cystic swelling of the size of a small football, densely adherent. Contents of cyst purulent-pure streptococcus.
222	T. K. H.	35	2-2-30	Ovarian cyst cystic papilloma	Exploratory Loparotomy	Inoperable	Malignant cyst—advanced.
227	T. K.	31	30-3-31	Ovarion cyst	Ovariotomy	Recovery	Ovarian cyst of right side removed, 9 pints of cystic fluid withdrawn. A small ovarian cyst about size of a thumb on left side also removed.

Table No. VI.—*(Continued)* *Ovariotomy.*

No.	Name	Age	Date	Disease	Operation	Result	Remarks
77	T. Y. H. C. S.	33	21-5-30	Broad ligament cyst	Tubo-ovarian cyst of right-side excised, left ovary partially excised. Uterus ventrally suspended	Recovery	Tumour size of 2 fists.
211	A. T.	39	2-12-30	Uterus displaced to the left	Ovariotomy	Recovery	Cyst size of 7 months pregnancy.
220	C. Y. S.	23	9-12-30	Uterus displaced to the left	Ovariotomy	Recovery	Cyst size of full term pregnancy. Cyst tapped. Fluid content 9 pts. 12 oz., weight of solid part of tumour: 6 lbs. 8 oz.
265	T. K.	36	16-4-31	Ovarian Cyst.	Ovariotomy	Recovery	Cyst size of full term pregnancy Cyst weighs 3 lbs. Fluid content 10¼ pints.

Table No. VI.—(*Continued*) *Ovariotomy.*

No.	Name	Age	Date	Disease	Operation	Result	Remarks
29	K. L.	37	10-4-31	Ovarian cyst Papilloma Malignant	Ovariotomy	Recovery	Free fluid in abdominal cavity. Ovarian cyst, loculi of various sizes, from the size of fist to foetal head, attached to one another. Omentum was adherent to cyst. One loop of intestine, appendix, and part of bladder were also adherent to cysts.
236	C. A. S.	32	25-4-31	Ovarian cyst Papilliferous cyst	Exploratory Laparotomy	Inoperable	Abdomen occupied by a tumour of the size of full term pregnancy. Free straw-coloured fluid evacuated.
160	C. A. F.	37	21-7-30	Multilocular cyst adenoma	Ovariotomy	Recovery	Cyst tapped. Omentum adherent to upper pole of cyst with varicose condition of the veins. Colour of fluid evacuated was thick chocolate.

Table No. VII. *Salpingectomy and Oopherectomy.*

No.	Name	Age	Date	Disease	Operation	Result	Remarks
	G. C. H.						
156	*N. M.*	**27**	**14-7-30**	Salpingitis	Uterus adherent to rectum and Pouch of Douglas by bands of adhesions, freed, uterus suspended by fundus and round ligaments.	Recovery	An ovarian cyst size of large hen's egg was removed. Adhesions to the right tube and ovary separated, and the fimbria opening enlarged. Right ovary not removed.
176	T. P. M.	**25**	**10-9-30**	Salpingitis	Resection of right cystic ovary which was ruptured. Right hydrosalpinx. Left thickened tube and left haematoma of the ovary removed.	Recovery	Right cystic ovary about size of a fist and left ovarian cyst about the size of an orange.
202	L. P. Y.	**21**	**24-11-30**	Salpingitis	Right cystic ovary partially excised Uterus suspended.	Recovery	
205	W. S.	**25**	**17-12-30**	Chronic Salpingitis	Uterus, ventral suspension.	Recovery	

Table No. VIII.

Prolapse.

No.	Name	Date	Age	Disease	Operation	Result
162	**G.C.H.** C. T.	28-7-30	37	Procidentia Erosion, laceration, and Supra-vaginal hypertrophy of cervix.	Complete prolapse operation performed with vaginal ventral-suspension.	Recovery
157	T. K.	14-7-30	23	Procidentia	Patient had bad heart condition. Complete prolapse operation performed with vaginal ventral suspension.	Recovery
171	C. K.	25-8-30	35	Prolapse of uterus. Procidentia.	Complete prolapse operation, vaginal ventral suspension; perinacorrhaphy.	Recovery
186	S. A. S.	13-10-30	24	Complete prolapse of uterus. Procidentia.	Complete prolapse operation performed with. Vaginal ventral-suspension.	Recovery
198	C. K.	17-11-30	57	Incomplete prolapse with cystocele.	Triangular flap from anterior vaginal wall removed bladder pushed up and a purse string stitched under pubic arch. Shortening of Mackentodt's ligament.	Recovery
211	N. I.	19-12-30	38	Prolapse with cervical hypertrophy.	Anterior Colporrhaphy; Shortening of Mackenrodt's Ligaments; Amputation of cervix; Reconstruction of cervix and perinaerrhaphy.	Recovery
224	M. C.	25-2-31	60	Complete prolapse of uterus.	Dilatation and complete prolapse operation done.	Recovery
235	L. A. L.	20-4-31	35	Prolapse of uterus. In complete.	Triangular flap was taken off the anterior vaginal wall. Mackenrodt's ligaments were shortened; Amputation of cervix; Reconstruction; Colpo-perinaeorrhaphy.	Recovery
103	**T.Y.H.** A. N. P.	26-6-30	26	Prolapse erosion of cervix Retroversion	Schroeder's amputation of the cervix. Shortening of Mackenrodt's ligaments and perinaeorrphaphy.	Recovery

Table No. VIII.—*(Continued)* *Prolapse.*—*(Continued)*

No.	Name	Date	Age	Disease	Operation	Result
128	**T.Y.H.** L. T. Y.	26-6-30	34	Retroverted uterus, lacerated cervix, slight prolapse, rectocele and cystocele.	Anterior Colporrhaphy. Vaginal ventral suspension. Shortening of Mackenrodt's ligaments. Colpoperinaeorrhaphy.	Recovered
143	K. H.	21-8-30	34	Procidentia.	Complete prolapse operation performed. No vaginal ventral suspension owing to adhesion to the bladder.	Recovered
144	W. K.	21-8-30	32	Prolapse of uterus. Incomplete.	Anterior Colporrhaphy. Shortening of Mac's ligaments, and Colpo-perinaerrhaphy.	Recovered
179	C. C.	30-10-30	39	Procidentia Supra-vaginal hypertrophy of cervix, indurated ulcer of ant. lip.	Supra-vaginal amputation of cervix, shortening of Mackenrodt's ligaments Anterior-colporrhaphy.	Recovered
210	F. H.	2-12-30	28	Procidentia.	Anterior-colporrhaphy, Amputation of cervix. Shortening of Mackenrodt's ligaments.	Recovered
213	C. P. K.	3-11-30	24	Prolapse.	Ventral suspension and repair of perinaeum.	Recovered
228	C. Y. M.	6-1-31	30	Small movable uterus cystocele and Rectocele.	Anterior Colporrhaphy Perinaeorrhaphy.	Recovered
248	T. C.	10-2-30	39	Slight Prolapse Small tumour projecting from the cervix.	Shortening of Mackenrodt's ligaments. Amputation of cervix and tumour.	Recovery
254	C. N. M.	12-3-31	23	Uterus retroverted and somewhat prolapsed. Slight cystocele.	Anterior colporrhaphy and perinaeorrhaphy.	Recovery

Table No. IX. *Puerperal Sepsis Cases Admitted to Hospital After Delivery.*

No.	Name	Age	Admitted	Died	Diagnosis	Treatment	Remarks
	G.C.H.						
212	H. L. S.	34	2-1-31	Recovered	Puerperal sepsis	Uterine culture takes and intrauterine douche given Antistreptococcal serum 40 c.c. intramuscularly. Widal on 2 occasions negative. Glycerine injected into uterus on alterate days 40 c.c.	Fever and rigor for 4 days after normal delivery of a full term infant.

Table No. X *Extrauterine Pregnancy.*

No.	Name	Age	Date	Disease	Operation	Result	Remarks
200	G. C. H. W. M. C.	31	21-11-30	Left pregnant tube, rupture.	Laparotomy	Recovery	Uterus deflected to the right, a cystic tumour size of an orange can be felt on the left side of uterus, it also partly occupied the post fornix. Rupture occurred later.
231	L. K.	40	12-4-31	Left tube pregnant. Aborted Pelvic Haematocele.	Dark red blood and clots of various sizes removed from abdomen. Pregnant tube removed.	Recovery	Uterus anteposed and elevated by a swelling occupying the posterior fornix about the size of 2 fists.

Table No. X.—*(Continued)* *Extrauterine Pregnancy.*

No.	Name	Age	Date	Disease	Operation	Result	Remarks
	T.Y.H.						
82	S. A. N.	28	27-5-30	Ruptured Extrauterine pregnancy.	Left ovary and tube excised. Uterus suspended.	Recovered	Preliminary examination. Tender lump size of a fist in left lateral fornix.
84	W. W. F.	32	3-6-30	Ruptured left Extrauterine pregnancy Pelvie Haematocele.	Right cystic ovary and left ruptured extrauterine pregnancy excised. Blood clot quantity size of mug evacuated.	Recovered	Right cystic ovary size of a fist. Blood clot in the Pouch of Douglas.
88	W. H.	27	31-5-30	Right ruptured extrauterine pregnancy Pelvie Haematocele.	Right ruptured tube and sac was excised. Blood clot quantity ½ a mug was removed.	Recovered	Right ectopic pregnancy, haematoccele size of a fist.
98	L. F.	33	21-6-30	Ruptured Extrauterine pregnancy Pelvic Haematocele.	Pelvic haematocele covered by uterus omentum and sigmoid. Blood clot about the size of a foetal head evacuated. Left ruptured tube excised.	Recovered	Tumour in lower abdomen reaching up to the level of umbilicus. Uterus displaced forwards.

Table No. X.—*(Continued)* *Extrauterine Pregnancy.—(Continued)*

No.	Name	Age	Date	Disease	Operation	Result	Remarks
	T.Y.H.						
122	W. S. M.	28	21-7-30	Extrauterine pregnancy Tubal abortion	Right pregnant tube and ovarian cyst on rt. side excised. Pelvic haematocele in Pouch of Douglas	Recovered	Ovarian cyst on right side about size of a fist. Pregnant tube size of 2 thumbs. Uterus displaced upwards and to the left.
218	Y. W. H.	38	9-2-30	Extrauterine Pregnancy ruptured.	Free blood and blood clots in the pelvis. Pregnancy was in ampular end. Pregnant tube was ruptured, tube excised.	Recovered	And Preliminary examination. Uterus resting on extrauterine pregnancy left side size of a hen's egg.
231	V	29	7-1-31	Extrauterine Pregnancy.	Unruptured extrauterine pregnancy left side excised.	Recovered	Normal uterus. Right tube thickened.

CASES FOR DIAGNOSIS.

(In the August number 1931, we published three clinical cases for diagnosis. We are very pleased to be able to record that quite a large number of solutions were submitted and have much pleasure in printing below the solutions for which the prize of $50 has been awarded. We take this opportunity of congratulating Mr. Lim Gim Kheang who won this competition and also the other students who sent in solutions which all attained a very creditable standard.—Ed.)

SOLUTIONS.

By Lim Gim Kheang.

CASE (A).

A Chinese gentleman, 52 years of age, somewhat fat and without previous history of diarrhœa or abdominal trouble was stretching his arms at 10 o'clock one morning when he was suddenly seized with a pain in the epigastric region. (He had slept well the previous night and his bowels had opened naturally in the early morning). He took breakfast—a single bowl of rice. The pain became gradually worse. He took some Chinese medicine and vomited. At 3 p.m. he was seen by his doctor. He was then in a very collapsed state and was given a quarter of a grain of morphia, from which he had no relief. By the evening he had not vomited again but the pain was very bad and then was felt to be worse in the left side. Pain was also felt in the back. The urine was distinctly high coloured and contained a trace of albumin. The abdomen was distended but not very rigid. The pulse was ninety per minute. The patient was not anæmic; some degree of cyanosis was noted. There were no abnormal physical signs in the chest. The hernial orifices were normal. There was some result from an enema.

SOLUTION TO CASE (A).

The symptoms referable to disease situated within the abdominal cavity are necessarily of a wide and varied kind, but there are only three which are sufficiently constant to be regarded as cardinal symptoms, namely:—

(1) Abdominal pain (2) Generalised enlargement (3) Localised tumour.

In this case, of course, the cardinal symptom is sudden abdominal pain accompanied by collapse. We will now proceed to balance the evidence for and against all possible causes, and then arrive at our diagnosis by the process of excluding those which the disease least resembles. At most a diagnosis is a strong probability.

Diseases which may cause sudden epigastric pain with collapse are: Diaphragmatic Pleurisy or a Basal-pneumonia.

This condition may well simulate appendicitis, peritonitis, or even both together, by giving rise to acute epigastric or iliac pains, and to abdominal rigidity, and to other symptoms of acute peritonitis, which can only be differentiated by the pulse-respiration ratio. We can exclude this condition because:—

(1) No respiration rate (which would be disturbed) is given.

(2) No abnormal physical signs in the chest were found, though, curiously enough, there may be none even in the diaphragmatic pleurisy.

Rupture of a Cyst or Organ or an Abscess.

There is no history to point to a sub-phrenic abscess which might rupture; neither is there a history of dysentery to make us suspect an amœbic abscess, for the patient was "without previous history of diarrhœa or abdominal trouble."

If it were a perforated gastric or duodenal ulcer, there would be a characteristic history of previous symptoms of some kind. The onset in this case is far too dramatic for any ulcer. Furthermore the abdomen would be very rigid and possibly a disappearance of liver dulness due to escaped gas. Age is against gastric ulcer. A pancreatic cyst would cause a tense, fluctuating and deep-seated tumour.

General Peritonitis.

Sudden epigastric pain may suggest acute appendicitis as the cause of the general peritonitis, but the ultimate location of the pain to the left side and to the back is rather against appendicitis. We would expect a very rigid abdomen, thoracic respiration, increasing vomiting, constipation and a rising pulse in general peritonitis.

The Colics.

The colics are very seldom accompanied by a "very collapsed state," but severe pain itself will cause a certain amount of prostration.

Biliary colic:—The pain usually ceases as suddenly as it commenced when stone passes on or slips back. Recurrent attacks are common. Vomiting at first is bilious, and then whitish.

Renal colic:—The pain frequently shoots down to the thigh and the testicle of the same side. Frequency of micturition is a common symptom.

Intestinal Colic:—Either pressure or morphia would give relief. The pain is characteristically twisting and paroxysmal.

Acute Intestinal Obstruction.

Here the vomiting is persistent and characteristic. The early vomiting of acute intestinal obstruction is associated with nausea,

straining and eructations. At first the vomited matter consists of gastric contents, but as time goes on it becomes green and bilious and finally fæcal.

There will be absolute constipation and probably we will get no result from an enema.

According to Sherren, the symptoms of intestinal obstruction which are clear and obvious, can all be made to disappear by the administration of slightly large doses of opium, without changing the gravity of the condition, or preventing the progress of the case to a fatal termination. Our poor patient had no relief from gr. ¼ of morphia.

Embolism of Mesenteric or Splenic Arteries.

The cause of embolism which in most cases is endocarditis is usually present.

In the splenic type, pain would be referred to splenic area.

Gastralgia.

The pain here is severe, periodic and relieved rather than aggravated by food as the case before us. "He took . . . . a single bowl of rice. Pain became worse." Gastralgia is rare, but is equally real.

Acute Adrenalitis.

This condition is rare.

It oftens resembles Acute Pancreatitis which we will discuss. There will be some sympathetic smyptoms in Acute Adrenalitis.

Thus far we have been able to exclude every possibility which can give rise to acute epigastric pain with collapse, except our diagnosis of

Acute Pancreatitis for the following reasons:—

(1) A middle-aged adult i.e., 35—55 years, but may occur at any age. The age of our patient 52 is just when Acute Pancreatitis is most common.

(2) Sex is again in favour of our diagnosis because the proportion of male: female = 2: 1.

(3) Fat. A "somewhat fat" man is what we would expect to be a victim of this disease.

(4) Onset is sudden and within one hour or two of a meal. The history of our case is rather ambiguous as to when the patient took breakfast before or after 10 a.m. It can be either. In the ordinary course of things a Chinese gentlemen takes breakfast at 9 a.m. so we will assume it is so in this case. Thus pain comes on one hour after a meal.

(5) Stretching out his arms may have nothing to do with the onset of pain; on the other hand it may just be the immediate cause of it. In so doing he might have dislodged a pancreatic calculus, and in that way lighted up the attack of pancreatitis.

Intestinal hæmorrhage may occur in alcoholics who account for 25% of the cases. I rather suspect a "fat Chinese gentleman 52 years of age" to be a bit of an alcoholic. Again, stretching out of the arms as late as 10 a.m. certainly shows some hunger for air which is a symptom if pancreatic insufficiency.

(6) Acute agonising pain even unrelieved by morphia is another feature of acute pancreatitis. Our patient too had no relief from gr. ¼ morphia. We have already seen that if it were acute intestinal obstruction or colic, a dose of morphia would clear up the symptoms.

(7) Site of initial pain. According to Carless, symptoms vary much, but the attack usually starts with acute epgiastric pain in his case.

(8) The pain soon becomes more excruciating. "The pain became gradually worse.

(9) Boring, deep pain in the middle over the lumber spine: this symptom is almost constant as observed by Prof. Digby. "Pain was also felt in the back."

(10) Associated with the pain there is some rigidity, and rapid abdominal distension and collapse. All these were observed in case (A).

(11) Cyanosis. This is characteristic, but may also sometimes be present to a slighter extent in other upper abdominal lesions e.g., subphrenic abscess. Cyanosis is due to:—

a. toxic blood state

b. some hephatic derangement

c. circulation is poor. Bernard says that in acute pancreatitis the pulse is extraordinarily weak compared with other symptoms.

(12) Albuminuria is also very constantly present. Albuminuria with highly colourel (scanty), urine, points to simple acute congestion of the kidneys.

(13) Constipation. Hence the need of an enema. Diarrhœa is very rarely present in acute pancreatitis.

(14) Sherren from his cases, shows that an enema always produces a result in acute pancreatitis.

Remarks.—Our diagnosis of Acute Pancreatitis seems to fit in perfectly with the clinical picture, history and symptoms given. The only thing which calls for comment is the apparently slow pulse of 90 per minute in such an acute abdomen, because in collapse the patient is prostrated with weakness, and he is anxious and restless, *the pulse is rapid,* small and thready, and the temperature subnormal. The pulse of case (A) if anything at all is slightly low for an acute abdomen. Nevertheless we have to bear in mind that 90 per minute may be a rapid pulse for a person whose normal pulse is well below the average 72, say 55 per minute.

Not unfrequently we find vomiting in a case of acute pancreatitis. The history of case (A) sounds as if it was the Chinese medicine that caused the vomiting. It might not be the case, for the patient might be on the point of vomiting when the Chinese medicine was administered.

CASE (B).

A young man between 20 and 30 years of age, who had previously enjoyed good health except for a few weeks of fever four years before, attended his father's funeral. On his return from the funeral he felt some uneasiness in the right iliac fossa and then experienced a severe rigor lasting for half an hour. Four more rigors followed during the night, and then one rigor occurred each day for the following nine days. The uneasiness in the right iliac fossa which persisted for two more days, on the third day of the illness amounted to pain, but from the fourth to the 8th day of the illness all pain vanished. On the 9th day about tiffen time, the pain returned, but this time it was higher up beneath the costal margin and was especially noticed when the patient took a deep breath. During this ten day illness the patient had never vomited except after Chinese medicine. The bowels had acted normally every day, but the motions were black possibly due to some ingredient in the Chinese medicines. He had suffered from occasional headaches, and his food had consised of sweet potatoes, macaroni and such like.

On the tenth day the temperature was 103° and the pulse 144 per minute but a strong beat. The abdomen was supple and moved well on respiration. Beneath the right costal margin there was a slight sense of resistance and tenderness on palpation. The area of splenic dullness was increased but the spleen was not palpable. There was no jaundice and the urine was free from bile though highly coloured. When blood was squeezed into the end of a finger the nail appeared red and slightly cyanosed.

SOLUTION TO CASE (B).

This case is interesting in that it presents three sets of main symptoms, which are more or less in a chronological order though slightly overlapping one another, viz :—

(1) " uneasiness in the right iliac fossa . . . . which on the third day of the illness amounted to pain."

(2) Rigors—five on the 1st day and one each for the following nine days.

(3) Return of pain, but this time higher up beneath the right costal margin.

The above picture if classified in this way, points quite clearly to the cause of mischief being in the right iliac region, following which there was a series of rigors due to pyæmia, and resulting in the formation of subphrenic abscess. Further, we have strong reasons to suspect the source of trouble as being an attack of appendicitis resulting in abscess.

Reasons for diagnosing Appendicitis Abscess.

(1) Age of the patient is usually between 15—30 years. Rare in both the aged and the very young. Patient's age is " between 20—30 years."

(2) The supervention of subphrenic abscess, the two great causes of which are (1) appendicitis, (2) gastric ulcer. We can safely exclude the latter as presenting none of the cardinal symptoms of gastric perforation. Lack of any previous gastric trouble in the history, the rigors, and the mild uneasiness in the right iliac forsa are enough to cut out gastric ulcer from our consideration. This leaves us with appendicitis as the primary cause—this diagnosis is borne out again by

(3) Uneasiness and subsequent pain in the right iliac region. This together with occasional headaches before, so well simulates my own case that I cannot help speaking from painful experience :—It began with a few days of occasional headaches. After that I felt uneasiness in the right iliac region, which became painful on the next day. By the 3rd day the pain was most severe, and operation revealed an attack of general peritonitis following performation of the appendix. Appendicular abscess usually begins with uneasiness which amounts to pain on the 3rd or 4th day when the abscess is well formed. The fact that patient was previously well is no point against our own diagnosis, for I too, before the attack had good health, so much so that I did not know the taste of Ol. Ricini or Mag. Suph. until after the operation.

(4) Sex is again in our favour for two men are affected to every woman. Male : Females = 2 : 1. Our patient is a young *man.*

(5) The disease is usually ushered in by rigors. The initial rigor followed by subsequent rise of temperature is characteristic (Carless). This is just what happened in our case.

(6) Anything that lowers the resistance of the body e.g. infectious diseases or chills. It was most likely for case (B) to have got chills after attending his father's funeral (we assume he is Chinese because he used Chinese medicine) for to attend a Chinese funeral is no easy thing expecially if it be the son. The son has to walk, oft-times with barefeet and certainly with barehead, for miles to the cemetery and back again, in the hot son or in the cold bleak weather. Again, patient might have never recovered fully from his few weeks of fever 4 years ago.

We will now proceed to state our

Reasons for Diagnosing Pyæmia.

Having satisfied ourselves that it was appendicitis that began the illness, it will not be hard for us to diagnose pyæmia following, in characteristic history of rigors like this. Though the initial rigor is easily explained by the appendicular abscess, yet the four rigors which occurred in the first night and the one rigor in each of nine successive days call for further explanation. We can best do this by referring to the causes of rigors.

Apart from malaria, septic infection in any form, is the sole cause of rigors supervening in the course of an illness of any kind. We can thus with confidence suspect abscess or pent up pus somewhere. Before the days of the thermometer, the doctor used to rely upon shivering and sweating as an infallible indication of formation of pus. The following will cause rigors :—

1. Pyæmia.
2. Occurrence of Septic Emboli.
3. Ulceration of the Appendix.
4. Sub-phrenic Abscess.
5. Empyema following pleurisy.
6. Pneumonia.

We can quickly dispense with the last two which are chest conditions, not because the mischief could not be in the chest for lung conditions can be give rise to signs and symptoms confined to the abdomen, but because we take for granted the chest is alright for

1. No abnormal chest signs are mentioned in the history.
2. No respiration rate is given. This is of paramount importance in diagnosis of chest conditions for often the diagnosis depends on the pulse-respiration ratio.

This leaves us with the four remaining conditions which cause rigors, and I believe that in Case (B) all the four conditions are present, some to a greater and others to a lesser extent. They are pyæmia, septic emboli probably causing some degree of pylephlebitis, ulceration of the appendix and sub-phrenic abscess. The viens in the meso-appendix may become thrombosed and infected with pyogenic organisms; detachment of emboli may cause some pylephlebitis and pyæmia. Some micro-organisms are of such violence that they rapidly pass through the walls of the appendix in the peritoneal cavity.

The first occurrence of pain which disappeared on the 4th day probably due to the appendicular abscess. The second onset of pain on the 9th day and at the right costal margin is probably caused by the formation of subphrenic abscess. The interval which is filled by the rigors is the period of pyæmia.

Reasons for Diagnosing Subphrenic Abscess.

(1) Age "a young man between 20 and 30 years."

The age incidence of 75 cases of subphrenic abscess in the London Hospital shows:—

0 – 10	10 – 20	20 – 30	30 – 40	40 – 50	50 – 60	60 – 70
6	5	29	15	13	6	1

The above curve, no doubt coincides with the age incidence of the two chief causes of sub-phrenic abscess, viz., appendicitis and gastric ulcer; either effects chiefly young people between 20 and 30 years old.

(2) Sex does not appear to excercise any great influence though the fact that male: female = 6: 4 is in favour of our diagnosis.

(3) Nature of onset and symptoms of sub-phrenic abscess (Sherren). In every case it is referred to the situation where the abscess forms. The onset of pain on the 9th day beneath the right costal margin, and especially after an attack of appendicitis and pyæmia, s almost diagnostic of a subphenic abscess. Again, the resistance and tenderness refers to subjacent inflammation and abscess.

Increase of splenic dullness signifies splenic engorgement which is almost invariably present in pyæmia, pylephlebitis and subphrenic abscess.

Once again, Chinese medicine is held responsible for the vomiting. There may be some emetic ingredients in the given drugs, but more likely, a patient with pyæmia is very apt to vomit and the slightest gastro-intestinal irritation by drugs or anything else is enough to provoke emesis.

Black motions were also said to be due to some ingredients in Chinese medicine, and so most probably they were. If it were Malæna, it would want profuse hæmorrhage, say from the appendix, to cause the stool to be black, but this is unlikely. Small hæmorrhages may, of course, occur. A highly coloured urine is only suspected in

1. Pyrexia
2. Toxic blood states—pyæmia
3. Some hepatic derangements.

(4) Pus tends to collect beneath the diaphragm. The reasons for this are:—*a.* the main cause is gravitation. As a patient lies flat upon his back in a bed, the posterior extremity of his sub-phrenic spaces are only separated from the mattress by the skin, ribs, and the diaphragm which together do not make up more than ½" of tissues. The pouch of Douglas or the recto-vesical pouch in the male, in a similar way are only separated by the skin and coccyx. Beween the two pouches the thick muscles with the kidneys rise as two mounds. Thus in peritoneal infections, pus tends to gravitate into the subphrenic and pelvic pouches.

b. suction action of the thorax.

Slight cyanosis in this case can be easily explained:—

1. The blood is toxic due to the pyæmia.
2. Subphrenic abscess and possible pylephlebitis to a little extent will cause some hepatic derangement.
3. There will be some compression and inflammation at the base of right lung and pleura, or even some dry pleurisy which explains the pain "especially noticed when patient takes a deep breath." Nearly all subphrenic infections pass readily to the pleura and lungs; it is very rare for the contrary to occur because *(i)* suction action of negative intra-thoracic pressure *(ii)* lymphatic flow is always ascending *(iii)* lymphatics are valved upwards.

The right anterior intraperitoneal variety of subphrenic abscess is nearly always caused by appendicitis. Case (B) presents symptoms of

this kind of abscess, with perhaps a slight degree of subhepatic inflammation.

Our diagnosis is thus, appendicitis leading to pyæmia with resultant right anterior intraperitoneal subphrenic abscess.

CASE (C).

This patient was an English girl 18 years of age, with no previous history of illness except for a "sprained" back at the age of 14. The was a rather thin girl, somewhat narrow chested and with bright red cheeks.

She was awakened on Sunday night with severe epigastric pain and vomiting. She had taken nothing likely to disagree with her on the Sunday except a single doubtful plum. She was admitted to hospital and remained under observation. During her first six days in hospital her temperature varied from normal in the morning to 99° or a little over in the evening. Her pulse on admission was 140 but fell in a day or two to round about 80. Her vomiting continued and was very persistent, and sometimes but not always bilious. She took little by the mouth and for some time received only glucose and sodium bicarbonate solution by the rectum. Yet she continued to vomit. The pain remained throughout the six days but was sometimes worse than at others. It was not relieved by heat. At the onset it had been bilious, but it soon settled in the right iliac fossa, to the right side of the umbilicus and in the left iliac fossa, but was greatest in the right iliac fossa. Tenderness and rigidity had the same distribution. It was noted at times when the patient was unawares that the rigidity was greatly diminished to gentle palpation. The abdomen was in no way distended. No tumour could be felt. No abnormal reflexes were present. The chest appeared normal on examination. The urine contained neither pus, albumin nor sugar but there was a large amount of acetone present and also phosphatic crystals.

On rectal examination the uterus was not tender, but the peritoncum on each side was very much so. Solid fæces were felt. The bowels were cleared occasionally with enemata. There were no ova nor parasites seen. The tongue throughout was red and clean, but after a few days faintly suggested a strawberry tongue.

The patient's menstruation had been irregular and scanty, but the last period 14 days previous to admission had been in no way irregular. There was a leucorrhœal discharge, showing bacilli but no gram negative cocci. The blood was taken on Tuesday and on Thursday. No malaria parasites were seen. The total whites on the first occasion were 7,600 per cu. mm. and on the second occasion 5,800. The differential accounts showed nearly 50% of lymphocytes.

SOLUTION TO CASE (C).

As in case (A), the only cardinal symptom on which we can rely upon as a guide to diagnosis is sudden abdominal pain. Neither generalised enlargement nor a localised tumour was present.

Vomiting apparently appears to be the chief symptom in this case but it is not much of a help in diagnosis because it is a fairly common accompaniment of all acute abdominal conditions, whether the stomach is involved in the lesion or not. Its causes may be rightly termed legion. Any reflex visceral irritation may bring it about.

Diseases which may cause sudden epigastric pain, without collapse.

1. *The colics.*

   Case (C) resembles none of the three colics so we will quickly dismiss them by stating the points against them.

   Intestinal colic:—Twisting, *paroxysmal* pain around umbilicus. Pain is relieved by pressure.

   Biliary colic:—Pain in right hypochondrium, shooting upwards to right shoulder. Jaundice soon intervenes usually at middle life.

   Renal colic:—Pain in loin shooting down to thigh and ovary of the same side. Hæmaturia and frequent micturition.

2. *Appendicitis.*

   may give rise to severe epigastric pain at the onset. Vomiting may follow and even continue for days. It also usually causes constipation. The white count showing lymphocytosis knocks out the possibility of appendicitis in which disease there is a most marked leucocytosis.

3. *Gastric Neuralgia.*

   The pain is severe, but periodic and relieved by food and by pressure. It is a rare condition.

4. *Tuberculous peritonitis.*

   This I think is our most probable diagnosis. The clinical picture of case (C) reveals a tuberculous patient.

Reasons in favour of Tuberculous peritonitis.

1. Age: nearly always young people. Case (C) is 18 years old.
2. Patients are delicate children. The clinical picture of a "rather thin girl, somewhat narrow chested and with bright red cheeks" is one which is typically tuberculous. Constitutional characteristics show there is a tuberculous diathesis.
3. According to Barnard, the symptoms of tuberculous peritonitis may be those of extensive peritonitis associated with intestinal

obstruction. There may be a sudden onset of severe abdominal pain, constant vomiting and constipation often resistant to purges and enemata. Case (C) is probably one of these cases. Her vomiting was persistent, sometimes bilious but never stercoraceous which is unlike that of intestinal obstruction. I believe in this case, if the vomiting was bilious it occurred when the stomach was empty—otherwise not bilious. There was also constipation for "hard fæces" were felt, thus the need for cleaning occasionally with enemata.

4. Pain and tenderness after the acute onset, were not very marked features except during subacute or acute exacerbations. "The pain remained throughout the six days but was sometimes worse than at others."

5. Emaciation and hectic fever i.e., normal morning temperature and an evening rise of 1° or 2° F. as in all active tuberculous processes.

"Her temperature varied from normal in the morning to 99° F. or a little over in the evening."

6. Tubercle is generally found elsewhere.

7. Dyspepsia or constipation

"solid fæces were felt"

"cleared occasionally with enemata"

8. Lymphocytosis of 50%.

9. Leucorrhœal discharge showing bacilli—they may be tubercle This tuberculous peritonitis is most probably of the adhesive type. Adhesion may not be extensive with the result that no matted omentum or intestines could be felt.

Tuberculous Salpingitis.—In addition to tuberculous peritonitis I diagnose the co-existence of tuberculous salpingitis. The points favouring the diagnosis are:—

1. Abdominal tenderness and pain in both the iliac fossæ but usually more on one side is very characteristic. "Settled in the right lliac fossa and in the left iliac fossa, but was greatest in the right iliac fossa."

2. Age: the disease may appear as early as 14 years of age. Patient was 18.

3. It is mostly primary, whilst tuberculous peritonitis is more often secondary. (Tottenham).

4. Tenderness in the peritoneum on each side of uterus.

5. Leucorrhœa showing bacilli. It is caused by an unhealthy condition of the mucous membrane of the *(i)* Fallopian tubes, *(ii)* uterus, or *(ii)* vagina. We are not told of anything abnormal

either in the vagina or the uterus so we will regard the leucorrhœa as being due to unhealthy Fallopian tubes.

The bacilli are probably tuberculous.

6. Salpingitis appears in 90% of all tuberculosis of the female genital tract.

No gram negative cocci of course excludes gonorrhœa.

Relations between tuberculous salpingitis and peritonitis

The onset of salpingitis is not so acute as the type of peritonitis case *(c)* had. There is no acceleration of pulse, no vomiting, no constipation, no peritoneal pulse, and these symptoms at all events are not very marked. This would make us think that peritonitis was the primary lesion leading to salpingitis since the onset had only peritoneal symptoms. On the other hand the salpingitis was most probably the primary lesion, but showed no symptoms until it lighted up peritonitis; and the symptoms of salpingitis only appeared after the acute onset of peritonitis. We have stronger reasons to believe that the tubes were the cause of the trouble for it is almost always primary. Why salpingitis is the most frequent of all tuberculous lesions in female genital tract, is because the tubes are so constructed and placed as to favour the stagnation of infective matter. It is an important clinical fact that tuberculous peritonitis in young girls in may instances is due to infection from the tubes, in consequence of the cœlomic ostia remaining unoccluded by caseous matter. It is seldom that the tubes are infected secondarily to tuberculous peritonitis, due to perforation of an ulcer of the intestine.

Acetone & Phosphatic crystals in the urine indicates the alkalinity of the urine.

Acetone bodies are brought about in acidosis a condition which is most probably induced in case (C) by the persistent vomiting of food and fluid, and the little intake by mouth of foodstuff. Although rectal glucose and Sod. Bicarbonate were given per rectum, they might not be enough to replace what was lost in the vomit and to make up for the very little intake.

The Tongue:—The denuded red and clean tongue is found in severe chronic ailments like tuberculosis. A slightly strawberry tongue may be caused by a prolonged period of pyrexia.

The blood in tuberculosis.—In a disease with such various manifestations and with such varying relationships between virulence of infection and the resistance of the body, we find great varieties in the blood in different cases and in different stages. As a rule, in an uncomplicated case, there is an increase of lymphocytes which may be balanced by a corresponding diminution in the number of polymorphs. As we only deal in diagnosis here, the only important diagnostic point is the absence of any increase of polymorphs which accompanies inflammation of the serous membrane due to other causes.

A PRELIMINARY REPORT ON INVESTIGATIONS INTO CERTAIN RACIAL CHARACTERISTICS OF THE NATIVES OF BRITISH NORTH BORNEO.

by

Lindsay T. Ride, Professor of Physiology, University of Hong Kong.

During the recent summer vacation (1931) a small expedition was undertaken with a view to investigating some of the racial physiological characteristics of the native tribes of British North Borneo. As just stated, the expedition was small, consisting of but two people from Hong Kong, Professor W. Faid, Professor of Physics in this University and the writer. During our stay in Borneo however, our numbers were increased by one, for we were fortunate in acquiring the services of an interpreter whose knowledge of the various languages, of the people themselves, their country and the conditions we were likely to encounter, brought an otherwise almost impossible task, well within the realms of possibility. This opportunity is therefore gladly taken of acknowledging, with grateful thanks, the assistance and loyalty of Peter.

Of necessity, this first attempt had to be undertaken more in the nature of a reconnaisance than anything else, for we, on our side were attempting to work under conditions of which we had had no previous experience, and amongst tribes with which we had had no previous dealings. On the other hand, the Government of British North Borneo were as ignorant of our exact needs as they were of the reaction our work would have on the native mind.

Nor was this latter point altogether negligible, for the native psychology is such that should a bad harvest or some epidemic follow while the memory of our visit was still green, the presence of two strange tuans with their pricking of fingers, examining of hair and foolish questioning as to parentage, etc., would certainly be blamed. We fervently hope that when " belattek " next reaches the position in the heavens that informs the native agriculturalist that sowing time is nigh the appropriate spirits will look with favour on the beautiful country of North Borneo and give them a plentiful harvest.

I should like here to record our expression of thanks to the Government of British North Borneo for the opportunity they gave us to carry out this work, and the manner in which their officers not only lavished hospitality on us, but spared no time, energy and effort to make our visit, as far as lay in their power, a success. And here one could not, with justice, omit to specially thank two people in particular; Mr. Smith, the Resident of the Interior, whose unselfish energy and help are entirely responsible for our successful results among the Muruts, and our safe though precipitated return from Keningau, and Mr. H. G. Keith, of the Forestry Department, our Sandakan host. His

personal knowledge of the country and its natives, his keen scientific outlook, and last but by no means least his cheery optimism, rendered his advice on all matters invaluable.

Aims of the Expedition.

The original aim of this work was to ascertain the distribution of the various human blood groups among Borneo tribes. The question of the heredity of these groups however, has assumed such importance of late, that it was decided to search for evidence on this point also. The method of approach was as follows. Details of such characters as are known, or thought to be, hereditary were noted along with the blood group of each individual, and as accurate a family history as possible was taken in each case. (These Borneo people do not know their family history as well as the Chinese do, but the Headman of each village was found to be a fairly reliable birth-and-death register, and apparently quite accurate. One interesting fact elicited was that the natives do not keep account of their ages and this can only be roughly ascertained by finding out how many times they had planted paddy and adding to that the number of times bad seasons or other causes had prevented them from planting). The occurrence of each observed characteristic in the various generations was then examined and compared with the occurrence of each of the other characteristics. If any parallelism could be found between the heredity of one characteristic and that of any entity helping to establish the blood group, then some definite facts concerning the latter could be established.

In addition to blood groups, the other characters of which record was made were (*a*) the distribution of papillary ridges on fingers and hands, (*b*) colour of eyes, (*c*) presence of eye fold, (*d*) presence of ear pits, (*e*) character of hair, (*f*) number and type of occipital hair whorls, (*g*) sriking, uncommon or unusual characters of features such as very broad nose, congenital contraction of fingers, etc. It soon became obvious however that statistics of characters (*b*), (*c*) and (*e*) were useless for our purposes, and hence discussion under these headings will be omitted from these papers.

Even on a small expedition such as this, the amount of data collected was very large, and time does not permit of arranging it all into one large report. It is therefore proposed to deal with all the information in a series of papers, each paper dealing with the completed findings on related characteristics. It is not intended however in this preliminary report to discuss the results at all fully, partly because the investigation is as yet, by no means completed, and partly because on some points the number of subjects examined is too small to admit of a general conclusion. It is hoped that the summer of 1932 will bring the opportunity of returning to complete this work, and then it is intended to submit a joint and detailed discussion on all the facts produced.

I

Study of the Distribution of Blood Groups amongst the Natives of British North Borneo.

Technique.—The technique employed was the open slide method. Standard sera of Groups A and B were obtained through the kindness of Dr. Richard Green, of the Research Institute, Kuala Lumpur. (Throughout this work the terminology of Bernstein will always be used, except in discussing heredity where it is sometimes less confusing to use numbers, and in those cases the classification of Jansky will be strictly adhered to; thus Group I=O, Group II=A, Group III=B and Group IV=AB.) With these sera, local Chinese were typed and a plentiful supply of sera was obtained from those who proved to belong to either Group A or Group B. Of these sera, only those which were found to be of a high titre were taken on the expedition.

Each glass slide was divided into two by a grease-pencil mark, and on the left hand side was placed a drop of Group A test serum, and on the right hand side the test serum of Group B. A minute drop of blood obtained by pricking the thumb was transferred by a small platinum loop to, and thoroughly mixed with, the left hand drop of test serum. The plantinum loop was then completely burnt off in the flame of a spirit lamp and a second sample of blood similarly mixed with the other drop of test serum. Blood was nearly always obtained from the thumb, but in the case of children, sometimes asleep and usually carried on the mother's back, the big toe was generally chosen. The glass slide was then repeatedly agitated and the result read either by the naked eye, or by means of a low-powered lens, any striking characters of the agglutination such as immediate, quick or slow clumping being recorded with the result. As each person came to be grouped he or she was given a catalogue number and information under headings (*a*) to (*g*) above was entered on printed forms.

Special mention must here be made concerning the tribal designation. If work such as this is to be of any anthropological value whatsoever, one must be absolutely certain that the subjects examined and catalogued as being of a certain tribe, really belong to the tribe in question. How then is membership of a tribe to be defined? For our purposes no person was entered as belonging to a certain bribe unless both the parents were known to belong to that tribe also. In many cases information concerning the grand-parents was also obtained, and if one of these four happened to be of another tribe, the members of that family were not entered as pure tribes folk. This point cannot be emphasised too strongly. Much of the blood-group data of the Chinese is useless for the very reason that this point is ignored, either in the collection of the data or in its publication.

Results.—In Tables I and II the results are set out, showing the number of both males and females as well as the total of each tribe examined, and their percentage distribution amongst the four groups.

TABLE I.

Name of Tribe	District	Sex	Number Tested	Group O		Group A		Group B		Group AB	
				Number	%	Number	%	Number	%	Number	%
Muruts	Putatan	Male	104	61	**58.7**	20	**19.2**	23	**22.1**	—	—
		Female	98	62	**63.3**	18	**18.4**	17	**17.4**	1	**.9**
		?	2	1		—		1		—	
		Total	204	124	**60.8**	38	**18.6**	41	**20.1**	1	**.5**
	Tuaran	Male	76	33	**43.4**	22	**38.9**	19	**25.0**	2	**2.6**
		Female	62	31	**50.0**	13	**21.0**	14	**22.6**	4	**6.4**
		Total	138	64	**46.4**	35	**25.4**	33	**23.9**	6	**4.3**
	Tambunan	Male	9	7		2		—		—	
		Female	2	2		—		—		—	
		Total	11	9		2		—		—	
	Ranau	Male	8	7		1		—		—	
		Female	6	4		—		2		—	
		Total	14	11		1		2		—	
	Tempassuk	Male	1	—		1		—		—	
	Combined Total		368	208	**56.5**	77	**20.9**	76	**20.7**	7	**1.9**

TABLE II.

Name of Tribe	District	Sex	Number Tested	Group O		Group A		Group B		Group AB	
				Number	%	Number	%	Number	%	Number	%
Dusuns	Keningau	Male	78	38	**48.7**	10	**12.8**	26	**33.3**	4	**5.1**
		Female	75	29	**38.7**	4	**5.3**	39	**52.0**	3	**4.0**
		Total	153	67	**43.8**	14	**9.2**	65	**42.5**	7	**4.6**
	Temogun	Male	117	60	**51.3**	18	**15.4**	39	**33.3**	0	—
		Female	90	39	**43.3**	15	**16.7**	33	**36.7**	3	**3.3**
		?	2	2							
		Total	209	101	**48.3**	33	**15.8**	72	**34.5**	3	**1.4**
	Peluan	All Male	9	5		1		3		0	
	Combined Total	Male	204	103	**50.3**	29	**14.2**	68	**33.3**	4	**2.0**
		Female	165	68	**41.2**	19	**11.5**	72	**43.6**	6	**3.6**
		?	2	2							
			371	173	**46.6**	48	**12.9**	140	**37.7**	10	**2.7**

Discussion.

Whether it is justified to draw conclusions from these samples, only later work can prove, but the smallness of the numbers examined makes it imperative to postpone, till a later date, a complete mathematical investigation of these results. In this respect it will be interesting to see to what extent future figures will bear out the impression that that the Dusuns and the Muruts have the separate and distinct blood pictures as follows:—

	O	A	B	AB
Dusuns	56.5%	20.9%	20.7%	1.9%
Muruts	46.6%	12.9%	37.7%	2.7%

II

Study of the Occipital Hair Whorls Amongst the Natives of British North Borneo.

The character, distribution and direction of the hair of animals has from time to time occupied the attention of many investigators. One of the most complete, critical and general studies of the hair of the lower animals is embodied in the publications of Kidd. Since the appearance of this book, this type of work seems to have interested only occasional investigators. It is not intended here to enter into any discussion on the cause or significance of hair whorls or to criticise any of the recent work on the causation of direction of hair tracts. It is hoped that such discussion will be embarked upon later, but at this stage it will be sufficient to place on record certain findings and conclusions.

If the hair of the scalp be examined, it will be noticed that its direction as it leaves the epidermis depends on two things (*a*) its anatomical position and (*b*) its proximity to a hair whorl.

(*a*) *Anatomical Position.*

Hair on the posterior and lateral aspects of the scalp invariably assumes a caudad direction, but that in the region of the vault of the scalp passes forwards towards the forehead with usually an inclination towards one side or the other, this inclination leading the hair of this region to merge imperceptibly into one of the two lateral streams mentioned above. This forward stream is usually found divided into two unequal parts by a 'parting.' (The direction of hair is always indicated by the direction from the root towards the free end).

(*b*) *Proximity to a Hair Whorl.*

The hair over the area near the occipital fontanelle is often seen to take up a direction much the same as that of the curved spokes of a wheel. The centre from which the hair seems to radiate is known as a 'hair whorl' and the hairs radiating from this whorl pass imperceptibly into the various hair streams mentioned in (*a*) above. This whorl, owing to its proximity to the occiput, is known as the occipital hair whorl and is found often in the mid-line, often on the right and

less often on the left. In tracing the hairs as they emerge from a whorl, one may be led centrifugally in either a clockwise or an anti-clockwise direction. In the former case the whorl is designated clockwise, and in the latter, anti-clockwise. (The profix ' anti ' was purposely chosen in preference to ' counter ' because in hurriedly taking notes in the field, one invariably uses contractions, and reading the notes months later, one is sometimes at a loss to know whether an undecipherable word beginning with C means clockwise or counter. This difficulty is accentuated when later the word ' centre ' was used to denote the position of the whorl).

Kidd (1) defines a whorl as follows, " A whorl consists of a group of hairs which, for some anatomical or dynamic reason, radiate from a central point and merge into the adjoining streams of hair in various ways." If one turns to a paper by Wood Jones (3) on the mid-dorsal hair whorl of man, one is immediately struck by the fact that none of the whorls depicted by that author fit in with Kidd's definition. This reason is not hard to find. It is that in man we have the remarkable occurrence of convergence of the lateral dorsal hair streams onto the mid-dorsal line, and therefore any whorl that exists in that region must of necsssity be a converging whorl and not radiating. It would be better therefore if the whorls were divided into (*a*) radiating and (*b*) converging, and a radiating whorl defined as consisting of a group of hairs which, for some anatomical or dynamic reason, radiate in curved lines from a central point and merge imperceptibly into the adjoining streams of hair. Similarly a converging whorl is formed when adjoining streams of hairs converge in curved lines onto a central point.

A further point of interest, but of no moment just at present, is that the area of the head that has a fixed and constant hair direction is the area generally immune from baldness. The area liable to be attacked by baldness is the area of variable direction of hair streams.

In the initial stages of this work, note was simply made in each case of the type of whorl, viz., clockwise or anti-clockwise. It soon became evident however that there was an interesting relationship between these types and their positions on the head with regard to the medial sagittal plane. As the investigations proceded therefore, note began to be made of the position as well as the type of the whorl.

Although in most cases such conditions as above described can be very readily demonstrated, in some cases a whorl cannot be found. In reading our records, one repeatedly comes across such entries opposite the whorl as " can't see," " can't find," or " didn't look." Perhaps those who have worked amongst natives will understand and sympathise with the last type of entry when they picture one being confronted by a not very enticing head belonging to a not very alluring female (whom even Gilbert would have to classify as definitely ' sufficiently decayed ') at the close of a long hot day's work in a stuffy over-

crowded native hut. No, one does not apologise for the " didn't look " entry. The other entries have more scientific explanations. One of course is baldness, but this is very rare amongst the natives. Another, and this applies especially along the coast where Chinese influence is marked, is the custom of shaving the head; but even here, unless the head has just been shaved, it is generally possible to form an accurate opinion as to the type and position of the whorl by using the fingers as well as the eyes. A third reason, and a common one, is the fact that long hair often tends to obscure the whorl and make it hard to find. Curiously enough however, long hair may make it remarkably easy, for if one takes hold of the bun, knot or plait and raises it slightly, just sufficiently to relieve the hair of its own weight, the whorl often reveals itself as if by magic. The last reason, and one which has not dawned till lately, is that there isn't any whorl to find. Lately the writer has had the opportunity of examining one or two short-haired heads which demonstrate this point. There is a centre of radiation of hair, but it is not a whorl, and may be more aptly termed a hair star. The hair radiates from the star as the straight spokes of a wheel radiate from the hub, and this type is therefore intermediate between the clockwise and anti-clockwise whorl. An excellent example of this is depicted in a paper by Osman Hill (2) illustrating the disposition of hair on the head of a Bonnet monkey of Ceylon.

Just as hair whorls may be radiating or converging so one can have radiating or convergent hair stars. For examples of the latter see the paper by Wood Jones (3) referred to above; p. 92 Case 2, and p. 94 Case 3 both show convergent hair stars in the sacral region. In view of all this, it is intended in further work on this subject to report as follows :—Presence of whorl or star, if the former, clockwise or anti-clockwise type, and its exact position on the scalp indicated by its relation to some fixed point such as the external occipital protuberance, such relationship being described by the clock nomenclature used by microscopists. A method such as this becomes all the more necessary when, as we shall see later one comes across cases of two and even three whorls on the same scalp.

Reference has been made above to the ' parting.' This is not a pure artefact. The position of the part is determined by the type of whorl and is independent of the position of the latter. If the whorl be clockwise the physiological parting is on the left between the left lateral cranio-caudad stream and the frontal stream, which latter, as seen above, must past forward and to the right to join imperceptibly the right parietal stream. Similarly the physiological parting on the scalp of a person with an anti-clockwise whorl is on the right. A true central parting is found when there are two whorls clockwise on the right and anti-clockwise on the left, or when there is a central radiating star.

RESULTS

TABLE III.

Name of Tribe	District	Sex	Number Tested	Clockwise		Anticlockwise		Double	
				Number	%	Number	%	Number	%
Dusuns	Putatan	Male	100	65	**65**	28	**28**	7	**7**
		Female	74	51	**68.9**	22	**29.7**	1	**1.4**
		?		2		—		—	
		Total	176	118	**67.0**	50	**28.4**	8	**4.6**
	Tuaran	Male	75	33	**44**	33	**44**	9	**12**
		Female	41	24	**58.5**	15	**36.6**	2	**4.9**
		Total	116	57	**49.1**	48	**41.4**	11	**9.5**
	Tambunan	Male	9	3		4		2	
		Female	1	0		1		0	
		Total	10	3		5		2	
	Ranau	Male	8	7		1		—	
		Female	3	2		1		—	
		Total	11	9		2		—	
	Combined Total	Male	192	108	**56.3**	66	**34.4**	18	**9.3**
		Female	119	77	**64.7**	39	**32.8**	3	**2.5**
		?	2	2		—			
			313	187	**59.7**	105	**33.5**	21	**6.8**

TABLE IV.

Name of Tribe	District	Sex	Number Tested	Clockwise		Anticlockwise		Double	
				Number	%	Number	%	Number	%
Muruts	Temogun	Male	116	67	**57.8**	35	**30.2**	14	**12.0**
		Female	67	43	**64.2**	15	**22.4**	9	**13.4**
			2	1		1		—	
		Total	185	111	**60.0**	51	**27.6**	23	**12.4**
	Peluan	Male	5	2		2		1	
		Female	0	0		0		0	
		Total	5	2		2		1	
	Keningau	Male	75	42	**56**	13	**17.3**	20	**28.7**
		Female	71	42	**59.2**	18	**25.4**	11	**25.4**
		Total	146	84	**57.5**	31	**21.2**	31	**21.2**
	Combined Total	Male	196	111	**56.6**	50	**25.5**	35	**17.9**
		Female	138	85	**61.6**	33	**23.9**	20	**14.5**
		?	2	1		1		0	
			336	197	**58.6**	84	**25.0**	55	**16.4**

TABLE V.

Name of Tribe	District	Sex	Number Tested	Clockwise						Anti-clokwise					
				left		centre		right		left		centre		right	
				No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Dusuns	Pututan	Male	55	7		20		10		1		11		6	
		Female	31	4		15		3		1		7		1	
		Total	86	11	**12.8**	35	**40.7**	13	**15.1**	2	**2.3**	18	**20.9**	7	**8.1**
	Tuaran	Male	65	12		17		3		10		13		10	
		Female	39	5		18		1		0		11		4	
		Total	104	17	**16.3**	35	**33.7**	4	**3.9**	10	**9.6**	24	**23.1**	14	**13.5**
	Tambunan	Male	7	—		2		1		—		1		3	
		Female	1	—		0		0		—		0		1	
		Total	8	—		2		1		—		1		4	
	Ranau	Male	9	—		1		—		1		7		—	
		Female	2	—		1		—		1		0		—	
		Total	11	—		2		—		2		7		—	
	Combined Total	Male	136	19		40		14		12		32		19	
		Female	73	9		34		4		2		18		6	
			209	28	**13.4**	74	**35.4**	18	**8.6**	14	**6.7**	50	**23.9**	25	**12.0**

TABLE VI.

Name of Tribe	District	Sex	Number Tested	Clockwise						Anticlockwise					
				left		centre		right		left		centre		right	
				No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Muruts	Temogun	Male	100	11		35		21		1		11		21	
		Female	58	8		25		9		0		12		4	
		?	2	—		—		1		—		1		—	
		Total	160	19	**11.9**	60	**37.5**	31	**19.4**	1	**.7**	24	**15.0**	25	**15.7**
	Peluan	Male	4	—		2		—		—		1		1	
		Female	0	—		0		—		—		0		0	
		Total	4	—		2		—		—		1		1	
	Keningau	Male	53	7		25		9		2		4		6	
		Female	53	6		25		4		3		8		7	
		Total	106	13	**12.3**	50	**47.2**	13	**12.3**	5	**4.7**	12	**11.3**	13	**12.3**
	Combined Total	Male	157	18		62		30		3		16		28	
		Female	111	14		50		13		3		20		11	
		?	2	—		—		1				1		—	
			270	32	**11.8**	112	**41.5**	44	**16.3**	6	**2.2**	37	**13.7**	39	**14.4**

TABLE VII.

Name of Tribe	District	Sex	Clockwise on Left & Anti-clockwise on Right	Clockwise on Right & Anti-clockwise on Left	Total
Dusuns	Putatan	Male	5	2	7
		Female	1	0	1
	Tuaran	Male	7	2	9
		Female	1	1	2
	Tambunan	Male	2	—	2
		Female	0	—	0
	Total	Male	14	4	18
		Female	2	1	3
			16	5	21

TABLE VIII.

Name of Tribe	District	Sex	Clockwise on Left & Anti-clockwise on Right	Clockwise on Right & Anti-clockwise on left	Total
Muruts	Temogun	Male	11	2	13
		Female	7	1	8
	Peluan	Male	—	—	
		Female			
	Keningau	Male	17	2	19
		Female	11	0	11
	Combined Total	Male	28	4	32
		Female	18	1	19
			46	5	51

Discussion.

Tables III and IV show the distribution of Clockwise, Anti-clockwise and Double hair whorls amongst the various Dusuns & Murut tribes examined. The only Dusun results worth considering are those of the Putatan and Tuaran; the numbers of the others are far too small to be of any comparative value. One is immediately struck by the fact that the percentage figures given for these tribues are definitely different. Is this because insufficient numbers have been taken or is it a definite tribal distinction? It is clearly necessary to examine a further series of about the same numbers of each of these tribes to decide this point. But when one truns to Table I on p. one sees that the blood group percentages also are definitely different.

Blood group data plus the hair whorl data when considered together seem to indicate that these two tribes are not very closely allied to one another. It is therefore doubtful whether it is permissable to regard the Grand Total of Table I as a true Dusun average, and later work may make it necessary to separate the Putatans altogether from the Tuaran Dusuns.

The next point to note is that each type of single whorl occurs roughly equally amongst the males and females. There is therefore no definite sexual affinity for either one or the other type of whorl. But when we examine the occurrence of the Double in the Dusuns, both tribes show a marked preponderance of this type in the males, 7 to 1.4 in the Pututans and 12 to 4.9 in the Tuaran tribe. The Muruts do not show this marked preponderance of the occurrence of double whorl in the male over the female. The male-female ratio varies more from 1 in the Anti-clockwise column than in the other two, but even here it is not very marked, and a glance at the combined total shows the male-female ratio in all three types fairly close to 1. Again the two Murut tribes examined in greatest numbers, Temoguns and Keningau, do not vary as greatly as do the two Dusun tribes mentioned above, a fact also coroborrated by the Blood Group tables.

The most striking contrast between the Dusuns and Muruts shown by the grand totals of Tables III & IV is the fact that the double hair whorl is commoner among the latter than among the former, and that this increase is at the expence of the Anti-clockwise percentage. The clockwise hair whorl is therefore not only the most common, but the most stable type of whorl.

Tables V & VI set out the position on the head where the different whorls are to be found. Here again we find the Pututans differing markedly from the Tuaran Dusuns. About 50% of single whorls occur in the mid line, whether they be clockwise or anti-clockwise. Of the others, a greater proportion appear on the right than on the left,

and this distaste for the left position is very marked in anti-clockwise whorls, only 14 anti-clockwise out of 209 appearing on the left in the Dursuns and 6 out of 270 amongst the Muruts. That the left side of the body favours the clockwise type, is again shown by the double whorls. Out of 21 double whorls among the Dusuns, the left-hand one in 16 cases is clockwise, while among the Muruts, out of 51 double cases, 46 of the left-hand whorls are clockwise.

REFERENCES.

(1) Kidd, Walter, The Direction of Hair in Animals and Man, A & C Black, 1903.

(2) Osman Hill, W.C., The Ceylon Journal of Science, XVI, Part 3, Oct.-Dec. 1927.

(3) Wood Jones, F. Amer. Jour. Phys. Anthrop. v. 11, No. 1, March 18, 1932.

Notes and Comments

INTERNATIONAL HOSPITAL ASSOCIATION POST GRADUATE WORK ON HOSPITAL TECHNIQUE.

(We have received the following from the President of the above Association, and have much pleasure in publishing this information in the hope that it may be of use to some of our readers who may happen to be in Europe during September and October of this year.—Ed.)

Headquarters: Municipal and University Hospital. Frankfort (Allgemeine Stadische und Universitats-Krankenanstalten, Frankfurt am Main, Sud 10, Eschenbacherstr. 14).

Duration: From September 29th to October 8th, 1932.

Enrolment fees: 30 marks for the full course or 5 marks per single day.

Applications for enrolment to be addressed, preferably before July 1st, 1932, to Geheimrat Dr. Alter, 5 Moorenstrasse, Dusseldorf, Gremany.

Thhe Municipal Hospital undertakes to find rooms for persons attending the course.

These lectures are organised in accordance with the principle that professors should learn while they teach, and that students should teach while they learn.

The course will consist of lessons lasting not more than 45 minutes, demonstrations, visits and discussions.

Programme.

Thursday, September 29th:

HOSPITAL LIGHTING AND VENTILATION, STERILISATION AND DISINFECTION.

9 a.m.: Dr. Dujarric de la Riviere, Professor at Paris.

10 a.m. . . . . (Consent has not yet dropped in).

11 a.m.: Dr. Konrich, Professor at Berlin.

3 p.m.: Discussion, demonstration and visits.

Friday, September 30th:

THE RECRUITING OF NURSING STAFF, AND EXAMINATIONS TO DETERMINE ITS APTITUDE.

9 a.m.: Mlle. Christiane Reimann, Geneva.

10 a.m.: Mlle. Delagrange, Paris.

11 a.m.: Dr. Aiter, Dusseldoorf.

3 p.m.: Discussion.

STANDARDISATION OF HOSPITAL ADMINISTRATION AND THE SUPERVISION EXERCISED ON INTERNAL MANAGEMENT.

9 a.m.: Director L. Urwick, Geneva.

10 a.m.: Dr. Frey, Hospital Director, Berne.

11 a.m.: Dr. Cleyndert, Hospital Director, Delft.

3 p.m.: Discussion and demonstrations.

Sunday, October 2nd:
VISITS.

We print below a list of the new appointments made to fill the posts of House Officers at the Government Civil Hospital from January 1st to June 30th, 1932. We are also publishing a complete list of the examination results of the Degree Examinations held in December 1931, and in doing so we take this opportunity of offering those successful candidates our heartiest congratulations.

House Officers.

Clinical Assistant to the Medical Unit .....Dr. Cheng Hung Yue.
Clinical Assistant to the Surgical Unit .....Dr. Ling Ke-dieh.
Clinical Assistant to the Obstetrical & Gynæcological Unit .....Dr. Lam Shiu Kwong.
House Physician .....Dr. Sze Tsung Sing.
House Surgeon .....Dr. Lim Ek Quee.
House Obstetrician .....Dr. Cheng Sui Yue.
Out-Patient Officer .....Dr. F. S. Fernando.

Examination Results.

The following have completed the FINAL M.B., B.S. EXAMINATION:—

Chan Shing Chue
Cheng Hung Yue—Miss
Enok, V.
Fernando, F. S.
Ling Ke-dieh
Phoon Seck Quai
Yuen—Miss Hilda

The following have passed in MEDICINE in the FINAL EXAMINATION:—

Chan Shing Chue
Cheng Hung Yue—Miss
Enok, V.
Fernando, F. S.
Lien Tsoong Kya
Lim Poh Sim
Ling Ke-dieh
Yuen—Miss Hilda

The following have passed in SURGERY in the FINAL

EXAMINATION :—

Chan Shing Chue
Cheng Hung Yue—Miss
Fernando, F. S.
Kho Han Po
Khoo Fun Yong
Ling Ke-dieh
Phoon Seck Quai
Teo Soon Wan
Wong Hok Nin
Yeoh Guan Eng
Yuen—Miss Hilda

The following have passed in OBSTETRICS & GYNÆCOLOGY in the FINAL EXAMINATION :—

Chan Shing Chue
Chan Wah
Cheng Hung Yue—Miss
Fernando, F. S.
Kho Han Po
Lam Shiu Chum
Lien Tsong Kya
Lim Poh Sim
Ling Ke-dieh
Teo Soon Wan
Tsai Ai Le
Yuen—Miss Hilda

The following passed in MEDICAL JURISPRUDENCE & PUBLIC HEALTH :—

Cheung Kung Leung
Kuo Shao Chou
Kuo Shao Hong
Lee Hah Liong
Liu Yan Tak
Mak Kai Cham
Tan Hee Choo
Todd—Miss Lois
Wong Wa Kwan
Ip Ching Yu
Lam Shiu Chum
Lee Shiu Kee
Lien Tsoong Kya
Lim Nget Siew
Ling Ke-dieh
Loh Seng Poh
Scully, G.
Tsai Ai Le
Tsan Wei Chean

The following have passed in PATHOLOGY & BACTERIOLOGY :—

Cheung Kung Leung
Kuo Shao Chou
Kuo Shao Hong
Lee Hah Liong
Liu Yan Tak
Mak Kai Cham
Tan Hee Choo
Todd—Miss Lois
Wong Wa Kwan
Fernando, F. S.
Kho Han Po
Khoo Keng Wah
Lam Shiu Chum
Lee Shiu Kee
Lien Tsoong Kya
Lim Nget Siew
Lim Poh Sim
Loh Seng Poh
Scully, G.
Tsai Ai Le
Yip Yuet Fong

The following have passed in THERAPEUTICS & PHAR-

MACY :—

Cheung Kung Leung
Kuo Shao Chou
Kuo Shao Hong
Lee Hah Liong
Liu Yan Tak
Mak Kai Cham
Tan Hee Choo
Todd—Miss Lois
Wong Wa Kwan

The following have passed in SENIOR ANATOMY & PHYSIOLOGY :—

Chiu Put Po
Goh Teik Wah
Mahan Singh
Sung Sheung Hei
Wei Cheuk Sheng

The following have passed in PHARMACOLOGY :—

Chau Woon Nin
Chiu Put Po
Goh Teik Wah
Lew Khoon Shin
Mahan Singh
Wei Cheuk Sheng

The following have passed in ELEMENTARY ANATOMY & PHYSIOLOGY :—

Cheng See Yan
Itoh, M.
Lee Hua Ngak
Leung Tin Sun
Wong—Miss Cissy
Wu Hung Tak
Yeung Tsaw Che

The following have passed in ORGANIC CHEMISTRY :—

Cheng See Yan
Choong Gim Seong
Gosano, E. L.
Itoh, M.
Kan Lai To
Lee Hua Ngak
Leung Tin Sun
Moonshi, A. J.
Tee Eng Liat
Ten Pin Hui
T'so Lai Kee—Miss
Wu Hung Tak
Yeung Tsaw Che

The following have passed in PHYSICS :—

Kong Sau-Yui
Koo Shu Ngeoh
Lee, A. T.
Ribeiro, G. A. V.
Tjon, L. A.
Tsukasaki—Miss

The following have passed in INORGANIC CHEMISTRY :—

Kong Sau-Yui
Koo Shu Ngeoh
Lim Yew Poh
Ong Tiong Yong
Ooi Kee Wan
Tjon, L. A.
Yong Pung Fook

The following have passed in BIOLOGY :—

Khoo Soo Lat
Kong Sau-Yui
Koo Shu Ngeoh
Ooi Kee Wan
Tjon, L. A.
Woo Tak Foo

Review of Books

'A Text-Book of Surgical Pathology': By C. F. Illingworth and B. M. Dick, Londos, Churchill. 1932. Pp. 677, 290 illustrations. 36s.

This book is intended to provide an account of the pathology of Surgical diseases, particularly those aspects of the subject not adequately dealt with in most books on general pathology.

A knowledge of the elements of general pathology is presumed on the part of the readers for whom the book is intended, with the result that it escapes the redundant quality, so common in books of this category, of treating at length the fundamentals of pathology. It is obviously futile for the student to hope to benefit by the perusal of any work on special pathology until he has acquired a certain familiarity with the general principles. The authors do not hesitate, however, to refresh the readers' memory of certain points, anatomical, physiological and embryological as well as pathological, such as the formation of bone and the rotation of the intestine, concerning which many of us doubtless experience difficulty in being always lucid.

Although the viewpoint of the practical surgeon has been maintained throughout, there are numerous references to recent experimental work which add very much to the general interest of the book. The sections on tumours and diseases of the gall-bladder, for example, are particularly good in this respect. Another useful feature is the provision of a short bibliography at the end of each chapter.

The book is of a convenient size, it is well got up and the text is clear. The illustrations are numerous and for the most part excellent.

This text-book can be cordially recommended to all those interested in its subject matter. It should be particularly useful for aspirants to higher surgical qualifications. The practioners will, however, find in its pages much of value and interest.

L. J. D.

"An Introduction to Practical Bacteriology, Mackie and McCartney." Third Edition. Published by E. & S. Livingstone, 16 & 17, Teviot Place, Edinburgh.

The authors have stated that this book is a guide to Bacteriological laboratory work and they do not claim it to be a complete text-book of Bacteriology. Nevertheless, for a book of its size, it contains an astonishing amount of information, written in a clear and concise manner. The first edition was published in 1925, the second in 1928. Though written primarily for students attending the Edinburgh University course in Bacteriology, it has appealed to students and graduates in medicine throughout the world.

It is impossible to refer to certain chapters only as good, because from beginning to end there is nothing that can be dispensed with, but, of particular interest to students are the chapters on the use of the microscope, Methods of culture and staining of micro-organisms, Immunological and Serological methods as applied to Bacteriology, and the complete description of morphology, cultural, biochemical, and immunological characteristics of the various organisms.

In addition, the practical bacteriologist finds in this book details of media making, the composition of the various stains used in laboratory work, and the details of animal inoculation. The general practitioner finds it a useful book for revision and clear instruction on the methods of taking specimens for bacteriological dagnosis.

It is a book that can confidently be recommended to any who are interested in Bacteriology, and it is of course primarily written for the student in medicine preparing for a degree examination in bacteriology and the graduate studying for D.P.H. and D.T.M. & H. examinations.

Acknowledgments

Report of University Hospital Shantung Christian University, year ending 30th June, 1931.
National Medical Journal of China.
Okayama Igakki Zasshi.
University College Hospital Magazine.
New Zealand Medical Journal.
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Post Graduate Medical Journal.
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Journal of Ceylon Branch B.M.A.
St. Mary's Hospital Gazette.
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Japanese Journal of Experimental Medicine.
New York Academy of Medicine Bulletin.
Middlesex Hospital Journal.
The Bristol Medico-Chirurgical Journal.
The Journal of Bone & Joint Surgery.
The Hospital.
St. Bartholomew Hospital Journal.
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Medical Journal of Australia.