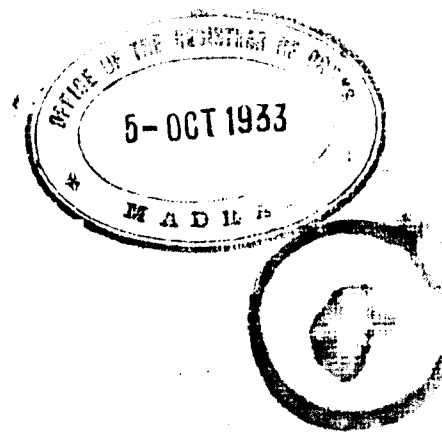


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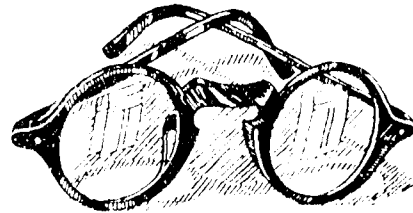
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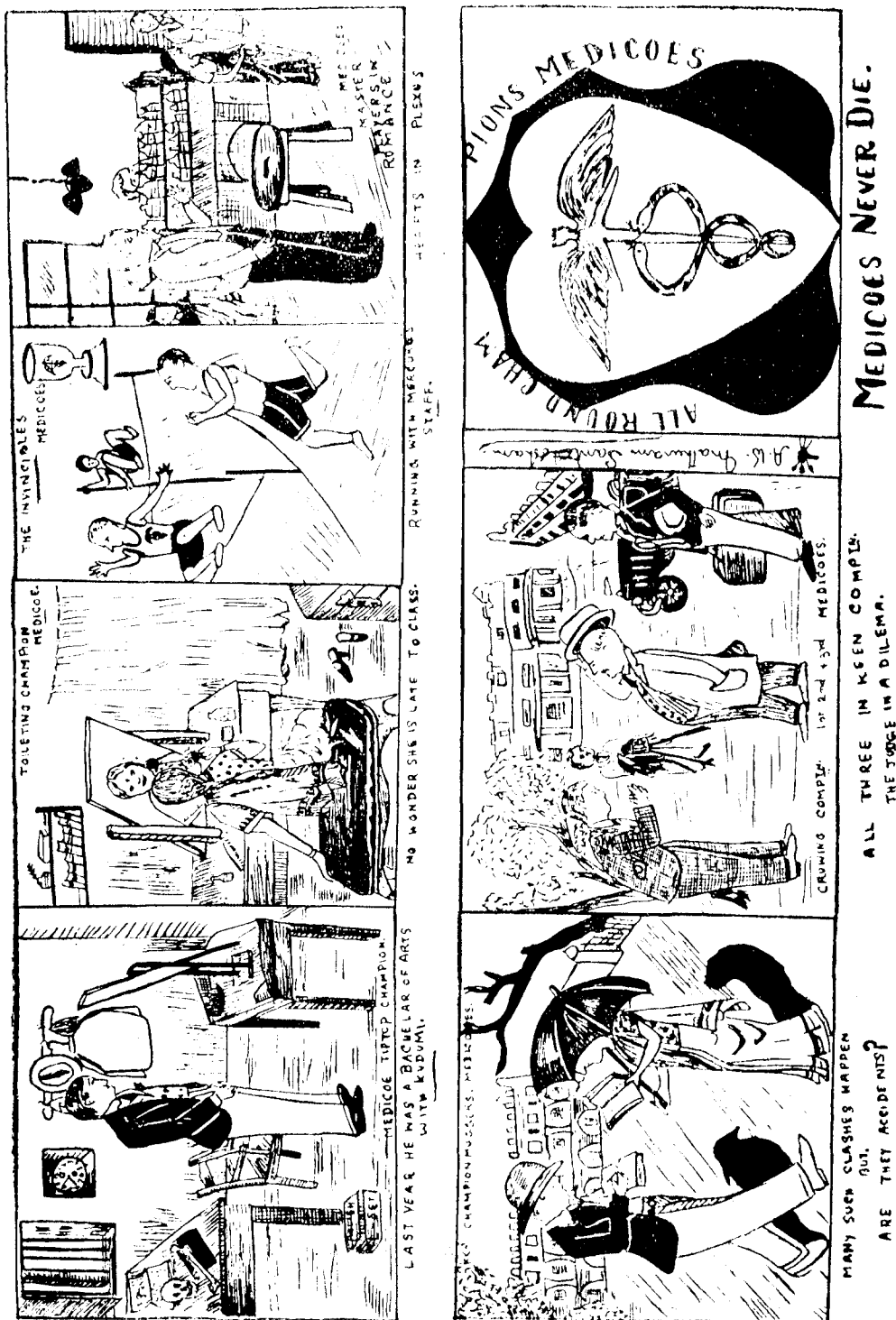
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THE MADRAS Medical College Magazine

VOL. XIII

AUGUST 1933

No. 1

Recent Methods of Surgical Diagnosis.*

BY LT.-COL. F. J. ANDERSON, I. M. S.

BIOPSY.

By the term biopsy is meant the removal of tissue for pathological examination in order to establish or confirm a diagnosis.

In practice biopsy is utilised in the following: A. Malignant disease, B. Tuberculous disease.

A. Malignant disease.

My remarks will be limited to the two conditions in which biopsy is most practised to-day, 1. The Breast, 2. Mouth and Tongue.

1. *The Breast.*—The local resection of a lump in the breast for microscopical examination is to be condemned: during the seven days which must elapse before a pathological report can be obtained, the patient's chances have been prejudiced beyond remedy. Also, as Sir Lenthal Chealte has pointed out, many early cases are not diagnosed by the pathologist as malignant owing to the fact that a whole section through the breast is not examined, the usual practice being to take one small isolated part of the lump, which may only show those changes known as chronic interstitial mastitis. It is better to follow the

* University of Madras Extension Lecture delivered at the Medical College, Madras, on 11—32.

method of Ogilvie and excise the whole breast in a plane which will have passed well beyond the line of possible extension. If, after the breast has been examined, malignancy is diagnosed, then the remainder of the radical operation, *i.e.*, clearing the axilla, can be performed.

Formerly, as a first step to the operation, a small portion of the lump was excised and submitted to histological examination after freezing; this was done in the Operation Theatre. Even by pathologists of repute it is found extremely difficult to give a reliable report on a frozen section.

In practice it is found that those cases, in which there is a doubt as to whether the lump is innocent or malignant, are usually malignant. It is considered good surgery to-day to perform the radical operation in such cases.

2. *Mouth and Tongue.*—At the Fondation Curie Paris, biopsy is performed in all cases as a preliminary to radium treatment.

The late Dr. Birkett of the Manchester and District Radium Institute is not in favour of this procedure. He states that any interference with the lesion if malignant causes it to spread rapidly. It is much safer in practice to treat any suspicious swelling as malignant and use radium at once. In this connection the statement of Birkett is worth mentioning, "All ulcers of the mouth and tongue which persist for more than a week or two in patients over the age of 30 should be regarded as potentially malignant and referred for expert opinion."

If it should be necessary to have a biopsy in certain cases, *e.g.*, when an epithelioma of the dorsum of the tongue is superimposed on a chronic superficial glossitis, the diathermy cutting knife should be used taking a fairly large piece including some healthy tissue.

B. Tuberculous disease.

1. *Joints.*—Diagnostic arthrotomy has been advocated by Girdlestone for those cases of chronic disease of the knee-joint in adults in which the radiological evidence is negative. The tissue removed should be submitted not only to histological examination but also to guinea-pig inoculation. If the tissue is examined by a pathologist practised in this work, the positive results obtained by him are higher than those obtained by guinea-pig inoculation. The specimen however requires prolonged examination before being pronounced non-tuberculous.

2. *Glands.*—It is seldom necessary to do a biopsy for tuberculous glands, *i.e.*, in the neck. These cases can usually be diagnosed with certainty on clinical grounds.

CHOLECYSTOGRAPHY

When certain halogen compounds called 'dyes' are taken by mouth or injected into the blood stream they are carried to the liver and excreted into the bile. When these 'dyes' are in sufficient concentration in the bile the bile becomes opaque to the X-rays, and since the bile is concentrated in the gall bladder, it is possible for this structure to be visualised on an X-ray film. The following description is obtained from a description of Graham's most recent practice at the Barnes Hospital, St. Louis, U. S. A., which appeared last year in Guy's Hospital Gazette.

Method.—Formerly the salt Sodium Tetraiodophenolphthalein was used, but an isomer Sodium phenoltetraiodophthalein is now used which has the following advantages.

(a) stains the blood serum and therefore can be used as a liver function test.

(b) increased rapidity of excretion by the liver.

(c) smaller doses can be used.

Intravenous route.—A known amount of dye is administered. The gall bladder shadow is not obscured by the dye in the intestine. The test can be performed on a patient with nausea and finally is more accurate.

Reactions very seldom occur if the 'dye' is given by the gravity method and not by the syringe method.

Oral Route.—This method does not necessitate the patient's stay in a hospital or nursing home. He can take the 'dye' at home; this saves a good deal of time for the staff. The reaction is relatively slight or absent. Formerly violent vomiting was caused.

I will not give the actual details of the technique, as these can be obtained from any standard work.

Liver Function Test.—According to Graham cholecystography is primarily a function test and not an anatomical one as most people believe.

Sample of blood is taken half an hour after the intravenous injection of sodium phenoltetraiodophthalein and the colour of the serum is compared with a standard solution. In a normal person, 90 per cent of the dye should have been removed from the blood by the liver.

Jaundice alone does not cause increased retention of the dye unless infection is present. This might be used as a diagnostic test between jaundice of toxic origin and that due to malignant disease.

This test of liver function is now used in determining whether a case is suitable for operation or not. If the blood serum shows a high dye retention, then the operation is postponed until the liver function has improved. In practice 35 per cent dye retention after half an hour is taken as the safe upper limit.

Visualisation of the Gall Bladder.—By means of cholecystography the outline of the gall bladder can be determined by X-rays.

The interpretation of shadows requires practice, but the most reliable evidence is the absence of any shadow or a faint shadow. This poor falling indicates a pathological condition of the gall bladder. Certain kinds of gall stones, *e.g.*, cholesterol and pigment stones, which have the same radio-opacity as the surrounding, bile cannot be demonstrated in an ordinary skiagram. After the exhibition of the 'dye' clear area or areas like gas bubbles are noticed in the gall bladder shadow; these are known as negative shadows. A very full description of the clinical application of cholecystography will be found in Anderson's article on "Clinical Interpretation of Aids to Diagnosis".

INDUSTRIAL "LAME BACK".

Etiological Considerations.

1. *Physical posture.*—It is due to the work of Goldthwait of Boston that the subject of low backache has been placed on an orderly basis. Formerly there was much confusion and I still find that the subject is improperly understood. I was fortunate in meeting Dr. Goldthwait in Boston who spent some three hours one evening in showing me his diagrams, sketches, etc. In his opinion many cases of backache can be traced to what he calls 'bodily mechanics.' Also by the build of a patient it is possible to foretell the type of strain to which he may fall a victim.

Women are particularly prone to strain of the lower back due to the stretching and softening of the ligaments of the pelvis which occur during the later stages of pregnancy and during parturition. These cases are treated later as displacements of the uterus and many unnecessary operations are performed in an endeavour to fix the uterus in place, but without any effect on the backache.

It is owing to the failure to obtain relief from their medical practitioner that so many of these people turn to quacks.

In America there are two great classes of 'manipulators', (1) Osliopaths, and (2) Chiropractics.

1. *Osliopaths* ascribe all diseases to the interference with the blood supply. This interference is caused by pressure on the vaso-motor system in the region of the spine.

This pressure is brought about by subluxations of the vertebra or 'osliopathic lesions.' Not only do these manipulators attempt to cure carcinoma of the stomach, gastric ulcer, but also deafness and defects of vision.

2. *Chiropractics* incriminate the 'intervertebral' nerves. According to them all diseases and deformities are due to displacement of vertebra causing pressure on these nerves. The 'intervertebral' nerves carry 'vital force' from the spine to the various parts of the body, any pressure therefore will interrupt this normal flow.

On physiological grounds both these schools have no foundation. There is a third class of unqualified practitioners, the bonesetter.

Although the bonesetter is unqualified, he has earned a great reputation and more especially in the treatment of backache. He has discovered by practice that certain movements cure certain conditions without actually understanding the underlying cause. The public do not appreciate that there are many qualified surgeons who are able to deal with such cases and there are now several good text-books of 'Manipulation Surgery'. I believe Mr. Timbrell Fisher was one of the first in London to confine his attention wholly to this class of work.

This subject has an added interest on account of the Workmen's Compensation Act.

The common strains of the back are (1) Lumbo-sacral articulation, (2) sacroiliac articulation, (3) dorso-lumbar articulation.

The reason is that these are the points of the spine most exposed to strain since they are junction points between fixed and flexible portions of the spine.

Sacro-iliac strain is usually brought about by some sudden unguarded movement, such as slipping, when stepping out of a bath.

There is a rotatory displacement of the sacrum on the iliac bone.

Any movement which cause a pull on the strained articulation will cause pain, *e.g.*, bending forwards with the legs straight.

Tenderness will be elicited over the posterior superior iliac spines or over the great sacro-sciatic ligament.

Pain is often widely distributed and may be felt down the back of the lower extremity as far as the ankle. Many of these cases are treated as sciatica.

Lumbo-sacral strain.—The articular processes of the fifth lumbar vertebra slide down into a position of full extension upon the sacral facets.

The body weight is now transmitted to the sacrum not through the bodies of the vertebra but through the spinal arches.

Such a movement narrows the intervertebral foramina and press on the fifth lumbar nerve. On extension also the soft parts are pressed between the spine of the fifth lumbar vertebra and the spine of the first sacral vertebra.

There is pain across the back at the level of the lumbo-sacral articulation and perhaps tenderness over the fifth lumbar spine. Pain down the leg may be complained of so that this condition also is often wrongly diagnosed as sciatica.

Dorso-lumbar strain.—The twelfth rib may approximate to the transverse process of the first lumbar vertebra and cause compression on the twelfth nerve. If bilateral there may be a girdle pain. One of the difficulties in the past in the recognition of the above sprains has been due to the reliance that has been placed on the X-rays.

Medical men have argued that if the X-ray film is negative then there is nothing the matter with the spine. Nothing could be more fallacious; it is impossible by X-rays to show slight subluxations as for example in the sacro-iliac joint. Many X-ray films are wrongly interpreted because stereoscopic films have not been taken.

Anatomic variations of the spine occur very frequently at the lumbo-sacral region. Such variations are very prone to produce strains :—

- (1) the lesser stability of certain joints,
- (2) adventitious bursae which are found frequently are subject to traumatic lesions.

The Anaemias in Infancy and Childhood.

BY CAPT. R. D. ALEXANDER, I. M. S.,

Additional Professor of Medicine.

There has been much confusion in the past concerning the classification of the anæmias of infancy and childhood. It is only recently, in the last decade, that the general conception of anaemia has been clarified, chiefly owing to the impetus given by the discoveries of Minot and Murphy in pernicious anaemia, and to the elucidation of the nutritional anaemias of childhood by Helen Mackay.

Before proceeding to the question of classification, it is necessary to touch on the modern conceptions of blood formation. The blood is now considered to be in the nature of a tissue or organ which is made up of the circulating portion and the various haematopoietic organs which go to its formation. Boycott and Wittes have introduced the conception of the erythron to connote "the tissue which is made up of the circulating red cells, and the cells in the bone marrow (and sometimes elsewhere) from which they arise."

The erythron is therefore made up of the following parts :—

1. The reticulo endothelium of the bone marrow and the extramedullary haemopoietic centres.
2. The megaloblasts.
3. The normoblasts.
4. The reticulocytes.
5. The erythrocytes.

It has been found that certain factors influence the normal development of the erythron. Firstly haematinic factor which

is brought into existence by the interaction of (a) an intrinsic factor present in the normal gastric juice, and (b) an extrinsic factor, which is either Vitamin B or closely resembles it, is necessary for the proper maturation of the megaloblast to the stage of normoblast.

Secondly for the maturation of the normoblast to the erythrocyte, Wittes considers that Iron, Copper, Vitamin C and Thyroxin are all necessary.

Thus it will be seen from the above, that the majority of anaemias naturally fall into two groups, those which are due to a deficiency of one or other of the factors which go to the normal maturation and functioning of the erythron, and those that are due to destruction of the erythron. The former anaemias are known as the deficiency anaemias, and the latter as the haemolytic or in the more recent nomenclature (Parsons, Hawksley and Gittings) as erythronoclastic anaemias. The reasons for the introduction of this latter term are clear. The term "Haemolytic" suggests that only the circulating cells are subject to the destructive factor, this is certainly not the case in many of the anaemic states, and the term Erythronoclastic indicates that the whole of the erythron is influenced, though to different degrees in its different parts.

A third group of anaemias, which are important in considering the anaemias of childhood, are the anaemias which result from the co-existence of the two causes that have been mentioned above.

A fourth type of anaemia is that which follows a simple haemorrhage. In this case, given a healthy erythron this tissue will rapidly regenerate and unlike other body tissues there will be no scar. Recurrent injury, *i.e.*, repeated small haemorrhages, may, on the other hand, produce a more permanent type of anaemia, and even when the injuries cease the erythron may heal more slowly. Should, however, other factors either

destructive (haemolytic) or nutritional affect the erythron at this time, then a more permanent anaemia will result.

From the above considerations, it will be seen that the anaemias may be classified into :—

1. The Deficiency Anaemias.
2. The Haemolytic or Erythronoclastic Anaemias.
3. The Mixed Anaemias.
4. The Post-haemorrhagic Anaemias.

Finally the complete destruction of the erythron has to be considered, and this gives rise to the clinical condition of aplastic anaemia.

It is impossible to separate the erythron from other marrow functions, that is to say, the generation and the maturation of the granular series of leucocytes, and the blood platelets. A good example of this connection is to be found in the anaemia accompanying myelogenous leukaemia, which arises from the over-functioning of the part of the marrow responsible for the production of the granular leucocytes to the exclusion of the erythron. This type of anaemia would of course be classified as erythronoclastic.

The types of blood picture found in these four groups of anaemia :—

Broadly speaking the deficiency anaemias in childhood mostly belong to the hypochromic and microcytic types of anaemias and the erythronoclastic anaemias to the macrocytic and hyperchromic type of blood picture. This statement has however to be qualified as there are certain deficiency anaemias which give rise to the hyperchromic and macrocytic type of blood picture.

These may be due to the absence of (1) The extrinsic factor or B Vitamin, (2) The Intrinsic Factor of Castle found in the gastric juice, (3) The failure of (1) and (2) to react to

form the haematinic factor requisite for the proper maturation of megaloblasts to normoblasts (Straus and Castle.)

Deficiency anaemias of the megalocytic type are rare in children but have been recorded in Coeliac disease, and sprue. A pernicious type of anaemia has been described (absence of the intrinsic factor).

Anaemias of the mixed type have variable blood pictures, and the post haemorrhagic anaemias are hypochromic in type.

The Deficiency Anaemias of Childhood:

1. The Nutritional Anaemias.
2. The Anaemias of Prematurity.
3. The Anaemias of Scurvy.
4. The Anaemias following on Coeliac Disease and Sprue.

The Nutritional Anaemias.—This is an anaemia of infancy due to deficiency of iron, either from deficient ante natal storage, or post natal supply. This type of anaemia is particularly apt to arise in prolonged breast feeding, in infants fed by anaemic mothers, and in infants that put on weight too rapidly. These children are pale and well covered though the anaemia may not be clinically obvious unless the Hb. is under 60 per cent. Bronchitis and other infections are frequently present. The spleen may be palpable. The condition readily yields to the administration of ferrous iron, with the addition of small quantities of copper, since copper storage is also frequently affected and copper is one of the factors necessary for the synthesis of Hb.

The Anaemias of prematurity.—The premature child often becomes anaemic a few weeks after birth and this form of anaemia can also be rectified by the addition of iron. The cause of this condition is uncertain but presumably there is a deficiency of iron.

The Anaemia of Scurvy.—This is a hypochromic anaemia occurring on account of the deficiency of Vitamin C, which has been shown to be a necessary factor in the normal functioning of the erythron.

The Anaemia of Coeliac Disease.—This is an anaemia which in its earlier stages is hypochromic, but later may become hyperchromic due most probably to the absence of the extrinsic factor (?B₁₂), as it yields to the administration of marmite. The Anaemia of Sprue is also hyperchromic in its later stages.

The Haemolytic or Erthronoclastic Anaemias.

These anaemias may be divided into the haemolytic anaemias peculiar to the new born and the haemolytic anaemias of later infancy and childhood.

The haemolytic anaemias of the new born comprise certain conditions associated with severe jaundice (Icterus Gravis) unassociated with infection or congenital defect of the bile ducts. The blood picture usually shows a hyperchromic anaemia with a considerable increase of normoblasts, this anaemia persisting after the disappearance of the jaundice. An indirect van den Bergh reaction is obtained after the disappearance of the jaundice. Reticulocytosis is present to a marked degree when recovery occurs. The spleen and liver are frequently slightly enlarged.

Less acute cases are met with of hyperchromic and megalocytic anaemias in early infancy, in which long continued destruction of the erythron proceeds. The nature of the haemolysing factor is unknown.

The haemolytic anaemias of later childhood may be divided into:—

1. Acute haemolytic anaemia of the Lederer type.
2. Subacute haemolytic anaemia.
3. Chronic haemolytic anaemia (von Jaksch Syndrome).

4. Acholuric jaundice.
5. Due to Protozoal Parasites.
6. Splenic anaemia and Bantis disease.

1. *The Lederer type*.—This is a rare condition described by Lederer in America in 1925. The illness is acute, there is enlargement of the spleen and liver, an intense leucocytosis, and there is usually some abdominal pain and diarrhoea. An intense anaemia of the hyperchromic type develops. The diarrhoea suggests that this anaemia is of infectious origin.

2. *Subacute haemolytic anaemia*.—This resembles the Lederer type except that there is no fever or signs of infection, and that the onset is more gradual.

In both these anaemias, recovery may be spontaneous, or it may be necessary to perform transfusion.

3. *von Jaksch Syndrome*.—This syndrome has always been very ill defined, and various descriptions have been given of it. The description given of it by English pediatricians is as follows:—

It occurs in the first 3 years of life, oedema may be present, the child is very pale, and there may be petechiae, the liver and spleen are enlarged, the latter very markedly so. The prognosis is good (Thursfield). The anaemia is hyperchromic and is accompanied by a higher proportion of immature leucocytes of the granular series (2—6 per cent.), than any other condition other than leukaemia.

This syndrome is not in accord with von Jaksch original description, so some authorities consider that the term von Jaksch Anaemia should be abolished, and chronic haemolytic anaemia substituted. The evidence that the anaemia is haemolytic is as follows:—The anaemia is hyperchromic, there is a high reticulocytosis, megaloblasts, anisocytosis, polychromasia, poikilocytosis, punctate basophilia and macrocytes are all

present, there is also an increased amount of urobilin in the urine. The greater proportion of these cases recover, and there is no specific treatment.

4. *Acholuric jaundice*.—This disease is considered by Boycott to be a congenital malformation of the erythron. This is expressed in the increased fragility of the erythrocytes.

5. *The anaemias due to Malaria and to Kala Azar*.—These anaemias are often of the hyperchromic type (Rogers).

6. It is probable that the ill defined group of diseases called splenic anaemia, and Banti's disease are associated with an erythronoclastic type of anaemia. Banti thought the marrow to be injured by the same toxins as produced the phlebitis of the splenic veins. So little is known about these conditions that it is difficult to classify them with any exactness.

The Mixed Anaemias.

The anaemias secondary to other diseases such as Tuberculosis, Rheumatism, etc., must be regarded as mixed anaemias, in other words there is probably both direct damage to the erythron, and also an interference with the absorption of factors necessary to its life and growth, the former factor is probably the more important.

The Post Haemorrhagic Anaemias

Apart from haemorrhage arising through trauma, cases of haemophilia are naturally prone to this condition.

The anaemia of ankylostomiasis is stated to be hypochromic in type, and is possibly due to the continuous drain of blood by the numerous parasites. Should this be the true explanation, then this anaemia would fall into the groups of anaemia following haemorrhage. Some authorities however state that the worm produces a toxin in which case this anaemia would belong to the erythronoclastic group (Blacklock and Southwell).

This article is not intended to exhaust the subject of anaemia in childhood, but rather to attempt to indicate some of the current views that are held at the present time.

Summary.—The anaemias of childhood have been classified as follows ;

1. Deficiency Anaemias.

- (a) Nutritional.
- (b) Anaemia of Prematurity.
- (c) Scurvy.
- (d) Coeliac Disease and Spure.

2. Erythronoclastic Anaemias.

- (a) Haemolytic Anaemia peculiar to the newborn.
- (b) Haemolytic Anaemias of later infancy and childhood.

- I. Acute Haemolytic. Lederer Type.
- 2. Subacute Haemolytic.
- 3. Chronic Haemolytic. V. Jaksch Type.
- 4. Acholuric Jaundice.
- 5. Protozoal Anaemias.
- 6. Splenic Anaemia and Bantis Disease.

3. Anaemias of a Mixed Type (1 and 2).

- (a) Certain Infantile Anaemias.
- (b) Anaemias secondary to general diseases.

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Case of Cephalic Tetanus.

“Some Observations on Tetanus and its Treatment.”*

By MR. N. S. NARASIMHAN, F.R.C.S.I., L.R.C.P. (LOND.).

In the “Antiseptic” of March 1923, I analysed 53 cases of tetanus treated in the Government Royapuram Hospital, Madras, in 1920, 1921 and 1922. Of the 53 cases there were 25 deaths and 6 were discharged otherwise. The mortality rate was 31 out of 53, *i.e.*, 58·5 per cent. Excluding the 11 cases that died in 24 hours it was 47·6 per cent. There was no bacteriological examination made in this group of cases.

The present series is a review of the cases treated from 1929 April to 1932. Col. Bradfield has reviewed the mortality rates and other factors on cases of tetanus treated in the hospital since 1868 in 1922.

The mortality rate in the pre-serum days was 63·4 per cent (1878 to 1887), and 67·1 per cent (1912 to 1922). The serum was not used on a systematic plan up to 1922. The 94 cases of this series did not receive any prophylactic treatment by serum. The collective study of these cases was commenced by Col. Bradfield and was continued under his guidance. The mortality rate in this group was 52·1 per cent; 43 per cent of cases did not exhibit any injuries or sores; the mortality rate excluding cases that died within 24 hours was 32·4 per cent.

Sex Distribution:—

	M.	F.	Mch.	Fch.
Number of cases ...	54	21	9	10=94.
Died ...	27	10	5	3=49.
	2 ow	2 ow		
Mortality % ...	53·7%	57·1%	55·5%	30%=52·1%.

* Summary of paper before the S. I. Branch of B.M.A., Madras.

Age Distribution :—

	0—1	over 1—5	over 5—10	11—20	21—45	46—70	Not known.
Number	1	7	18	24	34	7	3=94
Died and D. O. W.	1	2	8	10 } OW 1 } 17 } OW 2 } 4 } OW 1 }			3=49
Mortality %	100%	28·6%	44·4%	45·8%	55·8%	71·4%	100% = 52·1%

Occupation :—

Medical Student	1—died.	
Arts College Student	1—	
Postal Clerk	1—Recovered.	3 of 5 died = 60%.
Soldier	1—	
Agricultural Officer	1—died.	
Sweepers	6—3	3 of 6 died = 50%.
General Labouring Class 83	—13 died	= 51·8%.

Wounds.

A		B	
Number of cases with wounds or ulcers	... 35	No wound	... 26 } 30
Burns	... 1	Women in period	... 4 }
Vaccination	... 2		
Scabies	... 1		
Ear discharge	... 2		
Boils	... 1		
Operation on Labium	... 1		
Operation for Appendix	... 1		
Dogbite	... 1		
Puerperium	... 1		
Deaths.	36 = 56·2%	13 = 43·3%.	
Including discharged moribund.			

Seasonal incidence :—Nil.

Deaths during the different incubation periods :—

No. of days.	Cases	Deaths.	Mortality %
2 days	1	0 = 0%	
3 "	2	1 = 50%	
4 "	3	2 = 66·6.	cases 22—7 deaths 33%.
5 "	2	0 = 0%	
6 "	4	2 = 50%	
7 "	2	2 = 100%	
8 "	8	6 = 75%	
9 "	0	0 = 0%	
10 "	13	9 = 69·2%	24—17 deaths 68%.
11 "	1	1 = 100%	
14 "	2	1 = 50%	
15 "	4	1 = 25%	
19 "	1	0 = 0%	
20 "	5	4 = 80%	11—6 deaths 60%.
25 "	1	1 = 100%	

Some Observations on Tetanus and its Treatment

1 month	8	2 = 25%
3 months	2	2 = 100%
Scabies for a long period	1	0 = 0%
Ch. discharge Ear for long time.	2	1 = 50%
Perforating ulcer	1	0 = 0%
Not known	1	1 = 100%
	64	36

Mortality rate excluding admitted moribund cases (i.e., 24 hrs.)

Excluding 26 mentioned cases = 32·4%.

Mortality rate excluding admitted moribund and discharged otherwise cases :—27·28 per cent.

Mortality rate for different groups according to Incubation period.

Hyper-acute symptoms appearing in a few hours after injury or operation.	Acute symptoms appearing in 48 hrs.	Sub-acute some days before early signs appeared.	Chronic symptoms do not appear till some weeks after the injury.	Incubation period not known.	Non-injury cases 30.
0	1	36	20	7 = 64	+30
Deaths 0	0	22 } 2 OR }	8 } OR 2 }	2	13
Mortality %		66·6%	50%	28·6%	43·3%

Differential Diagnosis.—In this series, a case of cephalic tetanus was admitted for facial paralysis, one case as meningitis, and one as acute abdomen into the general wards. One case was under treatment in the outdoor as a case of lumbago; while acute tonsillitis was admitted as tetanus and one case underwent an operation for appendicitis. Rigidity of the abdominal wall is very characteristic and is to be regarded as an early sign of first rate importance. In tetanus, the tetanised muscles may be put on stretch without giving rise to pain, but in meningitis any manipulation of head and neck usually gives rise to great pains and agony.

Bacteriological Diagnosis.—Col. Bradfield wanted to see in what proportion of non-injury cases tetanus bacilli could

be isolated from the motions of these cases. At his instance, examinations were done by the Professor of Bacteriology of the Madras Medical College. Smears were taken from ulcers and wounds. Cultural examination from sections of wounds or ulcerated areas and motion culture after a sterilised saline enema and vaginal and cervical smears was done as a routine. In all 110 specimens were examined and the positive results were as follows:—1 from smear examination, 5 from culture of wounds, and 4 from motion cultures. I am not aware of any set of such examinations in the Indian cases, nor motion culture examinations from apparently normal Indians. Cultural examination of catgut, of the wound of the appendix case, and of motion was negative in an appendix case where tetanus occurred after appendicectomy, cultural examination from two cases of vaccination sores and a wound from labia majora as a result of operation elsewhere, was also negative.

Clinical Varieties.—(1) Local tetanus 1 (Local pain for 4 days; onset of general symptom 3 days after this).

(2) Cases without lockjaw—9 in number.

(3) Cephalic variety 3 cases, of which 1 recovered and 2 died.

Post-Mortem Examination.—Two examinations were available but nothing could be detected and cultural examinations of faeces were negative. There were no ulcers of the intestine.

Complications.—(1) Urine: of 17 examinations, 9 was normal; albumin was present in 1 case, acetone in 2 cases, there was retention of urine in 4 cases and cystitis in 3.

(2) Toxic appearance was noticed in 3 cases.

(3) Paresis of cervical muscles and ptosis was seen in 1 case.

(4) Mental symptoms were noticed in 3 cases. 1 case was incoherent.

(5) Synovitis due to serum was seen in 1 case.

(6) Erysipelatous inflammation during convalescence was seen in 3 cases and they recovered.

(7) There was suspended respiration in 1 case.

(8) Dysphagia in 1 case.

(9) Parotitis in 2 cases.

(10) Enteritis in 1 case.

(11) Herpes in 1 case.

(12) Lung complications:

Bronchitis 2, pneumonia 7, bronchopneumonia 1, oedema 1. The lung complications may have some association with dysphagia and paralysis of soft palate. Proper method of feeding is to be instituted in bad cases, preferably rectal glucose and tap water.

(13) High fever, 3 cases.

(14) Coma 4, lumbar puncture did not relieve the condition, blood urea and urea content of cerebrospinal fluid was normal.

(15) Drowsy 2 cases, due to the drugs administered.

Causes of death.—(1) Prolonged spasm of respiratory muscles leading to respiratory failure (fixation of respiratory muscles) was frequent. For a few hours before death, the spasms were apparently less frequent and less severe and some times ceased 18 or 24 hours before death.

(2) Exhaustion.

(3) Spasm of glottis.

(4) Semiconscious condition (1 case)—blood urea was normal.

- (5) Hyperpyrexia after intrathecal injection of serum.
- (6) Hyperpyrexia.
- (7) Dysphagia.
- (8) Paresis of cervical muscles, ptosis and acetone in urine.
- (9) Lung complications :

There were 3 cases of death, where one feels that these cases ought not to have died. 1 case died after 14 days, the second after 20 days, and third after 18 days treatment. The second case was one of compound fracture of leg with tetanus. A guillotine amputation was done and the wound almost healed up and he was recovering from a bronchopneumonia when he died suddenly. He was always complaining of extraordinary difficulty in breathing (spasm of respiratory muscles).

Treatment.—The principles underlying the treatment are agreed to be (1) to destroy the bacteria at the site of infection and thereby prevent further production of toxins, (2) to eliminate from the body, the toxins already absorbed from the primary focus, to neutralise and render innocuous the toxin already absorbed, (4) to immunise the body after local injection has taken place and (5) to overcome the symptoms due to the action of toxins.

Wound Treatment.—Text books and authorities and experimental evidence may be brought into two groups (a) when tetanus is developed the wound must be excised immediately, (b) the wound must not be actively interfered with until tetanic symptoms have subsided as fresh toxin may be liberated.

My experience of active treatment of wounds in this series (excision of wounds, amputation of fingers and toes and amputations of limbs) leads me to believe in the second principle of treatment of wounds. Carbolic acid must not be used, but only oxidising antiseptics. Eliminate from

the body the toxins already absorbed from the primary focus : eliminatory treatment as diuretics by mouth and intravenous salines were tried for a year in addition to other methods of treatment, but this was not successful. To neutralise and render innocuous the toxins already absorbed, antitetanic serum was administered. The toxin that is on its way before getting fixed on to the nervous system from the motor end plates along the nerve sheaths, that which is circulating in the blood and in the cerebrospinal fluid before getting fixed should be neutralised. Experimental evidence does not show that antitoxin penetrates the brain or the cord even when introduced intrathecally. Sherrington's experiments (1917) are quoted to prove the efficacy of intrathecal administration of large doses of serum. But Sherrington's experiments of injections of serum under the cerebral dura mater are not mentioned at all ; all the 10 cases of that experiment died. There is a great difference between tetanus in man and in an experimental monkey. In the former there are living tetanus bacilli, in the latter a weighed quantity of poison. In this series, 7 cases were treated with intrathecal injections of serum of which 3 died as a result of hyperpyrexia, 105 to 106°F, within an hour after the injection ; 13 cases were treated with intravenous serum, of which 5 died. The war office technique was adopted in both cases with concentrated serum. As a result of this experience, only intramuscular injections of A. T. serum have been used in addition to other methods of treatment.

The average dose of serum in the cured cases is 200 thousand to 300 thousand units.

There were 19 cases in children under 10 years with 8 deaths, 44 per cent mortality.

Recently there is evidence brought in for the phylactic effect of chloroform in tetanus. No special use was made

of this anaesthetic but it may not have any specific action at all, judging by the fact that post-operative tetanus cases that occur in this country have been operated under chloroform. Experiments on animals go to show that infection does not take place after inoculation if the animal has been under chloroform anaesthesia (Billard). Chloroform anaesthesia administered subsequent to entry of the toxin increases the virulence of the toxin. Therefore, it is essential that the antitetanic serum must be administered before the patient is given any chloroform for any surgical purpose. A death occurred before any operative procedure was undertaken in a case under chloroform anaesthesia and in this case no serum had been given. To immunise the body after infection has taken place has become a very important procedure in all accident cases. No case of tetanus in the series received a prophylactic dose of serum. To overcome the symptoms due to the action of the toxins chloral hydras and potassium bromide by mouth and injections of magsulphate 10 per cent solution, 10 c.c. intramuscularly, every 6 hours, was the routine in addition to intramuscular injections of serum.

Occasionally morphine, eserine, luminol, chloroform inhalation have been used.

Chloretone in oil, per rectum, has been very valuable to procure sufficient rest and was used as a routine. Nasal feeding has not been successful in the severe cases.

Conclusions:—(1) Prophylactic serum in every injury case is essential with a mechanical cleansing of the wound; only oxidising antiseptics are to be used; no excision of wound or surgical operation are to be done until the spasms have been brought under control.

(2) There is not much bacteriological evidence to show that in the so called idiopathic cases, the infection is from the gut; probably the trivial original injury was forgotten.

(3) The bacteriological proof of these cases is not easy as seen by the percentage of positive results, 9 per cent.

(4) The use of large doses of serum (200 to 300 thousand units) has diminished the mortality in this group (52.1 per cent) as seen from the group of my cases in 1920-22 (58.5 per cent).

(5) The correct route for the administration of serum has been much debated; cisternal route is praised; intrathecal and intravenous route next; the reactions although given according to the correct technique had been severe and hence these routes have not been persisted in: intramuscular route was adopted as the routine. It must be remembered that the cases had been under constant supervision and direction of officers in this series, so that these facts cannot be ignored.

(6) General nursing, quiet dark room, sedatives as chloretone, chloral, bromide, regular evacuation of bowels are essential.

Correct method of feeding and watching of dysphagia and withholding of food by mouth in cases where dysphagia is due to paralysis of pharyngeal muscles are essential to prevent lung complications or respiratory distress.

My thanks are due to Col. E. W. C. Bradfield, Col. R. G. G. Croly and Col. K. G. Pandalai in whose wards these observations were made.

Of late the intravenous method of treatment is being again tried on the following technique under the direction of Col. F. J. Anderson.

Technique of Intravenous and injections:—A war office committee recommends the following method:—5 c.c. of serum are injected with 50 c.c. Normal saline; of this mixture 1 c.c. is injected intravenously followed 4 minutes

later by 3 c.c., two minutes later by 10 c.c. and two minutes later again by 25 c.c. Then, in 10 or 15 minutes, the full dose may be given intravenously; if any reaction occurs during this procedure, the administration must be delayed.

This will form the subject of a future communication.

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The Treatment of Gonorrhoea in the Female.

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It takes usually 3 to 4 months to cure an uncomplicated case of male gonorrhoea in Indians, about 6 months in female gonorrhoea and requires a protracted treatment of about one year in vulvo-vaginitis in children. In Europeans it takes a longer period to eradicate the disease as they indulge more in alcohol. The chief stumbling block in the treatment of gonorrhoea in females is that every menstrual period increases the discharge. Sexual excitement, alcohol and menstrual period aggravate the condition. As regards treatment, the infection in the females may be divided into three zones according to the order of frequency as vulvar zone, cervical zone and tubal zone. In women, the urethra is most frequently affected, next comes the mucous membrane of the cervix then that of the uterus and finally the fallopian tubes.

The treatment of Vulvar Zone.—Urethritis, Skenitis, Cystitis, Vulvitis and Bartholinitis constitute the infections of gonorrhoea in the vulvar zone.

Urethritis is the primary seat of infection in female gonorrhoea. In acute stage, rest in bed, cleanliness, hot hip-baths and drinking large quantity of bland fluids are essential. Alkaline diuretics with Tincture of Belladonna to relieve the spasm are given by mouth. In Alkaline medium, Gonococci do not thrive well. Oral treatment plays a little part in the treatment of gonorrhoea. Many patent medicines as Santal-Midy, Copaisan, Gonax, Rheantine and so forth, that are widely advertised in the market, play very little part in curing

gonorrhoea. In urethritis, hot hip-baths once or twice a day and moist swabbing of the vulvar surface with a mild antiseptic prior to any urethral treatment are necessary. Then the urethra and bladder are irrigated once or twice a day with a warm solution of Potassium Permanganate, 1 in 8000, with a douche can. Kidd's female catheter, which has lateral openings and no terminal opening, is preferably used for lavage. The acute condition rapidly subsides if the irrigation is given twice a day. Skene's ducts are examined for any focus of infection, as the active discharge diminishes. The urine is tested daily and if threads persist, a straight bougie is passed into the urethra and it is massaged through the anterior vaginal wall. Mill's suction bougie may be used to clear up the threads and to help in the resolution of sub-epithelial infiltrates. It is better to change the antiseptic for lavage once in 10 days. As the condition improves, irrigation is given once a day or every alternate day. All treatment is stopped during menstruation. During this period, Liquor Sedans $\frac{1}{2}$ —1 drachm t. d. s. is given to lessen the severity.

Within 3 to 6 weeks, the urethritis subsides under proper treatment. Prolonged observation, both clinically and bacteriologically, is necessary for over 3 menstrual periods subsequent to the apparent cure to establish a complete cure. The urethra is to be examined by the Urethroscope to ascertain whether there is infiltration and any of the gland ducts or Skene's ducts harbour a chronic infection.

Graduated doses of polyvalent gonococcal vaccines are given as 5 millions, 10, 20, 50, 75, 100, 150 and 200 millions gonococcal vaccines once in 4 or 5 days and the reaction is noted after every injection.

Skinitis.—Infection of the urethra may be persistent if the Skene's ducts are involved. Small quantity of pus may be expressed from the gland ducts by pressure through the anterior vaginal wall. The best way of eradicating the infection is to

obliterate the ducts with a fine-pointed electric cautery. In the absence of electric cautery, 1 per cent picric acid may be instilled into the ducts with a blunt-pointed hypodermic needle or a very fine probe, tipped with fused silver nitrate, may be used to obliterate them.

Cystitis.—Infection of the trigone of the bladder occurs more frequently in female than in male patients. It may occur as a result of not irrigating the bladder. In the acute stage, absolute rest, well-regulated bowels and bland diet are necessary. Alkaline diuretics with Tr. Belladonna are given to lessen the frequency and urgency of micturition. Hot hip-baths are given twice a day. To relieve the pain, frequency and urgency of micturition, morphia $\frac{1}{4}$ gr. and atropine $\frac{1}{75}$ gr. suppository is inserted per anus. As the acute condition subsides, lavage is started. In the sub-acute and chronic stages, the surface of the trigone is painted with 1 or 2 per cent AgNO_3 solution through the urethroscope or cystoscope. If any sub-urethral infiltration occurs close to the vesical sphincter, it may be prevented and cleared up by gradual dilatation of the urethra with solid bougies and by painting the surface of the inflamed trigone and vesical sphincter with 1 per cent AgNO_3 . This complication leads to recurrent attacks of pain at the end of the act of urination and to dribbling after the act of micturition.

Vulvitis.—Primarily gonococcal infection does not involve the vulvar surface in the adult female above 14, as it is covered by squamous epithelium. The squamous epithelium may be destroyed as a result of urethritis, cervicitis or a Bartholinitis. The original focus of infection is to be eradicated. The parts are kept scrupulously clean by hot antiseptic hip-baths. The addition of Soda Bicarb to the hip bath is very soothing. Moist swabbing of the vulvar surface is done thoroughly. The electric cautery or a fine probe charged with fused silver nitrate is used to eradicate the infected mucous gland. In between the moist swabbing, the parts are kept as dry as possible by dusting with compound Dermatol powder, which prevents irritation and

intertrigo. In severe inflammatory cases of vulvitis, the labia are kept separated by strips of gauze soaked in sub acetate of lead solution in the intervals between treatment to relieve the acute pain and prevent an extension of the excoriation. In the resolving stage of vulvitis, stimulating lotion as zinc sulphate is applied to hasten the formation of a new epithelial covering.

Bartholinitis.—In the acute stage, perfect rest, bland diet, cleanliness and freedom from sexual excitement are essential. The parts are shaved to keep the vulva clean. Hot hip-baths every 4 hours are given to relieve the pain and discomfort. In between hip baths, evaporating lotions of lead and opium are applied to the contiguous labial surfaces. If the duct alone is involved, the infection may be aborted by injecting into the gland duct with a fine-pointed hypodermic needle, a small quantity of electrargol. The instillation is repeated for 3 days successively to abort completely the condition. If this abortive method fails, best way is to excise the gland completely with its capsule intact under chloroform. After shelling out the gland with its capsule, the cavity is cleansed with weak tr. of iodine and the walls are stitched together without leaving any drain. If the gland cannot be removed entirely, the edge of the wounds are closed leaving a drain at the lower end to encourage granulation from the base. If the abscess is simply incised and drained without removing the gland entirely, some focus of infection is left behind invariably which may serve as a source of infection subsequently.

In sub-acute and chronic bartholinitis, complete excision of the gland and its capsule is difficult unlike in acute stage and the cavity is scraped and cauterised to allow the wound to heal by granulation from the bottom. If the duct alone is involved, the infection is cleared by instilling into the duct 1 to 2 c. c. of electrargol with a hypodermic needle. The injection is repeated within 1 or 2 days. In addition to local treatment vaccine treatment is given.

Treatment of Cervical Zone.—Vaginitis and Cervicitis are the common infections in the Cervical Zone.

Vaginitis is rarely a primary infection in adult females above 14, as vagina is covered by squamous epithelium and the mucous membrane contains no glands and the vaginal secretion contains an acid substance which is inimical to bacterial growth. It is always secondary to cervicitis. Instead of douching, moist swabbing the vaginal surface through the Cusco's speculum is efficient. Paint the vaginal part of the cervix or the deeper parts of the posterior fornix with an aqueous solution of picric acid 1% or solutions of mercurochrome or acriflavine in 1/1000 to 1/4000 strength. If the vaginal surface is eroded and painful, it is relieved by touching with a solution of lead sub-acetate. After cleansing the vaginal surface, it is kept dry by dusting with compound Dermatol powder. In very acute cases, vaginal cavity may be packed loosely with gauze soaked in mercurochrome solution or some antiseptic daily.

Cervicitis.—The endocervix is primarily infected in gonorrhoea as frequently as the urethra. In the *acute stage*, complete rest in bed is essential especially during the menstrual period to avoid spreading of infection to the Fallopian tube. Rest in the semi-Fowler position is better to effect better drainage. Besides rest, hot hip-baths and mixture Belladonna Alkaline are given daily. Tr. of Belladonna is indispensable as it allays the rhythmic contractions of the uterus and so prevents the spread of infection upwards. Local lavage with potassium permanganate solution 1 in 8000 is good in the early stage. With the patient in the lithotomy position, introduce the bivalve speculum to expose fully the cervix and clean the vaginal portion of the cervix with sterile wool on sponge holders. A Playfair's probe covered with sterile cotton wool is then gently passed with a twisting movement into the cervical canal until it is felt to ride up against the internal Os. It is then twisted out down the canal again so as to rid the surface of

the ropy, tenacious mucus. This is repeated till all the pus has been removed. The most essential part of the treatment is to get rid of all the tenacious pus before applying antiseptics. A mop of wool on a Playfair's probe is then dipped into one of the following solutions and used as paint to the cervical canal 1, 2 or 3 times.

1. Acriflavine in glycerine 2%
2. Picric acid in glycerine 1%
3. Mercurochrome in saline 10%
4. Eucalyptus in olive oil 10%

Ring the changes on these antiseptics, as often as found necessary.

Then the vagina and the vulva are kept dry by dusting with compound Dermatol powder. This is done twice daily in the early stages to prevent the spread of infection.

In the *sub-acute and chronic cervicitis*, dilatation with bougies, application of suction bougies, weekly instillation of 1 or 2 c.c. of silver nitrate solution in addition to Urethro-Vesical irrigation should be carried out.

1. Suction bougie is applied once a week to the cervix. The suction bulb helps effectively in removing pus plugs from the openings of the racemose gland ducts and so establishes drainage. It also assists in the passive congestion of the whole cervix to render more effective the further application of antiseptics.

2. A narrow wick of gauze impregnated with one of the antiseptics mentioned above is introduced into the cervical canal and left in situ for 8 to 12 hours.

3. Endo-cervical application of silver nitrate solution in increasing strengths from 30 to 60 grains to the ounce followed by the application of Tr. of Iodine results in the formation of silver iodide.

4. Endo-cervical application of iodised phenol.

As in acute condition, patient is allowed to rest 2 days before and during menstrual period. During the period Liquor Sedans $\frac{1}{2}$ to 1 dr. with Tr. of Belladonna 5 to 10 m. t. d. s. is given to lessen the severity of the period and to prevent the spread of infection upwards. Douching is not so effective as moist swabbing in keeping the parts clean. Vaccine therapy or protein shock will assist in eradicating the disease.

Treatment of Tubal Zone.—Endometritis and salpingitis constitute the infections in the Tubal zone.

Endometritis is secondary to cervicitis. Rest in bed in the Fowler position is indicated in acute cases. To relieve severe pain, morphia suppository $\frac{1}{4}$ gr. is administered. Ice bag is applied to the lower abdomen to relieve pain. Local treatment is contra-indicated in acute conditions. In the sub-acute stage, hot vaginal douche is given and tampons dipped in ichthyol and glycerine 20 per cent. are introduced into the fornices and left there for 12 to 24 hours to vascularise the parts. General tonics are given to improve the patient's resistance. If the uterus is large and leucorrhœa persistent, the uterine cavity is washed with antiseptics. Only in chronic cases, curettage and painting the uterine cavity with tincture of iodine or of iodised phenol are indicated.

Salpingitis.—In the acute stage, rest in bed in the Fowler position is necessary. Empty the bowel and apply ice bag or hot stupes to the lower abdomen to give relief. Local treatment is stopped in the acute condition. If it is a pure case of gonococcal salpingitis, without pyogenic infection, no operative treatment is necessary. In the sub-acute stage, hot vaginal douche at a temperature of 110 or 112 degrees (F) is given to cause resolution of the inflammatory deposits around the Fallopian tubes and to prevent subsequent adhesions. After douching, 1 or more tampons of ichthyol and glycerine 20 per cent. may be inserted into the lateral fornices and left in

for 12 hours at a time. Gradually the interval between douching is lengthened and tampons left in for 36 hours as the condition improves. In the acute stage, Sodium Salicylas grs. 10 to 15 Tr. Bellad. m. 7 is given to relieve pain and prevent spasm. Tonics are given to brace up the patient.

Both protein and vaccine therapy are given to eradicate the infection.

In resistant cases, open and explore the pelvic cavity to break down adhesions or remove a localised pus sac in the intervals between attacks. In still more resistant cases curettage of the uterus is necessary to eradicate the infection from the uterus and cervix.

Injection treatment plays a secondary part in the treatment of Gonorrhoea unlike in Syphilis. As Gonococcal infection is a blood infection, it gives rise to metastatic complications, as arthritis. Various methods of treatment as vaccines, chemotherapy, protein and combination of protein and vaccine are given to stimulate an increased resistance on the part of the patient.

Vaccine therapy.—There are various types of vaccines which produce anti-bodies in the body, when injected.

(1) Polyvalent gonococcal vaccine consisting of emulsion of Gonococci grown from different strains.

(2) Mixed polyvalent gonococcal vaccines containing an emulsion of secondary organism as Streptococci, Staphylo, B. Friedlander etc., besides gonococci and it is most effective.

(3) Sensitised vaccine after the method of Besredka, which can be given in large doses without producing little or no reaction.

(4) Detoxicated vaccine, in which the toxic elements are removed from the vaccine to enable a big dose of the active antigen to be given varying from 2,000 millions to 30,000 millions without giving any great local, focal or general reaction.

(5) An autogenous vaccine prepared from the patient's own infecting organisms is very efficacious.

(6) Gonococcus Immunogen containing in 1 c. c. the antigens from Gonococcus 1,000 million staphylococcus 1,000 million.

(7) Gonorrhoea Phylacogen, a sterile aqueous solution of Bacterial derivatives from cultures of Gonococcus, Staphylococcus and Streptococcus grown in artificial media and from which the bacteria themselves after being killed, have been carefully removed by filtration. They differ therefore from bacterial vaccines and from serum.

Of all these vaccines, Mixed Polyvalent Gonococcal Vaccine is the best, and can be injected in small doses starting with 5 m. intravenously or intradermally or hypodermically. If the vaccine is injected intravenously or intradermally in the sub-acute stage, there is a slight rise of temperature which is seldom observed when given hypodermically. It is better to give vaccine intravenously or intradermally in small doses. If there is a severe reaction, prolong the interval in giving the next dose. Polyvalent gonococcal vaccine is injected every 4th or 5th day in graduated doses as 5 m. 10, 20, 50, 75, 100, 150 and 200 m. Each case has to be treated according to the clinical observation.

Protein therapy.—10 c.c. of sterile milk is injected, intramuscularly every 3rd day to produce a high temperature as 103°, which is not favourable to the growth of Gonococci. The high temperature increases Leucocytosis with consequent stimulation of antibody formation in the patient's tissues. Aolan or sulfarsenol intravenously may be given to produce protein shock. In persistent cases, exhibition of protein shock in between vaccine therapy is highly efficacious.

Chemo-therapy.—Many chemo-therapeutic substances as contramine, intramine, colloidal manganese and trimine are given intramuscularly with some benefit. Of these trimine is the best as it contains Iron, Manganese and Zinc in an active

colloidal state. Best result is produced if trimine is injected in combination with vaccines.

Combination of protein and vaccine therapy.—This is most effective form of vaccine in eradicating the disease.

Arthigon by improved process is intensely polyvalent because it is the product of a large number of gonococci colonies of the most varying origin. It consists of an emulsion of killed Gonococci in a sterile solution of urotropine, which prevents the decomposition of Gonococci and preserves the emulsion for an unlimited time. It is most efficacious if given intravenously.

Gono-yatren is a suspension of various strains of gonococci freshly obtained from patients in a 3 per cent solution of yatren. It is used for preventing complications in acute urethritis and also used for provocative purposes. It is very efficacious, if injected intravenously.

Tests for cure in female Gonorrhoea.

1. Absence of all clinical signs and symptoms for 1 month after stopping all treatment.
2. No evidence of gonococci from discharge, bacteriologically and culturally from the urethra, cervix and Bartholinian ducts after cessation of treatment. This examination is done for 2 successive menstrual periods after apparent clinical cure. To ensure efficiency of the test, a glycerine plug is inserted into the cervix and 300 millions polyvalent gonococcal vaccine is injected as a provocative dose to flare up latent infection, if any, and then examine the discharge after 24 hours.
3. Examine with a urethroscope to ascertain the infiltration of the urethra and the involvement of Skene's ducts.
4. Examine the pelvic contents bi-manually to note that there is no pelvic peritonitis or cellulitis and no involvement of

the Fallopian tubes. The tests are repeated once during the ensuing 3 months and especially within a day or 2 after the period. After 6 months have elapsed after the cessation of active treatment and apparent clinical cure, the complement fixation test of the blood for gonorrhoea should be carried out. It is better to give a provocative dose of 200 million gonococcal vaccine before taking the blood for the Complement Fixation Test. If these tests prove negative clinically, bacteriologically and serologically, then the patient is declared completely free from the infection.

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Home Education for Children.

BY REV. FR. A. TELLIER, S. J.

(Resume of the Lecture.)

EDUCATION FOR YOUR CHILDREN.

I. When your children are young.—(1) Remember that your children have been entrusted to your care and that you will have to render an account of your trust to God. They have been entrusted to YOU:—

(a) and not to your Ayahs or Bearers, who if not strictly supervised, will make your children untruthful, superstitious and immoral;

(b) and not to your boarders. They are at times very honest, but occasionally bachelors and spinsters may exercise an undesirable influence over your children. Here also supervision is required;

(c) and not to the Rector or Principal or Superioress of a School. They may help you but cannot free you from your strict obligation to prepare their work and to co-operate with it.

Do not keep the child at home for your own benefit, neglecting his or her education. Little boys should go to school in (Kindergarten) when they are 5 years of age. Then they will be ready to start the regular course of studies in a boys' school when they are 7 or 8, instead of 10 and 12. This means time saved to complete their education.

Do not give way to children when the time comes for them to go and work. Inspire them with the ambition to perfect themselves more and more, so as to command a more lucrative employment later on.

You will then fulfil this strict obligation of yours :

(a) by giving a good example to your children. No bad language, no quarrels, no liberties in words or actions in their presence, nothing that would diminish the authority or moral influence of either of you. Consult together privately so as to allow and forbid exactly the same things. Show esteem and respect for each other; maintain each other's authority: this will secure the children's respect and esteem for both of you. Train the children's piety. Make it spontaneous. Do not impose religion, but make children love it. Set them the example of prayer.

(b) by supervision. Some of it is necessary; too much of it is bad. Train the children to do what is right, by themselves, out of sense of duty, of duty to God, who is present everywhere and always. Train their will by teaching them to make up their mind on sound principles, and then to stick to their resolution in spite of difficulties, or the allurements of pleasure.

(c) by exacting prompt obedience. Command and threaten rarely, never when in passion, never idly; but stick to your word once given. Peace in the home does not mean that you should never displease those with whom you live. God and your conscience must always come first where your own soul's interest or that of your children is at stake.

(d) by training your children's purity. Do not rely too long on innocence (ignorance.) Instruct the child in time, before any one else does it. Be first to warn him against places, persons and games to be avoided. Tell him why "it is foolish to be wise where ignorance is bliss".

More and more clearly, as he grows, tell him the disastrous result of impurity, the beauty of self-mastery and purity. Never tell children the way in which sin is committed.

Be and remain your child's confidant, by deserving his confidence through your own irreproachable conduct. (Children soon detect hypocrisy). They at first despise it—which takes away their confidence in you,—and then they imitate it. They sin like you and deceive like you. Win their confidence also by sympathy and readiness to listen to them.

Train them to be moderate and self-controlled in the use of their faculties, senses and affections, which should always remain subject to reason and conscience.

N. B.—Cinemas (and to a lesser extent Theatres) may be good, but without supervision and direction will do immense harm. Never allow your child to see a film or a play which you have not seen before, or about which you have no reliable information.

(e) by training your children in truthfulness, especially when there is danger of servants and companions training them to tell lies.

Encourage, reward, forgive when the child tells the truth, punish severely when you catch him in a lie. But remember that children sometimes tell lies out of shyness and nervousness. In that case, you must set yourself to win their trust by showing more affection, and not increase their fears by threats or punishments.

When servants tell lies or incite the children to do so scold them severely in the children's presence to counteract their influence and bad example.

Help your children to realise the beauty and advantage of absolute sincerity through stories and films that instil this virtue. Do not allow them to see or read what encourages duplicity (described as cleverness). Insist on the fact that honesty is the best policy, that honesty and straightforwardness is essential in order to get on in life. Many jobs are lost for want of it.

Confidence fosters truthfulness, but credulity fosters lying. Do not be deceived by your child's assertions; yet let your general attitude be one of trust.

N. B.—The teaching of all this is useless, if not backed by your good example. *Never tell lies to your children, if you want them never to tell lies to you.*

II. *When your children reach the critical age (15, 16).—*This is the period of life when children are most in need of a wise and trusted friend. This friend should naturally be you.

1. *High Ideas.*—At this age life is imperiously abundant in them; give it an easy outlet by teaching them to be earnest in all their doings. Let them finish whatever they undertake. Place before them noble examples of great achievement; fire their ambition to excel in every line, in sports as well as in studies or any other work. Success will help them to develop self-reliance, and the ambition to succeed will make them recoil from all that is mean, cowardly and low.

2. *Bad Habits*—Should you suspect the danger of self-abuse in your boys—some do indulge in it; many know something about it—instruct them at once about this evil and its dangerous results. If the boy is much exposed or already affected, a talk with a doctor or a visit to a hospital may help him to realise what he exposes himself to, physically and morally. The great majority of books on "Sex matters" are too suggestive for boys. If you have a reliable one for yourself you may read some carefully selected passages to your boy to convince him that you do not exaggerate, but don't leave the book in his hand.

3. *Drink.*—Make your boys realise the dreadful consequences of want of control in drinking with regard to health, work, money, honesty, morality and happiness in their future married life. If necessary, make them realise this in a practical way.

4. *Dances.*—Tell your children (1) to avoid objectionable freak steps and give the reason why; (2) never to seek solitude with their partner; (3) not to allow strangers to take them home.

5. *Flirting.*—(1) Teach your children that love is a holy thing, a gift of God to unite two for ever and not to be wasted on many, until it is neither worth giving nor worth receiving. (2) With boys still at school insist on the impossibility of busying oneself with books and with girls at the same time. (3) Put before them the cruelty of winning the affection of another and then throwing it away, the danger of playing with fire, of deceiving and being deceived. (4) Do not forbid healthy friendships. Only select the friends. Control everything yourself at first. Give more freedom by and by. Instill principles of duty, respect and right ambition. Never give up supervision altogether. (5) As your children grow older, insist more and more on the following principles:—(a) Self respect. Make others respect you, and you will rise superior to them all. (b) Be modest and reserved. You will then not tempt others neither will others tempt you. (c) Dangerous occasions are not to be “controlled;” they must be suppressed.

N.B.—A boy or girl who starts working should be warned of the dangers ahead and what they lead to if they are not avoided.

6. *Warn especially against:*—(a) Living above one's means, (b) Friendship with those above one's social standard in life, (c) Accepting presents and money from those whose purposes may be questioned, (d) Taxi-drives with a doubtful friend, (e) Gambling beyond one's means.

III. *When your children begin to think of marrying.*—Tell them (1) That marriage is *not* a lottery, with good luck and bad luck. Help yourself and God will help you. This is true even in marriage. (2) That marriage is a contract, the terms of which God settled long before you entered upon it. You have to take

it as it stands. There is no choice left to you. It is hard at times to propagate human race according to your Master's discretion, not according to your own, to practise mutual forbearance when characters clash and novelty fades, to control your affections in order not to give to another what is due to your life's object, though it means trouble and the sacrifice of many selfish considerations. But all these are the very terms of your marriage contract and God will never allow you to evade them.

Teach them in time.—All the duties of married life. You may marry in order to have greater freedom, comfort, and pleasure, in order to follow your affections and satisfy your natural propensities, but marriage is primarily for the duty of having children; Hence:

(1) Prevention and Abortion are not allowed. They are against the Law of God expressed both in nature and by revelation (God's Commandments). Where the bearing of children might endanger the health of the wife, or where for other valid considerations limitation of the family is clearly necessary, *continence by mutual agreement* is the only method of prevention that is permissible.

(2) Conjugal relations: Excesses on the one side and excesses on the other, cause most miseries between husband and wife.

(3) Divorce is not allowed. Your heart belongs to your partner and to your children till you die.

4. Be sure your future partner knows his or her duties and ready to observe them. They are the matter of the marriage contract.

I admit it is not always easy to understand the working of God's Providence. But I also admit that God is cleverer than myself and knows best in every single case. How often have we not made mistakes in what we thought was more profitable

to ourselves. Try your best, trust Him more fully and let Him act. It does pay in the end.

When there is a doubt whether one of the partners possesses the requisite health for marriage, whether their united means will allow them to raise a family and support it; or if they dread the discomforts of married life :

(a) do not exaggerate either way ;

(b) remember (1) that health may improve by the natural use of marriage, (2) that there is a Divine providence, (3) that there is in family life a happiness which makes up for most discomforts.

(c) reflect also on the words of St. Paul. "If they do not contain themselves let them marry." (I Cor. 7, 9). Anything which is not evil is better than the grievous offence of God, which is involved in sin. Still when they are sure that the unfitness for marriage exists and persists, let them not marry. As long as there is a doubt, wait, ask for advice and pray.

5. Explain to them the real meaning of Courtship.

To be engaged does not mean to be married. Hence (a) Do not tempt the girl, but leave her the happy pride of being able to say on her wedding day "You marry a virgin." (b) Do not tempt the boy by want of modesty and reserve, but help him to control himself. (c) Your delicacy of conscience during courtship will be the standard by which your partner will judge of your fidelity after marriage.

6. Insist on the following principles in the choice of partner.

(a) Choose with God, in prayer and patience. (b) Study your own character and his or her character ; ask for information and advice. Remember you must agree "till death." (c) Choose for ten years hence ; At first sight any one may seem

to be an angel. (d) Marry the man or the woman, not the purse. (e) Do not oblige your girl to marry a man she does not love. Do not look for your own comfort, but for her happiness. There are good young men and good girls. Your children will be sought out if they are modest and reserved.

Conclusion.—There are hard things ahead in marriage that is entered upon with the honest resolve to abide by the terms: There were, for those who stood by the "scrap of paper." But you will have that peace of conscience which is worth more than a fortune ; you will have your reward in your children already here on earth, when they are still young but you will have grown old and feeble ; you will have accomplished the Mission God had entrusted to you in giving you the power of calling down souls to earth and of giving them the means to *reach* happiness, not only in this world, but for all eternity. This same Eternal Happiness will also be vouchsafed to you, good and faithful servant.

Bacteriophage.

BY P. V. KURIAN, IV YEAR.

“ Great fleas have little fleas
Upon their backs to bite 'em ;
And little fleas have lesser fleas
And so ad infinitum ! ”

From the time of Jenner the bacteriologists are providing the Medical World with new implements in the conquest of disease. The vaccines and sera have been proved to be of immense value both in preventive medicine and therapeutics. One more of these modern implements is the Bacteriophage.

The credit of harnessing the bacteriophage to the conquest of disease goes to the French Bacteriologist, D'Herrelle. Though Twort observed the phenomenon in 1915, it was left to D'Herrelle to work out the principle underlying the phenomenon. As early as 1896 Hankin observed that water from the rivers Ganges and Jumna exerted an antiseptic action against bacteria in general and *V. cholera* in particular. It is said that one c.c. of water in the Jumna near Agra contains about 100,000 bacteria and that a few miles lower down, the bacterial count per c.c. is only 90-100. Though the Ganges water has been recently subjected to investigation in the Calcutta School of Tropical Medicine, the results are not available.

We reverence the master minds of Science, not because they enunciated infallible dogmas about the forces of Nature, but because in their search after Truth they have tried to observe and record. Time and again their theories have been refuted. Other theories have been modified. But their records and statistics above all question stand as firm as a rock. D'Herrelle's experience was perhaps the same. In 1905, working on some insect pests, he noticed this phenomenon. But his explanations were wrong and he could not proceed further. After ten years of hard work in the Pasteur Institute and still harder thinking, he enunciated his conception of the Bacteriophage.

Bacteriophage

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On daily examining the stools of a patient suffering from dysentery, he noticed that the bacilli disappeared very markedly from the stools in convalescence. He inoculated a culture of these bacilli with a drop of the filtrate of the stools of this recovering patient. To his great wonder the culture became clear. He then inoculated another culture of the same bacilli with a drop of this clear solution and got the same result. He was able to repeat this in a series of 935 passages. This led him to believe that the active agent concerned was a filterable, ultra-microscopic living organism and that it multiplied enormously.

Some time after inoculating a plate of dysentery bacilli with his 'phage' several clear areas were noticed. He thus conceived the idea that the bacteriophage is a living, autonomous, ultra-microscopic organism invading the bacteria, multiplying enormously and causing the bacteria to disintegrate. He was convinced that the 'phage' (eating) phenomenon, was due to the action of enzymes evolved as products of metabolism of these filterable viruses. D'Herrelle's theory that the same 'phage' acts on several species of bacteria has been discredited. Phages are prepared for different bacilli.

Twort in 1915, also described the same phenomenon; but D'Herrelle contends that in bacteriophagy unlike in bacteriolysis, no residue of the bacteria is left behind. If a culture of *B. dysenteriae* (Shiga), lysed by some means, is injected into a patient, he dies because of the intracellular toxins. If a culture in which the phage has cleared up all the bacilli is used, no injurious effects arise. The bacilli are eaten away by the phage.

The powers of resistance of the phage to heat and antiseptics have been proved by more recent workers. The phage has been kept 'alive' for one year in sealed tubes.

Modern workers in this field have questioned D'Herrelle's views on the phage. Bordet thinks that it is only due to an exaggerated autolytic tendency. Kabeshima contends that the autolysin, which is in the nature of a proteolase, is activated by a ferment from the alimentary canal. Dr. Bronfenbrenner of the Rockefeller Institute, has done considerable work on this. He has made Cinematographic records of this phenomenon. As he was unable to elicit the respiratory process or to find any protein in its body substance, he could not agree with

D'Herrelle in classifying it as a living organism. He observed that the greater the multiplication of the bacteria in the medium, the greater is the quantity of the 'phage' developed, he concluded that the phage is either an intracellular product of normal bacteria or a bye product of the metabolism of bacteria.

During the Mahamakham festival at Kumbakonam, recently, the cholera 'phage' prepared at the King Institute was added to all the water supplied in the area. Not a single case of cholera was detected. The Health Department is preparing to demonstrate the same thing in Kistna Pushkaram festival at Bezwada. Another illustration of the application of this principle is the remarkable way in which cholera was controlled in Assam, one of the hot beds of cholera in India.

Phago-therapy, or the therapeutic use of phage, is also gaining ground. In bacillary dysentery, a few minims of the culture of the phage are administered, diluted with water, at intervals of 2—3 hours. Good results were obtained in fifteen cases treated at the school of Tropical Medicine, Calcutta. The experiences of Malone at Kasauli and Da Costa Cruz in Brazil are much more favourable. In Brazil this mode of treatment has secured a unique place. A case of chronic colitis of fifteen years duration has been recorded as cured by 'phage.' Results obtained by Fletcher are not so very encouraging.

D'Herrelle thinks that Bacteriophage exists normally in the human alimentary canal, leading a symbiotic life with *B. coli*. It is also present in all polluted waters—river water and sea water near the coasts.

The last word has not been said about the nature of Bacteriophage. Its value in the prevention and treatment of diseases has been demonstrated. There is no doubt that it opens a new method of treatment in several diseases of Bacterial origin, other than cholera and bacillary dysentery. Surely the bacteriophage has a great future ahead.

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A Case of Vasomotor Neurosis.

(A CASE IN DR. KRISHNASWAMY'S WARD)

BY N. RAMANUJAM.

<i>Name and age</i> —Mr. X, 19 Years.	<i>Occupation</i> —Work Shop apprentice.
<i>Race</i> —Anglo Indian.	<i>Admitted</i> —22-7-1933.
<i>Residence</i> —Hubli Ry. Quarters.	<i>Discharged</i> —9-8-1933.
<i>Complaint</i> —Fits.	<i>Duration</i> —18 Months.

Family History.—Nothing particular. No history of fits in the family.

Previous History.—Some years back the patient was operated on for inguinal hernia and when very young the patient was seriously scalded by hot water over the chest. He has been having discharge of the left ear for the past 6 years. The patient has been keeping good health otherwise.

History of present illness.—The first attack of fits began 18 months back. The patient has had 15—20 fits since then. It usually happened the patient spent a sleepless night on the day previous to the attack either due to attending some dance or due to having slept well during the day. The next morning half an hour after getting up the fits came. If the patient slept well in the night he did not get a fit the next morning.

The fit was not proceeded by any aura and there were no prodromal signs or symptoms. Each attack lasted a few minutes. He was unconscious during the attack and used to clench his hands and kick his feet. He used to fall down during the attack and once injured his head which had to be sutured. He had no frothing of the mouth or biting of the tongue and did not void urine or *læces*. His friends used to pour water on his face to bring him round. After recovery the patient felt a heavy head but he attended to his normal work as usual.

Physical signs and condition on admission.—The patient is a fairly well nourished young man of 19 years of age; slightly pale and

anaemic; tongue dry and coated; teeth clean and no pyorrhoea alveolaris; appetite good; bowels regular; has hyperidrosis (sweating of the palms and soles of the feet which always feel wet).

Nervous system.—All the cranial nerves are normal; no wasting of muscles; motor power is good; co-ordination good; knee jerks, biceps, triceps and ankle jerks are all slightly increased on the left side. The abdominal reflex is slightly brisk on the right side. No Bibiniski; jaw jerk is normal; sensations of touch, heat, cold, deep pressure, pain, position, movement and vibration are all normal; stereognosis normal.

Heart boundaries and sounds are normal, pulse regular, 78, volume and tension good.

Al. system and Resp. system normal.

Possibilities thought of in this case were :—

- (1) Epilepsy.
- (2) Hysteria.
- (3) Cardiovascular disease.
- (4) Chronic alcoholism
- (5) Intracranial tumours.
- (6) Cerebral syphilis.

I. Point against epilepsy are :—

- (1) Epilepsy generally begins in early life.
- (2) Absence of prodromal symptoms like headache, malaise, giddiness, etc.
- (3) Absence of any sign or aura preceding the fit.
- (4) No biting of tongue, foaming of the mouth or voiding of faeces or urine.
- (5) Not followed by drowsiness and sleep.
- (6) No family history.

II. Points against Hysteria are :—

- (1) The onset did not date from any emotional disturbance.
- (2) The patient was unconscious during the fit.

(3) The patient injured himself once.

(4) No signs of emotionalism such as screaming before the attack or bursting into tears or laughter after the attack.

III. Points against Cardiovascular disease are :—

(1) No evidence of Stokes-Adams disease (No slow pulse and E. C. G. normal)

(2) No evidence of any valvular lesion of the heart clinically, and the X-ray appearance of the heart is normal.

IV. The patient denies history of Alcohol.

V. Intracranial tumours. Points against are :—

(1) No symptoms or signs of cerebral tumour; no headache or vomiting. Fundus normal, no signs of papilloedema, optic neuritis or defects in vision.

(2) The convulsion did not begin in any particular area, spread in any regular order, i.e., were not Jacksonian in type.

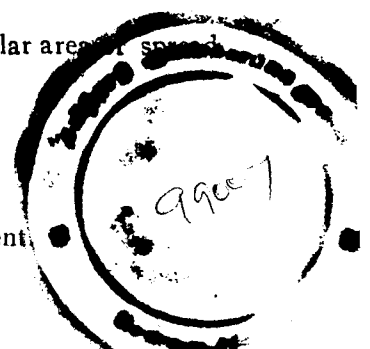
(3) X-ray of skull: sella turcica normal.

VI. Cerebral syphilis. Points against are :—

- (1) No history of syphilis and no stigmata present.
- (2) Wassermann: negative.
- (3) No evidence of paresis of cranial nerves.

The sweating of the palm and soles of the feet and also the history (that he got the fit only when he spent a sleepless night the previous night of the attack, and that when he slept well in the night, the next morning he was free) suggested that the case might be one of vasomotor neurosis and that, the normal antigravity apparatus maintained by the vasomotor mechanism by constricting the blood vessels was at fault. Hence the patient's blood pressure was taken lying in bed and standing and the readings were :—

	Lying in bed.	Standing.
Systolic pressure ...	124 mm. Hg.	104 mm. Hg.
Diastolic pressure ...	60 mm. Hg.	70 mm. Hg.



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There was a difference of 20 mm. Hg and this strengthened the suspicion. His pulse rate was counted lying in bed and standing and this showed a difference of about 24 beats per minute.

Pulse rate lying in bed 78 per minute.

Pulse rate standing 102 per minute.

The patient's urine was examined the next morning as soon as the patient got up from his bed and also after one hour's exercise.

The findings were :—

<i>Urine before exercise.</i>	<i>Urine after one hour's exercise.</i>
Sp. gr.—1010.	1013.
Reaction—Acid.	Acid.
Sugar— nil.	No sugar.
Albumin— nil.	Albumin + + 0.175 %.
Deposit— nil.	No deposit.

The patient was put on Calcium lactate that day.

Calactas of 3 Jss.

Fiant pulveris No. 4.

To be given in an ounce of sugar water 4 times a day.

The patient's urine was examined the next and succeeding days and it showed *no albumin again*. The condition is one of orthostatic, postural or functional albuminuria produced on account of vasomotor inefficiency. Mental work and physical work produce much albuminuria in some cases and it is also common in anaemic pale youths. The above condition disappears after rest as after administration of Calcium.

Treatment and progress :—

(1) The patient was put on Calcium Gluconate injection, (intravenous, one ampule of 5 c.c. 10 per cent solution diluted again with 5 c.c. distilled water) once in 4 days.

(2) Since the patient was pale and anaemic he was put on iron and arsenic mixture.

(3) The patient was given general treatment for neurosis such as whirlpool and electric baths every day for half an hour so as to get his vasomotor system toned up.

The patients' blood pressure was also recorded every day standing and lying down and there was a gradual fall in the difference of pressure. When the patient was discharged the difference of pressure was only 10 mm. Hg. as against 20 mm. before treatment.

The blood pressure readings before discharge were :—

	<i>Lying in bed.</i>	<i>Standing</i>
Systolic pressure.	110 mm. Hg.	100 mm. Hg.
Diastolic pressure.	70 mm. Hg.	80 mm. Hg.

I am grateful to Rao Bahadur Dr. P. Krishnaswami, M.B. & C.M., M.R.C.P., for his valuable suggestions in getting up this case sheet and kindly permitting me to publish the same.

League of Red Cross Societies.

BY A. NARAYANAN KUTTY MENON, IV YEAR.

At the present day when Nations are casting their greedy looks among themselves in their lust to satisfy their Commercial and Territorial ambitions with superior Scientific skill, and when President Roosevelt, Sr. Mussolini, Hitler, Macdonold and a host of other skilled political leaders in Conference get desperate to find out means to combat world economic depression and unemployment, the existence and working of such humanitarian societies as the League of Red Cross Societies form a silver lining to the otherwise dark horizon. The aim of this great organisation being not divergent from that of a Medical man, a brief survey of this League will not be out of place in the pages of a Medical magazine. The so called modern Adonis with his rimless spectacles, matchless tweed suit and spotless Gladiator shoes and smoking at an average twenty-five gold flake cigarettes may make a Red Cross Society Member in his multicoloured robes, the target of his polished ridicule. But to our countless unfortunate brethren who are a prey to devastating diseases and to the much more numerous soldiers who lie helpless and wounded in the battlefield in times of war, the very presence of these gentlemen forms a fountain of solace. Many a heroic deed done by the members of this society whose mission is service and not fame was unnoticed both by the Historian and the bard and this brings to the Memory's page the immortal lives of poet. "Full many a gem of purest ray serene the dark unfathomed caves of ocean bear, Full many a flower is born to blush unseen and waste its sweetness in the desert air."

If only some of them wanted to jump to the lime light, many a part of the world will have been singing with songs composed in their honour.

The history of this organization is a long chain of golden deeds each link appearing to glitter more than the other. A weather beaten ex-trooper Saint Camillus De Selles by name, who had met Dame Misery face to face, created a wonderful order similar to Red Cross Society called 'Brothers of a happy death' the humanitarian activities of which were confined to the pestilential areas. The Pope approved of this work and permitted them to wear the red cross. Florence Nightingale, the brightest star in the firmament of nursing profession, whose merciful mission during the dark days of Crimean war reduced the loss

by one half, brought to the attention of the world the imminent necessity of an organisation to attend to the sick and wounded in the battlefield. For the time being her fervent appeal emanating from the utmost recesses of a sincere heart became only a cry in the wilderness. War broke out in 1859 in Lombardy when the much apprehended tragedy re-occurred due to lack of efficiency and organisation. Mostly owing to the indefatigable efforts and volcanic energy of Henri Dunant, a Swiss citizen, his book called *Souvenir De Solferino*, in which a clarion call to render aid to the sick and suffering had been made, was discussed at a meeting of the influential society 'Genevoise D'Utilite Publique.' This meeting formed the starting point of the present Red Cross Society. An international conference was held in October 26, 1863, in which thirty-six members representing 14 Governments and 6 Associations participated, when a proposed code of International enactment was discussed and important recommendations were agreed to. A small incident decided the badge for the society. The hall in which the agreement was signed was decked with Swiss flags—white cross on a red back ground. Some unknown hand reversed the central big flag—red cross on white back ground. This innovation was much appreciated and was accepted as the badge. A second international conference was held at Geneva in 1864 and subsequently conferences were also held at Paris, Berlin and Vienna. The Headquarters of the Society is situated at Geneva which is the Historic centre of many other world organisations as the League of Nations and World Disarmament Society and Conference. At 1918 a Federation of Red Cross Society was formed with fifty affiliated societies. Since 1869, a quarterly, 'International Deo Societes De Lan Croix Range' is being issued by the central society. The English Hospital of St. John of Jerusalem, The National Society for aid to the sick and wounded in war, Eastern War Sick and Wounded Relief Fund, Staffed House Fund, The French Societe De Secours Aux Militaris Blesse, Russian Johnniter and Austrian Semariter are the best known Red Corss Societies.

The programme of the Red Cross Society can be classified as (A) *Improvement of Health*. The Society forms the information Bureau for all health questions and does health propaganda by distributing health propaganda literature, arranging health lecture and placing at the disposal of National Health Associations. All the societies' resources in this line. (B) *Prevention of Disease* chiefly by extending the Nursing

activities. A Nursing institution is established in London in an elaborate scale where an International course in Public nursing is instituted. 150 students representing 39 different countries have completed this course. Beside this institution possess a valuable lending library. (C) Mitigation of suffering, as Disaster Relief also forms an important factor in the programme.

During the famine in Russia, Typhoid epidemic in Eastern Europe, Earth quakes in Japan, and Cyclone havoc in Cuba, the amount of service done by this society is phenomenal. During the late war in Shanghai, when the helpless Chinese refugees were flying to the inter-national zones for safety unable to shield the terrific aerial bombing of Japanese aeroplanes leaving their fathers, husbands, and sons wounded in the battlefield, Red cross heroes with their Ambulance Cars and Doctors were the only saviours of the wounded soldiers.

Indian Red Cross Society was established as a National society in 1920 with Headquarters in Delhi during the winter, and in cool heights of Simla during the summer. Branches are established in all the provinces and in some Native States. Child Welfare, Popular health education, Relief work in disasters and supplying comforts to Hospitals constitute their chief work. Annual report of the Society in 1932 shows 13,337 adult members and 192,516 junior members in its rolls with 132 Child Welfare centres. Madras is a model centre in which practical lessons in Health are given by members of the local hospitals. Three hundred Civil and Military Hospitals are supplied with comforts by the Indian society at a cost of a lakh and half rupees. The service done by this society to our illfated mother country groaning under grim poverty, cruel superstitions, appalling illiteracy and devastating diseases can hardly be exaggerated. The path of the social reformers and humanitarian workers in this country is always a bed of thorns. A society like that of the Red Cross, embracing in its fold enthusiastic men and women irrespective of caste, community and creed working for the welfare of the distressed, can serve as an object lesson to those misguided youths, unmindful of the havoc done to our father land which was a veritable garden of Eden by the seeds of communal poison, attempting to inject the self same venom into the sacred portals of colleges.

Editorial

Contingent on the Surgeon-General, General Sprawson proceeding on three months leave to the U. K., the following temporary changes both in the college and hospital were effected. Lt.-Col. R. G. Croly, I.M.S., acts as Surgeon-General and Lt.-Col. K. G. Pandalai, I.M.S., is acting as Superintendent, General Hospital and Professor of Surgery, Medical College, Madras.

* * * *

Dr. P. K. Koshy, M.B., F.R.C.P. (Edin.) and Dr. R. Krishna Rao, M.B., F.R.C.S., have been confirmed in their appointment as Professor of Anatomy into their respective colleges at Madras and at Vizagapatam.

* * * *

We are glad to have Dr. A. Srinivasalu Naidu, B.A. B.S.Sc., M.D., back in the staff of the Medical College as Professor of Medical Jurisprudence. His long connection with the department of Pathology will be a valuable asset to him in his new department.

* * * *

Col. R. E. Wright, I.M.S., has returned from his long leave and resumed his appointment as Superintendent of the Ophthalmic Hospital and Professor of Ophthalmology.

* * * *

We are sorry to lose Dr. H. S. Halge, L.R.C.P., M.R.C.S., I.M.D., from our midst on account of some of the changes in the College Departments. Dr. S. Ramakrishnan, L.R.C.P. & S., D.T.M. & H. (London), Professor of Bacteriology, acts as senior assistant to the Principal in his place.

Dr. K. S. Viswanathan, M.B.B.S., B.Sc., Assistant to the Professor of Hygiene, is posted to be in charge of the Medical College Company of the U. T. C. and the increase in the enrolment is an index of his popularity.

* * * *

A Prize in Pharmacology has been newly instituted. It will be known as the Dr. Jesudoss's Prize in Pharmacology. This is to perpetuate the memory of the Late Dr. S. Jesudoss, B.A., M.B. & C.M., F.R.C.S. (Edin) D.P.H., Assistant Director of Public Health, who died in 1922.

* * * *

The prize of Rs. 40 offered by Dr. J. C. David, M.B., Ph.D., Professor of Pharmacology, for German was awarded by the Association to Mr. Dharmaraj, 1st year M.B.B.S. student who passed the Diploma Examination in German held by the University of Madras in 1932. We congratulate him very heartily.

* * * *

The Annual Reception to the graduates of the year went off very well. The refreshment arrangements and stage management left very little to be desired. The organisers of this year deserve every congratulation. If the noise during the performances is curtailed, all else will border on the ideal.

Review of Books.

"Materia Medica of Pharmaceutical Combinations and Specialities" by U. B. Narayana Rao. With an introduction by Dr. G. V. Deshmukh. Published by Rayan Pharmacy, Bombay, 1932.

It must be agreed on all hands that patent medicines should not be the alpha and omega of the practitioner's therapeutic armamentarium. Identical drugs have been put up by different manufacturing chemists under varying trade names, giving rise to confusion. Drugs mentioned in the B. P. are also sold under other names. Perhaps it is not known that Hexamine, B. P. is cheaper than urotropine and Acid Acetyl salicylic than aspirin or genaspirin. It is the patient that stands to lose by the prescription of such proprietary remedies. But it cannot be gainsaid that many well known manufacturing chemists have assisted in widening our knowledge especially in the realm of chemotherapy. The Germans are to the fore in this respect and we shall be the losers if we do not take advantage of their aid. Many of the firms have spent a mint of money in real scientific research. For examples the two fractions, *oxytocin* and *vasopressin* in Pituitary extract were isolated in pure state in the laboratories of Parke, Davis & Co. Moreover many of these firms put up very useful and convenient combinations of medicinal preparations of proved value. A rational practitioner will exercise the judicial mind in order to sift the grain from the chaff and he will not prescribe unknown remedies, the composition of which is unknown to him.

As a book of ready reference to the number of specialities of medicinal drugs, whose name is legion, put up by manufacturing chemists the world over, the work under review fills an existing need and must find a place on the book shelf of every busy practitioner.

The book is divided into several sections. Two sections give in alphabetical order the names of manufacturing chemists with their Indian agents. The main section covering 213 pages gives in alphabetical order the names of proprietary preparations, their composition, dosage and therapeutic indications. In another 30 pages the specifics are again classified under therapeutic headings.

The book is got up neatly and has been printed by the Basel Mission Press, Mangalore.

J. C. D.

My entrance into the Promised Land.

Here I am at last in the land of my dreams—the Medical College. From as far back as I can remember I have regarded doctors as demi-gods and secretly longed to be one. At first I contented myself with doctoring ducks and chickens but later I aspired to higher activities; so when I obtained admission to this abode of the learned I thought myself the luckiest person in the world.

Well, on that eventful day, the 3rd July, I set off for the college feeling strangely happy and important for from that day I would be able to call myself a medic. But when I arrived at the gate I noticed that my sense of importance had diminished greatly. Gone was the feeling of elation and pride of an hour ago. The feeling I had now was that of a “stranger in a strange land.”

However I tried to look brave, and started for the ladies' room, which seemed to be miles away from the gate; and all the way there seemed nothing else but men, men, men—men of all ages, men of all sizes, men in every costume. Bunches of them on every side, while round each corner I spied either a trousered leg, or the flying end of a tie, just something to show that round the other side was a man.

At last I reached the ladies' room where, sitting or standing in groups round the table were a number of lady students all laughing and talking, apparently quite at home. I went timidly to one of them and asked where the office was.

“I suppose you are a new pre-reg. student.” She answered. “Well the office doesn't open till 11 o'clock.” With that she subsided into silence, and I into the nearest chair.

Since I had to wait for a whole hour, I decided to spend it profitably. I sat in my corner and watched the various students as they chatted gaily wholly unconscious of the insignificant watcher in the farthest seat. I listened in wonder to their conversation which was sprinkled, liberally with such high sounding words as “pathology”, “pharmacology” etc. In fact, they seemed to find it extremely difficult to keep

the “ology” out of their talk. This and the ever-present stethoscopes showed plainly their seniority, and as I listened, I wondered if I should ever attain similar heights.

At last it was 11 o'clock and I made bold to ask another owner of a steth if I could now get my admission ticket. I must have looked very helpless and forlorn, for she took pity on my ignorance, and offered to do the needful for me; so stammering out my thanks I resumed my occupation of the previous hour.

Soon the lady bountiful returned with the precious ticket and I was told I would have to get it signed by the professors. I was just wondering how to go about it when a number of girls came in looking just as bewildered as I was. I knew at once that they were freshers too, so I introduced myself without delay, and learnt they were on the same voyage of discovery as I was.

I tacked myself on to them and we set off on our venture asking the first person we met where the biology class was. “Over there,” was the answer. So we went “over there,” but soon we found ourselves in a maze of passages and doorways, and the next passer-by informed us that we had passed the class-room! In this way we wandered up and down like lost sheep, wondering if our precious tickets would ever be honoured with any signature at all. Finally a kind-hearted lady student offered to take us to each class, and so at last we had our tickets signed and found that our work for the day was over.

Now that that first day has passed, I find the old feeling of pride stealing over me again, as I dream of the days when I shall walk about with a stethoscope and speak only in words of six syllables. May my dream castles never fall to the ground!

YOUNG HOPEFUL.

To
THE EDITOR,
Madras Medical College Magazine.

SIR,

Allow me to appeal, through your columns to the College Association.

The most regrettable feature of our College life is the want of a common room. It is the boast of every University, not excluding our own, that one of their fundamental aims is to cultivate the social life in every student. Every unit, whether an arts College or professional College ought to have this end in view. Colleges are not only teaching centres but also the meeting places of different minds, cultures, habits and manners. It is here we form our character. It is a sorry spectacle to see our College entirely neglecting this side of life. Not to have a common room for a premier institution like the Medical College is to deprive half of its charm and utility.

The very intensity of our College life necessitates a place for recreation. Sustained and continuous work requires relief and recreation in the intervals. So it is more than essential to have a place to which we can resort to, and breathe a sigh of relief whenever we are free.

The medicos are notorious for their ignorance about things social and political. It is because we cannot separate ourselves from our books. But in life we cannot afford to be doctors and nothing more. We are men first and doctors next. It is a painful necessity, if not a duty, to know something about things that are around us. So every opportunity even amounting to temptation should be afforded to us to cultivate this important aspect of our life.

Time is opportune. New buildings are nearing completion; and at this juncture it is our earnest prayer that the authorities should look to this primary need of ours. We anxiously look forward to the early opening of a common room decently furnished with important dailies, weeklies, journals and provisions for indoor games, on the model of the Law College common room. A common room is the very quintessence of a college life.

We have waited for long. Hope our prayers will be heard.

MADRAS, } I am yours,
15th August, 1933. } K. NAGAPPA ALVA,
2nd Year M. B. B. S.

[It is learnt from reliable sources that the present Students' Library will be converted into a students' common room and a number of other rooms will be handed over to McGrath Caffé. This will be given effect to as soon as the new buildings are taken over—Edr.]

IN MEMORY OF
MR. B. SHIVA RAU.



I find it a very painful and sad task to write about Mr. B. Shiva Rau—my dear friend and class-mate. Born in 1908 in a little village in South Kanara, educated at Mangalore, he joined the Medical College after a brilliant career in the Arts College. Medical examinations were not too unkind to him. He appeared for the Final M.B. last April with great preparation and good confidence. But he was taken away soon after the papers were over. God loved him so much that He spared him further worries and troubles that those who are left behind have to encounter. He succumbed to an attack of small-pox on 24th April 1933 after several days of suffering and agony.

By losing him the profession is poorer by one prospective worthy member. We miss a dear friend and pal, and his aged mother is left behind without her dearest child.

May God rest his soul in peace and help his unfortunate and grieving mother to bear up with fortitude.

B. SANJIVI RAU.

IN MEMORY OF
MR. ABDUL WAHAB.



The late Mr. Abdul Wahab joined the Medical College in July 1932 after passing his Intermediate Examination from the Christian College. Although the pre-registration examination was found to be too hard for him for the first time he got through it in the second chance. But unfortunately just after knowing his result he was laid up with typhoid for a month at the end of which he met his premature death in the 23rd year of his life. He was a short, simple, quiet-going, ever-smiling blooming youth, gentlemanly in manners, and reserved in nature. Our heartfelt sympathies are due to the bereaved family and we pray that his soul may rest in peace.

SYED MOHAMED GHIOUSE,
II Year.



Group-photo taken on the occasion of "Reception to the Graduates of the College" on 4-8-55.

In Lighter Vein.

Students or Sponges?

"The lecture system is a process by which the contents of the professor's notebook are transferred by means of a fountain pen to the students notebook, without having passed thro' the brain of either..... Did anybody ever get an education by being a sponge?"

HAMILTON HOLT, PRESIDENT OF ROLLIN'S COLLEGE.

The Physician as Thinker.

A score of Medical students are standing round a bed; three or four of them have examined the patient and an interne is now doing it, for the case is exceptionally interesting and may go on record. Every now and then the young doctor says a few words which a score of pencils note down. But a flutter passes over the little crowd. The patron, Potain himself, is here. He has heard of this case and wants to see for himself. In a few moments his magnificent head bends towards the patient and a scene, unforgettable to those whose who witnessed it, begins. Not a word! The splendid intelligence of the famous physician now abides his ear. With closed eyes and a marvellous receptivity over his face, Potain listens. At intervals something like beatitude in his expression shows that this examination goes well, every infinitesimal sound, every absence of sound, is interrogated, the students know that even a crease in the pleura becomes apparent to this man as he listens. Half an hour passes without these young men getting tired of this scene, however mute, and entirely given up to thought. At last, Potain reappears; the case is as clear as if all the organs were on the dissecting table and a few plain words describe it; thro' the solid thorax an irresistible intellect has done its divining work."

ERNEST DIMNET IN "THE ART OF THINKING."

Lecturer :—I don't care whether a student passes or fails. If I had been given to worrying that way, I would have committed suicide long ago.

B. D. :—It is not too late yet, Sir!

A certain lovely girl criticised my friend's scarlet tie as being too gaudy; and the impudent fellow explained that he had copied the colour-scheme from her lips.

By a Professor :—Logarithm is of course an expression in Oxometry!

S. Wards :—"Where is the long-plantar ligament?"

Student : In the buttocks, Sir.

P. M. Room :—"Has he got a hernia?"

"Ask him to cough and see."

From a case Sheet :—Present complaint :—Pain and inability to use hind limbs.

From a case Sheet :—General condition on admission :—Patient is of a Romantic Temperament.

"A kiss," said young Charles "is a noun, we allow; But, tell me dear, is it proper or common?" Lovely Mary blushed deep and exclaimed "why, I vow, I think that a kiss is both *proper* and *common*."

A Medical Journal has found that there are from one hundred thousand to two hundred thousand hairs on a woman's head. The number of hairs on a man's head depends considerably on the time he has been married.

A miser engaged Hogarth to paint for his stair case a picture of the destruction of Pharoah's host in the Red Sea. He agreed to pay only half-price. Hogarth painted the canvas all over red. "Zounds!" said the purchaser "where are the Israelites?" "They are all gone over." "Where are the Egyptians?" "They are all drowned," replied the painter.

Judge :—Have you anything to say before the Court passes sentence on you?

Prisoner :—Well, all I've to say is, I hope yer honour'll consider the extreme youth of my lawyer, and let me off easy.

A little girl of three years was saying her prayers, when her little brother, about four years old, came slyly behind her and pulled her hair. Without moving her head, she paused and said: "Please, Lord, excuse me a minute while I kick Herby."

"Guilty, or not guilty?" asked the clerk of the Court of a prisoner. "What are you put there for but to find that out?" replied the prisoner.

Doctor Hill, a notorious wit, physician and man of letters, having quarrelled with the members of the Royal Society, who had refused to admit him as an associate, resolved to avenge himself. At the time that Bishop Berkeley had issued his work on the marvellous virtues of water, Hill addressed to their Secretary a letter purporting to be from a country surgeon, and reciting the particulars of a cure which he had effected. "A sailor" he wrote, "broke his leg, and applied to me for help. I bound together the broken portions, and washed them with the celebrated tar-water. Almost immediately the sailor felt the beneficial effects of this remedy and it was not long before his leg was completely healed!" The letter was read and discussed at the meetings of the Royal Society and caused much difference of opinion. Papers were written for and against the tar water and the restored leg, when a second letter arrived from the (supposed) country practitioner: "In my last letter I omitted to mention that the broken limb of the sailor was a *wooden leg*!"

A youngster was asked to give his idea of the meaning of "responsibility", so he said "well, supposing I had only two buttons on my trousers and one came off, all the responsibility would rest on the other button".

"Why did you marry a man who is eighty years of age?"

"Because I couldn't find one equally rich who was ninety".

I sat me down and thought profound ;
 This maxim wise I drew :
 It's easier far to like a girl,
 Than make a girl like you.

An American has taught ducks to swim in hot water and with such success that they lay boiled eggs. Who says this is not the Age of improvement ?

A shrewd milliner in the suburbs has taught his parrot to say "Pretty creature" to every lady who enters his shop and his business is rapidly increasing.

"Landlord, that's a dirty towel for a man to wipe on." "Well, you are mighty particular ; sixty of my boarders have wiped on that towel this morning, and you are the first one to complain".

The course of true love can be traced in the eight letters produced at the hearing of a breach of promise case : The first letter commenced "Dear Mr. Smith," then followed "My dear John," then "My darling John," "My own darling Jack," "My darling John," "Dear John," "Dear Sir," "Sir," and all was over.

"What is an epistle?" asked a Sunday School teacher of her class. "The wife of an apostle", replied the young hopeful.

An editor at a dinner table being asked if he would take some pudding, replied, in a fit of abstraction. "Owing to a crowd of other matter, we are unable to find room for it."

Woman is said to be a mere delusion, but it is sometimes pleasant to hug delusions.

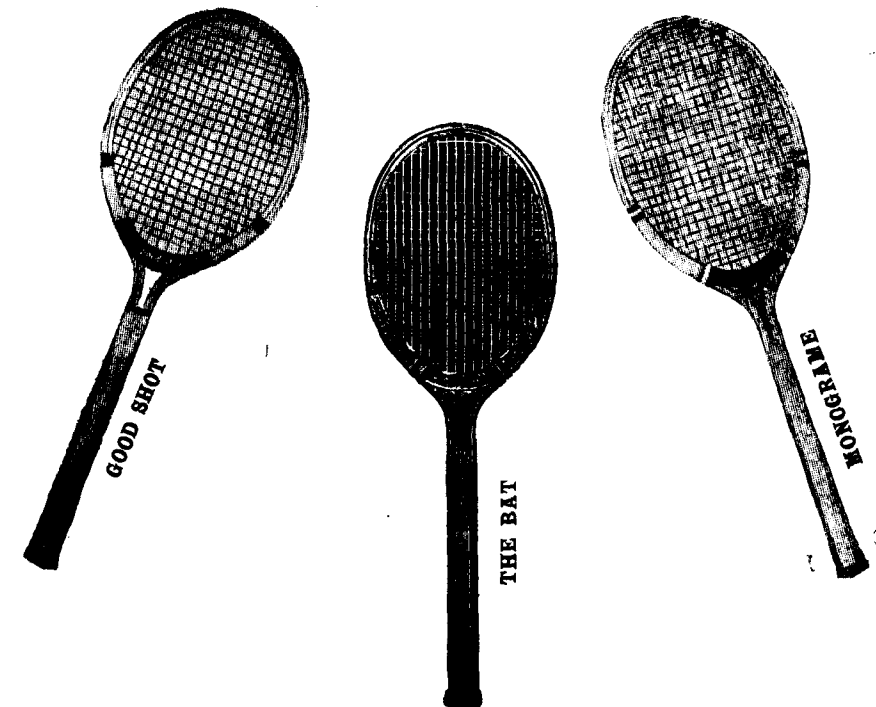
There was once a man whose objection to paying doctor's bills was so great that he purchased a book on medicine, and by its aid he treated himself successfully and economically for many years. He eventually died of a misprint.

(Clinical Excerpts.)

[The Student-Editors' thanks are due to the Contributors to this Column.]

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[Sd.] A. J. DODHI,
W.M.S.
Medical Office Incharge,
Women's Hospital.

I am glad to pay a visit to the United Surgical Works Sialkot, on the 9th December 1927.

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[Sd.] P. B. MOTIVALO,
Chief Medical Officer,
Bhavanagar State,
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