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The madras
Medical College
magazine



Vol. XII Nov. 1932 No. 2

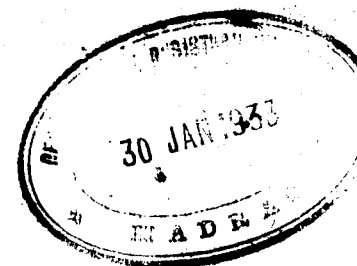
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GENERAL EDITOR

Dr. N. Mangesh Rao, M.B.C.M., F.R.C.S.E.



Vol. XII, No. 2.

NOVEMBER, 1932.

The Madras Medical College Magazine

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The Madras Medical College Association

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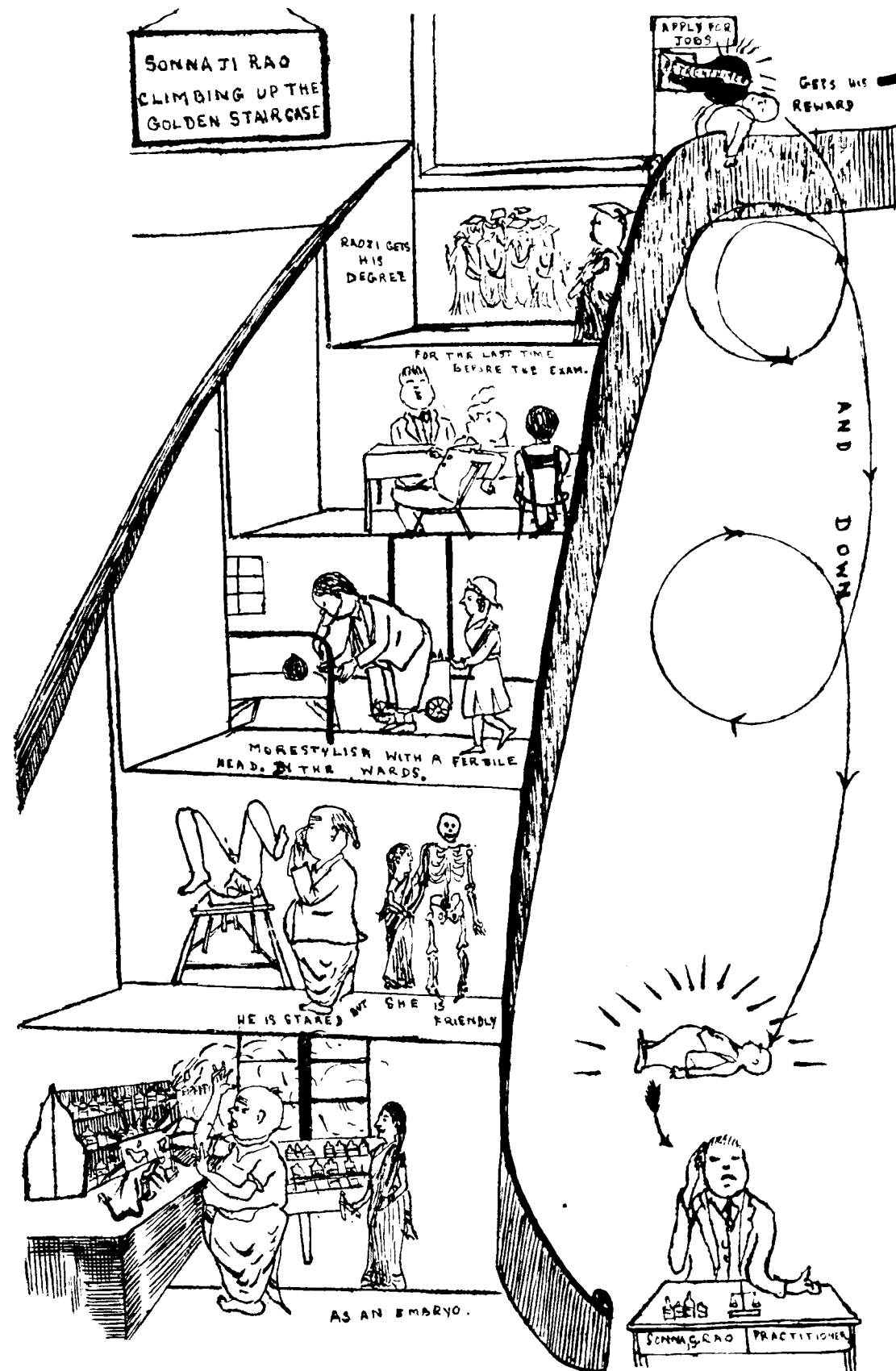
THE OATH OF HIPPOCRATES.

I SWEAR by Appolo the Physician, by Asklepios, by his daughters Hygeia and Panacea and by all the gods and goddesses, that to the best of my ability and judgment I will faithfully keep this oath and obligation.

The master that has instructed me I will esteem as my parents, and shall supply to him, as occasion may require, the comforts and necessities of life. His children I will regard as my own brothers, and if they desire to learn I will instruct them in the same art without any reward. My patients shall be treated by me to the best of my power and judgment in the best manner, without injury or violence.

Neither will I be prevailed upon by anyone to administer noxious medicines nor will I be the author of such advice myself. I shall never recommend means to procure abortion, but will live and practice chastely and religiously. I will not meddle with lithotomy, leaving that to operators of that art. Whatever house I am called upon to attend, I will aim at making the patient's good my chief aim, avoiding all injury, corruption and unchastity; and whatever I hear in the course of my practice relating to the affairs of life of my patients that ought to remain secret, nobody shall ever know of me.

May I be prosperous, honoured and esteemed by all men as I observe this solemn oath, and may the reverse be my lot if I violate it and forswear myself.



THE MADRAS Medical College Magazine

VOL. XII

NOVEMBER 1932

No. 2

The British Pharmacopoeia, 1932.

A BRIEF REVIEW.

BY DR. J. CHRISTOLOSS DAVID, M.B., PH.D.

The publication of a new edition of the British Pharmacopoeia is an event of very great importance, for about one-third of the world sets its standard for drugs, etc., according to this volume. Hitherto, the Pharmacopoeia had been published at irregular intervals, the longest being that between the edition of 1914 and the present one. A special commission on which were represented physicians, scientists and pharmacists was responsible for the production of this edition. Now that a permanent commission has been brought into being, with a permanent secretariat, revision will proceed continuously and a new edition will be published decennially; but in these days of phenomenally quick progress in our knowledge, even this space of time seems to be too long.

The new edition is a decidedly better get up in every way and by its general plan and detailed arrangement is, on the whole, well adapted for ready reference. A conspicuous feature of the new edition is the amount of general and detailed information given under the heading of 'General Notices' and in the appendices. The system of dosage is more fully explained, better standards are laid down for crude drugs, and methods of biological assay and standardisation, which were long overdue, are incorporated.

Many substances or preparations used only in particular parts of the Empire have been omitted, and local authorities are left to standardise such substances and to legislate by means of supplements for their peculiar needs. The introduction of an Indian supplement to the Pharmacopœia is therefore rendered desirable and the institution of the new Indian Medical Council will, let us hope, expedite this. The drugs for inclusion have been selected by reason of their medicinal value, and a number have been omitted because they are believed to have an insufficient medicinal value. Many compound powders, pills, and mixtures have been omitted on the ground that the individual practitioner should prescribe the combination suitable in each case. This argument will not apply for every case, for it is certainly desirable to have standards for many of the pills, etc., used in both hospital and private practice, although the pharmacopœial preparation need not be used every time.

The monograph under the head of each drug is amplified in many cases and structural formulæ are introduced for several important chemicals. The metric system of weights and measures is employed throughout the book for all processes. This is a move in the right direction. But one doubts if the clinicians in this country will readily give up the methods of prescribing to which they have been long accustomed even if the teachers of pharmacology adopt the metric system for prescription writing. Prescribers are requested to give up the use of the signs $\mathfrak{z}$ and $\mathfrak{J}$. They are advised to avoid confusion by using gr. for grains, oz. for ounces (437.5 grains), m. for minims, fl. oz. for fluid ounces and G. for grammes and also to give quantities in *Arabic* numerals.

The list of new additions comprise 128 articles and preparations, of which one is a crude drug, 63 are chemical substances and 42 are galenic preparations. The omissions

include 357 items. The names of 113 articles have been altered. The composition of a good number of preparations have also been altered.

There will always be two opinions as to the advisability of omitting a certain number of these preparations and the wisdom of including certain others. It will be better for clarity of purpose to give in serial order some of the important preparations mentioned in the new pharmacopœia and also to take note of the omissions as we proceed.

Apomorphine Hydrochloridum.—The doses are given as follows:

Expectorant dose:— 0.001 to 0.002 gram
1/64 to 1/32 grain.

Hypnotic and Emetic dose:—

By subcutaneous injection. 0.002 to 0.008 gram,
1/32 to 1/8 grain.

Acidum Hypophosphorum Dilutum.—This preparation, although only used for the preparation of Syrupus Ferri Iodidi is included with a dose of 5 to 15 minims.

Acidum Trichloroaceticum which has been used in dermatological clinics is one of the new drugs introduced.

Acriflavina is one of those new drugs whose therapeutic value has been proved. Although this drug has been used internally and intravenously, no dose has been indicated.

Adrenalina.—The dry product has been made official with a dose of 1/600 to 1/120 grain.

Aethylenum is a general anæsthetic which has found wide application especially in the United States as the

most harmless of the volatile anæsthetics. Strict limits for purity are mentioned.

Agar is the only crude drug added to the new pharmacopœia and has come into its own as a popular laxative especially in the form of emulsions with Liquid Paraffin and Phenolphthalein, as sold under the trade names, Petrolagar, Agarol and Paragol. The dose prescribed is 60 to 240 grains.

Alouinum is now described as a mixture of crystalline principles and the maximum dose is reduced to one grain.

Amidopyrina better known as Phramidon is now official. Dose : 5 to 10 grains.

Ammonium bicarbonate is a substitute in pharmacy for the carbonate.

Amylocaine Hydrochloridum.—Otherwise known as Stovaine has been introduced with dosage for subcutaneous and intrathecal injection. Dose : $\frac{1}{2}$ to 1 grain.

Antitoxins of Diphtheria, Tetanus and Welchium are new additions.

Benzocainum will be easily recognised under the name of Anæsthesin. Dose : 5 to 10 grains.

Bismuth Subnitrate has been omitted.

Bismuthum Precipitatum has been included. This is the new finely divided bismuth metal of not less than 98.5 per cent purity, which is given for intramuscular injection in Syphilis. The maximum dose for intramuscular injection is 3 grains and for the *Bismuth Salicylate* 2 grains.

Calcium Lactate.—The dose is increased to 60 grains.

Carbon Tetrachloridum.—A high standard of purity is demanded for this drug. Dose : 30 to 60 minims.

Carbromalum is the official name for the drug marketed as uradal or Adalin. This hypnotic has been included in the last edition of U. S. P. but is not so widely used in this country. Dose : 5 to 15 grains.

Cataplasma Kaolini is the official imitation of the proprietary preparation known as Antiphlogistine.

Chloramina contains from 98 to the equivalent of 103 per cent of Sodium p-toluene-sulphonchloramide.

Cinchophenum or atophan the maximum dose prescribed is 15 grains.

Cocaina.—The injection official in the B. P. 1914 has been omitted.

Colophonium is the improved name for Resina.

Dextrosium.—The pure anhydrous glucose for oral and intravenous administration.

Digitalis.—The leaf is assayed biologically and the standard is expressed in units of activity. The maximum dose is $1\frac{1}{2}$ grains or 1 unit or as for a single dose 10 grains (6 units).

Elixir Cascare Sagradæ is a more palatable preparation than was found in the previous issue. Dose : 30 to 60 minims.

Emetinæ Hydrochloridum and Emetine Bismuth Iodide (1 to 3 grains) are now official.

Emplastrum Colophonii is the new name for sticking plaster.

Ephedrine Hydrochloride. $\frac{1}{4}$ to $1\frac{1}{2}$ grains.

Ergot Preparata is defatted ergot, powdered and standardised to contain 0.1 per cent of the total alkaloids, as ergotoxin. Dose from 5 to 15 grains.

Ergotoxinæ Aethanosulphomas is the salt of ergotoxin selected for official purposes and recommended for use by subcutaneous and intramuscular injections in doses of 1/20 to 1/60 grain. The salt has been used for the assay of Ergot by Broom and Clark's method. In the new pharmacopœia, a colorimetric method for the assay of Ergotoxin has been adopted. In the light of the recent researches of Dr. Moir throwing doubts on the assumption that the activity of Ergot preparations resided in the ergotoxin content, the necessity for introducing such a costly and difficultly controlled drug as the salt in question seems problematical. Luckily, however, Dr. Moir is of opinion that preparations with high ergotoxin content are as active therapeutically as the original liquid extract of B. P. 1914.

Extractum Ergotal Liquidum is prepared to contain 0.06 per cent of alkaloid and should not lose more than 0.02 per cent on storage. It is made with an acid-alcohol medium. Dose: 10 to 20 minims.

Extractum Hepatis Liquidum is a new preparation containing in each fluid ounce the equivalent of 1/2 lb. of fresh liver.

Extractum Hepatis Siccum has the same strength for each dose.

Extractum Malti and *Extractum Malti cum Oleo Mercurii* are now included.

Extractum Hyoscyami Liquidum contains 0.05 per cent of alkaloids calculated as hyoscyamine.

Extractum Pituitari Liquidum is the extract of the posterior lobe of the Pituitary gland. The B. P. strength is 10 units per c.c. and the subcutaneous dose is 2 to 5 units.

Extractum Senegæ Liquidum is a 1 in 1 liquid extract with a dose of 5 to 15 minims.

Extractum Sennæ Liquidum is used for making the syrup. Dose: 10 to 30 minims.

Erythritylis Tetranitras Dilutus has been substituted for the Erythrol tetranitrate and contains 50 per cent sugar of milk. Dose: up to 2 grains.

The extracts of Agropyrum, aloes, Bael, Cannabis indica, colchicum, Ergotæ, Euonymus, cotton root bark, Grindelia, Hydrastis, Kava, Picrohiza, Rhelarb, Strophantus, Taraxacum, Viburnum and the liquid extract of opium have all been deleted.

Ferri et Potassium Tartras and Ferri Phosphas Saccharatus are also removed from the list. The dose of *Ferrum Redactum* is raised to 10 grains.

Fluorescinum Solubile which is the sodium compound and is used for diagnosis of corneal lesions is now included.

Liquid Glucose has been introduced to avoid confusion with dextrose and solid glucose.

Hydrargyri Oxycyanidum is the mixture of true oxycyanide and cyanide. Dose 1-6 grains for intramuscular and intravenous injections.

Ichthammol better known as Ichthyol is now incorporated in the new pharmacopœia. Dose: 5 to 10 grains.

Indigocarmine as a diagnostic agent has been added, with the dosage of 3/4 to 1 1/2 grains for injections and 1/8 to 1/4 grain intravenously.

Fresh and concentrated infusions have been introduced in the place of those infusions official in the previous edition.

Infusio Digitalis Recens—90 to 300 minims and 1/2 to 1 fl. oz replaces Infusion of digitalis, B. P. 1914.

The five injections of the 1914 pharmacopœia have been torpedoed and with good reason too; and in their places have been substituted the following:—

Injectio Bismuthi which is a suspension of precipitated metallic bismuth, 20 per cent in a solution of dextrose and cresol in distilled water. Dose: 8 to 15 minims.

Injectio Bismuthi Salicylatis contains 10 per cent of bismuth salicylate with 1 per cent of camphor and of phenol in olive oil. Dose: 10 to 20 minims.

Injectio Ferri is a neutralised aqueous solution of an ammonium iron citrate and contains the equivalent of 1/10 grain of iron in the maximum dose of 30 minims and will be probably considered to be too dilute. Recent researches have shown that iron is as well if not better assimilated on oral administration as after parenteral injection and so the necessity for this preparation seems to be doubtful.

Injectio Hydrargyri.—(Mercurial cream) contains 10 per cent of metallic mercury with camphor (10%) and creasote (10%) in a mixture of wool fat and olive oil. Dose: 5 to 10 minims.

Injectio Hydrargyri Subchloridi.—(Calomel injection) is a similar preparation containing about 5 per cent of calomel. Dose: 10 to 20 minims.

Injectio Sodii Chloridi et Acaciae is the 6% Bayliss's gum saline for intravenous injection.

Insulinum has naturally found its place in the pharmacopœia; the sterile solutions are to contain 20 units per c.c. The dose is from 5 to 100 units.

Iodophthaleinum is the di-sodium compound of tetraiodophenolphthalein. It is administered by the mouth in the form of capsules or in admixture with citric acid as a

suspension in water, and by intravenous injection for the delineation of the gall bladder prior to radiography of that organ. The oral dose is 0.04 to 0.06 gram per kilo body weight up to a total of 5 grams and by intravenous injection 3 grams may be administered.

Lactose is the new official name for milk sugar.

Lævulosum is the sugar which does not produce an increase of sugar concentration in the blood when the liver is normal and is therefore used as a test for liver efficiency.

Liquor Adrenalinae Hydrochloridi.—The subcutaneous dose is rightly reduced to 2 to 8 minims.

Liquor Ammoniac Dilutus.—A dose of 10 to 20 minims is given.

The new *Liquor Arsenicalis* is a neutral solution and replaces the two *Liquors* of the 1914 B.P. It does not contain compound tincture of Lavender. Dose: 2 to 8 minims.

Liquor Ergosterolis Irradiati is the solution in a vegetable oil of vitamin D prepared by ultraviolet irradiation of ergosterol and dissolving either the product or the separated calciferol in oil, so that each gram contains 3000 units of antirachitic activity.

Liquor Glycerilis Trinitratis is the new name for Liquor Trinitrini.

Liquor Iodi Fortis and *Liquor Iodi Mitis* in accordance with international convention are new names for the tinctures of 1914 B.P.

Liquor Iodi Simplex is the continental iodine solution and contains 9 per cent of total iodine and the maximum dose is 15 minims.

Liquor Quininae Ammoniatus is the new name for Ammoniated Tincture of Quinine.

Liquor Sodii Chlorinati Chirurgicis is the official Dakin's solution.

Liquor Sodæ Chloridi Physiologicus is normal saline.

Liquor Strychninæ Hydrochloridi.—The dose is now from 3 to 12 minims.

Liquores Acid Chromici, Ammonii Citratis, Atropinæ Sulphatis, Bismuthi et Ammonii Citratis, Calcis Chlorinati, Calcis Saccharati, Ethyl Nitritis, Ferri Perchloridi Fortis, Ferri persulphatis, Formaldehydi Saponatus, Hamamelidis, Hydrargyri Nitratis Acidus, Morphinæ Acetatis, Morphinæ Tartratis, Pancreatis and Potassii Permanganatis are all omitted.

Methyl sulphonal is better known as Trional. Dose: 5 to 20 grains.

Methylthionine Chloridum is the official Latin name for Methylene Blue. Dose: 1 to 5 grains. For injections 5 per cent solutions.

Mistura Magnesii Hydroxidi is perhaps the official equivalent for Milk of Magnesia.

Mistura Sennæ Composita is retained but the infusion is to be made with senna pods instead of the leaves. All other mixtures have been deleted.

Among oils, *Oleum Chenopodii* is introduced and is to be assayed for ascaridol. *Oleum Hydnocarp* and *Oleum Hydnocarp* *Aethylicum* which are universally used in the treatment of leprosy are now official.

Oleum Santali Australiensis has been made official and the necessity for this is not clear when drastic pruning of many useful substances has been carried out.

Neocarphenamina has been recognised as the official name for Neosalvarsan. The dose is from 2½ to 14 grains.

Nitrogen Monoxide.—The inclusion of this gas serves a useful purpose in providing an official standard for this important anæsthetic.

Oculenta are ointments for use in the eye and seven such are included:—Atropine, Atropine and Hydrargyri Oxidi, Cocaine, Hydrargyri Oxidi, Hyoscina, Iodoformi and Physostigminæ. The basis is a mixture of yellow soft paraffin and anhydrous lanolin.

Opium Pulverata is powdered opium. Dose: ½ to 3 grains.

Orthocaine is better known as Orthoform. Dose: 1½ to 3 grains.

Pancreatin.—Dose from 3 to 10 grains.

Paraffinum Liquidum of the new pharmacopœia is a heavier preparation and the dose is ¼ to 1 fl. oz.

Phenobarbitonum is the familiar *Luminol* and is given in doses of ½ to 2 grains. *Phenobarbitonum Solubile* is the soluble sodium compound.

Physostigmine Salicylas is substituted for Physostigmine sulphas with a dose of 1/100 to 1/50 grain.

The students' work is greatly lessened by the omission of the following pills:—*Alcæs et Myrrh*, *Colocynth Co.*, *Hydrargyri Subchloridi Co.*, *Ipecacuanha cum Scilla*, and *cum Urginea*, *Phosphori*, *Plumbi Copii*, *Quininæ sulphatis*, *Saponis Co.*, *Scillæ Co.*, *Urginea Co.* The omissions are under the assumption that each individual practitioner would like to have his own ingredients for these pills.

Pilula Ferri Carbonatis is the new name for Blaud's pills. The dose is raised to a maximum of 30 grains.

Potassium Carbonate.—The dose is reduced to 2 to 5 grains.

Procaine Hydrochloridum is better known as Novocaine. Doses by mouth are $\frac{1}{2}$ to 2 grains, by subcutaneous injection up to $1\frac{1}{4}$ grains and by intrathecal injection up to $2\frac{1}{4}$ grains.

The new pharmacopœia contains only eight compound powders: Compound powders of chalk, chalk with opium, liquorice, jalap and tragacanth are unaltered in name.

Pulvis Effervesceus Compositus is the new name for the good old *Scidlitz* powder.

Pulvis Ipecacuanha et Opii will be recognised as Dover's and it contains lactose instead of Potassium sulphate. The maximum dose is reduced to 10 grains.

Pulvis Rhei Compositus now contains both heavy and light magnesia.

Quinidine Sulphate is official with a dose of 3 to 10 grains.

Quinine et Ethyl Carbonate or Euquinine is included with a dose of $1\frac{1}{2}$ to 15 grains.

Quinine Tannas has according to recent observers very little clinical use and is costly, and yet it is included. Dose: $1\frac{1}{2}$ to 15 grains.

Saccharinum Solubile is the official Saccharine. Dose: $\frac{1}{2}$ to 2 grains.

Senna Pods are given a dosage of 10 to 30 grains.

Sodium Carbonate.—The dose for this is now 15 to 60 grains and that of *Sodium Carbonate Effervesceus* is reduced to 2 to 5 grains.

Sodium Phosphas.—Dose: 30 to 240 grains.

Slight changes are noticed in the dosage of *Spiritus*.

Strophanthinum.—Intramuscular and intravenous dose: $1/240$ to $1/60$ grain.

The dose of *Strychnine Hydrochloride* is now raised from $1/32$ to $1/8$ grain.

The new specification for *Sterac* gives a dose of 10 to 30 grains.

Sulpharsphenamina or Sulpharsenol is given a dose of $1\frac{1}{2}$ to 10 grains.

In *Easton's Syrup* (not Eastern syrup, as some students insist on telling me!) the amount of strychnine is halved.

Syrupus Pruni Serotinae is the new name for the syrup of virginian prune.

Tabella Glycerylis Trinitralis is *tabella Trinitrini* and is the only tablet of the new edition.

Theobromine and *Sodium Salicylate* as well as *Theophylline* and *Sodium Acetate* are new inclusions. The dose of the latter is from 2 to 5 grains.

Tincture of Digitalis is to be standardised biologically and a single dose of 30 to 90 minims is added.

Tincture Ipecacuanha replaces *Vinum Ipecacuanha* and the doses are 10 to 30 minims as expectorant and $\frac{1}{2}$ to 1 fl. oz. as emetic.

The other wines are either omitted or replaced as 'Tinctures'.

Tincture Opii Camphorata will be recognised as the *Tincture Camphorae Composita* of the B.P. 1914.

The dose of *Tincture Rhei Composita* is altered to 30 to 60 minims.

The dose of *Tincture Scilla* is now 5 to 30 minims, and is half strength.

Stricture of the Male Urethra.

By N. S. NARASIMHAN, F.R.C.S.I., Tutor, *Operative Surgery*.

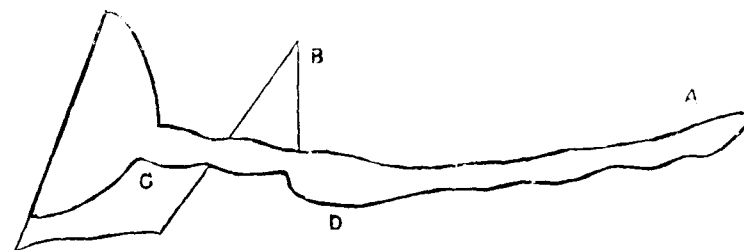
Anatomy of urethra.—The divisions of urethra, its form, length, calibre are well known.

There are two curves the first or anterior curve and the second curve. The first curve is obliterated when the penis is lifted up. The second curve cannot be obliterated and is therefore of more surgical importance than the first. The curve is equal to about $\frac{1}{3}$ of a circle whose radius is 6 cm. (2 $\frac{1}{2}$ inches). The summit of this curve at the internal orifice of the urethra lies about 3 cm (1 inches) behind the under half of the posterior surface of the symphysis pubis, and its deepest part about 18 mm. ($\frac{3}{4}$ inch) below the inferior margin of the symphysis pubis. An adequate conception of this curve can be obtained by study of a median sagittal section through the male pelvis.

The curve varies with the age of the individual and also with the condition of the bladder and rectum. A full rectum pushes the prostate upwards.

A full bladder pushes it downwards and thereby lessens the circumference of the urethral curve.

The variations in the calibre of the urethra are well known and the following figure well brings out that the expansion and contraction in the calibre occur on the posterior wall, or floor, of the urethra, the anterior wall or roof being practically uniform throughout its length.



a—fossa naviculari.
b—Bulb.
c—Membranous portion.

Stricture of the Male Urethra

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The absolute calibre of the urethra is determined by the size of instruments which it will admit. These instruments are measured by means of a draw plate, the apertures of which are supplied with numbers representing their circumference in millimeters. This is French method devised by Charriere.

(English standard is an arbitrary one which by general consent of all makers is now fixed from 00 to 30. In olden days each instrument maker had his own standard. Hence there is a tendency to use the Charriere scale more frequently now.)

It is important to realise the relation of the male urethra to the true pelvis. The anterior urethra lies outside the pelvis, while the posterior urethra is a pelvic organ.

Conception of structure.—The urethra when at rest is a closed canal the walls of which are in direct contact and Sir Charles Bell described stricture as a condition in which the affected portion of the urethra has lost its dilatability.

This excludes the spastic and inflammatory obstruction.

True strictures present a persistent narrowing caused by plastic changes in the urethral walls.

Excluding congenital strictures, there are only two causes for the development of organic stricture, namely, inflammation due to Gonorrhœa (90 per cent) and secondly loss of substance in the urethra due to trauma or ulceration. The trauma may consist of a blow or wound from without, of a tear during coitus, injury due to introduction of instruments or to a passage of calculus through the urethra; injection of corrosive fluids and destruction due to a wide spreading chancroid may cause the same.

Syphilitic strictures do not exist; hard sores heal without a scar and urethral gummata produce only a transitory obstruction; the urethra becomes pervious under treatment. Malignant

nant tumours and tubercles which grow from the wall of the urethra, infiltrating it and also sometimes projecting so as partly or entirely to occlude its lumen, are not classed as strictures. I may state that I have had only one case of tubercle of penis involving the urethra. He was operated on as one of Epithelioma of penis and the real diagnosis was noticed on receipt of the Pathologist's report.

Congenital defects.—Obliteration of the urethra is a form of arrested development due to unequal growth of the 3 parts out of which the male urethra is formed. In partial obliteration there is so much narrowing at the external meatus that a needle can hardly be passed into the urethra. This abnormality leads to severe disturbances unless immediate relief is given by the operation of meatotomy.

In complete obliteration either the skin or the urethral mucous membrane forms the occlusion or the entire urethra is converted into a firm fibrous cord. Occlusion of the skin reaches only a short distance into the urethra, that of the mucous membrane may extend further back; the cord like transformation generally extends far back, and is almost always associated with occlusion of the anus. Unless an opening for the urine is at once made by communication of the ureters with the sigmoid, the child will soon die.

Localised expansion of the urethra may occur behind a constriction situated far forward or may be due to an increase in size of the normal crypts and duplicatures of the urethra. Such pockets, funiculi and valves can occasionally be seen near the meatus or further back in the urethra (on urethroscopic examination). If they cause trouble they must be divided.

Pathological anatomy of stricture.—Under appropriate treatment, the leucocytic infiltration which is constant disappears and the mucous membrane becomes normal.

Unfortunately this is not the invariable termination, the small-celled infiltration does not entirely disappear and a chronic urethritis results.

This chronic process which is essentially a small celled infiltration may affect any part of the urethra from the meatus to the neck of the bladder and involve both its superficial and deep structures, but it seems to have a special affinity for the glandular portions, such as Littre's glands and Morgagni's Lacunæ, together with their adjacent tissues; it may penetrate to the deeper layers of sub-epithelial and connective tissues, and even force its way into the corpora cavernosa.

Some of this infiltrate, forms a callus or scar and is localised. This constitutes the stricture of urethra. The tendency of scar tissue to contract and shrink leads to distortion, narrowing and even complete occlusion of the urethra.

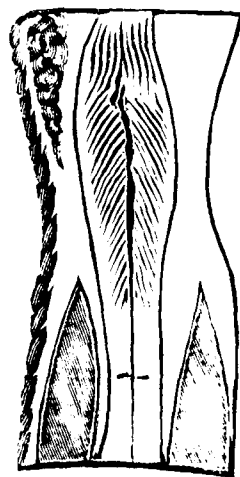
The corpora cavernosa, the overlying muscles and the erectile tissue of the penis may all be converted into a firm dense scar; thus the urethral walls slowly become rigid, unyielding. This hyperplastic connective tissue formation may not only infiltrate the walls of the urethra, but may also grow outwards into its lumen. Such free connective tissue tumours lead to the development, if firmly adherent, of stratifications, as a result of which valves are formed (valvular stricture).

The connective tissue from which stricture is developed may undergo retrograde changes so that a perfectly shrunken and drier connective tissue remains. In callous strictures the urethra feels thick and cartilaginous but in this form it is hard, inelastic and much thinner than in health (scar or atrophied stricture). To this class belong strictures produced by ulceration and injury.

The parts behind a stricture are generally dilated; in slight cases they show merely a little chronic inflammation, but in severe ones enormous pouches with fibrillation and destruction of tissue are present producing a condition which presents

the appearance of a network. (See figure below). Changes in the bladder are frequent and sometimes considerable. Consequent on the changes in the bladder the kidneys become infected partly as a result of back pressure and partly from extension of inflammation along the ureter to the pelvis of the kidney and calices. Stricture is most common at the bulb, where it becomes continuous with the membranous part (that being the most dependent part in all positions), next the meatus, and next any part of anterior urethra. Gonorrhoeal strictures are never situated beyond the membranous urethra.

Traumatic strictures may occur anywhere in the urethra, but generally are at the bulb or in the membranous or prostatic portion. The seat of traumatic stricture depends on the nature of the injury whether direct or indirect. In the case of direct injury the part injured is either the bulbous or membranous portion, the anterior layer of the triangular ligament is usually torn and there may be extensive laceration and contusion of perineal structures. In indirect injuries the urethra is torn across, often completely, at the junction of prostatic and membranous portions, the prostate being torn away from the deep layer of triangular ligament or this structure itself is torn off.



Net work of tissue behind a stricture.

Many chronic cases of gonorrhoea represent the early stage of strictures. The narrowing may be slight, a 16 F sound can easily be passed through it. In such cases the so-called *stricture of larger calibre* exists even though it may not be noticed.

Symptoms.—May not be obvious; patient takes a longer time to urinate than he should.

Frequency.—It is only when the stricture is very narrow and the patient does not completely empty his bladder that micturition becomes frequent. This incomplete retention is absent in cases in which the bladder is strong and the stricture not very narrow.

Pain.—Only in extreme degree of stricture, micturition is really painful.

Urinary stream.—The narrower the stricture and the more anterior its location, the greater is the loss of volume in the stream. Sometimes the urine is voided drop by drop. The projectile power of the stream is lessened.

Ejaculation of semen is attended with difficulty.

Incontinence of urine due to overflow—the urine is not voided in large quantities, but is passed in drops so that the patient is constantly wetting his clothing.

Sudden complete retention is due to spasm or superimposed engorgement due to a cold or free use of alcohol.

Extravasation of urine, (peri urethral) urinary abscess leading to a fistula, cystitis, kidney infections, epididymitis and prostatitis are also met with. In this country in addition to all these, patients arrive especially in hospitals with numerous urinary fistulae in the perineum, scrotum and in the penile and supra-pubic regions due to neglect.

The development of a peri-urethral abscess behind the stricture is not as common now in England and other advanced

countries as was once the case. All surgeons are agreed that extravasation of urine is extremely uncommon now in the above countries. These are extremely common in this country as stricture cases do not undergo proper treatment.

Treatment.—An appreciation of the morbid anatomy of stricture will show that forcible rupture of a stricture causes a scar to form and therefore increases rather than relieves the contraction of the urethra.

Light Cases—(Cases without urgent Symptoms).—*Gradual temporary dilatation* is the proper procedure for nearly all stricture cases.

The instruments commonly used are metal bougies, soft bougies and catheters.

The metal bougie designed by Clutton is better than Lister's, because it has a much better balance—an important item in passing such an instrument.

There are two numbers on the solid metal bougies and the number "four" separates them. The catheters and soft solid instruments are numbered according to English Standard and the metal bougies according to French standard.

I do not know what the English standard is based on, but the French standard is based on the number of millimeters in the circumference of the instrument. Size 18/22 corresponds roughly to No. 11 English size.

Pass a soft silk-web bougie of such a size that the stricture will just admit of its passage. The instrument is allowed to remain in the urethra for a few minutes; to leave it in longer is of no advantage.

At the next treatment which is given on the second day, the same bougie is passed once and then the next larger number is introduced. The employment of any force whatsoever

is wrong. With this gradual dilatation, much better and safer results will be obtained than if the stricture be forcibly enlarged at one sitting by using several instruments. From the latter course chills and fever often result.

Treatment should be continued slowly and gradually until the urethra will admit a good sized bougie (21—23 F).

So the rule with the treatment of stricture cases is :—*Dilate the stricture up to 22 F as quickly as reasonably possible and keep it dilated to this size.* At first the instrument must be passed every two weeks, later every four weeks and if the same size passes readily the intervals may then be increased to 3 months. By this policy they do not see many cases of stricture complicated by sepsis or other diseases in other countries. The second rule is "*when the urethra has been dilated to 22 F, never pass smaller instruments first.*"

American practice is to continue the dilatation much higher (with Kollman's dilators). This practice is not good as it may lead to the production of cystitis, for a large instrument will break down the orifices of numerous glands which open into the urethra. The glands in the perfectly healthy part of the urethra may be broken down and thus add to the trouble.

Internal urethrotomy ought to be practised more commonly and then full dilatation can be kept up.

Stricture with retention.—It is an invariable rule that "*if the urethra will not admit of an instrument and patient has retention he will have to be admitted as an in-patient.*"

You must prevent infection and avoid laceration of the urethra.

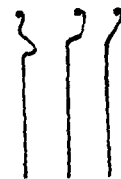
Metal catheters are not to be used especially the small ones as false passages are frequently made. *Use an instrument of which you are most experienced*—the olivary catheter is the best. *The urine must be let out very slowly from a distended*

bladder 4 oz. at a time every hour. The catheter may be tied in the urethra while this decompression is going on. The catheter is then removed. If a catheter is tied in for several days, infection is inevitable.

At the next sitting a larger instrument is passed and the patient can come up for regular dilatation. Every case is not so easy as this. The following are the devices for negotiating a stricture:—

A small coude catheter can be used. This may get past a tortuous stricture or one that is situated to one side of the urethra.

If this fails, try and pass filiform bougies; it is no use trying to force them through as they only bend up. The opening in the stricture may be so narrow that the instrument cannot penetrate it. It is well to inject a syringe of olive oil into the urethra and introduce a filiform bougie. The point of a straight bougie naturally strikes against the wall of the stricture. Therefore an attempt should be made to pass a spiral or bayonet filiform.



(Spinal and bayonet bougies).

A small catheter can be bent like this; the first bend is about $\frac{1}{4}$ " away from the bladder end of the instrument and the second one is about $\frac{1}{2}$ of an inch above the first bend. This is passed down to the stricture and then turn it round carefully through the various major points of the compass, carefully lifting the instrument up slightly as you pass through the various points; having negotiated the stricture in this way do not take it out.

If the stricture is eccentric and its opening cannot be found the practice of introducing several filiform bougies down to the stricture and then patiently and gently trying to work one into the opening may be tried with advantage. Frequently the difficulty of entering the stricture is due to the presence of one or more false passages, and the difficulty is due to the invariable tendency of the instrument to seek the false rather than the true passage. The following method is sometimes useful. Pass a moderately slender bougie about 6 (French) as deep as it will go without forcing it. It will almost always enter the false passage. With this one still in place a second one introduced beside it will often enter the stricture. This is explained by the fact that the false passage is occluded by the first instrument so that the second passes into the true opening.

If after a reasonable attempt you fail to get an instrument into the bladder then do a *suprapubic catheterisation*. You should never do more with the urethra under an anæsthetic than you would do without one. These patients do not do well for the reason that too much is done when the patient is under an anæsthetic.

Rapid dilatation under an anæsthetic is a poor method of treatment. It has been given up by majority of the surgeons.

*Suprapubic catheterisation:—*The catheter can be left in situ for 7 to 10 days: *Suprapubic cystotomy ought not to be done in cases of acute retention; sudden emptying of the bladder is followed often by anuria.*

After the 5th day change the catheter which has been introduced suprapubically through a candula. Before this time there is insufficient adhesion to make a regular track between the mucosa and exterior.

In a period of 10 days, the function of the kidneys should be estimated by blood urea and non-protein nitrogen tests and permanent measures must then be taken to deal with the stricture.

Never be tempted to open the bladder through the perineum in cases of stricture with retention; COCK, 'puncture and Wheelhouses', external urethrotomy are out of place in cases of retention of urine. The retention is relieved by the operation but the patient dies of ascending nephritis in a few days after.

Suprapubic puncture is useful in acute retention when catheterisation fails and when apparatus for suprapubic catheterisation is not available. Repeated punctures is only permissible in exceptional circumstances, it is dangerous to allow the bladder to refill after it has been punctured. Leakage may occur into the cave of Retzius.

Extravasation of urine with cellulitis of the abdominal wall has been met with after this puncture.

Both in the technique of suprapubic catheterisation and of puncture skin incision should be made; otherwise the pressure required to force the trocar through the skin may be sufficient to rupture the bladder.

Instances are recorded when patients have died of general peritonitis after suprapubic puncture. *The peritoneum is reflected up from the bladder wall* almost exactly in the middle line, however full the bladder may be, the cannula may enter in the peritoneal cavity if the puncture is not done with care. In case of cystitis, during operation it is seen that the peritoneum is in front of the bladder and adherent to it. During the process of distension the anterior wall curves upwards the peritoneal folds reflected upon its upper surface from the anterior wall, increasing the prevesical space, and thus it becomes possible to enter the bladder above the pubes without penetrating the peritoneum. This elevation is however variable and limited in extent; at its maximum it seldom exceeds 5 cm. (2 inches) *and in some instances fails even to pass the upper border of the symphysis pubis* and does not get stripped as the bladder is distended. One of my teachers never punctures the bladder for a stricture with retention. I would say that if suprapubic cath-

terisation cannot be done for want of instruments then only resort to puncture.

Perineal abscess may be seen when a patient has stricture but is not suffering from retention.

Do not dilate the stricture at once but open the abscess as adequately as possible and leave the stricture to itself. If there is retention, which is very rare, open the abscess and do a suprapubic catheterisation but do not deal with the stricture until the wound is no longer infective.

Extravasation of urine:—Do not touch the stricture in these cases until all active sepsis is at an end. Incise over the affected area of cellulitis freely and perform a suprapubic cystotomy. In cases of stricture with extravasation in which the perineum, urethra and in some cases the bladder has been opened by the perineal route, the bladder was perfectly healthy, but there was an advanced degree of ascending interstitial nephritis with the formation of abscess on the kidneys. The lymphatics of the urethra pass to the base of the bladder and thence to the outside walls of the ureters and to the capsule and interstitial tissue of the kidneys. By opening the septic area near the stricture and at the same time treating the stricture, you may infect these lymphatics and cause the death of the patient by producing a renal infection. If the bladder is opened above the pubis, the lymphatics do not drain into such an important group as the renal group. After the sepsis has subsided you may dilate the stricture.

I used to deal with these cases by perineal section. Patients with a high blood urea 300 mg. percent have been pulled through, but I used to lose some cases where I did not expect a bad result. Post-mortem examination showed acute pyelitis. I am convinced that the suprapubic drainage ought to be practised more often.

If in extravasation the abdominal wall is already affected, I should still do perineal section and drainage. The cystotomy

incision traverses the infected superficial plane and incurs the danger of leading to deep pelvic cellulitis which is a very grave complication. If the bladder is much distended and the patient uræmic, immediate suprapubic cystotomy will depress the renal function still further.

Perineal section in extravasation of urine.—Make no attempt to pass a catheter; go to perineum at once; median raphe is the guide. Make an incision in the median raphe, and steadily deepen it, always keeping to the middle line until a jet of urine and pus escapes; introduce a Pezzer's catheter or Watson's perineal drainage tube into the bladder. Make drainage incisions in the scrotum, sides of penis, and pubic region always parallel to the long axis of the body and separated at least two inches from each other; punctures are better on penis to avoid troublesome contractions.

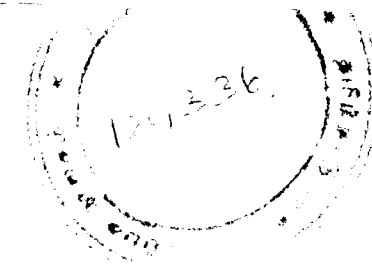
Deep seated extravasations in the superior perineal compartment may not be noticed during the early stages and may show itself later on in the hypogastric region only or around the rectum and in the ischio-rectal fossae.

So when the symptoms are not relieved and the general condition is progressively becoming worse after a perineal operation for urinary infiltration the upper region should be explored by way of hypogastrium.

Standard External urethrotomies—Symes.—This was used only when a No. 4 catheter could be passed through the stricture. This variety of stricture can be dealt with by filiform bougies or internal urethrotomy.

There is risk of a perineal wound and fistula. The operation is not done now.

Wheelhouse's.—I would say that there is no such condition as impassable stricture. This operation was used to be done for retention of urine which are dealt with in a different way



now as mentioned above. But the technique of the operation is still useful when we do perineal sections for other purposes as in rupture of the urethra and cases of extravasation of urine.

Cock's perineal puncture. There is no advantage gained by this procedure now.

Excision of stricture is practised when the stricture is solitary especially traumatic strictures. Excision and plastic operation requires a suprapubic drainage for the success of the operation. Subsequent dilatation has to be kept up. Experience of three cases treated by this method does not encourage me to speak highly of excision.

In the treatment of stricture you must prevent bleeding, pain and sepsis. Bleeding always means trauma and in some cases the production of false passage. If you get blood with the dilatation of a stricture you may be signing the death warrant of the patient and this is even truer of enlarged prostates.

The great difficulty in our hospital cases is that a good majority come with multiple fistulae either perineal, scrotal penoscrotal junction and rarely penile. Majority of them have stricture of the urethra, about 10 per cent without any stricture.

These classes of cases are not dealt with here.

Conclusions—(1) Gradual dilatation is the best form of treatment for majority of strictures up to 21-23 F.

(2) Internal urethrotomy is done and then full dilatation is kept up.

(3) Cases of retention of urine which do not admit of an instrument are serious and require institutional care and treatment.

(4) Slow decompression of bladder ought to be practised.

(5) Never tie catheters in urethra for more than 24—48 hours.

- (6) Never do more than a single suprapubic puncture.
 - (7) Suprapubic drainage by a catheter only ought to be done in cases of retention of urine and not cystotomy.
 - (8) Do not do a rapid dilatation under an anæsthetic.
 - (9) Never open the bladder through the perineum in cases of stricture with retention.
 - (10) Deal only with primary abscess, leaving the associated stricture to be dealt with later.
 - (11) In extravasation of urine, a way out for urine must be made either suprapubically or through perineal opening. There is an increasing tendency to discard perineal route but the indications are definitely given.
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The Anatomy Museum

By P. K. KOSHY, B.A., M.B., F.R.C.P. (EDIN.)

The museum occupies the portion of the Anatomy department between the dissection hall on the east and the staff rooms on the west. It is 48 ft. x 42 ft. x 34 ft. in size and is just enough for a start. There are at present about 600 specimens and models in the museum. Of the models a few are imported from abroad. All the rest, both models and specimens, were made in the department. The specimens comprise both soft parts and bones. The former, again, are made up of adult parts and embryonic structures. The bone specimens include all the bones of the skeleton separately put up, many articulated parts, sections, epiphyses, and foetal bones. In the case of the adult bones attachments of muscles and articular capsules have been marked out. In many cases, to the extent possible at present, adult bones have been mounted along with sections, epiphyses and corresponding foetal bones in one and the same jar, so that they together constitute a small bureau of connected information. As the value of mounting many specimens together in the above manner has already made itself apparent, efforts are being made to increase the number of such specimens.

The soft specimens consist, for the most part, of the various organs of the body, and of dissections of all the important regions. The embryology portion of the museum is made up of a number of human embryos from the fourth week upward, some foetuses, sections of foetus, special preparations of foetus called "transparent preparations" showing ossification of bones, foetal bones and wax models. The last, *i.e.*, wax models are partly imported, and partly made in the department by a process called

"reconstruction." The preparation of models in this way requires great accuracy in technique and a good deal of time and patience. This aspect of museum work has a great future before it. Real study of embryology is impossible without "reconstruction."

Mounting of Specimens.—Two different types of glass jars have been used for mounting skeletal specimens, one type for the floor and the other for the walls. The first type consists of a bell jar without knob placed on a revolving wooden disc which is fixed by a screw to the specimen table, the idea being to get every aspect of the specimen successively into view, without change of posture of the observer, by rotating the disc. This jar is a copy from the Edinburgh University.

The second type of jar, also a revolving one, is fixed in a metal frame which is securely fastened to a wooden plug driven into the wall. Both the metal and the glass parts consist of several detachable pieces. This jar was designed in our department in consultation with the local agent of Messrs. Adair, Dutt and Co., and was executed by Zeiss. It has been named "the Madras Medical College Pattern."

For most soft specimens, Plaster of Paris has been used for mounting. This material forms an excellent mounting which is at once permanent, useful and very elegant. It has also been copied from Edinburgh. The type of glass jar that is used along with it is rectangular. Specimens mounted in this kind of glass containing a fluid vehicle produce correct impressions, as contrasted with the cylindrical type. The vehicle used in the case of tissues other than brain is a mixture of glycerine and water in equal parts with a little formalin added to keep out fungus. In the case of brain specimens thymol water and glycerine are used. It is expected that specimens, both soft and hard,

mounted as above, will be available for the use of generations of students.

Arrangement.—The arrangement of specimens has been in accordance with the nature and amount of space available. All the space has been used to accommodate specimens, hitherto, without overcrowding. Even the walls and pillars have been utilized. On account of limitation of space no attempt has been made to mark off a portion of the museum as "bone room." On the contrary, it was found convenient to distribute the bone specimens throughout the room, which arrangement, in our opinion, has added to the total appearance of the museum. Bone specimens have, therefore, been accommodated, partly on the walls all round the room and the central pillars, and partly on the floor. On the walls and pillars they are placed at about standing height. It is proposed to erect a low platform in these situations for the sake of those who may, otherwise, have to strain in an attempt to see all parts of a specimen. On the floor the skeletal specimens are placed on tables in two long rows about the middle of the eastern and western halves of the room respectively. The soft parts and the wax models are arranged round about the hard specimens.

Furniture.—Sloping desks and ordinary tables, which were either available in the department as such or could be easily made by slight alterations of furniture available in other departments of the College, have been used for the sake of cheapness as well as utility, in preference to almirahs or racks.

General remarks.—The one aim kept prominently in view all the time in the building up of the museum has been to make it useful to students in every way,—students preparing for the first M. B. B. S. examination and others—and it is very gratifying to note that they are already mak-

control of the X-ray with a fluorescent screen and observing the same—analogueous to the screening of the stomach. The method consists in anæsthetising the pharynx and larynx with 10% solution of cocaine and spraying into the trachea and larger bronchi a mixture of cocaine solution with a few drops of adrenalin. A soft rubber catheter is passed through the nose and guided into the larynx and passed right down until the bifurcation of the trachea. Perfect anæsthesia of the trachea and larger bronchi is necessary or else the patient gets cough and the tube is thrown out. If anæsthesia is complete, the catheter remains in place during the entire examination without discomfort. The adrenalin relieves spasm in the bronchi. The patient is then taken behind the screen and turned in various positions so that the lobe we desire to fill is the most dependent, and the oil is injected under screen control. Iodised oil of 40% strength is used and 10 to 15 c.c. according to necessity.

The simplest portion of the lung to fill is the lower lobe: tilting the body of the sitting patient to an angle of 30 or 45 degrees towards the desired side will lead to the perfect effect. The introduction of the iodised oil into the upper lobes of the lungs is more difficult. The patient being placed horizontally on one side is turned to an angle of about 30 degrees. In addition to these lateral turnings it will usually also be necessary to elevate the pelvis, by placing flat pillows under the patient's buttocks. One should pay special attention to the fact that the patient's head must not be the lowest point of the body. The head should be raised somewhat by means of a pillow or a roll in order to keep the entering oil from collecting in the wind-pipe and thus provoking coughing. If with this method the iodised fluid enters only the larger bronchi of the upper lobe in question, it will be well to increase the elevation of the pelvis as soon as the filling has been completed and simultaneously to tell the patient to breathe deeply a few times. One then observes the contrast fluid entering the finer bronchi also and sometimes even filling the apical portions of the lung. It will not be difficult to fill the right

SKIAGRAM II.



The same as in I after Lapiodol injection.

SKIAGRAM I.



Aulero-posterior view.

middle lobe if the patient is placed horizontally on the table on the right side and turned about 30 degrees. It is important to keep the lobe under observation with the fluorescent screen and control the flow of lipiodol.

Observations on patients with bronchial fistulæ, in whom the contrasting media was introduced without the use of cocaine anaesthesia, have shown that the small branches of the bronchi and the alveolar tissues tolerate the presence of bismuth without reaction: coughing begins only when the bismuth has reached the hilus region, *i.e.*, the bronchi of the first and second order. A violent coughing reaction is then provoked at the bifurcation and in the trachea. On the basis of this observation it becomes apparent that not only the larynx and the pharynx but also the trachea and main bronchi should be anaesthetised by means of a cocaine spray.

Skiagram 1. Chest A. P. view: erect posture: 6 ft. film-tube distance.

Skiagram 2. After injection of lipiodol—same case. As 40% lipiodol was not available 20% was used. Ectatic bronchi at various stages are evident.



Lobe of the Azygos vein.

THE LOBE OF THE AZYGOS VEIN.

Since two cases within a couple of months, with "the lobe of the azygos vein" were observed in a private X-ray clinic like mine, I wonder whether the condition is not commoner than is considered. One was a Mahomedan male of middle age referred to me by a local doctor, with a note that he 'found some signs in the right apex.' The other an European male of middle age, an old patient of mine, who wanted just a lung picture to be taken—he had a patch of pleurisy on the right side.

To quote Peter Kerley: "Occasionally a large azygos vein takes an unusual course across the right upper lobe and forms

a furrow in the lung tissue. The furrow, if deep, divides the right upper lobe into two lobes of which the medial one is known as "the lobe of the azygos vein". The vein itself is not visible on a radiograph, but the pleural reflection which dips into the furrow formed by it appears as a fine line running obliquely upwards and outwards from the hilum. The line crosses the middle of the clavicle, curves slightly inwards in the apex, and then disappears. It decreases in width and density after it leaves the region of the hilum. *The lobe of the azygos vein often contains less air than a normal upper lobe, and hence appears slightly opaque. This opacity is easily mistaken for plural thickening or tuberculous infiltration. This should not, however, be confused with a true azygos lobe, which is, a small infra-cardiac lobe and of very rare occurrence.*"

Some Aspects of Heredity.

By C. J. JAYADEV, M.A.

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Prominent among the pioneers in the field of genetical research are the names of Galton, Mendel, and Weismann; the scientific study of heredity owes more to these men for its progress than to any other man.

Sir Francis Galton, the distinguished cousin of Charles Darwin, was the first to use the statistical method in the study of variation and heredity. Together with his eminent pupil and collaborator, Professor Karl Pearson, happily still with us, he founded the science of Biometrics, the mathematical study of biological problems.

Galton and Pearson were the earliest of biological investigators who were able to apply the results of genetical science for the improvement of the human race. We are in fact indebted to Galton for the term Eugenics and all modern ideas that have come to be woven around it. Such for instance are the present day views about birth-control, family limitation, the segregation of the mentally defective and the sterilization of the habitual criminal.

No one man has done more in elucidating the facts of human heredity with greater precision and thoroughness than Galton. He subjected to statistical analysis such characters in man as stature, weight, and eye-colour. He even estimated such characters as musical ability and hereditary genius. Galton formulated certain general laws as a result of his investigations.

Galton's law of Ancestral Inheritance states that "The two parents contribute between them, on the average, one half of the total heritage; the four grand parents, one quarter; the eight

great-grandparents, one eighth, and so on." Thus the inheritance is not dual but through the ancestors multiple and the contributions of the ancestors are definite and diminishing.

Galton's law of Filial Regression states that "If in a population sons and fathers are compared, the mean deviation of the sons will be found to lie between that of the parents and that of the general population." Thus very tall parents will have offspring on the average taller than the mean of the population, but not as tall as the parents themselves.

Johann Gregor Mendel, Abbot of Brunn, published his results as early as 1865, but they remained practically unknown till their independent rediscovery by the botanists De Vries, Correns, and Tschermak in 1900.

Mendel's success in his experiments was due to the resourcefulness and foresight with which he planned his work and his critical insight in interpreting results. He laid down four conditions for his experiments :—

(1) The parent generation of plants should differ in clear and well-defined characters and they should breed true. Thus he chose the following sets of characters in peas :—tall and short creepers, smooth and wrinkled seeds, yellow and green seeds. Each of these characters is called a unit-character, and a pair of opposite or contrasted characters, a pair of allelomorphs.

(2) The parent generation and their descendants should be naturally protected or readily protectable from stray pollen in the flowering season.

(3) Their descendants should be free from sterility.

(4) Reciprocal crosses should always be taken.

In his first series of experiments, Mendel simplified the conditions, so that he had to deal with one process at a time. He crossed a well-established pure-bred *tall* variety of the pea

with a well-established pure-bred, but *short* variety. The offspring called the first filial generation (F. 1) were all tall. Mendel called tallness the *dominant* and shortness the *recessive* character. When these (F. 1) were interbred the second filial generation consisted of tall and short plants in the proportions of 3 : 1. Of these (called F. 2) the short plants bred true; of the tall plants only one-third of them bred true, the remaining two-thirds splitting up again in the ratio of 3 : 1. Here again the pure tall and the mixed tall are indistinguishable in appearance, and only by further breeding can their nature be determined.

But in some cases, there is no dominance. When white and red four-o'clocks (*Mirabilis jalapa*, also called the Marvel of Peru) are interbred, the F. 1 are of an intermediate colour, pink. This is an instance of the so-called *blending* inheritance. But when these hybrids are inbred they split up in the F. 2 in the proportions of one white, two pink and one red to every four of the offspring. The hybrids in this case are self-evident, but that it is not a case of actual blending of the parental characters is seen in the fact that on interbreeding they split up in the proportions of 1 : 2 : 1.

The results are explained by assuming that there is a factor for each unit-character. If D and R are taken to represent the factors, the parent generation in the above instances can be represented by D D and R R, but the F. 1 in the case of the pea is D (R) while that in the four-o'clock is D R. It is further assumed that the forms D D and R R produce in each case only one kind of germ-cells, be they ovules or pollen, but in the forms D (R) and D R there are two kinds, D and R. Taking that ovules and pollen are produced in equal numbers, and that fertilization is at random, four combinations are possible : tall-producing pollen with short producing ovule, short producing pollen with tall producing ovule, tall pollen with tall ovule, and short pollen with short ovule. Of these the first two are identical,

thus giving the ratio of one pure tall, two mixed tall and one pure short, out of every four.

Since the rediscovery of Mendel's laws it was assumed that the hereditary factors or 'genes' are carried by the chromosomes. The chromosomes are half of paternal and half of maternal origin; and in spermatogenesis or the maturation of the spermatozoa, a reducing division takes place with the result that the chromosomes undergo a sort of shuffling, so that if the parents are hybrids the gametes are two kinds. A similar shuffling of the chromosomes takes place in the maturation of the ovum or oogenesis. And during fertilization there is a recombination of the characters that are shuffled. How this shuffling of chromosomes and their recombinations affect inheritance will be seen in a consideration of Mendel's second law.

Mendel's second law is called the *independent assortment* of the genes. When parents which differed in two characters were mated, it was found that these characters were inherited independently. Thus when guinea-pigs with short hair and black coat-colour were mated with those having long hair and white colour, all the offspring were black and had short hair as these characters are dominant over albino and long hair respectively. In the second filial generation, the characters, considered apart followed the usual 3:1 ratio. Thus out of every four of the offspring (F. 2) three were black and one white; similarly out of every four three had short hair and one long. But taking the two sets of characters together there were nine black with short hair, three black with long hair, three white with short hair, and one white and with long hair, out of every sixteen.

It is here assumed that the genes for the two sets of characters are carried by two different chromosomes, so that the four characters give rise to the possibility of sixteen combinations.

In such cases where the genes for two sets of characters are located in the same chromosome free assortment would not take place. Such characters when they occur together would remain linked in inheritance, the phenomenon being termed *linkage*. In some organisms it was found that certain characters are *sex-linked*, or in other words, the genes for these characters are carried by the sex-chromosome.

Sex has been explained as a simple Mendelian character. The inheritance of sex is compared to a cross between a pure recessive and a mixed form ($R R \times D R$). The germ cells of the pure recessive are alike, while in the mixed form they are of two kinds; thus the offspring will be of two kinds $R R$ or $D R$, in equal numbers.

It has been demonstrated that in man the sex chromosomes are $X Y$ in the male and $X X$ in the female, and that sperms are of two kinds, the one carrying X , the other Y , while the ova are alike each carrying a single X . And it has been further explained that when an X -bearing sperm fertilizes an ovum, the result is a female, and that when an Y -bearing sperm fertilizes an ovum a male is the result. Thus the male is said to be *heterozygous* for sex, while the female is *homozygous*, in man. A condition exactly the reverse of this occurs in Birds and Moths where the female is heterozygous for sex, producing two kinds of ova, male producing and female producing, while the sperms are all alike.

The first instance of Mendelian inheritance illustrated in man is the condition called *brachydactyly* in which the fingers and toes have two joints instead of three. Brachydactyly is inherited as a simple Mendelian dominant. Brachydactylous individuals have never intermarried so that persons showing the defect have always been the children of one normal and one abnormal parent. In such a case the person showing the defect when mated to a normal would give on the average equal numbers of brachydactylous and normal children; the brachy-

dactylous children would be like their abnormal parent, while the normals would be free from the defect.

Brachydactylous women cannot play the piano well on account of their inability to span the octave. The strength of grip in brachydactylous persons is considerably less than the average. Persons with this defect are generally employed in unskilled labour.

Feeble-mindedness, on the other hand is inherited as a simple Mendelian recessive. Mated to a normal individual, the children would appear to be quite normal, but they carry the defect in half their germ-cells. If two such persons are mated together, one-fourth of the offspring would show the defect, and of the remaining three-fourths who appear to be free from the defect, only one-third of them would be normal, the other two-thirds passing the defect to their offspring.

On the evening of Saturday the 5th November the Memorial Hall was the scene of an enjoyable gathering when the pre-registration class held their annual social gathering. On that day we were fortunate enough to see the sun shine with all its splendour and glory. The function began with photo in the college grounds after which the gathering moved in a beautiful procession to the Hall where light refreshments were served. After tea, there was a variety entertainment. The musical farce and 'Ram Sev' were the hit of the show. The leading actors of the two items acquitted themselves very capably. Mention must be made of the two items in the programme to which the talented actors of the fair sex contributed their share. The vocal music of Miss Kalyani Bai accompanied by veena played by herself and Miss L. Swaminathan were enjoyable. Messrs. V. Ramamurthy and P. Balakrishna Rao also contributed items of vocal music. The humorous speech by Mr. Mohana Rangam was very much enjoyed by the audience.

Our knowledge of the chromosome theory of heredity is derived from Weismann. August Weismann, who was the professor of Zoology at the University of Freiberg, was the first to postulate the theory of the continuity of the germ-plasm. The architecture of the germ-plasm which has in recent times been so thoroughly studied is the natural outcome of Weismannism.

The method of Galton was purely statistical, that of Mendel eminently experimental; but Weismann tackled the problem from a strategic line of approach. Galton and Mendel explored the open fields and broad highways of genetical science; Weismann confined his attention to the narrow bridge of heredity over which the entire traffic of inheritance had to pass. The cytological aspect of the study of heredity has proved to be the most fertile field for biological investigators. The purely numerical data of Mendel's experiments have become concrete and definite when once the actual processes involved had been traced out. The empirical formulations of Mendel have come to have a definite basis in the chromosomes.

Considering the laws of heredity in the light of the chromosomal mechanism, we find, that segregation is due to the purity of the gametes, as such, for any single Mendelian character; that free assortment is due to the shuffling of the chromosomes in gametogenesis; that linkage is due to the genes for the characters linked together being located on the same chromosome, and so on.

To all these brilliant results, the start was given by Weismann in his approaching the problem from within, while the earlier investigators were trying to tackle it from without. The older centripetal theories of heredity have given way before the new centrifugal theory. The chromosome and the gene have come to have as much importance in the study of biological problems as the atom and the electron in the physical sciences.

The Autobiography of a Modern Shylock.

(Continued from January 1932 Issue)

(By "X")

Summary of Previous instalment.

Shylock is a poor son of a poor father, who left only a paltry sum of three lakhs in his will to each of his two sons, besides some landed property. Shylock comes to Madras with a view to join the Medical College. He meets with some exciting incident when he arrives in the city, higgles with the railway porter and the taxi driver; this higgling costs him nearly two rupees for, time, tide and taximeters wait for no man; the latter go on registering time and money. As a result of this Shylock gets a shock and is convalescing in the students' lodge where he is staying. The present story now opens.

Shylock goes shopping.

Shylock—for we shall call him thus—had got over the shock of the taximeter incident. He was comfortably seated in an arm chair at the lodge. He had secured admission into the Medical College.

By the way, during his three days' convalescence from the shock of the taximeter incident he was on "acute special" diet and had therefore wisely intimated to the manager of the lodge to charge him only half rate for this period.

He longed to be in a new suit of clothes on the admission day at the Medical College. One of his friends had told him about the requirements of a medico: necktie, collar, collar pin, collar stud and shirt studs, hat, a nice suit, socks and shoes. "Or else," his friend said "how could a medico be distinguished from the other students? A stethoscope peeping from the outer coat pocket, a Gold Flake Cigarette from the corner of the mouth, a pair of tortoise shell spectacles with or without lenses (Harold Lloyd Pattern), a Parker Duofold Pen and Pencil in the upper coat-pocket—and above all, a Harley Davidson or Triumph Motor Bike, are the hall marks of a medico."

Shylock nearly collapsed on hearing an account of these necessities. "Why", he thought to himself "with the money needed to purchase

The Autobiography of a Modern Shylock

these articles, I could manage the whole of my medical studies at Madras." To him, this was sheer extravagance. But he dare not defy conventions.

First of all, he had to get a new suit of clothes. He was not particular about shirts for the present as he had brought a good supply (of quarter of a dozen) and this would last him for some time, at any rate, for the Pre-registration course, if not, longer.

"Ramu" he asked one of his friends at the Lodge "Which is the cheapest place in Madras to buy things?"

"That depends upon the article that you wish to buy" said Ramu. "If it is a Gillette Razor, the China Bazaar; if it is oranges—the Fruit Bazaar, Esplanade; if it is soap, Bunder Street; if it is....."

"I don't mean any of these luxuries" said Shylock.

"But what is it then that you want to buy?"

Shylock would not give out the secret lest his lodge-mates should laugh. "Oh, a few sundries such as buttons and the like."

"Oh" said Ramu "try Moore Market."

"Thank you" said Shylock. He was thinking "these blighters are wasting their money on clothes and other unnecessary things. I could easily manage to buy these for less than a rupee." The Moore Market was in his mind.

With the above thoughts flitting through his cerebral cortex, he armed himself with about a rupee (annas fifteen and pies six in nickel and copper, to be exact) and stepped into the street, wending his way to the Egmore Bus stand. Having reached there, he had hardly waited a minute, when a bus bound for Parry's Corner came and stopped.

"Coming Sir? Only three more Sir! Come along Sir!" beckoning to Shylock "Central! Broadway! Parry's Corner, Come Sir!"

Shylock congratulated himself on this rare bit of luck and jumped in. Off went the bus at the rate of a mile in two minutes.

They had hardly gone a mile when the Conductor came to Shylock and asked "Ticket Sir, Ticket, Ticket!"

Shylock's eyes opened wide as though he had a sudden "attack" of Exophthalmic Goitre. "Dash it all" he said "the ticket was collected at the Basin Bridge Station. They wouldn't let me keep it".

"What Sir" exclaimed the Bus Conductor "Where are you coming from?" He was scrutinising Shylock closely. Kilpauk area (beyond the toll gate) was obviously in his mind.

"I? I am coming from T"

"But sir give me the bus fare"

"Bus fare? What do you mean?"

Hot words were passing between the two. From words they very nearly came to blows. The bus had stopped opposite the Moore Market and a crowd had gathered. The Policeman on duty was coming towards them.

"Sir, ticket Sir, or I won't allow you to proceed".

"What do you mean? I got into this bus on *your invitation*. Or else I wouldn't have come at all".

"Apparently you do not belong to this place Sir" roared the conductor with an ironical smile "You are coming from some jungle or Asylum".

"Well, well, wait a minute" said Shylock scratching his head "Perhaps you are partly right. There is a forest near my village. People call it the Pulayar forest. You get good shooting there. There is a good trunk road leading to it."

"Forest and shooting be damned. Out with half an anna sir"

"Half an anna? Six pises? What do you mean? I say, Constable". said Shylock turning to the Policeman "This chap does not know the value of money. I cannot understand his mentality. It is not a matter of half an anna at all. It is a question of principle and justice. Is he right in expecting me to pay, after he had *invited* me to get into his bus? For all that, I thought he was giving me a joy ride. What do you say, what what—what—what?"

Within a second Shylock had disappeared. He had bolted into the Moore Market. The constable, conductor and the bus driver were

discussing everything from licences to traffic signalling and the new passenger getting-out-of-bus-when-in-motion—rule, and when they turned round, the hero of the moment was not present. (If only the All-India Olympic Committee had searched in T, India's chances at Los Angeles would have been distinctly rosy.) The Policeman laughed a hearty laugh, but the laugh of the bus conductor was one of disappointment and the laugh of the bus driver was but a grin—indicating perhaps admiration and wonder.

Meanwhile Shylock wandered up and down the shops inquiring in each place "Do you sell silk suits?" In most places the answer was "No Sir" but in one place it was "Yes Sir, would you like to see the latest patterns?"

"Could you let me have one on approval for a week?"

"My God! Where are you coming from, Sir? No Sir, I forgot we don't have any stock of silk suits now, expect a new stock next week".

Nothing daunted, Shylock wandered hither and thither enquiring at each shop if silk trousers, coats, collars etc, could be had *on approval* for a week. By the time he had finished one of the blocks in the Moore Market he had become so popular that nearly a hundred pairs of eyes were on him, following him wherever he went, as though he were an escaped convict holding his pursuers at bay, or a wild animal from the Zoo that had escaped from the cage, followed by the keepers.

When he stepped out into the compound of the Moore Market, he came to a petty shop where a man was shouting

"Anything for two annas!"

"Nothing over two annas!"

"Come one! Come all!"

"Don't go to other shops to be cheated!"

"Give me a fair trial and you shall be convinced!"

"Nothing over two annas!"

and the shop-keeper was ringing a bell.

Here was the opportunity for Shylock. He immediately went to the man and said "Look here man, have you got these things in your shop?" and he gave him a list.

The shop-keeper read the list, twice and thrice over. His eyes became wide; the mouth opened wider still; he stared at Shylock. He turned pale and blue by turns, reeled and fell down in a swoon with Shylock's list in his hand.

The list was as follows :—

1. One Good pair of trousers, preferably silk.
2. One good silk coat, preferably double breasted.
3. One dozen "Climax" collars.
4. One set of rolled-gold buttons.
5. One rolled gold collar stud and collar pin.
6. One necktie, silk preferred.
7. Two pairs of Interwoven socks.
8. One pair of Brogue Shoes.

That night all the local dailies thundered with prominent headlines "Snop-keeper faints" said one.

"A bus accident near Moore Market" said another.

"An unknown convict in Madras" cried a third.

"Inmate of the Mental Hospital escapes from custody" screamed a fourth.

"Excitement near People's Park. Wild animal broken loose?" thundered a fifth paper.

The moral of this story is—*Never put off till to-morrow what you can get on approval to-day.*

(To be continued).

Editorial Notes.

Two interesting lectures were delivered in the Bacteriology lecture hall, Madras Medical College, under the auspices of the South Indian Branch of the British Medical Association during October, one by Dr. N. S. Narasimham, F.R.C.S., on "Tetanus", and the other by the Surgeon-General on the "Doctors, Mistakes". Both meetings were well attended.

We are extremely sorry to record the untimely death of Dr. Seshadri Reddy of the Provincial Medical Service after a short illness. He was a popular officer and often acted as District Medical Officer. We extend our heartfelt sympathies to the bereaved family.

The Extension Board of the University of Madras has made arrangements for a series of lectures in Surgery and Medicine during the months of November, December and January. Lecturers are all drawn from the Surgical and Medical staff of the Medical College. We are gratified to note that the University of Madras from being a purely examining body has extended its activities on a small scale as a teaching body under various branches of study. University Professors and Readers are maintained permanently to supplement the teaching at the different Colleges in the City.

It is time that the authorities looked into the matter of the "Boys' Tiffin Room". A graphic description of the previous history, present illness, etc., is given in another place. We are quite certain that the above place should be made ideal, so that the students may find a resting place of an attractive character during their meal hours, after a hard day's work in the dissection room, hospitals or going about from hospital to hospital, etc. The fittings as well as the location of the room require an immediate change. It is false economy to stint on essential things.

Every year we are losing three or four students of the College. Most of the deaths are due to Typhoid fever and one can easily gather this from the College Magazine "In Memoriam" column. Typhoid is a preventible disease. All medical students on admission to the College (Pre-Registration Class) should be inoculated against T. A. B. by Wright's two-dose method and again re-inoculated at the beginning of the Third year when they enter the Hospital for the first time. This must be done under strict supervision and once in two years so that casual and regular students may be brought in. May we bring this to the notice of the College Council? This brings us again to the vexed problem of Hostel accommodation to the students and this again brings in the usual financial stringency. How is one to find the remedy? If there is a WILL there is always a WAY.

The Executive Committee of the Madras Medical College Association has unanimously agreed to set apart a sum of Rs. 60 annually on the recommendation of Dr. M. R. Guruswamy Mudaliar for awarding three prizes to the students of the College as follows :—

- (1) The most humorous article.
- (2) The best case report.
- (3) Short thesis on subjects of Medical, Surgical, Obstetrical, and Gynaecological interests.

A special committee will be appointed to decide the award. If a fair standard is not reached, the award will be withheld for that item.

We are sure that this will give an impetus to most of our students, both ladies and gentlemen, who have been taking only a lukewarm interest in the affairs of the Magazine.

AN APPEAL.

MEDICAL COLLEGE,
Madras 16th November 1932.

Col. Hingston proposed putting up a Memorial to Dame Marie Scharlieb in the College and invited subscriptions from old or present students and others. The Memorial was to be in the form of a well painted portrait, if the amount of the subscriptions warranted it, or a cheaper portrait or a brass tablet if sufficient money was not collected for an original oil painting.

The response has not been very satisfactory and the present Principal feels that there may be many medical men who would like to subscribe to this object and invites further subscriptions.

Subscriptions should be sent to the Principal, Medical College, Madras.

CLIVE NEWCOMB,
LIEUT.-COL., I.M.S.,
Principal.

Reflections of the Student Editor.

DECEMBER EXAMINATIONS.

December examinations are fast approaching. We know that it will be a hard trial but 'Hope for the best' will be a good policy. Well good luck to you.

THE MAGAZINE PRIZES.

Three prizes are offered to the student members of the association by the Magazine Committee the details of which will be found elsewhere. We believe that this will result in a keen competition which will help to revive the potential abilities of our members, which need only a spark to flare forth into huge dimensions. May we request you to take advantage of this offer.

LATE MR. U. GOPALAKRISHNA.

Scarcely have we recovered from the shock we received by the death of our college mates the late Mr. C. David and Mr. S. O. Maher when we had to face the death of Mr. U. Gopalakrishna of the final year. Surely death is levying too high a toll from the Medical College.

Our condolences to the bereaved family.

LATE SIR RONALD ROSS.

Every student of Medicine will remember with veneration the name of Sir Ronald Ross who died at the ripe age of seventy-five in England on the 16th of last September. Born in 1857, he joined the Indian Medical Service and was the recipient of the Nobel prize in Medicine in 1902. His work in connection with Malaria is well known. His death is really a great loss to the Medical world.

P. V. GEORGE.

IN MEMORIAM.



Little did I think when I bade good-bye to Mr. C. David last summer that that would be the last greeting which we would ever exchange in this world. As friends and college mates for some years we lived in adjoining rooms. His genial and gentle nature, his great fund of humour and hilarity and his unsurpassing spirit and enthusiasm made him a 'dear' to all those who came in contact with him.

Born in 1907, he passed the Intermediate Examination in 1926 and joined the Medical College the same year. Fate didn't show herself so cruel and terrible as on that dark day in August when she snatched away his soul from us to its eternal abode to lead a life of perpetual happiness in His presence.

God's ways are wonderful and we imperfect mortals can find consolation only in the doctrine that death is not an end but only a beginning of another life.

P. V. GEORGE,
Student Editor.

Letter to the Editor.

DEAR EDITOR,

May I request the hospitality of the pages of your Magazine to make the following suggestion to the Medical College Association.

It is really a sad thing that the College Association hasn't made any definite arrangement to bring together the old boys of the College in touch with their *Alma-mater*. There is no doubt that every old student has a warm corner in his heart for the College in which he has spent a minimum of five and a half long years. Though the course is long, the examinations tough, and the examiners hard, if they look back to their life in the College, they would certainly see that it had been a cheerful one on the whole. From the Magazine it could be seen that only very few contributions are received from the old students apart from those who are immediately interested in the College.

I would, therefore, suggest that an old boys Union be formed and that they all meet at least once a year under the wings of their *alma-mater* and refresh the memories of their past experiences.

I hope that you will kindly take the necessary steps to keep them in touch with the College through the medium of the Magazine.

If these things could be done, when the time comes for us to leave the College, we can do so with the feeling that we are not severing our connection with the College once and for all, but are only changing it into a new and better one.

Thanking you,
Yours truly,

ONE WHO HAS PASSED THE MID. TERM OF THE
COLLEGE LIFE.

An Impression while at The Hospital
for Women and Children, Egmore.

WITH HAND SO DEFT;
COOL, CALM, AND KIND:
PURE HEART! YOUR SKILL
AND HUMBLE MIND
TELL OF TRUE WORTH
ON THIS DARK EARTH
NO CLOUD CAN BLIND!

VICTOR CONRAN.

McGrath Cafe (A Case Report.)

Every little object we come across—animate as well as inanimate—if by some wonderful operation or other, is provided with a tongue, will have a tale of its own to narrate to those in the neighbourhood, and, if any Radio transmitting Station is available, it may probably broadcast the same, and thus make its story heard in all places inhabited by the modern man. When modern scientists describe in several volumes, the life history of some ultramicroscopic organism, how much more will have to be written about 'something' which can be seen with the naked eye even from far off, and if blind can be easily felt, and thus one can ascertain its "size, shape, and consistency." We members of the medical profession owe much of our knowledge to the researches done in the past as well as at the present time. I am no 'Research Scholar' as some of my naturally gifted brethren are, nor do I intend to become one, but I am here attempting to present in a detailed form the tale of one block of our 'Alma mater'—the Premier institution of the Presidency from which, year after year, fresh batches of qualified men and women in whose hands rest the life and death of their fellow beings, pass out—known at the present day as the McGrath Cafe, and formerly as the 'Boys' tiffin room.' I suppose I am perfectly right when I say that there won't be a single living gentleman-graduate of our college, who has not stepped into this 'very important block' of our buildings, and thus appreciated its most *hygienic* arrangements inside as well as outside; and it is a pity to note that not one of them has ever urged the proper authorities to the extreme necessity of its total demolition or at least some very radical improvement. Our sisters, who are fortunate in every way when compared to their brothers, will not have a single word to offer either in favour or against it, and it is really strange, especially in these days of "equality" to see that at least in one item, they don't aspire to get any share; but I hope that with the steady progress of the present day women's league and similar organisations, crying for equality with men, the day is not far ahead, when even this exclusively boys' domain will be equally shared by them. I think this introduction has exceeded its limit, and may I appeal to you, 'gentle reader' to follow this case very carefully, and then I am sure you won't be sorry for it. The case is a very rare one and hence extremely interesting, because it is

neither surgical nor medical, but is a combination of both, and as such physicians as well as surgeons have equal claim over it. Now let me introduce to you the case shortly.

Name.—McGrath Cafe alias Boy's tiffin shed.

Sex.—Male.

Age.—Not known as the patient is illiterate.

Married or single.—Married.

Occupation.—Catering.

Complaint.—Lack of sufficient room to accommodate all; restricted water supply in the solitary pipe connection; unhygienic surroundings, etc.

Duration.—From early infancy.

Family history.—Nil.

Previous history.—Was comparatively healthy till 1930. Then there were four rooms labelled as 'Brahmins,' 'Non Brahmins,' 'Christians,' and 'Muhammadans,' with no pipe connection whatsoever, equipped with dirty tables and benches, —none of them had ever tasted any repair or polish after construction—improperly ventilated, with no electric light or fan, the various cross-bams serving as the place of rest and abode for a good number of crows by day and bats by night, and all corners and crevices inhabited by spiders, cockroaches and ants of all species; and floor uneven everywhere. Underwent an operation in 1930 as a consequence of the strenuous efforts of the late Dr. G. M. Thambidurai, resulting in the removal of all the partition walls and labels of the rooms, and thirdly converting the entire building into one large hall, removal of most of the antiquated benches and converting the major portion of the building into McGrath Cafe and lastly installing one quarter-inch pipe in one corner.

History of present illness.—No space to accommodate even half of the students; intermittent supply of water through the solitary pipe; no lights or fans; dilapidated and awfully stinking wooden tables; absence of washstands and hygienic filters.

Physical signs.—General condition—deplorable.

(a) *Locality.*—Not at all suitable.

(b) *Sanitation and lighting.*—Miserable.

(c) *Furniture.*—Not adequate, and some extremely dirty.

(d) *Space.*—Not enough to accommodate with some standard of comfort even 25%.

Investigations.—

(1) Number of students using the room—350.

(2) Number of servants—50.

(3) Total Capacity of the room—About 40,000 c. ft.

(4) Cubic feet of space available per head—100 c. ft.

(5) Number of chairs and tables—Chairs 50, tables 6.

(6) Available fresh air per head 100 c. ft.

(7) Number of pipes and washstands—Pipe 1, washstand, nil.

(8) Amount of filtered water available and number of filters—1 filter and 4 gallons of water.

(9) Number of chairs placed on the verandah for use by the weary and tired—15.

(10) *Lighting and fan.*—nil.

Diagnosis.—Taking into consideration the previous history and present complaint, one is immediately tempted to give the possible diagnosis as one of the following:—

(1) Case has become chronic due to want of proper care and an honest attempt to remedy the complaints when and where they started.

(2) Result of want of guidance in the administration of the 'few drugs' prescribed in the past, in the shape of alteration and repairs.

(3) Result of change of authorities which takes place too frequently.

The detailed investigation points to the fact that the case got worse due to illdirected treatment in the past and hence resulting in the case becoming too chronic and attended by all sorts of secondary complications. To put it more briefly the case can be diagnosed as passive congestion of all viscera and internal organs.

Prognosis.—Very bad mainly because of the present financial strain experienced by the government.

Treatments indicated:—*A. Medical.*—Additional pipes to be laid and thus encouraging the use of adequate water providing lights and fans forthwith, the existing wooden tables to be changed, and marble topped ones supplied instead, and providing at least half a dozen filters.

B. Surgical.—Complete removal of the existing building to facilitate the growth of a more spacious one with all the latest developments of hygiene and sanitation, and allow the wound to heal by 'first intention'.

I am grateful to my colleagues for the valuable advice they have given readily in getting up this report.

The March of the Mugger Regiment.

Morning evening noon and night,
All the time we read or write ;
An hour or two in steady walk
But always mixed with study talk.

With weary limbs but heavy brain,
And withered face of over-strain
A living model of devil he looks
Though weak to carry e'en his books.

Step by step the soldier comes
Keeping time to his low hums
Horns of neuro muscular systems,
And mountain sickness's symptoms.

Hark ! by jove it is a fight
Nair and Rao in angry plight,
" What on earth is this " ! I cried,
Then in bold words Rao replied.

" Surely, surely, he is insane
To say that liver is heavier than brain,
With what basis does he speak ?
Or what book does he repeat ".

About turn, and off I went
Nothing to say on the argument,

But there again the pilgrims progress
With the load (Gray) on her in all distress.

Ah! airy fairy Lilian,
My lady looks an alien,
Painful to see that smiling face
Turned into expressionless gaze.

Often have I pondered long
How she stands the breeze so strong,
But for the weight of Gray I think
Air will carry away my fairy Lilian.

An hour or two for rest at hand
The muggers spend in dreamy land,
Dreaming of forearm and hand
And the structure of salivary gland.

I belong to that same regiment
Where every one is a mug or intelligent.
My time in songs and poems spent
So none could fail but for poor—.

By WILLIE, M—RAM,—HAM.

“Wait”.

“Wait, my child wait” was the answer he gave when Eve approached her father for her new abode. ‘White-ship will soon see her golden age—but not very soon! But could she plead for Adam too? Perhaps her duties and worries are so overwhelming that she has hardly leisure to think of Adam and his needs.

White-ship has already seen the dawn of her new era. Before the sun rose high on the 1st of July the tennis court was on the road to repair. Busily did the marker make his way to the court and before the day was ended the court had gone half its way and joyful cries were heard from every corner of the ship when the news was spread. Ah! but then, as is usual with men-aye’ with women too, she asks for more when the immediate needs are granted. She began her cry for a basket-ball court. A few feeble delicate ones felt that, that particular game would be too rough for their frail frames but the robust ones insisted. And now the white-ship has become a lively place indeed. Passing by the ship at eventide one can hardly fail to see the laughing players running after the ball. Sprains and fractures will be many and our surgeons near by may be called upon at any unguarded moment to attend to a fractured femur or a sprained neck. Even to watch the sprightly frames running after and over the ball makes one forgetful of even the most distressing woes. Tennis seems to attract but few these days, and some even feel it is too delicate a game.

Ah! Adam, thy state is pitiful indeed—Let us fervently hope that the authorities will launch out the ‘life boats’ before you are drowned ay’ before you have sunk too deep. We wish you luck in this struggle. If we can give you a piece of advice from our experience it is this. Be persistent and wait with patience. “Ask and you shall have it”, and when thy days come, be not forgetful of Eve. Conquer evil by good. When thy courts have risen to the Olympian heights over the new buildings; leave a share for Eve too and then Eve will be ashamed of her forgetfulness of Adam.

EVE.

Apollo's Shrine

BY A YOUNG PALMER,

Dedicated to my Fellow Students.

Most meet home for 'lympian Physician, Divine ;
Ah, Felicity ! for frater of for'ster fem'nine.
Daughter lovely, Aurora ! of rosy-fingered Dawn,
Rich bliss is thine, full many a dew be sprinkled morn.
Aye ! How sweet, the votaries of beauteous Apollo ;
Scarce fit my half-fledged muse to sing of such a halo.

Maidens, moon-like fair and lordly lion-like lads repair
Ev'ry peeping forth of day in dainty debonair ;
Doubtless, to meet golden-hair'd Apollo, the Sun-God,
Intent to list to his lore, then happ'ly go abroad
'Cross craggy hills and azure waves imparting relief
At ev'ry door afflicted,—thus do carry belief—
Leeches can cure what pain and disease mortals procure.

Call it not vain, ye gentle reader, to hope to cure.
O ! Sacrilege, thus in His lore not have any faith ;
Like to a channel from a spring, Apollo gaveth
Learned Hippocrates the sacred art. He unto
Earth's favour'd few bequeath'd the noble child. There at, to
Great rejoicing were the people wedded, and the world
Eden Seem'd—For now doctors came and their flags unfurl'd—

Neat stitch'd there on the wing'd rod of Hermes, Serpent twin'd.
Each 'gan slaying many a dragon in dens confined ;
Whence forth, for ever, over disease did health hold sway.
Can storm be claim'd, tho', past rocks of illness, far away.
Our boat of life, we steer all safe ? Nay, it cannot be,
My young rebel.—The sea remains unbridg'd. So too, the
Bar, oft fail, the Truth to find. Then wonder not—

Death, yet, is unquell'd.

VARADARAJ. L. VASUDEV.

Pre-registration Social Gathering.

On the evening of Saturday the 5th November the Memorial Hall was the scene of an enjoyable gathering when the pre-registration class held their annual social gathering. On that day we were fortunate enough to see the sun shine with all its splendour and glory. The function began with photo in the college grounds after which the gathering moved in a beautiful procession to the Hall where light refreshments were served. After tea, there was a variety entertainment. The musical farce and 'Ram Sev' were the hit of the show. The leading actors of the two items acquitted themselves very capably. Mention must be made of the two items in the programme to which the talented actors of the fair sex contributed their share. The vocal music of Miss Kalyani Bai accompanied by veena played by herself and Miss L. Swaminathan were enjoyable. Messrs. V. Ramamurthy and P. Balakrishna Rao also contributed items of vocal music. The humorous speech by Mr. Mohana Rangam was very much enjoyed by the audience.

After all the items of the programme were gone through, Lieut.-Col. Newcomb, I. M. S., the president of the evening made a short speech in which he expressed his gladness to spend a happy evening with the students. He congratulated the artists of the evening on their histrionic talents and said that such an entertainment was the first of the series he expected. The absence of the Senior Assistant was keenly felt.

With a vote of thanks to the President the function terminated.

My thanks are due to the various students who took part in the entertainment and those who helped me in making the unction a success.

CLASS REPRESENTATIVE
Pre-registration Class.

10—11—'32.

In Lighter Vein.

A little nonsense now and then
Is cherished by the wisest men.

Judge in the Dentists chair : " Do you swear that you will Pull out my toot, the whole toot, only the toot and nothing but the toot."

" Do you believe that kisses convey germs Asir."

" Sure " he answered.

" Then what disease do they bring."

" Palpitation of the heart of course."

" Why don't you ever take your wife for a drive in your car Tom."

" I can't control both at the same time."

Teacher : " What was the first thing that King John did when he came to the throne."

Smart Johnnie : Sat on it I suppose.

Little Mary after her first lesson in history asked her Grandfather " Grandpa, what great war broke out in 1850."

" Why yes " said the grandfather " That was the year I married your grandmother."

" Before we were married you said that I was a treasure " asked the husband.

" Yes what about now".

" Oh nothing ; only how you seem to think that I am your *treasure*."

In Lighter Vein

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Doctor :—" I hope your husband followed my prescription."

Mrs. X :—" Why No. If he had he would have broken his neck."

Doctor :—" Broken his neck".

Mrs. X :—" Yes he threw the prescription out of the 4th floor window."

" Doctor I have just called in to tell you how much I appreciate your treatment."

Doctor :—" Well young man I am not your doctor."

" Of course no, but you were my uncle's and I am his heir."

He asked her to say one little word that would make him happy for the rest of his life and she did.

It was 'No.'

Believe it or not.

Matrimony is both a word and a sentence.

The moon affects the tide but that is nothing to what it does to the untied.

No novelty.

A new motor car is controlled from the back seat. I have seen cars—and wives—like that.

Heard from the wards.

A third year student wrote in a case sheet under the 'history of present illness' column 'the final attack was the last one.'

" How will you prepare a patient for operation " asked the surgeon.

" Give him an *anaemia* on the previous night " the student answered.

He was a young lawyer and it was his first case.

"Twenty-four pigs were stolen my Lord" Said he waxing eloquent
 "Twenty-four pigs: twice the number in the Jury box."

The Doctor was giving medical evidence in an accident case "He was hit at the junction of the axis and the atlas."

"It is not a fact" one jury remarked "I have lived in this wont for forty years and have never heard of such a junction about here."

Exceeding the limit.

Motoring doctor :—"Well what are the symptoms."

Patient :—"Lassitude doctor, a sense of fullness and general disinclination to do anything."

Doctor :—"Oh you've just been exceeding the *feed limit*."

"I made an awful mistake the other day" Said the modern Bob Sawyer. "Operated on a man for appendicitis and he didn't have what I thought."

"He didn't have appendicitis at all then."

"Oh yes he had appendicitis all right but he didn't have any money."

During a geography lesson the teacher asked "Where is the capital of England."

"Please teacher" replied a boy "I heard dad say that most of it was in America and in France."

"You have heard of Naples the famous Italian port."

"No. How much is it a bottle?"

Explained.

Cupid is always represented as a baby because love always dies in its infancy.

We take this opportunity to express our thanks to all those who have contributed to the Lighter Vein column.

P. V. GEORGE,
Student Editor.

Pretty Nurses.

Pretty nurses are a valuable asset to a hospital. According to a Treasurer of the American Hospital Association, Mr. Asa Bacon, "a pretty nurse can generally handle young and high spirited patients for better than a doctor".

"Especially if the patient is a man" he added.

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The Songs of Birds

The day begins with the bright morn !
The sun throws out his rays of gold
On all the world, and makes man bold
To toil from the day he is born !

The birds with feelings deep and wild,
Inaugurate toil hard all round
While singing songs with sense profound,
And sound melodious, and mild !

The ploughman runs to fields to graze
His herds, or to till his ripe ground !
The housewife plies the house-hold round,
And awaits her sire in love's craze !

The songs of birds do make a hum
Of music sweet, divine, and high,
In tone, and get reflected from sky.
To earth with hope of good to come !

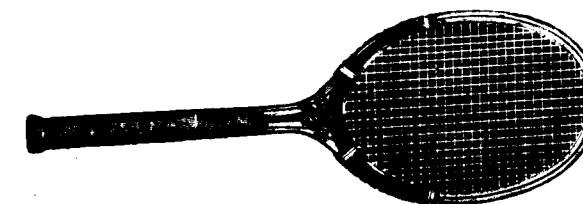
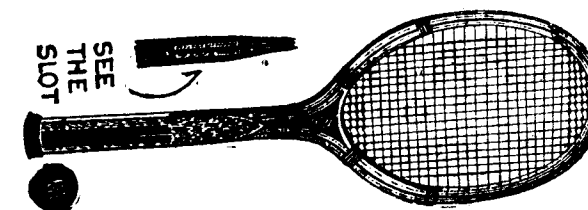
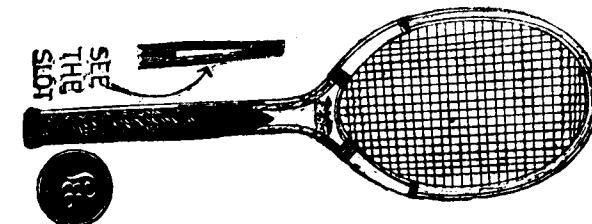
Oh ! bird ! is thy song sweet with love
Not op'n to men here in the world ?
Thy song is sacred, and not hurled
Low down ; but for those in chaste love !

Adornments great ! oh birds ! teach man
By might of music sound and great,
To live life pure ; and ways to cheat
Are soft, and lead to fall of man !

A. V. S. SARMA,
IV Year Class.

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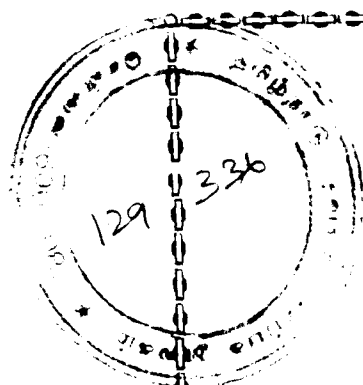


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