

306.

MEDICO, SURGICAL SUBSTITUTIONS

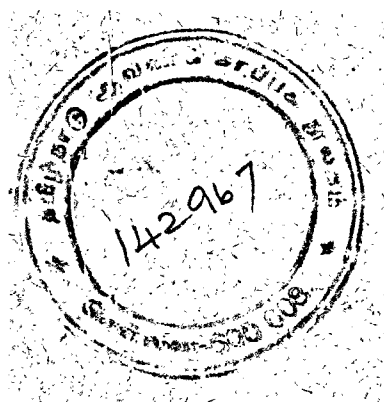
VOL VII

NO. 6.

JUNE - 1938.



JL
L: 4:7 m211, N 3140.
N 38.7.6
142967.



MEDICO-SURGICAL SUGGESTIONS

Vol. VII.

JUNE 1938

No. 6.

Verified

NOW softer • improved in flavour •
in air-tight bottles •



Ostocalcium Tablets are still offered in the handy prescription size of 50 tablets, but in an improved bottle pack, which gives complete protection against moisture.

For complete assimilation, calcium requires the co-administration of vitamin D. Ostocalcium Tablets contain $7\frac{1}{2}$ grains of soluble calcium and sodium lactate, with 500 international units of Ostelin Vitamin D.

INDICATIONS: Exudative skin diseases, menorrhagia, migraine, fractures, tuberculosis, general debility.

Of special value for routine administration during pregnancy.

GLAXO LABORATORIES Ltd., GREENFORD, MIDDLESEX, ENGLAND

Representatives in India: H. J. FOSTER & CO., LTD.,

P. O. Box 202, Bombay P. O. Box 2257, Calcutta

P. O. Box 108, Madras P. O. Box 244, Lahore.

OSTOCALCIUM

IN BOTTLES OF 50 TABLETS

PRODUCT OF THE
GLAXO LABORATORIES



NOBEL PRIZE WINNER
Dr. G. R. MINOT

(Quoted from "Times of India", Dated 12-12-34)

"Professor Minot has made discoveries which suggest that Chlorophyll the green colouring matter of plants, may greatly accelerate the absorption of Iron—the stock treatment for ordinary or secondary Anaemia."

"It is considered probable that the use of Chlorophyll may be of value in cases where the taking of large quantities of iron causes digestive disturbances."

Further researches on Chlorophyll have proved that:—

1. It is rich in Vitamins A, B, & C,
2. It stimulates the function of Red Bone Marrow assisting rapid production of R. B. C's in the body.
3. It helps assimilation of Iron.
4. It reduces enlarged spleen and

' BLOOD BEANS '

is the only combination of Iron, Arsenic, Strychnine and copper nucleinate, with CHLOROPHYLL.

For samples and literature apply to:—

YASMIN & Co.,
10, Churchgate St., Bombay.

THE CARE OF THE SKIN

FISSAN Fissan for
babies and invalids

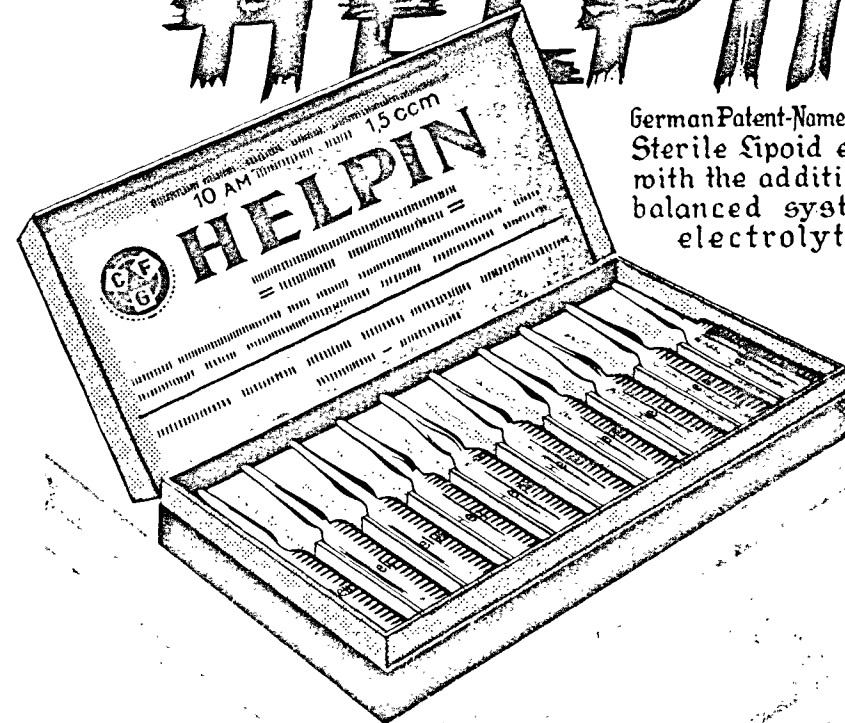
The maintenance of skin health requires the efficient protection of delicate and sensitive skin against irritation. The regular use of colloidal milk albumin preparations produced by modern scientific methods will give satisfaction even in difficult cases.

A brochure describing this important advance, together with samples of Fissan Brand Dusting Powder and Paste, are at your service on application to:—

SIEBERT & CO Fissan Dept., P. O. B. 356 MADRAS.

In Lipoid therapy

HELPIN



German Patent-Name registered
Sterile Lipoid emulsion
with the addition of a
balanced system of
electrolytes

CHEMISCHE FABRIK GRÜNAU
Sandshoff & Meyer Aktiengesellschaft
Berlin-Grünau.

CFG

600 008

When ordering please mention *Medico-Surgical Suggestions*.

HELPIN

sterile Lecithin-Glycerine-Emulsion with the addition of a system of electrolytes which increases its effect.

A parenteral lipid preparation causing no irritation, promotes the regenerative processes of the cells and enhances the resistance of the entire organism. Absolutely non-poisonous, no haemolytically acting properties, therapeutic effects of long duration.

Modes of Issue. Helpin is placed on the market in original packages of 10 ampoules each containing 1.5 cc.

Also in packages of 50 and 100 ampoules each containing 1.5 cc.

Dosage. Intramuscular injections of 1 or 2 ampoules (each 1.5 cc.) daily or every other day.

A single course of treatment consists of 20 to 30 injections. In cases of Tuberculosis and Anaemia the course may be extended. In severe cases of Phthisis it is advisable to begin the treatment with half ampoule doses.

Effects. The effect of a course of Helpin treatment is a marked improvement in general well-being, together with an increase of appetite and weight, and an increase in the quality and quantity of the red blood corpuscles. Increase in the capacity of resistance. The full benefit of Helpin often only becomes apparent towards the end of a course of treatment and continues after its termination.

Literature. More than 40 original publications of HELPIN have appeared, amongst which are treatises from the university clinics of Berlin, Frankfurt, Tuebingen, Stockholm, from public therapeutical institutes in Berlin, Wuerzburg, Kovno, Cologne, Vienna from the Robert Koch Institute in Berlin and from therapeutical institutes for Tuberculosis in Peelitz, Alland N.-Oe., Sendenhorst and Cottbus.

Samples and literature are kept at the disposal of medical practitioners by

CHEMISCHE FABRIK GRUNAU

Landshoff & Meyer, Aktiengesellschaft

Berlin-Grünau.

Sole Agents for India and Burma:

Ad. Meyer
11/2 Stephen House
Post Box 589
Calcutta

Ad. Meyer
247, Angappa Naick Street
George Town
Madras

When ordering please mention *Medico-Surgical Suggestions.*



STERILA

(Made in Switzerland)

Composition: Cl O Na + Cl O H.

One of the most important daily problems concerning the health of the people is the purity of drinking water. India especially is very badly off for water suitable for human consumption and the daily death roll caused by drinking impure water is enormous.

It has long been definitely established, that nothing excels free chlorine gas in the sterilization of water. Hitherto, this method, however, has required expensive apparatus and skilled workmen and could therefore only be adopted in large enterprises.

Now, with Sterila tablets, bound in a new and stable form, and in which state they do not deteriorate even when stored for long periods, the sterilization of water has become a simple matter and can be done by any one at home, at the laboratories, in large works, when travelling or when out hunting in the jungles.

Sterila tablets dissolve in water and liberate free chlorine gas, which ensures a most efficient disinfectant for drinking water, rendering it absolutely germ-free.

One tablet disinfects in 5 minutes 1 quart, in 10 minutes ½ gallon, in 25 minutes 1 gallon and in one hour 2 gallons of ordinary river water.

Sterila kills with certainty within 10 minutes:

Gonococci	in a solution of 1 grm. to 1 quart of water.
Pyocyaneusbacillus	" " " " 1 " " 3 gallons "
Staphylococci	" " " " 1 " " 3 " " "
Typhoid & Cholerabacillus	" " " " 1 " " 5 " " "
Diphtheriabacillus	" " " " 1 " " 5 " " "
Streptococci	" " " " 1 " " 6 " " "

The less the concentration of Sterila the longer it takes to kill the germs.

The last limit of its disinfecting power is 1 grm. to 7 gallons and in this solution ordinary river water will become sterile within 24 hours.

✓ Sterila is non-poisonous and in no way harmful to health.

The water remains without a by-taste unless one tablet is used for less than 1 quart, in which case a slight taste of chlorine is noticeable.

Use Sterila—it is not only safe—but the most economical way of obtaining pure and germ-free drinking water. One tube of 25 tablets at 8 As. is sufficient for 50 gallons of water, thus cheaper, quicker and safer than boiling the water. Sold by all Chemists & Druggists.

AD. MEYER

(Swiss firm established 1896)

247, Angappa Naick Street

P. O. Box 1221

MADRAS

Phone: 4201

REMARKABLE ! NEW !! IMPROVED !!!

KRUPP

RUST-RESISTING and CHEMICAL RESISTING
HYPODERMIC, SERUM and SUTURE NEEDLES

Made of the Genuine Krupp "V2A" Rustless Steel

This extraordinary new alloy, containing chromium and nickel, is the highest development in corrosion-resisting metal. It is stronger than steel, smooth as glass, lustrous as silver and lasting as granite. Impervious to acids and even sea water. These needles are *not* plated but always stay *bright and clean* both inside and out. They do not clog up, and are positively *unrusting, unstaining, and untarnishing*. Nothing else like the Krupp anywhere—and positively economical.

INSIST
on KRUPP

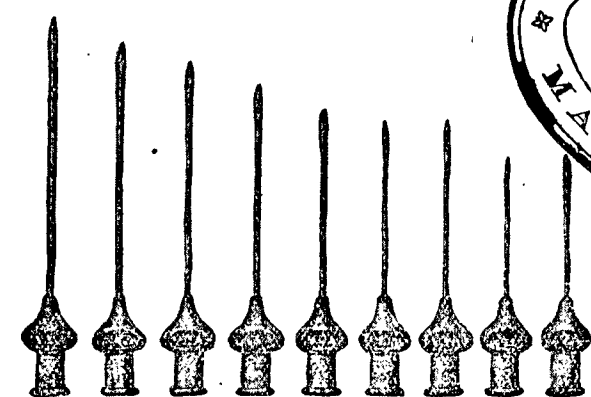
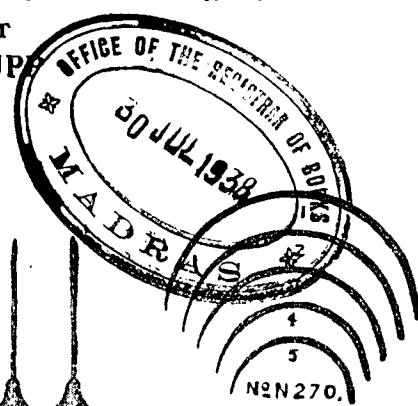


Fig. 6559. Injection Needles, record mount, different lengths and gauges. Sizes : 1, 2, 12, 14, 16, 18 & 20 (thinnest) ...	Dozen	Rs. A. 3-8
Fig. 6560. Injection Needles, with Luer mount, for all glass syringes, Sizes, 1, 2, 12 and 14 (thinnest) ...	Dozen	4-0
Fig. 6561. Serum Needles, record mount, two inches long. Sizes : 8, 10 and 12 (thickest) ...	Dozen	9-0
Fig. 6567. Lumbar Puncture Needles, Bier's, for spinal anesthesia, Ex-small, Small and Medium. Each Rs. 4-0 Large.	Each	4-8
Fig. 6566. Local Anæsthesia Needles, 3½ ins. Re. 1-4 and 4 ins. long	Each	1-8
Fig. 6574. Intravenous Saline Needles, Weintraud's ...	Each	2-4
Fig. 6585. Syringe Rest, Issack's, safest method of injection ...	Each	3-8
Fig. 6592A. Pneumothorax Needles, Saugmann's, terminal outlet with cock-fitting, 55 mm. long ...	Each	12-0
Fig. 5264A. Intestinal Suture Needles, Straight and Half circle ...	Pkt. of 6	2-4
Fig. 5272A. Suture Needles, Surgeon's, triangular pointed, Straight, Half curved and Full curved ...	Pkt. of 6	2-0
Fig. 5266A. Suture Needles, Hagedorn's, Half circle ...	Pkt. of 6	2-8

Several other varieties held in stock. Also we stock 'BOSCO' Stainless Steel Needles and Jena Resistance Glass and Precision Record Syringes. Apply for special Krupp booklet.

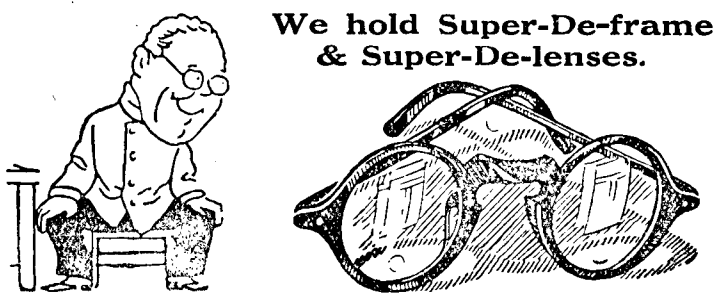
BOMBAY SURGICAL Co.

Specialists in Surgeon's Instruments and Hospital Requisites

Telephone : } New Charni Road, { Telegrams :
41936. } BOMBAY 4. { "SURGICO"

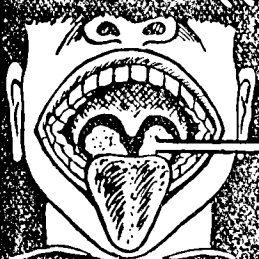
When ordering please mention *Medico-Surgical Suggestions*.

We hold Super-De-frames
& Super-De-lenses.



WHITE BROS., Opticians, 3/173, Broadway, Madras.

MANY THOUSANDS SAVED FROM TONSILS WITHOUT OPERATION



TONSINOL (REGD)
GUARANTEED CURE FOR
TONSILS
WITHOUT OPERATION.
TONSINOL LABORATORY
53, GOVINDAPPA NAICK ST, G.T. MADRAS.

RANG-TO

In early Tubercular lesions of lungs and peri-bronchial infiltrations, acute or chronic bronchitis in children or adults, "**Rang-To**" is proved to be a Lung Tonic of great efficiency. It contains very useful drugs and is the recipe given by a doctor of repute as a Specialist in diseases of lungs. It is also very useful for Pneumonia convalescents and Asthmatics. It helps expectoration, relieves bronchial spasms, and hastens repair of other lung lesions. It alleviates and repairs.

DOSE :

Adults : Two teaspoonfuls for a dose with water three times a day.

Children : As directed by the physician.

For samples apply to :

STOCKING & SONS,

(Estd. 1914)

Pharmaceutical Chemists,

VEPERY

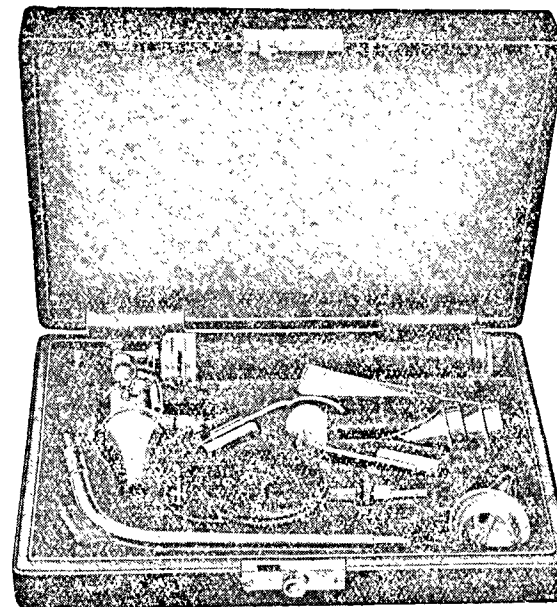
::

MADRAS.

When ordering please mention *Medico-Surgical Suggestions*.

Tele { Phone : 24114 (2 Lines)
Grams : 'ELECSTORES'

—Most Reliable
Surgical House —
for
Medical Students and
Practitioners.



Stockists of :
Surgical, Medical & Electrical
Apparatus and **ERKA**
Stethoscopes, Blood-
Pressures, Diagnostic set
for Eye, Ear, Nose & Throat
purpose, Quarza **ULTRA**
Violet Lamp and other
Varieties.

Concession for
Medical Students.
Dissection sets can be had
at Moderate Rates.

Please refer to :—

National Surgical
COMPANY.

Oomarigar Building,
80/82, Lohar Chawl,
BOMBAY 2

Liver Cure

(REGISTERED.)

AN EFFECTIVE REMEDY

For Infantile Liver & Spleen Complaints

Acclaimed as the best for

Infantile Cirrhosis of liver

Enquire Particulars:

JAMMI VENKATARAMANAYYA,

Liver & Spleen Specialist,

8, Salai Street, Mylapore, Madras.

When ordering please mention *Medico Surgical Suggestions*.

INSOMNIA

To soothe the tired nerves, after a hard Day's work, to invigorate them to pick up and restore the expended energy, during your rest and eventually to induce sound sleep

JEEVAMRUTHAM

IS AN INFALLIBLE TONIC

One or two spoonful every day before retiring—
works wonderfully

SOUND SLEEP IS SOUND HEALTH.

Manufacturers :

AYURVEDASRAMAM :: MADRAS.

Distributors :

AMARCHAND SOBACHAND, MADRAS.

If You Feel

As thousands of other parents feel that children are the most valuable possession, you will also do, what others have done to keep their darling babies hale and healthy—give your child the benefit of

Pandit. D. Gopalacharlu's

BALA BHASKARA

It is an excellent remedy to cure and prevent Liver and Spleen disorders in children at any stage.

Mfrs :—AYURVEDASRAMAM :: MADRAS.

Distributors :

AMARCHAND SOBACHAND, MADRAS.

When ordering please mention *Medico-Surgical Suggestions.*

MEDICO-SURGICAL SUGGESTIONS

A MONTHLY JOURNAL OF PRACTICAL MEDICINE & SURGERY

Editor : Dr. P. R. Venkappaya.

VOL. VII

JUNE 1938

NO. 6

CONTENTS

PAGE.

ARTICLES—

Local Anesthesia in General Practice—By Prof. Rudolf Demel, M.D., (Vienna)	207
Urology in General Practice—By R. Campbell Begg, M.O., M.A., M.Sc., M.D., F.R.C.S.E., F.A.C.S. ...	219
Indications for Mastoidectomy—By J. D. Wicht, M.B., B.Ch., D.L.O., F.R.C.P. & S. (ENG.).	225
Diabetes and Heart Disease—By E. R. Musick, M.D. ...	227
Fundamentals of Serum Therapy—By Winston H. Tucker, M.D.	230
MEDICAL NEWS AND NOTES	238
THERAPEUTIC NOTES	240
CORRESPONDENCE	241

Annual Subscription : Rs. 5 ; foreign : 10 sh.; Single Copy : As. 8.

Sample Copy for 4 As. Stamps.

Office of the Editor & Publisher: 179, Mint Street, Madras, India.

NOTICE

Original articles, case reports, and other topics of medical interest are cordially invited, and are accepted only with the distinct understanding that they are contributed exclusively to *Medico-Surgical Suggestions*. Manuscripts should be type-written. All communications in regard to editorial business, books and journals for review and exchange, samples of drugs and instruments, etc., should be addressed to the Editors. The Editors accept no responsibility for views expressed by contributors.

All business communications should be addressed to the Manager, *Medico-Surgical Suggestions*. Only approved advertisements will be admitted, and the Manager reserves the right to exclude any advertisement which is against medical ethics.



AGENTS:-
SIEBERT & CO
P.O.B. 356 MADRAS



CARIPEPTIC LIQUID

UPJOHN

**Standardized Enzymes of Carica
Papaya with Diastase.**

Caripeptic Liquid contains, in palatable stable and active form, the active proteolytic, amylolytic and renniti enzymes of Carica Papaya, fortified as to starch digesting power by the addition of diastase. It affords in one prescription a combination of vegetable digestant, carminative and psychosecretory factors in treatment.

Caripeptic Liquid, is a pronounced carminative. When it is taken after a meal, the immediate subjective effect is a sensation of gastric stimulation; the sense of well-being and comfort spoken of by pharmacologists in describing carminatives. This carminative phase is frequently soon succeeded by evidence of digestive action apparent in subsidence of the feeling of oppression of discomfort occurring in dyspeptic subjects.

Manufactured by:

THE UPJOHN CO., U. S. A.

Sole Agents:

**T. M. THAKORE & CO.,
43, Churchgate Street, FORT, BOMBAY.**

Branches:

5, Sunkurama Chetty Street, Madras.
12, Dalhousie Square, Calcutta.
124, Anarkali, Lahore.
123, Bunder Road, Karachi.
65, Tseekai Mg. Taulay Street, Rangoon.
31, Rua de Janeiro Nova-Goa.

When ordering please mention *Medico-Surgical Suggestions*.

MEDICO-SURGICAL SUGGESTIONS

VOL. VII

JUNE 1938

NO. 6

LOCAL ANESTHESIA IN GENERAL PRACTICE.

PROF. RUDOLF DEMEL, M.D. (VIENNA),
Vienna.

INTRODUCTION.

Local anesthesia, as it is known to-day, is an improved modification of the use of cocaine in ophthalmological operations, first advocated in Vienna by Koller in 1884. While Reclius originated the technique of the infiltration-anesthesia with 1.0 and 0.5 per cent solutions of cocaine in France in 1890, Schleich, in Germany, introduced, in 1891, a new physiological principle in the technique of local anesthesia by infiltrating the field of operation with hypotonic solution of cocaine. It may be considered that a further progress was made when surgeons endeavoured to separate the area of anesthesia from the field of operation. This pioneer method was advocated by Hackenbruch in 1897. He injected a solution of cocaine round about the field of operation, thus creating a blocking wall, circumscribing the field of operation. This was the fundamental work for conduction-anesthesia, and the credit of further improvement and modification is due to Braun. He enriched the technique of local anesthesia by adding suprarenin to the cocaine solution, which considerably increased the duration of anesthesia. The introduction of novocain by Einhorn in 1905 may be regarded as another mile-stone, as it opened up numerous fields of surgical use. Local anesthesia, with its various improvements in technique is, to-day, much preferred to general narcosis for many operations. Local anesthesia is, first of all, the method of choice in minor surgery. It is specially indicated in those cases, which are under the care of the general practitioner, where now-a-days local anesthesia is nearly always the method of choice. It is not necessary to go into the details of the many advantages of this method both for the physician and his patient. It is proposed, in this paper, to limit the discussion on local anesthesia to some general considerations of its importance and to some special considerations of its technique in surgical practice.

GENERAL CONSIDERATIONS

METHODS OF LOCAL ANESTHESIA

The following methods of local anesthesia are available :

(1) *Superficial anesthesia* of the mucous membrane where the solution (20 per cent cocaine) is simply instilled on the mucosa by means of a hair pencil.

(2) *Infiltration-anesthesia* may be said to cover all methods, where the tissues are infiltrated with the anesthetic solution. The technique of this method varies and depends upon the case, whether the cutis, the subcutaneous tissue or the deeper soft structures lying under the deep fascia is anesthetised.

In order to make the cutis insensible, a puncture is made in a horizontal direction under the epidermis, directly into the tense tissue of the cutis with a very fine cannula, injecting up to 0.5 c.c. of the solution. This will raise a skin wheal (quaddel), making the spot immediately insensible. Through this wheal, the needle is then pushed into the cutis, thus creating a circumscribed painless area in the skin, ready for a short operative incision or for instance a trocar-puncture, devoid of any pain. This method of course would be too complicated, for anesthetising larger surfaces of skin. The method of choice in such cases is the *subcutaneous infiltration*, which is similar to the first mentioned method. It begins with the raising of several skin-wheals, into which deeper punctures are made as far as into the subcutaneous tissue by means of a strong cannula. When this cannula is pushed forward in the subcutaneous tissue, the finger of the left hand must carefully watch its progress. The solution is only injected when it is pushed forward or withdrawn. It is important to note that it is not permissible to inject with a resting cannula, because the solution may be injected into a casually punctured blood vessel. Thus a wall of infiltration, corresponding to the infiltrated subcutis, becomes visible on the skin-surface, and it readily becomes anemic owing to the effect of suprarenin. By continuing this method of injection a much larger region of the skin may be anesthetised. The subcutaneous infiltration produces an interruption of the conduction of the regional nerves. While the cutaneous infiltration causes anesthesia immediately after the injection, it takes about 5 to 10 minutes, when the infiltration is done subcutaneously, before complete insensibility is produced. This delay is explained by the fact that some time elapses before the nerves and nerve-sheath, absorb a sufficient amount of the solution. In cases, where we have to inject a mucous membrane, a similar technique may be used, provided the submucosa consists of spongy tissue.

If we have to anesthetise deep seated structures, the low infiltration may not be voluntarily done, for there is a great danger of injury to important organs. The technique will then depend on the

anatomical situation and its accessibility. As a rule, we, first of all, make the deep injections and then transfer to the superficial subcutaneous injections. The needle is first directed vertically into the depth of the tissue and an injection is made, then drawn back into the subcutaneous connective tissue; again pushed, but this time obliquely towards the centre of the layer of infiltration and finally pushed into the subcutaneous connective tissue parallel to the surface of the skin, injecting the solution each time, when pushing forward as well as when drawing the needle back. The deep infiltration, first of all, affects the spongy interstitial tissue, the fat and the muscular apparatus causing the anesthetisation of the nerves placed within the connective tissue spaces. Of course we must use great care not to injure any of the larger vessels, although it is proved by experience, that the casual puncturing of even large vessels has no serious effect, on account of the very fine injecting needle. The principal point is, to be scrupulously careful, not to inject the anesthetising solution into the vessel. Since we have to deal in such cases with larger nerve-branches than there are in the subcutaneous tissue, a much longer time will be here necessary to obtain complete insensibility.

By injecting the anesthetic solution round about the field of operation, the actual region of the operation remains free from infiltration, but it becomes bordered by an infiltrating band of the solution in all directions, where sensory nerves may be encountered. In those cases, where these injections are given subcutaneously, the field of operation becomes surrounded by a row of wheals, 5 to 10 cm. apart from each other. Beginning from each one of these wheals, a subcutaneous band-like area is injected in the direction of the next wheal by means of a long cannula, left and right until an infiltration-ring resembling a rhombus or a polygon surrounds the field of operation. To this type, for instance belongs the anesthesia of the fingers according to Oberst. On some parts of the body, e.g., over the scalp, the anterior surface of the neck or the finger, the sensory nerve-tracts lie in the subcutaneous connective tissue. In these cases, the subcutaneous injection round the field of operation is sufficient, to obtain anesthesia of the deeper structures, like periosteum or bone. When anesthesia of deeper tissues is needed the needle is directed onwards and deeply—beginning at the wheals—and the solution is injected into divergent, fan-like fields, close to each other, which border trough-shaped or conical structures. This method of injection is used in all those cases, where soft tissue surrounds the field of operation and holds good for the majority of operations, done under local anesthesia.

(3) In cases of *conduction anesthesia*, a search must be made for the sensory nerve—independently from the field of the operation—at that point, where it can be most comfortably and definitely

secured, and then the narcotic solution is injected endo-neurally. This endo-neural conduction-anesthesia may be used even without previously laying bare of the nerve, in all those cases, where the nerve runs over a firm support or base like bone, because there is little possibility of injuring other structures. The subjective complaints of the patient, viz., pain and paraesthesias during the injection into the nerve-trunk are a sure proof of effective localisation.

In case of nerves of moderate thickness it is sufficient to inject the narcotic solution peri-neurally (*perineural conduction-anesthesia*); here we have, so to say, to deal with a localised infiltration-anesthesia. While the correct infiltration-anesthesia overflows the entire field of operation with a diluted solution, conduction-anesthesia aims at stunning a limited region by a relatively small quantity of a concentrated solution. The endoneural injection causes an immediate anesthesia, but it takes some time, about 20 minutes, before the solution penetrates through the nerve-sheath, when the injection is given perineurally.

CHOICE OF INSTRUMENTS.

The instrument-set for local anesthesia is simple, but it must be good and dependable. From a large variety of models of syringes, there is no doubt that the record-syringe, holding 2, 5 and 10 c.c. is the best to recommend. They only require correct handling and reasonable care. When sterilizing, the closing piece and the piston have to be removed and the glass-barrel must be wrapped in cotton wool. By no means, are we allowed to put the syringe into boiling water, it must be put into cold water and allowed to boil.

The canulae are made of rust-free metal. The following two models of canulae are sufficient for all cases: (1) *The wheal-canula*: It is of a fine calibre (0.3 to 0.5 mm.), strong and 3 to 5 cm. in length. The hollow needle is provided with a long sharp point, enabling the physician to perforate the cutis easily and without any difficulty. (2) *The infiltration-canula* is 5 to 10 cm. or more in length, having a diameter of 0.7 to 0.9 mm. Besides this, we need a graduated porcelain mug for the solution.

The instruments should never be allowed to be sterilised in soda solution, for the alkali would interfere with the action of the suprarenin. It is much better to use either tap or distilled water, or the isotonic Ringer's solution (the physiological common salt solution contains in spite of all precautions minute quantities of soda) for sterilizing the instruments. The canula should always be cleansed and most carefully dried out with ether or benzine after using, and a thick wire should be put in.

CHOICE OF DRUGS.

As far as solutions are concerned, only solutions of cocaine are recommended for superficial anesthesia of the mucous membranes, e.g., for the urethra 1 per cent, for the eye 2 per cent, for mouth and

pharynx 5 to 10 per cent and for the larynx a 20 per cent solution. Only a few drops of suprarenin-solution (1:1000) is added to the cocaine-solution. For all other kinds of local anesthesia the novocain-solution is most practical and most suitable on account of its minimal toxic effect and non-stimulating action. We use the 0.5 per cent solution for nearly all cases of infiltrations and wound-injections. The 1.0 per cent solution is used, if we have only little room for the spreading of the fluid, consequently in all those cases, where the field of operation is very small. In out-patient treatment in minor surgery the 1.0 per cent solution is used very frequently. The 2 per cent solution serves for conduction anesthesia.

PREPARATION OF SOLUTION.

For the preparation of these solutions, we use the novocain-suprarenin-tablets A of the Hochster chemical factory. Plenocain tablets contain 0.125 novocain or plenocain and 0.00012 synthetic suprarenin. We should never depend upon the sterility of these tablets; because many organisms have been found on culture, including the ordinary potato-bacillus and hay-bacillus. The physician should not get these solutions made by the chemist and keep them in stock for future use, because much damage has been done in this way. It is much better to prepare these solutions always fresh before using them and allow the tablets to boil once when preparing the solution. The simplest way is to dissolve them in a few c.c. of physiological saline solution in a small sterile alembic made of Jevenser glass and then to boil over a spirit or gas flame. The content of this little alembic is then poured into a sterile graduated measure made of porcelain and different quantities of physiological common salt solution are added, according to the desired saturation of the solution.

The anesthetic solution should be perfectly transparent before use. It should not be reddish in colour, for this would be a sure proof of decomposition of the suprarenin owing to the action of alkali, contained in the glass vessel while boiling. Such a decomposed fluid may give rise to toxic symptoms on injection. This inconvenience may be avoided by adding hydrochloric acid to the common salt solution, (3 to 8 drops of acid hydrochloric dilute, to 1 litre of solution). If the tablets are dissolved and boiled in an alembic made of Jenenser-glass, which yields only negligible quantities of alkali, there would be no likelihood of the decomposition of suprarenin. Thus the addition of hydrochloric acid could be avoided.

DOSAGE.

It is not possible to specify an exact maximal dose of novocain, used for infiltration. It depends upon the saturation, upon the mode of use and finally also upon the quantity of the solution used. As a rule 200 c.c. of a 0.5 per cent solution may be safely injected in a robust patient, while only 50 to 100 c.c. of a 1.0 per cent solution

may be injected. When the solution is 2 per cent we should never give more than 20 to 30 c.c. In a weak or exsanguinous patient, we only use, as a matter of precaution, a 0.25 per cent solution and give only 150 c.c. at the most.

TOXIC SYMPTOMS.

We should also never forget that novocain is a poison. There are reports of quite a number of cases, where signs of poisoning have appeared. Such episodes have also occurred in cases, where sub-minimal dose, smaller than the permissible therapeutic dose was given. The clinical features of poisoning are characterised by vomiting, palor, giddiness, increasing weakness of pulse, restlessness, dyspnoea and clonic spasm, mimetic fascial spasm, cyanosis and cessation of respiration. An intravenous injection of this solution is in most of these cases responsible for these troubles. Therefore greater care and attention must be paid, when injecting this solution to avoid drawing blood in the needle. Only in very few cases a deleterious effect was noticed on the tissues injected but such cases are extremely rare.

No special preparation of the patient for anesthesia is necessary in minor surgery. Infants (sucklings), who can be operated under local anesthesia, are not allowed any food before the operation but may be given the milk bottle before beginning the anesthesia. This is sufficient for complete distraction of attention of these little patients. Generally the patients are given 1 to 2 ctg. of morphine or pantopon one hour before the commencement of the anesthesia. The patient should be comfortably placed and the anesthesia as well as the operation should be performed as gently and carefully as possible. Besides this, we should always take into consideration the fact that the post-operative pain may be very severe.

CONTRA-INDICATIONS.

Local anesthesia has also its contra-indications. First of all it is the psychological condition of the patient, which may be the chief contra-indication for local anesthesia. Besides this, in cases of inflammatory processes the injection may not be made into the inflamed tissues owing to the danger of further spreading. In such cases, only the conduction-anesthesia may be considered. Local anesthesia is not in order in cases of a generalised infection. Further, local disturbances of nutrition and direct danger of gas-gangrene are absolute contra-indication, of local anesthesia.

Those operations, where the private physician must use local anesthesia, will be considered together with the following discussion of injuries.

SPECIAL CONSIDERATION.

WOUNDS.

In cases of incised wounds, or lacerated, contused or ruptured wounds of the skin and of the underlying soft parts, a number of

wheals bordering the field of operation is injected into the surrounding area of the wound. Beginning from these wheals a 0.5 per cent, or in case of smaller wounds a 1.0 per cent solution is infiltrated into the subcutaneous tissue in the form of small stripes or bands surrounding the field of operation. Within a few minutes the entire region of the wound is anesthetised. To this group belongs also the suture of fresh (new) rupture of the perineum, whereby wheals are injected in the vaginal mucous membrane as well as in the skin wound. The entire region of the wound is infiltrated in this way with a 0.5 per cent solution.

FRACTURES AND DISLOCATIONS.

In cases of bone-fractures and luxation of joints, local anesthesia has been used with success. A one per cent solution is injected in a quantity of 10 to 20 c.c. either into the fissure of fracture or close to the central and peripheral dislocated epiphysis. It is, of great importance to make sure that the needle is inserted correctly into the fissure of the fractured end; a little preliminary aspiration is advisable before making the infiltration, as the appearance of blood would indicate the correct position of the needle.

The result of the anesthesia is often dramatic. Almost immediately after the injection the pain disappears and a few minutes later, the site of fracture becomes completely insensitive. The muscles relax as in deep narcosis. In cases of luxation, the previously stiff fixed joint becomes movable and painless very soon after the injection and the muscles are also relaxed.

The advent of local anesthesia marks a definite progress in the treatment of fractures, because it enables us, to bring the patient painlessly before the screen of the x-ray and permits a smooth reduction of the fracture. The application of the securing bandages is much easier, because the patient keeps still and does not make any disturbing movement. The same remark holds good for luxation, because in these cases, the reposition becomes much easier than under general narcosis.

SUPERFICIAL TUMOURS.

When removing an atheroma or a smaller subcutaneous tumour in any part of the body, e.g., mammary fibro-adenoma, lipoma, etc., 10 to 20 c.c. of a 0.5 per cent solution may be injected in the form of a rhombus, beginning from two points of punctures, which are placed at the extremities of the intended incision. This is also done even in cases of biopsy or test-excisions. In cases of larger tumours, a pyramidal deep infiltration is also made, into the deeper tissues. The amount of the 0.5 per cent solution, in this case is increased from up 50 to 70 c.c. This method of injection infiltrates also the base of the tumour in a fan-like radiating manner. In cases of deep infiltration of abdominal wall, it is important to make sure, firstly, that the infiltration is injected deep enough and secondly, that the

peritoneum does not get injured. After we have perforated the subcutaneous connective tissue with the needle in a vertical direction, we feel the resistance of the fascia, which is next pierced. The needle, is then directed somewhat obliquely and pushed forward under the fascia, injecting at each movement. In cases of very emaciated patients with contracted abdominal walls, the greatest care must be used.

DENTAL SURGERY.

As we all know, local anesthesia is also a very safe method for dental surgery. In cases of anesthesia of the teeth of the upper jaw, the lip and the cheek is lifted up from the upper jaw by means of a retractor just far enough, to make the duplicature of the mucous membrane at the alveolar process visible. For injection we use a 2 per cent solution. The syringe is held in a horizontal direction, the needle is pushed into the duplicature and moved forward above the root of the teeth into the muco-periosteum, in a horizontal direction. For the incisor teeth and for the canine tooth, the needle is pushed in next to the frenulum, for the premolar and the first molar tooth above the roof of canine tooth, and for the last molar teeth behind the epiphysis of the processus zygomaticus under the mucous membrane. For the anesthesia of one or two teeth 2 to 3 c.c. of solution are required, for several teeth of the half of the upper jaw, 5 to 10 c.c. are necessary to obtain the anesthesia in about five minutes. This anesthesia, which was given only at the anterior surface of the alveolar process is sufficient for operations on the pulp, dentine and for resection of the roots and other operations at the anterior surface of the alveolar process. For the extraction of the teeth of the upper jaw, we must in addition inject the lingual gingiva and the maxillary periosteum; for this purpose the n. palatinus ant. is interrupted in its conduction by means of conduction-anesthesia which we obtain by injecting 2 to 3 c.c. of a 2 per cent solution under the mucous membrane of the bony palate, directed medially from the posterior molar tooth towards that furrow of the mucous membrane which is invisible at the transition of the mucous membrane of the bony palate, into the lingual gingiva.

When extracting incisor teeth, it is advisable to inject about 1 c.c. of a 2 per cent solution behind the lateral incisor tooth, thus causing the insensibility of the n. incisivus. These injections produce the anesthesia of the lingual gingiva as well as of the periosteum of the bony palate.

When operating on the lower jaw and teeth, the above mentioned injections under the mucous membrane of the alveolar process are only well effective, when given in the region of the incisor and canine teeth. Further backwards, the inferior maxilla becomes too thick, and thus, the anesthetic does not even reach the nerves of the pulp. Therefore in cases of lower jaw teeth operations, it is much

more practical to interrupt the n. alveolaris inf. and the n. lingualis at the lingula of the inferior maxilla. The following procedure is known to be the most practical one. With the patient, seated and the mouth well opened, the surgeon feels with the left index finger for the anterior sharp edge of the ascending ramus of the lower jaw. Then the syringe, fitted with a long needle, is inserted from the region of the opposite lower canine tooth into the oral cavity parallel to the masticatory surface of the lower teeth; the needle then is pushed under the mucous membrane one cm. above and somewhat lateral from the masticatory surface of the last molar tooth, whereby the point of the needle hits the bone directly under the thin mucous membrane. If this technique is not followed, the needle is liable to be introduced too far medially. It is a mistake, which is very often made by young practitioners. As soon as the point of the needle reaches the bone, we carefully palpate forward and medialwards little by little, until the needle slides in the depth at the inner surface of the inferior maxilla. Then the needle is pushed home for a distance of $1\frac{1}{2}$ cm. at the most, without losing contact with the bone, and 5 c.c. of a 2 per cent solution are injected into the depth; thus producing an interruption of the conduction of the n. alveolaris inf. and of the n. lingualis. Anesthesia is established in 10 to 15 minutes, but it also induces insensibility of the lower lip, the tongue and the floor of the mouth. Never should this injection be made with a short needle, for such a needle, should it break, is hard to remove.

In cases of operations on the posterior teeth, we should besides this infiltration give an additional injection under the labial gingiva, in order to exclude the fibres of the n. buccinatorius. Since the sensibility of the incisor teeth is also dependent upon the n. alveolaris inf. of the other side, it is usually not sufficient in cases of dental operations of the inferior maxilla, to interrupt the conduction of the n. alveolaris inf. at the lingula on the side of the operative field. In these cases, we should, after lifting the lower lip, push the needle, close to the canine tooth, into the mucosal duplicature and inject one c.c. of a 2 per cent solution, when moving the needle medialwards and forwards over the anterior surface of the inferior maxilla on to the fossa mentalis.

In cases of inflammatory lesions of the teeth and of the alveolar process, the submucosal ring injections must not be made into the neighbourhood of this area. Conduction-anesthesia of either the n. alveolaris sup., ant., medii., and post., or of the n. alveolaris inf. is the method of choice.

PARACENTESIS THORACIS ET ABDOMINIS.

If we use stronger canulæ or trocars for puncturing the pleura for either diagnostic or therapeutic purposes, it is advisable—after making first a wheal—to infiltrate into the place of puncture a 2 per

cent solution into the soft parts, up to pleura costalis, in order to anaesthetise the entire puncture channel. A similar procedure may be adopted for paracentesis abdominis. It is important to note that the bladder must be emptied first. For supra-pubic puncture of the bladder, the puncture-channel, which lies above the symphysis, is likewise infiltrated with a few c.c. of a 2 per cent solution

ASPIRATION OF HYDROCELE.

The site is first selected and then it is anaesthetised by injecting a few c.c. of a 2 per cent solution, through a wheal raised previously on the anterior surface of the scrotum. Then a trochar or a canula is pushed through the skin and the integuments of the scrotum into the vaginal sac.

MINOR OPERATIONS ON THE PENIS.

For operations on the penis, as phimosis and paraphimosis, the simple ring injection of the prepuce is not always sufficient and deeper circular injections are not advisable on account of the possibility of subsequent disturbances of nutrition. In those cases, where we think, that a simple dorsal linear incision of the prepuce is sufficient, only the line of incision between both the preputial membranes are infiltrated. A very fine hollow-needle is pushed into the free preputial margin, set between both the preputial membranes as far as over the sulcus coronarius and 1 to 2 c.c. of an 1 per cent solution is injected. For all other cases of phimosis, as well as for all operations on the penis, inclusive of the amputation, the conduction anaesthesia of the n. dorsalis penis is the only method to choose. In such cases, the needle is pushed in on both sides next to the root of the penis and the corpora cavernosa is infiltrated deeply. Besides this a subcutaneous injection is made around the root of the penis. The quantity of 0.5 per cent solution used amounts to about 40 c.c. This procedure produces an insensibility of the entire penis inclusive of the penile urethra.

MINOR OPERATIONS ON THE ANUS AND RECTUM.

Local anaesthesia, in cases of fissura ani and of the simple and superficial anal fistulæ, consists of the typical infiltration around the anus. Beginning with four wheals, which are raised at a distance of 2 to 3 cm. from the anus, a long needle (10 c.m. in length) is pushed forward deeply along the lateral rectal wall through the sphincter ani and the levator ani muscles under the control of the left index finger, which is introduced into the anus. Every time, when pushing the needle forward or backward, 20 c.c. of a 0.5 per cent solution is injected; therefore the entire quantity of solution injected amounts to 80 c.c. infiltrated through the four wheals. These wheals serve also for the subcutaneous injection of 20 c.c. of a 0.5 per cent solution into the anal region. The entire quantity of 0.5 per cent solution used for this infiltration amounts therefore to about 100 c.c. When setting the point of the needle into the depth, it

should always be felt by the palpating index finger in the rectum under the rectal wall thus avoiding not only a perforation of the intestinal wall, but also preventing the danger of infection in the periproctal tissue, which may arise, when the injections would be continued after the perforation. If the anaesthesia is fully effective, the sphincter relaxes entirely and the operation, such as in cases of fissura ani, dilatation of the sphincter and formation of eschar of the fissures, fistula ani, division and curetting of the fistula canal, can be done without any difficulty.

OPERATIONS ON FINGERS AND TOES.

Anaesthesia of the fingers or toes as recommended and advocated by Oberst is the right method to choose in quite a number of cases of operations, e.g., panaritium, if it does not go beyond the second phalanx; paronychia, removing of the nail, unguis incarnatus, amputation of a phalanx of the finger or toe as far as the median joint and the centre of the proximal phalanx.

The mode of action of this method of anaesthesia is here greatly favoured by the disposition of all sensory digital nerves in subcutaneous connective tissue of the proximal phalanx. Further, the strongest pair of nerves are situated volarwards close to the flexor tendons; dorsalwards from the flexor tendon lies a second pair and finally under the skin of the extensor surface there are two more five nerves. The narcotic solution is injected into the neighbourhood of these nerve trunks. For this purpose two wheals are raised on the lateral surface of the proximal phalanx of the finger or of the toe, but directed towards the extensor surface, for there the skin is also less sensitive. From these wheals the needle is now pushed forward under the skin of the flexor surface, injecting the solution. The needle is then drawn back, but set again into the same wheal, but this time directed under the skin of the extensor surface and infiltrates the solution here. Two similar injections are also made on the other side of the finger. As a rule we wait for about five minutes, until the tip of the fingers become insensitive against needle punctures.

Oberst recommended some time ago to tie the fingers up with elastic stripes before injecting the narcotic solution, so as to avoid the rapid dispersal of the injected fluid and thus to gain a prolonged effect of the anaesthesia. With the introduction of suprarenin, the method of ligature has been abandoned. On the other hand, the infiltration of solution containing suprarenin into the fingers or toes requires a certain amount of attention, because the arteries of the fingers are also terminal arteries. Even if we use a 0.5 per cent solution to make the finger narcotic all arteries of the finger get contracted and the suprarenin is only very slowly conveyed from the tissue. This is liable to cause disturbances of circulation as well as disturbances of nutrition. We know of cases, where after local

anesthesia, a gangrene of the respective finger was produced. It is necessary to mention here of the severe after-pains following this form of anesthesia. All these disturbances can be avoided, if the injection is made most close to the base of the finger, where vascular anastomosis is free. It is important to remember that the subcutaneous connective tissue of the finger or of the toe, not being areolar, is rather dense—consequently it is advisable to inject a smaller amount of the solution. It is sufficient to inject about 3 to 5 c. c. of a stronger solution (2 per cent).

For an amputation of the finger at the metacarpo-phalangeal joint or for an amputation of the toe in the metatarso-phalangeal joint, we raise four wheals first. Two of these wheals are placed one on either side of the finger (or toe) at its base in the interdigital folds. The remaining two wheals are made over the back of the hand (or the dorsum of the foot) one on either side of the metacarpal (or metatarsal) bone near the interosseus space but not far from the metacarpo- (or metatarso-) phalangeal joint. The wheals should be never raised on the palm of the hand (or plantar surface), for the skin is here too thick and too sensitive. Before beginning with injections, the surgeon puts the tip of his left index finger into the palm of the hand (or the plantar surface) in order to control the direction of the injecting needle. The needle is first of all directed from both wheals raised on the back of the hand (or the dorsum of the foot) towards the palm (or plantar surface) through the interosseus space. The progress of the needle is controlled by the palpating finger over the palm of the hand (or plantar surface). With each of these movements 5 c.c. of a 0.5 per cent solution is injected. From the two wheals in the interdigital folds, the needle is subcutaneously pushed forward towards the palm (or plantar surface), as well as towards the back of the hand (or the dorsum of the foot) injecting 5 c.c. of a 0.5 per cent solution every time. Besides this, the two wheals on the back of the hand (or the dorsum of the foot) are connected with each other by a subcutaneous injection. The entire quantity which is used, amounts to 30 to 40 c.c. of a 0.5 per cent solution. After tip of the finger or toe becomes insensitive, we can begin with the amputation of the whole finger (or toe), and also parts of the metacarpal (or metatarsal) bone, if necessary.

CONCLUSIONS.

The methods of local anesthesia have been introduced to-day in almost all branches of surgery. The practice of local anesthesia has been brought to such a stage of perfection that now-a-days even major surgical operations are performed under local anesthesia. The possibilities of local anesthesia in minor surgery are unlimited, and the general practitioner can take full advantage of the opportunities thus offered.

UROLOGY IN GENERAL PRACTICE.

POINTS IN THE TECHNIQUE OF URETHRAL INSTRUMENTATION.

By R. CAMPBELL BEGG, M.C., M.A., M.Sc., M.D., F.R.C.S.E., F.A.C.S.,
Johannesburg.

An accurate knowledge of the best instrument for the particular case and a satisfactory technique are the best ways to avoid the difficulties in relieving cases of acute retention. These difficulties are frequent in general practice and present a severe test of the skill and resource of the doctor called in to handle them.

The subject may be considered under three heads:—

1. *The Instruments and How to Sterilize Them.*
2. *Lubrication.*
3. *Local Anesthesia.*

1. The common instruments in use are catheters made of rubber; catheters, bougies and filiforms of woven silk; and catheters and bougies of metal. They exist in endless variety. Each has its advantages, and disadvantages but only a limited range is really necessary.

The ordinary rubber catheter has a single eye and a very limited application. It will not take a stilette, can rarely be passed in cases of prostatic obstruction, and is quite unsuitable as an in-lying catheter. The best rubber type has two eyes, with a recess beyond the terminal one for taking the tip of a stilette. Such catheters are as useful as the more usual variety for all purposes, and when fitted with an introducer with a proper curve, they can be successfully passed in the most difficult prostatic cases. When used for continuous drainage they are comfortable, non-irritating, and rarely become obstructed.

Woven silk catheters are made by the alternate application and prolonged baking of many successive layers of special varnish on the woven silk basis. When provided with a coude tip, they are suitable for routine use. They are not so useful in some cases of acute retention because as in-lying catheters the gumvarnish quickly perishes. When such catheters have an olivary end they will pass through fairly narrow strictures, but are rarely successful in acute retention from this cause.

Filiform catheters are as a rule necessary in such cases. They should be of woven silk and provided with a female screw so that a follower may be attached and inserted to dilate the passage they have found.

The old set of whalebone filiforms is a bad investment. They are dangerous, apt to penetrate the mucosa, difficult to sterilize and likely to shred at the ends on keeping.

For dilatation of strictures up to 20 F silk-web bougies should be employed. Metal catheters are rarely required except in some cases of spasm of the external sphincter or after a previous external urethrotomy. A rubber catheter moulded on an introducer with a Guyon urethral curve is often more serviceable, even in such cases as these. Metal bougies follow on the silkweb variety in the dilatation of strictures. The small sizes are dangerous.

All the urethral instruments mentioned above should be boilable. The woven silk varieties require special care. The varnish softens when they are heated and may be easily damaged. They should be boiled in a towel and never brought into contact with other instruments or forceps. When used warm, they mould themselves to the urethra. Gum-elastic instruments that may not be boiled have no place in present-day urology.

Cystoscopes and urethroscopes are hardly instruments for the general practitioner, but if used it should be remembered that immersion in spirit or carbolic acid dulls the lenses and may dissolve and spread the cement used to fix the windows. If not boilable, the most satisfactory method of sterilization is immersion for a quarter to half an hour in 1 in 1,000 oxycyanide of mercury.

2. LUBRICATION.

Olive oil or vaseline damages rubber catheters, renders all types difficult to clean and sterilize, and is insoluble in urine. Glycerine causes some pain. Liquid paraffin is a poor lubricant. Water-soluble preparations such as K. Y. Jelly should be used exclusively. As these preparations are water-soluble the maximum efficiency is given by drying off the end of the catheter with gauze before they are applied.

The practice of catheterizing the female urethra without the use of lubricant ignores the added discomfort undoubtedly so caused.

3. LOCAL ANAESTHESIA.

The most gentle passage of any instrument through the virgin male urethra causes at best considerable discomfort, and at worst severe pain. The vicarious fortitude of those urologists who devoid of enlightening personal experience, advocate and practise cystoscopy without any form of anaesthesia has contributed to a certain reputation for brutality sometimes associated with the practice of urology. General anaesthesia has few if any indications in urethral procedures. Local anaesthesia, on the other hand, can with advantage be made universal in connection even with the routine passage of catheters. To the most hardened urethra it gives a certain comfort which is much appreciated, while in cases of acute retention it is often the trump card which ensures success. The acute agony caused by dilatation of strictures, which is too rapid, forceful and unameliorated by a local anaesthetic, leads the patient in many cases to go on to acute retention rather than suffer it again.

There has been, in the past, a good deal of make-believe in the matter of urethral anaesthesia. As a result of unsuitable agents and over-hasty administration, many practitioners have lost faith in the method.

The criteria to be observed in this connection are the following:—

1. *The drug used must be effective as a mucous membrane anaesthetic.*

Novocaine does not, in my experience, come under this heading. I have had no luck with borocaine, stovaine and many other agents recommended from time to time. Decicaine gives moderate results.

The drugs that in my experience have proved themselves best are cocaine and nupercaine (percaine).

2. *The agent used must be safe.*

The bogey of the danger of cocaine is due to the occasional report in the rather remote past of fatalities when the drug was used in strong solution and injected under pressure.

Ryall introduced the half per cent. solution in half per cent. sodium bicarbonate in water. Sometimes a drop or two of adrenalin is added. Scores of thousands of cases have been given this anaesthetic without incident. It is safe and effective. One drachm of the solution will give, when injected into the anterior urethra, almost instantaneous anaesthesia as far as the bulb. This is adequate for the routine passage of soft instruments. For metal instruments or cystoscopy, four drachms of the solution are required. The total amount of cocaine hydrochloride is about 1·2 grains.

Nupercaine (the South African trade name for percaine) is effective. It acts more slowly but the effect lasts longer than that of cocaine. The solution is 1 in 1,000 and 4 drachms may be used. Solutions in excess of 1 in 1,000 are dangerous. Even if signs of irritation are lacking at the time of introduction nupercaine shares with acriflavine the tendency, in strong solution, to set silent processes in train which lead to stricture.

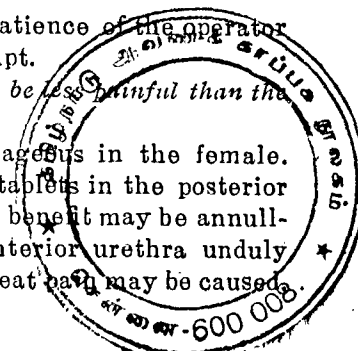
3. *The drug must be given time to act.*

With the bladder empty two drachms are injected, one pressed back into the bladder, and one left in the anterior urethra, which is clamped. This is repeated after five minutes. With cocaine it requires ten minutes to secure maximum anaesthesia, with nupercaine 15 minutes.

As in local anaesthesia in general, the impatience of the operator will bring the method into undeserved contempt.

4. *The administration of the anaesthetic must be less painful than the procedure for which it is given.*

Local anaesthesia is thus rarely advantageous in the female. For the same reason, the depositing of alpin tablets in the posterior urethra of the male has been abandoned. All benefit may be annulled if the syringe is used roughly or the anterior urethra unduly distended with the solution. In either event, great pain may be caused.



In conclusion, it must be emphasized that the successful passing of an instrument and its management may determine the fate of the patient, and success can be brought about not so much by brilliancy as by the great art of taking pains.

ACUTE RETENTION IN PROSTATICS.

In no circumstances must a bladder in acute retention be emptied unless and until it has been proved that it was not previously in a state of chronic retention.

Neglect of the above rule is one of the most fertile causes of disaster. The majority of the cases of retention met with in general practice belong to this category, and the doctor in attendance holds the life of the patient in his hands to a greater degree than the prostatectomist or resectionist.

Urologists can to-day with justifiable pride point to operative death-rates varying from 2 to 5 per cent, a vast improvement on the figures of twenty years ago. But what is the death-rate of *prostatic disease*? Only the breaking of the silence of thousands of practitioners and reports from a multitude of nursing homes and private houses could give the answer. It will never be given. The vast bulk of the profession is active but silent; and in the ranks of this silent majority may be found all grades of skill from the lowest to the highest.

Rolnick and Riskind published recently the records for the last five years of the Cook County Hospital in Chicago. The substance of their report amounts to this: Of 329 patients submitted to the "safe" method of two stage prostatectomy, 184 survived and 145 died. Of these, 94 died as the result of the preliminary cystotomy and 51 from the enucleation. Startling figures these. But is there any reason for considering them exceptional? When all the cases that died before any operation, or even catheterization, are taken into account the figure is brought up to 50 per cent. This figure of a 50 per cent. mortality will not surprise those who can cast their minds back to the numbers of patients observed in all public hospitals admitted *in extremis* from uremia and sepsis. Among the worst of such cases are those on whom intermittent catheterization with complete emptying of the bladder has been practised for a few days. The desiccated tongue, the fetid breath, the mental deterioration, and may be the glutinous, foul urine indicate only too clearly the forlorn hope of effective treatment.

The base is rapidly putting its house in order, and if prostatic mortality is to be reduced the improvement must take place at the aid posts. The front line in the fight is in the hands of the general practitioner. Mortality diminishes as the patient, to continue the military symbolism, comes down the line. It is greatest after complete neglect of treatment or after inappropriate handling, especially in the stage of acute retention. It is very considerable after

preliminary suprapubic cystotomy. It is low after prostatectomy or resection.

In the case of the prostatic with acute, superimposed on chronic, retention, prostatectomy should be looked upon as one continuous operation in which the first step is not the incision, but the first passage of the catheter through the virgin meatus. This first step is difficult and fraught with danger. In the nature of things, it must fall, not to the urologist, but to the general practitioner, often working under most adverse conditions. The patient is in agony, the relatives are insistent, the light is poor, the sterilizing equipment is elementary, the bed sags. Any attempt to secure a history is looked on as a cruel and time-wasting irrelevancy.

Yet it is imperative that a decision be made on the vital point: "Did this man empty his bladder before the acute attack?" If the answer is in the negative, *under no circumstances must the bladder be emptied.*

A story of nocturnal frequency or of a slow and feeble stream speaks for residual urine. Occasional slight incontinence has the same significance. The most dangerous case of all is that of the haggard individual whose scaphoid abdomen is relieved in its contour only by his obviously distended bladder, and who complains solely of indigestion. The emptying catheter is to him as fatal as the headsmen's axe!

If chronic retention preceding the acute phase is even suspected, the sole remaining task of the doctor is to select the most appropriate type of catheter, and after its insertion to adjust the outflow of urine so as to give relief with the minimum lowering of intravesical pressure.

Passing the Catheter.

The administration of the local anæsthetic gives a breathing-space in which the patient may be catechized and the future procedure planned. The prostate may be examined at this stage. If it is not palpably enlarged there is all the more reason to suspect chronic residual urine. The gland in the fulminating acute retention of hæmatogenous prostatitis in men of middle age is frequently enormous, luring the unwary into vain prospects of future enucleation.

A good local anæsthetic increases greatly the chance of successfully passing the catheter. As for the instrument itself, the two-eyed woven silk with coude tip will often pass, and in virtue of its wide bore drain well. If left in place, however, it is uncomfortable and its varnish soon perishes and becomes rough. Metal instruments should never be tried. They are apt to do damage and can never be left in. The best combination is the two-eyed rubber catheter armed with an introducer with a fixed Guyon curve. This gives all the advantage of full control of the point as in a metal instrument, and when the stilette is withdrawn the catheter acts as a perfect drain.

Large sizes are unnecessary. They bruise and hurt. The ordinary Jacques rubber catheter is unsuitable. Its one eye is bevelled, prohibiting the use of an introducer. If used without one, it may injure the posterior urethra, be held up, recurve on itself, and if it does reach the bladder it is an untrustworthy drain.

Adjusting the Outflow.

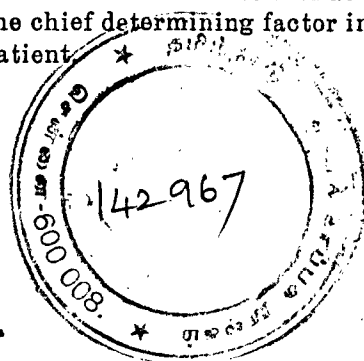
The catheter once safely inserted, a few ounces only should be drawn off. It is impossible to estimate the previous residual, and there is danger in decreasing the bladder content below it. It is better to be on the safe side. As a working rule, the greater the history of previous urinary disturbance, the less urine should be removed. With the catheter tied in, some device for slow decompression must be devised. A regulating nozzle may be fitted. A hypodermic needle may be inserted into the lumen of the catheter between the plugged outer end and the external meatus as suggested by Harris. The lumen may be cut down by a carefully applied artery forceps, leaving a very fine opening. As soon as possible a proper decompression apparatus should be applied and a special nurse installed to control the apparatus.

The immediate crisis having been tided over, further investigation should be made and the future procedure decided on. If it is concluded that there is no immediate necessity for radical intervention, and that a state of chronic obstruction did not previously exist, the catheter may be removed in a dozen hours and passed again if necessary. If it is decided that residual urine existed previously there must be no such interruption. Step by step the case must be conducted to its final stage of prostatectomy or resection. Continuous carefully graduated decompression until the kidneys have readjusted themselves to working at the normal pressure level must precede all further investigation.

At the first possible moment the patient should be handed over to the care of the urologist or surgeon who has to carry out the final operation.

If the principles outlined above are adhered to, the ultimate mortality will be reduced to a minimum. It cannot be over-emphasized that the treatment of acute retention in prostatic disease is the chief determining factor in the death or survival of this type of patient.

(S. A. Medical Journal, Dec. 1937.)



INDICATIONS FOR MASTOIDECTOMY.

By J. D. WICHT, M.B., B.Ch., D.L.O., F.R.C.P. & S. (ENG.),
Cape Town.

The most widely recognized indication for mastoid operation is the occurrence of a tender postaural swelling in the course of an attack of acute otitis media, and there is a tendency to wait for its appearance before diagnosing mastoiditis.

If all mastoid infections presented such unequivocal signs, the risk of dangerous complications would be negligible, but it is only in a small proportion of cases that the conditions are present.

The picture of mastoiditis is more typically presented by the case of otitis media in which, after discharge has been established, a sense of discomfort remains although the acute pain may have vanished. There is a vague mastoid tenderness, difficult to be sure of in the most co-operant subject. The tympanic membrane remains intensely inflamed, and between the pouting lips of the perforation a thick muco-purulent discharge oozes steadily. The temperature is normal or slightly raised, but the patient feels out of sorts. Recommendation of operation in these circumstances is frequently received with incredulous surprise.

Unfortunately one's opinion cannot always be substantiated by a skiagram, because it is only in the markedly cellular type of mastoid that pathological changes are easily discernible. A "wait and see" policy may mean waiting and seeing a fatal complication appear.

In the majority of cases there are, however, to be found one or more unmistakable indications for operation, which may be listed as follows:—

1. Pain of a throbbing character in spite of adequate drainage.
2. Profuse, pulsating discharge, which rapidly refills the meatus after it has been mopped out.
3. Persistence of increased pulse-rate and raised temperature three days after paracentesis.
4. Persistence of discharge for four weeks in spite of adequate treatment.
5. Mastoid tenderness coming on *after* perforation.
6. Signs of meningitis or labyrinthitis. To these must be added rigor and headache which, if not otherwise explicable, should be looked upon as being positive indications for operation.

In infants and young children there is a type of mastoiditis which has no counterpart in older patients. The initial symptoms are those of toxæmia, with perhaps some pulmonary or gastro-intestinal signs, but the findings in the chest or alimentary tract scarcely explain the child's serious condition. Examination of the ears shows one or both eardrums injected and bulged outwards with pus, which gives a dull, whitish appearance to the membrane.

Paracentesis releases the pent-up pus, but there follows no improvement in the general condition. Once having decided that the illness is to be ascribed to the otitis media, the only logical procedure is to open the mastoid or mastoids. A delay of more than two days after paracentesis will certainly reduce the chances of a successful outcome.

Before discussing the indications for operation in chronic otitis media, it may be well to stress the point that all chronically discharging ears begin as acute middle-ear infections. It is during the acute stage that efforts at cure are capable of almost two per cent. success.

This happy outcome will only be possible if intensive treatment is carried out from the start. It must include regular cleansing of the ears, the instillation of suitable drops, the exclusion of sepsis in nose and pharynx. Finally, if these measures have failed, mastoid drainage must be resorted to. If all cases of acute otitis media were treated on these lines there would be few chronically discharging ears, which are a menace to their owners.

Chronic otorrhœa varies by numerous gradations from the intermittent mucoid discharge to the constant outpouring of evil-smelling pus. The many methods of treatment which are put forward bear witness to the resistance of the disease. The last resort, radical mastoidectomy, although removing the danger of intracranial complications, is not always successful in producing a dry ear. The danger signs in chronic otitis media may be enumerated as follows:—

1. Pain, either constant or intermittent.
2. Facial nerve palsy.
3. Attacks of giddiness with or without vomiting.
4. Meningitic symptoms.

The supervention of any one of these signs is an indication for immediate operation, for the prompt evacuation of a collection of pus in the mastoid antrum frequently saves the life of the patient.

SUMMARY.

1. Postaural swelling and tenderness are not the most important or frequent indications for mastoidectomy.
2. Mastoidectomy is the last line of defence in preventing acute otitis media from becoming chronic otorrhœa.
3. Radical mastoidectomy will render a chronic middle ear safe, but not necessarily dry.

(S. A. Medical Journal Dec. 1937).

DIABETES AND HEART DISEASE.

E. R. MUSICK, M.D.

Medical Arts Building, Oklahoma City.

To the physicians who are interested in internal medicine there are several important problems that frequently arise in connection with heart disease and diabetes. I will first enumerate these problems, and shall then briefly discuss each one separately.

First. Since diabetes is one of the most frequent associations of arteriosclerosis, does it have any effect on the production of any types of heart disease? If so, what are these types?

Second. Are there any methods of treatment of diabetic cases that will prevent arteriosclerotic changes, and the resultant heart changes?

Third. In the two diseases, each complicating the other, in a general way what should be our treatment, and in what conditions are diabetic treatments dangerous to the patient?

Fourth. Are there any points of similarity in the diagnosis of these two separate diseases that might cause confusion in their differentiation?

Fifth. From the experience gained from our former treatments of diabetes may we deductively assume protamine insulin to have any better effect on arteriosclerotic heart conditions?

Heart disease in diabetes is largely limited in the heart to arteriosclerotic changes and to hypertension. Death seems to occur in these cases most often from coronary occlusion. Rheumatic fever and syphilis seem to be minor factors in the development of cardiovascular disease in diabetics. It is well known that diabetes and the arteriosclerotic symptoms of heart disease occur most frequently at the same age of life—between fifty and sixty years. A large number of diabetics, especially the mild cases occurring in elderly individuals, develop coronary artery disease and hypertension. This has become more evident now that insulin products prevent early death, and allow the diabetic patient to live long enough for him to develop vascular changes. In other words, there is uncertainty at the present time that diabetes is the cause of angina; for the patients dying from angina pectoris are practically the same age as those with diabetes who die from angina pectoris. It is thought however, that mild diabetic patients who have been kept on diet alone without the use of insulin and have developed arteriosclerosis, are prone to develop anginal symptoms. Friedman in 1935, in a series of 120 cases of diabetes above the age of 39, found that arteriosclerosis was demonstrable in the aorta in 75 per cent; and that 60 per cent of these had aortic dilatation. Also, the heart was enlarged in 47 per cent. Hypertension was present in 56 per cent. Rabinowitch in the same year found, in a series of 500 diabetics, that 62 per cent had cardiovascular disease.

Degeneration of the heart muscle itself, apart from coronary disease, has been noted by several observers. At autopsies of cases dying in diabetic coma, it has been noted that the heart muscle is pale, cloudy, and swollen. Consequently, the deduction from these reports leads one to believe that arteriosclerotic changes have frequently been caused by diabetes, and these changes in so far as the heart is concerned are hypertensive heart disease, coronary disease, and toxic myocarditis.

The non-diabetic can take protein, fat, and carbohydrate without much apparent damage to his body; but in the diabetic it is felt that protein favors rather than prevents the onset of arteriosclerosis. Consequently, the usual diet rarely exceeds one gram of protein per kilo of body weight. Carbohydrate in a diabetic, if used in such excess as to cause an obesity, may be a factor in the development of arteriosclerosis. Excess of fat and cholesterol most certainly seems to favor this condition, and an acidosis over a period of time is also classed as a factor. From the experiences of various investigators, especially with diabetic children, conclusions are rather general that excess cholesterol in the blood seems to be a very important causative factor in the production and development of arteriosclerotic changes. Cecil states that after the third decade of life we see arteriosclerosis with increasing frequency in our diabetics, and that in the middle aged and elderly it is found with great uniformity. The arterial disease however, is often most marked in the mildest cases and many times absent or negligible in the severe forms. Dr. Joslin has pointed out that the uncontrolled diabetic has high blood cholesterol; and that the controlled diabetic runs a more nearly normal one. He has also demonstrated that a higher carbohydrate, low fat diet, in contradistinction to our former high fat diet shows less arteriosclerosis in our diabetics. In 1935, Rabinowitch reported from investigation and data obtained from other observers, that high carbohydrate low caloric diets have delayed the development of cardiovascular disease, and that one of the most constant characteristics of such a diet is an immediate and sustained decrease in the plasma cholesterol. If this be true, it would seem that arteriosclerosis, which includes hypertensive heart disease and coronary heart disease, can to some extent at least be prevented by the proper regime to prevent the high cholesterol in the blood; and to prevent this high cholesterol, our treatment should be a fairly high carbohydrate, low fat, and fairly low caloric diet, which is controlled by sufficient insulin products to keep the blood cholesterol as near a normal state as possible in that patient.

The indications and limitations for the use of the various drugs used in cardiac cases are the same in diabetic patients as in non-diabetic patients. However, there are certain types of heart disease in which caution must be exercised in the treatment of diabetes.

Primary among these are coronary thrombosis and angina pectoris. It has been shown by numerous observers that insulin can be harmful to patients with these types of heart affections, and that hypoglycemia is to be avoided in these cases. There is much in the literature showing varied reports, from the precipitation of anginal attacks in diabetic patients with damaged myocardiums, to actual deaths. This is thought to be due to the action of insulin. The results obtained from insulin shock are the same as those obtained from a low carbohydrate diet without the use of insulin. Not only may the cardiac diabetic not be helped by too rigorous control of his diabetes, but also he may be made worse by too much sustained lowered blood sugar, or insulin shock. It seems probable that the pathological heart requires more carbohydrate than the normal heart; and the bad effect of insulin is not due to insulin itself but to the lessened carbohydrate it causes to the heart muscle. Consequently, a higher than normal blood sugar level is beneficial to our acute cardiac patients rather than harmful. In these heart conditions insulin and protamine insulin should be used with caution, and in small doses repeated often if necessary. In the elderly diabetic sudden or radical reductions in the carbohydrate is extremely dangerous, and should not be done. Muscular exercise of the cardiovascular patient with diabetes should be encouraged according to the condition of the heart musculature.

In the discussion of question four, there is one particular heart condition which may simulate clinically impending diabetic coma. That condition is coronary thrombosis in a diabetic patient. Since coronary thrombosis occurs quite frequently in these patients, of course glycosuria is common. If infarction occurs, the blood sugar may rise to a very high level, diacetic acid and acetone may show in the urine, and a condition resembling diabetic stupor or coma may develop. When this occurs, we are likely to feel that this is a true diabetic coma development; but it may be the result of an associated coronary thrombosis. Care must be used in the differentiation as to the cause of the hyperglycemia,—and a thrombosis of the heart must not be overlooked. Insulin if used in too great doses might be very serious to our patient.

The work done by Dr. Joslin and his associates with protamine during the last year seems to show that the blood cholesterol is rarely high with its use in the control of diabetes. This was not true of regular insulin. In many patients they had great difficulty in keeping the blood cholesterol at a normal level. The characteristic pathological point of differentiation of arteriosclerosis due to diabetes and that due to other causes, is that in the diabetic the same type of changes are found in the smaller arterioles that are found in the larger arteries. We wonder with our lower level of cholesterol in the blood obtained with the use of protamine insulin,

if we may expect less arteriosclerosis and consequently less heart complications in later years than has been seen formerly in our diabetics. It will be difficult to state definitely for several years at least, that protamine will prevent heart complications in our diabetics; but in the light of former observations as to the possible cause of these complications, we are expecting it to make them less prevalent. It is perfectly possible that the high cholesterol content of our former diets, and the inability to control the cholesterol in the blood, was responsible for the cardiovascular complications seen in diabetes.

(*Journal of the Oklahoma State Medical Assn. Dec. 1937*).

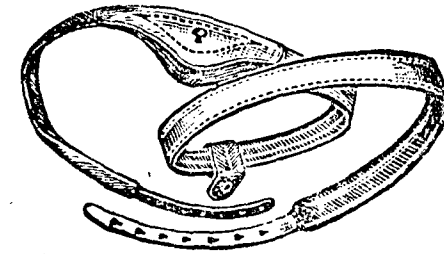
FUNDAMENTALS OF SERUM THERAPY.

WINSTON H. TUCKER, M.D.

Coordinating Epidemiologist, Illinois Department of Public Health.
Springfield, Ill.

Within recent years, the employment of serums of various types in the control and treatment of infectious diseases has made rapid advances. Inasmuch as the State Department of Public Health distributes certain serum preparations to the medical profession of the state without charge, it was felt that a review of the field of serum therapy and prophylaxis was indicated at this time. An attempt will be made to indicate which serum preparations are of distinct value, and to separate from this group those preparations which are of doubtful value, or in the experimental stage of development.

It has been known for many years that human beings who recovered from certain of the infectious diseases developed immune substances in their bodies as a result of having recovered, which thereafter generally protected them against a second attack of the disease. As an illustration, the patient who recovers from an attack of diphtheria produces diphtheria antitoxin in his body, which if developed rapidly enough, results in neutralization of the circulating toxin generated by the organisms at the site of the focal infection in the nose and throat. Following the discovery by Von Behring and Kitasato in 1890 that diphtheria antitoxin could be obtained by injecting laboratory animals with diphtheria toxin, attempts were made to produce antitoxin in large animals in sufficient quantities to produce a supply for treating human beings who had diphtheria. Diphtheria antitoxin was used in treating diphtheria by Von Behring in 1894, and the method was so successful that in a few years it



For Hernia, Abdominal Belts and other
Deformity Appliances.

Always consult or write of

International Surgical Co.,

Sandhurst Road, Bombay 4.

Direct importers of Surgical Instruments, Sick-room and
Hospital Requisites etc.

Telephone : 42135.

Telegrams : Splintwork.

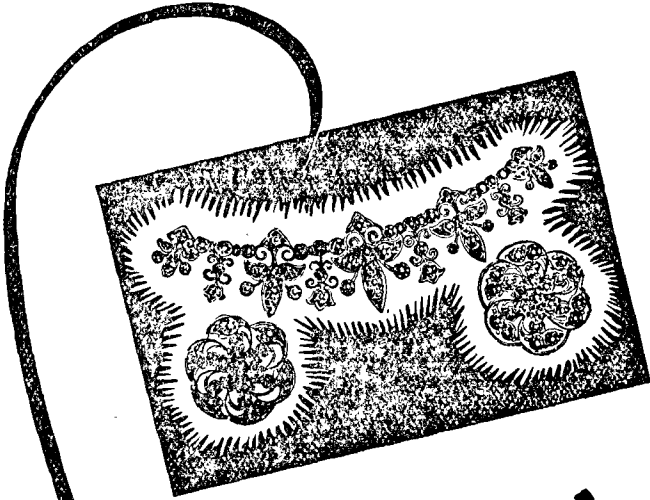
REACH THE MEDICAL PROFESSION

EVERY MONTH BY ADVERTISING

IN

MEDICO-SURGICAL SUGGESTIONS.

When ordering please mention *Medico-Surgical Suggestions*.



**A WOMAN'S
DEAREST JEWELRY
SURAJMAL'S
DIAMONDS**

Nicety of workmanship, Beauty of design & distinctiveness of character go to make our today's creations as vogues of tomorrow.

= SURAJMAL'S =
THREE HUNDRED AND THIRTEEN • ESPLANADE MADRAS

When ordering please mention *Medico-Surgical Suggestions*.

came into general use. The results obtained were very striking, and physicians finally had at their disposal a specific therapeutic agent for treating this dreaded disease. The use of diphtheria antitoxin spread rapidly, and soon it was employed throughout the entire civilized world.

The phenomenal success which attended the introduction of diphtheria antitoxin stimulated investigators to make studies on other diseases, hoping that antitoxin or antisera could be developed for therapeutic purposes of all communicable diseases, thereby making the treatment of them a relatively simple procedure. However, after attempts to develop antisera against most of the common infectious diseases to which man is heir, laboratory workers were much disappointed to discover that antisera could be developed for only a small number of diseases. In some instances, as in diphtheria, the bacteria causing the disease secreted a soluble toxin, against which antitoxin could be readily developed. In other instances, the antisera were developed following the injection of dead or living bacteria, with the result that the active constituents of the antisera were antibacterial rather than antitoxic in nature. At the present time the most important conditions in which serum is of value either for therapeutics or prophylaxis are diphtheria, scarlet fever, meningococcic meningitis, pneumococcic pneumonia, bacillary dysentery, tetanus, and snake bites. I shall discuss each of these products separately, with a consideration of the indications, mode and amount of injections, and after-effects of each.

Diphtheria. Diphtheria antitoxin has been employed more extensively than any other serum known to medicine. The standardization of antitoxin is now on a very sound basis, and there is no reason why potent diphtheria antitoxin should not be used. It is known that in all diseases in which serum therapy is employed, the value of the product from a clinical point of view depends upon the administration of the product in the early stages of the disease. It has been shown many times that diphtheria antitoxin is most effective on the first day of illness, and the effectiveness decreases proportionately with each day of delay. Diphtheria antitoxin should be administered immediately to every patient who is suspected of having diphtheria. For many years injections of 5,000 to 10,000 units of antitoxin were administered, but it has been found that this quantity is inadequate. One large dose of antitoxin administered in the early stages of the illness is far superior to small divided doses. Consequently, antitoxin for therapeutic purposes is now distributed only in 20,000 unit packages by the Illinois Department of Public Health. It is our feeling that if the patient needs antitoxin at all, he needs at least 20,000 units. The intramuscular route of injection is the method of choice for most cases, but in very severe cases the intravenous as well as the intramuscular route should be employed.

However, before an intravenous injection is given, one should ascertain whether or not the patient is sensitive to horse serum protein. Serum injected intramuscularly is absorbed slowly, and several hours elapse before it reaches the general circulation in sufficient quantity to be of value. A combination of the two routes in severe cases is preferred, the intravenous injection taking care of the immediate needs of the patient, whereas an additional amount of serum is gradually absorbed into the blood stream from the intramuscular depot over a period of several hours. Mild cases of diphtheria should receive at least 20,000 units of antitoxin, while severe and malignant cases should receive from 40,000 to 100,000 units.

When diphtheria antitoxin was first discovered, it was employed for prophylactic purposes on a very wide scale following exposure to the disease. However, since the development of diphtheria toxoid for active immunization, the use of antitoxin as a prophylactic has decreased to a marked extent. In short, it is the responsibility of the family physician to see that all children in his practice are immunized with diphtheria toxoid early in life, thereby eliminating the necessity of injections of prophylactic doses of antitoxin following exposure to a case of diphtheria. In the State of Illinois diphtheria immunization has been employed on a wide scale, and the medical profession in general is to be commended for its efforts in this direction. However, many thousands of children are still unprotected, and every effort should be made by the physicians and parents to see that these children are protected against diphtheria. This applies especially to children between the ages of nine months and six years. The one-thousand-unit prophylactic dose of diphtheria antitoxin should be employed only in persons who have come into close contact with a diphtheria patient. Younger brothers and sisters and classmates who have had close contact are included in this group for the most part. Unless there is sufficient reason to believe that close contact has actually taken place, it is best not to take the chance of sensitizing a child to horse serum with a prophylactic injection of antitoxin. Inasmuch as most adults are naturally immune to diphtheria, the administration of the prophylactic dose of antitoxin is unnecessary. It should always be borne in mind that the serum is rapidly eliminated from the body, and the protection conferred by the injection lasts for only a period of two or three weeks, therefore active immunization with toxoid should follow in about four weeks.

Scarlet Fever. The discovery in 1923 by Doctors George and Gladys Dick that scarlet fever was essentially a toxemia from hemolytic streptococci localized in the nose and throat, led to the development of streptococcus scarletinae antitoxin for treating cases of this disease. This product is employed by physicians on a much wider scale than is generally realised, particularly for the most severe cases. Following an intramuscular injection varying from 6,000 to

12,000 units, (the dose varies considerably in preparations of different manufacturers) there is a drop in temperature, disappearance of the rash and a general improvement in the toxic condition of the patient. However, the general mildness of scarlet fever as we see it at the present time, with a low fatality rate, coupled with delayed serum sickness in a certain percentage of the cases have been factors which have mitigated against the use of scarlet fever antitoxin on a scale comparable to that in which diphtheria antitoxin is employed. Nevertheless, there is no doubt as to its value in severe toxic cases of scarlet fever, and it has been definitely shown by several investigators that the fatality rate can be reduced following its use. However, it has been of little benefit in treating the complications of scarlet fever.

The use of streptococcus scarletinae antitoxin as a prophylactic measure is not very widely employed by physicians at the present time, and is not recommended by the State Department of Public Health. Only 10 per cent of children exposed to scarlet fever come down with the disease, and it is not justifiable to incur the chance of serum sickness when the possibility of contracting scarlet fever is so small. The short time required to carry out a Dick test makes it possible to determine which persons are susceptible to scarlet fever, following which only young children in the same family, and classmates should receive prophylactic injections.

The use of human convalescents' serum in treating scarlet fever is not a new procedure by any means; it was used in 1912 in Germany by Reiss and Jungmann. Within recent years this procedure has gradually assumed greater popularity and it has been shown by Hoyne, Levinson and Thalhimer to be of definite value in severe cases. However, the limited supply of human convalescents' serum for treating scarlet fever renders it unlikely that this product can be employed on a wide scale, therefore making it necessary to continue the preparation of scarlet fever antitoxin for commercial use.

Meningococcic Meningitis. This disease has been treated by serum since 1913, when an anti-serum was developed by injecting living meningococci into laboratory animals. The resulting preparation, accordingly, was antibacterial rather than antitoxic in nature. Inasmuch as there are four different types of meningococci, all types are injected and a polyvalent serum is produced. Variations in the types of the meningococci have occurred in some outbreaks of the disease, against which standard polyvalent serum is not effective. However, the discovery, within recent years by Ferry and his collaborators that the meningococcus elaborates a toxin, has led to the development of meningococcus antitoxin. Administration of this product by the intravenous route, when diluted with saline or glucose solution, has resulted in a marked decrease in the fatality rate in the hands of Hoyne and Tucker. The fact that meningitis is a systemic

infection rather than a primary infection of the central nervous system has led to the preference for the intravenous, rather than the intraspinal route of injection.

Pneumococcus Pneumonia. The discovery of the soluble specific substance in pneumococci by Avery and Heidelberger in 1924 established a basis upon which an antiserum against the pneumococcus was first developed. This is an instance of an antiserum being developed against a bacterial product. As in the preparation of most other sera, horses are used for the preparation of antipneumococcus serum in large quantities. For many years, only four types of pneumococci were recognizable, the first three of which could be definitely separated from the others, and the fourth type provided a waste basket into which all other unclassified types of pneumococci were thrown. Studies for the past fifteen years at the Rockefeller Institute have shown that an antiserum against the type I pneumococcus can be developed which has been followed by a fair degree of success in the treatment of type I pneumococcus pneumonia. Within recent years, type II pneumococcus pneumonia has also been treated successfully with a specific antiserum. However, type III pneumonia has never responded favorably to serum therapy. Felton has refined and concentrated the active constituents of antipneumococcus serum, and this product is known as Felton's Refined Pneumococcus Antibody Solution. By employing this product by the intravenous route, Felton has been able to reduce the fatality rate in type I and II pneumococcus pneumonia about 50 per cent.

Monovalent pneumococcus antisera as well as polyvalent antisera are now obtainable in the market. The development of the Neufeldt method of typing of pneumococci has made available a rapid method for determining the type of pneumococcus which is present in many cases of pneumococcus pneumonia. With this procedure, it is best to administer type specific antiserum at once, a procedure which has resulted in a marked reduction in the fatality rate of pneumococcus pneumonia. Unfortunately, pneumococcus antiserum is not employed on a scale commensurate with its value, and for this reason we recommend the use of this product on a wider scale. It may be of interest to know that within the past ten days the Legislature of the State of New York has appropriated \$ 400,000 for the purpose of making pneumococcus antiserum available free of charge to physicians throughout the state for treating their cases of pneumococcus pneumonia. Unfortunately the Illinois Department of Public Health does not now have sufficient funds at its disposal for providing this product for the physicians of Illinois.

Tetanus. At the present time tetanus antitoxin is used almost entirely as a prophylactic measure. As a matter of fact, the increasing number of automobile accidents, in which wounds are contaminated with street dirt and soil, renders the administration of a

prophylactic injection of tetanus antitoxin mandatory on the part of the physician. The dose administered is 1500 units, generally by the intramuscular route. The value of this product was conclusively proved during the world war, at which time all wounded men in the allied armies were given prophylactic injections of tetanus antitoxin. War wounds inflicted by bullets and ragged projectiles were contaminated with soil in the majority of instances, and the losses from tetanus during the early days of the war were alarming. The fact that tetanus spores may remain viable in old scars and wounds for many months led to an order from the Chief of the Army Medical staff that all men receiving operations for war injuries several months later were to receive a prophylactic injection of tetanus antitoxin before the operation was carried out. In the case of infections which persist, injections should be repeated every eight or ten days.

When tetanus has already developed, the use of tetanus antitoxin as a therapeutic measure is limited because the tetanus toxin has already united with the nerve tissue and is not reached by the antitoxin. Injections by the intraspinal route are preferred by some physicians following the withdrawal of a slightly greater amount of spinal fluid. However, intramuscular and intravenous injections should also be made, and from 60,000 to 100,000 in all should be given. The whole procedure should be repeated daily if indicated. In general, the treatment of tetanus is quite unsatisfactory, and half of the cases terminate fatally in spite of the administration of antitoxin.

Anti-Dysentery Serum. Since the work of Shiga on bacillary dysentery in 1895, antitoxic serums for the treatment of this disease have assumed increasing importance. Bacillary dysentery, as is true in other diseases of the gastro-intestinal tract such as typhoid fever, has been markedly reduced during the past generation along with the development of pure drinking water and establishment of sanitary sewage disposal facilities. However, cases of the disease come to our attention rather frequently, particularly in eleemosynary institutions. A polyvalent antiserum for treating dysentery is available, which is very effective. The general prostration and acute toxemia disappear rapidly following its use, and the local intestinal involvement is greatly diminished.

Antivenins. In the field of immunology one of the early discoveries was that specific antisera could be developed against the poisonous snake venoms. At the present time, a polyvalent serum is available in this country which has been used effectively for the treatment of persons following rattlesnake, water moccasin and copperhead bites.

Human Convalescents' Serum. Within recent years the use of human convalescents' serum has received a great deal of attention, particularly in treating poliomyelitis. There is a controversy as to

the merits of this product in treating cases of poliomyelitis at the present time. The Illinois Department of Public Health has employed this product for the past five years with satisfactory results according to the opinion of the Medical Staff. The Serum is now made available to physicians free of charge for treating their patients with poliomyelitis, and it is recommended that doses varying from 160 to 200 cc. be employed for persons over 12 years of age, 120 to 160 for persons from 6 to 12 years, and from 80 to 120 for persons under 6. Injection by the intravenous route is advised, although the intramuscular route or a combination of the intravenous and intramuscular routes is of great value. It is not contended that nerve tissue which has already been destroyed will be regenerated following the administration of serum. Clinical observation in pre-paralytic and early paralyzed cases have resulted in a rapid return of the temperature to normal, disappearance of the toxic condition and cessation of progress of early paralysis. It is our feeling that this product should be used in large amounts in contrast to the small quantities which were employed in New York in 1931. Inasmuch as this is human serum, untoward reactions are negligible and physicians need not fear serum sickness of the type which follows the use of horse serum products. It has been impossible to employ serum in alternate cases in this state, therefore a carefully controlled study is unavailable at this time. However, the good results obtained following the use of this preparation in our hands has strengthened our feeling that the use of this product should be continued until a more effective therapeutic agent is made available to the medical profession for treating poliomyelitis.

Other Convalescents' Sera. Human convalescents' sera have been used in the treatment of chickenpox, measles and mumps with a reasonable degree of success, although not yet on a large scale.

Desensitization. With the increased employment of serums for therapy and prophylaxis, the possibilities of serum sensitization should be considered, in as much as most serums are produced in horses. Accordingly, every physician who is about to administer serum should first carry out an intradermal skin test with 0.1 cc. of the serum diluted 1-10 in physiological saline. If the patient is sensitive to horse serum protein, a large wheal will appear at the site of the injection ten to thirty minutes later. In such cases, desensitization is best carried out by injecting gradually increasing doses of the serum by the subcutaneous route. The recommended procedure is to make an injection every thirty minutes, beginning with a dose of 0.5 cc. and doubling the dose at each subsequent injection. This procedure should be continued until the entire amount of a full therapeutic dose has been administered, following which additional intramuscular and intravenous injections may be made without danger. It is encouraging to note that serum reactions are becoming

less frequent since refinement and concentration procedures have been applied to commercial serum products. Physicians should be certain that a syringe containing 1 c.c. of adrenalin chloride is at hand when serum injections are being made, in order to combat any signs of immediate serum sickness.

Serum Reactions. Very rarely, an immediate anaphylactic reaction occurs in persons who are sensitive to serum products, or who have a history of previous asthmatic attacks. Park has observed such reactions in about one in each thousand persons who received diphtheria antitoxin. The symptoms are prostration, rapid and feeble pulse, nausea and a sensation of suffocation. Artificial respiration and injections of adrenalin chloride generally bring about complete recovery. Persons with a history of asthma should not receive serum unless absolutely necessary, and then only with extreme caution.

In our experience, delayed serum sickness has occurred in as high as 50% of persons to whom an animal serum preparation has been administered. The usual symptoms are elevation in temperature, prostration, joint pains and an urticarial eruption, which appear from one to two weeks after injection. Previous desensitization does not prevent the development of delayed serum sickness. Injections of 0.5 c.c. to 1.0 c.c. of adrenalin chloride once or twice daily should be employed, and calomine lotion and a sodium bicarbonate bath will relieve the irritation from the urticaria. This type of serum sickness is rarely fatal. Serum sickness has not yet been observed by us following administration of human convalescents' serum in several hundred cases of poliomyelitis.

SUMMARY.

1. Administration of serum for therapeutic purposes in most communicable disease is of greatest value when the diagnosis is made early, and the serum is given promptly. The value of serum therapy decreases proportionately with each day of delay.
2. A history should be obtained of previous serum administration and asthmatic attacks. If any doubt exists an intracutaneous test should be made to determine presence or absence of sensitization. If the patient is hypersensitive, desensitization with fractional subcutaneous doses of serum at 30 minute intervals should be carried out.
3. Intramuscular injections are preferred in prophylaxis.
4. The intravenous route is preferable for administering serum to persons who are extremely ill, and a simultaneous intramuscular injection should also be given.
5. The intravenous route is preferable for administering human convalescents' serum in scarlet fever and poliomyelitis.
6. Serums should always be warmed to body temperature before injection.
7. All injections of serum should be made very slowly.

8. Prophylactic serum injections for temporary protection against diphtheria and scarlet fever should be given only to small children who have had close contact with the patient.

9. Physicians should stimulate prophylactic inoculations, particularly against diphtheria with the use of diphtheria toxoid, thereby eliminating the necessity for prophylactic injections of diphtheria.

(*Illinois Medical Journal*, Dec. 1937.)

Medical News & Notes.

THE TINNEVELLY DISTRICT MEDICAL ASSOCIATION, PALAMCOTTAH.

(*Tinnevelly Branch of the Indian Medical Association*).

The Monthly meeting of the Tinnevelly District Medical Association was held at Mangalagiri, (Rural Reconstruction Centre—near Tuticorin), on Saturday the 14th of May 1938. Forty-one members including five women doctors were present on the occasion. Some private Practitioners of Tuticorin, also attended the function.

After light refreshments the Anniversary of the Summer School was held under the Presidentship of Lieut. Col., T. S. Shastry, I.M.S., who distributed the certificate to the students.

The monthly meeting of the Association was held under the Presidentship of Lieut. Col., T. S. Shastry, I.M.S., the President of the Association. The Secretary read the minutes of the Joint Meeting of the Travancore Medical Association and The Tinnevelly District Medical Association held at Cape Comerin, on the 23rd of April 1938, which were passed. He read a letter received from Dr. (Mrs.) Poonen Lukose, B.A., M.B.B.S., (London), L. M. (Rot.) M.C.O.G., Surgeon-General, Trivandrum, offering her sincere thanks to the members of the Tinnevelly District Medical Association for their passing a resolution congratulating her on her appointment as Surgeon-General, Travancore State.

Dr. D. Kribaimani, L.M.P., Sub Assistant Surgeon, Government Hospital, Tuticorin, read out case-notes on Epileptoid state which was successfully treated at the Government Hospital, Tuticorin.

Dr. P. S. Srinivasan, L.M.P., Sub Assistant Surgeon, Government Hospital, Palamcottah, read out the following interesting case-notes of the cases which were treated and operated at the Head-quarters Hospital, Palamcottah :—

1. A case of Sarcoma left hand.
2. A case of Tumour Fore-hand—Secondary Growth
Metastasis Thyroid Cancer.

3. A case of Epithelioma back of knee.

All the cases were fully discussed by the members. Thereafter Colonel Shastry, summed up the salient and important features of all the cases.

Lieut. Col. T. S. Shastry, I.M.S., congratulated the two members of the Association, Dr. N. Issac, L.M.P., and Dr. L. Mahadevan, M.B. B.S., (Madras), D.O.M.S., (London), for their being elected as the Councillors of the Palamcottah Municipality. He also congratulated Mr. J. L. P. Roche Victoria, M.L.A., on his election as Chairman of the Tuticorin Municipality.

Colonel Shastry suggested to the members the opening of an Institute of deep X-ray therapy on co-operative basis by the members. He also suggested to Mr. Roche Victoria to work for donations for the installation of a Radium Institute. He thanked Mr. Roche Victoria for his kindness in organising the function at Mangalagiri, and playing the host.

Thereafter an excellent dinner brought the happy gathering to a close late at night.

THE RAJAHMUNDY MEDICAL ASSOCIATION.

At its meeting held on 31-5-38 at the dispensary of Dr. S.V. Rama Rao, adopted a resolution viewing with alarm the proposed conversion of the Stanley Medical School at Madras into a college as it would adversely affect the interests of the Vizagapatam Medical College and the hospital attached to it. Dr. B. Ramachandra Rao, M.B., B.S., President of the Association, presided,

Drs. S. V. Rama Rao, A. B. Nageswara Rao, V. V. R. Dikshitulu, R. Subbaramayya, K. Butchiraju, K. C. Swami, V. C. Kamaraju, W. Venkateswararao and others took part in the debate at the meeting. They were of opinion that the raising of the status of the Stanley Medical School at Madras into a College while the Vizag Medical College, the only institution of the kind in the Andradesa had not yet been recognised for want of equipment and buildings, would undermine the prestige and the strength of the College and it would ultimately lead its abolition, despite the assurances of the Ministry.

The following resolutions were unanimously adopted by the House :—

"That the Rajahmundry Medical Association views with apprehension the proposal to convert the Stanley Medical School into a College and that this Association feels that two Medical colleges are quiet adequate for the training of the medical graduates in the presidency and also while the status and position of the longstanding Medical College at Vizag is not fully stabilised, the establishment of a third college is not only superfluous but also prejudicial to the best interests of the Vizag Medical College.

"The Association requests the Government to expedite the construction of buildings and supply of equipment in the Vizag Medical College so as to hasten the recognition of the degrees of the Vizag Medical College."

CONJEEVERAM MEDICAL ASSOCIATION.

At a meeting of the medical practitioners of this place, held on June 11 at the Municipal Hall, Dr. Nathaniel Vedanayagam (of the Church of Scotland Mission Hospital) presiding, it was decided to form a Medical Association for Conjeveram with the objects of safeguarding the interests of the profession, looking after the health of the town, and establishing a medical library for the use of the members. Dr. Balavelayudham Pillai, Civil Assistant Surgeon, Government Hospital, was elected President and Dr. S. R. Gopal Aiyar, Secretary of the Association.

SOUTH CANARA MEDICAL ASSOCIATION.

A meeting of the South Canara District Medical Association was held on June 2nd with Capt. C.R. Naidu, District Medical Officer, in the chair. Dr. Venkataraman of King Institute, Guindy, delivered a lecture on "Bacteriology in relation to the general practitioner."

Dr. D. K. Viswanathan, District Health Officer, was "at home" to the members.

Dr. K. R. Kini, Honorary Secretary, proposed the vote of thanks.

THERAPEUTIC NOTES.

AN ADVANCE IN SKIN-THERAPEUTICS.

The fissan idea. Fissan is an improved method of preparing medicaments for cutaneous application in the form of dusting powders, ointments, pastes and lotions, etc., characterised by a new and effective manner of bringing the therapeutical constituents into a state of high dispersion.

This method can be applied to all medicinal substances employed in dermatological practice, their optimum effect being ensured by giving the specific constituents a maximum surface.

For dispensing purposes, the simple Fissan preparations e.g., Fissan basic ointment, Fissan Lotion, are supplied in special packings so that other medicaments may be added as prescribed.

Medicated Fissan Dusting Powders are manufactured with the aid of a special equipment which ensures absolute uniformity of texture.

TREATMENT OF ENLARGED TONSILS WITHOUT OPERATION.

Tonsinol, manufactured by Tonsinol Laboratory, Madras, is a preparation containing indigenous and allopathic medicines. Tonsinol

treatment for enlarged tonsils consists of pills for oral administration and a solution for local application. The pills are given twice a day before food, and the solution is rubbed well over the enlarged tonsils two or three times a day and the solution contains no harmful or corrosive ingredients. An antiseptic gargle must be used for the throat twice or three times a day after the tonsils are rubbed with the solution. The duration of treatment is from 1 to 2 months as the case may be. This treatment may be tried in cases of inflamed tonsils also. Medical practitioners who gave a trial for this treatment are very much satisfied with the same, hence a fair trial may be given before operative treatment is resorted to.

Correspondance.

THE TINNEVELLY DISTRICT MEDICAL ASSOCIATION.

(Tinnevelly Branch of the Indian Medical Association).

Lieut. Col. T. S. SHASTRY, I.M.S.,

President.

K. RAMA AYYAR, M.B.B.S. (Andhra)

Secretary & Treasurer.

PALAMCOTTAH

Dated 16th June 1938.

Dear Sirs,

A Joint Conference of the Tinnevelly, Travancore, Madura and Ramnad District Medical Associations will be held at Courtallam (Sethu Castle) on Saturday the 23rd of July 1938, from 7 a.m. to 3 p.m.

About two hundred Medical men and women will be participating in the Conference. Stalls will be thrown open to firms exhibiting their products. The rent per stall will be Rupees (15-0-0) Fifteen only. Those who intend taking stalls will have to send the money in advance to the Secretary. The Tinnevelly District Medical Association, Palamcottah, on or before the 15th of July 1938.

Yours faithfully,

K. RAMA AYYAR, M.B.B.S. (Andhra).

Secretary and Treasurer.

5L
L: 4.7-7.21, N3110
N38.7.6

**The
CALCUTTA
MEDICAL JOURNAL**

Annual Subscription Rs. 5 only
inclusive of postage.

*The Journal year commences
from July.*

Circulated to and read by almost
all medical men of India, Burma,
Ceylon and abroad.

**Best Medium of Advertisement
for Medical and Scientific
Articles.**

*For rates apply to the Manager,
The
Calcutta Medical Journal
62, Bowbazaar Street, Calcutta.*

**THE PATNA
JOURNAL OF MEDICINE**

*Published under the auspices of the
PATNA MEDICAL ASSOCIATION*

*Editor: Mr. M. Husnain,
M.B. (Cal.), D.L.O. (Lond.), D.O.M.S.
(Lond.), F.R.C.S. (Edin.)*

*Associate Editor: B. Narayana,
M.Sc., M.B. (Cal.), Ph. D. (Edin.),
F.R.S.E.*

*With an Editorial Board Consisting
of Eminent Members of the
Profession*

Circulated in all parts of the World.
Subscription rates inclusive of postage

*INLAND. FOREIGN.
Per Copy Re. 1-0-0. sh. 1/6.
Annual Rs. 3-0-0. sh. 4/6.*

*Best Medium of Advertisement for
Medical, Surgical & Scientific Pro-
ducts, Instruments and appliances,
etc., etc.,*

*For further particulars apply to:
THE MANAGER,*

Patna Journal of Medicine
P. O. Bankipur, Patna.

**THE INDIAN
& EASTERN
DRUGGIST**

*The only Journal cater-
ing exclusively for the
Drug and Allied Trades
in Eastern Markets.*

Subscription 7/6 (Rs. 5) per annum
post free. Specimen copy free on
application.

Advertisement rates sent on request.

Indian & Eastern Druggist

*Published by
LEONARD HILL LIMITED
17, Stratford Place, London W. 1.
ENGLAND*

Calcutta Medical Review

A Record of Medicine Surgery,
Public Health and Medical News
Indian & Foreign.

Edited under a strong Editorial Board

Annual Subscription:—

*Inland Rs. 5-8-0 Foreign 12 sh.
The most widely circulated monthly
Medical Journal in India, Burma,
Ceylon & Abroad.*

**Best Medium for Advertisement of
Medical and Scientific Articles**

Sample copy sent on request free of charge.

For rates etc., apply to:

*The Manager,
CALCUTTA MEDICAL REVIEW,
53, Creek Row, Calcutta.
Phone Call, 6368.*

MALARIA



POSITIVE CURE
by new treatment
Qinarsol

Efficacy: One to two injections of Qinarsol promptly eliminate all malarial symptoms and bring down the temperature to normal. A continuation of the treatment with Qinarsol tablets ensures permanent result, even in the most relapsing and chronic cases of Malaria.

Composition: Qinarsol is a combination of basic quinine mur, with sodium salt of dimethyl arsenic acid and phenyl-dimethyl pyrazolone in isotonic aqueous solution.

NO AFTER-EFFECTS

Potentiometric Control: The PH value of Qinarsol is adjusted by electric measurements to the reaction of normal living tissue, thus enabling a non-irritant form of intramuscular injection.

For Literature & Samples write to:

'CIPLA' LABORATORIES

289, Bellasis Road,
BOMBAY.



When ordering please mention *Medico-Surgical Suggestions.*

Dr. RAYAS'

House-Hold Remedies:

Pain Balm. This is a genuine remedy for Head-ache, Rheumatism, Neuralgia, Chest-pain, Cough, Sprain etc.

Itch Cure. A reliable remedy for all sorts of Itch, Eczema and other skin affections.

Wanted Agents in Every Town.

Sample on request.

Manufacturers :

THE RAYAS PHARMACY.

**179, Mint Street, Sowcarpet,
MADRAS.**

JOURNAL OF THE INDIAN MEDICAL ASSOCIATION

EDITED BY

SIR NILRATAN SIRCAR, KT., M.A., M.D., D.C.L., ETC.

WITH THE HELP OF

A STRONG ALL-INDIA EDITORIAL BOARD

The Official Monthly Publication of the Indian Medical Association.

FEATURES

1. Original Articles. 2. Case-Reports. 3. Society Proceedings. 4. Valuable abstracts from leading Medical Journals from all over the world.

Published on the First Day of the Month

Annual Subscription : Rs. 6/- post free

Free to members of the Indian Medical Association

AN EXCELLENT MEDIUM FOR ADVERTISEMENT

For particulars, write to Secretary,
Samavaya Mansions, Calcutta.