VOL VIII. NO. 2.

August - 1939.

MEDICO-SURGICAL SUGGESTIONS

Vol. VIII. AUGUST 1939. No. 8.

MEDICO-SURGICAL SUGGESTIONS

A MONTHLY JOURNAL OF PRACTICAL MEDICINE & SURGERY
Editor: Dr. P. R. Venkappaya.

VOL. VIII AUGUST 1939 NO. 8

CONTENTS

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 typewritten. 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 Editor. The Editor accepts 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 advertise ment which is against medical ethics.

When ordering please mention *Medico-Surgical Suggestions.*

When ordering please mention *Medico-Surgical Suggestions.*

When ordering please mention *Medico-Surgical Suggestions.*

During the Age of Growth

At no time, throughout the span of life, is the proper and orderly balance of calcium, phosphorus and iron, vitamins and other highly important food elements more readily disturbed than during the period of active growth and development.

The food supply of every child should, therefore, contain an adequate proportion of these important substances, if normal progress is to be maintained. The construction of an entirely correct dietary, to suit the varying requirements of each individual is, however, beyond the possibility of realization in ordinary practice.

Many physicians ensure that the ordinary dietary of the young patient is safe and adequate by advocating the daily addition of 'Ovaltine.' This is a complete, well-balanced food, rich in natural vitamins and in readily assimilable calcium, phosphorus and iron.

'Ovaltine' is composed of full-cream milk and malt extract. Its sugar content is chiefly in the form of maltose, a very readily available source of energy. No cane sugar or chocolate is added to give bulk or to cheapen th cost. 'Ovaltine' is delightful to the taste and readily assimilable even by digestions impaired by disease.

OVALTINE

A liberal supply for clinical trial sent free on request:

JAMES WRIGHT LTD.

CULCUTTA, BOMBAY
MADRAS & KARACHI

Servants of High Official bearing offerings to the Tomb

M. 287.

When ordering please mention *Medico-Surgical Suggestions.*

FOUR SPECIFICS OF PROFOUND INTEREST
TO THE MEDICAL PROFESSION

CALSOLA

Calcium-Sodium Lactate suitably flavoured, in bottles of 36 tablets 7½ grains each. An effective form of Calcium.

Administration to aid the formation of healthy bones and teeth.

Eminently suitable during pregnancy and invaluable to nursing mothers.

WEP

is the latest scientific discovery and is introduced as a sure specific for the treatment of fungus skin diseases commonly known as "Athletes' foot," Ringworm, etc., caused by the infection of parasitic fungi, such as Epidermophyton rubrum and other dermatophytes.

GLUCAL
Calcium-Gluconate

Glucal Syrup contains Calcium Gluconate combined with Potassium Guaiacolsulphonate Pepsin and other valuable ingredients, for Coughs, Colds and all affections of the Chest and Respiratory tract.

GLUCAL GRANULES

Calcium Gluconate in the form of Granules in bottles containing 2 ozs.

GLUCAL TABLETS

Calcium Gluconate 5 grs. available in bottles of 50 and 100.

BRONCASTHMIN ELIXIR

Full adult dose containing ¼ gr. each of Ephedrine Hydrochloride and Codein Phosphate combined with Therapeutic doses of Wild Cherry, Grindelia, Euphorbia, Caffidine and suitable flavouring agent.

For the treatment of **ASTHMA, BRONCHITIS,** and other spasmodic conditions of the Bronchi.

GIVES IMMEDIATE RELIEF.

WILFRED PEREIRA, LTD.,

QUALIFIED CHEMISTS,

Head Office:—VEPERY, MADRAS.

Local Branch:—*25, Mount Road, Madras.*

Mofussil Branches:—*Ootacamund, Coonoor, Kotagiri and Coimbatore.*

When ordering please mention *Medico-Surgical Suggestions.*

MEDICO-SURGICAL SUGGESTIONS

VOL. VIII AUGUST 1939 NO. 8

Original Articles.

SURGERY IN PARALYSIS OF CHILDREN.*

BY DR. N. S. NARASIMHAN, F.R.C.S., (ENG. & I.),
Orthopaedic Surgeon, Government General Hospital, Madras.

Before discussing surgical treatment adopted in the various types of paralysis in children, it is desirable to give a brief outline of different types of paralysis found in them. Paralysis in children may be classified as follows:

I. Pseudo-paralysis in infants due to congenital syphilis.
II. Acute paralysis starting with fever.
(*a*) Acute anterio-poliomyelitis.
(*b*) Diphtheritic paralysis.
III. Paralysis with slow and insidious onset:
1. Progressive muscular dystrophy—different types of myopathies.
2. Hereditary ataxy.
3. Syringomyelia,
4. Compression paraplegia: (*a*) Tuberculous caries of spine; (*b*) Spinal cord tumour; (*c*) Injuries.
5. Cerebral spastic paralysis.

In Diphtheritic paralysis majority of cases are between two and ten years of age. In the 5, 6, 7th week of the disease a diffuse paralysis, usually symmetrical occurs in limbs. Paraesthesia is sometimes present and a slight disturbance of tactile sensibility at the periphery of the limbs.

1. Primary progressive muscular atrophy called muscular dystrophies—myopathies.

Myopathies are extremely common. Sixteen cases were seen during one year in the Madras Government General Hospital. The diagnosis is extremely difficult in the early stages. Two male children had extensive distribution involving all the four limbs. These again are sub-divided according to the authors describing them

* Lecture delivered under Dr. Elizabeth Mathai Endowment Fund, in the University of Madras, 1938—39.

as: (*a*) Pseudo-hypertrophic type; (*b*) Juvenile type (Erb). (*c*) Facio-scapulo-humeral type (Landouzy-Dejerine); (*d*) Distal type (Gowers).

(*a*) PSEUDO-HYPERTROPHIC muscular paralysis: –

More than one child in the family may be affected; age of onset is 4th or 5th year—child has been weak in its legs since birth.

Girls are seldom affected. First signs are: Loss of power, tendency to fall, inability to rise again with ease, rapid rise in increase in some of the muscles as those of calf, extensions of the knee, gluteii, infraspinatus and increase of weakness. Mode of progression is of a peculiar waddling nature and is similar to that seen in congenital dislocation of hip. There is wasting of the lower part of pectoralis major and latismus dorsi. Mode of rising from the recumbent position is characteristic of family history. Weakness of extensors of the hip causes lordosis.

As the spinal muscles become involved, lordosis is replaced by kyphosis and subsequently lateral curvature sets in.

Prognosis is grave. Majority do not attain adult life.

TREATMENT:—

1. Planned muscular exercises.
2. Spinal support.
3. Tenotomy for Tendo-achilis, if required, is good.

(*b*) ERB TYPE:

Atrophy commences in the Scapulohumeral group: onset 7th year; both sexes equally affected; several generations may be affected. The muscles of the pelvic girdle may be affected. The progress of the disease is extremely slow and may become arrested.

(*c*) FACIO-SCAPULO-HUMERAL TYPE: (Landouzy-Dejerine).

This may be both hereditary and familial affecting both sexes. The onset is in early childhood and atrophy commences in the facial muscles. The disease progresses very slowly, and may show a temporary or permanent arrest.

(*d*) DISTAL TYPE OF GOWERS:

Atrophy commences in the feet and hands, extends up the forearm and the leg. The onset is about the 12th year.

TREATMENT: No rest; no appliances; no tenotomies. The patient must be encouraged in the use of his limb.

HEREDITARY ATAXY.

The deformities present are lateral curvature of the spine and talipes equino varus and occasionally contraction of the knees. The lateral curvature is due in the first place to muscular weakness, and then to the effects of posture, but as a rule despite recumbency and supports, it increases and becomes permanent. The condition of the foot is talipes plantaris. The heel is raised; the instep is excessively arched and in the sole of the foot bands of contracted plantar fascia may be felt. The heads of metatarsal bones are at a lower level than the heel, the toes are hyperextended at the phalanges

and flexed at the second and third and the whole front part of the foot is adducted; the result is a partial or entire loss of equilibrium of the patient.

In the majority of cases it is advisable to interfere surgically.

SYRINGOMYELIA.

This is uncommon in children but cases have been reported with an onset before the 10th year.

The chief features of syringomyelia are:—

1. Loss of sensibility, chiefly to pain and temperature.
2. Muscular atrophy very similar to that of progressive muscular atrophy.
3. When the compression affects the pyramidal tracts—a form of spastic paralysis.
4. Lateral curvature of the spine—due to atrophy of the muscles of the trunk.
5. If the dorsal and lumbar regions of the cord are affected, the lower extremities are seen to be in a spastic condition but this is rather rare.
6. Thickening of bones.
7. Charcot joint.

Occurrence of spinal tumour in childhood is rare. Early childhood is almost exempt, if the teratoma complex congenital tumour of the sacro-coccygeal region is excluded.

COMPRESSION PARAPLEGIA.

Paraplegia due to spinal caries is a common disease in early childhood, the majority of cases occurring before the 10th year. The features to be noted are.

1. This occurs 1 in 8 cases of spinal disease.
2. With reference to pressure on the cord by pus, it is a very true observation that abscess and compression paraplegia are seldom associated, and further, that is an abscess makes its appearance the nerve symptoms subside.
3. Its onset is, as a rule, gradual, occasionally sudden.
4. *Causes*: (*a*) Granulation tissue in the spinal canal; (*b*) Formation of intraspinal abscess; (c) Tubercular pachymeningitis.

Causes of sudden onset: Displaced bone, rupture of blood vessel, acute myelitis or tubercular meningitis.

5. Even the most hopeless cases recover under recumbency and extension; even cases who have had four attacks and many three attacks make good recovery.
6. Laminectomy is a disappointing operation.

SPASTIC PARALYSIS.

During the course of a year I have seen thirty-two cases of this distressing disease admitted in Madras Government General Hospital. There must be many more who die in the post-natal period. There is an almost equal incidence of sexes; the average at which

the mothers bring the children has been from 3 to 5 ; 2 were forceps cases ; 9 had convulsions off and on. A good deal of thought and attention has been devoted to these subjects in other countries as Australia, England and Germany. The prophylaxis of the condition properly belongs to the domain of the obstetrician. This may be briefly recapitulated here.

There is great frequency of intracranial trauma and hæmorrhage in extreme degrees of moulding and in unduly rapid moulding from the rupture of venous sinuses due to tears of tentoriam cerebelli and cerebelli and falx cerebri. There is infratentorial hæmorrhage around the medulla oblongata or supratentorially upon the surface of the cortex cerebri or in both situations. In the severe cases the following symptoms may be noted :

Asphyxia, stupor, great restlessness, rigidity, extremities appear helpless.

Pupils of the eye dilate unequally.

Hæmorrhage from nose, bowels, bladder and convulsions may occur.

Baby may cry incessantly for many days.

Lumbar puncture may show the presence of altered blood in the cerebrospinal fluid ; Ophthalmoscopic examination may reveal a high percentage of cases with retinal hæmorrhages.

Prematurity itself does not cause any symptoms as asphyxia, somnolence. The premature child despite great unripeness and very small size, often discloses quite extraordinary vigour and tenacity of life. Repeated withdrawal of cerebrospinal fluid may be of some use.

There is no doubt a high initial mortality in cases of subtentorial hæmorrhage but in the cases of supratentorial hæmorrhage it is difficult to diagnose. Medullary symptoms as dysphagia, aphonia, persistent inco-ordination of the respiratory muscles, palatal paresis with stridor are rarely found.

Unlike the medulla which is functionally active from the first, the infantile cerebral cortex is for long a silent area of the brain. Medullation of the pyramidal tract proceeds only slowly. That is why even when there had been tensive supratentorial hæmorrhage it is usual to find that a long time has elapsed, a year or two before the parents bring the child for advice ; the common symptoms are inability to grasp, rigid spastic legs with adductor spasm, stiff expressionless face with delay in speech or dribbling of saliva. An earlier recognition of this disease is urgently called for.

The following forms of spastic paralysis may be met with :

1. *Cerebral diplegia* :—There is rigidity and paralysis, rigidity is the more striking, feature leg more affected than the arm. Severest is often fatal ; patient often lies in bed like a log.

Severe form of cerebral diplegia. There is much general rigidity. Superficial lesions in cerebral hemisphere.

2. *Haemilegic form* (infantile) :—Paralysis predominates and rigidity is secondary to it ; arm is more affected than the leg.

3. *Bilateral Spastic Hemiplegia* :—Convulsions are more common. Disease is due to congenital affection. Lesions in the cerebral hemisphere are deeply situated.

4. *Rare variety* :—Congenital chorea, bilateral athetosis and choreic diplegia.

Athetotic movements are seen in the face and tongue ; and in severe cases the muscles of the trunk and limbs are involved also. Convulsions are not marked and the mental condition is good.

It is well-known that the crossed pyramidal tract at the 7th month of fœtal life has only reached the medulla, and an arrest of development of the pyramidal tract occurs in a child born prematurely at the 7th month then general rigidity h ould follow. At the 8th month the tract has pushed its way down the spinal cord as far as the dorsal region, and if an arrest of development occurs at that stage, then paraplegic rigidity of the lower extremities should ensue.

Infantile spastic paralysis more often affects the younger children of a larger family than the elder ones. The affection is rarely met with in the elder children.

Operation is contraindicated in :—

1. A hopeless idiot.
2. If there be general rigidity.
3. If the child suffers from persistent bed wetting.
4. If there be persistent dribbling at the mouth and loss of control.
5. If athetoid movements are present

In the less severe cases there is always a distinct natural tendency to improvement, more especially in the paraplegic variety affecting the lower extremities.

The following points may be of interest to the Orthopædic Surgeon :—

1. The upper limb is more severely affected than the lower.
2. The lesion of the upper limb is more permanent.
3. The power of dorsiflexion of the hand and the simultaneous extension of the fingers is lost.
4. The movements are performed without precision, spasmodically and slowly.
5. The power of abduction of thumb is often lost.

The disabilities of the lower limb are :—(*a*) Contraction of the knee ; (*b*) Extension of the foot ; (*c*) Internal rotation of the femur with adduction ; (*d*) Rigidity.

Cerebral diplegic group can be divided into :—(*a*) Cases with and without severe mental complication ; (*b*) Complete and partial

disabilities of the hands; (c) Complete and partial disabilities of the limbs; (*d*) Cases complicated with athetotic movements.

The term 'Little's disease' is applied when the spasm is limited to the leg.

Course of the Disease :—

1. If there be excessive general rigidity the disease is rapidly fatal.

2. If there be only paraplegic rigidity or slight general rigidity, the condition is nonprogressive or it may tend to improve.

3 The amount of unaided improvement is never great and normal function is never acquired.

4. Complete improvement may occur in the upper limbs, with persistence of spastic rigidity in the lower extremities.

5. No improvement is possible if athetosis is well marked.

6. Cases afflicted with hemiplegia or paraplegia live longer than those in which three of the four extremities are affected cerebral diplegies rarely attain adult life.

TREATMENT:—Physicians are pessimistic, it is not wise to leave the improvement to nature alone, but to give every assistance in our powor to the restoration of limbs to their proper position and function. It is surprising, to what an extent these defects may be overcome in later childhood; unlike the child with primary amentia due to a numerical deficiency of cortical neurones, the spastic child is often patient and persistent in the effort to learn.

Cases suitable for Treatment :—

1. A child or young adult of fair intellectual development who has had no fits for the last three or four years.

2. A child may be brought for contractures at the knee for adduction of the thighs or for talipes equinus or equinovarus. Such contractures are capable of removal.

Entirely Unsuitable for the Treatment :—

1. The idiotic.
2. The micro-cephalic.
3. Violently irritable type of diplegic subject to fits.
4. Children with active athetotic movements and convulsions who have no control over their excretions.
5. If the affection of the hands is so great that they will not be of any use to the limbs during walking, *i. e*, if the spasm of the hands is so great as to hinder movement.
6. If the fingers of the affected hand are only moved in conjunction with the fingers of the opposite side, the results are discouraging.
7. If it can be ascertained that the patient is able to do more with hands now than a little while ago, the success of the treatment is provable.

8. If any degree of voluntary relaxation exists, treatment is urgently called for.

Period of Active Treatment :

Active treatment is required for two years; it is unwise to undertake a case in the hospital for two months.

We must secure the co-operation of intelligent parents anxious to do all they can for their child and will face all the trouble involved in careful training.

Principles of Treatment :

1. An overstretched, paretic muscle must be placed in a state of rest—in a foot by tenotomy of the tendo-achilis.

2. Excessive deep reflexes are characteristic of this disease, limit this excitement by division of a highly contracted muscle.

3. The removal of this excessive reflex excitability of the spinal cord affords of that quiescence of nerve centres so essential to the welfare of these children.

Treatment falls into two divisions:—

(*a*) Operative.

(*b*) Post-operative: the post-operative being mechanical and persistent training of the patient to utilise to the best advantage his limbs, when the deformities have been rectified and the contractures removed. Sister Kenny's work in Australia as recently demonstrated in London is a further proof what patient work can do for the patients.

There is no indication whatever for electric treatment.

Treatment of Upper Extremities :—The most pronounced deformities of the hand and arm in these cases are pronation and flexion of the wrist: treatment should consist in rendering the forearm supine and hyperextending the wrist; gradual extension of the wrist may be brought about by the use of a malleable iron splint, in which the angle is increased from time to time, but very gradually. The most difficult part of the treatment is to secure supination.

Prolonged fixation of spastic muscles in a position opposed to their contraction gradually lessens the severity of the spasm.

In a mild case, the extension must be kept up over twelve months without intermission. The test for relaxation must be return of power of voluntary movement, however slow it may be. At this stage, the patient, in endeavouring to extend the wrist, will first of all close his fingers and will only open them on completion of extension. The process is reversed when the wrist is flexed. To meet this difficulty, the splint employed extend both wrist and fingers is modified so as to extend the wrist alone and to allow freedom to the fingers.

If the progress is unduly slow, operation on the forearm and hand is required.

The objects of the operation are :—

1. The excessive action of the pronator radii teres into a supinating power.

2. Reduction of carpal flexion and conversion of carpal flexors into carpal extensors.

It is the muscles which arise from the internal epicondyle which are involved and these muscles are both pronators and flexors Any operation designed to lessen the pronator spasm will diminish the flexor spasm, both at elbow and wrist.

Tubby's technique of the operation of converting the pronator radii teres into a supinator :—

1. Incise 2½ to 3 inches in length over the position of the radial artery, and near the middle of the forearm.

2. Identify the inner margin of supinator longus and separate it from flexer carpi radialis.

3. Identify radial vessel and nerve and draw to the inner side.

4. Identify the pronator radii teres insertion; this is not constant and is situated at a varying position in the length of the forearm. It can be recognized on attempting to forcibly supinate the forearm, when the muscular belly stands out quite clearly, just as it passes under the supinator longus. It is a broad muscle with a short flat tendon, which rapidly merges into the periosteum of the radius. Clear the upper and lower borders of the muscle well, and the tendon with a good piece of periosteum, is detached from the radius.

5 Pass a stout silk suture through it.

6. On the inner side of the radius pass an aneurysm needle quite close to the radius through the membrane and around the bone and work vigorously vertically for a space of an inch and a half.

7. The tendon is brought to the outer side and back of the radius.

8. Refix the tendon on the outer side of the radius by drilling a hole through the radius from front to back.

9. When the tendon is re-inserted, the forearm is in a position of supination.

The insertion of pronator quadratus is also divided in addition to the above procedure in these cases.

An incision is made over the tendon of flexor carpi ulnaris just above the annular ligament and another is made over the flexor carpi radialis. Both tendons are divided low down, and the flexor carpi ulnaris is inserted into the extensor ulnaris and the radial flexor into the radial extensor.

The improvement effected by these operations is in my experience most marked. Voluntary movements were steadily performed.

After-Treatment : Wound heels in 10 to 14 days. Educate and train the limb in its new position gradually, but after the sixth week movements are more vigorously practised.

In hemeplegic child, the sound limb can be tied up so as to induce the child to use the affected one as much as possible.

No effort should be spared in urging and practising exercises from simple to complex.

The principles governing the exercises are:

(*a*) The movements should be practised slowly and without excitement

(*b*) They should be interesting to the child.

(*c*) Those movements opposed to the direction of the deformity should predominate.

(*d*) Those presenting the greatest difficultly should be chiefly practised.

Treatment of The Lower Extremities :

Operative treatment may be grouped into four classes :

1. Division of posterior spinal root (Forster)
2. Operation on sympathetic nerves (Royle)
3. Operations on efferent nerves (Stoffel)
4. Operation on muscles.

All these methods have been extensively tried and as a result of the experience gained it may be stated that though division of the posterior nerve roots is performed with the object of diminishing uncontrolled reflex are, it no doubt diminishes the spasm but does not lead to any increase in co-ordination of the affected muscles.

Royle's operation is based on the theory that the abnormal muscle spasm is caused by the presence of non-medullated nerve fibres in the voluntary muscles, and that division of the grey remi-communicantes passing from the sympathetic nervous system to the motor nerves will result in the cure of the spasm; this has proved to be very unsatisfactory.

Stoffel's operation consists in the division of part of the motor nerve fibres to each of the affected muscles with the object of reducing the spasm in that muscle. It is not possible to gauge the exact amount of nerve tissue to be divided and these may be too restricted or too free divisions.

Operations for muscle balance are common. The overacting groups are weakened by complete or partial division.

In slighter cases with little contraction at the hips, improvement may be effected by placing the patient on a double abduction frame.

Operations on muscles can be done in stages beginning with the hips and subsequently attending to the knees and feet, open operations are to be preferred; subcutaneous division and stretching may take long time and there is a probability of recurrence of adductor spasm.

Adductors are dealt with; longus, brevis, gracilis, horizontal portion of adductor magnus and the pectineus are divided; in fact any and every tissue which limits free abduction. The sartorius the-iliotibial band and tensor vaginae femoris are dealt with by the open method. The knee is then dealt with The hamestrings are seldom sufficiently tight to require lengthening. Only very occasionally, in the presence of a severe contraction, the tendons of semitendinosus and gracilis may be lengthened by Z shaped division performed through an incision in the popliteal space.

N. B.—*The semimembranosus tendon should under no circumstances be divided or elongated.*

The tendo-achilis is elongated by the Z method. The patient is stretched comfortably by the abduction frame with the lower extremities fully abducted, the knees straight, and the foot at right angles.

At the end of three months, the splint is taken off during the day and movements are sedulously practised. At first these are painful; but if both passive and active movements are carried out vigorously the pain disappears and the patient will make efforts to walk.

For the first two weeks, frequently during the day, adduction, flexion and extension of the hips must be carried out. This should be done with and without resistance.

At night the feet should be attached to the sides of the bed in order to maintain abduction.

After the first few days the splints should be removed twice daily the muscles well massaged, and both active and passive movements of ankles, toes, knees and hips encouraged.

Walking may now be taught. Walking must be carried out under the direction of a nurse or an intelligent parent. Thomas's walking knee splints are to be ordered to prevent the knees from bending. A child can walk with two walking Thomas's new splints. The boots should be made of felt with substantial shoes. The patient must keep the boots and splints both day and night.

It is most necessary to teach the patients to walk properly.

The special points regarding walking are:

1. Swinging of the lower limbs must be prohibited.
2. Therefore crutches should not be allowed until the patient has been taught to stand unsupported.
3. During the early stage of walking the limbs should not be approximated.
4. Every step must be deliberately perfected, the feet being maintained in a proper distance apart and the toe and heel coming in contact alternately with the ground.

RESULTS If properly treated and the after-treatment supervised a child, aided by hands or sticks, will be able to walk distances in from 12 to 24 months, and this with perfectly straight limbs, and

toes and heels on the ground. Later on many cases will manage with one stick only, and others will dispense with all kinds of artificial aids.

With the improvement in the physical condition, the mental outlook is widened.

The treatment of spastic paralysis should be rigorously systematical; the case must be under the surgeon's control for 12 months. The surgeon's work does not cease with the operation, he becomes the patient's physician for both body and mind. Specially trained nurses are required to manage these children and educate them. Scholastic institutes for the care of paralytic children of all classes should be instituted. These cases should be treated on a surgical basis; the pessimism conveyed by Sir William Gowers and other distinguished neurologists still prevails. One can see how surgery can be silenced in the matter.

These cases should not be left to the care of the masseuse or native bone-setter in the hope that nature will eventually do something towards their care.

PREVENTION: Antenatal examination of mother to foretell an abnormal labour is essential; instrumental labour will have to be conducted with all care.

Most of the shadows of this life are caused by standing in our own sunshine. EMERSON.

"ULTRA-VIOLET RADIATION IN THERAPEUTICS."

BY DR. S. K. GUPTA, B.D.SC., B.O., (PB.)
Laboratory Clinic, (*Analyst*)
Railway Road, *PASRUR*, *District*, *Sialkote* (*Pb.*)

Several theories have been put forward in the papers and books dealing with the Ultra Violet Radiation, to explain the action of the Rays upon living persons, such as :—

(A) By the absorption through the blood system (Serum & Corpuscles)

(B) Through the Nervous System.

As regards the blood stream theory, we find it difficult except in certain cases of greatest wave length *e.g.*, 350 A units which have got some therapeutic value beneath the permi Epedermis. It is the Rays of medium wave length 2,500 A to 3,500 A. which have by far the greatest therapeutic value and the rays of this wave length will not penetrate 1 mm. of the skin, a depth which leaves the blood vessels well out of the reach of the rays. The shortest wave length radiation will not pass even through a bacterium, through its germicidal function at the exposed surface of the skin is of utmost importance. For these reasons the blood stream theory seems to be untenable.

Ultra Violet Rays may be divided into three sections :

(i) Extreme 360 A — 2,000 A.
(ii) Far 2,000 A — 3,000 A.
(iii) Near 3,000 A — 3,900 A.

This division is purely arbitrary. The 'Near' Ultra Violet Rays have little germicidal power but are more penetrating than the rays of the "Far" Ultra Violet region which have a strong Bacterial action. Hence the "Near" rays are employed for general constitutional effects, "Far" rays for germicidal effects by local treatment and the "Extreme" for academic interest.

Besides in cases of "Erythema caused by the exposure (1) if the blood-stream were the sole or the primary agent, the production of the erythema should be carried beyond the treated area and be sensible elsewhere but it is not so. (2) If we are to suppose that this effect is due to decomposition formed in the blood during the absorption of the rays, their formation should cease with the cessation of the cause, while the blood, being the medium of disposal, these products would be carried far beyond the irradiated area. (3) Whereas the chemical effects continue as is shown in the Rickets the increasing quantities or Calcium and Phosphorus appear in the blood long after the withdrawal of the source of irradiation.

Some may argue that "Protein shock" play a part in the decomposition and "Catalyst" or "Vitamin" is perhaps the formation by the exposure of the rays which shows the increasing quantities of Calcium and Phosphorus but this is not an argument but a sign of weakness.

Regarding the "Nervous System" theory most people believe that there is some selection in the type of nerve ending affected, and that the pain-sensing nerve are the most easily stimulated. But when the nerve endings are submitted to larger doses than they can tolerate, cells will be destroyed, foreign products will form, inflammation process will supervine and Erythemia will appear.

The nerve endings lie in the rate of the Stratum mucosum (near or the Corneum than any of the Capillary) so the reaction takes place only in the area directly irradiated. When the decomposition products are absorbed into and removed by the blood stream the inflammatory processes cease. If the reaction has been severe enough, the dead tissues are thrown off thus desquamation occurs in all degrees.

Secondly the tingling in the skin may be caused (*i*) directly by stimulation of the nerve endings by the vibration of the Ultra Violet Radiation penetrating the stratum Corneum-nerve endings occur in the stratum mucosum. (*ii*) Indirectly, stimulation may occur by the products of ionization either in the substance of the nerve endings or in the tissues surrounding them. Here the PH value of the exudation from the irradiated skin tends towards acidity. (*iii*) Thirdly, the Physiological effects of electrical stimulation of the nerve and muscle have been known since Calvenis day. Hence the stimulation effects of Ultra Violet Radiation upon healthy nerve endings are akin to these, while the nerves out of condition are relieved from the irradiation by the change in PH value of the surrounding fluid. This may reasonably explain the feelings of "Comfort and drowziness" produced by irradiation.

So, immediate nerve stimulation is followed by nerve control of doctrine organs and thus the regulation of the Metabolism is attained.

INTERPRETATION OF ACUTE ABDOMINAL PAIN.

BY DR. P. KRISHNASWAMI.
Sarojini St., Theogaraya Nagar, Madras.

In practically every abdominal emergency pain is not only the outstanding symptom but is also the first. This extremely annoying and unpleasant sensation is nature's danger signal. It is a message from injured peritoneum conveying a wealth of information, which if heeded and understood is invaluable in making an early diagnosis and in early diagnosis lies our hope of reducing the all too high mortality rate. In the interpretation of abdominal pain we are often faced with a very difficult problem. Cabot in his differntial diagnosis says "The diagnosis of the causes of abdominal pain is one of the most unsatisfactory as well as one of the most important in medicine." Un-satisfactory because our methods of examination are so inadequate. The chest, the cranium and the extremities present far less difficulty partly because their diseases are more accessible to direct inspection, partly because, in relation to thoracic diseases, we have developed the technic of auscultation-percussion, X ray examination to a point quite out of the question dealing with the belly. Our methods of investigating the abdomen are though not primitive compared to those for the study of the chest yet considerable strides have to be made in this direction.

There are three types of true abdominal pain: COLIC. Due to the spasmodic contraction of a hollow viscus or duct during its attempt to expel anything within it which is acting as an obstruction.

(2) The continuous pain of tension in similar organs.

(3) Pain due to the irritation of the peritoneum.

It was Bengess who has made an extensive study of viscerogenic reflexes and association of nerve pathways and has concluded that referred pain is an orderly response to irritative stimulation of the viscera and is distributed segmentally at specific spinal levels, for example, pain from the stomach is referred to peripheral distribution of the fifth to eighth dorsal nerves (*i.e.* between the xiphoid cartilage and the umbilicus); from the duodenum close above the umbilicus, from the small intestine and appendix (eighth to eleventh dorsal) to the umbilical area to the umbilicus corresponding to the tenth dorsal, from the large intestine to the mid-hypogastric line, from the liver gall bladder and bile ducts (Seventh to nineth dorsal). The pain is radiated to the lower part of the epigastrium and sometimes to the angle of the scapula (eighth dorsal). When the peritoneum is irritated the pain set up is due to the noci stimulation of the nerve endings of the extra peritoneal tissue and is felt just at the sight of the stimulation. Typical of referred pain radiating into the area of distribution of nerves coming from that segment of the spinal cord which supplies the affected part are: 1. Renal colic in which

the pain is felt in the region of the testis or labium on the same side.

2. Biliary colic in which the pain is experienced at the angle of the right scapula or in the right supra clavicular area.

One should inquire: Is the pain affected by respiration? A pleurisy pain always increased on deep inspiration this is likewise true of pain resulting from any intra-abdominal condition which irritates or makes pressure against the diaphragm such as a sub-diaphragmatic abscess. Many an appendicectomy has been needlesly performed in patients suffering from early pneumonia with concomitant diaphragmatic pleurisy and with pain projected to the abdomen.

The trajectory pain of coronary disease and angina pectoris is frequently to the gall bladder area, substernal discomfort, a history of circulatory derangement, the absence of digestive disturbance in foreground a careful examination of the heart and an electro-cardiogram will usually settle the diagnosis.

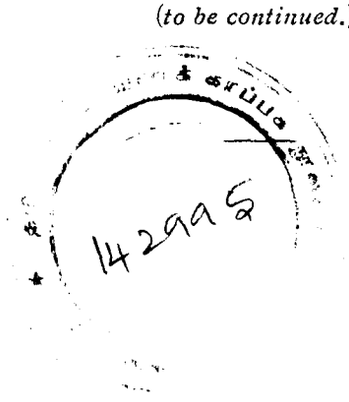
When considered from an etiological stand point abdominal pain falls into three distinct categories.

1. *Inflammation.* The pain comes on gradually becoming more severe and is accompanied by tenderness at the sight of the lesion. Illustration. Cholecystitis.

2. *Perforation*: The pain is sudden and unexpected and is characterised by extreme burning. Illustration. Perforated gastric ulcer.

3. *Obstructions*: The pain is sharp colicky, intermittent in character is localised at the point of obstruction, though it may often be referred elsewhere. Illustration. Renal colic.

(to be continued.)



THE EYE IN DIABETES MELLITUS.

BENJAMIN RONES, M. D.
Washington.

Diabetes mellitus is accompanied by numerous changes in the eye, some of them organic and others *functional*. There is considerable question, however, as to whether these disturbances result from the impaired metabolic state or whether they are dependent upon the premature senility of tissues that accompanies diabetes. In this paper an attempt will be made, so far as possible, to separate the various clinical pictures found and to assign them an etiologic factor.

TEMPORARY REFRACTIVE CHANGES.

Most characteristic of diabetes are the temporary refractive changes. The patients first notice blurring of vision, and on examination the lenses are found to be clear, and that the change of refraction has occurred in both eyes. That this disturbance is due to changes in the lens is demonstrated by the fact that it does not occur in aphakic eyes. Consequently the theory that it is due to alterations in the blood-sugar content of the lens is not a valid one. Also the fact that a simple increase of blood sugar in the aqueous and vitreous is not the underlying fault has been demonstrated experimentally by showing that the sugar content of these structures would have to be about 5 per cent. in order to produce these changes, whereas it very rarely exceeds 1 per cent. Adler has offered the theory that the refractive alterations are due to the change in the sugar content of the aqueous and vitreous with relation to the changes in the blood-sugar level. Thus he theorized and if the sugar concentration in the aqueous increased while that of the vitreous remained constant, myopia would result; and that if the sugar in the vitreous were high and that in the aqueous alone dropped, hyperopia would develop. He believed that this mechanism occurred, since the aqueous reached equilibrium with the blood much more rapidly than the vitreous. This again does not explain why this mechanism should not operate in aphakic eyes, as after cataract extractions.

Krause felt that these refractive changes took place in the lens, and explained them on disturbances in the acid-base equilibrium. If the PH of the blood is lowered by the entrance of carbonic and other acids which can diffuse through the capsule and cells of the lens, the osmotically active ions of the lens are increased; the lens swells and the patient becomes myopic. The lenticular protein becomes osmotically less active through the replacement of the active carbonate ion. The acidification with carbonic acid or other diffusable acids leads to the swelling of the lens and to dilution of its total base content. Alkalization has the reverse effect and produces hyperopia.

These transitory refractive changes occur in those patients with shifting blood-sugar levels. The change in the refraction may be within a range of ½ to 7 diopters, and it occurs both in the younger

patients and in the older ones. With the stabilization of the blood sugar, the refractive state also tends to become constant.

CATARACT.

Cataracts are very frequently seen in patients suffering from diabetes, and because of this relationship these have been labelled diabetic cataract. However, it must be borne in mind that elderly individuals show a considerable percentage of lens opacities whether or not diabetes is also found. Numerous attempts have been made to clarify this problem. O'Brien, Molsberry and Allen have studied a series of 214 patients with senile cataracts, and found that 41.6 per cent had a blood-sugar level above 120 milligrams per cent. They thus felt that hyperglycemia did have significance in the causation of senile cataract. Andersen however, in examining a large series of patients found that the percentage of cataracts was approximately equal in both diabetics and non-diabetics of the same age group. This was confirmed by the findings of Kirby and Wiener. It is most generally felt that in the elderly individual the cataracts are of the senile type, but that senility occurs possibly somewhat prematurely in diabetics, and that cataracts occur therefore at an earlier average age.

There is one type of lens opacity, however, that is quite definitely of diabetic origin. In this variety, small flocculent opacities occur beneath the anterior and posterior capules of the lens. These are present in the youthful diabetics, the youngest patient reported having been 11 months of age. If treatment is instituted promptly, it has been noted that some of these opacities tend to disappear. In untreated cases, however, the progress is rapid and leads to total opacification of the lenses, giving a milky white appearance. The exact mechanism of the production of this type of lens opacity is unknown. The hypothesis has been advanced that it is due to a disturbance of the water balance, so that fluid enters the lens and causes changes in the superficial fibers. If treatment is started early this flow of fluid will be reversed and the opacity cleared up. However, if treatment is not instituted until after degenerative changes have taken place in the lens fibers, then clearing up of the opacities cannot be expected. The increased blood sugar alone cannot explain this, because many diabetics go on for long periods with high blood sugars and do not develop lens opacities.

In the days before the use of insulin, the extraction of cataracts from patients with high blood-sugar levels was fraught with considerable danger, since a large percentage of them lost their eyes from suppurative changes. Since the institution of insulin therapy and its control of the blood-sugar level, the risk in cataract surgery is not much greater than in the nondiabetics.

Iritis.

Waite and Beetham after studying a series of 2,002 diabetics concluded that there is no distinctive diabetic iritis. McKee in his series of 1,272 cases could find iritis in 2 only. The description of the so-called diabetic iritis is usually that of a gelatinous plastic exudation into the anterior chamber, but one that does not respond particularly well to the control of the diabetes without using local therapy.

Histologic study does reveal a characteristic diabetic change in the iris. The pigment epithelium on the posterior surface of the iris is found to be swollen and the cells vacuolated. The pigment granules are easily liberated from the swollen cells, and are thus scattered over the anterior capsule of the lens and posterior corneal surface. It is a matter of discussion as to whether this characteristic chage in the iris epithelium does not play a role in the disturbed nutrition of the underlying lens, although no evidence has been offered to support this view.

Retinal Lesions.

The retinal changes seen in diabetes which are termed "diabetic retinitis" are characterized by a number of punctate hemorrhages and white patches around the macular region. Although this condition was first described by Jaeger in 1855, shortly after the advent of the ophthalmoscope, the discussion is still going on as to whether these changes are due to the diabetes, or whether the vascular lesions do not explain the entire picture. In this respect it is important to note that the retinal changes are encountered only very rarely in youthful diabetics, in whom the severity of the condition is more pronounced and the blood sugar levels are higher than in the older groups. In Wilder's series of 1,471 diabetics at the Mayo Clinic, 132 were found to have retinal hemorrhages, and only 4 of these were under 40 years of age. Waite and Beetham found 4 per cent of their patients under 40 years of age to have retinal hemorrhages, while it was seen in 10 per cent between 40 and 50 years, and in 86 per cent over 50 years. The fact that the hemorrhages are found to be situated deeply in the retina points to their capillary origin, so that it does not necessarily follow that with the ophthalmoscope the larger retinal vessels need show visible evidences of sclerosis. Where the latter does occur, hemorrhages will be found frequently. Also these retinal changes apparently have no relationship to the blood pressure or to the renal function. The trend among recent workers in this field has been to account for this picture on a vascular basis rather than on the diabetes alone, although it would seem that some causal connection exists between the diabetes and the type and distribution of the accompanying arteriosclerotic process.

The white patches distributed in the macular region have a more clear-cut and waxy appearance than the fluffy exudates seen

in the purely vascular retinal disease. On histologic section these patches are seen to be masses of colloid in the outer layers of the retina, and have a very similar appearance to those observed in arteriosclerosis and in "albuminuric" retinitis. Waite and Beetham feel that they arise through hyalinization of the deep retinal hemorrhages, since they correspond closely to these in distribution, position in the retina, and similarity of the incidence curve. With the duration of the retinal lesion the exudates tend to lose their clear-cut margins, and when they become confluent in the macular region they closely resemble the picture of "alluminuric" retinitis, although a star-shaped pattern is very rare.

As previously mentioned, the severity of the disease plays a small role, but the age of the patient and the duration of the diabetes are most important. Braun in his series found that the retinitis usually appeared 5 to 10 years after the onset of the disease, and more frequently in older people. In this group it has been found by many observers that there is no relationship to the blood-sugar level, for the majority of patients showed only a moderate elevation of this level. Also, the use of insulin and the dietary control of the blood sugar were without effect either in clearing up the retinal lesions or in preventing their progression.

Since the advent of insulin, lipemia is scarcely ever seen, although even in pre-insulin days it was a rare occurrence This condition gives rise ophthalmoscopically to a peculiar yellowish-white color of the eyeground. Since the lipoid content of the blood is markedly increased, the retinal vessels will have an almost white color. Because the changes, are practically entirely in the blood, no definite histologic lesions are found. Many observers feel that the fat content of the blood must reach at least 5 per cent before lipemia retinalis becomes manifest. McKee and Rabinowitch, however, found that a lipemia as low as 1.13 per cent, still produces retinal changes. The patients are usually young and death occurs rapidly, although a few recoveries have been recorded.

Changes in the Vitreous

It is a well known fact that in diabetic coma the tension of the eyeball is subnormal. In 6 cases of coma examined by Gray, he found that the intraocular tension was lowered in 5, but returned to normal in 30 to 80 hours after inauguration of therapy. Waite and Beetham had 113 cases of coma with lowered intraocular pressure in their series, but in only one fatally terminating case was there observed a negative pressure with a collapsed cornea. This sub-normal tension is the result of the dehydration of the intraocular fluids and is comparable in degree to the dehydration occurring in other parts of the body. With replenishment of the body fluids the ocular tension returns to normal.

Besides the dehydration occurring in coma, the vitreous is also involved by hemorrhages arising from the retinal circulation. These hemorrhages tend to recur, and the ultimate prognosis for useful vision is poor, since they become organized and the resultant contraction of this connective tissue causes detachment of the retina. It has been claimed that the use of insulin tended to increase the frequency of these hemorrhages, but this is not borne out by observation. The underlying factor in these vitreous hemorrhages is the sclerotic disease of the retinal arterial tree.

RETROBULBAR NEURITIS

There will occasionally be seen a diabetic who has been going along in a well controlled condition, and who suddenly complains of impaired vision. No alteration of his refractive state can be found, and ophthalmoscopic examination reveals no abnormalities. The visual field, however, will reveal a central scotoma, which together with the normally appearing optic nerves points to the presence of retrobulbar neuritis. It occurs in middle-aged patients and seems to bear no relationship to the severity of the diabetes. Again the question arises as to whether this damage to the optic nerve fibers is due to the diabetes or to some other factor. DeSchweinitz and Fewell believe that the nerve fibers in diabetics are much more susceptible to the toxic action of tobacco or alcohol, and that the abstinence from these will cause improvement, unless degeneration has already occurred. Kako found that in only 2 of 16 cases could alcohol and tobacco be excluded as a cause. Nevertheless Reber has reported 1 case and Moore 2 cases, in which tobacco had never been used. Also, O'Donoghue had 2 cases which cleared up in spite of the continued use of tobacco

OCULAR PALSIES

Waite and Beetham in their series of 4,001 eyes found 16 with paralysis of one or more ocular muscles, the most common one being the external rectus. These bore relationship to the blood sugar levels or to the duration of the disease. Because of the sudden onset of the paralysis and its slow disappearance, they suggested minute hemorrhages as the possible cause, but they did not specify whether these occurred in the muscles or in the nerves supplying them. Although the sixth nerve is most commonly involved, many authors have reported third nerve disturbances with involvement of the sphincter pupillae, levator palpebrae, etc. It is difficult to believe that hemorrhages along the nerves are the cause of this condition, since it resembles the general peripheral neuritis so often seen in diabetes, and like this latter condition tends to clear up over a period of time with proper treatment.

SUMMARY

In thus examining the ocular lesions found in diabetes, it is striking that only the changes in the lens can be definitely shown

to originate from this disease. The senile type of cataract must be excluded from these characteristic lenticular changes, since only the alterations in the refractive state and the juvenile opacities offer a clear-cut clinical picture. The presence of senile lenticular opacities and of the retinal lesions indicate that diabetics as a whole are much more liable to an early senility than are nondiabetics, although how these factors operate to produce these tissue changes is as yet unknown.

(*Medical Annals of the District of Columbia, May 1938.*

Give us courage and gaiety and the quiet mind. Spare us to our friends. Soften us to our enemies. Bless us if it may be in all our endeavours. STEVENSON.

THE USE OF X-RAYS IN THE TREATMENT OF SKIN DISEASES.

F. F. HELLIER.

Hon. Assistant Dermatologist, The General Infirmary, Leeds.

"It is hardly too much to state that roentgentherapy is the most widely useful addition to the treatment of skin diseases that has been made." (Pusey).

The above statement was written over thirty years ago and is equally true to day. According to MacKee, there are over eighty cutaneous affections which are more or less amenable to X-ray treatment. The object of this paper is to draw attention to the commoner of these and also to mention other conditions for which X-rays are less suitable.

Before discussing the biological action of X-rays, a word must be said about the methods of measuring their dose. Following the discovery of X-rays numerous ways of estimating the dosage were tried out but most of them were soon discarded in favour of the method of Sabouraud and Noire. These workers had paid especial attention to the question of temporary epilation of the head in cases of ringworm. They based their measurement of dosage on the colour change which occurred in barium platinocyanide on exposure to X-rays. This substance was made up into a little disc or "pastille" by mixing it with a collodion amyl acetate emulsion and coating this on a thin piece of paper. This was placed under the X-rays and the change of colour, which was from a greeny yellow to a browny yellow, compared with a standard. By trial and error they found that the amount of X-rays which would just produce an erythema without any permanent changes in the skin and would give a temporary but not a permanent epilation, turned the pastille to the tint which they labelled "B." This was the limit for the physiological action of X-rays and any further exposure gave permanent

pathological changes. This erythema dose or "sB" has been the standard for practical skin work up to within the last few years, the doses having been measured in fractions or multiples of an sB. The drawback to this method lies in the estimation of the colour change, different observers making an error of up to 20 per cent. on the same pastille. To eliminate this personal factor, a purely physical method has been devised which depends on the ionising action of X-rays when they fall on a gas. Once ionised, the gas becomes a conductor and by measuring the conductivity of the gas, the quantity of X-rays can be determined. This is done in practice by means of a little chamber which is placed under the X-rays during treatment and the dose is recorded on a dial in terms of the physical unit of X rays called the roentgen "*r*." This unit is defined as the amount of X-rays energy which releases a charge of I E S.U. in I cc. of air at N.T.P. One sB equals approximately 5000*r*, the exact relation varying according to the quality of the X rays owing to the fact that one measures a chemical and the other a physical change.

The biological action of X-rays may be summarised briefly as follows:—

1. Minute amounts of radiation stimulate while large amounts inhibit and destroy.
2. Cells that are undifferentiated, immature, biologically or physiologically active, are most readily influenced.
3. Becteria are not directly affected by gamma or X-rays. They may be killed by large amounts of beta rays.

From the practical point of view these actions can be utilised in the following ways in dermatology:—

1. The Functional inhibition and atrophy of the cutaneous appendages.
2. The environment may be so modified that the bacteria and fungi often encounter a less favourable medium upon which to grow
3. The nutrition of the living cell is affected. Minute doses stimulate, while large doses inhibit, cell function. Very large doses produce complete cell destruction.
4. The inhibitory and destructive action is much more pronounced on young and physiologically active cells then on mature and comparatively inactive cells. Therefore certain pathologial cells are inhibited or destroyed before the more resistant cells of the surrounding stroma are seriously affected.
5. There is an anodyne and antipruritic effect.

Turning now to actual skin conditions, we will discuss these in an order roughly corresponding to the above actions of X-rays.

Conditions affecting cutaneous appendages. One of the first uses to which X-rays were put, was the removal of the hair in order to

cure ringworm and they have revolutionised the outlook in this hitherto intractable condition. Occasionally ringworm is cured by external applications alone but it is probable that when this occurs, the infection has been by some fungus other than the microsporon audouini which is far and away the commonest in this country. Nowadays all children suffering from ringworm should have a complete epilation of the head. The only drawbacks to doing this with X-rays are that an expert operator is required in order to get an even dose over the whole scalp and that the child must be old enough to keep its head still. Generally speaking a child of five or over will behave under the X-ray, but for a younger child it is necessary to strap the child's head down very firmly or else to use thallium acetate instead of X-rays. With X-rays the hair begins to come out in just under three weeks and there is ample time to destroy any fungus before the hair starts to regrow.

Hypertrichosis. This is mentioned here in order to say that excess hair should *never* be treated by X-rays. It is impossible to produce a permanent epilation without causing changes in the skin which ultimately produce disfigurement far worse than the original condition and may even lead later to the formation of epitheliomata. The same warning applies to the treatment of *Sycosis.* X rays are sometimes advocated in this condition but they should only be used with great care and they are often disappointing. If one epilates a case of sycosis, the result may be brilliant for a few weeks but as the hair regrows, the condition frequently returns as bad as ever. Patients then demand a permanent epilation but this should never be performed for the reasons mentioned above. Sometimes however considerable improvemet may be obtained from fractional doses of X-rays which desensitise the skin, and in carefully chosen cases, a temporary epilation does occasionally help.

Hyperidrosis and Bromidrosis. Considerable temporary improvement can be obtained from repeated fractional doses of X-rays but here again permanent destruction of the sweat glands cannot be carried out without serious damage to the skin.

Acne. This is associated with an increased or altered secretion of sebum and tends to increase in severity from about the age of fourteen for some years and then gradually dies away. X-rays have a very striking effect in acne but this passes off in from six months to a year. If therefore X-rays are given to a child at the beginning of the acne period they will almost certainly have to be repeated on one and possibly on several occasions and care must be taken to avoid an overdose. On the other hand towards the end of the acne period there is a much better chance of getting a permanent cure as the activity of the glands is already on the wane. It is essential however, that the patient should do his or her share by persevering with local treatment and X-rays should not be used as an excuse for the

patient to be lazy, a characteristic all too common in sufferers from acne.

Rosacea. Although some textbooks are doubtful about the action of X rays in this condition, X-rays combined with a 2 per cent, sulphur and salicylic acid ointment constitute the most successful method of producing a cure. Attention should of course be paid to any focal sepsis, pelvic lesion or gastric abnormality and a suitable diet prescribed but this alone often fails to alleviate the eruption.

Boils and Carbuncles. X-rays are often a valuable aid in aborting these. A carbuncle should never be incised but should be treated with a fairly large fractional dose of X-rays followed by fomentations or, better, dry heat, and painting with a simple antiseptic. In this way much pain and scarring are avoided and the healing is expedited. X-rays also have a prophylactic value and appear to desensitise the skin in some way and thus bring to an end recurrent staphylococcal infections in such areas as the back of the neck, the axillæ or the perianal region.

Eczema. In no skin condition are X-rays so valuable as in the more chronic forms of eczema. The explanation is probably that they inhibit the multiplication and activity of the cells of the epidermis and dermis which in eczema have become hypersensitive and thus the skin is allowed to regain its normal character. In addition the sensation of itching is diminished and the patient is better able to keep himself from rubbing and scratching. X-rays should not be used in acute eczema as they may make the condition worse; their action is most marked in lichenified cases, especially the type known as localised neurodermatitis.

Psoriasis. This can be cured by suitable local applications if they are properly applied so that X rays are unnecessary in most instances and are further contraindicated by the widespread nature of the condition and its tendency to recur. Occasionally one uses X-rays in a special case such as a patient with a knee covered in psoriasis upon which a surgeon wishes to operate, or a candidate for an interview with psoriasis of the face. One type of psoriasis which may resist ordinary treatment is that which affects the vulva and perinaeum resembling an intertriginous eczema. Here at times X-rays are of great value and are much appreciated by the patient who usually complains of severe irritation.

Lichen Planus. X-rays will often allay irritation and clear the lesions when fractional doses are applied to the local lesions. Recently I have been trying the effect of large doses of X-rays given to the cervical and lumbar spine as advocated by Pautrier and others on the Continent. The does used has been 1 sB filtered through two mm. of aluminium; the effect of this filtration is to screen out the softer, longer rays and give a higher proportion of the harder, more penetrating rays. The results have been better than I expected

when I started the investigation and, in about half my cases, definite relief of itching occurred within a few days though this has not always been followed by a complete cure.

Pruritus. Itching, whether or not accompanied by eczematisation, is often dramatically relieved by X-rays. It is doubtful whether this is due to any direct action on the nerve terminals and many writers think that it is more probably due to the inhibition of inflammatory reaction around these terminals. It is, however, very important to realise that X-rays are only an empirical form of treatment and that it is essential to seek out the fundamental cause of the itching if possible, whether this be a carcinoma of the rectum causing pruritus ani, diabetes irritating the vulva or merely the effects of marital maladjustments.

Warts. It is quite easy to clear away a wart with a destructive dose of X-rays, that is to say a dose larger than the erythema dose. One usually uses about two sB, but of course this must only fall on the wart and must be carefully screened from the surrounding skin. The warts can only be treated individually by this method and for more than one or two it is every time a current consuming; one reserves it for single warts in nervous patients and also when they are in sites where an excision might lead to infection, e.g. the sole of the foot or the hand of a surgeon. Multiple warts are annoying things to treat but sometimes one can clear them with a small dose of X-rays (⅓ sB) which can be given without screening the normal skin. Whether this is really a direct effect of X-rays or merely falls into the category of wart charming is hard to say, but I have seen warts disappear unexpectedly at times from the hands of people who have had X-ray treatment for other conditions, which suggests that there is some direct action on the warts at times.

Tumours. New growths of the skin are easily accessible and do not present the difficulties for X-ray treatment which deeply seated growths provide. All that is required is an adequate dose with protection of the surrounding skin from exposure. Thus most basal and squamous cell carcinomata can be treated successfully with X-rays though sometimes in those involving deeper structures such as bone, screened radium or excision are more satisfactory forms of treatment. In order to get a uniform dose over the base of the growth, it helps very materially if the growth is first of all scraped away as far as possible with a curette under local anæsthetic. By this means the necessity for a penetrating dose of X-rays is removed and unfiltered rays can be used; the usual dose for a rodent ulcer that has been curetted is about 4 sB.

I have given above an account of the more important skin conditions for which X-rays are used successfully. There are numerous other conditions for which X-rays have been tried; some

of these are less common conditions which respond well to X rays and others are common affections in which X-rays are of less certain value. Among the former are such diseases as cheloids, mycosis fungoides, sarcoma of the skin, leukaemia cutis, etc., whilst the latter include chilblains, lupus erythematosus, Bazin's disease etc.

It is essential that all X-ray therapy should be carried out under the supervision of an experienced dermatologist. X-rays are a double-edged weapon and a little carelessness may easily lead to an overdose. The immediate effects of this vary from a mild erythema to a severe, painful, indolent ulcer which may take years to heal. I saw in1937 an ulcer which was just healing and which had followed an X-ray epilation in 1922! Late results show themselves as pigmentation and scarring of the skin, atrophy of the underlying tissues, telangiectasia and all too frequently squamous carcinoma. It is sometimes necessary to remove and graft large areas of skin which show a radiodermatitis and which are constantly forming epitheliomata.

One final word of warning should be given about the use of X-rays to those who attend a hospital skin department. Students are apt to get the impression that X-rays are used for almost every case; they fail to realise that the cases which attend out-patients are cases selected because they have failed to respond to simpler forms of treatment in the hands of their own doctors. It is essential to grasp the true methods of treatment of skin diseases and employ simpler things before turning to X-rays, otherwise the student will be very soon in difficulties when he gets into a practice away from a centre where X ray treatment can be obtained.

(*University of Leeds Medical Magazine, Vol. 8. No. 3.*)

Talent means the ability to do well what others have done already, while genius means ability to do something new. HAVELOCK ELLIS.

ACTION OF QUININE AND THE SYNTHETIC DRUGS ON MALARIA

	Action on Trophozoites		Action on Gametocytes		Action on Acute Symptoms			
	B.T. + Q.	M.T.	B.T. + Q.	M.T.	Action on frequency of Relapse	Action on Splenomegaly.	Effect on general condition of Patient.	
Quinine	Daily doses of 1 gm. (15 grs.) causes disappearance, 5·7 days.	Daily doses of 1·3 gm. (20 grs) causes disappearance, 5·7 days.	Affects pregametocytes and gametocytes.	Affects pregametocytes but gametocytes only very slightly.	Marked action from 3rd day (2nd paroxysm).	Variable action from 3rd or 4th paroxysm.	Acts on all species but in B.T. and Q. release rate may reach 50 per cent.	Acts on all species but effect is transient where re-infection or relapses are frequent.	No effect if treatment is limited to number of days essential.
Atebrin	Daily Doses of o·3 gm. causes disappearance after 3 days. Effects last longer than quinine.	Daily Doses of o·3 gm. causes disappearance after 4 days in 90 per cent. of cases.	Similar to quinine but slightly more marked.	Similar to quinine.	Very marked action. Fever falls by 2nd paroxysm.	Marked action. Fever usually falls by 3rd paroxysm but with some strains effect is less than quinine.	Action slightly more than quinine especially in B. T. and certain strains of M.T.	Effect somewhat slower than quinine but seems to last longer.	Sometimes yellow coloration of skin.
Plasmoquine	Slight action only.	Practically no action.	Definite action in both species.	Marked action in minimum doses of o·o2 gm.	No indications for using plasmoquine alone for treatment of acute attack.	No indications for using plasmoquine alone for treatment of acute attack.	Insufficient data.		In the doses now used (*e.g.*, o·o2 gm.) it seems to have no depressing effect.

Action of Combinations of Drugs.—(1) There is no advantage in combining quinine atebrin in treatment.

(2) Quinine + plasmoquine simultaneously produce less frequent and less intense toxic symptoms than atebrin *plus* palsmoquine, but are best given consecutively where possible. Quinine (15-20 grains daily, 7 days) *plus* plasmoquine (0·02 gm. daily, 5 days*) are probably the best treatment for B.T. and Q. malaria.

(3) Simultaneous administration of atebrin and palsmoquine aggravates the toxicity of each and is not recommended Consecutive treatment with atebrin (0·30 gm. daily, 5-7 days) and plasmoquine (0·02 gm. daily, 5 days*) has no advantage in the primary attack, but acts on gametocytes and relapses in the same manner as quinine and plasmoquine treatment.

Practical Suggestions for Treatment.—(1) Individual treatment. Quinine (15-20 grains) or atebrin (0·3 gm.) 5-7 days, followed by plasmoquine (0·02 gm.) 5 days, or quinine *plus* plasmoquine simultaneously.

(2) Treatment in Field. Quinine (15-20 grains) or atebrin (0·3 gm) 5-7 days, folllwed by plasmoquine (0·02 gm.) 5 days if funds and medical supervision are available. But if, as is usual, this is not so, short treatments with the cinchona alkaloids are more suitable.

(3) Mass Drug Prophylaxis. Daily doses of quinine (o·40 gm. or 6 grains), or bi-weekly doses of atebrin (o·20 gm.)

*For gametocidal purposes alone, however, one dose of o·o2 gm. plasmoquine followed by a second dose, if necessary, on the 5th day is equally effective It may be noted also that in one mass treatment experiment (in Sardinia), the daily administration of o·o2 gm. plasmoquine had to be stopped after 3 days on account of toxic symptoms.

Extracted from the 4th General Report of League of Nations, Malaria Commission and issued by the Malaria Institute of India.

Diagnostic Pointers.

Acidosis in Children.

Acidosis can be differentiated from appendicitis, intussusception etc by the fact that in the latter disease, the child vomits everything, while in acidosis. dry foods such as sweet biscuits etc. are retained though all liquids may be vomited.

This point is of much importance in treatment also for the nutrition may be maintained and sodium bicarbonate given dry mixed with sugar under the tongue.

The diet must be carefully watched until the urine is extremely free from acetone.

Typhoid.

Sore throat is not at all uncommon and should never lead us astray.

Peritonitis.

The heart sounds and inspiratory murmur can be heard by auscultation over all parts of the abdomen in cases of peritonitis with free fluid.

Thoracic and abdominal lesions

In the absence of thoracic signs, abdominal pain associated with movements of alae nasi during respiration indicates thoracic lesions.

Vomiting.

In the absence of pregnancy, vomiting occuring on an empty stomach in the early morning is almost invariably due to gastritis.

Malaria.

Fever occuring in periodic cycles of 7, 14 or 21 days or in multiples of seven is certainly malarial.

Tuberculosis.

Thirst in the evenings in adolescence is suggestive of tuberculosis especially if accompanied by a rise of temperature in the evenings followed by subnormal temperature in the mornings.

Therapeutic Gleanings.

Chancroid.

Soft chancres treated with milk protein injections are free from pain after injection and are usually cured after two or three injections.

Furuncle in external ear.

This distressing condition can frequently be relieved by tampooning the canal with 10 per cent argyrol solution leaving it in for two or three hours. Repeat daily as required.

Milk injections in chronic pelvic infections.

For chronic pelvic infections that fail to respond to other treatment, intramusoular injections of boiled milk give excellant results. The patients feel better, the anaemia and the general condition improve so that operation may be safely undertaken. Some of these patients need no further treatment.

Dysmenorrhoea.

Any treatment of dysmenorrhoea which is to be abidingly effective must be applied during the twenty two days of peaceful interlude and not during the six days of agitation and pain.

Small-pox and vaccination.

It has been proved that not above 1 in 100 of the vaccinated takes small pox when exposed and almost none die. On the other hand of the unvaccinated fully 99 per cent take it and 25 to 30 per cent die.

Gonorrhoeal Complications.

Of ninety early cases of gonorrhoeal complications of various kinds treated with parenteral injections of milk proteins, fifty nine were cured, twenty seven improved and four unimproved. This treatment has little or no value in uncomplicated gonorrhoeal urethritis.

Gas poisoning.

The intravenous injection of 3 mg. of lobeliene saved a case of gas poisoning when artificial respiration and oxygen had failed

Sea sickness

Rectal suppositories containing seven and half grains of chloral hydrate and fifteen grains of bromide are a good preventive of sea sickness. One of these is to be inserted night and morning.

Itching

It is possible to allay the itching in resistant urticarias and in cases of moist eczema by increasing the calcium content of the blood.

Extracts.

SULFANILAMIDE IN THE TREATMENT OF VENEREAL DISEASES.

F. W. F. PURCELL. *South African M. J., Cape Town.* *Nov.* 12, 1938.

The author reviews the literature on the subject, and discusses his own experience with sulfanilamide treatment of gonorrhea. He treated 54 cases of gonorrhea with sulfanilamide—51 males and 3 females. Of the males, 45 completed treatment. In all cases, 2 to 4 gm. of sulfanilamide were given per day with local irrigations of 1/10,000 potassium permanganate or mercury oxycyanide. Prostatic massage and other routine treatment were given when necessary. Of 29 cases of anterior urethritis, 22 (76 per cent) were cured within an average of 10.3 days of treatment. The failures were treated with the drug for an average of 51.4 days each. Of 16 cases of total urethritis, only 2 (7.6 per cent) were cured, requiring an average of 22.5 days of treatment. There were 14 failures (92.4 per cent) who were treated for an average of 80 days each. Without sulfanilamide, 5 weeks was an average treatment time for a case of anterior urethritis and 3 to 4 months for a case of posterior urethritis when the prostate or seminal vesicles were involved.

The failures among the anterior urethral cases were all associated with littritis. This required local urethroscopic treatment. In two patients very ill with posterior urethritis and with severe hematuria, the drug was quickly effective. Treatment of cases of prostatitis and vesiculitis (normally requiring 3 to 4 courses of biweekly massage of 6 weeks each) with sulfanilamide enabled massage to be carried out sooner.

Five cases of genital ulcers all healed on 3 gm. of sulfanilamide a day, complete healing in 4 cases resulting within a week. Vincent's spirilla and fusiform bacilli were found in 1 case. In 3 others, Ducrey's organisms were found, and the Ito Reenstierna skin test with dmelcos was positive.

The author noted no serious toxic effects from use of the drug although minor ones were frequent. Sulfanilamide should be given only when the patient can be observed by the physician daily or at least every 3 days. It should never be given without medical supervision and should not be sold except on medical prescriptions.

COMBINATION COURSES OF BISMUTH ADMINISTRATION.

TORALD SOLLMANN, H. N. COLE AND KATHERINE HENDERSON.

J. A. M. A., Chicago. Dec. 10. 1938.

With the use of the watery solutions in intramuscular bismuth therapy an effective concentration of bismuth in the blood and tissues is reached in a short time, but as the excretion is rapid their action is brief and they must be administered frequently. The oil suspensions are slow in absorption; they tend to become cumulative and the effective concentration in the blood is approached more slowly. They may be given, therefore, at longer intervals. The authors have studied a combination of the two extremes, adjusted to build up an effective concentration rapidly by use of the watery solution and a continuous concentration meanwhile by use of the salicylate suspension. This combined bismuth therapy is suggested for use in treatment of patients with acute syphilis who are sensitive to arsenic when a rapid but prolonged effect of bismuth is called for, or as the form of bismuth medication in the treatment of early syphilis.

In their studies the authors used iodobismitol and sobisminol for the water-soluble compounds. Three or four patients to a group were studied for treatment with each of these drugs in combination with bismuth salicylate.

There was a daily determination of the urinary excretion of bismuth, and charts are given showing the median for each group. The study shows that a graded sequence of injections of soluble bismuth preparations with continued weekly injections of bismuth salicylate produces a high initial concentration of bismuth, which reaches at the end of two weeks a level of from 4 to 12 mg. of bismuth a day according to the drugs used. This concentration then falls so as to join the slowly ascending curve characteristic of salicylate injections about the end of from 5 to 7 weeks, so that the median level does not fall below 2 mg. of bismuth for the lower dose (0.13 g.) of salicylate and 4 mg. of bismuth for the higher dose. (0.26 g.) of salicylate. The sequence therefore secures the benefit of the intensive action of the water-soluble bismuth preparations in the early part of the course and the advantages of the convenience of salicylate injections in the later part of the course.

In the discussion, Kulchar states that he believes this method makes possible an intensive beginning for treatment in the kind of cases mentioned by the authors and also in early syphilis in elderly patients to whom arsphenamine must be given with caution Hanzlik has found oral sobisminol definitely effective in syphilis. Cole emphasizes that this combined form of bismuth therapy is designed

principally for acute syphilis, and the patients should be watched carefully. The use of water-soluble preparations causes a certain amount of irritation and discomfort and it is harder to get patients to continue with these treatments twice a week than it is to get them to have treatment with bismuth salicylate.

Medical News and Notes.

THE TINNEVELLY DISTRICT MEDICAL ASSOCIATION, PALAMCOTTAH.

(Tinnevelly Branch of the Indian Medical Association)

The Joint Meeting of the Madura Medical Association and the Tinnevelly District Medical Association, was held in the "SETHU CASTLE", on the 29th of July 1939 at Courtallam, one of the most charming waterfalls of Southern India, noted for pretty mountain scenery. 22 members of the Madura Medical Association and 48 members of the Tinnevelly District Medical Association attended the function. All the members had an early bath in the Falls, and light refreshments.

The Meeting began under the Presidentship of Lieut-Col., K. V. Ramana Rao, I.M.S., The Secretaries of the Medical Associations read out the minutes of the proceedings of the previous meetings for their Associations, which were passed. Lieut. Col., K.V. Ramana Rao,. I M.S., moved from the chair, to elect Lieut. Col., T.S. Shastry, I.M.S., the former President of the Association as an Honorary Member of the Tinnevelly Dt. Medical Association. It was seconded by Dr. T. N. Govinda Aiyar, M. B. &. C. M, and was unanimously elected.

Lieut. Col., K. V. Ramana Rao, I. M. S., delivered an interesting and elaborate lecture on "Calcium Metabolism".

Two cases of Tumour Breast which were operated by Lieut. Col., K. V. Ramana Rao, I.M S., at the Govt. Women & Children Hospital Vannarpet were read out and shown to the members.

Dr. A.L. Anantanarayana Iyer, M.B.B S., Medical Officer, Tenkasi demonstrated cases of Meningo Myelitis, Leprosy and mitral stenosis.

Dr. K. K. Jayabalaraj of Kulasekharapatnam showed a case of Hydrocephalus.

Lieut. Col., K.V. Ramana Rao, I.M.S. moved vote of thanks to the guests, to the organisers, to the Estate Manager for having permitted us to hold the meeting at the Raja of Ramnad's Palace.

Dr. M. V. Natesan, on behalf of the Madura Medical Association offered a hearty vote of thanks to the Tinnevelly Dt. Medical Association for the excellent arrangements and organisation of this unique gathering and wished for many a happy return of the same.

Thereafter an excellent Lunch brought the happy gathering to a close.

THE KRISHNA DT. MEDICAL ASSOCIATION, MASULIPATAM.

(Branch of The Indian Medical Association)

The fourth Monthly Meeting took place at Masulipatam, on 12th of August 1939., in the D. M. O.'s Bangalow. This Meeting was Presided over by Lt. Col. T. S. Shastry, I.M.S. Forty-five members including six women members, joined the Association.

Kumari Parvati of Masulipatam, entertained the audience with sweet music Then the meeting began at 5-30. P.M.

The Business-Meeting:—The Secretary read the Minutes of the Last Meeting. The Members proposed by the Managing Committee for the post of the President and Vice-Presidents of the I.M.A. for the coming year, were accepted *viz*:—Dr. A. Said of Sindh as President, and (1) Dr. Bhupalsingh (2) Dr. D. Venkappa, L M. P. of Madras, (3) Dr. Thangamma, F.R.C.S E., M L.A. (Benares), for the Vice-Presidents.

The Presidents exhorted the Doctors to do the Red-Cross Training in Schools, and the following members volunteered:—Dr. M. Sheshacharyulu, L.M. & S, for the Hindu College, Dr. A. Achutha Ramayya, L.M.P., for the National College. Dr. R. Achutha Ramayya, M.B., B S. for the two High-Schools, and Dr. Miss N. Sakunthala, L.M.P. for the Girls' High-School.

The Managing Committee's Resolution, "That the Minimum Medical Fees for the Insurance cases shall not be less than Rs. 8", was unanimously accepted. The intention of the Bezwada Doctors to form a separate Branch of the I.M.A. in this District.

The Clinical Meeting:—(1) Two Cases of Urethral Tumour in women, (2) One case of Fibromyoma of Uterus; (3) Retained Testis-Cum Secondary Cancer Of Omentum. (4) Cyst, Parailleal, (5) Stricture-Rectum in a man.

The President discussed in detail the Pathology, differential diagnosis and treatment of these uncomman cases, starting with the very common symptoms presented by them.

The President requested all of them to pay at the end of September, the whole yearly contribution of Rs. 3. to the Central Council at Calcutta, and announced that their anniversary comes off in October next. The Meeting ended at about 8 P. M., and the Members adjourned to a Splendid Dinner.

NOTICE.

Warning Notice to Registered Medical Practitioners.

As a number of cases of advertisement by registered Medical practitioners, in the lay press and by means of handbills, have come before the Madras Medical Council in recent months, the Council has, at its last meeting held on the 17th April 1939, decided to warn all registered medical practitioners that all kinds of advertisement—including even the opening of private institutions, inviting lay men to attend functions connected therewith and publication of same in lay papers—by registered medical practitioners will be considered as advertisement under section 6 of the WARNING NOTICE published by the Medical Council, and will be dealt with accordingly.

(Sd.) N. M. WILSON,
Major-General, I. M. S.,
President,
Madras Medical Council.

He that does not believe in others finds they do not believe in him. CHINESE PROVERB.

Regd. No. M. 2853.

Published by Dr. P. R. Venkappaya & Printed at the C.C.P. Works, Ltd., Madras.