THE ANTISEPTIC

1943

SEPTEMBER 40-9

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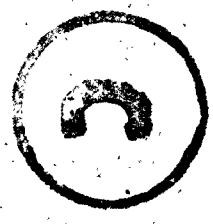

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The Antiseptic

A Monthly Medical Journal

Edited by

U. Rama Rau, & U. Krishna Rau, M.B., B.S.

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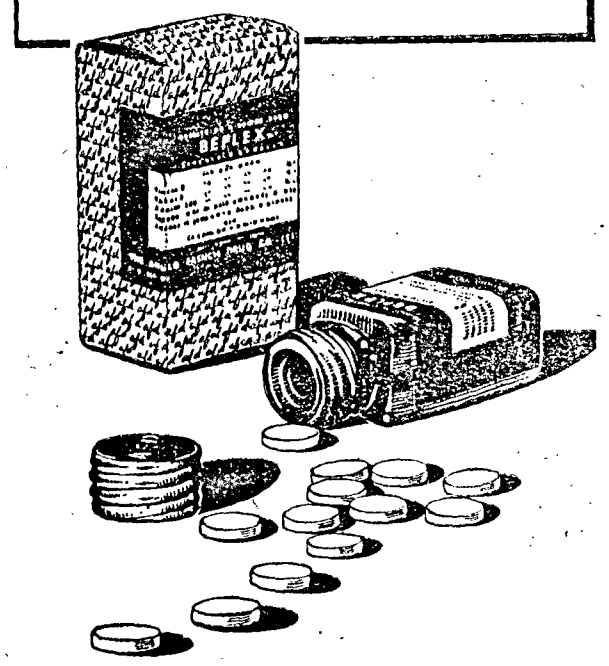

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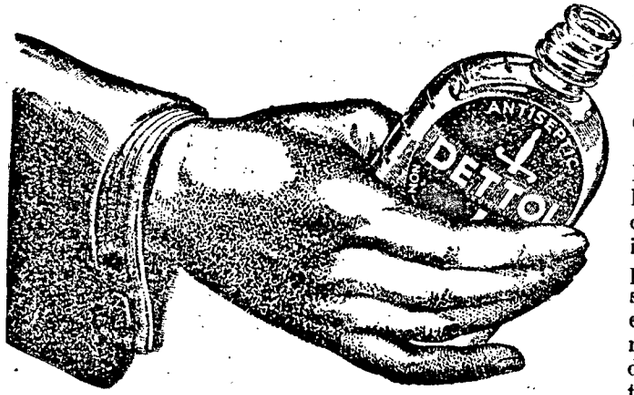

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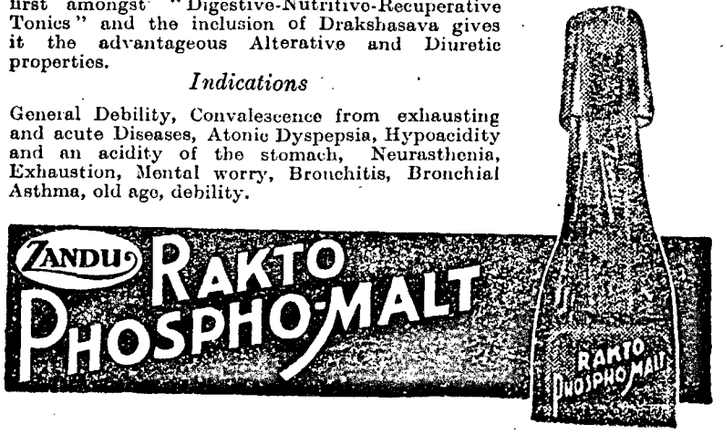

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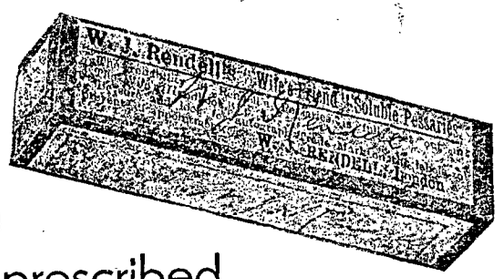

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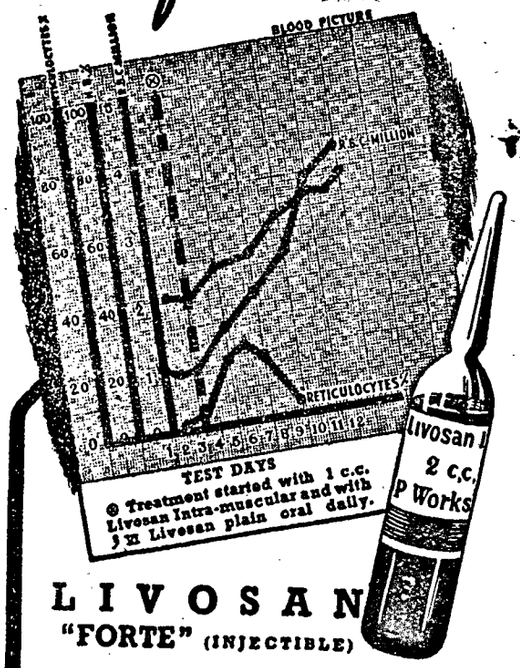

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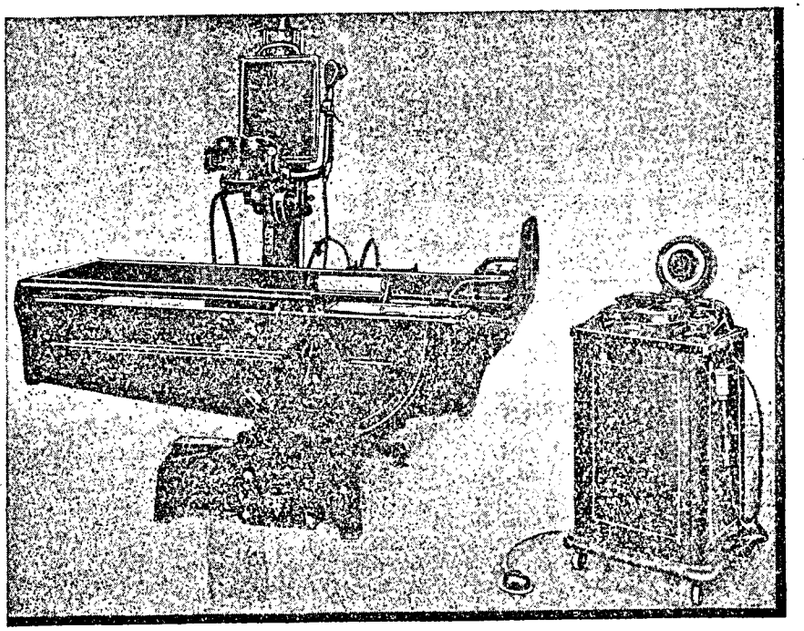

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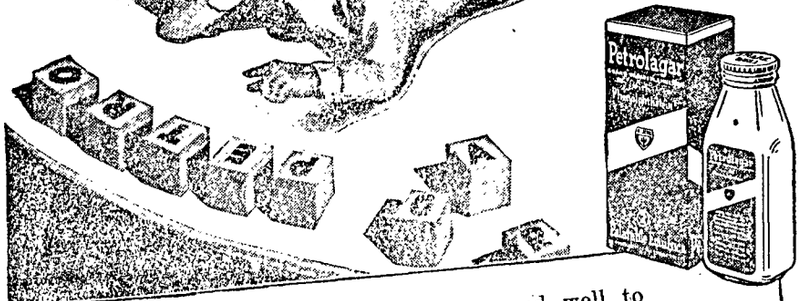

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Original Articles

Peptic Ulcer and Recent Advances in its Medicinal Treatment*

BY
RAJENDRA PRASAD, M.B., B.S.,
(*Indian Medical Association, Muzafferpore*).

IN the term peptic ulcer are included both the gastric and the duodenal forms. During the last two decades, ideas on the subject have been radically revised as a result of progress of abdominal surgery and radiology. The latter has enabled a diagnosis of ulcer to be made in many instances which previously might have been termed gastritis. Ulceration might be seen not only without pain but actually without any gastro-intestinal symptoms.

Duodenal ulcer is said to be more common than the gastric variety. From recent European statistics, it can be said that the ulcers have moved more down towards the duodenum. It is considered to be occurring more in males than in females. The Denmark view, however, is that of late the ulcer has become rarer in females and commoner in males. Below 20 years is an infrequent age for incidence, though duodenal ulcer has been noticed in babies a few days old.

Even to-day, it must be admitted that the cause of the condition is still undecided. The various factors that have been thought to be responsible are:

(1) The ulcers occur in such situations as are exposed to the action of gastric juice. The role of acidity of this juice and of pyloric obstruction in the causation of the ulcer have been experimentally demonstrated by BOLTON.

(2) The experimental works of ROSENOW lend support to the view that focal infections are the causative factors.

* Paper read before the Indian Medical Association, Muzafferpore, and specially sent to 'The Antiseptic,' for publication.

(3) ALVAREZ suggests that ulcer commonly occurs in persons who live under nervous strain and tension and stresses the importance of psychical factor. MEULENGRACHT lays great stress upon this factor and as his mode of treatment has been discussed below at length, it will be proper to quote him here on the aspect of the ætiology of the disease. He says:—"In the course of time it has dawned upon me, as on so many others, that factors other than food play a determining part in ulcer disease. It is not the 'good eaters' who develop ulcer, but rather the starvers; it is men lean men, busy men, over active men—who do not give themselves proper time to eat, and when busy prefer to smoke a cigarette rather than take a snack between meals. Observations on the life history of chronic peptic ulcers forcibly and convincingly describe the part played by the nervous element in the development and persistence of gastric ulcer, both the nervous constitution of the patient and the external events in life which may influence it: 'the soil and the seed'...The patient with gastric ulcer is a characteristic type of man with a characteristic 'ulcer face.' It cannot be said in what way a definitely nervous constitution, accentuated by external events of life, can be imagined to assume such a localised expression as acid gastritis with ulcer, but it is the growing conviction that it must be reckoned with as a factor when planning the medical treatment of the ulcer."

(4) BLUM suggests the possibility that histidine may be necessary as an intermediate in the building of histidine-proteins or other parts of cells containing glyoxaline derivatives, and lack of this essential substance may cause an increased hypersensitiveness which could result in ulceration. The successful use of histidine on account of its vasodilating and hypotensive action—in the treatment of certain cardiovascular affections *e.g.*, angina, pectoris, etc., indicated that histidine mediated its effect through the autonomic nervous system. Accordingly, the usefulness of histidine in allergic disorders was anticipated, and later proved by clinical trial in hay fever, asthma, etc., including peptic ulcer. This led to the postulation that peptic ulcer may be an allergic manifestation. The question why peptic ulcer should develop at all since histidine is being constantly supplied to the body by the ingestion and digestion of protein is answered by KREBS. He says that liver contains histidase, that this histidase may act upon the histidine derived from food and destroy it before it can reach other tissues.

(5) Auto-digestion on account of embolism, ulcer diathesis, presence of any foreign body, erosion of the mucus membrane, anæmia, chronic colitis, etc., are too obvious factors to be ignored in reckoning.

The symptoms are periodic and intermittent—the chief being pain and hæmorrhage.

1. The onset of the pain is almost punctual with relation to food. The nearer the ulcer is to the pylorus, the lower down in abdomen will be the pain and the longer will be its interval after a meal. In case of gastric ulcer, the rhythm of the pain is four-phasic–food, comfort, pain, comfort–in case of duodenal ulcer, three-phasic–food, comfort and pain. The periodicity of pain is altered by variation in the quantity and the quality of the food and by irregularity of the meals. When complications such as stenosis or adhesions set in, the pain becomes more or less continuous and the punctuality of onset is lost. The pain may be slight or severe, and

may radiate and may be relieved by vomiting. Vomiting directly after food is unusual in gastric ulcer. A definite interval elapses between it and the taking of food, which may be longer or shorter according to the site of the ulcer.

2. *Hæmorrhage is common.* It is said that of late its incidence is on the increase. But usually it is not severe and rarely fatal. It may take the form of hæmatemesis or melæna depending upon the situation of the ulcer.

The treatment of uncomplicated ulcer is always medicinal. Before starting it, all sources of infection in the body should as far as practicable be eradicated. The treatment itself, till very recently, consisted of rest in bed, careful dieting, and antacids. In hæmorrhages, the more severe the hæmorrhage the more stringent the immol ility and the more stringent the inanition. A strict ulcer diet rarely had a caloric value exceeding 1700, 'dead boiled' milk was scarcely attractive to the patient, and the patients in the long run had to face mild chronic malnutrition, undernourishment and avitaminosis.

From his observations on his bleeding cases, MEULENGRACHT was led to believe that it must be fundamentally wrong to withhold food and drink from patients, as was being done in the old regime, with such hæmorrhages, as he thought that hæmatemesis was a condition akin to post hæmorrhagic shock in its general effects if not in anything else. This led him to the adoption of a principle, which may aptly be called revolutionary. The patients were given something to eat and drink, from the very first day, a varied and liberal diet, *i.e.*, water, salts, vitamins, calories, and *ad libitum*, antacids and big doses of iron. His own regime is as follows:—6 a.m.—Tea, white bread, and butter; 9 a.m.—Oatmeal with milk, white bread and butter; 1 p.m.—Variety of dishes; 3 p.m.—Cocoa; 6 p.m.—White bread and butter, slices of meat, cheese, tea. The patients are encouraged to eat *ad libitum*: water and milk are put on the table and they should drink as much as they like. With regard to selection of this diet, MEULENGRACHT says: "I might have chosen any other form of soft non-irritating diet because it is not a question of a special diet but rather the adoption of a principle—*viz.*, something to eat and drink...I believe that every country will gain by varying the details of the treatment according to individual, local and national circumstances and customs."

The obvious result of this line of treatment will be an enormous simplification of the work of the attending nursing staff. It has been found that the patients feel well on it and naturally like it. It is also apparent that the patients, thereby, escape the disagreeable and dangerous period of exhaustion and avitaminosis. MEULENGRACHT says: 'The patients feel so well that they soon ask to be allowed to get up, and when after two to three weeks they are out of bed their convalescence is very short, so that they feel completely recovered on discharge!". With regard to the hæmorrhage itself, he says: "Food in the stomach does not increase or protract the bleeding, rather opposite is the case. The actual bleeding, as a rule, can only last a short time, perhaps only a few hours: the fact that a positive benzedine reaction is demonstrable for so long a time does not mean that the hæmorrhage lasts so long, but that it takes that length of time for the intestines to rid itself of the blood. It is very important to have a clear conception of this fact, because a wrong interpretation has

so largely contributed in the past towards prolonging the fear of giving the patients something to eat." To crown all, MUELENGRACHT claims a lowered mortality rate with this line of treatment.

On treatment of non-bleeding ulcer, MUELENGRACHT says: "My treatment of painful ulcer now approximates to that of bleeding ulcer. I maintain that results are improved by it: the pain disappears just as well, and relapses do not seem to be more frequent. The treatment is supplemented with alkalies and belladonna. The fundamental principles of medical treatment of ulcer must be rest, relaxation, and food—adequate quantitatively and qualitatively—containing necessary amount of vitamins and salts—a soft non-irritating diet but plenty of it. In comparison with these factors, it is of less interest to me whether alkali or belladonna is given or not. I use both these drugs and believe they are of value, but to me they are not a matter of prime importance...Tobacco is forbidden. On discharge from hospital the patients are urged to avoid the most irritating kinds of food for 6 months, to continue taking frequent meals, to restrict the use of tobacco, and not to let 'a smoke' take the place of snack between meals, and also to try to adopt a calm attitude towards life and its incidents."

Other workers lend support to the views held by MUELENGRACHT since 1932. LEESE and BLACK have worked out the nitrogen and chloride metabolism in hæmatemesis. Their findings support the therapeutic value of a liberal diet with liberal fluids by mouth. MORGAN is of the view that in hæmatemesis the existence of a negative nitrogen balance provided 'a rational basis for the liberal diet and fluids.' NICOL says, "Two hourly feeds of a mechanically non-irritating type (food) and containing more protein were superior to hourly feeds of milk and pudding in the control of gastric acidity...Experience of treating patients in bed, without diet restrictions, indicated that the attainment of physical and psychological rest was of more importance in obtaining healing of ulcers than any rigid dietary regime or the use of alkalies or atropine."

The parenteral administration of histidine in the treatment of peptic ulcer in animals was brought to the attention of the medical profession by ARON and WEISS in 1933. The results of animal experimentation by them and by FLOOD, MULLINS, SANDWEISS, STALKER, VOLINI, MCLAUGHLIN, MATZNER, WINDWER, &c., are at variance. The clinical effect in human being in certain allergic conditions, cardiovascular disorders, and its hæmatopoietic action, and its effect upon the blood coagulation bespeak against any conception that histidine is pharmacologically inert. By control experiments it has been convincingly proved that parenteral administration of histidine is more than a psychotherapeutical measure. The works of HERKNESS, VOLINI, MCLAWGHLIN, RAFSKY, EADS, BEHNEMAN, BULMER, BOGENDOERFER, ALSBERG, STOLZ, WEISS, KAHLER, DUREGGER, BENEDICT and others definitely establish the efficacy of histidine in the treatment of peptic ulcer. The observations of the uniform and definite course of hundreds of peptic ulcer cases treated with histidine militate against any doubt of a coincidental natural remission. Further, a review of the literature and experience indicate that histidine does not change the predisposition towards the development of ulcer, *i.e.*, the effect of histidine is upon the lesion itself and not upon the constitutional make-up—the dictum 'Once an ulcer patient, always an ulcer patient' applies.

The details of the treatment are as follow:—

1. The patient is usually permitted to be ambulatory.

2. 5 c.c. of a 4% Isotonic sterile solution of Histidine Monohydrochloride (*i.e.*, Larostidin) is injected daily in the buttocks over a period of 24 days.

3. The following is the direction about diet during treatment:

(a) Allowed:—(i) Milk, cream, butter-milk, malted milk; (ii) toasted white bread, biscuits, crackers; (iii) cream of wheat, oatmeal, rice; and (iv) soups, meat, vegetables, eggs, fruits, salads, jellies, ice plain, ice-creams, plain egg-cakes.

(b) Disallowed:—(i) Alcohol and tobacco for good; (ii) excessive use of tea, coffee, carbonated drink; (iii) hot breads, pancakes, cereals containing bran; (iv) pork, veal, goose, duck, sausage, cured meat, salt-fish; (v) rough vegetables—e.g., cabbage, cucumber, onions, beans, tomatoes, turnips, sour fruits and berries; (vi) fried eggs, pickles, radishes; and (vii) salt, pepper, mustard, sauces, candies, vinegar.

(c) In hæmorrhages and in acute conditions, meat is ground before serving and eggs are served soft-boiled; otherwise the diet may be the same.

(d) The diet is gradually increased parallel to and determined by the clinical improvement. The amount of diet is not restricted.

4. The patient is educated to the need of a quiet and orderly regimen of living.

Under this regime, the pain is found to disappear usually by the 5th day, the food intolerance to abate by the 12th day. Complete remission of all symptoms with gain in weight and a feeling of good health follow at the end of the treatment. The period of hospitalisation is about 4 weeks. Recurrences of the symptoms in a series of treated cases were found to be about 40%—in most of the cases X-rays showed development of a new ulcer rather than a breakdown of the original lesion.

References:

1. B. M. J. August 12, 1939.
2. The Military Surgeon, Vol. 83, No. 5, November 1938.
3. R. N. Chopra—Tropical Therapeutics.
4. Price—Text Book of Medicine.

Ancient and Modern Uses of Amla*

BY

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AMLA is the common Indian gooseberry (emblica officinalis - emblic myrobalans, phyllanthus emblica) that grows in the Deccan, the sea-coast districts and the mountainous regions. Some of its vernacular names are : *amalaki* (Sanskrit),*nellikkai* (Tamil,Malayalam, Canarese), *usirikai* (Telugu), *amlika* (Hindi) and *amlay* (Arabic). It forms one of the constituents of the triad called *triphala* in Ayurvedic and *ithripal* in Unani systems of medicine. The other two members of this group are chebulic myrobalans (terminalia chebula-*harithaki* in Sanskrit-*kadukkai* in Tamil and Malayalam, *anile kayi* in Canarese, *pilahara* in Hindi, and *halilaj* in Arabic and beleric myrobalans (terminalia belerica-*vibtritaki* in Sanskrit, *thanrikkai* in Tamil, Malayalam and Canarese, *bhairah* in Hindi, and *baleela* in Arabic). These three drugs are very frequently used as adjuvants in a number of medicines given for various ailments. Pulvis *triphala* by itself is a tonic, stomachic and appetiser. It is given in diseases of blood, urine, eye, etc., and also in intermittent fevers. In this article we shall consider the actions and uses of amla, as it is one of the ancient drugs that has been recently investigated and utilised according to the scientific methods of modern medicine in deficiency diseases.

The Following note from the *Indian Medical Gazette* (March 1942, pp. 166) gives a short resume regarding the modern uses of amla in deficiency diseases :

> " Vitamin C or ascorbic acid, the vitamin which prevents scurvy is found in fresh fruits and vegetables. Among vegetables the green leafy varieties are the best sources.
>
> " Pulses and cereal grains in the ordinary state contain no vitamin C. When, however, they are allowed to sprout, the vitamin is formed in the grain and in the growing green sprouts.
>
> " There is one cheap and common fruit, namely, amla, or *nellikkai* (phyllanthus emblica linn), which is rich, probably the richest natural source of vitamin C. Amla (gooseberry) grows abundantly in all Indian forests and is obtainable in almost unlimited quantities from January to April. The fresh juice contains nearly twenty times as much vitamin C as orange juice, and a single fruit is equivalent in vitamin content to one or two oranges.
>
> " The heating or drying of fresh fruits or vegetables usually leads to the destruction of most or all the vitamin C originally present. Amla is an exception among fruits for of its high initial vitamin C content, because it contains substances which practically protect the vitamin from destruction on heating and drying and because its juice is strongly acid. Acidity has a protective action on vitamin C. Hence it is possible to preserve amla without losing much of its vitamin.
>
> " Amla is included as an ingredient in many Ayurvedic medicines and tonics. Fresh Amla was found to be a most effective cure for scurvy, when an outbreak of the disease occurred in 1940 in the Hissar famine area. Tablets are made from amla powder in concentrated form and this is a convenient method of preserving this vitamin for future use."

* Specially contributed to 'The Antiseptic.'

Further details regarding the modern views about Amla, may be obtained from their original papers. Here we shall take up the uses of the drug that are known from time immemorial, according to the tradition and texts of Ayurvedic and Unani systems of medicine.

Some of the synonyms of amla, pithily describe its actions, *e.g., amalaka* having no waste matter, *vayastha* promoting long life, *kayastha* building up the body, *dhatri* acting like a mother, *amritapalam* fruit having the properties of nectar. Terms as *sahab, mulook* and *rai* affixed to it in Arabic, Persian and Hindi mean that it is the king of drugs of the *shadrasas* (six tastes—sweet, sour, saline, pungent, bitter, astringent) and it has all except saline. During *vipakam* (absorption) it becomes sweet. Two important properties of the drug according to Ayurveda are its *seetha viryam* (refrigerent, sedative) and *ruksham* (drying up secretions) and, according to Unani, cold in second degree and dry in third degree. (These features come under the terms *misaj* or *viryam* and *gunas* of substances, and refer to the stimulating, sedative, drying-up, demulcent, emollient and such other actions of medicines. Its classification in Ayurveda, is *seetha viryam, ushna, viryam, ruksham, snigdam* etc., and in Unani, hot, cold, dry and moist each having four degrees). Other actions of amla are as follows : *Rasayanam* (tonic for rejuvenescence) aphrodisiac, *dhatuvriddhikaram* (nutrient) stomachic, laxative, diuretic, astringent (control bleeding and other discharges), promotes complexion, growth of hair, and union of broken bones, alleviates all the three *doshas—vata, pitta* and *kapha*, especially *pittam* (safra) affecting stomach, heart, brain and eyes (inflammatory conditions. On the basis of these principles, diseases in which amla is administered, are given below, with its mode of action.

Jara. - Old age is a disease according to Ayurveda. Ancient sages wanted everyone to maintain the vigour of youth upto the last moment of human existence. Old age or senility was not considered a physiological phenomenon. It meant a definite pathological entity, having the following clinical features. Fatigue, cheerlessness, drowsiness, sleepiness, easily getting exhausted by work, failing memory, loss of complexion, debility, flaccidity of muscles, impaired digestion, feeble voice, and premature death. The condition is due to an impairment of the quality and quantity of the *dhatus* (basic substances of the body composing all tissues, like proteins, carbohydrates, fats, mineral salts, vitamins and water) which maintain the body in a state of equilibrium or health. *Ojas*, the quintessence of the *dhatus* get specially affected. Thus *jara* or senility has come to be a deficiency disease. It may also set in early in the life of a person, by irregular diet, overwork, mental worry, too much of sexual indulgence, lazy, inactive and vicious habits etc. Treatment of this condition forms one of the *ashtangas* of Ayurveda, *i.e.*, the eight fold classification of the human ailments for purposes of treatment *viz., kaya, bala, griha, urdhvanga, salya, damshtra, jara, vrishan* referring respectively to (1) constitutional disorders as fevers, (2) diseases of children, (3) diseases of mind, (4) diseases of the upper part of the body as eye, ear, nose, throat, etc., (5) surgical conditions, (6) toxicology, (7) *rasayanam* or rejuvenation for senility,

and (8) *vajeekaranam*, or aphrodisiacs for impotency. The last section is also included under deficiency diseases since it is the diminution of *ojas* which leads to a lack of sex vigour and sterility, and a cure for senility restores the sexual power of a person.

It may, at first sight, be found difficult to accept 'old age' as a deficiency disease. Usually, modern medical books deal with xeropthalmia, night-blindness, beri-beri, hunger œdema, pellagra, scurvy, rickets, and sprue (some authors), under this heading. In recent books, however, we have a wider conception of this subject. They include all the affections that are caused by a diminution or qualitative change in the various proximate principles of the diet. Thus we have osteomalacia, tetany, predisposition to the infections of the respiratory tract, neuritis, hæmorrhagic tendency, caries teeth, sterility, impaired growth, and syndromes termed 'hypo vitaminosis', 'lack of calcium,' etc. Many of these are not diseases *sui generis*. Further, in a number of affections as pernicious anæmia, sub-acute combined degeneration, Addison's disease, tuberculosis, administration of vitamins forms a part of the routine treatment. Most of the tonics are based on the principle of supplying the deficient factors as calcium, phosphorus, vitamins, endocrine glands, iron, etc. In old age, when the entire system is not acting normally, power of digestion, absorption and assimilation becomes impaired and enough *rasam* (food juice) does not circulate properly in the body. Thus in Ayurveda *jara* is definitely a deficiency disease, that is treated just like other disorders of the ashtangas.

Rasayanam is the remedy for this condition. (*Rasa* and *anjana* mean a thing that nourishes *rasa* and *dhatus*). Results of its administration are: Increased memory, intelligence and vigour, firmness of the muscles, improved lustre and complexion, well-marked motor and sensory activities especially with regard to voice and sex, and prolonged span of life. In modern medicine, the term tonic (for rejuvenescence) is the nearest equivalent to rasayanam. However, it is difficult to define exactly what is meant by a tonic, but roughly it may be used to signify anything which improves the general sense of well-being, and restores the normal tone to the tissues. When the whole system is braced up, it is called a general tonic, while when some special part or function as digestion, stomach, intestine, heart, blood-vessels, nerves, etc., are acted upon, it is called digestive stomachic, intestinal, cardiac, vascular, nervine, etc., tonics. In Ayurveda many methods as *kuteepravesikam* or indoor, *vatatipikam* or outdoor etc., and medicines are used for this purpose. Among drugs, amla by itself or with other drugs is an ideal *rasayanam*, *chyavanapras*, *amalaki rasayana*, *brahma rasayana*, *abhayamalaka rasayana*, *amalaka aveleha* (dose of each 2-3 drams) are few of the famous tonics having amla, as the chief ingredient in their composition.

Premegam is the second group of diseases where amla is used. Juice of the fruit, half an ounce with turmeric powder gr. 20 and a tea-spoonful of honey given b. d. is a simple prescription for this disorder. The term *premegam* in Ayurveda refers to conditions characterised by polyuria with disordered metabolism as diabetes, sub-acute nephritis, etc. Amla having *ruksham* and *seetha viryam* (cold and dry) as its properties, diminishes the quantity of urine without any irritation. Some explanation accounts for its use in chronic diarrhœa, dyspepsia with hypersecretion, gonorrhœa,

and nocturnal enuresis. In India when an orthodox person breaks his fast of an *Ekadasi* (eleventh day after new or full moon) on the next day (*Dwadasi*), amla is always included in the breakfast just for the purpose of controlling excess *pitta* (bile) and promoting the appetite, besides restoring the deficiency of the dhatus that might have occured during fasting. In Unani-medicine, a dram of amla powder with gr. 20 of *thabasheer* (bamboo manna) is a favourite sedative tonic after an attack of typhoid.

Rakta Pittam is the next ailment that is treated with Amla. The essential features of this disease correspond exactly to the hæmorrhagic states, such as scurvy, hæmophilia, purpura, etc. It also comprises all kinds of hæmorrhages such as epistaxis, hæmatemesis, hæmoptysis, malæna (including bleeding piles), hæmaturia, menorrhagia, metrorrhagia, etc., that are due to disorders of blood. Causes, such as prolonged exposure to hot sun, excessive walking or other exercises, constant mental worry, too much of sexual indulgence, taking articles of diet having sour, saline, or pungent tastes and heating, caustic, stimulating or drying up properties, etc., aggravate and produce overheating in *pitta* which, in its turn, renders *raktam* overheated. Then the abnormal *raktam*, instead of circulating properly, escapes either by the upper or lower or cutaneous (hair follicles and subcutaneous tissue) orifices of the body, giving rise to all sorts of hæmorrhages. The *seetha viryam* and *ruksham* properties of amla, exactly counteract the pathogenesis of *rakta pittam*. The excited and overheated *pitta* is alleviated and the flow of blood is arrested. It is this aspect of amla, that has now been confirmed by modern researches which showed its high vitamin C content acting as a specific for scurvy.

Other affections in which Amla is given internally are: dysentery, stomatitis, intestinal worms, constipation, jaundice, cough and dyspnœa as met with in chronic bronchitis and tuberculosis of lungs, etc., palpitation of heart, anæmia, chronic rhinitis, leucorrhœa, strangury, piles, insomnia (especially of fevers), hemiplegia, facial paralysis, muscular spasm, peripheral neuritis, amnesia, etc.

Externally it is used in diseases of the eye as ophthalmia, corneal opacities and asthenopia in the form of collyrium, in stomatitis and ulcers of the mouth as gargles, for massaging paralysed muscles along with oils *(e.g., bringamalaka tailam)*, for promoting the growth of hair, to relieve pruritis, and for allaying the inflammation of the genital tract, as a douche.

The exact way in which Amla acts in all these conditions, *i.e.*, whether by supplying some deficient factors or in virtue of other active principles, can be elucidated only by future researches. This article is mainly intended to show the multitudinous uses of Amla mentioned in the ancient systems of medicine and the way in which it helps our body when it gets affected by a deficiency of the various basic elements (*dhatus*).

In practice the drug is administered often in the form of the juice of the fresh fruit (half to one ounce), powder (gr. 30—60), decoction (2—3 ounces) and preserved fruits (*murabha* or pickles one or two). Of the well-known preparations containing amla, besides those mentioned in the previous paragraphs, the following also may be added:—(1) *rubbai amila*; (2) *javarishai amila*; (3) *anuf daru*; (4) *mufrai ahmadi*. These four are in the form of confections that can be given in doses of 2–3 drams b. d. The first two have a purely sedative and drying up action and can

be given in cases like sprue, tubercular enteritis, etc. Third and fourth, contain in addition to Amla, ingredients which have a stimulating action on the stomach and intestines. These are employed in dyspepsia, gastritis, diarrhœa, etc.; (5) *Dhatri leha* (gr. 20-40) having iron also, is useful in anæmia and jaundice; (6) *Dhatri arishta* (half to one ounce) is given in convalescent stage to promote appetite and nutrition; (7) *Dhatri gritam* (half to one tea-spoon) is used for *rakta pittam* and as a nutrient tonic; and (8) a preparation having the juices of Amla and sugarcandy honey, is given for piles in half to one ounce dose.

Properties of Amla—Ayurvedic Text:—

हरीतकी समं धात्रीफलं किन्तु विशेषतः ।
रक्तपित्त प्रमेहघ्नं परं वृष्यं रसायनम् ॥
हन्ति वातं तदम्लत्वात्पित्त माधुर्य्यशैत्यतः ।
कफं रूक्षकषायत्वात्फलं धात्र्यास्त्रिदोषजित् ॥
यस्य यस्य फलस्येव वीर्यं भवति यादृशम् ।
तस्य तस्यैव वीर्येण मज्जानमपि निर्दिशेत् ॥

Amlaki has got properties similar to *harithaki*, but it has some special features. It subdues *rakta pittam* and *premegam*. It is a great *aphrodisiac* (*vrishyam*) and tonic (*rasayanam*). It allays *vata* by its sour taste, allays *pitta* by its sweet taste and cold temperament *(seetha viryam)*, and allays *kapha* by its drying-up character (*ruksham*) and astringent taste. Thus *dhatri* is *tridoshaharam*. The pulp within the seed of *amlaki* has got the same temperament as that of the fruit.

Some of the properties of *harithaki*, that are said to be possessed by amalaki, are as follow:

हरीतकी पञ्चरसाऽलवणा तुवरा परम् ।
रूक्षोष्णा दीपनी मेध्या स्वादुपाका रसायनी ॥
चक्षुष्या लघुरायुष्या बृंहणी चानुलोमिनी ।
श्वासकास प्रमेहार्शः कुष्ठशोथोदरक्रिमीन् ॥
वैस्वर्यग्रहणी रोगविबन्ध विषमज्वरान् ।
गुल्माध्मानतृषाछर्दि हि क्काकण्डू हृदामयान् ॥
कामलां शूलमानाहं प्लीहानञ्च यकृत्तथा ।
अश्मरीं मूत्रकृच्छ्रञ्च मूलाद्यातञ्च नाशयेत् ॥
स्वादुतिक्त कषायत्वात्पित्तहृत्कफहृत्तुसा ।
कटुतिक्त कषायत्वादम्लत्वाद्वातहृ च्छिवा ॥
पित्तकृत्कटुकाम्लत्वाद्वातकृन्न कथं शिवा ।
प्रभावाद्दोषहन्तृत्वं सिद्धं यत्तत्प्रकाश्यते ॥

Harithaki has five tastes except saline. It has more of astringent taste. It has drying-up character and hot temperament *(ushna viryam)*. It improves intellect and is stomachic. Its *vipakam* (taste during digestion) is sweet. It is a tonic, nutrient, laxative, and *lagu* (absorbed easily into the system). It improves vision and prolongs life. It is useful for cough, dyspnœa, *premegam*, *kushtam*, *sotham* (swellings), ascites, worms, hoarse voice, *grahani*, constipation, intermittent fevers, *gulmam*, flatulence *(admanam)*, thirst, vomiting, hiccough, urticarial eruptions, diseases of the heart, jaundice, colic, intestinal obstruction *(anaham)*, enlargement of liver and spleen, stone in the urinary tract, strangury, and retention of urine. It allays *pitta* and *kapha* by its sweet, bitter and astringent tastes, and *vata* by its pungent, bitter, astringent and sour tastes. It aggravates *pittam* by its pungent and sour tastes, *vatam* is never increased by *harithaki*. The varied actions and uses of *harithaki* can be accounted only by its *prabhavam* (empirical action of drugs).

Swellings or Lumps in Lower Abdomen*

BY

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THE subject of swellings or lumps in the lower abdominal region is an interesting one—interesting from the general practitioner's point of view because the controversial point is the establishment of correct diagnosis for which purpose many consultations are held and the case is also much talked off in the surrounding area as the most puzzling one; but so far as the treatment is concerned, it is mainly surgical in the majority of cases and hence it is better in the interest of the patient's life that the case is entrusted to the care of the surgeon as early as possible. That will also help to enhance the reputation of the attending physician for the timely and proper course that he adopted.

As it is customary to arrange these different conditions in some order, we will try to classify them as follow. But for descriptive purposes, it is best and convenient to describe two or more similar conditions together under one head. I shall also try to cite some interesting cases along with each of the conditions. The classification that we adopt will be according to the positions of the swellings and the course that it takes, whether acute or chronic.

I. **Acute middle line swellings** —1. Acute umbilical abscess. 2. Strangulated ventral or umbilical hernia.

II. **Middle line chronic swellings** —1. Distended bladder. 2. Pyosalpinx. 3. Fibroid uterus. 4. Regional ileitis. 5. Pregnant uterus. 6. M. B. mesenteric glands. 7. Stone bladder. 8. Pseudo-pregnancy. 9. Gaseous distension. 10. Ovarian cyst. 11. Ascites.

III. **Right-sided acute swellings.**—1. Acute abdominal wall abscess. 2. Appendicular abscess. 3. Psoas abscess. 4. Strangulated hernia. 5. Funiculitis. 6. Acute adenitis or bubo. 7. Miliary M. B. of bowel. 8. Extrauterine pregnancay. 9. Salpingitis.

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IV. **Right-sided chronic swellings.**—1. M. B. cæcum. 2. Hydrocele of the cord. 3. Chronic enlarged glands. 4. Round worms. 5. Omental cysts. 6. Sliding hernia.

V. **Left-sided acute swellings.**—1. Abdominal wall abscess. 2. Funiculitis. 3. Filarial lymphangitis in pelvis with effusion of chyle. 4. Strangulated hernia. 5. Acute adenitis or bubo. 6. Extra-uterine pregnancy. 7. Diverticulitis with superficial abscess formation.

VI. **Chronic left-sided swellings.**—1. Meralonia in undescended testes. 2. Sliding hernia. 3. Chronic adenitis. 4. Secondary metastasis in abdomen.

Acute umbilical abscess.—The abscess generally results from umbilical sepsis–either from furuncule in the unbilicus or infection from scratching. We had a case of an aged female with an umbilical sinus discharging pus of some months duration, yet the condition was diagnosed as "patent Meckels' diverticulum discharging fæcal matter" by her physician. The whole sinus track with the umbilicus was excised but the wound again got infected fully with fowl smelling discharge. One stitch was removed and free drainage helped the healing process. Second was a case of an aged male with three inches area around the umbilicus all sloughed off. The sloughing had followed the acute abscess resulting from the umbilical sepsis. Urine was examined but sugar was absent.

Umbilical hernia.—This is more common in children, but they generally get cured spontaneously as the child grows. In adults, the umbilical hernias are not genuine umbilical but the bowel protrudes from a space a little above or below the umbilicus. The interesting points about these hernias are :—

(1) They get easily strangulated and gangrenous ;

(2) sac is generally buried in the fatty subcutaneous tissue ; and

(3) in a majority of cases, the bowel is adherent to the overlying skin and requires care during separation.

A male, aged 50 years, was brought as an emergent case for strangulated umbilical hernia. The swelling was red, painful and irreducible. During operation, the small bowel was found to be adherent to the subcutaneous tissue and also partially gangrenous but it was subsequently found to be viable. It was replaced and the recovery was uneventful except that the skin wound left a small sinus due to collection of serum in the wound. Another was a case of a male, aged 52, with umbilical hernia but no strangulation. Here also the small bowel was found to be adherent to the overlying structures and it was very gently separated and replaced in. As the bowel was always remaining out in the hernial sac, the patient complained afterwards of a feeling of fullness and tightness when the operation was completed. In both these cases the incision was vertical and elliptical in shape with the umbilicus as the centre.

Pyosalpinx, fibroid uterus, ovarian cyst.—These three conditions are difficult to diagnose clinically. All three or four cases that we had of middle line swellings in females diagnosed as fibroid uterus, surprisingly turned out to be cases of pyosalpinx. A female aged 50 years was admitted for a big swelling in the middle line—the swelling was hard to feel and fixed posteriorly with no other clinical symptoms except being

painful on deep palpation. Exploratory laparotomy was undertaken and we were suprised to find it to be a pyosalpinx—the biggest of the three or four that we had so far seen, and the worst point was that the small bowel was adherent to the top of the tumour at three or four places and separation even with gauze-stripping was a risky problem. The best course was to do the marsipulization. The tumour was so big that it could not be delivered out of the wound and to reduce the size some pus was aspirated by the syringe and then the parietal peritoneum was stitched up to the wall of the tumour and thus some area of the tumour wall was isolated from the abdominal cavity for drainage purpose. The drainage tube was retained in to drain in a bottle under the cot. Thus nearly 2 to 3 pints of pus was removed in the first two days and then as the discharge became less, the tube was replaced by a strip of rubber and gradually the wound healed.

Second was a case of a Mohammedan lady with a very intractable diabetes and pyosalpinx on the right side ; a sinus track remained behind not responding to scraping, ultraviolet rays and all kinds of dressings and hence the track was wholly excised again ; during this second manœuvre the urine showed lot of acetone and sugar not responding to the usual treatment ; still the case is hanging on in the hospital with every sign of a persisting sinus inspite of all our labour to eradicate it.

The third was a case of a Hindu woman, aged 28 years, with a swelling in the lower abdomen diagnosed as fibroid because of the consistency of the tumour and its connection with the uterus. On laparotomy, we could not at first decide as to with what it was connected and what kind of tumour it was. On examining the left tube, it was found to be missing and as the swelling was now found to be connected with the uterus—which looked quite insignificant compared to this tumour—we concluded that it was after all a pyosalpinx. The bowel was adherent to the tumour at many places and also it was adherent posteriorly, the outer sac was left in situ and the inner part removed. It afterwards formed a sinus but the latter was treated gradually. As regards the question of ovarian cyst, it has become so common that there is rarely a female whose ovary is not cystic with the only difference that the size may be variable and that it may or may not be accompanied by any symptom.

Pregnant uterus and pseudo-pregnancy.—Diagnosis of pregnancy is a very easy matter but at times a case of pseudo-pregnancy springs up when the differentiation clinically becomes a baffling problem and then X-ray is a sure guide to decide the diagnosis. I shall cite below one interesting case of a pseudo-pregnancy where a Hindu sterile female, aged 35 years, was referred to us for abdominal enlargement, amenorrhœa of 9 months' duration. The doctor during his routine examination suspected it to be a case of false pregnancy. Per vaginal examination revealed absence of pregnancy signs but the woman thinking that she was pregnant had already got her name registered in the maternity hospital. The radiogram confirmed the diagnosis of pseudo-pregnancy.

Urinary bladder.—A distended bladder is a common cause of midline swelling ; the history and examination will give an idea as regards the cause of distension.

Another but a rare cause is the stone in the bladder but the stone as such does not give rise to a swelling except due to the subsequent distension

of the bladder; only in one instance a poor Kathiawari labourer came to us one day with a small bulging just above the pubis and a history of frequent urination and a sense of heaviness. P. R. revealed the presence of very big stone in the bladder. Supra-pubic lithotomy was undertaken and the stone was of such a big size that it took nearly half an hour to extract it out of the wound and the bladder.

M. B. Mesenteric glands and regional ileitis.—Enlarged mesenteric glands feel as scattered hard mass in a thin, emaciated abdomen. Regional ileitis feels as a generalised solid mass occupying the whole lower abdomen and it resists all the ordinary methods of treatment for the loose stools it gives rise to.

Abdominal wall abscess and appendicular abscess.—Abdominal wall abscess occurs anywhere but when it is in the region of the right iliac fossa it has to be differentiated from the appendicular abscess. In wall abscess generally the hip is not kept flexed (though not always) and secondly the contour of the wall abscess becomes more pronounced by asking the patient to raise the head in the recumbent posture and with the upper extremeties by the side of the trunk. Appendicular abscess is diagnosed from the history and physical examination. The treatment of appendicular abscess is mainly conservative but hospitalization of the patient should be the rule because he can be kept there under the surgeon's observation and the operation undertaken, if decided necessary, by the surgeon. The points necessitating an operation are the increasing pulse count, no subsidence in the size of the swelling, no alleviation in the pain and the report of blood count. A male, aged about 48 years, was admitted for acute appendicular abscess and very troublesome hiccough. He was already given Glucose intravenously at home and in the hospital for the hiccough and toxæmia but to no effect. P. R. revealed a mass in R. I. F. He was kept under observation and on conservative line of treatment but the toxæmia, pulse count, the size of the swelling and the amount of pain—all went on increasing with no relief of hiccough and we thought of draining the abscess; the only unfavourable point in this case was that the percussion over the mass revealed a tympanitic note suggesting the presence of a distended bowel over the lump. But as the case was not progressing at all towards recovery under the conservative treatment, the abdomen was opened very carefully to drain the abscess but the already distended appendix burst just then, forming the fœcal fistula. The patient ultimately expired on the third or fourth day with hiccough remaining up to the last moment. A male, aged 32 years, was brought for appendicular abscess and it was found necessary to drain it and hence operation was undertaken. During operation, as soon as the abdominal wall was opened sloughs began to come out; they were gently caught with artery forceps and removed; one of the sloughs, to our surprise, proved to be the sloughed off last of the appendix itself come out as a whole. A small rubber strip was just retained in the wound to drain the abscess. Two interesing points about this case are:—(1) that the patient recovered without the misfortune of developing the fœcal fistula which was anticipated in this case, and (2) that he was fortunately saved from undergoing the second operation of appendicectomy as it was already cast off as a slough.

Another was a case of a Sailor who came to us with an appendicular abscess which was incised and drained. The rubber tube kept as a drainage pressed upon the bowel because it was a bit longer and kept longer than necessary that it gave rise to a fœcal fistula. A small rubber strip was substituted and kept just in the wound superficially to drain it; by this change, the fistula gradually healed. The appendicular abscess must be given a thorough chance of clearing off under the conservative treatment and, if at all drained, the rubber strip should only be used as a drainage and that it must be superficially retained only.

Psoas Abscess.—This generally results from tuberculous spine and if it bursts superficially it leaves behind a very bad sinus. When the abscess is only pyogenic, the pus is deeply situated extra-peritoneally and requires only drainage to cure it. The swelling appears in the inguinal region, there is fever and the hip is usually kept flexed to relieve the psoas muscle from the spasm and from the pain. A girl, aged 18 years, was brought for painful inguinal swelling. The history of the case was that the swelling first appeared in the thigh with fever, the former then shifted to the inguinal region, the fever continuing. Extra-peritoneal drainage set everything right.

Another is a case of a sweeper, aged 52 years, who was operated upon for right-sided indirect inguinal hernia some two months before the day he again came to us with a history that he developed painful swelling of the thigh extending the R.I.F. and fever some 10–15 days after the discharge from the hospital. The physical examination revealed an œdematous swelling R.I.F. the inner aspect of thigh and some œdema in left iliac fossa and flexed hip-joint. The œdema skin suggested a deep suppuration and exploration with the needle showed frank pus on both sides. The incision was taken in the left iliac fossa and the pus began to pour out in bucketfuls; it was as if the whole pelvic cellular tissue was converted into a big reservoir of pus and communicating with the thigh because the thigh swelling gradually diminished. The patient is still in the hospital with inability to extend the right hip, the pain and swelling on the joint still persisting and the pus pouring out of the L. I. F. It now appears to be a case of right pyoarthiosis of hip communicating with the pelvic cavity.

Salpingitis.—Here the mass that we feel is a bit lower down than the appendicular abscess and there is generally a history of gonorrhœa and sterility. Injection of pure milk, calcium with iodine and diathermy relieve the symptoms.

Hernia and funiculitis.—Strangulated or obstructed hernia is easy to diagnose. Funiculitis sometimes simulate an attack of inflamed hernia as in one of our cases a patient was brought in an emergency by a doctor with the history that while on duty the patient developed an acute pain and swelling in the right inguinal region with fever and vomiting. The case looked like a strangulated hernia. During operation, the cord felt swollen and inflamed and an incision brought out the pus. This was only a case of funiculitis and drainage improved the condition. I remember an instance where an acute inguinal abscess was diagnosed as strangulated hernia by two surgeons and the incisions revealed the true state of affairs!

Extra-uterine pregnancy.—This condition when occurring on the right side may at times resemble an acute appendicitis. The history of ectopic is acute pain in the right or left side of the abdomen and slight bleeding per vaginum and very weak pulse. The history of missed period may or may

not be there because the pain may have supervened before there is time for the next period to appear. Another interesting point about this ectopic is that the patient is generally in a state of collapse with a very weak pulse due to internal hæmorrhage that is going on and during operation as all the blood clots are removed and the bleeding is checked—the pulse improves marvellously.

Tuberculous cæcum takes the lead in the chronic right-sided lumps in the abdomen because of its frequent occurrence. The appearance of the patient is only suggestive of the condition and the history is of chronic pain in the R.I.F. with or without frequency of loose stools. Short-circuiting operation with no excision has proved to be the operation of choice with us.

Round-worms.—Somewhere I have described an interesting case of round-worm where a female, aged 28, years was admitted for acute pain in the R.I.F., vomiting and no fever; the bowels were costive. The provisional diagnosis was acute appendicitis and arrangements were made to shift her to the surgical side but luckily she passed one round-worm in the stools and Santonin and Calomel was tried with the result that in the stools she passed one big mass of entangled round-worms with the disappearance of the lump in R.I.F. and relief of all other symptoms.

Hydrocele of the cord and chronic adenitis.—Hydrocele of the cord is to be differentiated from bubonoale in children and even if it is not differentiated, the treatment is only surgical. Chronically enlarged glands offer no difficulty in the diagnosis,but it is difficult to ascertain the cause of their enlargement. Recently I saw a case of bilateral enlargement of inguinal glands of a chronic duration. The palpation of that mass revealed the cotton-like softness and the glandular portion only felt on deep palpation. On the top of this, the patient had inguinal hernia for which herniotomy was performed.

Omental cysts.—This is a rare entity. One K.G., aged about 40 years, was admitted for a cystic swelling in the right lumbar region of five years' duration with no symptoms except that when the lump was pressed, it was painful. The condition was clinically diagnosed as mesenteric cysts by the surgeon and on laparotomy, the cysts were alright but they were in the omentum; one was a small one and the other a big one but adherent posteriorly and with difficulty it was delivered out of the wound.

Sliding hernia.– This is the protrusion of colon, appendix, or bladder with no definite hernial sac. It is difficult in these cases to ligature the sac but the peritoneum can be sutured in the usual way. In spite of all these, the chances of recurrence in these hernias are many.

Diverticulitis with superficial abscess formation.—This does not seem to be a very common condition. It means an inflammation in the diverticulum or saccule of the descending colon. The history is of chronic pain in L.I.F. with repeated acute attacks. It is also termed as "appendicitis on the left side" because signs, symptoms and sequelæ are nearly the same. Superficial abscess formation is one of the results. A female, aged 45 years, came with an acute painful swelling in L.I.F. with fever and occasional vomiting. It was a deep abscess in connection with the colon and drained.

Another very interesting case was of a male of 40 years of age admitted for acute painful swelling in the hypogastric region with no definite margin, the swelling was red, painful, and accompanied with fever. The conjunctiva and sclera were of intense yellow colour and the urine highly bile-stained, suggesting the presence of jaundice. The patient said that the jaundice was of very long duration and was not related to the swelling. The swelling was diagnosed as pelvic abscess and the abdomen was explored extra-peritoneally, but not a drop of pus was detected. After a little more search with the exploring needle extra peritoneally, a collection of chylous fluid (bile-stained) was detected in the pelvic cavity and behind the urinary bladder. It was drained by a long tube retained in. This was a case of chylous collection in pelvic cavity.

A young male, aged 28 years, came with a painful swelling of nearly cricket-ball size in the left inguinal region, emaciation and low temperature. The duration of the swelling was nearly ten years but it had recently increased rapidly and become more painful and there was pain in the abdomen. At first sight, I mistook it for encysted hydrocele of the cord but on palpation the basal portion felt very hard and the abdomen above the mass revealed a very hard mass in the whole left side of the abdomen and the left side of the scrotum was empty. It was a case of teratoma in the left undescended testes with secondary intra-abdominal metastasis. The prognosis as regards the patient's life was hopeless but for the academic interest only, it was decided to remove the testicular mass. The removal of testicular mass showed that it was continuous with the mass inside the abdomen and separation of the two was difficult and likely to tear off the portion of the peritoneum which was adherent to it. Anyway the outside mass was removed and on section examination, the inside was made of cavities and solid fibrous areas resembling the fibrocystic disease.

This does not complete the whole list of swellings in the lower abdomen but I have endeavoured here to enumerate and describe those conditions, which I had come across and proved interesting from the diagnostic point.

As the majority of cases that are cited here belong to DR. Y. M. SUBHEDAR, the Chief Medical Officer of our Institution, I offer him my thanks for allowing me to publish these case-notes and also for his valuable suggestions from time to time.

The Sulphonamide and its Scope in the Diseases of the Eye*

BY

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MANY chemical substances which have destructive influence on pathogenic organisms more or less have poisonous effect on the human system in higher concentrations required to kill the invading organisms. The introduction of the Sulphanilamide group of drugs in the treatment of bacterial infection is one of the greatest chemo-therapeutic achievements ranking in importance with the discovery of Arsenobenzene (Salvarsan) by EHRLICH in 1910, in the treatment of spirochætal infections. From this time onward workers were engaged in finding out a chemo-therapeutic agent having more parasitotropic than organotropic properties. Workers like GLEMO in 1903, HERELIN, DRESSE and KOIHI in 1907 and others described bactericidal action of certain azo compounds in vitro but no action in vivo in mice. Nothing definite came out till 1935 when DOMAGK reported the antibacterial action of a synthetic dye-sulphonamide chrysodine, which was discovered by MEITZSCH and KLARER in 1932. This compound was introduced in the market under the name of Prontosil. It was after the publication of the papers on the marked beneficial effect of Prontosil in puerperal sepsis by COLEBROOK and COLEBROOK and KENNY, much interest was shown by others. On investigation, various workers proved that this bactericidal action of the eye is due to para-amino-benzene Sulphonamide radicle. Further it was shown (1937) that the dye breaks up in the body to Sulphonamide, which is responsible for its antibacterial activity.

Chemistry—its action, absorption and excretion.—Sulphanilamide—is a para-Amino-Benzene sulphonamide, which is the mother substance of all derivatives. If to the structural formula of the Benzene ring H_2N is combined, Amino Benzene is formed. If Sulphonamide group is attached to the Amino-Benzene radicle, Para-Amino-Benzene Sulphonamide is formed. This compound according to FULLER is Sulphanilamide. Thus Sulphanilamide contains two groups namely Amino-group and the Sulphon-group. The compounds formed by the various substitution in the Amino-group are Prontosil, Rubiazol, Urea Sulphazide, Soluseptisin, Proseptasin, etc., and the compounds formed by the substitution of the sulphon group are albucid, uleron etc.

Sulphanilamide is a white crystalline powder soluble to approximately 0.8% in water or normal saline solution at the body temperature. It is readily and completely absorbed by mouth and within 3-4 hours after ingestion it reaches maximum concentration in the blood. This concentration gradually diminishes and reaches the zero point within about 24 hours after administration of a single dose. A small proportion of the drug is changed to acetyl derivative in the body. This new compound behaves in the same way as that of Sulphanilamide itself except that it is inactive against the infectious agents. The quantity of the acetylated compound formation varies in different animals. Thus it is found to be higher in

* Specially contributed to 'The Antiseptic.'

rabbits and lower in human beings. The total concentration of the Sulphanilamides in the blood is the concentration of unchanged form plus the acetylated form. Without going into details about the optimum concentrations required for various pathogenic organisms, it has been advocated by many that a blood concentration of approximately 10 mg.–15 mg. per cent. maintained with comparative safety for a number of days, may be effective against all infections for all practical purposes. This concentration can be maintained for a longer time by the oral administration of given dosage on the basis of the body weight, provided the renal function is normal.

Sulphanilamide is a most diffusible substance and very easily attains a concentration in various fluids in the body, such as spinal fluid, ascitic fluid, etc. The effectiveness of Sulphanilamide against many different species of bacteria in vitro and its poor activity as an anti-bactericidal in vivo created extraordinary interest amongst workers. As to their mode of action several theories have been put forward from time to time. Without going into details, or discussing the merits and demerits of these, they may be stated to be as follow:

(1) that they act on the bacteria themselves either by interfering with the invasive power or ability—bacteriostatic theory;

(2) that these drugs are bactericidal to certain organisms;

(3) that they act by increasing the defensive mechanism in the body by stimulating natural body defences;

(4) that they bring about certain change in the susceptible organisms or in the environment of the organism, thus helping their easy phagocytosis;

(5) that they probably act by neutralising or interfering with some metabolic function or enzymotic activity of the organisms; and,

(6) by neutralising the toxins formed by the organisms in the body.

Of the various theories expounded above, the most accepted one being the bacteriostatic effect on infectious agents without altering normal immunity of the body against the infection. As the Sulphanilamides are mainly excreted by the kidneys and as it is accompanied by loss of fixed base, it is advisable to administer with Sodibicarb as prophylaxis against acidosis.

Review of ophthalmic literatures on the use of Sulphonamides.—Much has been written about the use of Sulphanilamides—(per mouth) by continental workers in cases of ophthalmia neonatorum, conjunctivitis, orbital abscess, panophthalmitis, cornçal ulcers, trachoma, corneal abscess with hypopeon, sympathetic ophthalmia, herpetic affections of the cornea, dendritic ulcers, etc. I will deal here only with those literatures dealing with the local application of Sulphonamides. For successful local treatment with sulphanilamide therapy, it is very necessary to see that an adequate concentration of this drug is maintained for a number of days without giving rise to any unwanted reaction either at the site or in the system.

1. T. H. LUO in 1940 published a paper dealing with the concentration of sulphanilamides in the aqueous humour of human eyes with special reference to local application. When powder is used, according to

him, the concentration in the aqueous was found to be considerably higher than blood, without any untoward result.

2. GUYTON in 1941 published a paper dealing elaborately on his experimental observations on various aqueous concentrations attained after local application of Sulphanilamides either in the form of solutions or ointments.

Aqueous Sulphanilamide concentrations obtained after instillation of 0.8% solution of the drug into the conjunctival sac of rabbits are between 8.7 mg. to 3.3 mg%. The optimum blood and aqueous concentration after oral therapy ranges between 5-15 mg%. He proved, on the basis of his experiments that Sulphanilamide ointments are more satisfactory than fluid preparations in attaining high aqueous level. A number of different bases containing Sulphanilamides in 5% concentration were used locally in the conjunctival sac. The concentration level ranges between 13.5 mg.% to 36.2 mg. %. The ointment with Tragacanth-Glyserin base produced only 1.8 mg%. to 5.7 mg%. According to him the use of Sulphanilamide in ointment form is the best way to maintain an even high concentration of the drug within the conjunctival sac. The experimental observation of RAMBO and the clinical observations of REIN and TIBBETTS demonstrate that this type (local) of therapy is the best way to maintain a high concentration of the drug within the conjunctival sac.

Logically it is hoped, therefore, that the local application of Sulphanilamide ointment would produce a more beneficial effect on the corneal infection than on conjunctival infections as it is difficult to put the ointment into the crevices of the upper fornix.

3. It was in 1942 that ROBSON and SCOTT published a paper dealing elaborately with the study of the action of sulphanilamides locally in the eye and in doing so they undertook the experimental investigation by producing local lesions of equal size in both the eyes of the rabbits under anæsthesia by removing the corneal epithelium with discission needles. The lesions in both the eyes were inoculated with a 24 hour culture of B. Pyocyaneous by means of a metal loop. They studied the effects of sulphanilamide at periods 1,5,12 hours after inoculation of the culture on the eye, keeping the other eye as control. In selecting which Sulphonamides to use, they attributed the following properties of a Sulphanilamide essential to produce the concentration and maximum effect, when applied locally:

1. It should possess high solubility to produce high level concentration.
2. It should be non-irritant and have high penetrating power into the various tissues.
3. The solution must maintain its neutral character.

They, in their investigation, found the sulphanilamides effective when applied locally.

4. MEYER, BLOCH and CHAMBERLAIN published in 1941 the result of their experimental studies on the sulphanilamide concentrations when applied locally. They found that the drug concentration in the cornea in the first few hours, followed in its general trend the concentration as of the blood and aqueous humour but after 7 hours the corneal concentration was equal or higher than that of the blood. After 7½ hours the same relationship was obtained in 8 out of 9 animals. From their experiments it is evident that Sulphapyridine and still more Sulphanilamide, at physiological PH, are strongly absorbed.

5. A definite improvement was noticed by SMITH, JULIANELLE and GORMET in all of their patients with Neo-Prontosil when applied locally.

6. REIN and TIBBETS use 0-5% Sulphanilamide solutions as a conjunctival irrigation every 15 minutes in treating the cases of gonococcal conjunctivitis with no other systemic infection due to gonorrhœa. No other treatment was used. The average number of days before a negative smear was obtained was 6.8 in comparison with 27.2 days in a control series treated by earlier methods.

7. RAMBO has shown in his article in 1938 that with he irrigation of conj. sac with sulphanilamide solution no irritation whatsoever was noticed and injection of sulphanilamide into the anterior chamber of the rabbits prevented the infection when Streptococci were inoculated.

8. BRAV in the treatment of recurrent trachomatous ulceration of the cornea using Neo-Prontosil 2½% locally along with Sulphanilamide-5 grs. at a time, thrice daily, found that on the 6th day of the treatment there was no pain and no further ulceration.

9. Clinical observations and deductions by YOUNG on the use of *red prontosil soluble* show that it can be safely used not only as a curative agent in many infections of the eye but also as a prophylactic measure: (*a*) To prevent secondary infections in all traumatic lesions of the globe and its adnexa: (*b*) to prevent complications arising out of some infections of cornea and conjunctiva; and (*c*) in before or after all operative procedures on the globe and its adnexa.

According to him it can be used as a diagnostic agent for determining clinically the active areas of inflammation along with the extent of healing at any moment.

From the review of all these literatures it can be assumed that by local use of Sulphonamide—

1. In a majority of cases, no ocular complications were noticed.
2. No cases of allergy on the local use of Sulphanilamide have been reported.
3. The economic advantages in the shape of reduction of the period of hospitalization than that required by the use of other standard measures.
4. Ointments in suitable strength are more handy and remain in prolonged contact with the diseased part than the solutions which require instillation every ½ an hour to 2 hours to attain optimum Sulphanilamide concentration in the cornea, in the conjunctival sac, in the aqueous humour or in other parts of the eye.

In my series of cases I have selected Urea-Sulphazide in the form of ointments, tablet and solution (red). This Sulphanilamide belongs to the Para-Amino group with the change that two Sodium radicals are replaced by Urea. It offers Urea in addition to the bacteriostatic action of the Sulphanilamide. It was in 1915 that SYMNCERS investigated the presence of antibacterial properties of Urea. KIRK in 1935 used Urea in the treatment of wounds and found it produced rapid healing. This finding of KIRK was corroborated by ROBINSON in 1936, HOLDER and MACKEY in 1938 and lastly by STONHAM in 1941. Urea was found to be effective as :—

1. An adjunct to wound healing, due primarily to lytic action of the aqueous solutions upon the necrotic tissues and other debris.

2. The carbamide granulation tissue is healthier and more vascularized.

3. In addition to the lytic action, Urea is almost non-irritating to the living tissues, even when they are placed in contact with them in 100% concentrations and it is a stable bactericide on many forms of organisms.

4. Urea has little or no osmotic effect and is freely soluble and diffusible through most animal membranes and thus get soon absorbed and excreted.

STONHAM suggested the combined treatment of Urea with Sulphanilamide.

Review of the cases :—Theoretically local chemotherapy in localised infections is a logical procedure. The use of Sulphanilamide as an ointment is the best way to maintain an even high concentration of the drug within the conjunctival sac or in the cornea, without too frequent instillations. It is also true that the local application of Sulphanilamide ointment should produce more beneficial effect on corneal infections than conjunctival infections because it is difficult to get the ointment up into the crevices of the upper fornix. With these ends in view I was inclined to use Urea Sulphazide both in the form of tablets and ointment (EYELEX) marketted by Messrs. Union Drug Co., Ltd.

I. **In Conjunctivitis.**—*Bilateral Cat. Conj* :—(1) Forty-one (41) cases with bilateral catarrhal conjunctivitis (no definite organisms were detected on pathological examination of the smear and cultures were not possible) were treated with Silver Nitrate 1% plus Eyelex in one eye and Silver Nitrate 1%-2% as a control in the other eye. Eyelex was used 2-3 times daily on an average. Those cases with Silver Nitrate and Eyelex were cured within 5-6 days while the control cases with Silver Nitrate took 9-10 days for cure.

(2) Thirteen (13) cases with bilateral catarrhal conjunctivitis (no definite organisms were detected) were treated with Eyelex only. Cure was effected within 6-7 days.

One distinctive feature of the application of Eyelex ointment is that there is an early relief of subjective symptoms. The discharge is markedly less from the very next day and along with this gritty sensation, photophobia and pain disappeared on the 3rd day. Then gradually redness passes off.

Pneumococcal conjunctivitis :—(1) Seven cases with pneumococcal conjunctivitis were treated with Eyelex ointment three times a day. The swelling of the lids was less from the 2nd day and disappeared on the 4th day of the treatment and was cured within 6-7 days.

Kochweek's conjunctivitis :—(1) One patient with conjunctivitis due to pneumococcus and Kochweek's bacillus was treated with Eyelex and was cured within 9-10 days.

(2) Four patients with bilateral Kochweek's conjunctivitis were treated with Silver Nitrate 1% in one eye and Eyelex only in the other eye. In all these cases the eyes with Eyelex did not respond satisfactorily, thus showing that Eyelex is not so efficacious when compared to Silver Nitrate is Kochweek's conjunctivitis.

Gonococcal conjunctivitis :—Treatment of gonococcal infection of the human eye has as its immediate objective the early eradication of the gonococcus and its toxin from the conjunctiva and superficial layers of the cornea. The speed of this successful attack will directly influence the prevention of corneal complications. Two cases of gonococcal conjunctivitis were treated with Silver Nitrate 1% and Eyelex 3 times a day, with the addition of Urea Sulphazide tablets orally—20 grs. a day. At the end of 48 hours remarkable change such as the cornea became clearer and brighter, stoppage of purulent discharge, receding of the œdema of the lids occurred. The patient was cured after 7–8 days' treatment. To observe the effect of Eyelex alone one patient was treated with it. As the patient did not turn up from the 4th day, it was not possible to study the effect of this form of treatment. But he was markedly improved clinically.

II. **Corneal Ulcer.**—The high values reported by PAN for optimum corneal concentration after the local application of Sulphanilamide and the strong adsorptive power of the cornea for this drug suggests its especial applicability for corneal infections. The results of treatment of infected corneal ulcers with Sulphanilamide ointment have been most encouraging. Obviously no controls could be run in the case of ulcers. Yet the fact is that in every case of infected corneal ulcers in which Eyelax was used there was complete healing and the majority of the ulcers healed quite promptly.

(1) Seven cases of ulcers of undetermined etiology, three with hypopeon were completely healed within a period of 6—7 days without exception. The symptom of irritation and the progress of the ulcers were stopped within a day or two. To see the scope of Eyelex in hypopeon without chemical cauterization, one such case was treated with Eyelex alone which proved itself efficacious.

(2) One case of ulcer (due to Kochweek's infection) with slight hypopeon healed completely within 8 days. Pain, lachrimation, and photophobia disappeared within 3 days. Circumcorneal infection disappeared between 4—5th day.

N. B. :—In one case of corneal ulcer with hypopeon, Urea Sulphazide 5% (red solution) was injected intramuscularly. Two injections were quite sufficient to control the progressing ulcer. Eyelex was also used along with it 3 times daily. The ulcer healed within 6 days.

III. **Trachoma.**—While local application of metallic salts (silver, copper, etc.) has been established as perhaps the most reliable of the choices available, they nevertheless have certain limitations, since such treatments are painful, prolonged and scar-producing and their result is uncertain as frequent recurrences testify themselves. The introduction of Sulphanilamide or its derivatives as new therapeutic agents for trachoma is a recent example of the efforts continuously made to perfect the treatment of this disease. The prognosis for trachoma as observed in the out-patient clinics has in the past been very unfavourable on account of the lengthy period required to effect a cure and the great difficulty of maintaining the patients co-operation for the necessity of frequent and painful treatments. Patients' as a rule in a majority of cases, seek treatment only for acute or sub-acute exacerbations particularly when corneal ulceration or trichiasis is present, with the result that their disease

continues active over a period of many years. It seemed therefore that the possibility of spontaneous healing, if it was obtained, would necessarily be significant. JULIANELLE, in speaking of the infectious agent of trachoma concludes that it "is a virus of remarkable frailty succumbing before physical and chemical agents tolerated by numerous other bacterial and viral agents. Biologically it may be characterised as possessing a low infectivity, weak propagative power, infrequent filterability and poorly immunogenic properties." It may be that this is one infectious agent on which Sulphanilamide even in low concentration (such as 2.5%) exerts a destructive rather than merely an inhibitory effect.

Eyelex along with oral therapy of Sulphanilamide was used in 58 cases with trachoma for periods ranging from 10 days to 25 days. Diagnosis was made on the clinical grounds. No inclusion bodies could be found in any. These cases may be classified under the following groups:

1st group:—Consisting of eleven patients in whom infection was essentially limited to the lids and with beginning pannus without corneal infiltration. (MacCallan types I & II).

2nd group:—Consisting of fifteen in number, showed varying degrees of activity of the lids and cornea. (MacCallan types II and III).

3rd group:—Consisting of 32 in number with predominant corneal lesions.

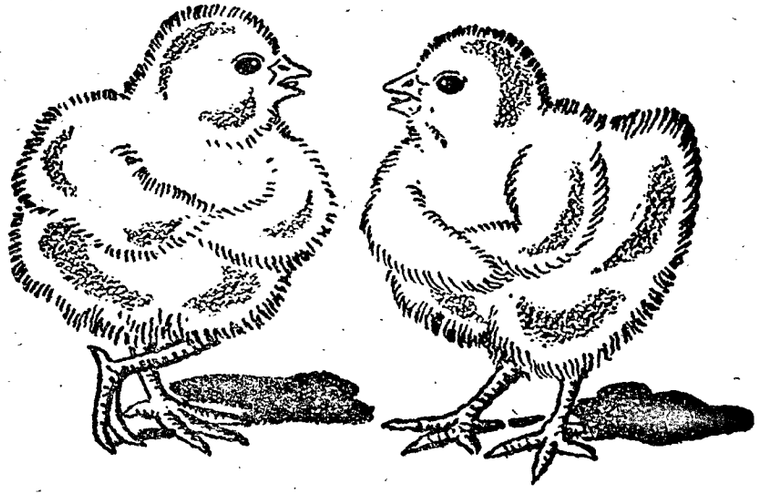
In the 1st group, which would otherwise have been treated with grattage, only one patient showed some improvements while the remaining 10 patients remained unchanged.

In the 2nd group, 9 (nine) patients showed definite improvement and 6 (six) patients remained unchanged.

In the 3rd group, twenty patients showed definite improvement and 12 patients showed little or no improvement. In this group the improvement was rapid. Urea Sulphazide tablets per mouth along with Eyelex locally were used in all those cases. There was improvement not only subjectively but even clinically. The improvement was discernible within 5–10 days. In cases exhibiting severe corneal symptoms the effect of sulphanilamide therapy was most dramatic, photophobia disappeared within 48 hours. Ulceration and infiltrations healing within 15 days on an average.

It is noteworthy that the promptness with which the subjective and objective symptoms of corneal trachoma have subsided under the influence of the drug in contrast to the relatively slow changes in the conjunctival changes. The cases classed as "definitely improved" all showed satisfactory amelioration of subjective symptoms particularly those derived from the cornea. It would appear that relatively a vascular lymphoid tissue of the trachoma follicles absorbs much more slowly than the cellular infiltrations producing papillary hypertrophy. All stages of trachomatous pannus responded to the drug, the response being most rapid in the cases of incipient pannus. The vessels of the pannus became thinner and less distinct within 7–10 days after the treatment was begun. There was improvement of visual acuity with this combined therapy.

Summary and Conclusions.—1. A review of correlated literature is made.



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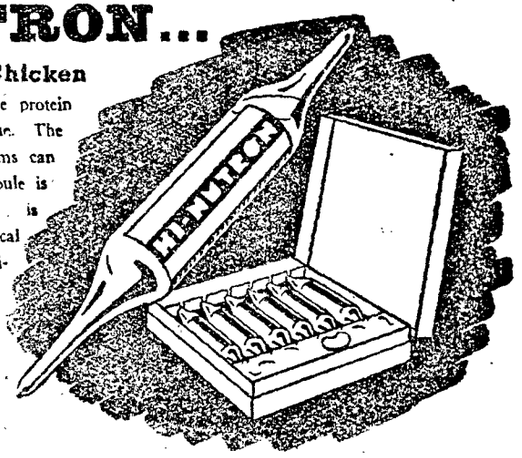

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2. Conjunctivitis:—In catarrhal conjunctivitis due to ordinary infections, Eyelex ointment proved to be of value in early relief of symptoms (subjective) and also in the period of treatment. In cases of pneumococcal and gonococcal conjunctivitis, it is of great curative value. It has failed in Kochweek's conjunctivitis.

3. Corneal Ulcers—Encouraging results have been obtained with the use of Eyelex ointment in the treatment of infected corneal ulcers. Superficial ulcers healed up more quickly than the deep ulcers with hypopeon. It has certainly proved itself efficacious without any necessary treatment save Atropine drops.

4. Trachoma—Eyelex along with Urea Sulphazide tablet per mouth causes a disappearance of all subjective symptoms and an improvement of varying degrees in the clinical condition. Corneal lesions respond more rapidly than the conjunctival. The papillary hypertrophy regressed much more rapidly than follicular hypertrophy.

5. Treatment with Eyelex was entirely harmless even when used for a prolonged period. Ocular complications were nil. No untoward manifestations were noticed in cases treated with Urea Sulphazide tablets. Both these can therefore be used as a regular out-patient therapy.

Contra-indications and incompatibles do not appear to exist with the local use of the sulphanilamide ointment (Eyelex). This ointment is non-irritant and easily miscible antiseptic ointment.

6. The use of sulphanilamide in ointment form (Eyelex) is the best way to maintain an even high concentration of the drug within the conjunctiva and cornea, without the tedious process of too frequent instillation of the solution.

7. In my opinion a higher percentage (10%) of the ointment should be more efficacious in ocular infections when 5% ointment took longer time for treating or failed.

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Phlyctenular Ulcers of the Cornea and Conjunctiva *

BY

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PHLYCTENULAR ulcers of the cornea and conjunctiva is one of the most common eye diseases of childhood and youth. Poverty, insanitary surroundings, tuberculosis and measles will predispose the attack. It is known by various names such as pustular conjunctivitis, scrofular ophthalmia, etc.

It is characterised by appearance of grayish elevations or nodules about the size of the millet seed at some part of the conjunctiva, cornea or at the limbus. The nodule is generally surrounded by an area of conjunctival hyperæmia while the rest of the conjunctiva is normal. The nodules get ulcerated at its apex and in the normal course healing takes place within one or two weeks-without any change in conjunctiva or cornea.

Sometimes the nodules disappear without going to the stage of ulceration. In severe type exudation may appear in the deeper layer of the cornea resulting in destruction. SUSRUTA describes this disease as an inflammatory swelling of the eyelid dotted with minute punctures like the pores in the stem of a water-soaked lotus (Visa-vartama).

The ætiology of the disease is still an unsolved problem though the disease was recognised from time immemorial. ARNOLD SORSBY in his Hunterian Lectures delivered at the Royal College of Surgeons on Jan. 30th, 1942, dealt with this subject exhaustively on his experiments conducted in White Oak Hospital and came to the following conclusion:—"Phlyctenular ophthalmia is a manifestation, not of any tubercular disease, but of tubercular infection, the phlycten making its appearance only when a hyper-allergic phase is present and there is suitable (specific) exciting factor of endogenous or exogenous origin.

It is suggested that the age distribution, sex incidence and seasonal variation seen in phlyctenulosis are best explained on the assumption that the affection is tubercular in character.

The prognosis of the phlycten is graver than that of a positive tuberculin reaction in a child.

His results were confirmed by the following data :—

(1) Positive tubercular reaction in 84.8% of phlyctenular cases.

(2) Family history of tuberculosis in 28.9% of phlyctenular cases.

(3) Personal history of tuberculous disease.

(4) History of previous phlyctenulosis in adults suffering from tuberculosis.

Treatment.—The treatment is more general than local. Fresh air, good and nutritious food and Cod-liver oil will go a long way in combating the course of the disease.

* Specially contributed to 'The Antiseptic,'

Locally Saline or Boric wash and Calomel dusting over the phlyctenules are some of the common remedies employed.

Recently I have been trying the following line of treatment which I found to be more useful and lasting than the time-old remedy. Locally—Saline wash, Calomel dusting in the morning and in the evening and at bed time an ointment consisting of Halibut-liver oil 10% and Yellow oxide of mercury 2% is applied with best results.

By mouth—Sulphanilamide three tablets a day for three days and they are then discontinued. Cod-liver oil or Shark-liver oil is advised by mouth for two months.

Injections.—Prepalain (Vitamin A concentrate) is injected on alternate days for about dozen times. Later on he is advised to undergo a course of Tuberculine.

Reasons.—Halibut-liver oil and vitamin A are used in view of their anti-infective properties. Sulphanilamide is advised as a bacteriostatic, tuberculin is advised to avoid relapses and to give immunity to the body against tubercle bacilli.

Case Notes.—Miss K., aged 8 years, suffering from phlyctenular ulcers of the cornea since fifteen days. She is having fever, cough, reduction in weight ; gave history of tuberculosis for her mother who expired about six months back.

Treatment.—Sulphanilamide tablets three a day for the first three days, Cod-liver oil for one month, Prepalain six ampoules on alternate days. Locally—Calomel dusting, Halibut-liver oil cum yellow oxide of mercury ointment in the morning and in the evening and at bedtime. Improvement is noticed within three days. Calomel dusting is dropped on the third day. The ointment is continued for one month. Later she was given a course of tuberculine and anti-tubercular treatment.

Case No. II :—Miss G., phlyctenular ulcers of the conjunctiva—no temperature—no cough—and no signs of tuberculosis treatment. Locally Calomel dusting, Halibut-liver oil cum yellow oxide of mercury ointment are advised and Prepalain injections are being given.

Both the cases improved very well without relapses and scar formation over the cornea or conjunctiva.

I am indebted to the authors of various articles, appearing in several Medical Journals for the information I have gathered and the South Indian Eye Laboratory for supplying me with the necessary ointments.

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Infantile Beri-beri*

BY

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THIS particular disease occurs specially in the Phillipines and Japan. It has got an interesting historical background. Most of the work on this disease is done by the Japanese workers. HIROBE in 1888 was the first to describe this affection in infants at the breast, and gave the name of infantile beri-beri. It is worthy of note that in 1928 the Australian Government prohibited the native inhabitants of Nauru (a Pacific Island) from taking the fermented toddy made from the coconut palm. Soon after it was found that infantile beri-beri became widespread. On this occasion BRAY observed that all the infants who developed this were breastfed. and none of the adults nor the mothers showed any signs of this disease. The usual diet of the natives consisted of white flour, meat and sugar. This condition responded well to the treatment by an emulsion of yeast. So BRAY concluded that the mothers were suffering from latent or clinical beri-beri, thus differing from HIROBE, who believed it to be due to a toxin in the mother's milk. BRAY confirmed his conclusions by finding that the chickens fed on these mothers' milk developed polyneuritis. CHAMBERIAIN also obtained good results by giving polishings of rice.

The Toxic Milk Theory.—The Japanese workers, ASAKURA and OSAKO (1932) considered that milk of women suffering from vitamin B deficiency contains a toxic substance. SUZUKI showed this toxin was Methylglyoxal. SATO confirmed this by showing that when Methylglyoxal was administered to rabbits, it produced pathological changes in the heart similar to those found in infantile beri-beri.

Later on MRS. LYDIA FEHILY (1941) after some observations made in China became a supporter of this theory.

VOGTMOLLER of Denmark holds another view. He believes that the symptoms of the disease were due to poisoning by Methylglyoxal, which accumulated in consequence of failure to normal dismutation due to faulty action of the coenzyme glutathione.

Pyruvic Acid Theory.— Original researches by PETERS at Oxford and later on by PLATT and LU at Shanghai brought out some evidence in favour of pyruvic acid theory. They showed that there is always a rise in the pyruvic acid content of the blood in these subjects, but it is unlikely to be the direct cause of the cardiac symptoms. Afterwards it was shown that Methylglyoxal was also present along with the Pyruvic Acid. Thus in adult beri-beri this toxic substance would accumulate in the blood and the suckling would receive it in its mother's blood.

Glutathione Deficiency.—It is questioned out by some, whether there is any such thing as primary glutathione deficiency. Some of the observations on infantile beri-beri are suggestive of this, because better results were obtained in the treatment of this affection by Yeast, a preparation which, besides being a rich source of Vitamin B_1, possesses a glutathione content of 130 mg. per 100 cc. Marmite and rice polishings were comparatively less effective. (WOODWORD.)

* Specially contributed to 'The Antiseptic.'

Thus having considered all this the cause of the high incidence of infantile beri-beri in Nauru could be determined as follows. That the mothers were suffering from latent beri-beri and they accumulated pyruvic acid in their tissues which inhibited the action of glutathione on methylglyoxal, and this being excreted in their milk, the infants suffered from methylglyoxal poisoning.

At any rate all this work is still to be confirmed by further researches.

Symptoms.—Every practitioner should be familiar with the symptomatology as this condition is likely to occur under the prevailing war conditions. More than 50% of the cases show symptoms between the third and the fourth week of life.

It occurs both in acute and chronic forms. In chronic form usually the early symptoms are disinclination for the breast with spilling of the milk from the mouth, but water is eagerly taken. Anorexia, restlessness, vomiting, constipation or diarrhœa, abdominal tenderness especially over the liver, and gastric distention accompanied by colicky pain with paroxysmal screaming are not infrequently present.

Pulse rate increases up to 200, generalised œdema and dyspnœa occur; other signs of cardiac insufficiency as cyanosis, pulmonary congestion, enlarged heart and enlarged liver are seen. Later on signs of intra-cranial pressure develop. Aphonia is often striking due to œdema of the larynx. Loss of knee jerks is present in 75% of cases. Each phase may last for some hours or at the most a day or two. In acute cases the signs develop rapidly and death ensues.

Treatment.—The essential point in treating the disease is not to let the mothers suffer from latent or clinical beri-beri. 1-2 mg. of vitamin B_1 daily must be taken by every mother. Commonly Yeast, marmite and other preparations of vitamin B_1 are usually employed. AYKROYD and KRISHNAN have reported rapid response in cases of infantile beri-beri in India to the injection of pure synthetic vitamin B_1. Relief both in acute and chronic forms follows the administration of Thiamine. Besides this, artificial milk should be substituted for natural milk, or a healthy wet nurse employed. Extracts of rice polishings have been employed with success in two-hourly feeds. In the Pacific islands toddy made from coconut milk and fermented by yeast has been used with benefit. But most effective is to prescribe Aneurin Hydrochlore (Thiamine) in adequate dosage. Other drugs as Digitalis, Strophanthus, Camphor can be given, if found necessary.

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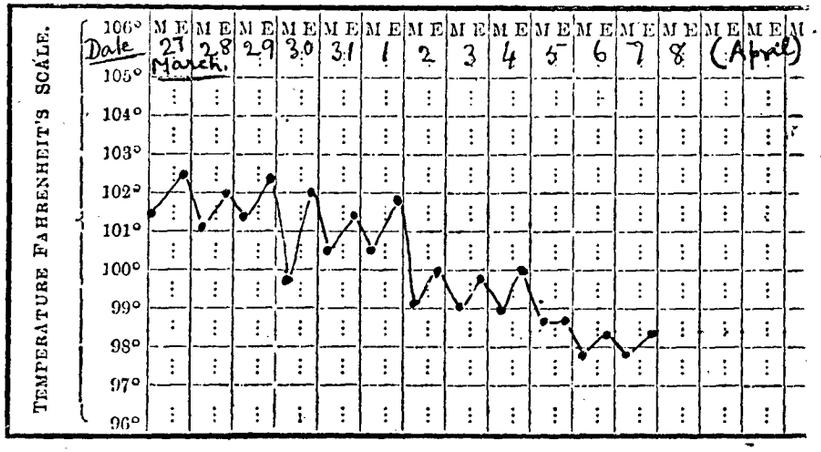
Besides, the patient becomes progressively worse under any treatment known to us at present. (It may be mentioned here, that the child was treated with "Jammi's Liver Cure" for nearly two months before I commenced treatment, and there was no relief).

If scurvy, in this case is a superimposed factor, the diminution of the size of the liver, rapid clearing up of jaundice, and the subsidence of fever in such a short period (*vide Temperature Chart*), under therapy

Temperature Chart: Readings recorded are temperatures taken in Axilla.



with "Redoxon" alone rule out the possibility of scurvy and biliary cirrhosis of liver co-existing.

2. *Leukaemia :*—Characteristic blood picture is absent. Absence of leucocytosis, absence of abnormal W. B. C. and absence of enlarged lymph glands, eliminate leukæmia.

3. *Congenital syphilis :*—Absence of history—No evidence of signs of congenital syphilis *e.g.*, snuffles, rhagades etc. No history or signs of syphilis in mother, nor is there a history of abortions or still-births.

4. *Malaria, Kala azar, etc.* :—Findings of blood smear examination negative. The course of fever and symptoms do not conform to any of these diseases,

5. *Purpura haemorrhagica* :— (Morbus Maculosus of Werlhof) No family history. Such rapid response to treatment with vitamin C alone, excludes the possibility of the case being purpura hæmorrhagica.

6. *Haemophilia* :—No "Bleeders" in the family. The disease occurs in males, though transmitted through the female. There is no history of prolonged bleeding as a result of any injury.

7. *Rickets* :—Harrison's Sulcus, enlargement of liver and spleen are present in rickets. But jaundice, continuous fever and hæmorrhages are not the symptoms characteristic of rickets. In this case, however, rickets is also present, child's diet being deficient in other vitamins as well. (Vitamin—D.)

Treatment.— *(i) Dietetic* :— Usual milk diet, supplemented with orange juice (mother's milk and cow's milk.)

Infantile Scurvy
K. V. Subba Rao, L.M.S.

FIG. I.
Purpuric patches in front of legs and fore-arms.
Enlarged liver and spleen.
Harrison's sulcus.

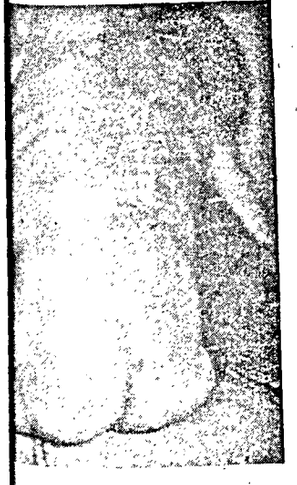


FIG. II.
Swelling on the neck.
Nodules (15-20) on the back in a group about the centre.
Purpuric patches on back and buttocks.

Cases and Comments

Infantile Scurvy

BY

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INFANTILE Scurvy (Barlow's disease) is due to deficiency of vitamin C in the diet of the child, and is characterised by extreme tenderness of the limbs, tendency to subcutaneous and subperiosteal hæmorrhages, and sponge bleeding gums. The commonest sites of these hæmorrages are the lower end of the femur, upper ends of tibiæ and orbit.

The pathological change noted in the bones is rarefaction of the bones. No changes in other viscera are described as characteristic of the disease.

The following case presents some atypical manifestations of this rare disease.

27-3-43. Patient (V)—age 10 months, Hindu, Brahmin, female child.

Complaint :—Fever, jaundice, large abdomen.

Duration :—Three months.

History of present illness :—Commenced with loss of appetite, child always likes to lie on naked floor. Disinclination to sit up ever since the illness started, though she could sit up before the illness, and in the early days of illness.

Irregular fever in the early stages. Now, for the last twenty days or so, the fever is continuous. Gradual enlargement of the abdomen.

Constipated throughout. But, during the last ten days, child is having diarrhœa (normal coloured stools), with occasional passage of few drops of blood towards the end of defæcation. No hæmaturia.

Previous history :—No history of any previous illness.

Family history :—1st child died at the age of three years. (Infantile biliary cirrhosis?) 2nd male child, present age four years, healthy. 3rd child patient.

No history of abortions in the mother nor is there any history of syphilis in the parents. No member on father's or mother's side suffered from any of the "hæmorrhagic diseases," or "blood diseases."

Diet :—Child fed entirely on mother's milk, supplemented by diluted cow's milk during the last one month.

Mother's diet :—Ordinary South Indian vegetarian diet. No extra milk or fruit are included in the mother's diet.

Physical Examination :—Patient anæmic, jaundice present (lemon yellow colour of the conjunctivæ); tongue—slightly coated. Teeth—one lower *incisor* tooth cut and gum, round bleeding slightly on gentle pressure. Bowels—Usually constipated. Diarrhœa (normal coloured stools) during last ten days, with occasional passage of few drops of blood at the end. No Ascites. Fever present, temp. 101.5° F. (Axilla).

Liver :—Enlarged, lower border palpable, 2½" below the costal margin, smooth, not painful.

Spleen :—Enlarged, palpable 1½" below the costal margin.

Heart—Normal. *Lungs*—Normal. *Nervous system*—Normal.

Skin and Subcutaneous tissues :—Nodules in skin and subcutaneous tissues varying in size, from that of a pea to that of a marble. About 15 to 20 nodules, almost in the centre of the back and in a group (*Fig. II*). Similar nodules (scattered) present on the scalp. Skin over the nodules is of normal colour and nodules are movable on tissues underneath.

Purpuric patches ranging from 1 centimetre in diameter to 1½" in diameter. Dark purple in colour situated over back, buttocks, front of both knees, and fore-arms (*Fig. I & II*) These areas are tender.

No enlarged lymph glands.

Osseous system and joints:—Leg bones tender (mostly near malleoli) Harrison's sulcus present (*Fig. I*). No subperiosteal hæmorrhages.

Joints :—Normal.

Investigation.—*Blood smear*—No parasites, no leucocytosis, (no abnormal W.B.C.)—secondary anæmia.

Urine—Acid, albumin : Trace. Sugar : No sugar ; no blood or bile.

Progress notes :—Last night child very restless. Developed a big swelling on the back of the neck. Swelling about the size of an orange filling partly the hollow of the neck on one side (*Fig. II*). Skin over the swelling normal in colour, glossy and the swelling is tender.

29-3-43. Size of swelling less. Purple discolouration of swelling.

30-3-43. Swelling on the neck diminished in size, purple, purpuric patches on back fading. (Rather greenish).

31-3-43. Purpuric patches fading in other places as well. Nodules over back smaller in size and flattened.

1-4-43. *Jaundice deeper. Temperature in the evening higher.*

2-4-43. Few nodules on the back. Others disappeared, leaving a rather greenish stain in the skin. Purpuric patches fading, showing a lighter colour. Swelling on neck markedly diminished in size (about the size of quarter anna piece). Jaundice—Present. Liver—Diminished by ½". No blood after defæcation. No diarrhœa. No tenderness in bones.

3-4-43. Condition better. Patient able to sit up.

5-4-43. No fever. Patient sits up and playing with interest.

6-4 43. Child very comfortable. Bluish discolouration on back of neck, present (less than before). All other purpuric patches fading, and light green stain only is present in old areas.

Jaundice : Less. Urine : No albumin. No sugar. Immediate discolouration with "Dichlorphenol Indopenol." In this test rapid discolouration indicates saturation of body with vitamin C.

11-4-43. All purpuric patches (including that on neck) disappeared. No fever. Spleen : Palpable only on deep inspiration. Liver : Diminished in size. No jaundice.

16-4-43. Liver palpable 1½" below costal margin. Spleen : Palpable on deep inspiration. No fever all these days.

14-5-43. Maintaining progress. Blood condition improved (not anæmic). Liver and spleen same as on 16-4-43. No fever all these days.

Differential Diagnosis.— 1. *Infantile biliary cirrhosis :* — Usually occurs at a later age *i.e.*, after the child's diet is changed from milk to rice, etc. In a case with such enlargement of liver and spleen, jaundice and fever, the child is more toxic and ascites would have been present.

A Few Observations on the Causation of Goitre

BY

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MY observations on the causation of goitre was published in *The Antiseptic*, January '41. Since then 36 more cases came under my observation which I investigated and now analyse here, All my later observations confirm those previously made and I think it redundant to repeat them as they have already been noted in my first paper.

1. Of these 36 cases, 72.22% were females (26) and only 27.78% were males (10). Females suffer more than males. Why ? Probably because the nervous system of the Indian females of the middle classes to which all the cases belonged is generally more unstable than in males.

2. Incidence in one particular family affecting many members—sons and daughters of the same parents—shows that the predisposing cause, nervous instability, is sometimes hereditary or congenital. The exciting cause can only act on those predisposed to goitre. The exciting causes in this series are shown below :

STATEMENT OF THE EXCITING CAUSES

Puberty	Male and Female Climacteric	Shock and Worry	Marriage	Severe Illness	Total
23	2	8	2	1	36
63.89%	5.56%	22.2%	5.56%	2.78%	100%

4. Incidence is greatest when the body and the ductless glands have to readjust themselves to the changes due to puberty and climacteric as appears from the following statement :

STATEMENT OF THE AGE OF INCIDENCE

Age Group	1-10	11-20	21-30	31-40	41-50	51-60	61-70	Total
Number	—	28	1	2	5	—	—	36
Percentage	—	77.77%	2.78%	5.56%	13.89%	—	—	100%

5. All cases belonged to Lucknow and the cases from the endemic area which abound in Lucknow have not been noted. They all came from the lower middle classes and none from the upper or lower classes. The lower middle class has to bear the brunt of the modern struggle for existence. It was observed that the majority of cases belonged to families which were in affluent and easy circumstances only a generation before. These families were reduced to much lower financial position but socially maintained the same position of respectability in society. In India respectability has been to a great extent hereditary and also depends on the class or caste profession to which families belong. The changes in customs and outlook have been slow in India but money is liquid and its rapid flow can leave the succeeding generation in extremes of poverty with consequent influence on the nervous system which becomes unstable. The inequilibrium of the nervous system can predispose a set of people to dyspepsia, psychoses, neuroses, neurasthenia, functional heart diseases, hyperpiesia, etc. It can, as appears from my observations, predispose another set to goitre.

6. The enlargement is very moderate and the lobes are more involved than the body, and of the two the right is more affected than the left. The enlargement is always stationary. There are no signs of hyperthyroidism, and the general health and the eyes are normal. The only abnormality observed in all cases is hypersensitiveness and hyperirritability of the nervous system.

7. Another point of some interest is that from the investigations made in this connection the average age of the attainment of puberty has been found to be 12 years in girls and 14 years in boys.

Illustrative Cases.—1. M. F., 65, duration 15 years, enlargement appeared at menopause—her sons are normal but all the daughters have enlaged necks. Peculiarity is the exemption of the male sex perhaps due to their removal from the influence of the home as they generally lead an outdoor life. On the other hand, the daughters living in purdah were subject to the influence of the home life. In the later the nervous system became weak and prone to the development of goitre.

2. M. F., 11½, not menstruating, had typhoid followed by enlargement of the neck. She had two sisters and four brothers by the same and healthy parents. Brothers are normal and both the sisters have goitre. In this family again males escape probably for the same reason as in the case noted above. Puberty and even typhoid cause enlargement on account of predisposition.

3. M. F., 52, mother of several children. She remained normal till the age of 32. In 1922 the husband who was the support of the family died after a prolonged illness of two years, which threw a great strain on her nervous system. Four of her sons also died in that year. Her sister also died in that very year. Husband's long illness caused her continuous anxiety and six deaths severe shock; and subsequent poverty was a source of constant worry as she had to find bread for her remaining children. In that very year her neck got enlarged.

4. M. M., 50, found at the age of 46 or 47 that his sexual desire and capabilities became diminished, his temperament also changed. Activity of the body and mind was reduced. His weight began to increase. Male climacteric. At the same time he found his neck enlarged.

5. M. M., 17, eldest son of the family, attained puberty about 3 years ago. Father suddenly died only one month before he came under observation, leaving the family unprovided for. He was burdened with the support of his father's family. Sensitive boy he left his studies to earn bread for them. Within this month his neck became enlarged.

6. M. M., 21. His father had left his mother and married a second wife. With difficulty he read upto the Intermediate class. His failure caused him a great shock and his neck got enlarged.

7. H. F., 30, was married before puberty and began to live with her husband from the age of 11. Her neck became enlarged soon after marriage. She attained puberty more than one year after marriage. Here marriage was found to be the cause of goitre.

8. M. F., 50, still menstruating. 12 years ago her husband died and she became a nervous wreck. 5 years later three deaths in the family occurring in rapid succession within the course of a few months so affected her that she developed goitre. Her husband's death was the cause of her nervous breakdown and the shock of three deaths acted as an exciting cause.

9. M. M., 30, death of his eldest son to whom he was deeply attached was a great shock to his nervous system. He began to get hysterical fits and suffered from palpitation and nervousness. His temperament changed and his neck became enlarged.

10. M. F., 16, duration of goitre 7 months. Married 7 months ago and soon after marriage all the collars became too short for her neck which really had become enlarged. She had attained puberty at the age of 13. Here marriage was the cause of goitre.

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Lucknow.

Three Cases of Tetanus due to Uterine Infection after Delivery

BY

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TETANUS infection is a very serious specific infection of which uterine infection is the most difficult for treatment. Difficulty arises with the cleaning of the uterus where wound lies. After delivery the unhealthy condition of the uterine mucosa becomes a good seat for the growth of tetanus bacillæ. The open wounds at the site of placental adhesion and the tears of the neighbouring part, help rapid propagation to the largest area for involvement.

Prognosis depends on early manifestation of symptoms and early exhibition of serum. As there is no chance of telling when the actual infection has taken place, from the time of delivery to the time of manifestation of symptoms, we take it for granted that the infection has taken place at the time of delivery, when the parts are mostly handled. Shorter this period becomes, most likely is the case to be a serious one. Another thing to be considered about the prognosis, is the early administration of sufficient quantity of serum. Some people are in favour of giving huge quantity of serum, such as 2,00,000 units in about 24 hrs. and this specially is advocated by some American Doctors such as DR. HYMAN VENER M.D., but I do not know if their cases constituted many of uterine infection cases. I find no advantage in giving huge quantity of serum early, particularly when the infection lies inside the uterus which cannot be properly cleaned; and when this serum is one of antitoxic sera which has nothing to do with the bacteria themselves. A moderate dose of 30,000 to 90,000 units is sufficient in 24 hours, if started early, and this dose to be continued for 3 or 4 days and then the dose to be reduced gradually. But serum must be continued so long as there is any sign of muscular contraction—a period of 10 to 14 days will be required for complete disappearance of signs.

Regarding local treatment I administer a hot vaginal douche with lysol lotion and intra-uterine injection of Glycerine with Acriflavine. This is being done twice in 24 hrs. to start with and after 3 or 4 days once a day.

Fits are controlled usually by keeping the patient in a dark room, which should be as noiseless as possible. A mixture containing Bromide and Chloral Hydrate is given every 4 hours. A solution of Mag. Sulphate 12½% 5 to 10 c.c. is given intramuscularly once or twice daily according to the intensity and frequency of fits. In severe cases Morphine and Atropine are needed. Somebody advocated M & B 693 and DR.S. M. GHOSAL, M.R.C.P., of the Patna Medical College gives a promising result. But I find no particular advantage in one of my cases.

Case No. I.—Mrs. Biswas, a woman of 35 yrs. of age, a 3rd para, gave birth to a dead child on 9-1-'42. On the 11th day after delivery she experienced some difficulty in opening her mouth. Next day I was called in. The case was examined, there was sub-involution of the uterus; on vaginal examination a purulent discharge of about 2 ozs. came out. There was slight rise of temp. and pulse was 82 to 86 p.m.

20-1-'42. She was kept in a dark room, a Bromide mixture with Chloral Hydras given 4 hrly. Soap water enema, a vaginal douche with lysol lotion (3i in 1 lb.) and an intra-uterine injection of glycerine with acriflavine was administered. 40,000 units of A.T. Serum was given at once.

21-1-'42. No improvement; started having fits and lockjaw was complete, hardly anything could be put inside. Given 45,000 units of serum in 2 divided doses, and Mag. Sulph. Sol. 12½% 6 c.c. intramuscularly, in the morning and Morphine with Atropine at night. Hot vaginal douche, intra-uterine injection and mixture, same as before.

22-1-'42. Fits continued, opisthotonus complete, no improvement; given 40,000 units sera in 2 divided doses, injection of Mag. Sulph. Sol. 6 c.c. in the morning and Morphine and Atropine in the evening.

23 1-'42. Muscular contraction showing signs of relaxation, other conditions *same*; given 40,000 units sera and Mag. Sulph. Sol. and Morphine Atropine others same.

24-1-'42. Showed signs of improvement; she could open her teeth a little; fits were coming on at longer intervals and lasting for less time than before. But passed no urine for 14 hrs. and bladder was full. Given 30,000 units of sera. Others same, urine drained.

25-1-'42. Had to drain urine morning and evening. Improvement more marked, 20,000 units sera given.

Subsequently she was given another 80,000 units of sera and she made uninterrupted improvement.

Case No. II.—Mrs. GHOSH, 3rd para, showed signs of lockjaw on the 5th day of her delivery and they called me in after about 36 hrs. of exhibition of symptoms.

9-1-'42. When she started getting fits, lockjaw nearly complete, temperature 103°F., pulse 104 p m. No stool for the last 5 days. She was placed in a dark room, given a soap water enema, vaginal wash, intra-uterine injection of Glycerine with Acriflavine and a Bromide Chloral Hydrate mixture. She was given an injection of 20,000 units of sera, (no bigger doses could be given as sera could not be procured there). She was also given an injection of Morphine with Atropine.

10-5-'42. Condition—no improvement, fully opisthetonus, temperature 103.2°F., pulse 120 p.m. She was given 50,000 units of sera in the morning and 30,000 in the evening, others as on the previous day. The baby stopped taking milk and could not open her mouth, muscles at the back a little stiff. The patient died next morning and the baby in the afternoon.

Case No. III.—Mrs. Bhadra, a 5th para. She had a carious tooth and on the 9th day after her delivery she began to feel pain in her tooth and slight swelling also marked on the left side of her cheek and she

experienced difficulty in opening her mouth. I was called in to examine her tooth to find out if that required any surgical intervention. On 21-2-'43, I saw the case in the morning. She had swelling on the left cheek, experiencing some excruciating pain in her tooth. But her tooth could not be examined as she could not open her mouth fully, a tender, palpable gland was found on the neck. Pulse 88 p. m. and temp. 98.8°F. There was no stiffness in the neck, but stated from that morning she is feeling some catching pain for a second or two, and she had about 6 or 8 attacks like that by the time I went there at about 11 a.m. I was not satisfied with her only complaint of the tooth. I gave her an injection of A.T. serum 10,000 units and a paint for the tender gland. By the evening her neck muscles were a bit stiffer than they were in the morning and pain she felt for a longer time than before, gave 20,000 units of sera and taken the case to be a tetanus.

22-2-'43. Muscles of the back began catching. Condition of the uterus subinvolution, and had prolapse of the 2nd degree, had little discharge with no bad odour. She was given a hot vaginal douche and Glycerine, Acriflavine intrauterine injection. A. T. sera 40,000 in the morning and 75,000 units in the evening was given. She was also given M & B 693 one tablet every 4 hours.

23-2-'43. No improvement, opisthotonus, started having mild fits, had no urine. She was given Bromide Chloral Hydras mixture and injection of 40,000 units of sera in the morning and 15,000 in the evening. She was also given a Morphine injection in the evening. Urine drained evening and morning. M & B 693 continued, swelling of the cheek increased.

24-2-'43. Condition more aggravated, fits are more prolonged and coming on at close intervals, opisthotonus more marked; with all other treatment, injection of Mag. Sulph. solution added to the morning and Morphine Atropine in the evening. Serum 40,000 units given.

25-2-'43. Condition almost same as on the previous day, excepting that fits were coming on at slightly longer intervals. Serum 20,000 units only could be given as serum could not be procured. She was given all other treatment as on the previous day. M & B 693 cut down to 4 tablets in 24 hrs.

26-2-'43. Condition practically same. She was given 25,000 units serum in the morning and 15,000 units in the evening. The abscess gum burst, a teaspoonful of pus came out.

27-2-'43. 26,000 units of sera was given, condition improved but very little. Fits sluggish and at longer intervals. She could not pass urine nor stool by herself.

28-2-'43. Condition improving but very slowly. She was given 20,000 units of sera, other treatments are same.

29-2-'43. Subsequently she was given another 60,000 units of sera and altogether she was given 52 tablets of M & B 693 and she made an uninterrupted recovery.

In conclusion I beg to report that I could not find a line of treatment specially adopted for the case of tetanus, (*a*) when the infection is inside the uterus, anywhere in the books or in any journal and (*b*) whether a huge quantity of serum to be administered at the early stage, when the infection could not be cleared off completely. (*c*) In Case No. III, though M & B 693 was given as recommended by DR. GHOSAL, no special advantage was noticed excepting that it might have produced some action which kept infection of the urine suspended.

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Formation of Indian Army Medical Corps

OUR readers must have followed with very keen interest the formation of the new Indian Army Medical Corps organised on lines similar to those of the R.A.M.C. Our readers must also have been aware of the visit to India of the Medical Personnel Mission from England headed by Mr. H. S. SOUTTAR, Chairman of the Council of the British Medical Association, which was sent out by the Secretary of State at the request of the Government of India. In addition to MR. SOUTTAR, members of this Mission included Lt. General A. HOOD, Major-General Sir Ernest Bradfield and Lt. Col. J. T. ROBINSON. The Mission set out in November last and on the way to India spent eight days in Egypt, devoting some time to an intensive investigation of the Indian hospitals, in the Near East. They arrived in India in the middle of December. Our readers must have also been aware at that time of their tours round India and of their spending a month first visiting Delhi for an interview with the Viceroy and the heads of Departments and, later on, visiting Calcutta, Lucknow, Lahore, Bombay, Poona and Karachi. At the time, nothing was known as to what their programme was and what was the result of the investigations that they had made during their visits. At Calcutta they met the leaders of the different medical associations whose evidence and statements were taken down. They, however, never visited Madras. But, representatives from other provinces were selected by the Government themselves and asked to meet this Medical Mission. We understand from the note that appears in our distinguished contemporary, *The British Medical Journal* dated 8th May '43, that the formation of the new I.A.M.C. is the result of this Mission's recommendations. We were told at the time that the new corps was to include both graduates and licentiates as medical officers. All regular and emergency commissioned officers of the Indian Medical Service were to be seconded to it and that it would receive by transfer the whole existing Personnel of the Indian Medical Department and the Indian Hospital Corps.

We have on previous occasions stressed the necessity of giving Commissions to licentiates. We have also drawn the attention of the Government to the fact that while doctors with foreign qualifications not registrable in Great Britian were accepted for purposes of granting

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Commissions in the I.M.S. at least till the duration of war, the licentiates were excluded. A country-wide agitation for the recognition, at any rate, till the duration of war, of licentiates and the grant of King's Commissions to this great class of medical men, with increase in their pay and prospect, have been engaging the minds of the public and has been vigorously advocated in the columns of our Journal. We are glad that this great drawback has been removed in the formation of the A.I.M.C. For the licentiates themselves, it is a distinct improvement. Many of them, who originally had to be satisfied with the Viceroy's Commission can now get King's Commission. We are glad to note that the Mission, on their visit to Cairo, made special enquiries about the work of the licentiates in the field and obtained the opinion of their commanding officers that these men were capable of full medical responsibility and were found to be a loyal and hardworking body of men, not inferior in intelligence or capacity to any other class of medical men. The Government of India have therefore very rightly decided to recognise their professional worth and status and improve their emoluments and future prospects.

The other great feature of the new corps is that it will make possible a service of orderlies of the type and training which army nursing requires. The bulk of the nursing is carried out by sepoys, who receive only a brief military training before they are turned into the wards to do nursing. Although the re-organisation of the medical services of the Indian Army has been the subject of many reports during the last twenty years, apparently the importance of male nursing personnel as a vital part of Army medical service has escaped attention in these enquiries. An attempt has therefore been rightly made to attract to this service men of a superior class who with an effective training in nursing and first-aid and prospects of promotion will be a very useful adjunct.

No one can therefore deny that the formation of the new I. A. M. C. is a step in the right direction. There is also no doubt that in the future when the Indian Army will certainly have to be maintained on a much larger numerical level, this new Indian Army Corps will function as a very desirable and necessary service.

We, however, cannot allow this opportunity to go without pointing out some of the defects which still exist. For a number of years the Medical Press and also the Medical Profession have, from time to time, demanded the abolition of the civil side of the I. M. S. which has been retained on the plea of constituting a war reserve. The civil side of the I. M. S. has not yet been completely abolished. On the other hand, retired members of this Service have now been re-employed and re-entertained in important offices. While we have nothing personal against these officers who during their term of office have done yeomen service to this country, we object to it on principle. While there are a number of young medical men capable of carrying on such responsible duties, and while in addition to these there are a number of equally efficient and more experienced retired members of the provincial medical service always willing to render any aid in such matters to Government, we see no reason why the retired members of the I. M. S. should be thrust on the civil side in important key positions. We have also found examples of members of the Missionary Medical Service being drafted on to be heads of important hospitals. These are very undesirable features.

Another demand that has been made often is that the Indian Medical Association, representing as it does the medical profession of India as a whole, should be adequately and equitably represented on the recruitment boards for obtaining recruits for the Army Medical Service. In America and other free countries, it is the Medical Associations that are responsible for recruitment of officers. But, in our country, the Indian Medical Association which, perhaps, is the only one associationn which is capable of representing the medical profession all over India, is not in-charge of recruitment. If one were to peruse the proceedings of the last All-India Medical Conference held at Patna and read the speeches made by representative medical men from all over India one is forced to come to the conclusion that the medical associations in India not only are not consulted but that they also view the formation of I. A. M. C. with very great suspicion. They feel that, while the licentiates, to a certain extent, have been benefitted, class distinctions still continue. Many of the speakers at the last Conference expressed a doubt whether the formation of the new I. A. M. C. without the abolition of the I. M. S. would in any way be beneficial to the medical profession in India. We also wonder?

Dr. Sir Nilratan Sircar

It is difficult to say anything about Sir Nilratan Sircar which has not been said already. In the interval since his passing—an event which left not only the medical profession but the whole of India distinctly poorer—his co-workers and friends have paid homages to his memory in exquisite fashion. The lay public, to whom Dr. Sircar in life was far more than a name, have been powerfully reminded of the ideals to which his years were consecreted.

Like many distinguished men who have gone before him, like others who will keep the line continuous to the end of time, Sir Nilratan was a poor boy who made good. His life-story has all the traditional attributes of the "log cabin to the White House" genre. Born in 1861, the son of humble but respectable parents, he early found in the circumstances of his household a magnificent incentive to strive. He was a good student and got through the routine academic courses with distinction. We have it on the authority of a friend of his that his first ambition was to qualify as a mechanical engineer. But his mind changed when it fell to him to nurse his mother through a spell of illness. The suffering that he then witnessed made him resolve to study medicine and to seek superb accomplishment in the science of healing as the best way of serving humankind.

The vital statistics are dull but belong in this survey of Sir Nilratan's career. Here they go: Primary education at the Jayanagar (24 Parganas) Higher Elementary School; passed the Entrance examination in 1876 but found he could not afford to join college; got into the Campbell Medical School and secured a brilliant pass in 1880; appeared for the First Arts examination and graduated in 1884; worked as the Headmaster of the Chatra High School, near Serampore, for a while, to get over temporary financial difficulties and joined the Calcutta Medical College in 1885; passed out in 1888 and during 1888–89 acted as a House Surgeon at the Chandrey and Mayo Hospitals, Calcutta; spent his leisure equipping

himself to take the M.A. and M.D. Degrees of the Calcutta University, which he did in 1889 and 1890 respectively; set up practice on his own in 1890.

As a private practitioner SIR NILRATAN displayed from the outset qualities which were later destined to bring him a princely income and make him the acknowledged leader of the profession in all the country. DR. BIDHAN CHANDRA ROY has testified that, in his professional life, SIR NILRATAN was great because he looked after the smallest detail. "Sympathy and respect for the feelings of others, differently situated in life, formed the warp and woof of his whole being and expressed themselves in manifold ways." As an Examiner in Medicine he always made it a point to test the knowledge, and not the ignorance of the examinee.

SIR NILRATAN'S was not a single-track mind. Even the most competent doctors sometimes disappoint by surprising unfamiliarity with things outside their immediate range. But DR. SIRCAR was a rare exception. His knowledge was wide and his experience profound. And it was not only the ailments of the body of which he was qualified to speak with authority. He had thought hard about the afflictions of the nation also and had considered remedies to suggest for the various ills which are retarding India's advance.

SIR NILRATAN laboured harder than any other to raise the standards of the profession in India. By his own example he showed that the practice of medicine is a co-operative mission in which there can be no scope for unpleasant or unhealthy competition to arise. He was jealous about safeguarding the prestige of the profession, so deprecated any attempt on the part of one practitioner to lower the reputation of another. He was keen that every development in the science and practice of medicine should be responded to with alacrity by the Indian practitioner. This meant, for him, finding the facilities for increasing the bounds of medical knowledge and enhancing its appeal. He realised that his dream would never come true, if all the vast latent skill of his compatriots had to await canalisation through the official Medical Colleges which lay beholden to the traditions of a service. For him to be brought round to such a conviction was to act. With a few collaborators, who found his enthusiasm infectious, he got the needed resources together and organised a Medical School entirely to be manned and administered by Indian agencies. This school has developed into the Carmichæl Medical College. SIR NILRATAN taught in it himself—Physiology and Cardiology were his favourite subjects. He had quite a struggle getting the College affiliated to the University of Calcutta, because the Indian Medical Service stood out against recognition being awarded to non-official medical colleges in India. But the opposition was overcome partly because of the quality of the staff and the equipment the College possessed, and partly because of the great influence SIR NILRATAN had with LORD CARMICHÆL, then Governor of Bengal.

The Indian Medical Association owes its existence and its present enviable position to the untiring and devoted labours of this selfless patriot and veteran physician who filled a large part in the public stage of India for a period extending over four decades. He had the vision to perceive early in his career as a medical man that if the Indian medical practitioners are to face and combat the many difficulties and obstacles that were placed in the way of their attaining that position and status which

are by right their due, by the much-pampered members of the Indian Medical Service who easily got the hearing of the powers-that-be and who were too zealous to maintain their monopolistic position, an Association of their own was necessary to put forth their demands unitedly, unflinchingly and with determination. He brought into existence the Indian Medical Association, nurtured it as a father would his son, presided over and guided its activities for a considerable length of time, and built it up, step by step, to its present high position. If to-day the position of the Indian medical practitioners is considerably improved, their voices heard, their grievances redressed, much of the inequities and injustices that existed done away with, they are not a little due to the outstanding personality and ceaseless endeavours of this doyen of the profession and the great respect and influence he commanded not only among his brethren in the profession but also in the public life of this country.

SIR NILRATAN believed in the world-wide recognition of our medical science, applying the basic principles of chemistry, physics, biology, physiology, pharmacology, pathology and bacteriology, and incorporating the good points of the indigenous medical systems of the various countries. And he wanted an Indian Pharmacopeia compiled, listing medicines that research has noted efficacious and which could be made here. As this could not be done without intensive research into Ayurvedic, Unani and Tibi systems, he advocated the establishment of special chairs for these in India's Medical Colleges. Although he was all for the contractual employment of eminent foreign specialists, he pleaded all through his life that the medical research organisation in this country should be thoroughly Indianised, that the control of the Secretary of State should be removed, and that the I. M. S. Officers should be reverted to military employment.

In his Convocation Address to the Andhra University on October 7, 1939, he declared that a national system of education should make use of three main methods—the literary curriculum, the scientific curriculum and the technical curriculum, and that each of these curricula should include the other two. He also gave vivid expression to his conviction of a life time, that the mother tongue should be made the medium of instruction in place of the English language. And he affirmed that military training should be given to University students to make India really capable of enjoying autonomy.

SIR NILRATAN was a pioneer industrialist also. And his public life was marked by membership of the old Bengal Legislative Council from 1912 to 1927.

He was eighty-two when he passed away, and he died full of years and honours. *The Antiseptic* salutes his memory.

Pernicious Principles in Practice

THAT public examination is not the only proper test to judge a boy's merit and equipment is now accepted on all hands all the world over, and some have even come forward to plead for the abolition of the farce of examination altogether and for the substitution in its place of some sure and sound means to test the real capacity of students. Yet men in charge of colleges in our country still swear by the results of public examinations, and it has almost become a Herculean task for students

who have unfortunately not secured a Class in the public examination to gain admission into professional colleges unless they have some godfathers to back them up, or they belong to some community which is favoured. The letter from DR. D. V. CHAFEKAR, which we publish elsewhere in this issue, speaks for itself. It is the aim, of course, of all students to secure Class, but it is not all that can secure it. If it is possible for all students who sit for a public examination, to secure a Class, the necessity for the examination itself ceases to exist. The vagaries of examination and examiners are too well-known to be detailed at length here. We can quote with chapter and verse cases of students, brilliant in their subjects, finding themselves at the bottom, thanks to the system now in vogue.

The position is none the better in the Madras Presidency. The introduction of the communal quota, in the selection of students for admission into colleges, merely on the population basis, without any reference to the cultural attainments of the communities concerned, is bad in itself. The recent super-imposition of the regional basis has made matters still worse. The culturally advanced areas and communities suffer the most, and the Class craze which has taken a stronghold in the minds of the authorities vested with the power of selection of students for admission into the Medical Colleges, has worsened the situation still further. There is neither rhyme nor reason to support it, and the failure of the authorities to take note of the subjects in which the students have specialized, has deprived many a deserving student the prospect of entering the medical profession. For example, a student in the Mathematics group, if a seat is not available in a Medical College, can find ample scope for the display of his talents in some other branch of learning, say engineering and the like. Not so the students who have taken to the science group, with the aim of joining the Medical College. If they are denied admission, they will be left in the lurch, their dreams will remain unfulfilled. Further the sons and daughters of medical men are not given the preference to which they are entitled to by reason of the heredity and the liking they have developed to the art of healing. If the present unwholesome and pernicious principles had been long in force, we doubt very much if many sons and daughters of medical men and women who have joined the ranks and are adding lustre to it, would really have found a place in the list.

Our country has not the requisite number of qualified medical men to administer to the needs of suffering humanity. To deny it its legitimate due, to bolt the door against admission to students well-fitted by their aptitude and heredity is, to say the least, the greatest folly which, even in ordinary times, is really inexcusable. Much more so it is at the present day when the absence of qualified medical men is keenly felt all over and columns of daily newspapers are flooded with advertisements calling upon medical men to come to the rescue. We trust the authorities will have the good sense to see the error of their ways and mend them before it is too late. If sufficient number of seats are not available in the existing Medical Colleges to admit all the deserving students, it is their bounden duty to make provision for more seats, or to increase the number of Colleges. India is in need of more and more qualified medical men even to meet the ever-growing needs of its population in peace times.

Gleanings From Medical Press

Medicine and Therapeutics

Penicillin.—Prof. Florey and his collaborators at Oxford have already demonstrated the great potential therapeutic importance of penicillin, an extract from the culture fluid of the mould *penicillium*. The principal clinical interest of penicillin is, of course, that it will kill certain bacteria, such as *Staph. aureus*, for which there was previously no satisfactory remedy, and (unlike the sulphonamides) even in the presence of pus. Two different lines of investigation have been started as the result of this discovery. First, attempts are being made to purify penicillin itself in the hope that knowledge of its structure will lead to a less laborious and expensive method of preparation than fractionation from the crude extract. Incidentally this should also show how penicillin inhibits bacterial growth. Secondly, the antibacterial activity of large numbers of moulds other than *penicillium* has been examined with considerable success. According to Florey and his co-workers the crude penicillin extract has a yield of about 4 Oxford units per c.cm. of culture fluid but by means of absorption, distribution between solvents, and reduction a barium salt has been obtained, with an activity of 450 to 500 units per mg., which appeared homogeneous by chromatographic analysis. By elementary analysis an empirical formula has been suggested for this salt, but its structural formula is necessarily more difficult to ascertain. This purified penicillin completely inhibits the growth of *Staph. aereus* at a dilution of 1 in 24,000,000 to 30,000,000, and is free from toxic reactions as judged by its effect on leucocytes or on mice into which it has been injected. It is very unstable, and is readily inactivated by treatment with acid, alkali, or boiling. In the form of the dried barium salt, however, it keeps its antibacterial power indefinitely.

Among other substances having bactericidal properties and isolated from bacteria or fungi are: pyocyanase from *Pseudomonas aeruginosa*; tyrothricin (gramicidin and tyrocidin), isolated by Dubos and Hotchkiss from *Bacillus brevis*; actinomycin A and B, isolated by Waksman from *A. antibioticus*; and pro-actinomycin. Gardner and Chain were led by their discovery of the last named to investigate a large number of saprophytic actinomycetes, and found that of a total of 52, 10 were bacteriostatic in some degree to the Gram-positive cocci. There is obviously a great deal of work to be done in the classification of these derivatives and the selection of those most suitable for therapeutic trial. Some of them, such as tyrocidin, pro-actinomycin, or claviformin (isolated by Chain, Florey, and Jennings from *Penicillium claviforme*), although their antibacterial activity is high, are unsuitable because they are toxic to mice and stop the movements of leucocytes in high dilution after only a few minutes. The bactericidal activity of such substances is, perhaps, only one expression of a general toxicity to living tissues. Gramicidin, which is now known to be a complex polypeptide and has been crystallized, has limited use in therapeutic trials, for similar reasons. Though much less reactive than tyrocidin, it is relatively insoluble: its antibacterial activity is readily reduced by cephalin, and it is toxic on intravenous injection. However, it is so much less dangerous when applied locally or injected subcutaneously or intramuscularly that it may yet come to be of practical importance. The search among these "bacteriostatics," which will attack the bacterial infection without harming the patient, has already produced a large number having fastidious inclinations—for example, they will inhibit the growth of one strain of staphylococcus without affecting others. Therein may lie future difficulties for the clinician, but the advantages which these new therapeutic substances offer are so great that their future development is clearly a matter of the first importance.—*B. M. J.*

Pulmonary Congestion and Oedema.—Broadly the clinical causes of congestion and œdema are (1) heart failure, (2) pronounced changes in pulmonary "hæmodynamics" and/or capillary damage (infarct, pneumonia, drowning, irritant gases), and (3) diseases associated with retention of fluids in the tissues (beri-beri, glomerulo nephritis, and toxæmia of pregnancy). The causes may be combined. After a certain point has been passed œdema may progress rapidly; and the longer it lasts the more difficult it is to re-establish the physiological state. Congestion and œdema may be localized (as in pneumonia). In heart disease, congestion usually preceeds œdema, which may be either pericapillary (interstitial), intra-alveolar, or both, when caused by infectious diseases or chemical agents; on the other hand, œdema often develops without preceding congestion, and results from changes in permeability of the alveolar walls. Failure of the pulmonary incubation often occurs in the presence of an adequately maintained greater circulation. If pulmonary œdema persists, fibrosis and obliteration of capillary beds in the alveolar wall may supervene. Thus heart disease can cause, first reversible and later irreversible lung disease. There may be much interstitial œdema without intra-alveolar œdema, and therefore without rales, as is observed in patients with left ventricular failure, who have dyspnoea and a low vital capacity. Diffuse intra-alveolar œdema, giving fubbling rales, may be unilateral, and may involve only one lobe. In left ventricular failure there is severe impairment of the reserve functional capacity of the left ventricle as compared with the right. Therefore, under physiological stress, a serious unbalance between the functions of the two ventricles is

apt to occur. In such circumstances paroxysmal dyspnœa (cardiac asthma) and transient pulmonary œdema associated with heart disease may cause gross disturbance of the pulmonary circulation within a few minutes or even seconds. If the balance between the two ventricles as regards equality of the output is re-established, by decreasing arterial resistance or the inflow to the heart, or both, the engorgement will persist, because the accumulated excess of blood and œdema remains trapped within the pulmonary circuit (and diffuses away into the lung tissue slowly). Repeated attacks of paroxysmal dyspnœa may therefore lead to progressive deposition of fibrin and connective tissue (looked upon in the past as induration pneumonia). In this instance the left ventricular failure is caused by arterial hypertension, but it may be associated with a normal or low arterial pressure, as in coronary thrombosis. X-ray appearances indicate that the distribution of œdema varies in different types of congestive failure: in general heart-failure it is usually basal; in pure left ventricular failure it is often hilar and perihilar. Congestion and œdema usually begin over the right lung, and remain more intense on this side (right hydrothorax usually preceeds left hydrothorax). During and immediately after an attack of pulmonary œdema, various bizzare-shaped distributions of the œdema may appear These X-ray changes may disappear within forty-eight hours, but obstruction of lymphatic drainage influences the persistence of œdema within certain areas. At times the appearances may be identical with those observed in tuberculosis or pneumoconiosis accumulations of œdema close to lung roots may imitate shadows caused by aneurysms or neoplasms; and in rare instances hæmosiderin pigment deposits and surrounding tissue reactions in mitral stenosis may give radiographs imitating miliary tuberculosis or sarcoidosis. The X-ray differentiation of pulmonary œdema, infarction, and pneumonia and fibrosis is often difficult, particularly as pulmonary infarction is often associated with local or generalized pulmonary oedema. —*B. M. J.* April 10-43. P 151.)

Pathogeny of the Sprue Syndrome.—It is now generally agreed that tropical sprue, idiopathic steatorrhœa, and cœliac disease are varieties of the same disorder—the "sprue syndrome." The pathogenesis of this syndrome is still a matter for discussion, although it is generally agreed that it is a disease of malnutrition, the primary defect being faulty absorption from the intestine, particularly of fat and carbohydrate. Verzar originally suggested that fat, like carbohydrate, is absorbed from the intestinal mucosa by a process of hydrolysis, phosphorylation, and resynthesis to neutral fat, the failure in sprue being one of phosphorylation due to lack of adrenal hormonal control. This notion has been disproved by a number of workers. Stannus has now come forward with a novel hypothesis to explain the defect in intestinal adsorption. He states that the absorption of neutral fat in sprue is normal, but that of fatty acid, glycerol, cholesterol, and glucose is defective. The loss of power to absorb these is due to failure of phosphorylation, an essential process for their absorption by the intestinal mucosa. Neutral fat and fructose are normally absorbed without phosphorylation, and this would explain the success of the older methods of treating sprue with strawberries and bananas. Calcium is lost to the body because it forms insoluble soaps with the free fatty acids, and phosphorus is lost by the defect in phospholipid formation resulting from failure of phosphorylation. The loss of calcium and fats, with their fat-soluble vitamins (A,D,K), is responsible for the bone changes, tetany, and failure of blood-clotting so often seen in the sprue syndrome. The mass of unabsorbed fatty acid and gas due to the fermentation of unabsorbed glucose causes intestinal delay and passive distension, together with other signs commonly demonstrated radiologically. Like Verzar, Stannus believes that the physiological lesion in sprue is failure of phosphorylation, but that this is due not to adrenal insufficiency but to a defect in the enzyme system catalysing phosphorylation. He believes that the coenzymes of this system are members of the vitamin B_2 complex, including riboflavine, nicotinic acid, pyridoxine, choline, and possibly other members. The observation of Birch that pyridoxine plays a part in the absorption of unsaturated fatty acids by the intestinal mucosa and their incorporation into phospholipids suggests that this member of the vitamin B complex may play a part in the pathogenesis of sprue. It also seems possible, as Stannus points out, that the loss of certain phospholipids containing unsaturated fatty acids may explain the causation of anæmia in sprue. and the nature of the fatty acids in the diet may even be a factor in determining the geographical distribution of the disease.

These observations would explain the beneficial effect of liver, rich in the vitamin B complex, in sprue. The response of the sprue patient to parenteral liver therapy is beyond all doubt. The hypothesis of Stannus receives support from the observations of May and his co-workers, who have recently shown that the absorption of fat and glucose, the intestinal motility, and indeed the whole clinical course of cœliac disease are favourably influenced not only by crude extracts of liver given parenterally but also by mixtures containing vitamin B_1, riboflavine, nicotinic acid, pantothenic acid, and pyridoxine given parenterally. Oral therapy gave unsatisfactory results. It is known that both riboflavine and coenzyme I—a complex containing nicotinic acid amide, adenine, pentose and phosphoric acid—may function in the transfer of phosphoric acid, and it is possible that other members of the vitamin B_2 complex may do so as well.—*B. M. J.*

Acute Bacillary Dysentery (Flexner) :—The control of acute bacillary dysentery is becoming increasingly important because of the presence of troops in tropical regions where this disease is common and also because of the poor housing and sanitary conditions which inevitably result from the mass shifting of civilian populations. This study is based on a small epidemic of 28 cases of bacillary dysentery (Flexner) which occurred in Eloise Hospital and Infirmary in the State of Michigan during the summer of 1942 Careful epidemiologic, clinical and laboratory studies were made on all of the cases, with special attention to the therapeutic effectiveness of sulfaguanidine and succinylsulfathiazole. It was concluded that both drugs are of distinct value in this type of dysentery. It was emphasized, however, that failures have occurred following the use of these drugs. Because succinylsulfathiazole is equally effective and because it is without the potential toxic effects of sulfaguanidine, the authors believe that it is the drug of choice in the treatment of acute bacillary dysentery (Flexner). They consider that succinylsulfathiazole given in doses of 0.25 Gm. per kilogram initially and 0.25 Gm. per kilogram daily for at least six consecutive days was adequate to effect a cure in 12 or 14, or 85 per cent. of their cases. They observed that doses of twice this amount may be administered without untoward reactions and it is suggested that if fever and diarrhœa are not controlled after three days of therapy with the smaller doses twice the amount of the original dose should be given. The importance of repeated stool cultures for at least three weeks after therapy has been discontinued is stressed. Although the final decision regarding the value of succinylsulfathiazole will require further clinical use, the results of this comparative study indicate that it is a definite advance in the treatment of this important enteric disease and may prove to be of great value in the treatment of other types of bacillary dysentery.—*U.S.O.W.I.**

Treatment of Bacillary Dysentery :—The general regimen that Poth and his collaborators carried out in treating patients with bacillary dysentery included the administration of adequate parenteral fluids and electrolytes to combat dehydration when this was indicated, no transfusions of whole blood or plasma for the dysentery and succinyl sulfathiazole by mouth in a daily dose that varied from 0.25 to 1 Gm. per kilogram of body weight. The total daily dose was given in six equal portions. The length of treatment varied from two to seventeen days. There were no failures and no deaths. The ages of the patients ranged from 8 weeks to 83 years. The response of children and infants was prompt whether treatment was begun early or late in the disease. The response was equally good with small as well as with large doses. The temperature returned to normal in twenty-four hours or less in 9 of 10 instances. In the exception the time was thirty-six hours. The response of 10 adults to therapy was also prompt regardless of the duration of the disease. Bacteriologic studies showed that Shigella paradysenteriæ was especially susceptible to the antibacterial action of succinyl sulfathiazole. The dysentery organisms ordinarily disappeared from the stools within forty-eight hours, whereas significant lowering of the coliform bacteria required two to three days of additional therapy. The drug was equally effective in the acute and the more chronic forms of the disease. No untoward toxic manifestations ensued. —*J.A.M.A.*

Transmission of Leprosy by Fleas :—Munoz Rivas found that when fleas of the type Pulex irritans and Pulex canis bite patients with leprosy they suck up lepra bacilli which will survive for more than twenty-six hours in the digestive tract of these insects. The stomach of larvas fed on dejecta of adult fleas biting patients with leprosy contain acid alcohol resistant bacilli in 21 per cent of the cases. The stomach of larvas fed on infected leprous food contain lepra bacilli in 100 per cent. of the cases. The stomach of larvas from fleas captured in the rooms of patients with leprosy or which were left in contact with earth from the rooms of these patients contain acid alcohol resistant bacteria morphologically identical with lepra bacilli in 75 per cent. of the cases. The author concludes that fleas transmit leprosy. Extermination of fleas should be a part of the campaign against leprosy. —*J. A. M. A.*

Pellagra in Adults.—Alessandri and his associates report observations on 110 cases of pellagra which were observed in Santiago-de Chile between 1934 and 1941. Pellagra exists in Chile in the endemic as well as in the alcoholic and secondary forms. Twenty-nine of the patients presented the endemic form, 60 the alcoholic form; in the remaining 21 it was secondary to some grave organic disorder. Alcoholism and organic disease were etiologic factors Pellagra has been increasing during the last five years. The authors calculate that in recent years Chile must have had about 3,000 cases of pellagra annually. In the city of Santiago twice as many cases were of alcoholic as of endemic origin. Endemic pellagra was more frequent in rural than in urban regions; this is so in Chile as well as in other countries. Women developed the endemic form more often than men. Alcoholic pellagra was three times more frequent in urban than in rural environment and appeared almost exclusively in men. Pellagra developed most frequently in persons between the ages of 30 and 60 years. Hospitalization for pellagra increased during the four hot months of the year. The total mortality for pellagra was 26 per cent. in the reviewed material. In alcoholic pellagra the mortality was twice as high as in endemic pellagra. The authors discuss three groups of symptoms: (1) cutaneous, (2) nervous and mental distur-

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bances and (3) digestive disorders. Until the beginning of 1939 the authors treated their patients according to Goldberg's recommendations with bed rest, a diet rich in antipellagral foods and yeast. In some cases anti-anæmic hepatotherapy was employed with vitamin B or A. Since 1939 nicotinic acid has been added to the aforementioned treatment. Excellent results were obtained with the classic treatment of Goldberg in the majority of cases, but in some cases of extreme malnutrition this treatment has failed. The introduction of nicotinic acid signifies a definite advance in antipellagral treatment. It greatly accelerates recuperation, shortens hospitalization and thus reduces the expense of the treatment. The nicotinic acid is not, however, a substitute for the dietetic treatment but rather an important complement.—*J.A.M.A.*

Treatment of Acne Vulgaris.— One hundred and thirty of the 169 patients with acne vulgaris that Smith treated with 75 roentgens once a week obtained a final satisfactory result. Also the condition of 23 patients was definitely improved and that of 16 was slightly or not improved. As many factors influence acne vulgaris, attention to them is important in the successful treatment of the disease. Of the several forms of physical therapy used for hastening cure, irradiation is of most value. It is important that sufficient treatment (twelve or more exposures) be given to prevent relapse; over treatment must be avoided. Roentgen therapy is the least favourable for early cases. Of 100 patients more than 16 years of age, receiving twelve or more treatments of 75 roentgens each, 89 per cent. obtained satisfactory results. This percentage could probably be increased if proper co-operation of all patients could be obtained and appropriate follow-up treatment given. Ultra-violet radiation is sometimes of temporary benefit. It is most useful as a desquamating agent between or after courses of roentgen therapy. Mild freezing with carbon dioxide slush is worth trying if roentgen therapy is not advisable, and as a later desquamating agent. Ultraviolet therapy should not be used concurrently with roentgen therapy.—*J. A. M. A.*

Effect of Thiamin Chloride on Cardiospasm and Achalasia of the Oesophagus.—Stinson (*Ann. Otol., Rhin. and Laryng.*, 1941: 50: 898) from the marked analogy between the effect of avitaminosis B_1 on motility of the bowel and the findings in cases of cardiospasm which have come to autopsy, has propounded the following theory as to the steps in the development of cardiospasm: Anorexia, the first symptom of deficiency of vitamin B_1 loads to further deficiency. An early finding of B_1 deficiency being dilatation of the colon it can be assumed that the same occurs in the œsophagus. With dilatation of the œsophagus and loss of motor stimulus through degeneration of Auerbach's plexus, stasis of food follows as the result of loss of the propulsive force of the œsophageal walls rather than by reason of constriction at the cardia or in the liver tunnel. Adhesions between the folds of the mucosa develop through maceration of the mucosa caused by dutritus lying in the œsophagus. Ptosis of the diaphragm by reason of vitamin B_1 deficiency further complicates the picture, so that in the advanced stage one finds all the factors put forward by previous workers increasing the obstruction but occurring as secondary factors. Thus the primary obstructive factor in cardiospasm is the lack of propulsive force in the walls of the œsophagus rather than obstruction at the cardia. Cardiospasm is frequently a manifestation of avitaminosis B_1. Vitamin B_1, given intramuscularly, will relieve an attack of cardiospasm in many instances and continued administration of vitamin B_1 will prevent recurrence of attacks of cardiospasm in these cases. The author, of course, sounds a note of warning that every obstructive lesion must be subjected to an œsophagoscopy and response to thiamin chloride is not sufficient evidence upon which a diagnosis is to be based.—*G. P.*

Sulfonamides in Ointment form.— Miller reports the treatment of a total of 115 patients during the past year with sulfanilamide and its derivatives in ointment bases. The dermatoses could be placed in three groups: (1) primary infections of the skin, (2) diseases of the skin with secondary pyogenic infections, and (3) miscellaneous diseases. The first group includes impetigo contagiosa, ecthyma, sycosis vulgaris, folliculitis of the scalp, acne varioliformis and the dermatitis Repens. The second group includes infantile eczema, chronic dermatitis of the fingers of unknown origin, allergic eczema with secondary infection, dermatophytosis with secondary infection, epidermolysis bullosa, psoriasis, acne vulgaris of the pustular type, seborrhœic dermatitis and pustular bacterid.

The preparations used were sulfanilamide, sulfathiazole, sodium sulfathiazole and sulfadiazine in strengths varying from 5 to 50 per cent. They were incorporated in two different bases, which were essentially water in oil emulsions. The base most frequently used contained diethanolamine oleate, white wax, liquid petrolatum, white petrolatum and distilled water. The preparation was compounded so that the drugs were in a suspended state, the size of the suspension approaching a colloidal one. They were in solution to about the degree of their solubility in water (0.8 per cent. in the case of sulfanilamide and 0.1 per cent. in the case of sulfathiazole). Cure was obtained in all patients with superficial pyogenic infections, such as impetigo, in a shorter average time than that reported with accepted methods of treatment. In patients with cutaneous diseases secondarily infected, the secondary infections were quickly cured, but further treatment with the ointment did not favorably affect the primary disease. Results in patients with deeper pyogenic infection, such as sycosis, were variable, apparently depending on the ability of the ointment to reach the seat of the infection. Sulfathiazole ointment produced the only reactions noted. This ointment in 50 per cent. concentration produced an unusual and apparently characteristic reaction in 2 patients. The identical reaction was subsequently produced in one of these patients by giving sulfathiazole by mouth. A 5 per cent. concentration of sulfanilamide or sulfathiazole ointment is recommended.—*U. S. O. W. I.**

Sulfanilamide and the Prevention of Rheumatic Recurrences.—During two successive winters, 1940—1941 and 1941-1942, the 108 rheumatic children at Irvington House, Irvington-on-the-Hudson, New York, were divided into two groups matched as closely as possible, one of which was given, from October 1940 to June 1941 small daily doses of sulfanilamide (54 children). During the second winter, 54 children were given sulfanilamide and 50 served as controls. Only children who showed neither clinical nor laboratory signs of rheumatic activity received this drug. The results of this study showed that streptococcal upper respiratory infections and rheumatic relapses in rheumatic children can be prevented by the prophylactic administration of sulfanilamide. Toxic manifestations of sufficient severity to necessitate the withdrawal of the drug occurred in 15 per cent. of the patients. Children who did not develop toxic reactions tolerated the drug well. The effectiveness of sulfanilamide in preventing rheumatic recurrences indicates that infection with Group A hemolytic streptococci is an important factor in the etiology of rheumatic fever. *U. S. O. W. I.**

Sulfanilamide in the Treatment of Leprosy.—Sulfanilamide as a potent chemotherapeutic agent for combating certain types of invasive bacterial disease and the striking results obtained from its use have led to a widespread trial of the drug. Experimental administration with sulfanilamide to combat secondary infection in leprosy and also its influence on the disease itself is reported. Of the twenty patients treated in this manner six show some improvement of their leprous lesions. Two others showed improvement but they were improving when the treatment was started. One was probably stationary. The remaining ten showed probably slight progression of the disease. In two of the cases the sulfanilamide treatment definitely helped to clear up secondary infections. It was noted incidentally that sulfanilamide therapy produced prompt improvement of pseudoerysipelas in twelve patients not included in this group.

It was concluded that sulfanilamide therapy has proved effective in the treatment of secondary infections complicating leprosy and as a help in the healing of secondarily infected leprous ulcerations. It cannot, however, be regarded as a curative agent for leprous lesions either of the macular or lepromatous type. One interesting feature of the study was the development of eosinophilia (5 to 23 per cent.) which occurred in twelve of the cases. The significance of this during the course of sulfanilamide treatment is interesting and may be a fruitful field for further study.

*U. S. O. W. I.**

Surgery

Carcinoma of Breast.—Haagensen and Stout discuss the data from a punch card method utilizing a summary sheet listing some 700 different items found in the study of the mammary cancer of 1,040 women with proved or presumed carcinoma of the breast coming to the Presbyterian Hospital in 1915 to 1931. Of these, 986 were accepted for study and detailed unit records. The fact that in 6.6 per cent. an unsuspected carcinoma was discovered during a routine physical examination is striking proof of the value of a careful and complete physical examination of every patient. Only 1.6 per cent of the patients sought medical aid because of pain in the breast. The cancers of 876 of 986 women were relatively operable and of 640 absolutely operable. In 236 a radical operation was not done because of constitutional inoperability, the extent of the carcinoma, death, refusal or primary erroneous diagnosis in 10. Of the 640 primary cases treated by radical mastectomy, 599 were followed until death or for a minimum of five years. The term "five year clinical cure" is used to designate the group of patients in whom no further evidence of cancer developed during the five postoperative years. Twenty patients died at operation, 41 were lost track of before the five years were up, 13 died of unknown causes and 12 of intercurrent disease during the five years, 290 died because of their disease, while 33 with recurrence and 231 without recurrence are alive five years after operation. A local recurrence developed in 146 and metastasis in 316 within five years of the operation. The earlier the patients came for treatment the better was their chance of clinical cure. The clinical cure rate of those in whom the disease was limited to the breast was approximately three times as high as of those in whom it extended to the axillary lymph nodes. The frequency of local recurrence appears to be similarly related to axillary involvement. Only from the knowledge obtained from an accumulation of actual measurement of the

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axillary nodes can one hope to become more expert in his judgment of axillary involvement. Preoperative radiation is not given to patients with operable carcinoma of the breast. Post-operative prophylactic radiation has not appeared to have had any demonstrable value. Palliative irradiation for recurrent disease has been of the greatest value in controlling pain due to bone metastasis and in clearing up small local recurrences in the operative field. When persistent pain develops in the back, pelvis or legs of a patient who has had a radical mastectomy for carcinoma irradiation is begun at once, even though rœntgenograms fail to reveal any definite lesion of the bone. During the years covered by the present report there was an increasing tendency of the staff surgeons to lengthen the operative time and to increase the extent of the dissection. The evidence suggests that these more radical operations gave better results.—*J.A.M.A.*

Etiology and Treatment of Duodenal Ulcer.—After an experience of twenty years with some 4,000 operative cases of gastric and duodenal ulcer, Somervell believes that the operative treatment of duodenal ulcer should be stabilized on a firm and scientific basis, especially in India with its poor class of patient "whose stomach must be fitted for curry and rice in the shortest possible time," which depends largely on objective data and less on the personal opinion of the surgeon than has heretofore been the case. The effect of vitamin deficiency on the cause of duodenal ulceration is discussed by him and his belief is that deficiency of vitamins A and B_2 is the main dietetic cause of this condition in South India and possibly elsewere. Roentgen examination and the fractional test meal, if operation is decided on, enable the surgeon to have a good idea before the abdomen is opened as to the best type of operation to perform. The advantages of ligation of gastric arteries in place of gastrectomy are set forward. Rapid reduction in gastric acidity is obtained by the ligation of a sufficient number of the arteries of the gastric wall. This enables the simple gastroenterostomy to be done instead of the more serious gastrectomy preferred by many surgeons in the past. Gastro-jejunal ulcer is perhaps the most serious of all late sequelæ of gasteroenterostomy. Its treatment depends on the acidity, the general condition of the patient and the liability to recurrent ulceration as shown by the presence of more than one ulcer. Considering these three items, the best operation for any particular case can be decided soon after the abdomen is opened.—*J.A.M.A.*

Keloids.—The 80 cases of keloid that Garb and Stone report were treated in private practice and at the New York Post-Graduate Hospital from 1929 to 1940. The literature is reviewed to facilitate discussion of the theory and therapy of keloids. Hormone stimulation appears to be the main or the important contributing cause of keloid formation. The fact that the keloids of 23 of 67 patients whose ages were given occurred in the second decade and 12 per cent. of keloids followed acne vulgaris also point to hormone stimulation. This view is further supported by the resolution or absence of keloids after the menopause and by their rarity in the aged, possibly the result of the diminution or disappearance of the male or female sex hormone. While keloids have distinctive, usually easily recognized, features there are numerous instances in which a differential diagnosis has to be made between keloids and hypertrophic scars, sarcoids, scleroderma fibroma and paraffinomas. Epulis, some tumors of the throat, lung, stomach or ovaries and even esthiomene and rectal strictures are considered by many investigators as forms of keloidal growths. Primary union of a wound does not prevent the formation of keloids. Rœntgen or radium treatment before or soon after excision of a keloid does not prevent its recurrence. A keloid of sufficient size should be first excised, wound-healing hastened and X-rays or radium used at the first sign of recurrence. Among the authors' patients 2 are of particular interest: a girl of 18 whose hundreds of keloids did not respond to any form of therapy and a woman of 49 with extensive keloidal growths for fifteen years in whom deep ulcers and hyperkeratotic areas developed.—*J. A. M. A.*

Sulfonamides in the Treatment of Hematogenous Osteomyelitis.—Wilson & McKeever report studies on the influence of sulfonamide drugs on the course of acute hematogenous osteomyelitis in children, based on 31 consecutive patients entering the Los Angeles Children's Hospital from January 1939 to December 1941. Administration of sulfonamides to the patients admitted during the first nine months of the period was both spotty and indecisive. During the last two years sulfonamides were administered on the basis of .0975 gm. per pound of body weight every twenty-four hours, and sulfathiazole was the drug employed. In several cases surgical treatment was also necessary. Twenty-eight of the 30 surviving patients were examined early in 1942. Twenty-one had all draining sinuses closed, showed good bone reconstruction, were free of soft tissue damage and had no joint impairment. They were classified as having good results. All sinuses were closed in one patient but the ankle joint was fused. In one patient the lesion was unhealed and there was joint damage. Five patients still had draining sinuses without impairment of joint function. They concluded that chemotherapy with sulfonamide drugs is a valuable addition to the treatment of acute hematogenous osteomyelitis in children, and should be used routinely. The greatest effect of the sulfonamides is on the infected blood stream, which is usually promptly sterilized. The incidence of death and of multiple bone involvement is reduced by routine sulfonamide therapy. In an occasional mild case of acute hematogenous osteomyelitis, the patient may recover by chemotherapy alone without surgery. Well-timed surgical drainage of abscesses and pyogenic granulomata *is not supplanted by chemotherapy in the* treatment of acute osteomyelitis, and should never be withheld from a patient on the false hope that recovery will result without drainage.—*U.S.O.W.I.**

Plasma Therapy in Severe Burns.—Management of a patient with severe burns attempts to bring him past four serious stages in the chronological course of a burn, namely, primary shock, shock, toxemia and infection. In a recent discussion of this subject, Harkins and his colleagues state that plasma is the best available agent for the treatment of burn shock. The administration of plasma should be quantitatively adjusted to fit the patient. There are four methods of calculating the plasma dosage. When no laboratory facilities are available, use of the *first aid formula* is suggested, whereby 50 cubic centimeters of plasma is given for each per cent. of the body surface (as calculated by the Berkow method) involved by a deep (blistering) burn. The three other methods of calculation of plasma dosage depend on the determination of the extent of hemoconcentration. The formulas of Black, and of Elkinton give accurate results, but the method described in this paper is therapeutically just as reliable and is much simpler.

This method is as follows: the amount of plasma needed can be roughly calculated for an average-sized adult as being 100 cubic centimeters plasma for every point the hematocrit exceeds the normal of 45, as long as the plasma proteins are above 6.0 grams per 100 cubic centimeters. When the plasma proteins are below 6.0 grams per 100 cubic centimeters, an additional 25 per cent. of the calculated amount of plasma should be added for every gram the protein level is below 6.0 —*U.S.O.W.I.**

The Acute Abdomen in Infancy.— Harrold A. Murray, M.D , F.A.A.P., Newark, N.J.

Congenital Hypertrophic Pyloric Stenosis.—This is the most common condition which requires surgical treatment in the first few months of life. The symptoms are those of high obstruction with accompanying loss of body fluids and chlorides. The vomiting generally occurs before the tenth day, is projectile in type and contains no bile. With increasing vomiting, the stools become scant and the output of urine is lessened. Marked loss of weight occurs, and severe dehydration becomes evident.

The examination of the abdomen gives the greatest help in the diagnosis. The "tumor" should be 100 per cent. palpable. Operation should not be resorted to unless the hypertrophied pylorus can be felt. It should be remembered that the infant must become quiet before a successful examination can be made. This can be accomplished by means of a pacifier or a small feeding of sweetened water. The stomach must be completely emptied, and a gastric lavage may be necessary. X-ray examination is not necessary for the diagnosis. Barium may be vomited and aspirated, and often distresses the infant postoperatively. When it is used only a thin mixture and a small amount should be given.

Preoperative care.—A dehydrated infant should never be operated upon until lost body fluids and chlorides have been replaced. Sometimes this may take from two to four days. Subcutaneous routes, as by hypodermoclysis with 5 per cent glucose in saline, either alone or, when possible, combined with an intravenous injection of 10 per cent glucose in sterile water, quickly relieve the dehydration. Transfusions are not advised before operation, and atropine sulphate has little value in the typical case of pyloric stenosis.

The *operation* described by Rammstedt is now generally employed to relieve this condition. Either administered by the open mask drop method is the anesthesia of choice. The stomach is washed out before operation and some surgeons leave a 15 French catheter in place during the entire operative procedure.

Postoperative care.—A routine feeding schedule somewhat along the following lines should be established: As soon as the infant is conscious, one ounce of fluid is given every two hours. This is continued for the first twenty-four hours, when regular feedings are instituted, at three-hour intervals. Whenever possible, breast milk should be used. Barley water or a weak solution of evaporated milk and sterile water offers an excellent substitute. After the first week the infant is fed at four-hour intervals, with the daily requirement of fifty calories and three ounces of fluid per pound of body weight. It is often necessary to administer fluids parenterally during the first twenty-four hours, or as long as any signs of dehydration exist.

Infrequently an infant continues to vomit postoperatively. If this occurs and continues, further operative procedure might become necessary to relieve the obstruction.

Intestinal obstruction.—Intestinal obstruction in infancy is due to either intrinsic or extrinsic causes. The intrinsic causes are membrane, stenosis or atresias. Obstruction when caused by any of these offers a poor prognosis. The extrinsic causes are: bands, volvulus or fixation of the intestine in abnormal positions. The prognosis in these conditions is somewhat better.

Congenital volvulus is the most common cause of intestinal obstruction. It is generally caused by the cæcum and large intestines entering the umbilical opening first, instead of the small intestine which should precede it. This causes a torsion involving the mesenteric artery. The

*United States Office of War Information.

mesenteric artery supplies the small intestine as the prearterial segment, the cæcum, ascending colon and one-half of the transverse colon as the postarterial segment. The prearterial segment should enter the umbilical opening first. If the postarterial segment enters first, then torsion of the duodenum around the mesenteric axis results with the formation of a volvulus.

A diagnosis of intestinal obstruction should be made *before* blood occurs in the stool. The suspicious symptoms of intestinal obstruction are: sudden intermittent colicky pain, *vomiting of bile soon after birth*, a mass in the abdomen and extreme shock.

The treatment is immediate operation with the preoperative measures to relieve dehydration. Ether with the open mask drop method is the anesthesia of choice. The postoperative procedures to control dehydration and to re-establish feeding routines are the same as in other abdominal operations in infancy.

Intussusception.—Intussusception is one of the most important surgical emergencies in infancy. It is rarely caused by mechanical abnormalities in infancy and is more prone to occur around the fifth month of life. The symptoms are classical and should always suggest the presence of this condition. The little patient intermittently becomes pale and draws up his legs in extreme pain. Pallor, sweating, dehydration and shock followed by bloody stools occur within twelve hours. Abdominal and rectal examination reveal the presence of a sausage-shaped mass in a large number of cases. A barium enema examination is helpful in some cases. but the symptoms are so suggestive that a roentgenologic examination is rarely necessary to make the diagnosis.

The diagnosis of intussusception should be made *before* blood appears in the stool.

Nonoperative methods such as the colonic injection of air or fluids used in an attempt to reduce the intussusception, are to be condemned.

Postoperative treatment is very essential. Parenteral fluids should be administered about three times a day for the first four days, and only water in small amounts is given by mouth for the first twenty-four hours. It is unwise to give the full caloric intake of food before the end of the first week. Routine lavage both before and after operation will prevent vomiting, with resulting aspiration following operative procedures.

Postoperative peritonitis has been lessened with the introduction of a sulfonamide at the time of operation.

A postoperative fever is a common finding during the first few days after operation and, unless extremely high, is no cause for alarm.

If recurrence of intussusception takes place which rarely happens, a second operation is immediately indicated.

—*J. M. S. N. J.*

Chronic Prostatitis.—Gandin (*New Zealand M. J.*, 1942: 41: 30) points out that as a focus of chronic infection the prostate comes next in order to teeth and tonsils. We often fail to recognize the presence of chronic prostatitis because it possesses no special syndrome to suggest it. Nervous disease of the "function type," rheumatism and gastro-intestinal upsets is the order in which the author would place those systemic disorders that may have their origin in the diseased prostate. If one finds nothing much amiss in such cases referable to the system affected, treatment of the prostate generally brings rapid improvement. A diagnosis may be made in three ways: (1) in the course of a routine examination of the prostate; (2) where a urinary tract infection fails to respond to careful treatment; (3) where a very thorough investigation of a presumptive diagnosis of say, a renal calculus fails to discover such a condition. Local pain is seldom marked, but a sense of discomfort in the prostate is a common feature. It may be aggravated by a full bladder, a bowel movement or by jolting. Often it is noticed that the patient does not sit still and squarely in his chair but is restless and sits on one or other buttock. Slight frequency of micturition and one or two nocturnal disturbances are the rule. In most cases due to the presence of posterior urethritis there is frequency of micturition, slight discomfort which may amount to actual pain during and more particularly after micturition and slight hesitancy, almost stickiness, the first thing in the morning. Voiding is usually accomplished easily with a full heavy stream but occasionally the stream is suggestive of stricture. There may be a slight urethral discharge. There is little more than a gumminess in the morning with perhaps a prostatic bead at stool. From time to time the symptoms may be more acute with increased frequency of micturition and the stinging pain after the act amounting to tenesmus. The only reliable signs in a case of chronic prostatitis are a prostate tender on palpation, and on massaging it a burning sensation in the urethra. The finding of quantities of pus cells will definitely decide the diagnosis. The importance of a rectal examination with a lubricated gloved finger must never be neglected in such cases.—*G. P.*

Tumors of the Breast —E. T. Bell, M.D., Minneapolis, Minnesota.

The correct interpretation of tumors of the breast involves a clinical examination of the breast as well as a study of the tissue that is removed. It is very important to examine the breast by gentle pressure with the open hand.

1. A single adherent tumor. When the tumor is adherent to the skin or deep fascia it is nearly always malignant. The exceptions are fat necrosis and occasional cases of mastitis.

2. A single non-adherent tumor. In young women these are chiefly benign but in older women many of them are malignant. The benign growths are cysts and fibroadenomas; the malignant ones are medullary carcinoma, sarcoma and scirrhous carcinomas situated at some distance from the skin and deep fascia. In this condition the tumor should always be removed and examined to determine whether an extensive operation is indicated.

3. Multiple non-adherent masses. These are nearly always cystic disease but a few are multiple fibroadenomas, and rarely a gelatinous or medullary carcinoma may produce this condition.

4. Multiple adherent masses. This type of breast nearly always represents an advanced carcinoma.

In addition to these types of involvement of the breast there are several other special types.

(a) Acute carcinoma of the breast. This rapidly developing form of cancer has the appearance of an acute mastitis. The breast is swollen, reddened and tender and there is increased local heat. The tumor is highly malignant and infiltrates the lymphatics of the breast and axilla extensively and rapidly. The prognosis is extremely unfavourable.

(b) Paget's disease of the nipple appears as a stubborn dermatitis of the nipple. Upon biopsy the characteristic clear cells are found in the surface epithelium. The tumour is usually regarded as a primary carcinoma of the large ducts of the nipple.

c. Mastitis of puberty. In boys and girls about the time of puberty a mass in the breast may develop which is sometimes mistaken for a neoplasm. It is a small button-like indurated mass about the nipple. The nipple is exactly in the centre of the growth. Microscopically one finds a moderate infiltration with large lymphocytes and some hyperplasia of the glandular tissue of the breast. The mild inflammatory reaction is probably a response to endocrine stimulation. It requires no treatment other than a protective dressing.

(d) Discharge from the nipple. A discharge from the nipple may be either serous or bloody and may occur with or without the presence of a palpable tumor. If a tumor be present this should be removed by biopsy and examined. It may prove to be a circinoma or a duct palpilloma.

When no palpable tumor is present the discharge is due either to a duct papilloma, a cyst communicating with a large duct or a simple ectasia of the large ducts. A conservative operation is indicated. If the discharge is serous and no tumor is palpable, surgical intervention is not necessary.

Malignant lesions are very rare before the age of 20 years and they are infrequent in the third decade. In the first three decades the vast majority of the lesions are benign; in the fourth decade about three-fourths are benign, and in the fifth benign and malignant lesions are of equal frequency. After the fifth decade malignant lesions heatly preponderate.

The benign lesions are: (1) fibroadenoma, (2) cystic disease and (3) chronic mastitis.

1. Fibroadenomas attain their maximum frequency in the third and fourth decades but a few are found in advanced life. These tumors are usually single but may be multiple. They are hard and freely movable. They should be removed because an occasional tumor becomes a sarcoma.

2. Cystic disease reaches its peak in the fifth decade and practically disappears after the menopause. There may be a single mass in the breast but usually there are multiple non-adherent tumors. Upon gross section one may see cysts or solid masses of tissue. Microscopically there are two forms: a simple ectasia of the ducts and an adenomatous growth of the lobules with or without the formation of cysts. In making the microscopic diagnosis it is very important to examine the section under low magnification. In adenocystic disease the epithelial masses are always arranged in lobules while in carcinoma the lobular arrangement is lost. If one uses high magnification at first he is apt to make an erroneous diagnosis of adenocarcinoma.

Cystic disease is not a precancerous condition. Having established the diagnosis by biopsy it is safe to leave the rest of the breast undisturbed. This conservative treatment is especially recommended in young women.

3. Chronic mastitis. (a) Chronic exudative mastitis resembles chronic inflammations elswhere except that the escape of secretion leads to the formation of pseudotubercles which may be mistaken for true tuberculosis,

(b) Chronic fibrous mastitis is applied to fibrous induration of the breast. There are many bona fide examples in which a part or the entire breast is thickened, hard and fibrous. Microscopically, there is merely an increase of dense collagenous tissues. However, the majority of cases which the pathologist finally calls chronic fibrous mastitis represent normal breast tissue in which the glandular elements are atrophic. The surgeon picks up the lobules of the breast between his fingers and thinks he feels a tumor.

Carcinoma.—Carcinomas of the breast are usually subdivided into scirrhous, medullary and gelatinous. In our 714 cases, about 90 per cent. were classified as scirrhous, 6 per cent. as medullary, and 4 per cent. as gelatinous. The medullary and gelatinous forms are non-adherent but there is not much difference in their malignancy.

An important type is the comedo tumor. This is a solid growth which on pressure yields a column of fatty material not unlike that which may be expressed from a blackhead. On microscopic examination one finds large ductlike structures filled by growing epithelium, and there is uncertainty as to the interpretation. Bloodgood found that nearly all the women with comedo tumors were well five years after radical mastectomy, and he suggested that the growth is not malignant. However, it is dangerous

for the pathologist to diagnose a comedo tumor as benign on the basis of a biopsy alone, since after removal of the breast, one frequently finds areas of definite carcinoma. The safest procedure, therefore, is to recommend mastectomy. If, after thorough examination of the breast, no areas are found except the ductal proliferations, the axilla need not be dissected out.—*Texas State Journal of Medicine.*

Proceedings of Associations

The Kistna District Branch of the Indian Medical Association.—The monthly meeting of the Kistna District Medical Association, Masulipatam, was held on Monday, the 2nd of August, at the Government Hospital, Masulipatam.

Dr. N. N. Sujeer, the president, at the outset introduced Dr. V. Venkappa, L M.P., Provincial Secretary of the All-India Medical Licentiates Association who came on a tour in connection with the recruitment of Licentiates to Indian Army Medical Corps.

In response to the letter from the Honorary General Secretary, I. M. A , Calcutta, Dr. Jivaraj Mehta, was nominated for the presidentship, and Drs. D. Ramachandra Rao, M.A., M D., Amseer of Karachi and M. Seshachari for the Vice-presidentship. At the clinical meeting which followed Dr. Mrs. P. Janakibai, read an interesting report of a case of operation of tumour abdomen.

Dr. Venkappa in a lengthy speech appealed to the Licentiate members of the Association to join the Indian Army Medical Corps in large numbers, Dr. P. S. Chalapatti Rao, presiding

Dr. N. N. Sujeer also spoke at length on the subject. Some doubts of certain members were cleared. With a vote of thanks the meeting came to a close.

The Pharmaceutical and Allied Manufacturers' and Distributors' Association, Ltd., Bombay.—It was a record gathering that assembled at the third annual meeting of the Association which was held at the premises of the Chamber of Commerce, Ballard Estate, Bombay, on the 28th of April last, with Dr. M. Venkatrao in the chair. After the adoption of the annual report, the President referred to the phenomenal progress the organisation had made in the matter of enlisting members and in securing recognition at the hands of the Director-General. He turned to post-war reconstruction problems which are engaging the attention of all thoughtful men at the present moment. More important than anything else, he said, was that goods of standard quality should be manufactured in this country, and only those who respected the pharmaceutical trade should be encouraged. Many rubbish preparations, fit for nothing, were put in the market by unscrupulous men, and the honour and prestige of the trade are considerably affected. It was up to them to strive their utmost in putting down with a firm hand the nefarious activities of these self-seekers by appealing to the Government consistently and persistently to come to their rescue by passing suitable legislation.

He also referred with approval to the starting of packing departments in India by some of the well-known manufacturers of England to enable them to find a ready market for their products. He would wish them start their factories here for the manufacture of drugs to help guide the Indian manufacturers and secure for the Indian industry an acknowledged place in the medicinal world.

[The trials and tribulations to which this country had been subjected to owing to war conditions had opened the eyes of many people to the need for the manufacture of all the essential requirements in our own country, and it is the duty of the trade and of the government to see to it that unscrupulous people are not allowed to make hay while the sun shines and flood the market with quack remedies and medicines which do not satisfy standard requirements. E.D.]

Preparations and Inventions

Pholetone.—Manufactured by Boots Pure Drug Co., Ltd., Nottingham, England. Bombay Office: P.O. Box No. 680; Calcutta Office: Mercantile Buildings, 10, Lall Bazaar.

PHOLETONE (Pholedrine) B-(p-oxyphenyl) isopropylmethylamine sulphate is a British-made product which is the same as the German preparation 'VERITOL.' It is a non-toxic sympathomimetic substance closely related to adrenalin and isomeric with ephedrine, supplied as a sterile 2 per cent. solution in ampoules of 1 c.c. for intramuscular, subcutaneous, or intravenous injection.

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Stocks are available now. Detailed literature will be sent by the Calcutta Office of the firm on application. It is supplied in 1 c.c. ampoules, in boxes of 3, 6, 12 and 50 ampoules.

Laverain, Manufactured by Messrs. Smith Stanistreet & Co., Ltd., Calcutta.

LAVERAIN is prepared from quiniodine the non-crystallizable alkaloids of Cinchona bark. It is claimed to be an effective subsitute for quinine It is being locally produced and there is sufficiency of raw materials as to enable the manufacturers to distribute not less than 14,000,000 tablets this year. LAVERAIN has been thoroughly tried. It has the advantages of being somewhat cheaper than quinine and of not producing certain of the undesirable after effects, notably deafness. Under clinical tests there have been positively no cases of relapse.

Ferilex, Manufactured by Teddington Chemical Factory Ltd., Solo Distributors: W. T. Suren & Co., Post Box. No. 229, Bombay.

FERILEX is a palatable and potent liver preparation in liquid form suitable for internal use, containing as its basic constituent a highly concentrated extract from selected fresh sheep liver. "The liver vitamins in this tonic consist of:—vitamin B_1, B_2 (Riboflavin) B_6, Pantothenic Acid and Nicotinic Acid from 12 ozs. of fresh liver per oz. of tonic. FERILEX is further supplemented by iron in its most assimilable form by traces of manganese and copper, by glycerophosphate and malt extract. It is appetising, sweet and pleasantly flavoured and is acceptable to the palate.

It is indicated in all conditions of debility and weakness occuring as sequelæ to faulty nutrition or attacks of malaria and other infectious diseases and in delayed convalescence. It is invaluable in the treatment of secondary anæmias by liver and iron therapy. It is a valuable source of nutritional factors preventing the onset as well as for curing the symptoms of macrocytic anæmia in conditions of pregnancy.

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Correspondence

An Interesting Case

To The Editors,
THE ANTISEPTIC, Madras.

Sirs,

Dr. Bachan Singh's case reported under the above heading in the April issue of this Journal is immensely interesting but to my mind it is not quite so puzzling or exciting as he seems to think.

The possibility of the "Coughed up" flat worms being ordinary lung flakes (Trematodes) has not been ruled out at the Laboratory: the seven "Segments" Dr. Maplestone tackled at the Laboratory were "so immature" or degenerated that he hardly knew what to make out!

In any case the real scientific curiosity in a case like this starts or ends not until a cover-glass preparation of fresh sputum of the patient is examined under a microscope which in this instance appears to have been singularly omitted!

Here is an example of what might have been a "discovery" gone west for want of proper investigation!

I am afraid that Dr. Singh's "specimens" won't be of much use now, otherwise I would have requested him to let me have some.

T. D. NAIR.L.A.S.,
D.T.M., L M.,
(Asst. Surgn. East African Medical Service,
Retired.)

To The Editors,
THE ANTISEPTIC, Madras.

Dear Sirs,

I have read an article by Dr. Ch. Krishnamurthy on Anaphylactic Shock after Aolan injection with interest, in your *last* Antiseptic. I have met with a similar case some three years ago, and I think my explanation will help enlighten the phenomenon.

My patient was suffering from chronic otitis media. He was 45. He had received some four or five injections of milk previously. I was giving him all injections in the deltoid alternately. After this particular injection the patient began to experience uneasines, heavy perspiration, twichings and symptoms of collapse. After heavy fanning and lapse of sometime he began to come round. When he was quite well, he said that as usual his hand was not heavy and he felt that the injection had escaped into the blood. I at once caught his sense and knew that the needle might have entered some small vein and that the injection had been intravenous. The injection was automatically very quick in contrast to some resistance as is usual in a muscle injection. So I think it was not anaphylaxis, but entry of plenty of milk proteins quickly, that was responsible for this phenomenon.

Yours Sincerely,
KESAVLAL H. PAREKH,
Medical Officer.
Desai Kalidas Sarvajanik Dispensary, Jetpur.

An Appeal

D. V. Chafekar, B.A., M.B., B.S., Gadag, writes :—

Sir, I am a private medical practitioner of about twenty years' standing. I conduct a Maternity and Nursing Home. I am now getting old; and naturally, I wish now that my son should take up my place.

My son is an averagely talented healthy lad of 19. He has up to now no failure in the University Exam. He appeared and passed his J. B. Sc. Exam. this year.

He applied for admission to both the Medical Colleges in Bombay, last year after passing his I Sc. as well as this year. He could not get admission.

The minimum requirement for admission to a Medical College is passing the I. Sc. with B. Group. It can never be the lot of all students to get a Class, in our University examinations. If once a student passes the I. Sc. examination but does not get a Class, he can never get admitted to a Medical College under the present state of affairs. If he were to fail, he can try again to secure a Class, but if he commits the sin (!) of passing, his chances are barred.

The same is the case with the B. Scs. as well; and this is the fate of my son. He passes without a class; therefore he shall not learn medicine!! Therefore his father should sell his practice te some one else or close it !!!

Now sir, is this right? If not, who is responsible? What way is there for such a lad to obtain a Medical Degree?

(1) If for the medical course the University keeps an entrance exam. and passes only as many students as there are seats, there may be some hope, though this method has its serious defects.

(2) Why should not the Medical College increase the number of seats? They can allow 3 or 4 students to form a group for dissection or for clinic, so long as the war continues, and thus do it. Where there is a will there is a way. More Colleges may be opened later on.

But who is going to think of the disappointments of an Indian student? Who cares for the frustrated hopes of an Indian parent?

Will you kindly try to solve the problem and make matters move if you can? Thanks.

Notice

The XX All-India Medical Conference, Ahmedabad.

The 20th session of the All-India Medical Conference of the Indian Medical Association is to be held in December next at Ahmedabad at the invitation of the local branch of the Association. It will be the 2nd session of the Conference to the held in that province. Dr. G. B. Mankad, M.D., M.R.C.P., P.C P.S., Chairman of the Scientific Section, appeals to all practitioners of the province to give their whole-hearted co-operation in making the session a success, by enlisting themselves as members of the Reception Committee, the fee for which has been fixed at Rs. 15/- minimum.

As usual the Conference will discuss subjects of professional interest in its scientific, social and economic bearings, and members of the medical profession are requested to make their contribution to the discussions by sending papers to be read or by reading papers themselves. The Conference Committee requests that the title of the paper which the members wish to read may be sent as early as possible to the Conference Office, Surgical Hospital and Radium Institute, Ellis Bridge, Ahmedabad, 6.

Dr. P. B. Mukherji, Hony. General Secretary Indian Medical Association, writes :—

The following resolution was passed by the XIX All India Medical Conference held at Patna during the last Easter hoildays :—

"In order to stimulate intensive study and research on puerperal sepsis the control of which is of vital importance to the nation, this Conference recommends to various medical institutions in the country to under take detailed investigations of this disease in its different aspects, bacteriological and clinical, and to make available to the profession their findings in this respect. This Conference recommends to the Indian Medical Association to offer a medal or prize for the best paper on the subject to be read at the next session of the All-India Medical Conference."

Dr. K. S. Ray, an Ex-President of the Indian Medical Association, has offered a Gold Medal for the best paper on the subject to be read at the next session of the Conference to be held at Ahmedabad during the ensuing Christmas holidays. The last date for receipt of papers will be notified later.

Acknowledgment

We are in receipt of the July issue of the Journal of the Gwalior Medical Association. It has during its life of over seven years served the medical profession in Gwalior and outside well, and we have no doubt that it will increase in usefulness and utility with the passage of time. We wish the Journal all success,

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Urethane	q. s.
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Use:—Ferarchin is to be used in (i) acute & Chronic stages of Malaria including Malignant type with enlarged liver and spleen.

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Ferarchin should never be used in cases where arsenic administration is not desired.

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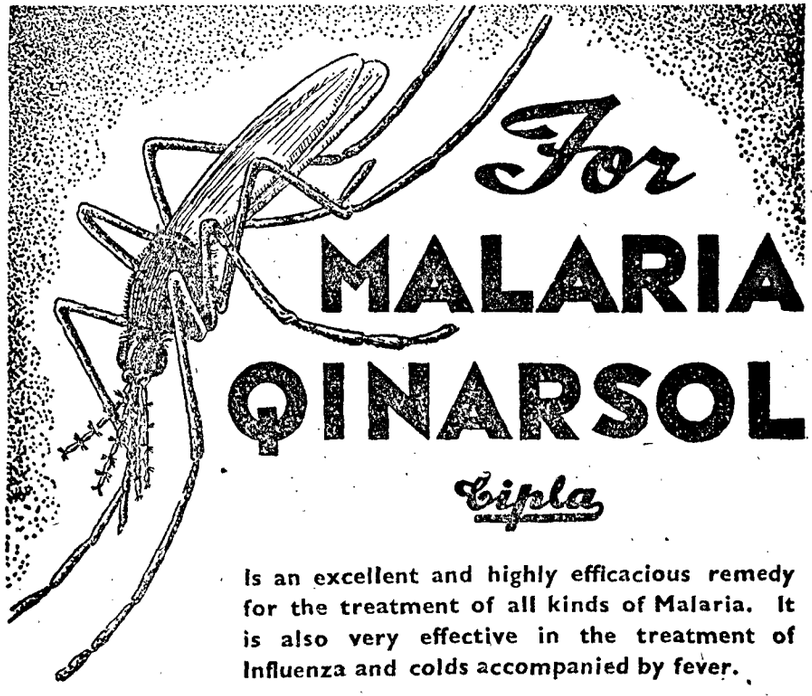

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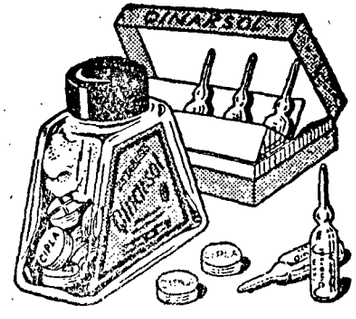

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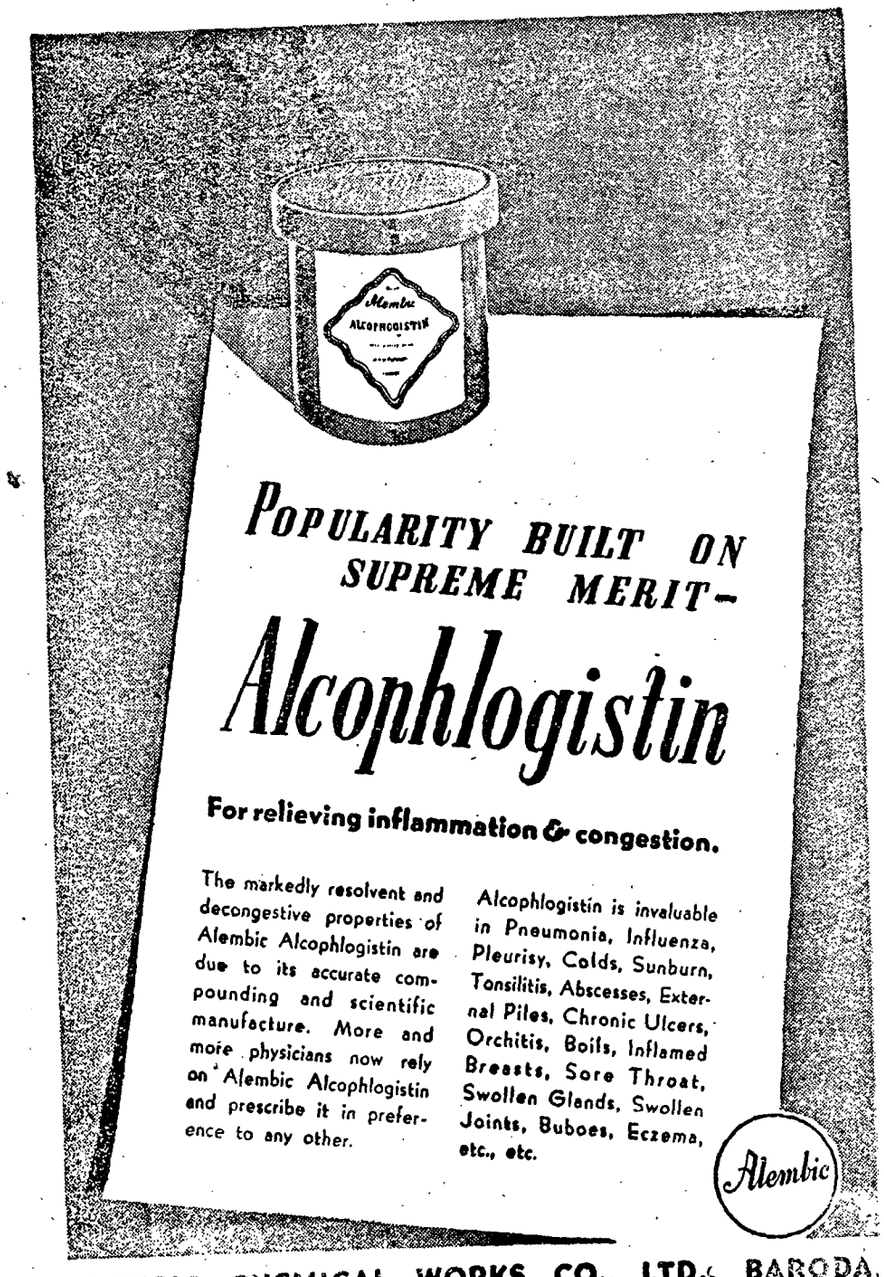

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A Monthly Medical Journal

Edited by

U. Rama Rau, & U. Krishna Rau, M.B., B.S.

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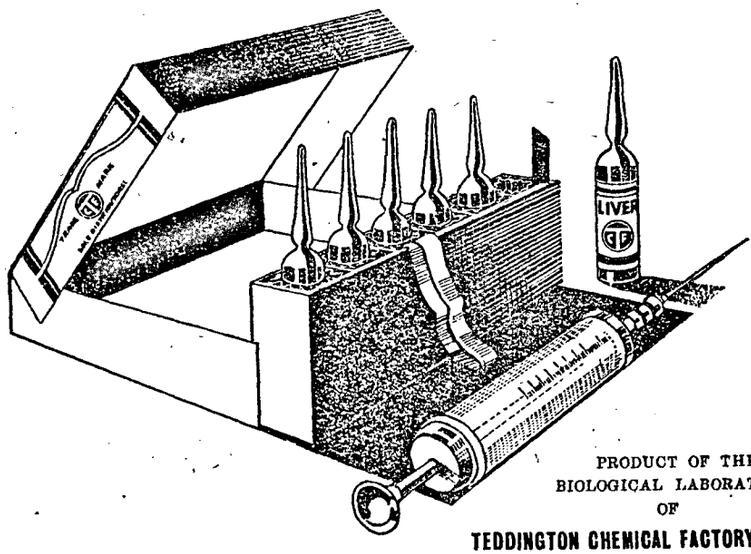

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Original Articles

Nicotinic Acid Deficiency in General Practice*

BY

CAPT. N. AHMED,

Divisional Medical Officer, East Indian Railway, Alahabad.

NICOTINIC Acid or Bpp (pellagra-preventing factor in B_2 complex) has such a marked therapeutic value in the treatment of pellagra and so dramatically ameliorates its clinical and sub-clinical manifestations that pellagra has now come to be known as a deficiency disease. The value of Nicotinic Acid in pellagra and sub-clinical pellagra are discussed by me in detail in my articles, Pellagra in the United Provinces (*Indian Medical Gazette*, 67 : 142), Pellagra in Bihar (*Pat. J. Med.* 17 : 1), and Pellagra in the Upper India Provinces (*Jour. Ind. Med. Assn.* 12 : 1). I am also using Nicotinic Acid for the last 5 years in various other conditions with such marked beneficial results that I now consider it worthwhile to place the result of this clinical research in the hands of general practitioners for a wider trial and for the benefit of the patients and profession in general.

Rationale of using Nicotinic Acid in general practice.—A clinician, in order to avoid waste of time, energy and material, has to base the use of a new therapeutic agent in general practice on a rational basis. Nicotinic Acid dramatically cures the manifestations of pellagra which specially occur in the nervous, gastro-intestinal, circulatory and cutaneous systems of the body. The exact causation of definite pellagra is still under discussion and not definitely known. Some workers believe that it is due to Nicotinic Acid deficiency with or without some sort of toxæmia, while others say that as low nicotinamide blood content is not always found in pellagrins the disease is not mainly due to its deficiency. However, what is important for a clinician is that addition of Nicotinic Acid parenterally or by mouth invariably corrects the disturbances produced by pellagra or pellagra-like conditions that resist ordinary routine treatment. Apart from pellagra, depletion of Nicotinic Acid in the body has also been found to exist in cases of intractable or prolonged illnesses due to any cause

* Specially contributed to 'The Antiseptic.'

whatsoever. Low nicotinamide blood content has actually been demonstrated by various workers in cases of diarrhœa, vomiting, malnutrition, exhaustion and anæmias due to causes other than pellagra. This depletion brings about a vicious circle exaggerating the conditions that have caused it. Ordinary treatment in such cases fails if we neglect to make good the deficiency of Nicotinic Acid in the body. We are, therefore, justified in trying to cure or help to cure such diseases by the additional therapy added to the ordinary treatments. A knowledge, clear understanding and keeping in mind of the above-mentioned facts should enable a general practitioner to recognize the cases in which Nicotinic Acid therapy is likely to prove beneficial or even absolutely essential. To economise in space I shall not detail the results obtained by other workers by experimental and clinical trials but will be content to give the essential points with few illustrative cases concerning the subject to enable the general practitioners to know where and how to use Nicotinic Acid in general practice.

Nicotinic Acid in mental disturbances.—Nicotinic Acid deficiency produces definite 'mental state,' varying in intensity from ordinary depression to acute suicidal mania. Fits of depression which make a chronically ailing or ill person morose, taciturn and 'fed up' with life are often noted by us to which we have not been paying due clinical attention. Pellagrins often show mental disturbances which, if not recognized in time, may lead to disaster. LOWE (1931) recorded a case of a pellagrin who committed suicide by drowning when under one of the fits of depression. One of my own cases (recorded in *Jour. of Ind. Med. Assn.*), who was ailing for a year, was brought to me for having strong suicidal tendency which made me look for cutaneous lesions of pellagra in him. He was found to be a pellagrin and was cured by Nicotinic Acid. Having this knowledge in hand we should always keep in mind that an illness which produces exhaustion, malnutrition, defective in-take or assimilation of balanced food is likely to produce deficiency of Nicotinic Acid in the system and consequent mental disturbances which could easily be cured by the additional therapy. JOLIFFE suggests that cerebral manifestations may be the very initial symptoms of depletion of Nicotinic Acid. CLECKLEY, SYDENSTRICKER and GEESLIN tried Nicotinic Acid in a series of elderly patients showing typical psychotic state supervening on symptoms of definite chronic diseases like arterio-sclerosis producing malnutrition. The mental state got so dramatically cleared up that the observers were tempted to conclude that 'many patients are allowed to die because of the failure to recognize the cerebral symptoms of pellagra when other evidences of the disease are absent' and suggest that Nicotinic acid should be given to a patient who is found in an unexplained 'mental state.' In the present state of our knowledge we may not agree with these observers that psychotic states in elderly chronic patients or in unexplained cases are always the cerebral symptoms of pellagra, but we do believe strongly that, pellagra or no pellagra, the mental state in such patients, whether old or young, is clinically due to deficiency of Nicotinic Acid in the system as shown by definite cures of the condition by Nicotinic Acid therapy and recurrences of the trouble whenever the patient is allowed to lapse to his former condition, and dramatic cure again when Nicotinic Acid is added to his diet. We should not, therefore, neglect to try Nicotinic Acid in all those patients who at any period of their illness show definite mental disturbances and are found in a state of mind that produces pessimism and psychological morbidity that delays recovery and which, if not dealt

with suitably, brings about premature death. I have a case of a girl under my observation for the last 15 months which is a perfect research model for demonstrating how depletion of Nicotinic Acid causes profound mental disturbances that dramatically disappear under Nicotinic Acid therapy and recur and get cured again and again.

CASE :—*Fits of mental state in a girl suffering from chronic abdominal pain* :—A girl, aged 13 years, weighing 102 lbs, had vague abdominal pain and began to lose appetite and weight. She lost about 15 lbs. in 3 months. She then had an attack of acute pain with fever rising up to 103° F. She was seen by two surgeons and some physicians who excluded appendicitis but could not diagnose the case. She lost some more weight and almost completely went off food and was given Glucose by mouth and intravenously to keep up her strength. It was then that she lost interest in everything, became morose and taciturn, avoided company of her sisters and brothers and one day seriously told one of her sisters that she intended to end her life by taking some poison. I was informed of that new development and at once suspected depletion of Nicotinic Acid and added 50 mgm. of it in her 25 c.c. of 25% intraveous Glucose without informing any one about it. She had more than the usual flushing and tingling of skin but was a different person by the evening. She was found comfortably sitting in a sofa with cushions round about her amongst her relations, singing the cinema hits after the 2nd injection. She told her sister that her talk about suicide was foolish as after all she could bear the vague pains and loved to live. She was given 10 injections of 50.mgm. each twice a week and though an exploratory laparotomy was to be done and she knew about it she never felt nervous or depressed. No cause was found radiologically and by operation except generally enlarged glands which showed mild inflammatory condition on section. She did not gain weight after the operation but lost about 30 pounds in all. She then developed vomiting and could hardly retain anything. That forced her into the mental stage again and Nicotinic Acid again worked wonders. Two months after she had 105.5° F. fever and then frequent passage of pus mucous and blood without tenesmus. Prompt care and treatment with M&B 693 and Glucose intravenously tided her over the catastrophe but severe cerebral symptoms with strong suicidal intentions developed. She was watched carefully but Nicotinic acid was withheld purposely. Her weight was reduced to 50 lbs. She became bad to worse and then Nicotinic was again tried. She behaved normally after two injections. That time she became aware of the effect of Nicotinic on her mental condition and on her enquiry the whole thing was explained to her. She began to keep Nicotinic Acid tablets with her and took them whenever she felt depressed without any rhyme or reason. She was treated by the Vaids, Hakims, Homeopaths and Psychopaths without relief but she never allowed herself to pass into a psychotic state or so called hysterical fits and always kept hereself mentally normal by timely doses of Nicotinic Acid. She was then put on pure milk diet and after she began to digest two pints of milk a day she never felt the need of Nicotinic Acid and is now taking about 9 pints of milk a day. Though her abdominal pain occasionally troubles her, she is slowly gaining weight. She has gained 19 lbs in 4 months. I have given full details of the case intentionally to make it a clinical mode on the subject for your guidance in general practice.

Nicotinic Acid in gastro-intestinal troubles.—The one universal result of avaitaminosis on the human system is its detrimental effect on

the alimentary canal. Deficiency of vitamin B in general has been known to cause gastro-intestinal disturbances. Recent investigations tend to show that it is B_1 which is responsible in beri-beri like diseases and Bpp of B_2 complex in pellagra and its sub-clinical varieties. Stomatitis, glossitis, anorexia, peptic ulcers, vomiting, flatulence, gurgling, diarrhœa, constipation, non-specific types of colitis and general hypotonicity of the tract when existing as a pellagrous syndrome get dramatically cured and when due to other causes get benefited at one stage or the other of their existence by exhibition of Nicotinic Acid and also by B_1 (Thiamin). The reason is clear. The damaged gastro-intestinal tract through manifold causes prevents absorption and assimilation of Nicotinic Acid, the deficiency of which makes in time the damage irreparable by ordinary methods unless it is met with by additional therapy, essentially by injection method. Workers, too many to be quoted here, have now confirmed the efficacy of B_1 and Bpp in disturbances of the alimentary canal. The following cases from my records are interesting:

CASE:—A retired engineer, aged 65 years, had indigestion, flatulence, gurgling in the intestine and diarrhœa alternating with constipation for 15 years. Signs of gastric ulcer developed for 5 years. He had every conceivable treatment including injections of Larostidin and Sipis diet. He was weak and flabby but signs of huge muscles and strong constitution were still apparent. He felt very miserable and saw me in 1940. His history revealed that his life as an engineer was hard and his diet such that avitaminosis could be expected. He showed all the signs and symptoms of peptic ulcer with continuous pain and hypotonicity of the rest of the tract. I started him on modified Sipis diet with injections of Larostidin intramuscularly and Nicotinic Acid 50 mgm. in 25 c.c. of 25% Glucose intravenously on alternate days. The improvement was noticed within a week, pain disappeared and after a month he told me that he never felt so fit at any time in the last 15 years and that he felt like a man of 40 years in robust health. He still continues maintenance doses of Nicotinic Acid by mouth and is free from all the troubles.

CASE 2:—A married woman, aged 18 years, primipara, had the usual nausea and then vomiting in the early months which assumed the character of hyperemesis gravidarum and was treated on usual lines and got some relief. Anorexia, aversion for food, vomiting if forced to eat, head-ache, pain in the back and limbs, anæmia, giddiness and continuous nausea persisted upto the 7th month of pregnancy. She received Glucose intravenously, high doses of Iron, Adexolin and later on Calcium by mouth. Her diet was restricted to Glucose, fruit-juices and milk. I was called in by a lady doctor and her physician to decide if abortion which was threatening would help her if allowed to take place or should be checked. She was in a definite psychotic state with suicidal tendency and extreme exhibition of love towards her husband to the point of embarrasment to him. She could not get up from her bed. Nausea, giddiness and weakness were very pronounced. I gave her Calcium Levulose and Glucose 20 c.c. 25% with Iodine 2 c.c. intravenously on alternate days for six injections with suitable diet. She did not feel much relieved. I then added 50 mgm. of Nicotinic Acid to the intravenous Glucose and omitted Iodine. The usual flushing and tingling of the skin which she began to feel before I took out the needle from her vein and against which I warned her beforehand sent her almost crazy but the effect was marvellous. Nausea disappeared,

anorexia diminished and she could sit in bed after the very first injection. Her giddiness was gone after the 3rd injection. She was put on 4 tablets of Caldeferrum a day as well. She felt very fit within a fortnight and was in perfect health within a month. Nicotinic in fact started the improvement and Iron, Calcium, vitamin D and suitable diet did the rest.

CASE 3:—A multipara, aged 30 years, had eclampsia and was treated in a hospital. The child died but the mother was saved after the usual drastic treatment. She never felt well after that illness. Three to four loose motions, generally starting immediately after taking food, flatulence, gurgling or gas in the intestine, heart-burns, occasional vomiting, complete loss of appetite, hysterical fits oft and on with anæmia and extreme weakness troubled her for about 18 months. Diagnosis to the point of tuberculosis of the intestine and treatments as an indoor and outdoor patient to the extent of charms and amulets were tried to no avail. She was being treated for sprue for two months when I saw her. The history alone was enough to suggest that avitaminosis had to be corrected first before any relief from other treatments could be expected. 50 mgm. of Nicotinic Acid in 50 c.c. of 25% Glucose intravenously on alternate days for three injections and then twice a week to complete a course of 10 followed by 100 mgm. by mouth with lime-juice, Iron Calcium with vitamin D gave quick relief and marked improvement. She was able to digest her normal food within a month. I had to give a course of Petrolagar to sooth and coax the mucous membrane of her gastro-intestinal canal to normal. She is perfectly fit now.

Nicotinic Acid in circulatory disturbances.—Myocarditis, degeneration of heart muscles with œdema, dyspnœa, week pulse and extremely low blood pressure are noted in certain groups of pellagrins. The same troubles exist in cases of sprue, ankylostomiasis, beri-beri, epidemic dropsy, hyperchromic, macrocytic anæmias of pregnancy and tropical variety and in many other such conditions. Severe types of micro and macrocytic anæmias are associated with many of the above conditions. In some cases damaged gastro-intestinal mucosa and defective absorption and assimilation indirectly produce deficiency of essential food-factors in the body and in others inadequate and unbalanced diet and direct avitaminosis cause the troubles. Achlorhydria in varying degrees is also associated with these states. Even histamine-fast achylia was noted by me in one of the suspected pellagrins. TAYLOR and MANCHANDA (1940) found histamine fast achlorhydria in a case of tropical macrocytic anæmia and MCROBERTS (1940) noted it in even 'microcytic ancylostomic anæmia' showing that in such cases hoemopietic factor is interfered with just as it occurs in Addisonian pernicious anæmia. The peculiarity in such cases is that when Nicotinic Acid deficiency reaches a certain stage the anæmias and other circulatory disturbances defy all treatments with liver in macro and iron in microcytic anæmias and heart conditions and low blood pressure persist inspite of do what you can, while exhibition of Nicotonic Acid alone or addition of it to the ordinary treatment brings about a rapid change in heart condition, blood picture and secretion of HCL in the stomach in all such cases.

A male, aged 45 years, ill for 5 years, not able to even turn in bed (recorded by me in *J.I.M.A.* 12:2) having extreme dyspnœa, rapid pulse, dilated heart with bruit, œdema of whole body. B.P. 92/50, R.B.C. 2.9 millions HG. 90% and colour index 1.5 resisted all treatments including large

doses of Campolon & Betaxin. It puzzled my colleague when on my suggestion 100 mgm. of Nicotinic Acid intravenously for 10 injections plus high protein diet made his œdema disappear, brought his heart and pulse to normal, raised his B.P. to 110/70 and R.B.C. to 3.1 millions and enabled him to walk about in 20 days.

A second case of male aged 24 years (recorded by me in *Pat. J. of Med.* 17:5) had dyspepsia for six years and gastric pain with severe anæmia for 6 months. He was subjected to intensive and extensive liver and iron therapy with liberal diet including Marmite and Pepsin and HCL dilute to help digestion for about two months by one of my colleagues and later by myself but he responded to no treatment and became from bad to worse. I then stopped all medicinal treatment and put him on Nicotinic Acid plus a liberal diet and he improved marvellously and got cured in a month. The results of various treatments are striking and are given in a tabular form to impress upon you the important aspect of this Nicotinic Acid therapy :—

DIET AND TREATMENT	CONDITION OF CIRCULATORY SYSIEM	GENERAL CONDITION
Emetine, Santonin, liver injections, Iron, Arsenic and Nuxvomica and milk and sago diet for 20 days.	R. B. C. 1.8 million. Size 8.4 μ—Hb-40% C.I. 1.1— B. P. $\frac{84}{80}$ Hæmic murmur and dyspnœa.	Tympanites, gastric-pain, dull, pale complexion, constipation, extreme weakness, achlorhydria on empty stomach and after porridge meals. Wt. 76¾ lbs.
24 c.c. of Hepatex injections; 15 dr. of Ferri et Amon. Citras; 30 dr. of dilute HCL; 20 tea-spoons of marmite with a liberal diet in 10 days.	Same as before except Hb from 40 to 60% and R.B.C. from 1.8 to 1.6 millions.	Worse than before.
25 c.c. of Compolon in 8 days, 30 mgm. Berin in 15 days, 45 dr. of dilute HCL, 15 dr. of Ferri et Amon citras, pepsin after meals and orange juice, ovaltine, marmite, eggs, milk, biscuits, meat and vegetable soup, minced chicken pudding and fruits daily for 16 days.	R. B. C. 1.6 million. Size 8.2 μ—Hb. 50% B P. $\frac{84}{40}$—Hæmic murmur, dyspnœa, swelling of legs, feet and face.	Nausea and vomiting and tympanites and pain increased, urine clear, skin very dry, pale and showed faint, extreme weakness, achlorhydria present—Wt. 76¾ lbs. Condition almost helpless. Patient positively mental.
Nicotinic Acid 50 mgm. in 25 c.c. of 25% Glucose, intravenously on alternate days for 3 injections and every 4th day upto 12 injections plus diet detailed above and no other medicinal treatment.	After 18 days. R. B. C. 2.6. Size 7.8μ Hb 70% B. P. $\frac{95}{55}$. Hæmic murmur, dyspnœa, œdema all disappeared.	After 52 days. 3.2 millions - 7.0μ - 55% Great relief, patient felt strong and walked about—gastric symptoms disappeared—HCL after porridge returned, complexion improved. Wt. 78½ after 52 days. ,, 81 ,, 6 months. ,, 93½ ,, 1 year.

My usual practice, now, is that whenever I meet with a case of anæmia not easily amenable to ordinary routine treatment I supplement the latter with Nicotinic Acid therapy and nothing but pleasant surprise to my co-workers and complete satisfaction to me are the results. I suggest to you to try it in your very first case of intractable form of anæmia associated with other alarming circulatory, gastro-intestinal or mental symptoms and note the effect for yourself.

Nicotinic Acid in dermal lesions.—Erythematous skin lesions of pellagrins get cleared up with Nicotinic Acid but thick pigmented scaly

skin patches of very old standing do not satisfactorily yield to it. Apart from definite pellagrous dermal lesions there are various skin blemishes like dryness, courseness, scaliness, cracks, pigmentation, eczema like condition of the skin of face, hands, legs, scrotum, groin and feet that yield to Nicotinic Acid. It appears that any mild sort of continuous trauma in a dry and cool season in the presence of Nicotinic Acid deficiency alters the texture and colour of the skin and may produce even actual dermatitis. Actinic, thermal and mechanical trauma-like friction all could act in a similar manner. The so-called 'liver-patches' that disfigure so many fair-complexioned ladies' faces get remarkably cured when Nicotinic Acid, yeast or liver-juice is given to them for two or three weeks. Dry and cracked lips and skin of hands and feet behave similarly on exhibition of Nicotinic Acid. Scrotal dermatitis of unknown origin occurring in places with low humidity get benefited with Nicotinic Acid. I find that no hard and fast rules could yet be laid down even on clinical basis about the dermal lesions that could be rationally treated with Nicotinic Acid. The only criterion by which I am often guided in cases of skin lesions is that whenever I find dermal lesions on exposed parts of the body or at spots exposed to constant mild friction that starts as erythematous patches with a core in the centre or get worse, if already present during dry and cold weather in places where humidity is low, I try Nicotinic Acid if other ordinary methods of treatment fail. I cured a set of 16 children suffering from so-called solar dermatitis in a hill station within a week by Nicotinic Acid while those treated by other methods continued suffering for weeks and months.

Nicotinic Acid in prevention and cure of toxic symptoms produced by Sulphonamide preparations.—I had a case of a Bengali woman, aged 26 years, with severe type of lobar pneumonia in 1940. I gave M & B 693 and the very first dose of 1½ tablets produced severe nausea, gastric pain and later on vomiting and giddiness. As I noticed beneficial effects of Nicotinic Acid in toxæmias of pregnancy—one case being of hyperemesis and the other of post-eclamptic troubles. I used Nicotinic Acid to combat the toxic effects of M & B 693 and found that 50 mgm. given per mouth about 15 minutes before the dose of M & B 693 caused the latter to be tolerated without trouble and the woman received full treatment and recovered. My attention was then drawn to a report on this point by DOUGHTY J. F. in the *Amer. Med. Assn. Journal*, March 2, 1940, p. 756. I have now made it a practice to give Nicotinic Acid in all cases treated with sulphonamide group of drugs showing even slightest toxic [illegible]. Pregnant women are specially prone to nausea, gastric pain, [illegible] and vomiting when taking even moderately effective doses of M & B 693, prontosil rubrum or even septanilum and I find 25 to 50 mgm. of Nicotinic Acid 10 to 15 minutes before the dose a good and reliable preventive. As for its being a valuable remedy for acute and severe toxic condition produced by sulphonamide type of drugs I cite a very interesting and instructive case from my records : —

CASE :—*Acute toxic symptoms due to high doses of M & B 693 relieved with Nicotinic Acid :*—A young, robust, married lady, aged 26 years, felt nausea and while returning from the bath room fell down unconscious on the verandah. She turned blue, her respiration was laboured, pulse irregular and saliva flowed from her mouth. My assistant was called. She gained consciousness and complained of severe epigastric pain, troublesome nausea and intolerable head-ache and giddiness and uncontrollable

sinking sensation. My assistant gave her a dose of stimulant and later on Carminative mixture which she vomited. I was then called in after one hour as she was sinking and her symptoms alarmed her husband. On careful direct questioning I found that she took 2 tablets of M & B 693 at 2 p.m., two at 4 p.m. and 2 at 6 p.m. and was about to take two more at 8 p.m. when she became unconscious. I immediately gave 50 mgm. of Nicotinic Acid in 20 c.c. of 25% Glucose intravenously at 9 p.m. The cynosis disappeared within 15 minutes, nausea, giddiness and headache decreased, sinking feeling was gone altogether and she felt better. She vomited at about midnight and was relieved of all symptoms except head-ache which lasted for 24 hours.

I do not know how Niconitic Acid acts in such cases but I do know that it gives quick relief and its value in such cases should be kept in mind to avert disaster.

Nicotinic Acid in toxic effects due to Atebrin.—I have also used Nicotinic Acid in epigastric pain, nausea and vomiting due to toxic effect or intolerance of Atebrin given per mouth for malaria in a few cases and found it equally effective. Owing to stoppage of Atebrin administration in our malaria centres during the war, the opportunity for a clinical research on the effect of Nicotinic Acid on toxic conditions produced by administration of Atebrin is being lost for the time being.

Nicotinic Acid as a vaso-dilator.—Nicotinic Acid is best given orally or intravenously with Glucose. The intramuscular injections are very painful. Within a minute of intravenous and after 5 to 10 minutes of oral administration dilatation of cutaneous vessels usually occur. The "blush-area" is first to be effected causing the face, neck, ears and head to become warm and flushed. Very soon the dilatation of the cutaneous vessels of the whole body occurs. The patient feels warmth and tingling or prickly sensation all over the body. Heart begins to beat rapidly and violently. The head feels full and tense. Eyes get red and temporary blurring of the sight due to dilatation of retinal vessels results. Carotids and their branches throb and in some cases throbbing in the head and slight head-ache and giddiness may be felt. The whole thing lasts a few minutes but if erythematous points or patches on the skin appear the cutaneous sensations may then take half to one hour to disappear. A few beads of perspiration may appear but profuse sweating does not take place. The blood pressure was taken by me in a few cases during this peripheral vascular dilatation phase and was found not to be very much affected. I do not know whether Nicotinic Acid stimulates the parasympathetic or directly acts on the cutaneous vessel walls. However, the whole thing is so alarming to the patient and the doctor that one of my colleagues who did not know about it was actually so alarmed that he refused to repeat the intravenous injection and gave the drug intramuscularly which proved to be very painful. PRASAD who noted this reaction in 3 of his cases in 1940-41 called it a 'toxic reaction' and advised reducing the dose from 50 to 30 mgm. to avoid it. I believe that the drug to be effective should be given in doses that bring about vaso-dilatation in the patient and no reduction of the dose should be made to avoid this transient vascular disturbance. Detailed pharmacological study of Nicotinic Acid may throw further light on the subject and is very much overdue.

Discussion.—Deficiency of vitamin B has been known to cause manifold disturbances met with in beri-beri like diseases. Later it was investigated

and found that it is B_1 and Nicotinamide as represented by Nicotinic Acid or Bpp factors in the B-complex the deficiency of which causes such troubles including pellagrous conditions. On a careful study of available literature, recorded cases and clinical histories of my own patients it appears to me that B_1 and Bpp factors are somehow responsible for the maintenance of health and nourishment of the structures derived from ecto-and endo-dermic cells of the germinal layers. Deficiency of B_1 affects the peripheral parts of the nervous system and cord and of Bpp gives cerebral symptoms; lack of B_1 gives anorexia, general hypotonicity, flatulence, gurgling and constipation, while Bpp gives stomatitis, glossitis and degenerative type of atrophy of the mucosa of the gastro-intestinal tract with diarrhœa. Troublesome pruritis, vaginitis and cystitis also occur. There is also an anti-anæmic factor in B_2 complex which is available in marmite and is analogous to Castle's extrinsic factor which in combination with intrinsic factor from the gastric mucosa forms the anti-anæmic factor that cures hyperchromic macrocytic anæmias of all varieties. I have noted in some of my cases that macrocytic anæmia at one stage or other of the disease neither yields to liver therapy nor to marmite when used singly or in combination. The hæmoglobin percentage rises but the size of RBC remains unaltered and the total number continues falling in spite of heroic doses of liver injections, high protein diet and marmite and then if Bpp in the form of Nicotinic Acid is given it alters the picture immediately showing that it plays some part in either influencing the restoration of Castle's intrinsic factor in the gastric mucosa or in bringing about a healthy condition in which the intrinsic and extrinsic factors could combine in curing the intractable anæmia that yields to no other known treatment. Bpp factor has now also been definitely recognised to be responsible for the growth of cutaneous or epithelial tissues of all kinds in the body. Hypovitaminosis Bpp in the presence of sunlight or any other actinic thermal or mechanical trauma causes dryness, scaliness and pigmentation of epithelial cells of the skin. Crystaline lens of the eye being derived from epidermal cells stand in the same boat and we know that cataract is more common in places and people exposed to strong sunlight for long periods. I, therefore, believe, of course, on theoretical grounds that deficiency of Nicotinic Acid may have a lot to do with the formation of cataract and the maintenance of the requisite supply of it to a person may in time be found to be a great preventive measure against the formation of senile cataract in the tropics. I also believe that further investigation will reveal the influence of Nicotinic Acid on essential parts of the organs of senses which are also derived from epidermal cells for the growth and nourishment of which Nicotinic Acid is responsible and so essential.

In the end, I recommend to you to grasp the rationale of Nicotinic Acid therapy and to use it in suitable cases keeping careful records that may in time help to bring to the notice of the profession a list of deficiency diseases and conditions due to hypovitaminosis Bpp as represented by Nicotinic Acid.

It may be noted that deficiency of other vitamins, specially of the B-type, generally exist with that of Nicotinic Acid and must be corrected along with it to obtain satisfactory results.

Summary.—1. The effects of hypovitamonosis Bpp (Nicotinic Acid) on nervous, gastro-intestinal, circulatory and dermal disturbances and

lesions are described and the method of recognising and dealing with them is explained by many illustrative cases.

2. Rationale of Nicotinic Acid therapy in diseases other than pellagra is detailed.

3. The value of Nicotinic Acid as an antedote for the prevention and cure of toxic symptoms due to Sulphanilamide and its allied drugs and also Atebrin is brought out through illustrative case-reports.

4. Clinical evidence has been produced to suggest that B_1 and Bpp factors of vitamin B-complex have a great influence in the maintenance of health and nourishment of all the body-structures derived from ecto-and endo-dermaic cells of the germinal layers and as a corollary the relation of the senile cataract to the deficiency of Bpp factor is surmised on theoretical grounds.

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Role of Vaccine in Therapeutics*

BY

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THE word 'vaccine' is derived from the Latin word 'vacca.' Vacca means a cow. Cow-pox was called 'vaccinia.' JENNER designated protective inoculation against small-pox (with cow-pox virus) as 'vaccination.' PASTEUR, adhering to this nomenclature, applied the name 'vaccine' to the suspension of bacteria that he used for immunisation. Now the term has come to mean the enumerated suspension of organisms or their products which, when inoculated into the body, stimulates the tissues to produce the anti-bodies.

Centuries ago, in this country, children were exposed to mild cases of small-pox in order that a mild infection be caught and a lasting immunity secured. This practice, to-day we can call crude; but JENNER'S method was in no way better. Even PASTEUR, who followed in the footsteps of JENNER, used living organisms though in attenuated forms: but he could bring to light the principle or the mechanism involved. It was towards the close of the last century that cultures of dead bacteria came into use and the modern conception of vaccination in man was well established.

It is strange to note that India, which has given to the world the lead in prophylaxis therapy, should choose to revolt from time to time against precautionary measures against fell epidemics. Feelings at times have been stirred to such lengths as to lead to bloodshed, as will be evident

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from the Poona murders of 1897, when the Plague Officer and his associates were done to death. The opposition has all along been so fierce that inspite of the undoubted utility of prophylactic-vaccine-therapy in such diseases like typhoid, diphtheria, cholera, plague etc., which have taken toll of millions of lives in the country, the Government have not been able to achieve more than a pyrrhic victory; and except for the introduction of compulsory small-pox-vaccination, they have never ventured to initiate any action till recently to push on with such therapy. The public response to their recent introduction of compulsory anti-cholera inoculation in the Sitamarhi Mela clearly manifests that such opposition has not completely died down, though it does not possess the old virulence. But it is also apparent that such opposition is based upon lack of proper education, and more or less upon personal prejudices.

In the field of curative therapeutics, the vaccine therapy has also of late fallen into disrepute by its use in all sorts of unsuitable conditions. The commonly prevalent impression that if vaccines do no good, at least they do no harm is perfectly erroneous. The therapy has received a further set back with the advent of the sensational chemotherapy of the present decade.

The vaccines contain the antigens of the bacteria. These antigens are chemical substances, and stimulate the production of the anti-bodies. Changes in the antigen molecule result in striking alterations in the anti-body response. Such changes in the antigen can result naturally during the growth of the bacteria. In bacterial cultures, there might appear colonies which might be discrete or spreading, or which might have a smooth or a rough appearance. It has been found that the antigen of the discrete and the smooth colonies gives the best anti-body response, while that of the spreading and the rough ones is practically useless for the purpose. Hence in the preparation of vaccine, selection of the strain is very important. The importance of this feature was not well recognised till recently, as a result of which there was a time in the history of the United States of America when most of the typhoid vaccines used outside the services were almost useless.

In the preparation of vaccines, the ideal aimed at is to render the organism innocuous and to modify its antigenic structure as little as possible.

An ordinary vaccine is a uniform and pure suspension in normal saline of killed and enumerated organisms. It may be autogenous, stock, polyvalent, or mixed. An autogenous vaccine is superior to the stock one as it is antigenically more specific; but in organisms like bac. typhosus and staphylococcus in which the different strains exhibit serological homogenity, there may not be much difference between stock and autogenous varieties All prophylactic vaccines are stock vaccines prepared from a large number of strains.

A sensitised vaccine is prepared by mixing the grown organisms with the appropriate immune serum, thus allowing the passive anti-bodies to cling to the organisms. Since anti-bodies will be present in the mixture, larger doses of the sensitised vaccine can be tolerated and it can be given in acute and generalised infections with little fear of severe reaction.

Virus vaccines are prepared by cultivating the virus in the tissues of animals—*e.g.*, on the shaved skin of the abdomen of calves in case of small-poxvirus and the brain of the sheep in case of rabies virus, and a pure emulsion of the infected tissues is made and standardised.

Vaccines consisting of the exotoxin or the endotoxin of organisms, *e.g.*, T.B., diphtheria, and tetanus, are prepared by growing them in special fluid media, and when maximum degree of toxicity has been reached, by filtering the medium and finally by standardising the bacteria-free filtrate.

Detoxicated vaccines have their toxins detoxicated. The endotoxin is separated from the organisms by dissolving them in alkalies and then precipitating them by an acid. This separation possibly alters the nature of the antigen and hence reduces the quality of the anti-body response of the vaccine. The exotoxin is detoxicated by incubating the organisms with formalin, whereby the exotoxin is converted into a harmless toxoid but still retains its antigenic properties. The chief value of these detoxicated vaccines, *i.e.*, dissolved vaccines or toxoid, lies in the fact that larger doses can be used with safety. The usefulness of toxoid in the prophylaxis of diphtheria and tetanus has so far gone undisputed. The active immunity induced by these toxoids lasts for months and years in marked contrast to the passive immunity conferred by anti-toxic sera, which disappears in a few weeks' time or even sooner.

Filtrates of cultures of strepto and staphylococcus which have stopped growing contain inhibitory substances. These substances have been named 'anti-viruses'. It is claimed that animals inoculated subcutaneously, intradermally, or poulticed on their shaved skin with anti-viruses are resistant to inoculation of virulent cultures 24 to 48 hours later. The claim has, however, yet to be universally accepted.

There are other types of vaccines depending upon the mode of their preparation. *e.g.*, defatted vaccine. lipo-vaccine, vaccines killed by chemical substances like ether iodine sodium fluoride, bacteriological extracts filtrates and digests. But none has been universally acknowledged to be possessed of any superiority to the ordinary vaccine.

Subcutaneous route is the route of choice for administration. Hot Olive oil heated to 120° to 140° cent. sterilisation is becoming popular in hospitals, *e.g.*, Pasteur Institutes, as it considerably saves the needle bill. Small pox vaccine is given intracutaneously. There seems to be no special advantage in giving bacterial vaccines by this route. Intravenous route has been tried, but the beneficial results that follow are due to the non-specific protein reaction rather then due to the route. Oral route is only then worth trying when the choice is between that and nothing.

It is, however, important to note the following observations in connection with the anti-body response to vaccines. For an adequate response two doses of the same antigen are required. The first injection of the toxin, toxoid or vaccine does not usually produce a high and lasting titre of anti-bodies. But this primary stimulus sensitises the body cells so that if a second injection be given after an interval, there is a very rapid and complete rise of the anti-bodies. The dose of antigen to produce the secondary stimulus need not be a large one, even a small amount of antigen absorbed through the alimentary canal might give the effective secondary stimulus. Thus the oral therapy is not quite devoid of any value, but to be of any sure use it shall have to fulfil certain conditions, which it is not possible to measure and control in ordinary general practice and hence is not to be depended upon. In prophylaxis, complete protection will be afforded by two injections, but even a single injection may do a lot of good as it provides the primary stimulus and the secondary stimulus would be provided by the infection itself.

There is a great variation in the anti-body response of different patients to the same Antigen. Such variations have been studied with a good deal of accuracy with the staphylococcus Antigen. This phenomenon explains the difference in the results obtained in different patients suffering from the same manifestation of staphylococcus infection. Further, the clinical results are better obtained when there is good anti-body response, although this is by no means the rule. Thus, we see a number of recurrences of boils in patients who at the time of recurrence had high antitoxic content in their blood.

Of late, toxoid therapy of staphylococcus has come much into vogue. The anti-toxic response, however, is better obtained with Vaccoid (vaccine plus toxoid), than what obtained with pure Toxoid or sensitised Toxoid (toxoid treated with anti-toxic serum). Obviously the toxoid gives anti-toxic and the vaccine anti-bacterial immunity,and these complimentary effects give better results. It is therefore common to find that toxoid will cure some vaccine failures, and vice versa. Best results will be obtained by using a combination of the two either together or alternately at weekly intervals.

The present day knowledge of influenza is that it is caused by a virus in some cases and in others by a bacterium. Influenza-virus-vaccines are not eassy to prepare and those that have been prepared have not yet been experimented upon human body. From animal experiments, it has been observed that inoculation with the bacterial vaccine does not only afford complete protection against bacterial infection but also to an appreciable extent against the virus infection too.

It is not known if a virus is at the root of common cold, but much of the discomfort experienced is due to superadded, if not primary, bacterial infection. As in the case of influenza, much good can be done by the bacterial vaccine.

In cases of true asthma, which is the result of hypersensitiveness to some foreign protein associated with bacterial infection, vaccine therapy has been found to be of considerable value. For autogenous vaccines, organisms are obtained from sputum cultures. In some cases refractory to such vaccines, organisms isolated from the intestines particularly enterococci are incorporated in the vaccine with dramatic results.

Various attempts have been made to treat chronic rheumatic conditions with vaccines prepared from organisms isolated either from the site of the lesion or from somatic septic-focii. It is difficult to correlate the finding of organism from such focii and the occurrence of the conditions, yet it has been found that vaccines obtained from them are all the same beneficial. In acute rheumatic fever, caused by streptococcus hæmolytyticus, vaccine therapy has given favourable results in checking recurrences.

In prophylaxis of plague, the results obtained from the vaccine are quite convincing. Recently better results have been obtained in animal experiments from bacteriophage-lysed vaccines.

In the prophylaxis of cholera, both subcutaneous inoculation with vaccine and oral bilivaccine confer high degrees of immunity. The immunity obtained five days after a single subcutaneous dose is about as high as that present three days after a full course of the oral vaccine.

In the prophylaxis of Shiga dysentery, sensitised toxins have been extensively used with good results. Recently toxoids and oral vaccines

have been used but the results reported are not uniformly good. In the treatment of chronic dysentery vaccines have been used but the opinions as to their efficacy are divergent.

From the available evidence, it appears that typhoid vaccine may favourably influence the course, but it has been argued that the action obtained is non-specific in character, and therefore the same results can be obtained by giving any other bacterial vaccine. In prophylaxis, the position of the vaccine is unassailable.

In the treatment of whooping cough with vaccines, the best results have been obtained in the early catarrhal stage. The treatment cuts short the course if it does not altogether cure it.

The treatment of acne vulgaris with vaccine should be continued for a long time for getting any good result.

Bacillus-coli-vaccines are used both for prophylaxis and cure. Cases for treatment are to be carefully chosen as there may result acute symptoms of coli fever following an initial dose when there is obstruction to the outflow of urine. Bacilluria and pyuria, resistant to other forms of treatment and in which no exciting cause is detected, may benefit from a course of vaccine therapy.

In rabies and small-pox, vaccine-prophylaxis has reduced the mortality to an amazing extent.

The latest development in this therapy is the recognition of synergic action of vaccines and Sulphanilamide group of chemicals. Such synergism was known to be existing between these chemicals and Anti-pneumococcal serum in vitro and these and Anti-streptoccal serum in vivo. By animal experiments, similar action has been shown to exist between M & B 693 and pneumococcal vaccines. Mice or rabbits with virulent pneumococcal infection showed far mild manifestations of the disease and greater percentage of recovery when treated with 693 and vaccine together as compared to results obtained by treatment with either of them alone. Since these chemicals were bacteriostatic in their action and not bactericidal, so naturally when the degree of immunity rose higher with the vaccine, the better was the result and outcome of the treatment. In treating pneumonia in man with this chemical, the method of choice will be to combine it with either the specific serum or the vaccine. In order to be able to use the serum the coccii will have to be typed, and even then more often than not the serum may not be available in all types, or even when available it may be too expensive for general use. On the other hand, polyvalent stock vaccine can be easily and cheaply had and large doses can be administered without risk of any negative phase. Needless to add that if typing be possible vaccine of the specific type should be preferred, but the sooner any vaccine is given the better the result is likely to be.

In gonococcal infection too, better results are obtained if chemotherapy is delayed to allow increased immunity to develop as a result of the infection itself, or till immunity is artificially induced by a vaccine.

Local focal or general reactions may occur after vaccine administration. In prophylactic inoculation, where large doses are given, local and general reactions are common. In curative inoculations, it is advisable to avoid constitutional disturbances. In asthamatics, it will be necessary to guard against any anaphylatic reaction.

Deficiency Diseases of the Eye*

BY

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THE deficiency diseases of the eye can be divided into two main groups:—

1. Those diseases which are definitely due to deficiency of certain constituents in the body.

2. Those that are probably due to deficiency of certain metabolic changes or deficiency of certain materials in the system.

GROUP No. 1:—The following diseases are supposed to be definitely due to deficiencies of certain vitamins or other constituents in the body:—

I. Xerophthalmia and night-blindness.
II. Corneal ulcers and keratomalacia.
III. Functional night-blindness and nyctalopia.
IV. Predisposition to infection.
V. Uveitis due to deficiency of vitamin B.

GROUP No. 2:—The following eye conditions are supposed to be due to deficiency diseases:—

I. Intraocular hæmorrhage in vitreous and retina.
II. Cataract in tetany.
III. Lens lesions in myxœdema.
IV. Phlyctenular keratitis.
V. Retrobulbar neuritis.
VI. Oculomotor lesions.
VII. Diabetic retinitis.
VIII. Renal retinitis.
IX. Shark-skin appearance round the eye.

The number of deficiency diseases is so big that if I write in full detail on each and every point perhaps it may require the whole volume of the *Antiseptic* which it is not possible especially in the war period. Secondly, the readers of the *Antiseptic* are mostly concerned with general medicine and surgery, so I am quite sure they will have neither the patience nor the inclination to read such special articles in detail. Under these circumstances I will be as brief as possible.

I. **Xerophthalmia and night-blindness.**—It is the experience of every general practitioner that patients appear before him now and then who complain of sudden night-blindness. Such cases are seen more frequently and in large numbers when there are either famine conditions or other situations which do not allow the middle and poor class people to obtain the best food materials at a price at which they can afford to buy. If the general practitioner looks at the eyes of the patient he finds one or two lustreless wrinkled small patches on the outer and inner side of the limbus. Not only these patches are lustreless but they are almost dry, *i.e.*, the conjunctival secretion of tears fail to make them wet. This condition is mainly due to deficiency of vitamin A. Now this deficiency can be either due to absence of such food material as contains vitamin A or the inability of the patient to get these materials absorbed from the intestinal canal which may be due to diarrhœa or other intestinal diseases. The patient generally looks emaciated and underfed.

* Specially contributed to 'The Antiseptic.'

Treatment.—The most important treatment for the condition is administration of Cod-liver oil, Halibut oil, or Shark oil. This last drug has taken the place of the first two drugs mentioned on account of the difficulty in getting Cod-liver and Halibut oil due to war conditions. In addition to these drugs the foodstuffs, which contain considerable quantities of vitamin A are milk, butter, curd, cheese, and yoke of egg, carrot, lettuce, tomatoes and bananas. Mangoes contain a large amount of vitamin and if these foods are available they would be the best food for patients suffering from xerophthalmia.

II. **Corneal ulcers and keratomalacia.**—It is the experience of every Ophthalmic Surgeon that corneal ulcers are found in greater numbers in patients who belong to the poor and labouring class. In addition to corneal ulcers, keratomalacia is found almost exclusively in those childern who are devoid of the vitamin A which is a fat-soluble vitamin and which is supplied to children either from mother's milk or cow's or goat's which become the main articles of diet of children. One other factor which is equally important is that those children who suffer from diarrhœa or other intestinal disorders cannot absorb the vitamin A from the alimentary canal due to damage inflicted on the mucous membrane of the digestive system. On examination the patient is found to be emaciated and marasmatic, the skin hangs loose and conjunctiva is deviod of healthy lustre. The eye lids are generally wrinkled and closed. Conjunctival discharge which is not purulent is seen coming out from the eye. On opening the eye part or whole of the cornea is found white, lustreless and necrotic. The general condition of the patient is depressed and even the crying is more of a moaning type than forceful crying of the healthy child. Most of these patients not only lose their both eyes but in a very large precentage their lives as well. If treatment is begun in right time the lives of the majority and the eyes of a great number of patients can be saved. Of course if the disease is advanced there is a certain amount of damage done to the cornea already. The cornea of the eye perforates and the iris gets prolapsed through perforation, or if the patient is lucky the large opacity is left behind if perforation has not occured. Treatment for such cases should be as energetic as possible. The main drug is either Cod-liver, Halibut oil or Shark oil. Juice of Citrus fruits such as orange, sweet lime is very beneficial. I have found a special preparation of Allen and Hanberry's which goes by the name of Hallib Orange very beneficial especially in the case of those patients' parents who are not very particular or regular in giving fruit juices to their children. In addition to the above mentioned drugs fresh milk, preferably pasteured, fresh butter or cream and mango juice will help the patient a good deal towards recovery. As for the local treatment of the eye, washing the eye with Saline 1% and instillation of Cod-liver oil in the eye three or four times a day has been found to be most useful.

III. **Functional night-blindness or nyctalopia.**— In this condition the only symptom that the patient complains of is night-blindness coming all of a sudden. This night-blindness is of a totally different type from the one which is found in retinitis pigmentosa. As all Ophthalmic Surgeons know the latter condition is found in more than one member of the same family, is hereditary and comes at an age of 10 to 12 years and is progressive while functional night-blindness comes on all of a sudden and is generally found in children and patients of advanced age. In the beginning no change is found in ocular conjunctiva and this is the main difference between the conditions described in Number I.

IV. **Predisposition to Infection.**—Every physician, surgeon as well as opthalmic surgeon, knows that diminution of general vitality leads to greater predisposition to infection. This condition is due to want of certain factors in food such as vitamin A, B, C, D or some material or some mineral substance such as calcium. Eye being a part of the body also shares the dangers of predisposition to infection. Marginal blepharitis, styes, corneal ulcers, phlyctenes iritis, and uveitis as well as choroiditis and retinitis are all started in a body which is already predisposed to infection. Treatment is well known to all general physicians In eye conditions protein and tuberculine injections in the hands of some opthalmic surgeons play an important part in remedying this condition.

V. **Uveitis due to deficiency of vitamin B.**—As all ophthalmic surgeons know uveitis is due to so many causes. As a rule all such inflammatory conditions were treated on the lines of hitting at the causative factor. It was the experience of good many ophthalmic surgeons that some forms of uveitis did not respond to any line of treatment. When some ophthalmic surgeons tried vitamin B, to their great surprise they found that the disease began to show signs of improvement and if the treatment was continued for sometime the condition was entirely cured. This proved beyond doubt that such forms of uveitis were directly or indirectly due to deficiency of vitamin B.

Deficiency diseases of the eye which are probably due to absence of some constituents in the body:

I. **Intraocular hæmorrhage in vitreous, retina and choroid.**—This kind of hæmorrhage is mostly due to atheromatous conditions of arteries especially in old age and intraocular hæmorrhage that goes by the name of expulsive hæmorrhage in a cataract extraction. In old people it is certainly due to rupture of arteries which are distinctly sclerosed. In addition to this we find hæmorrhage in vitreous and retina in quite young people, male and female, where in spite of exhaustive investigation it is not possible to find out the actual cause of such hæmorrhage. In this case it is quite natural that we presume that these hæmorrhages are either due to deficiency of vitamin K or deficiency of calcium salt in the blood. Treatment is simple. Administration of vitamin K and Calcium salt is the right type of treatment.

II. **Cataract due to tetany.**—In a number of children who have or are suffering from tetany we find the cataract in both the eyes. Naturally these cases can be due to deficiency of vitamin D and inability to absorb calcium salt from their food. Deficiency of parathyroid internal secretion is most probably the causative factor.

Treatment is administration of vitamin D, Calcium and tablets of Parathyroid.

III. **Lens lesions in myxœdema.**—In some cases of myxœdema we find that the lens shows various forms of opacity. As we all know myxœdema is due to deficiency of thyroid substance and all the changes that are found in the body due to this disease are cured to a great extent by giving the patient Thyroid extract in sufficient quantities. Whether this treatment has any effect on lens opacity which has developed already is not known to me.

IV. **Senile cataract.**—We all know that so far the etiology of cataract is not definitely known. Various theories have been put forward by eminent

ophthalmologists of the world. But so far no theory has been proved to be absolute. One of the theories is deficiency of certain forms of vitamin. How far this is true is not known to us as yet. But I am confident that one day or the other it will be proved that cataract, especially of the senile type, is due to deficiency of some constituents in the body and when these substances are found out it will be an established fact that cataract can be cured by non-surgical means.

V. **Phlyctenular keratitis.**—This disease is a disease of children and young people. As is well known even to the general practitioner that it is characterised by signs and symptoms of conjunctivitis and appearance on margin of the cornea or on sclera of vesicles which may be either solitary or multiple. From the base of these vesicles a triangular-shaped vesicularization of conjunctiva is noticed. There is well marked lacrimation, well marked photophobia, pain and redness. If the disease is not treated in right time vesicles are turned into pustules and sometimes perforation of the cornea and prolapse of the iris are seen resulting in partial or total loss of the eye.

Etiology.—For a number of years this disease was said to be directly or indirectly connected with tuberculosis. Even now a large school of ophthalmologists regard tuberculosis as the predisposing cause of this disease. A second school of ophthalmologists consider this disease to be an eczematous condition of the eye. This theory is supported by the presence of eczematous patches in those patients who suffer from this disease. It is a well-known fact that this disease is found very frequently in people of poorer classes and those who live in rooms which are not well ventilated and well lighted. Further, it has been observed that either on account of famine or war conditions, when people are unable to get sufficient nourishment, this disease in found to be more prevalent. Further, administration of Cod liver oil, Halibut oil or such preparations brings about considerable and rapid improvement in the condition of the eye. Naturally this leads one to suppose that either vitamin A or some other form of vitamin deficiency is the main causative factor.

Treatment.—The best treatment that I have found for this disease is the use of Calomel powder and yellow Oxide of Mercury Ointment 1% for the eye once or twice a day.

VI. **Retrobulbar neuritis and oculo-motor lesions.**—These are very often found in those patients who are suffering from beri-beri and it has been proved that beri-beri is due to deficiency of vitamin B. It is natural that these conditions of the eye improve under administration of vitamin B.

VII. **Diabetic retinitis and renal retinitis.**—These are believed by some ophthalmologists to be due to deficiency of some metabolic constituents in the body. So far nothing definite has been put forward in the literature available.

VIII. **Shark-skin appearance round the eye.**—This disease is not a very common disease but it has been found in some patients and it is believed to be due to deficiency of riboflavin which is a form of vitamin B. Naturally administration of this drug will bring about the cure of the condition which upto this time was believed to be incurable.

Modern Treatment of Wounds*

BY

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DURING the last few decades modern surgery has made rapid strides. It is hardly possible for us to imagine the days when the scope of operative surgery was limited to demands of emergencies, to situations in which it left no choice but to accept heavy risks with uncertain hope that life might thus be saved, when all other measures have failed. The risks attendant upon the production of a surgical wound were as great as those very commonly met with in accidental wounds in that era. To undertake surgical procedures which implied a wound was nothing short of an adventure. Wound sepsis, pyæmia, and gangrene practically always dogged the way and they seemed to be the lesser evil when death was otherwise so certain. The mortality from wound infection was so great that Sir JAMES Y. SIMPSON remarked, "the man laid on the operating table in one of our surgical hospitals is exposed to more chances of death than the soldier on the field of Waterloo." Need we be surprised, then, that in the face of such risks and uncertainties, operative surgery was regarded as a grim game of chance in which the dice were heavily loaded on the side of death. This indeed makes very depressing reading and yet man has won many a battle against germs by now. He has recognised the nature of this mysterious 'infection.' And incessant efforts spreading over ages have been made to combat it.

Let us for a moment review the history of the *Antiseptic* era, for the history of surgery is based on the researches carried out to control wound infection by antiseptics. The first glimmer is associated with the works of SEMMELWEISS who reduced maternal mortality in 1846 by 'disinfecting' hands with Chlorine water. But his achievement could not be explained scientifically till PASTEUR unravelled the mysterious activities of mycro-organisms. Then came LISTER with his antiseptics to counteract and eliminate infection from wounds. And finally the principles of asepsis were evolved which we practise even to this day.

Let us for the present discuss the scope of our problem. Wounds generally can be classified as accidental and surgical or acute and chronic. The treatment of accidental wounds has received very scant attention as compared to primary and deliberate surgical wounds, because infection in the former was unexceptional and only unfortunate, while in the latter it was tragic and adversely affected the name of the surgeon. Prophylaxis was ignored and the treatment given was haphazard—which meant many casualties. But the last Great War—presenting, as it did, accidental wounds in any number—disturbed the complacent attitude of the war surgeons and a new technique of treatment had to be developed to bring down the mortality and infirmity. And we are glad to find that this has been so well perfected in the last Spanish War that it is true to say that the new conceptions have revolutionised the treatment of accidental wounds, just as the pioneer work of N. M. KEITH did on shock in the last great war.

Before we come to the actual treatment of wounds, let us review the significance of modern researches. We have discovered a group of

* Read before the Medical Association, and specially sent for publication to 'The Antiseptic.'

drugs which have locally a bactericidal or bacteriostatic effect upon the organism—may be by upsetting the metabolism of the organism, and excites a stimulus of tissue non-specific defence mechanism. We must know the specific action of some of the main compounds of Sulphanilamide before we can make use of them. Sulphanilamide has definite bactericidal effect on streptococcal infection but it does not stimulate tissue defence mechanism; Sulphapyridine, though more effective, acts locally as an irritant. Sulphathiozole is useful in both streptococcal and staphylococcal infections and stimulates a foreign body reaction. Sulphacetamide is an efficient bactericide, its solubility is an added advantage and its application ensures the development of that healthy defence mechanism. With these drugs in the armamentarium of the modern medical man, the treatment of wound has naturally become more scientific, simpler and very encouraging in results. The local application of these drugs has been proved to be more useful than even oral administration, because of its higher concentration at the essential point. Introduction of this drug into the wound must be so thorough that all the crevices receive a good share. To ensure this, it can either be blown into the wound by a pump, or sticks and paste be squeezed out of a tube. This Sulphanilamide pack inhibits infection, accelerates healing and makes it possible to perform primary suture at a relatively later date. With such advantages it is no wonder that Sulphanilamide has been advocated even for field or first aid dressing.

In the modern treatment of an accidental wound we have to consider (1) prophylaxis (2) bacteriological investigation of the wound flora and (3) appropriate use of antiseptics.

I. **Prophylaxis.**—Wherever there is much bruising, tissue destruction and soil contamination it is always advisable to adopt measures to abort infection of tetanus and gas gangerene with serum therapy or/and chemotherapy local and parenteral.

II. It is always easier to fight an enemy that is known to us. It being so, it is wise to determine (by bacteriological investigation) the infecting organisms and their characteristics. Commonly, the organisms are streptococci, staphylococci and bacillus pyocyaneus and proteus. Streptococcus has stong invasive properties, involving joints and meninges and produces systemic infection. It also lurks in granulation tissue to cause 'flares-up.' Staphylococcus, though less invasive, has persisting tendencies (Brodie's abscess for example) and induces necrosis of tissue. Bacillus pyocyaneus has a nuisance value because the infection is intractable and persisting.

III. Before healing of the infected wound can take place, the organisms must be destroyed, toxins eliminated, enzymes of dying and dead tissue counteracted, necrotic material separated and dispersed, and natural vital processes of tissue resistance and repair should be stimulated. The use of an antiseptic becomes essential but the choice of a suitable one is indeed a difficult problem. Let us in brief discuss the leading features of some of them. The acids are either too strong and consequently harmful to the tissues, or too weak to be efficacious. Only 5% solution of Acetic Acid is a specific bactericide for B. Pyocyaneus. Soaps are good cleansing agents but ineffective bactericide and are rendered inactive by serum protein. The essential oils, though known to embalmers of ancient Egypt, are too costly and ineffective against staphylococci. The oxidising antiseptics are effective in anærobic infection, and mechanically aid in

the separation of sloughs but have little effect on staphylococci and B. coli. The Halogens (Chlorine and Iodine) are powerful bactericides but inhibit local resistance, combine with organic matter, are unstable and exert toxic effect upon the tissues. The heavy metals like mercury are powerful antiseptics (though more bacteriostatic than bactericide); but they are slow in action, combine readily with organic matter, produce harmful effect on renal and liver tissue on absorption, act well only in acid medium and their action is selective staphylococci being uninfluenced. The alcohols coagulate protein, prejudice tissue reaction of the wound, and their penetrative powers are virtually non-existent. (This explodes the myth of spirits as suitable vehicle for antiseptics). The coal tar derivatives (Phenol and Cresol) are destructive to tissues and lethal on absorption. But some oily preparations like Cyllin are very useful because they do not coagulate protein, their action is not prejudiced by the presence of organic matter and are really effective antiseptics. The Aniline dyes in aqueous solution possess considerable power of penetration and are particularly effective against staphylococci (to wit, Gentian violet); but their action is slow, diminished by organic matter and are ineffective against gram negative bacilli. The Acridine dyes (Acriflavine) are very popular because they are effective bactericides (except against staphylococci and B. pyocyaneus), are non-toxic, not affected by organic matter and do not disturb or damage the delicate mechanism of wound resistance. From this description it is apparent that Chlorine and Acridine dyes score over many other antiseptics.

Having discussed at length the various factors in the treatment of wounds let us now work out a plan:—

1. In an early case where the wound is not more than 6 hours old, primary excision of the wound and suture give wonderful results as obtained by TRUETA in Spain. Excision must be thorough, though the vital structure should only be cleansed and preserved. The wound then could be treated in three ways: (1) May be closed with adequate drainage-dead spaces having been obliterated and no antiseptic used. (2) Depot antiseptic or Sulphanilamide introduced and sutured. (3) Left open with antiseptic packing. In all these three cases complete rest by immobilisation in plasters or splints is very essential, of course, after having made sure (with prophylactic sera and sulphanilamide) that tetanus and gas-gangrene are not likely to threaten.

2. If the wound on lower limbs is older than six hours or that in the upper half of the body older than 12 hours, excision should not be undertaken, because infection is likely to have taken hold already. In such cases debridement or surgical toilet as it is called, should be practised. The wound is opened up, foreign bodies removed, and all obviously infected, grossly bruised and devitalised tissues must be removed. Skin must be conserved to the fullest degree. Detached fragments of bone and non-viable muscles are cleanly cut away. After bleeding has been arrested, a good quantity of Sulphanilamide is rubbed into the wound, and then packed with abundant antiseptic dressing, the choice of the antiseptic being determined by the bacteriological findings in the wound. If the progress is satisfactory, the wound may be closed by interrupted sutures and immobilised.

3. In grossly infected wounds, it should only be enlarged for proper drainage; and no excision of tissue attempted lest infection should spread. Hypertonic solutions are applied to encourage tissue exudation

which washes the wound and separates the sloughs. Later on this lymphagogue can be replaced by an antiseptic.

A few observations on after-treatment will not be out of place here. Experience has shown that those wounds healed best and quickest in which the dressings were left undisturbed for long intervals. This lessens work, prevents cross-infection in wards and minimises daily injury and pain to the granulating tissues that is coming up. Applications of greasy dressings like Cod-liver oil have their own advantage in this way. Change of antiseptics from time to time is useful to meet with the faculty of habituation in organisms and for the change which may naturally come over in the flora of the wound. Lest wounds should become chronic and covered with unhealthy tissue, use of caustics may become necessary at times. Ointments like Scarlet Red have great capacity to fill up wounds. Skin-grafting may prove useful in closing many a wound. The value of vitamin C in healing wounds has been proved beyond doubt.

This is the story of our scientific progress in the treatment of wounds and it is apparent that many a great change have come over since the early days of antisepsis. Though the record is brilliant, yet we have to march on this eventful journey full of hopes and fruition. The latest researches have been eminently fruitful in discovering 'Pencellin' which has definite bacteriostatic effect on injective organisms like staphylococci. This would promise a new era in the treatment of wounds.

Vitamins and Surgery in South of India

BY

CAPT. C. S. S. SARMA, D.M.O.,

Cuddapah.

SURGERY in the South of India is full of vistas. Great pioneers have made the knife conserve the life of its dwellers. Its cruel kindness, if one may say so, at the final reckoning, has been cherished with gratitude and shouted from house-tops, beyond praise, as well as cavil. What do, however, the surgeons feel about it? Have they paused to consider, if the quality of their technic and/or the selection of their cases, been responsible in any way for the good or otherwise of their results? They are intrigued and puzzled and are occasionally at a loss to account for some failure at least. They venture a statement that the South Indian is a generally poor surgical risk, that he eats far too little protein, has a large, bulky stomach, with a capacity for carbohydrate. It is said that he cannot educate his bowels to absorb fluid by mouth; is moribund in liver or kidney, and the ubiquitous victim of malaria, hook-worm, dysentery and other tropical ills of the skin, that the casual surgeon is in justifiable dread to do anything out in the muffasil, without reviewing each time his competency, equipment and nursing facilities from A to Z, before brandishing the much needed knife to save a South Indian life.

It is therefore reasonable to compare the experience of various people who have in addition to a good volume of work that had passed through their hands, have also ranged the length and breadth of South India and stayed in each place long enough to obtain reliable data. Malabar, Coimbatore, Madura, Vizagapatam and Madras form a kind of ring within which, but for the variations in the physique and local peculiarities of diet

* Specially contributed to 'The Antiseptic.'

and endemicity of particular diseases, the general quality of the surgical risk is not likely to differ markedly. In ordinary parlance, a hernia is a hernia wheresoever found and by whomsoever tackled. A hernia in a few educated and particularly endogamic community in one district is usually large, one cannot easily persuade one of its sufferers to part with it, and they usually come at the last moment, very often hours and days after strangulation and bring untold chagrin all round. The same holds good of a good percentage of carbuncles, giant ovarian cysts, massive elephantoid scrota and fungating tumours of the breast, limbs etc. I am not hinting at any ethnic causes for this anomaly, nor the prevailing causes of a terror at a surgical operation, or even a hereditary disposition to certain diseases, but to the uniformly poor surgical risk in certain class of people and certain stages of their disease. It is up to the profession to find out the essentials of the problem and examine them in great detail to see if they offset a surgical approach which, however well directed, is lacking in a composite and comprehensive grasp of the main problem.

It can be easily illustrated in the surgery of the gastro-intestinal tract. Where in one institution about 100 gastro-enterostomies were done in one decade, the number rose to 400 a decade latter and one in four resulting in a partial gastrectomy. Various sound reasons were offered for this procedure, " the victim must eat the diet he is accustomed to," " must have full working capacity," "must suffer from no relapses if he could at all manage to do so and must be as soon as possible restored to the effective strength of any agricultural or industrial calling he is pursuing." This is eminently scientific but it is full of "ifs" and "buts." The ifs are "if he does not smoke, if he gives up his present occupation which has by any stretch of imagination, a hypothalmic stimulation at the back of it and lives on a well balanced diet."

This well balanced diet is in the forefront of the picture. Surgeons in the South are getting more and more conscious of it. Persons accustomed to eat large quantities of the staple grains, like cumbu, ragi and maize do indeed possess excellent physique, but when any demand on their reserve stores of energy, however much they may withstand murderous attacks, deliver without much toxæmia and naturally they rapidly go under an anæsthetic and under the surgeon's knife. The ravages of unabsorption in chronic fluid loss conditions as in pyloric stenosis, chronic exudative states, produce famine stricken giants, but little responding postoperatively to intravenous fluid medication.

There is another illustration of this problem from a fortuitous way. The stomach after an operation on it in the South Indian is a study in itself. Post-operative stasis of even unabsorbed glucose, has been time and again seen. No absorption taking place but the ryles tube regurgitating *ad lib* and filling up 2 lb. bottles galore, necessitating even this unprofitable lavage to be discontinued in the interests of fluid conservation. Rectal route is a little more encouraging. The conditions of absorption appear to be no better down the duodenum. The first 48 hours, the fateful hours in the post-operative " fluid push", has to be by all routes to avoid dehydration.

The hypoprotinœmia of the South Indian is held to blame. But this can be easily taken for granted. The low protein seems to secure him alright in the fields at work but on the border when well, but disease finds him or her out. There was need to introduce plasma on two or three occasions to cases of poor risk and the fluid absorption given as a

routine by every other hackneyed route was showing a gratifying response not seen in much more robust individuals, even after simpler procedures. Apart from "eat more meat" and prescribe more protein for the poor surgical risk in South India, the tissue repair also shows a remarkable fluctuation. There are seasons of high wind and dry dusty conditions, with shortage of green vegetables, when patients are not volunteering for surgical interference and if forced to do so heal by second intention, burst their suture lines and show various wound-morbidity like weak, streched out scars, painful noduler lumps. Rhino oro-labial and gential type of gingivitis of the a-ribo-flavinosis type—true cases of hæmorrhages or thrombosis of deep veins in the claves due to fragility of the venous capillaries with painless smooth swellings of one dorsum of foot, one leg, etc.—are known and the underlying avitaminosis is missed. These later may seek surgical help and their dangerous low level of the tissue reparative-vitamins, notably "C," may be made evident.

A dilated stomach from any cause refuses to absorb anything and the forcing in of water however gently and inexorably shifts the fluid from the bowels to the pulmonory system and fluid logging is profound. Tragic post-operative failures attributed to the anæsthetic pulmonory atelectasis, too rapid perfusion, alkalosis and acidosis are all perhaps attributable to sudden acute depletion of both protein and vitamin "C" in the recently operated individual especially if that individual happens to belong to the sunny South.

The test for this hypothesis was to put it into practice. Frank cases of pyloric stenosis with œdema, profound secondary anæmia of the nutritional type, went through high protein diet and parenteral vitamins especially Berin and Celin and stood the operation and fluid medication better than similar ones which were misleadingly better risks by reason of their appearance, hæmoglobin and blood pressure. A case of fibroid uterus, with secondary heart and œdema, was a clear eye opener to the need of feeding up with proteins and vitamins the South Indian Poor risk, a good month before a surgical operation and resuming such feeding as soon as convenient. The Jug broth, the liver soup, the egg flip, the bone soup, have done more than milk plain and simple, in building up their proteins and saving the body proteins, when faced with a surgical risk. If only this side of the invalid and post-operative dietary received better attention at the hands of surgeons poor risk mortality will markedly improve. Craving to eat meat returns with the return to convalescence after all serious major surgical operations. It is at this stage the indigent patient finds himself back again at home with all the vistas of no convalescent care and no protection by a follow up. Nutritional cases of anæmia, myocarditis, post-operative gastro-enterological conditions as well as cases of malignant diseases treated palliatively by roentgenological methods, all form clear cut groups which should interest the health worker. Round about growing clinics famed for surgical work should spring up voluntary follow up organisations and their results would be illuminating and inspiring.

The question of operation in endemic areas of beri-beri would bring its own problems, when persons may be treating patients with marked or larval beri-beric symptoms, surgically. "Ersatz" products for the costly vitamins are always available; it is in the routine appreciation of their importance and pre-operative administration and post-operative continuance and well scrutinized "Check up" by a survey that we hope to eliminate the poor surgical risk in the South.

Cases and Comments

A Case of Acute Pain in the Abdomen

BY

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Asst. Surgeon, Municipal Hospital, Basim (Dt. Akola), Berar.

A YOUNG gentleman, aged about 28 years, came to the hospital on 2nd May 1943, at about 5-30 p.m., with symptoms of acute pain in the abdomen, especially in the region of the umbilicus, with the history of having vomited 3-4 times and passed stools twice before he actually came to the hospital. The pain had started the same day earlier at about 2-30 p.m. and it went on increasing, thereby forcing the patient to come to the hospital for treatment.

On examination it was found that there was tenderness and some rigidity in the region of umbilicus. Temperature was 98.2°F. Pulse was found to be 100 per min., while respiration was found to be 20 per min. No history of any gastric disturbances before the onset of pain could be elicited. Similarly there was no history of any acute pain in the abdomen before the present attack.

Accordingly, a provisional diagnosis of acute abdomen was made and an injection of Atropin Sulph. 1/100 gr. and a dose of Carminative mixture with 5 min. of Tr. Belladonna were given. The patient vomited the dose immediately after it was given to him. He passed one stool which was liquid in consistency. The patient was removed to the ward. It was however found that the vomiting was persistent and troublesome too. As such :

℞ Tr. Iodine Rect ... ♏ x
Aqua ad. ... ℥ ii

Pulv. 1 tea-spoon was given every 15 min. This very much relieved the vomiting.

Two hours after admission, temperature, pulse and respiration were recorded again and they were found to be as follows :—

Temp. 100.2°F., Pulse 110 per min., Resp. 20 per min.

The pain in the abdomen had disappeared by now completely and there was no sign of any tenderness or rigidity anywhere in the abdomen.

Immediately a blood slide was taken and strained for malarial parasite and examined under the microscope. To our great surprise B. T. rings were seen. This however made the diagnosis clear. Soon after an injection of Quinine Bihydrochlor (10 gr. in 2 c.c.) was given and two hours after this, two Quinine tablets (4 gr. each) along with a dose of Carminative mix. ℥i with Pot. Bromide gr. xx was given. Patient slept well the whole night. Next morning (3rd May 1943) the temperature came down to normal and there was no vomiting or diarrhœa thereafter. Quinine by mouth was given to a total dose of 30 gr. per day and the patient made an uneventful recovery.

As a matter of fact there is nothing very abnormal in the case, but it just shows how a case of malaria may start with symptoms of acute pain in the abdomen and may just even mislead an unwary practitioner.

I hope this case will prove interesting to most of the readers of your Journal.

Case Notes on Retroverted Gravid Uterus

BY

DR. M. N. PALADHI

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1. On 2–7–'37, a Hindu female named Manuli, aged 27, was admitted into the hospital. She gave history of cessation of menstruation since last 4 months and of frequent micturition with slight incontinence and pain in the lower part of the abdomen for the last 10 days. Since the previous evening, she got retention of urine with intense pain in the abdo- examination I found a fluctuating mass in the lower part of the abdomen, men. On which disappeared on relieving the bladder by a catheter. On passing the fingers into the vagina I experienced an unusual difficulty and felt a smooth elastic tumour occupying the hollow of the sacrum. Cervix was high up behind the symphysis pubis.

Treatment.—The patient was put under chloroform and the gravid uterus was replaced by bimanual method. She was kept in semiprone position and the following mixture was prescribed :—

℞ Pot. Citras	...	gr. x
,, Bicarb	...	gr. x
Tr. Hyoscyamus	...	♏ xv
Infusum Buchu	...ad	℥ i

Ft. mist one, T. D. S.

The bladder was relieved twice a day with catheter. The patient experienced pain in the abdomen and had light hæmorrhage and insomnia. An injection of Morphine et Atropine was given in addition. Bladder was washed with mild Pot. Permanganas lotion. On 4–7–'37, hæmorrhage stopped. The mixture and catheterization continued till 6–7–'37. On 7–7–'37 she passed urine of herself. The above mixture was continued twice a day till 9-7-'37 and she was discharged cured on 10-7-'37.

2. Another case of retroverted gravid uterus in the 4th month of pregnancy causing abdominal pain and retention of urine was admitted on 14-6-'38 and the above line of treatment cured her on 19-6-'38.

3. A third case of retroverted gravid uterus causing abdominal pain and retention of urine in 3½ months pregnancy was admitted into the hospital on 13-10-'39 and similar method of therapy cured her on 18-10-'39. In all these cases the later part of pregnancy was uneventful and the ladies had normal deliveries. My object in contributing the above notes to the *Antiseptic* is that the cases of retention of urine by retroverted gravid uterus in the early months of pregnancy is very common in these parts of the Kumaon Hills and the contribution will help my junior colleagues to deal with such cases. I am thankful to RAI SAHIB DR. H. S. BISHT, Civil Surgeon, Almora, for permission to publish these case notes.

Dagenan M & B 693 in the Treatment of Bacillary Dysentery

BY

NANAK CHAND, L.M.P., (Rgn.),

Burma Medical Hall, Jagadhri (Ambala District).

1. On 20th February 1943, I was called to see a child aged 2½ years, suffering from frequency of motions containing blood and mucous, abdominal pain, tenesmus, prolapse of the rectum—duration of illness 7 days. His father tried all sorts of medicines, both Allopathic and Ayurvedic but without any success. In fact patient was getting from bad to worse. I put the baby on restricted diet and prescribed one tabloid M & B 693, divided into 4 powders, one powder to be administered 4 hourly. To my surprise, the effect was miraculous. Patient had good sleep and the number of motions went down on the very first day. Parents were much worried about the prolapse of the rectum, which was replaced after thorough cleaning, padded and bandaged. Patient made rapid recovery in a few days' time.

2. On 27th February '43, I was called to see a patient aged about 40 years, having typical symptoms of acute bacillary dysentery, the duration being one day. I prescribed Mist. Ol. Recine 1 oz., 4 hourly. Patient was much relieved in 2 days and he left for his destination on the 3rd day, as he was a traveller.

I am writing these notes about the wonderful efficacy of Dagenan M & B 693 in cases of acute bacillary dysentery and request my professional brothers to try this drug extensively. I have no doubt that if the cases are selected properly, my brothers will meet with unfailing success. Such notes are frequently published in the *Antiseptic*.

Sulphaguanidine, if available, is also worth trying.

A Case of Persistent Complete Hymen

BY

M. D. AMRAWAT, A.M.O.

AND

V. J. GHAWDE, M.B. (Cal.),

P. O. Pandharkawath Dt., Yeohmal C. P.

Tuki, H.F., 16 years old, was admitted into the Municipal Dispensary Pandharkawada for the following complaints :—(1) Difficulty in passing urine for about 3 months ; (2) A painful elongated swelling in the abdomen for about a year.

History.—About 2 years before the patient used to feel mild pain in the centre of the lower abdomen. The attacks of pain were intermittent. The patient's mother noticed a small round swelling in the hypogastrium. This state of affairs continued for about a year. Afterwards the pain became rather severe, unbearable and was felt in the hypogastrium, perinæum and lumbosacral region. The swelling also gradually increased upwards like a tube. Now she began to feel gradually increasing difficulty in passing urine. There was no difficulty in defæcation. The patient was married. There was no external manifestation of menstruation. The patient was treated with quack remedies, some medicines and hot iron cautery (gul) but there was no relief.

Physical examination.—Patient thinly built; breasts well developed, pubic and axillary hair well grown.

Abdominal.—An elongated swelling lying obliquely to the right side of the middle line and reaching upwards about 1½ inches below the right costal margin. Upper portion was soft and was movable from side to side. The lower portion was hard to feel. There were many scar marks indicative of past treatment with hot iron cautery.

Vulval.—Labia well developed. The vaginal orifice absent, due to the presence of a complete persistent hymen bulging downwards between the labia. Fluctuation was present.

Treatment.—When the hymen was divided by an incision in the position of the vaginal orifice, a large quantity of thick tary blood escaped. The abdominal swelling also disappeared altogether. Vaginal douche was given. On P. V. examination the vaginal canal was found to be dilated, indicative of hæmatocolpos. The cervix and uterus could not be felt. Post-operative treatment with a sand bag on the lower part of the abdomen, vaginal douche daily and postural drainage were carried out.

After seven days, on P. V. examination, the vaginal canal was found to be patent. The cervix was looking anteriorly. The uterus was acutely ante-flexed and ante-verted.

The patient was discharged and was advised to come again after her next period.

A Case of Presistent Hiccough

BY

CH. KRISHNAMURTHY, L.M.P.,

Selection Grade Sub-Asst. Surgeon, Markapur.

C.B., H.M., 53, was first seen by me on the night of 12-1-1942 for persistent hiccough of 5 days duration. It was stated that he could not retain anything and was aesthenic. He was being treated outside before I was called in. An injection of Adrenalin was given hypodermically and a dose of strong Carminative mixture with gr. 15 of Pot. Bromide internally that night. The patient felt better by next morning but the hiccough did not stop altogether. His general condition was poor, tongue dry, pulse feeble and rapid. On gathering the history, it transpired that he was having fever with chills for four days daily, six days before the onset of hiccough. He was taking Quinine himself at home. He appears to have suffered from a peptic ulcer some years ago, for which he was treated medically elsewhere for some months. There was constant hiccough and splashing sounds in the abdomen whenever he had hiccough. He was given intravenous Glucose injections to maintain his strength and his stomach was washed. The hiccough was better, occurring at long intervals. Internally he was given Chloral Bromide, Spts. Etheris and strong Carminatives and Hyoscine Hydrobromide injections towards evening. The stomach wash was repeated the next day and bowels moved by soap water and Turpentine enema. There was no hiccough for a whole day and it recurred again the next day, at first slowly, and gradually became persistent. It became worse and the usual remedies tried above were of no avail and he had to be given Chloroform inhalations to keep the hiccough in checkc The rest of the treatment and Hyoscine injections were continued. This,

stopped the hiccough and he recovered completely. He has been now well for an year and a half. The cause of hiccough in this case is obviously a dilated stomach, perhaps due to an old ulcer near the pyloric end. The stomach must have become congested and irritable on account of injudicious Quinine he had taken himself. The local and general neuroses which kept on the persistent hiccough in addition to the organic lesion inside, is remarkable in not yielding to anything less than Chloroform inhalations.

Cardiac Failure from Hypovitaminosis in Pregnancy Anæmia

BY

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Selection Grade Sub-Asst. Surgeon, Markapur.

V.R., H.F., 18, a primi, was seen by me on 17-5-1943 for dyspnœa, œdema of legs and genitals, general anasarca, giddiness, palpitation and scanty urine of one month's duration. The body was swollen all over, face puffed, conjunctiva pale, and xerotic and eyelids swollen, abdominal wall œdematous, legs and genitals intensely swollen, labia looked like elephantoid ones, lower limbs greatly swollen and œdematous and the patient was unable to walk even a few steps—in fact she was deposited from a bandy. The uterus was enlarged to the size of seven months and fœtal heart sounds were feebly audible. There was enlargement of the heart and engorgement of the veins with dyspnœa, orthopnœa and periodical attacks of pain, distress and palpitation. Pulse 112 when first seen, urine scanty, high coloured reddish but no albumin was present, well marked systolic murmurs were heard over the base and apex and they were of the character of hæmic murmurs. She was put on the usual lines of treatment for cardiac failure, *viz.*, rest, purgatives, digitalis and in about two weeks, the œdema and anasarca had gone down and pulse came down to 72. She was put on an Iron and Cod Liver Oil Mixture and fresh liver soup internally. In less than two days, she again complained of dyspnœa and the œdema and anasarca appeared gradually and in about a week she was again almost in the same state as when she came in. The urine was scanty and high coloured but did not contain albumin. She was again put on the same treatment (rest, purgatives and digitalis) but without much effect. She had to be given Bromide and Morphine often, to relieve her of cardiac pain. It was therefore decided to put her on vitamin B_1. There was no supply of synthetic vitamin B_1 available and the patient was too poor to purchase it also and so 4 ozs. of rice polishings daily were simmered in hot water and the strained infusion given morning and evening in addition to the above. She also delivered a week later and the bran-tea was kept up for a fortnight after delivery and she made an uninterrupted recovery except for an attack of dengue-like fever for 9 days which disappeared with simple treatment.

Cardiac decompensation in pregnancy anæmia appears to be partly due to hypovitaminosis, deficiency of vitamin B_1, and unless cardiac tonics are combined with thiamin or some source of B_1, the results cannot be satisfactory. This case illustrates it and where a costly synthetic remedy like some vitamin B_1 preparation is not available, bran-tea can be used instead.

Records of 3 Cases of Meningitis with M & B 693

BY

DR. S. K. GUHA, L.M.F.

Gopalpur Tea Estate, P. O. Gopalbagan (Dt. Jalpaiguri).

As one in charge of the Tea Estates' Hospital in Dooars for the last 12 years I have had occasion to deal with numerous cases of infection with malignant tertain parasites with cerebral symptoms. May I at the outset state the experience I have gained in tackling 3 important cases of meningitis associated with infection of malarial fever, which is a very common factor in Dooars? The publication of these short notes may be of great interest to the readers in remote villages where pathological examination is not possible and may not be confused with the possibilities of mixed infections.

Case No. 1.—The patient came here 10 days before the onset of the disease after a stay of 2 or 3 months in other parts of Dooars. He gave a clear history of malarial attacks during the period. He was a new comer in Dooars from Muzaffarpur District and possessed a good physique.

He was having high fever, head-ache and pain all over the body for the last 2 days and the case was reported to me on the 3rd day. He was treated with Alkaline Bromide and Salicylates for two days. Spleen was palpable upto 2 fingers. All symptoms gradually became aggravated, pain increased and ultimately passed to a stage of delirium and unconsciousness. Blood smear was taken and a positive M. T. RINGS was found. He was at once injected Quinine Bihydro, 10 gr. twice daily for 2 days, with usual Alkaline mixture and Quinine by mouth was given for next 2 days. By the 7th day, though the temperature touched almost normal with an evening rise upto 101°F, the condition of the patient almost became critical. The symptoms of intense head-ache, rigidity in the neck, arm and legs, pain along the spinal cord, retention of urine, with stoppage of the movements of bowels, Kernick's sign, restlessness and insomnia with coma ultimately supervened. The manifestation of the above symptoms made me suspect it to be a case of meningitis. Lumbar puncture was not possible at the spot.

The patient was at once put on M&B 693 treatment, pushing 4 tablets daily with Glucose-25p.c, 25 c.c. twice daily, rectal saline with Glucose and Paraldehyde twice given. Bowels and urine were daily passed by enema and catheter. This process was continued for 4 days when the condition of the patient turned to a favourable direction and ultimately he recovered fully after following the same line of treatment for a further period of 4 days.

Case No. 2 :—The patient was a boy of 14 years, came to this area a few days before with a very large spleen, reaching upto umbilicus and high fever. I was called upon to attend the case. Firstly he was given 2 injections of Quinine gr. 10 for 2 days with some alkaline mixture. He was next treated with Quinine by mouth for 2 days. Though the case showed some improvement in temperature other symptoms like pain all over the body, rigidity, delirium and ultimately coma developed, causing the suspicion of meningitis. He was at once put on M & B 693 treatment with Glucose intravenously, and rectal saline was continued for 4 or 5 days when the case took a favourable turn and ultimately recovered after fully following the same line of treatment a few days more.

Case No 3 :—The patient is a new comer in Dooars, and was treated by a local doctor who gave 3 injections of Quinine and some quantity by

mouth. Though some improvement in temperature was noted the patient gradually developed other symptoms of rigidity of neck, headache, delirium and ultimately coma. I was called upon to attend the case. Blood examination and lumbar puncture were not possible at the spot. He was advised to push M & B 693, in sufficient doses with Glucose intravenously and rectal saline daily. This treatment was continued for 5 or 6 days when the patient took a favourable turn and ultimately recovered completely after following the same line of treatment for 3 more days.

Points of Interest :—1. All the cases are new comers to Dooars, where meningitis is a very rare disease.

2. Blood examination was possible in case No. 1 only and lumbar puncture was not done in any of the cases.

3. Diagnosis was made clinically and uneventful recovery took place in all the cases. Prognosis simply depends on early diagnosis and early treatment with sufficient doses of the drugs.

4. Cases of meningitis complicated with malarial fever may be also present as in case No. 1, and should always be taken into consideration.

5. In conclusion, I have the least doubt in stating that the drug is most efficacious in cases of meningitis as well as in pneumonia, gonorrhœa, and bacillary dysentery.

My thanks are due to Dr. T. M. GHOSH, B.Sc, M.B., G.M.O., of this group, for his kind instructions and permission to publish these short notes.

A Case Report of Black Water-Fever

BY

DR. S. C. HAZRA,

Sub-Asst. Surgeon, Govt. Agency Hospital, R-Udayagiri.

It is needless to mention here that the village R-Udayagiri in the Ganjam Agency is the worst malarious place where many-a-death has occurred due to B. W. fever about 5 to 6 years back. Some of the clerks in the Taluk office and others died and so the Government abolished the Taluk office for a couple of years.

But from the statistics of the last 5 years it could be elicited that there was no case of B.W. fever, treated in the Agency hospital at R-Udayagiri; though it is suspected that it might have occurred in the neighbouring villages without coming to the notice of the local medical officer.

During my stay of about two years in the Agency hospital, R-Udayagiri, I have never come across a case of B. W. fever, though once it was narrated that a man in one of the neighbouring villages died as he was suffering from fever and hæmaturia. Though it is suspected to be a case of B.W.F., yet it could not be mentioned here as the case did not come to the notice of the medical officer and it may be taken into consideration that the hæmaturia might have been due to some other cause; but the locality and past record instances go in favour of B. W. fever.

The boy was brought to the hospital by his father at 10 a.m. on 8-2-'43 with the complaint that the child was passing blood during micturition at 9-30 a.m. *i.e.*, half an hour prior to the arrival at the hospital. The

child was asked to micturate in a tray and he passed a few drops of urine which looked bright red. On enquiry it was elicited from his father that the child neither had temperature on that day nor on the previous days and he did not undertake any treatment for malaria.

On examination the general appearance of the child was quite good and he was quite jolly and was playing with his father from which it could be imagined that he was not having any severe pain at that time, which might have been caused by any internal trouble either in the urethra (his pereneum was palpated for an injury due to fall, when neither any external injury nor any swollen mass could be palpated) or in the bladder which was too palpated without having any definite sign or in the ureter and kidney. The temperature was 98.2°F and the pulse rate 128. Spleen four fingers enlarged. No definite reason for hæmaturia could be thought of at that time and the child was given dr. ii of Alkaline mixture and was kept under observation.

At 3 p.m. the father of the child came with 3 oz. of tarry coloured urine, said to have been passed by the child, and on enquiry I was informed that the child has got temperature. He was asked to bring the child at once to the hospital. Now the general appearance of the child was not good as in the morning—he was pulled down and looking sickly, but not prostrated. He vomited out some bile-stained mucous. On examination the pulse rate was 152 and the temperature was 99.5°F. which rose up to 101.5°F. by 8 p.m. at night.

The case was diagnosed as malaria hæmoglobinuria (or B. W. fever) and the child was administered a strict dose of

Sodi bicarb	...	gr. xv
Pot citras	...	gr. xii
Extraction Casia Barium liq.	...	℥ p
Infusum Pondhu	...	℥ iii

at 4 P.M. and was given perfect rest, being covered up under a blanket. At 6 P.M. another dose of the mixture containing Sodi bicarb gr. x, Pot citras gr. xii. Extraction Casia Barium liq. m. xx, Infusum Pondhu dr. iii was administered and this mixture was repeated six times two hourly till 6 A.M. next morning. Glucose liquidum one and one half ounce with water was administered frequently at intervals.

At 8 P.M. the child passed 2 oz. of urine, the colour being the same as before and the black clots were found in the pot when the upper portion of the urine was thrown off.

At 10-30 P.M. there was very little sweating from the forehead, armpit and legs. Temperature came down to 99°F. and by 12 o'clock the temperature completely came down. He passed urine on the bed at 1 A.M., the quantity of which could not be ascertained, but a little quantity of urine which could be obtained showed a little variation in colour, *i.e.*, more like reddish than dark red as he was passing before.

But the same mixture, with frequent Glucose drink, every two hours was insisted on till next morning. At 6 A.M. the child passed about 2 oz. of urine, the colour of which was completely changed to yellow.

On 9-2-'43 the same mixture as noted above was administered every 4 hours with frequent Glucose drink. But the colour of the urine did not show any further marked variation. The child had no temperature for the whole day and at night he was given four ounces of barley water in addition to glucose and mother's milk as he was taking before.

On 10-2-'43 colour of the urine completely changed to normal. There was no temperature for the whole day and the general appearance was quite good. He was administered the same mixture with ℥ x of Exl. cas Bank Liqd. On successive two days child was administered mist Albabine 4 times a day and he had a complete recovery.

Points in favour of the diagnosis :—1. Locality. 2. Chronic sufferer of malaria. 3. Rise of temperature with hæmoglobinuria. 4. Variation in change of colour in urine, passed on the same day. 5. Sudden and extreme cold on those days as it is stated that chill provokes an attack. 6. Instances in previous years. 7. Definite response to treatment within 15 hours. 8. Presence of albumin and blood in urine.

Discussion :—Though it is reported that the temperature, vomiting and prostration precede the hæmoglobinuria, in this case it commenced as hæmoglobinuria without temperature ; without any history of fever within 12 days and without any administration of Quinine which is taken at times to precepitate an attack. Only the diagnosis could be done above as per the points in favour of diagnosis.

The Sewing Needle Displayed a Curious Feat

BY

RAJARAM NAYAR, M.R.C.S. (Eng), L.R.C.P. (Lond.), P.C.M.S.,
Civil Hospital, Sirsa (Hissar), the Punjab.

The readers would be astonished to learn what marvellous feats are displayed by needles. The following case-notes would interest them. A patient named Chandu, s/o Ganpat, a Hindu agriculturist, aged 20, was brought to the hospital from a village named Mochiwala about 29 miles from Sirsa. He was admitted in the hospital on 20-7-'43.

The patient deposed that on 18-7-'43 at about 10. a.m., he took his morning meals consisting of wheat chapathies, spinach (cooked leafy vegetables), and curdled milk (lasi). He lay down for a while and then caught hold of a sewing needle to dig out the particles of food sticking in between the teeth. He then felt a craving for smoking. He approached the hubble bubble. Whilst smoking hubble bubble, he did not part with the needle but kept it in his mouth held tightly by his teeth. Curiously enough, the grip was loosened and the needle slipped into the mouth and in a wink of eye it was throttling his throat. An attempt was made to pull it out but to no avail. He felt awful pain in front of his neck, but it suddenly stopped and the pain moved into the pit of stomach. By 3. p.m., it shifted to the level of umbilicus. By now the relatives of the patient were able to procure a magnet and rubbed it to the chest and abdomen of the patient. The writer is unable to judge how this magnet (must be of crude form) could affect the path adopted by the needle. I leave it to the readers to reflect over it.

On 19-7-'43, the pain shifted to the hypogastric region and at about 6 p.m., he felt the prick of needle at the junction of penis with the scrotum. (*Diagram 1 vide page 528.*) He was then carried to the hospital for treatment on 20-7-'43. The needle was deeply palpated, embedded in the tissue at the junction of penis with scrotum.

The needle was dissected out from this spot. It was 3¼ inches in

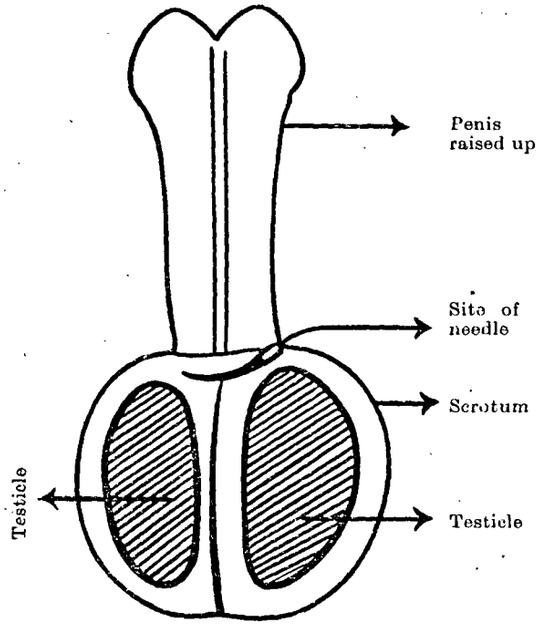

DIAGRAM 1.

length, 3/4 c.m. in circumference, round in shape, and slightly curved at its shaft. One end pointed while the other was perforated. It was indeed a sewing needle. (*See below Diagram 2.*)

The patient was discharged as cured on 5-8-'43. He did not develop any untoward symptom during the whole of the course of treatment.

Funny are the ways of nature. The needle goes into the mouth and comes out of scrotum. Nature bewilders mankind. God protects man by astonishing ways. But these are what a layman should think and not the doctors. Let us subject it to a close scrutiny and find out the passage it might have traversed.

1. As contended by the patient and his relatives, the needle by the effect of the magnet, traversed through the muscular and facial planes and reached the scrotal region. This cannot be accepted. This tortuous route would have caused intense pain and produced inflammatory symptoms.

DIAGRAM 2.

2. I actually believe that the needle was swallowed in the stomach and there it was enwrapped in thick paste of

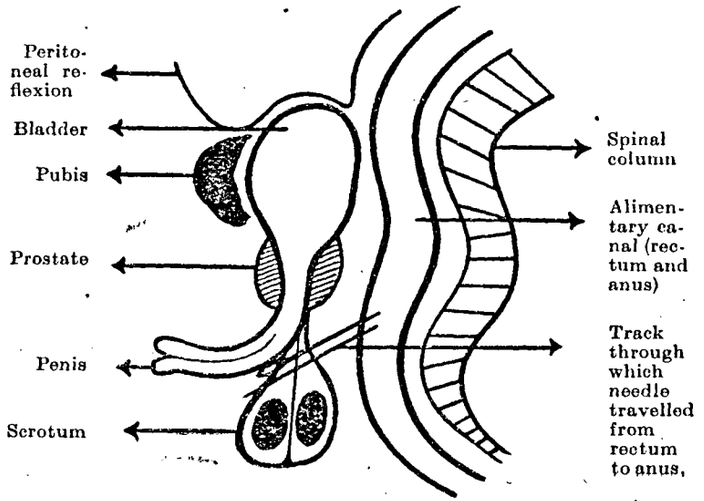

DIAGRAM 3.

chaphaties and sag and thus it became a harmless thing. It passed into the duodenum and travelling through the smaller and larger intestines came into the rectum. Near about the ano-rectal junction, the expulsive forces of the rectum forced the needle into the anterior wall of the rectum and piercing through it below and outside the peritoneal sac, it reached the junction of penis and scrotum. (*Diagram 3-vide page 528.*) It is a clear indication that the needle passed through a harmless route and travelled so sharply that within 48 hours it travelled through a tortuous route and reached the spot wherefrom it was extracted harmlessly. This is the first case of its kind seen by the writer. He saw one case in 1939 who required gastrotomy for its removal. The literature lacks further details.

The writer will welcome the detail of similar cases by the readers.

Few Peculiar Cases of Fever (Malaria)

BY
MANORANJAN CHANDU, L.M.F.,
Manikganj, Dacca (Bengal).

IN the following notes I am placing a few cases of fever (malaria ?) where blood was not examined as the laboratory was far off from the place but the patients were cured by Quinine treatment. The cases are interesting for their peculiar symptoms. The cases were all seen within Manikgunj subdivision from 1940 to 1942, an endemic area of malaria.

1. S., carpenter, H., male, 27 years, had a sudden attack of vomiting and purging (rice water) with cramps and collapse with no pulse and sweating, about 6 hours before I was called in to see the case. Usual treatment of cholera was given with Atropine, Adrenalin, Pitutrin, Cholera Phage, Glucose solution, Rectal and I. V. Saline etc. The patient improved in all respects but symptoms relapsed again on the 2nd day and the usual treatment was followed as before with Kaoline, etc. There was no enlargement of spleen. Patient showed improvement, temperature was 97·6° F. On the 3rd day, symptoms relapsed again with temperature 98·8° F. Alkaline, Saline, subcutaneous Saline etc., were given. He passed urine on the 2nd day. Spleen was slightly palpable. On the 3rd day, I gave one I. M. injection of Q. bi Hydro g x with Ad. Ch. and patient was improved. A second injection cured the patient. Later on Quinine was pushed by mouth.

2. U.C., aged 25, Hindu, compounder, had an attack of fever not above 100° F. for 2 days with slight headache. Duration of fever was 2 to 3 hours and no medicine was taken. On the 4th day at night after his day's work and night-meal he was gossiping with his friends when he suddenly fell down and became unconscious. I was called in at about 11 P.M. His pulse was bounding, 80 per minute, pupils moderately dilated but reacted to light. No enlargement of spleen was found and temperature was 98° F. Treatment was given, as such cold overhead, about 10 c.c blood was let out, bed raised towards the head. Glycerine and Mag Sulp. solution by rectum, terpentine etc. No improvement was noticed. Next day blood pressure was taken. Sys 170 M. M. H. G. Pulse was bounding as before and other conditions were as before. Veni section done but temperature was 98°F. which remained constant. Next day, *i.e.* after 36 hours he could deglutate very small quantity of fluid unconsciously. Iodide, Calcium, Bromide, Mag. Sul. Alkali, terpentine sponging etc., were given. Coma was deep. Planter ref. not altered. On the 3rd day bowels was moved unconsciously and he would move his limbs unconsciously. B.P. was less, temp. 98.8°F. in the evening. Other conditions were the same. Spleen was palpable on the 4th day. Q. injection gr. 10 was given and after 4 hours tension of the pulse was less. He regained consciousnes. On the 5th day temperature rose upto 100°F. and spleen was enlarged slightly. Quinine was pushed by mouth and injection. Alkaline

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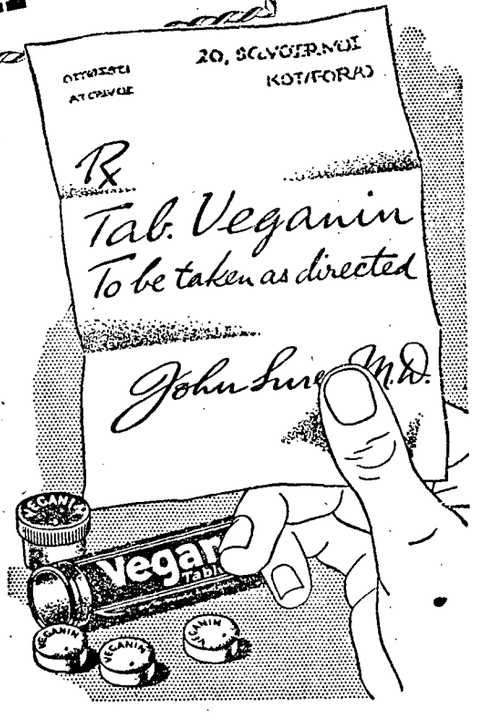

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sedatives were given by mouth and the patient was cured on the 7th day though he was weak and anæmic for a long time.

3. G., Sub-Inspector of Police, 32, H. After a vigorous riding and other work he had a bile-stained vomiting in the evening with fever which rose upto 103.4° F. with headache But there was no shivering, rigor, etc., and gradually all symptoms of typhoid developed within a week, *i.e.*, dry furred tongue, delirium, temp. 100° F. to 103° F. tympanitis, liq stool, etc., and usual treatment of typhoid was given. But there was no vomiting after the 1st day. Spleen was only palpable on the 6th day and it remained so all along. On the 12th or 13th day I was called in for consultation as the condition worsened with irregular pulse. Rectal Saline Cardiazol. Glucose injection, cold compress over abdomen, etc., were given. After consultation with my colleague, I injected Quinine gr. 10 with Adrenaline (depending on 1st day's history of bilious vomiting and sudden rise of high temperature). Next day fever fell upto 100° F. with improved pulse, etc. My colleague gave another injection next day and the patient came round within 2 or 3 days. Quinine was given by mouth after injection.

4. K , female, 40, H., complained of fever 99° F. or so in the evening with severe headache. On the 3rd day he had 100° F. at about 9 A.M. without any rigor, etc. It rose upto 102° on the 4th or 5th day. She was somewhat delirious. Fever varied from 101° to 103° F. from that day. I was called in on the 7th day for consultation. Spleen was papable and the liver was enlarged, pulse tension low, and pulse was 65 per minute (temp. 103° F.). She was somewhat constipating. Usual treatment was given with Glycerine enema. On the 8th day her words were very indistinct and somewhat stammering. She could move her limbs of right side with difficulty. Sodi Iodide was given with usual treatment, etc. Pupils were normal. Pulse was low and spleen palpable. Quinine grains 5 was pushed inter. musc. on that day and Quinine Bicarbonate by mouth. Next day another injection of Quinine grains 10 was given. Spleen was diminished and the patient gradually came round on the 14th day. But she lost her strength of limbs of right side and could speak with great difficulty with loss of memory. Later on I prescribed Iodide Sarsaparilla and Vit. B_1, etc., and her condition improved considerably in about $2\frac{1}{2}$ months. After that she was taking Kaviraj medicines. The peculiarities of the above cases were that spleen enlargement was of late origin and never beyond costal margin, also temperature was never very high.

5. This case is different from the above where Quinine was pushed but gave no apparent result (?). A female child well developed and healthy about $1\frac{1}{2}$ years old, had an attack of fever with vomiting, shivering, etc., with remission in the morning. I was called on the 8th or 9th day. Before this Homeopathic treatment was given. She came from Cooch Behar 12 days before. I found her spleen 3 fingers below costal margin, with temperature falling to 98° F. and rising to 103° F. On the 1st day Alkaline mixture, Milk of Magnesia and U Quinine grain $1\frac{1}{2}$ were given B. D. Bowels moved clearly and tongue was slightly coated. Temperature fell to 98° F. and rose upto 100° F. Spleen was somewhat diminished. Temperature sometimes touched normal. Quinine Sulph, Kaloemgh, Quinine Hydrochlor, Quinine Bihydrochlor Ch. Feb. Aristochin were pushed along with Alkaline mixture. Spleen remained as before (1 finger below costal margin). Later on she developed intense anæmia (40%) Ferri et Am. Citras along with other mixtures were given but gave no response to any treatment except occasional fall of temperature to normal. Later on Quinine Hæmogen and Adexoline were prescribed and in this way I treated the case for about one and half months. Blood was examined and M. T. parasite was found in the blood and hopelessly I prescribed Atebrine tablet. Patient was cured within 4 days with no palpable spleen. On the whole 3 tablets were given in divided doses. I could not understand the reasons.

" *Chanda Niketan*,"
Manikganj, Dacca

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Aviation Medicine

IN modern warfare aircrafts take a very prominent part and very often decide the issue between success and defeat. Even in civil life the use of aeroplane as a means of transport has become so enormously increased that aviation medicine has become an important aspect of medical science.

To us in India, where the Air Force is growing in increasing numbers, and very rapidly too, this subject must be of special interest to medical men. Air Marshal SIR HAROLD WHITTINGHAM, Director-General, Medical Services, Royal Air Force, in a very masterly review in the latest edition of the Medical Progress Volume of the British Encyclopædia of Medical Practice, has discussed this subject at great length.

Under modern high-speed and high-altitude flying conditions, it is important that aviators should be alert in body and mind, with accurate vision, good muscle tone, quick reaction-time and a good sense of balance. The standard clinical examination, as used in the Royal Air Force to help in the assessment of physical fitness, is fairly severe. The results of such tests, however, do not seem to predict the individual's aptitude to learn to fly. Workers in this field have found it by following-up the flying training to the end of a year of a batch of sub-standard candidates as judged by the existing clinical tests and a control batch of a fairly equal number of standard candidates. The proportion of failures to learn to fly was practically the same in both groups. They came to the conclusion that none failed to learn to fly for any medical reason rendered apparent by the clinical efficiency tests. It was found that 90% of those who failed to learn to fly at all or within the average time, did so because of inherent lack of flying ability, this being mainly due either to poor power of muscle-joint co-ordination or to some psychological factor. This last factor would appear to account for the major proportion of failures to learn to fly. On the assumption that those with deft hands and feet will handle the controls of aircraft more adroitly than those who are ham-handed and lead-footed, a so-called 'Flying Aptitude Test' has been devised in which the arm-leg co-ordination or sensori-motor apparatus is used. It has been found by experience that the application of

these tests to candidates on entry eliminate about one-third of the potential failures to learn to fly among those who are otherwise physically fit. Certain other standards are also required. In the selection of fighter pilots who are so liable to be exposed to sudden variations of acceleration, it is of the utmost importance that they should have good cardio-vascular stability. As most of these may be subjected to aerobatics, it has been pointed out that persistent hypotensives should not be accepted. Failure of the diastolic pressure to rise efficiently on change from the horizontal to the vertical position indicates instability for high-speed flying. It has been found that 20% of the cream of the American youth applying for acceptance for flying training in the United States Army have to be rejected on account of vasomotor instability ; this is an incidence much higher than that of the United Kingdom.

With regard to flying in very high altitudes at high speed above 30,000 feet and even at low rates of ascent, man is liable to suffer from decompression sickness or 'bends,' the condition being akin to Caisson disease in deep-sea divers. The common symptoms in order of frequency are itching of the skin, joint pains which may be incapacitating, visual disturbances, localized œdema of the skin, and if exposure is continued further, paralysis, pulmonary œdema, and unconsciousness. It is considered that these symptoms are due to the nitrogen dissolved in the body fluids coming out of solution more rapidly than it can be disposed of by the lungs, thus forming gas bubbles in the blood vessels and in certain tissues, particularly those of a fatty nature, which helps to explain the symptoms and also the fact that obese individuals are more prone to suffer from 'bends' than those of a spare build. As a result of a series of experiments carried on in the low-pressure chamber, it has been possible to test the individual aviator for 'bends', thus making possible a pre-selection of individuals for such high flying work. It is also claimed by workers that the inhalation of pure oxygen for ½ to 1 hour before ascent prevents the onset of 'bends' by elimination of much of the nitrogen from the body. But it is considered by some that pre-oxygenationing delays the onset of 'bends.'

Night visual capacity which is another important aspect deserves special attention. For night flying it is important to select those who have not only good light-and-dark adaptation but who possess also good form sense. To test for night visual capacity a number of different techniques have been devised. It has been found that night visual capacity was not equal in all. While 61% of 6,000 fit males in the age group 18 to 30 had average capacity, only 4.8% had exceptional capacity. It is beyond the scope of this article to go into details with regard to the testing apparatus and the techniques.

Another important aspect of aviation medicine is to assess the individual's judgment in approach and landing of aircraft. This is done by assessing stereoscopic vision at various optical planes. The review mentioned above also contains details with regard to two new valuable tests in use in the United Kingdom for this purpose. Apart from the value of such tests in finding out the individual's capacity, they have been proved to be most successful in improving the landing performances of pilots, suffering from certain forms of ocular muscle imbalance.

In the advancement of aviation, the man is as important as his

machine, a fact apt to be forgotten in this mechanical age. As far as practicable, the machine must fit the man instead of man fitting the machine and to ensure this, design of aircraft and flying equipment should be carried out in conjunction with physiologists and certain other medical scientists. The high speed, range of flight, and complexity of modern aircraft, together with the need for operating at even higher levels to avoid stormy weather and bumpy air, and to attain protection from enemy anti-aircraft fire, have led to a great increase in stress and strain on the human element, demanding a high degree of physical fitness of air-crews and constant supervision of their physiological requirements. Among the problems to be solved are oxygen-want, blacking-out, cold, mental and physical fatigue, noise, vibration, glare and air-sickness.

In the fit individual, so far as aviation is concerned, symptoms of oxygen-want or so-called 'altitude sickness', such as dulling of the judgment and intellect, unwarranted sense of well-being and security, delayed reaction time, tachycardia, dyspnœa, and muscle weakness, do not usually occur until a height of 15,000 feet has been reached and maintained for about half an hour, the period of time and degree of affection varying greatly with different individuals. The symptoms occur much more quickly if moderate exercise such as moving about in the aircraft, is indulged in. Heights above 25,000 feet cannot be long attained without the use of oxygen, since otherwise unconsciousness and death would quickly occur, owing to decrease in the total and partial pressure of oxygen in the air, with consequent low percentage of oxygen in the blood and tissues. Death from altitude sickness in the normal individual is probably always due to failure of the respiratory centre. Among the means taken to prevent oxygen-want in present day aviation are training of men in the low-pressure chamber and the development of improved type of oxygen apparatus, so that an adequate supply of oxygen may be ensured at all times, and in all atmospheric conditions with the minium of waste.

Protection against cold is an important factor in flying. The temperature of the air decreases on an average 1°c for each 50 feet ascent until the height of 36,000 feet is reached ; above that altitude, the air temperature remains constant at −55°C, throughout the year. In aircraft the cold may be greatly lessened by warmth from the sun, or it may be intensified by draughts. Severe cold leads to arteriolar spasm and pain, followed by local death and insensitivity of the tissues involved—this is termed 'frost-bite,' the hands, feet, nose and ears are the parts affected first. Continued exposure to cold causes a lowering of the body temperature, and slowing of circulation and respiration, accompanied by anoxia leading to physical and mental sluggishness and profound sleepiness. Oxygen deficiency or want during high-altitude flying, therefore, aggravates the ill-effects of cold and must be carefully guarded against. The most satisfactory method of protection against cold in aircraft is by efficient cabin heating off the exhaust or by special boilers ; when this is not practicable, recourse must be had to retention of body heat by the wearing of suitable flying clothing or by providing additional heat through electrically heated gloves, boots, and clothing. It is of the utmost importance to ensure that no tight-fitting clothing is worn, and particularly gloves and boots, as otherwise the circulation is impeded. All clothing must be dry, to prevent undue heat loss from the skin. Hot drinks and carbohydrates should be taken frequently and muscular movements of the

limbs indulged in as often as possible to increase heat production and stimulate the blood flow.

Fatigue is another important factor. There are various factors at work in causing fatigue in aviation such as the stress of taking off with heavily laden machines or landing at high speed; the mental anxiety of night flying or flying through fog; the discomfort of a confined and cramped position; loss of vitality due to cold; the effect of noise on the auditory nerve; and the anoxia when the oxygen supply is inadequate. Preventive measures to combat these fatigue-producing factors include robot pilots, improved wireless apparatus, and direction finders to simplify night and blind flying; the proper design of seats to avoid cramping; air-conditioning of cabins and the provision of suitable and easily donned flying clothing to maintain agreeable temperature in all climates and at different heights: sound-proofing of cockpits and cabins and the wearing of specially designed flying helmets to minimize aeroplane noise; and last but not least, the provision of an adequate oxygen supply, the necessity for which must be impressed upon all, especially the captain of the aircraft and the crew. Those engaged regularly on flying duties require adequate relaxation and rest, particularly sound sleep; otherwise, mental and nervous energy are proportionately decreased, and if the loss of sleep is continued, there will be a gradual but definite fall in efficiency, as the batteries of life run down in a manner somewhat similar to the effect of a short in the circuit of an electric battery.

Noise in aircraft is derived mainly from the engine, from revolutions of the crankshaft and propeller. The effect of noise on man depends on its level in the sound scale. Sounds between 80 and 90 decibels are disturbing, the degree depending on individual sensitivity, whereas sounds above 90 decibels are deafening, the more so as the scale is ascended, and at or about 120 decibels they produce the feeling of pain. Continued exposure of the unprotected ear to sounds above 80 decibels leads eventually to various degrees of nerve deafness. In the non-sound-proofed cabin there is noise between 80 to 100 decibels in intensity. As a result of sound-insulation of walls and the use of good sound-absorbing inner lining, noise has been so decreased that conversation in a modern commercial aircraft is as easy as in a train. In service aircraft, it is not practicable to reduce the noise by sound-proofing the fuselage, owing to weight. Instead, flying helmets with earphones are used, so designed as to reduce aircraft noise to the minimum while giving good intercommunication reception.

Two important visual problems are protection against glare and night vision. Glare is especially apt to affect the eyes of aviators when engaged in flying over clouds, desert or water, also when flying towards the sun. To overcome this, specially designed goggles are used; these are provided with triplex glass filters of various tints, appropriate for day or night flying or with polaroid lenses, which are interchangeable and can be slipped in quickly while flying. There is also a dark vizor which can be tilted into position in front of the goggles to enable the pilot to fly, or the gunner to aim, if necessary, directly towards the sun, with the minimum of glare effect. In addition such goggles help to protect the eyes against fire, missiles, dust and draughts. For night vision it is necessary, in the first place, to pre-select those who possess good visual acuity and dark adaptation power, as well as good form sense, so as to be able to recognise objects quickly in the dark, as described above. Important adjuncts to improve night vision are pre-adaptation by wearing special dark goggles, an adequate intake of vitamin A and C, and the use of oxygen at night at heights above 7,000 feet.

Air sickness which is also common is akin to travel-sickness. The incidence of air-sickness varies with the type of aircraft and the position of the aviator in the aircraft, being most common in the tail position. There are a number of factors which have been shown to predispose to air-sickness, cold, discomfort, noise, vibration, smells diet, and fatigue. Precautionary measures include sound rest the night before a flight, to increase resistance to fatigue; evacuation of bowels before a flight; a good meal eaten slowly about an hour before taking off; avoidance of fats, small meals consisting of hot tea or coffee, and carbohydrates taken about every four hours during long flights; the wearing of warm clothing and the avoidance of discomfort from cramped sitting positions; the protection of the ears against aeroplane noise by means of ear-plugs, or the flying helmet as this noise leads to fatigue and so predisposes to air-sickness; the occupation of the mind during flight is the most effective means of avoiding air-sickness. Drugs to prevent air-sickness should be given under medical supervision only. The commoner ones used are Chloretone, Atropine, or one of the barbiturates; to be effective, these require to be taken about half an hour before the intended flight and may require to be repeated during long flights.

We have only presented to our readers a summary of the review by Air Marshal Sir HAROLD WHITTINGHAM. We would request such of our readers who are spcially interested in this special aspect of medical science and who would like to have more details to read his splendid review in its original.

Gleanings From Medical Press

Medicine and Therapeutics

Genitian Violet for Thread worms—The genitian violet treatment of thread worms appears to be without any risk except that it sometimes causes vomiting, presumably because the capsules in which the drug is given have dissolved in the stomach. It is best to give the drug after meals when any irritant effect is minimised. The correct dose is based on the formula: gr. 1/6 for each year of apparent age per day for five days; then five days rest; and then repeat for 5 days. Having worked out the dose, divide it into three lots and order it after meals. The drug is put up in gelatin capsules. For adults probably gr. 2 a day would be suitable. No purge is required and no wash-outs, but it is well to order some white precipitate ointment, for application to the anus at night, and the nails should be carefully cut and cleaned. It is also a good plan, to try to make sure that there is no reservoir of infection present in any other member of the household. —*B. M. J.*

Hypo and Hyper-chlorhydria.-Vitamin A has been said to improve both the symptoms and the secretion of hydrochloric acid when administered for two or three weeks in a dosage of 16.000 international units t. d. s. to patients with hypochlorhydria Curiously enough, vitamin A in high dosage is also required to relieve gastric ulcers.

A subcutaneous injection of 0.5 to 1.0 mg. of histamine acid phosphate will increase the secretion of free hydrochloric acid in hypochlorhydria, but this is a diagnostic and not a therapeutic measure. It is better to treat the presumptive cause of the hypochlorhydria—iron in hypochromic anæmia; thyroidectomy in hyper thyroidism; dental treatment and gastric lavage in oral sepsis etc. In many cases of hypochlorhydria there is a strong constitutional factor, and there is no more prospect of getting the acid secretion back than of growing hair on bald heads. In such cases one can, if necessary, give dilute hydrochloric acid B. P. 20 to 60 minims in water at meal times. But why this bother about the hydrochloric acid? The organism usually gets on well without it, and the symptoms of gastritis can rarely be correlated with lack of acid.

Excessive smoking causes hyperchlorhydria in normal subjects. Smoothing might therefore be expected to increase the secretion of Hcl. in hypochlorhydria, but only in a dosage likely to cause also loss of appetite and other disturbances in the gastro-intestinal tract. —*B. M. J.*

Sterilization of Sulphanilamide without Admixture.—A method for effective sterilization of sulphanilamide powder, which does not in any way render it unsuitable for insufflation, is described by P. J. Morrison (*Pharmaceutical Journal*, April 24, 1943, **150**, 146). The apparatus required is (1) a hot air oven or paraffin oil bath; (2) McCartney's bottles (9 by 2·5 cm. with well-fitting metal screw caps with good quality rubber inserts); (3) Dreyer's dilution tubes (7·75 by 1 cm.). The sulphanilamide and about one-third as much calcium chloride are spread separately in thin layers in enamel dishes and dried for one hour in a hot air oven at 40°C. The McCartney's bottles and Dreyer's tubes, after previous sterilization by autoclaving, or other method, are dried in the same oven. While still warm the bottles are filled three-quarters full (about 8 gm.) with dried sulphanilamide powder and temporarily capped. The Dreyer's tubes are filled with dried calcium chloride and corked lightly. The McCartney bottles are now uncapped, inverted over a thin rubber sheeting held firmly round the neck of the bottle, and a small hole is pierced in the centre of the sheeting sufficient to allow the insertion of the calcium chloride tube spirally upwards, so that the base of the tube reaches the centre of the base of the bottle. The cork of the calcium chloride tube is removed with forceps and a light plug of cotton-wool substituted. The bottles are then capped and placed in a hot air oven or oil bath for one hour at 150°C. After cooling, the bottles are unsealed and the tubes removed with forceps or, if not wanted for immediate use, the bottles can be stored with tubes still in place, provided instructions for immediate removal of the tube are given on the label. Tests of the product after preparation showed that it was free-flowing and not discoloured or caked, and on insufflation with a Wyeth's "picragol" insufflator the spray was fine and the powder completely insufflated. —*Practitioner.*

Theophyline for Asthma.—The chronic asthmatic has to be his own doctor, at least to the extent of being able to administer his own adrenaline. Among methods of administration, inhalation of 1 in 100 adrenaline from a fine spray has proved useful in aborting early attacks in individual cases; and the intramuscular injection of adrenaline in oil leading to a prolonged liberation of the active constituent has sometimes been effective. Most asthmatics know by experience that hot coffee is an excellent palliative in the early stages of an attack. It is known that caffeine would reduce the bronchial spasm and also stimulates the medullary centres. Recently expensive derivatives have been used in the treatment of bronchial asthma and theophyline seems the most efficient. Can treated 22 patients with status asthmaticus who were received as acute emergencies and who did not respond satisfactorily to adrenaline. In half of the cases 0.48 g theophyline in 2 c.cm. given intravenously over 2 minutes brought immediate relief. In the remainder the effect was evident within half an hour and lasted for a variable time, from one hour upwards. In about one-third of the cases there were undesirable tonic reactions, such as dizziness, nausea, vomiting, 'pounding of the head' or pains in the chest; these were transient and unaccompanied by gross cardiovascular changes. No fatalities have been recorded. These results are most encouraging, though the exact mode of action of the theophyline is still under dispute. It has been suggested that it restores the sensitivity of the tissues to adrenaline in some unexplained way. It seems more probable that by a direct action on the bronchi and upon the medulla it breaks the vicious circle for a sufficient length of time for the patient to recuperate. While it is at present advisable to restrict the use of theophyline to the refractory cases until further experience has accumulated, it may well be that in the future it will prove to have a still more extended use.—*B. M. J.*

Skin reactions to Phenobarbital—Phenobarbital is one of the most useful hypnotics in general use. But it possesses the drawback shared by all the members of this series in its liability to produce toxic rashes in susceptible subjects. Phenobarbital is a powerful narcotic poison and is even more toxic than barbitone, but it is not in the cases of acute poisoning that these toxic rashes occur. Very often they are seen, when only a single small dose of the drug has been taken, and they are characterised by urticarial lesions of widespread distribution and by intense pruritus. They are usually recognised without much difficulty, and disappear quickly when the drug is no longer administered. Rarer and more serious are the eruptions which make their appearance only after phenobarbital has been given daily during a period of some weeks, with at first at all events no apparent ill effects. But when the skin is involved these cases can be severe and even fatal. The eruptions are characterised by emulation and exfoliation with ulceration of the mucous surfaces. Patients who have taken a single massive dose show no cutaneous symptoms, while those who suffer from the cumulative effect of a series of doses show no nervous symptoms.—*B. M. J.*

Sulphaguanidine in Intestinal Infections.—A number of controlled studies on the use of sulphaguanidine in bacillary dysentery have appeared during the past years. Cases of dysentery due to Flexner, Schmitz and Sonne type have responded favorably, the clinical course being considerably shortened. Data obtained on Shiga cases indicate the following:

1. An increased feeling of well-being within 24-48 hours of administration, rapid relief of abdominal pain and tenesmus, decrease of abdominal symptoms.

2. Fall in temperature and pulse rate in uncomplicated cases, often reaching normal within 1-3 days.

3. A remarkable reduction in the number of stools.

4. Rapid disappearance of blood from the fæces; mucous also decreases, but takes longer to finally disappear.

The data available at present are not sufficient to obtain any idea of the comparative therapeutic efficiency of other sulphonamides, although sulphanilamide, sulphapyridine and sulphathiazole have all been used in the management of bacillary dysentery. Of these three, sulphathiazole is the most desirable and undoubtedly is of value. Sulphaguanidine, however, is preferable to all, from the standpoint of safety. It has been stated that of 281 children, for example, receiving sulphathiazole, 9 per cent. developed toxic reactions, not including those of minor nature such as nausea and vomiting. If one contrasts this with children receiving sulpha-guanidine, where toxic reactions are nil or negligible, the superiority of the latter drug is evident. Only if cases of dysentery are found which do not respond to this drug, would it seem advisable to use a much more toxic and a more efficient chemotherapeutic agent.

The value of sulphaguanidine in the treatment of other intestinal ailments is less striking. It has proved rather disappointing in typhoid fever, and in chronic ulcerative colitis. No data are available as to its use in cholera. The drug has been used in the preparation of patients who needed operations upon the colon. It appears that the use of a sulphonamide locally in the abdominal cavity and systematically at the time of operation may prove more valuable than an attempt to reduce the bacterial ora of the colon before surgery.

In dosage schemes the object is to maintain a saturation of intestinal contents and to reduce systemic absorption to a minimum. The total amount of sulphaguanidine absorbed from the intestine depends much more on the time interval between doses than upon the actual size of the dose. One or two large doses per day will produce a much lower maximum blood concentration than the same total daily dose divided into several portions and given at frequent intervals. Moreover, saturation of the intestinal contents also depends upon the rate of passage of the contents along the intestinal tract (as judged by the number of stools per day).

The following schedule is recommended: Initial dose, 0·05 Gm. per Kg., maintenance dose of 0·05 Gm. per Kg. every four hours until number of stools is reduced to five or less, then shift to a maintenance dose of 0·05 Gm. per Kg. every eight hours and continue for at least three days. In adults, weight can be disregarded and a dose of 3·5—4·0 Gm. given.

Sulphaguanidine has shown little toxicity in patients compared to the other sulphonamide drugs in general use. When toxic reactions have occurred, these have been of a mild type and have cleared up promptly on stopping the drug.

As stated before, this drug introduces a new concept in bacterial chemotherapy,

namely, that a substance given by mouth can be quite soluble in the intestinal contents, while at the same time its absorption from the intestine is limited. It is natural that other sulphonamide drugs with similar properties will be tried as intestinal chemotherapeutic agents. Two such drugs have been reported in preliminary studies, but final conclusions are not yet available. —*G.P.*

The Use of Thiamin Chloride in the Treatment of itching conditions.—High dosage of thiamin chloride, without any local treatment, has been used by W. Ray Shannon (*Urologic and Cutaneous Review*, December 1942' **46**' 786) in a series of thirty-five cases of itching affections of the skin, mostly in children and infants. The conditions treated included chilblains, urticaria, eczema, pityriasis rosea, scabies, measles, and chicken-pox. In some cases the relief was immediate, for example in a case of chilblains in a thirteen-year old patient to whom 120 mgm. thiamin chloride was given in eight hours. There was also prompt relief in most cases of measles and chicken-pox, in the treatment of which the dosage employed varied considerably; in one case of a child of eleven and a half years, the dose was 40 mgm. in twelve hours; in another, a child of five and a half, 40 mgm: was given in one dose, resulting in immediate relief. The cases of urticaria and eczema varied in their response. The author states that although the series treated was small, 62 per cent. were completely relieved of itching within a strikingly short time after the institution of treatment.—*Practitioner.*

Immersion Foot—As a result of submarine activity, many survivors of torpedoed vessels have been exposed to unusual physiologic conditions, one of the commonest being painful swelling of the foot and lower legs called "Immersion Foot." This is caused by prolonged chilling just short of actual freezing. Consideration of the known facts concerning the reaction of tissues to cold leads to the conclusion that the common denominator in all conditions that follow thermal insults is injury of the blood vessels and nerves. The ischemia during prolonged exposure to intense cold, according to White, is followed by a period of acute inflammation. The hyperemic reaction of the feet is due mainly to the chemical effects of the products of tissue injury. Paralysis of the vasoconstrictor fibers is an added factor, but is of secondary importance. In spite of the increased flow of blood in the main vessels, there is a disparity between the blood oxygen supply and demand in the cutaneous capillary bed. Capillary permeability is thereby increased. Edema, pain and petechial hæmorrhages as well as the congestion seen when the feet are in the dependent position, are evidence of injury to the blood vessels. By cooling and reducing the local metabolism and need for oxygen, both edema and pain are diminished. The inflammatory reaction and hyperemia fade in a few weeks, and the circulation usually returns to normal at this time. Neuritic pain makes its appearance with partial recovery of the nerves and continues until nerve function is restored. It has disappeared within two weeks in some of the mild cases, but it is impossible as yet to tell how long it may last in the severe ones. In some of the survivors observed in this series, it was troublesome for nearly six months. Much can be accomplished by suitable treatment. This must be directed primarily at reducing local tissue metabolism in the early period and in preventing further injury and infection of the insensitive swollen feet. Gangrene should be a rare complication.

When there is sufficient time before abandoning ship, all hands should get into the most waterproof and loosely fitting boots they can obtain and take along extra pairs of heavy socks. If water-proof boots ship water and are wet inside much can be accomplished by emptying them out periodically and putting on another pair of socks. Frostbite of the hands and feet can be at least partially prevented in many cases by greasing the skin.

The following first aid treatment after rescue is suggested:

1. Give the skin of the feet a preliminary cleansing with soap and cool water. This is to remove superficial dirt and bacteria, which may cause infection of the blisters and thus open the way to cellulitis and moist gangrene. Surgical cleanliness should be scrupulously maintained until the blebs are resorbed and the danger of infection is past. If the blisters have ruptured, do not apply any antiseptics. Dust these raw areas with sulfanilamide powder or cover with sulfathiazole ointment, but if neither is available, leave them alone. On transferring these patients to a hospital ashore, the feet can best be protected against bacterial contamination from blankets and handling by covering them with a sterile towel or bandage (if available), or clean cotton socks.

2. Keep the feet cool by exposure to the room air. Have no bedclothes below the knees, the room cooled below 70°. Fahrenheit and, if possible, direct cool air from a blower or electric fan over the exposed feet and legs.

3. Avoid pressure points on the feet, especially the heels, and elevate the feet on a pillow. Under no circumstances permit these patients to sit up with their legs dependent, as this increases swelling. Elevate the legs so that the feet will be above the level of the heart and thereby promote drainage of edema fluid. Remember that anesthetic, swollen feet are vulnerable to trauma and infection. For this reason even gentle rubbing or massage is dangerous.

4. Use codeine or morphine as necessary to control pain.

On arrival in the hospital, the severe cases have pronounced swelling, blebs and discoloration. They have the greatest amount of anesthesia and, for the first few days, the least pain. Hyperemia is striking, with dilatation of the main arteries and prominent veins, but circulation through the cutaneous arterioles and capillaries is nevertheless inadequate, as shown by a dusky cyanotic color and minute hæmorrhages in the skin. As explained above, the rationale of treatment at this stage is to reduce tissue metabolism to a point where there is an adequate supply of oxygen to all the cells. This can be accomplished by cooling the skin 5 to 10 degrees F. to a point below 85°F. Experience has already shown that, under these conditions, color improves, blebs tend to resorb, and edema is reduced. In the mild cases this degree of cooling can be brought about by simple exposure to room air, provided the ward temperature is kept below 70°F. Slightly greater chilling can be obtained by having an electric fan on a bedtable blow air over the feet and this can be rendered more effective still if the patient occasionally sprays water from an atomizer into the stream of air from the fan.

During the most intense stage of hot, congested feet, and also when the neuritic pains are severest, neither of the above measures is effective. Naval medical officers have worked out a very satisfactory type of ice pack for use under these circumstances. This consists of a cotton hand towel to cover the foot; four ice bags applied over the dorsum, soles and sides of the foot; oil-silk wrappings to 12 cm. above the malleoli; a thick insulating pad of fluffed cotton or cellulose; and a rubber pillow-case tied loosely about the calf of the leg. The purpose of this pack is not to induce severe chilling, which might lead to further tropic disturbances, but to cool the skin of the foot and toes to a level between 80° and 85° F. During the early, intensely hyperemic stage a thermocouple inserted next to the skin shows that the temperature of the foot does not fall below 90° F., although the toe temperatures may drop 5 to 10 degrees farther. At this period the active circulation causes rapid melting of the ice. The packs should be changed at four-hour intervals and observations of skin temperature made at these times to control their application. In one instance the feet maintained this intense hyperemia in continuous ice packs for the first eleven days, but on the twelfth day of treatment they became distinctly cool. The ice packs were then discontinued and treatment by exposure to cool air begun.

In carrying out treatment with ice packs it is important to make sure that they do not leak and wet the skin. Each time this has occurred it has caused sogginess and maceration. Measures often helpful include Buerger's exercises prior to getting the patient out of bed and a diet high in protein and vitamin B.

Although it is too early to give accurate statistics of the end results in Immersion Foot it appears that the majority of patients respond favorably to the methods of treatment described in a month or six weeks. *U.S.O.W.I.**

Surgery

Treatment of the fractured great toe.—Fracture of the great toe is in itself of minor significance in traumatic work; it is, however, the commonest fracture in industry. Stan Mr. Griffiths of the Albert Dock Fracture Clinic who pointed out the lengthy off work period that some of these cases demanded—the average duration of incapacity being 18 weeks—and under him a system of treatment has been evolved which reduces this period often to less than 10 days.

The subungual hæmatoma which forms, more especially with fracture of the distal phalanx, is not large. However, owing to the firmness with which the nail is attached to its bed and the bed in turn attached to the periosteum of the phalanx, the tension developed is great and the pain sometimes excruciating. The nail, on occasions been averted in the treatment of such a case, a procedure which is little less than a crime. Such a sacrifice deprives the broken phalanx of an ideal splint and exposes a singularly tender area which will not permit of a return to work for some weeks. In order to save the nail and at the same time to relieve the tension and therefore the pain, it is a simple matter to trephine the nail; a little patience and a sharp operating knife are all that is required. The trephine opening need not be more than 2 m.m. in diameter; and should be placed over the most prominent point of the hæmatoma. With this simple manœuvre the relief is dramatic as soon as the free blood is released. Vaselined ribbon gauze ½ in. wide is applied to the toe, and when the fracture is confined to the distal phalanx a plaster of Paris thimble enclosing the whole toe provides adequate immobilization, when, however, the proximal phalanx is fractured a plaster toe-splint is fashioned to enclose the sides and plantar surface of the toe; this extends along the medial surface of the foot to about the tubercle of the navicular bone and across the sole of the foot for about half its breadth. The splint is either bandaged or strapped in place. The vaselined gauze lubricates the inside of the plaster and allows an easy and painless removal of the splint. Failure to do this can result in the most tedious and painful task, especially when the blood has leaked under the plaster. The patient is put in bed for 48 hours, with immediate elevation of the limb. The patient is allowed up on the third day. By the eighth to the tenth day he may return

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to work. This date is of course variable. Severely comminuted fractures or grossly lacerated soft tissues will demand a longer incapacity period.

As with compound injuries of fingers and thumb, conservation of tissue is the great aim. Excision and debridement are carried out in the same manner as in other compound fractures. When the great toe is severely mutilated and amputation is deemed advisable, preservation of the metatarso-phalangeal joint must always be the goal. This importance is not always realized, and the simple operation of disarticulation is too often undertaken. Following this procedure, the late result of pain while walking forward on the tread, which entails pressure on the antero—inferior aspect of the metatarsal head, causes many weeks of disability. Where possible a small portion of the proximal phalanx should be left to maintain the integrity of this very important joint. It is almost unnecessary to state that the head of the first metatarsal must be preserved at all costs, because it, together with the remaining metatarsals and the os calcis forms the tripod on which the weight of the body is borne.—*B.M.J.*

A new and simple method for subcutaneous ligature of varicose veins.—The injection of various solutions into varicose veins often causes their obliteration; but this technique is generally useless when the upper part of the great saphenous vein is varicose; the downward pressure of this long column of blood unfortunately unseals the attempt at thrombosis. In the past decade surgical opinion has recognised this factor, and operations for high ligature of the vein have become standardized. These are usually, and rightly, combined with injection of the veins lower reaches. This combined operation is generally very successful. Lately the surgeons have practised a still simpler technique; the vein is compressed subcutaneously instead of by open operation. The method being ambulatory, effects a great saving. The patient stands and the highest visible part of the internal saphenous vein in the thigh is shown; but it is advisable to keep at least 2 in. below the saphenous opening. A local anæsthetic wheal is raised on each side of the vein. A curved cutting needle is then threaded with catgut. It is plunged into one wheal, passes deep to the vein, and emerges through the skin via the opposite wheal. This curved needle is now removed from the catgut and a straight needle substituted on to the catgut. This straight needle is now thrust back into the skin via the same minute opening through which the curved needle has recently emerged. The straight needle passes in front of the veins and emerges through the same minute hole where the curved needle made its original entry. The two ends of the catgut are once more in juxtaposition; they are tied fairly tightly and cut short; the knot retracts and almost disappears. The little operation is complete. The area receives no dressing other than a small piece of bare elastoplast. This is removed in one week, when the catgut knot will have disappeared spontaneously. There will now be a minute puncture and the surrounding skin will have a slightly traumatized appearance, but no further treatment is necessary; in a short time the skin regains its normal appearance and elasticity.

A few days after the original ligation the varicose veins below the knee should receive one or more injections as necessary, but great caution should be observed; only a small quantity of the thrombogenetic fluid should be injected at first. The reason for this cautious and small injection is obvious; with the main internal saphenous vein ligatured, the venous current is so slow that dilution or washing away of the chemical hardly occurs; from a minimal dose maximal results are obtained.

For a week after the ligation patients can move about and are quite fit for light duties. After that they rapidly become normal.

—*B.M.J.*

Syphilis of the Larynx.—Earl LeRoy Wood M.D., Newark, N.J.—The larynx is a point of predilection for manifestations of both inherited and acquired syphilis. The laryngeal lesions may be serious and important. They may cause grave complications.

Congenital syphilis of the larynx is rare but may appear shortly after birth as what has been called "laryngeal catarrh with erythema." The picture may be that of deep inflammation with mucous patches or there may be hyperplasia, possibly with ulceration and perichondritis. The immediate clinical importance in the new-borne is the possibility of airway obstruction.

Late hereditary syphilis may be mistaken for the acquired disease because of a similar appearance. Laryngeal hyperplasia may be the sole manifestation of hereditary syphilis and be only slightly influenced by ordinary anti-syphilitic remedies.

In acquired syphilis it is doubtful that a primary chancre has ever had its location in the larynx since the region is scarcely accessible to direct infection. The secondary manifestations are infrequent with tertiary lesions more common. In the larynx, secondary and tertiary lesions do not follow the classical time relationship. Laryngeal involvement may be the immediate companion of the systemic invasion even while the primary chancre is still present. Also, the tertiary lesions of the larynx may accompany or closely follow secondary ones or they may even coexist; or the lesions may be met after an interval of many years. A perichondritis may develop while the patient still has a secondary rash.

Secondary syphilitic laryngitis is a diffuse serous erythema, a generalized intense redness and swelling with papules consisting of circumscribed thickenings of the epithelium. The surface epithelia of these papules are soon cast off, leaving small superficial ulcers, the mucous patches, which at times coalesce,

producing an irregular ulcer with sharp reddened margins. The laryngeal inflammation is diffuse, deep red, dusky, often mottled in appearance, with considerable swelling. Or the erythema may have no characteristic to distinguish it from an ordinary laryngitis. It is painless with a hoarseness that is marked and persistent. Diagnosis depends on the recognition of secondary syphilis elsewhere. The condition speedily yields to general antisyphilitic treatment.

The tertiary manifestations are more commonly met and may appear early in the secondary stage or any time later during the syphilitic individual's life. The tertiary lesions take the form in infiltrations due to small cell proliferation. The infiltration may form a well-defined circumscribed gumma with a smooth, rounded surface, often irregular in shape, deep red or purplish in color. On the other hand, the infiltration may be a more generalized tumifaction or a diffuse hyperplasia occurring anywhere in the larynx.

The gumma or gummatous infiltration may break down, forming a deep, irregular ulcer with sharp edges and a punched-out crater-like appearance surrounded by a deeply inflamed areola, hyperplasia and edema. The base of the ulcer shows a dirty gray or yellow necrotic slough. Gummatous ulceration is extremely destructive, often painlessly so.

When ulceration penetrates deeply, perichondritis results, with frequent necrosis and exfoliation of cartilages. Any or all of the laryngeal cartilages are vulnerable. The perichondritis may resolve, leaving scar tissue that has a characteristic tendency to contract, resulting in marked deformity, worse when the supporting cartilage has been lost. The post syphilitic deformities often cause stenosis that is intractable and serious. The fibrous bands of syphilitic scars present a radiating or stellate appearance.

There is a more diffuse form of infiltration, in contradistinction to the gumma, which is replaced by an organized connective tissue process instead of ulcerative changes. If the stage of healing is reached, cicatrization, membranous adhesions, stenosis, and deformity of the larynx are common sequelæ.

Motor or sensory disturbances of the larynx may be due to syphilis. Paralysis may result from affection of the Vagus nerve nucleus or from a neuritis of the peripheral nerve or by involvement of the recurrent portion by aneurysm or another syphilitic lesion in the thorax or neck. Paralysis of the vocal cords may be unassociated with any obvious pathological change in the larynx.

The chief symptom of secondary syphilis is a peculiarly persistent and painless hoarseness. The voice has a peculiar, raucous tone. Cough and dysphagia are rare complaints. In the tertiary stage, the symptoms vary with the situation, extent and severity of the lesion. The voice is generally severely affected, becoming hoarse and raucous. Pain is not marked unless deep ulceration is progressing rapidly. Tenderness is associated with perichondritis. Dysphagia may be present if deep ulceration involves the swallowing mechanism. Dyspnœa depends upon the amount of invasion of the glottic and subglottic space or the amount of fixation of the vocal cords. It is liable to increase rapidly when edema suddenly develops or necrosis of cartilage occurs.

The diagnosis is based on the laryngoscopic picture, general examination, history, presence of confirmatory lesions elsewhere, laboratory evidence and results of treatment. A history of a syphilis infection is significant but does not preclude the patient having tuberculosis or malignancy as well. Syphilitic lesions often coexist in the larynx with cancer or tubercle or both. The laryngeal picture often shows a lesion more extensive than the symptoms would seem to indicate and this picture is capable of rapid change. The Wassermann or Kahn blood and spinal fluid tests, chest x-ray and biopsie come to mind immediately. The therapeutic test, though not always immediately conclusive, is a favourite method of differentiation but should be undertaken cautiously with the patient under close observation. Remember that iodides may precipitate an edema of the larynx necessitating a tracheotomy, that iodides are contraindicated in tuberculosis and that malignant lesions often seem to improve for a while after the administration of potassium iodide.

It is imperative to control the general disease with adequate quantities of classic iodine, mercury, bismuth and arsenic, together with the recent therapeutic additions and refinements. The laryngologist should keep the patient under his observation lest edema develop or a full dose of arsenicals precipitate a Herxheimer reaction in the form of airway obstruction. Furthermore, arrested laryngeal syphilis is healed by contracting scar tissue which frequently results in laryngeal deformity, voice impairment, and even laryngeal stenosis. The treatment of these sequelæ, particularly the stenosis, requires patience, ingenuity and persistence. Its consideration deserves a separate chapter. *J. M. Sc. N. J.*

The Sulphadiazine Treatment of Burns.—Adams and Crawford, in the *Southern Surgeon*, May, 1942, give the following plan of treatment:

1. The usual emergency treatment for shock is given on admission. This includes plasma or blood, heat, and sedation.

2. If shock is present or impending, no attempt is made to cleanse or debride the wound; the burned areas are immediately sprayed with the solution. Later, when the patient's condition permits, debridement is carried out and the areas again sprayed. When feasible, however, the wound is thoroughly cleansed before the solution is

applied. It does not adhere well to greasy surfaces.

3. Following these emergency measures, the patient is transferred to a bed covered with sterile sheets.

4. The patient is then placed in a large heat cradle with the temperature maintained between 85 and 90° F.

5. The burned areas are sprayed with the sulphadiazine solution every hour during the 1st day, every 2 hours the 2nd day, every 3 hours the 3rd day, every four hours the 4th day, or until the coating is adequate. Warm air from an electric blower hastens drying of the eschar. When the eschar begins to curl at the edges and crack, the edges and cracks are covered with sulphadiazine ointment or jelly to prevent secondary infection. In the presence of infection the eschar can be easily removed with saline or mineral oil dressings.

6. Daily urinalyses are made for the first 6 days and thereafter every 2nd or 3rd day, with particular attention to the presence of sulphadiazine crystals or red blood cells. If either is present, the drug is discontinued at once If the blood concentration of the drug rises above 10 mgm. % the treatment is likewise discontinued. It is also discontinued in the presence of any toxic manifestations.

7. In order to carry out the fluid replacement therapy in an intelligent manner, blood counts, total protein and hæmatocrit tests are repeated daily for the first 6 days and every 3 days thereafter.

8. Sterile precautions are upheld until all wounds are healed.

9. Adrenal cortext hormone is administered hypodermically to those patients who present a rapid, feeble pulse, low blood pressure, and other signs of shock, on the assumption that some degree of suprarenal damage has resulted from the injury.

10. In several cases where profuse local infection developed, one of the sulphonamide drugs was given orally.

Almost without exception, these patients have been partially or completely relieved of pain after the first few applications of the sulphadiazine solution. Only 3 patients showed any signs of toxicity during the administration of the drug in this form. One developed local pain on the 2nd day of treatment, a second developed urticaria on the 8th day of treatment, and a third developed microscopic hæmaturia.

We do not recommend the use of the solution on fingers or toes when the entire digital circumference is involved. One must be extremely careful of constricting the circulation in these parts. Sulphadiazine ointment or wet dressings are more suitable for such areas. Because of the discomfort of an eschar on the face, sulphadiazine ointment is also preferable for the treatment of facial burns.

Of the 50 patients comprising this study, all of whom had burns sufficiently severe to necessitate hospitalization, 31 have been discharged, completely healed. Nine are in the hospital at the present time, 3 of this number being prepared for skin grafting. Ten of the cases terminated fatally, 8 of this group being very extensive burns. —*G.P.*

The Treatment of Surgical Shock.—Arkell M. Vaughn, M.D., F.A.C.S., Chicago.

Shock is a subject which has baffled the surgeons for many years. Its pathogenesis has been and still is the basis of much experimental and clinical research. While many theories have been proposed and many exploded, progress is being made in the solution of the problem.

Clinical traumatic shock is defined as a circulatory deficiency which is neither cardiac nor vasomotor in orgin and is characterized by the following:

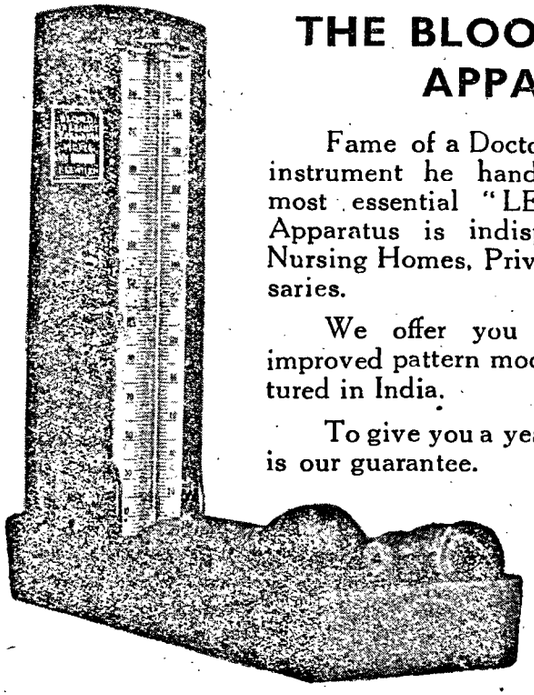
(1) Decrease in blood volume (oligemia); (2) Reduced cardiac output; (3) Diminished blood flow; (4) Hemoconcentration; (5) Tissue anoxia; (6) Capillary congestion; (7) Vasoconstriction; (8) Decrease in venous pressure; (9) Low blood pressure; (10) Decreased muscular tone; (11) Decreased metabolism; (12) Acapnia; and (13) Acidosis.

Shock may be primary or secondary. Primary shock is a condition which develops immediately after an injury; it has a nervous basis, pain and psychic factors play a role through their effect upon the vascular system.

Secondary, surgical, wound or traumatic shock is that state of general collapse which follows two, three or four hours after severe tissue injury. It is this type of shock which will be discussed in this paper.

Surgical shock may be produced by many conditions, but extremely painful trauma, severe crushing injuries and hæmorrhage are the most frequent causes. Hæmorrhage may be either "red" or "white." Loss of whole blood either outside the body or within the body cavities is the hæmorrhage we are all familiar with and is called 'red hæmorrhage. "White" hæmorrhage is seen in patients suffering from shock produced by severe burns; it is a leakage of plasma through the capillary bed into the soft tissue and in such a condition it is frequently said "the patient bled to death into his own tissues." This increased or abnormal permeability of the capillary bed is caused according to Moon, by any type of injury to the endothelial lining of the capillaries, thereby causing increased permeability to plasma colloids. Leakage of plasma from the blood produces hemoconcentration, decreased blood volume, diminished blood flow, reduced cardiac output and finally tissue anoxia which, if uncompensated, will give rise to symptoms of shock eventually leading to death unless the above processes are reversed by appropriate methods of treatment.

The aim of treatment in surgical shock is to reverse or rectify the abnormal processes mentioned above, and to do this the following must be carried out: Replacement of



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the fluid lost, and prevention of further fluid loss. Harkins has clearly outlined the empiric and specific treatment of shock as follows:

I. *Empiric treatment*:—(*a*) Rest; (*b*) Warmth; (*c*) Elevation of the feet; (*d*) Tight bandaging of the extremities; (*e*) Administration of sedatives; (*f*) Stimulants and (*g*) Vasospastics.

II. *Specific treatment*:—(*a*) Blood substitutes (1) Water; (2) Plasma—Normal, concentrated or diluted, Dried, Calcified; (3) Whole blood; (4) Serum; (5) Crystalloids, Sodium Chloride, Dextrose, Ringer's solution, Hartman's solution, Locke's solution; (6) Acacia; (7) Red cells; (8) Hemoglobin—Ringer's solution; (9) Ascitic fluid. (*b*) Oxygen therapy; (*c*) Adrenal cortical extract.

Empiric Treatment—Rest, as in all pathologic conditions, is essential. Sedation in the form of narcotics or preferably the barbiturates may be necessary; however, their intensive administration is to be avoided because of the danger of too marked depression of vital functions, especially so in shock due to head injury. Warmth is necessary but should not be extreme, especially in patients suffering from shock due to exposure and freezing. Elevation of the feet or lowering of the head allows more blood to reach the respiratory centre. On the battlefield this can be accomplished by having the stretcher bearer at the patient's feet put his end of the stretcher on his shoulders while the other bearer carries the head end at arm's length, thus lowering the head. Tight bandaging of the extremities decreases the vascular bed and probably increases the blood volume to the vital centres. This may also prevent "white" hæmorrhage or plasma loss through the capillaries in the extremities. Koch and Allen use pressure bandages in severe burn cases, hoping that this pressure will prevent further fluid loss into the tissues. Stimulants should not be used too intensively, especially in shock due to hæmorrhage, since their administration might increase the hæmorrhage. Warm coffee, or whiskey, if the patient is conscious, are permissible. Vasospastics are merely symptomatic therapeutic agents and if used too freely may actually be harmful. Freeman and others have shown that epinephrine alone will cause shock.

Specific Treatment—Plasma transfusions at the present time seem to hold the spotlight of the specific treatment. It has been stated by Strumia that "there is no emergency condition except carbon monoxide poisoning in which plasma is not as useful as whole blood." The material for transfusions may be prepared in several ways and is dispensed usually as liquid or frozen plasma in civilian practice, and dried or concentrated plasma in military practice. It may be given anywhere without typing, even at the front line first aid stations where it is most needed. According to Blalock, serum transfusions are not preferable to plasma. Citrated whole blood in my opinion would be advisable in shock due to hæmorrhage where there is profound anæmia; in such a case, blood cells and plasma are both lost and whole blood would replace both losses. Water prevents dehydration but is not a complete restorative of blood volume. Crystalloids, as shown by Beard and Blalock, may actually do more harm than good if not supplemented by blood or plasma, since they diffuse out through the permeable capillary wall unless there is an adequate amount of plasma protein present in the blood. Acacia was used in World War I but has been supplanted by plasma which is more beneficial and not as dangerous. The other blood substitutes are either experimental or not generally accepted.

For the past year and a half at Mercy Hospital, with the assistance of our surgical resident, Dr. M. McCarthy, some clinical investigation has been carried out on various types of cases subjected to different operative procedures: cell volume determinations with hæmatocrit tubes, specific gravity of the plasma or serum, and plasma or serum protein determinations by means of the Kagan-Falling drop proteinometer have been determined in over 50 clinical cases. If the cell volume was considerably below the normal of 45, as is found in cases of secondary hæmorrhage, whole blood transfusions were given. If, however, the cell volume is above the normal of 45, as occurs in severe burns, acute pancreatitis and other conditions where there is a hemoconcentration and the plasma protein is below the normal of 7% plasma transfusions have been advised. Furthermore, fluid balance can be more accurately checked by the above determinations and used as a guide to fluid therapy.

Whole blood, plasma or serum can usually be given by intravenous needle, but in severe shock there is a compensatory vasoconstriction so that many times the veins are difficult or impossible to enter. In such cases canalization of the veins may be necessary but even this is sometimes not possible due to thrombosis from previous needling. When this occurs, sternal transfusions in patients over three years of age, as recently reported by Tocantins, may be used as a last resort. Our experience with sternal transfusion has been limited to one case where it was not entirely satisfactory, probably due to our inexperience in its use.

Of the other specific treatment of shock, oxygen therapy is of prime importance. One of the reasons for the irreversibility of the shock syndrome is anoxic damage to the tissues. Early prevention and continued treatment with high oxygen percentages are essential. Schnedorf and Orr have recently shown experimentally the value of oxygen inhalations as an adjunct in the treatment of shock due to hæmorrhage. The use of adrenal cortical extract is still in the experimental stage but offers great promise and should be used, in my opinion, as a therapeutic agent, as well as a prophylactic agent. Cole and his associates have recently shown experimentally that this preparation is of definite value prophylactically.

—*Illinois Medical Journal*

Chemotherapy of Erysipelas —Volavsek (*Archiv fur Dermatologie und Syphi is* Feb. 20, 1941) reports observations made in the course of oral administration of azosulphamide in 600 cases of erysipelas In order to estimate the efficacy of this sulphonamide compound the results obtained were compared with those observed in 600 cases of erysipelas treated before the sulphonamide era. The patients were given 2 tablets of 0·3 Gm. each three times daily until the fever had subsided, and after that 1 tablet three times daily until the cutaneous symptoms disappeared. The sulphonamide treatment reduced complications from 15·5 to 4 per cent. and the mortality from 6·5 to 2 per cent. The reduction in complications concerned chiefly phlegmons and abscesses. The fever subsided in 32 days as compared to 5·6 days without the use of the sulphonamide. The therapeutic effect of the sulphonamide was also manifested in a 50 per cent. reduction of the patients' dissatisfaction with and failure to improve hospitalization from 11·9 to 8·5 days. Chemotherapy of erysipelas reduces the severity of the infection and thus leads to a more rapid cure ; it represents a great advance in the therapy of erysipelas. —*G. P.*

Anthiomaline in Venereal Lymphogranuloma.—Law reports that 220 cases of venereal lymphogranuloma were treated during eighteen months among both British and African troops in West Africa. The lesions, with three exceptions, were genital and inguinal in situation and were less extensive than in the female. Cases of rectal involvement with stricture formation were not seen. The primary lesion is small, painless and transitory and is often overlooked ; it may accompany other venereal infections. The value of the Frei test in diagnosis was confirmed. In some cases there was spontaneous resolution of the buboes. "Anthiomaline" (lithium antimony thiamalate), an organic compound containing 16 per cent of antimony, was administered intramuscularly or intravenously. Injections were made two or three times weekly, beginning with 0·5 cc. and increasing by 0·5 cc. up to 2 cc. for a maximum of twenty injections, which should be equivalent to 0·2 Gm. of antimony metal. When anthiomaline was not available, sodium antimony tartrate was injected intravenously as a freshly prepared 1 per cent. solution in distilled water. A total of 137 cases were treated by chemotherapy. The average number of injections was ten, and the average time was a little over three weeks. It is advisable to administer eight or more injections even if the lymph node swelling has subsided on a smaller dose. Exacerbation or recurrence of the bubo may occur if treatment is discontinued too early. For comparison a series of cases was treated with sulphanilamide administered by mouth in tablet form. First stage cases responded quickly, but no more rapidly than to the antimony therapy. No real advantage could be claimed for this treatment. Some patients were subjected to lymph node excision. In the first stage such treatment was effective. To compare chemotherapy with surgical excision, 1 patient was subjected to excision from the right groin and to anthiomaline injections on the left side. Block dissection was carried out. The wound healed by first intention, but subsequently the scar became keloid in part, whereas the left inguinal glands subsided without complications.—*J.A.M.A.*

Obstetrics and Gynæcology

Heartburn of Pregnancy Treated with Vitamin B.—Good results have been obtained by B. F Hart (*American Journal of Obstetrics and Gynaecology*, Janury 1943, 45, 120) by the administration of vitamin B in large doses to a group of sixteen pre-natal patients with heartburn of from two days' to two months' duration. All but three of the patients were in the last half of the period of gestation. The results obtained were as follows:—Two patients, with a previous history of pellagra, were given large doses of vitamin B complex in the form of yeast extract with 200 mgm. nicotinic acid daily. There was complete relief of symptoms. Both patients were in the seventh month of pregnancy and were kept on small maintenance doses. Of the remaining patients, one with heartburn of two months duration was relieved within one week by one tablet of TRN6P (Merck) after meals ; four were given 200 mgm. nicotinic acid daily, divided into four doses. One patient was relieved but the others did not respond and were given thiamin chloride 50 mgm. intravenously followed by 25 mgm. orally per day. There was complete relief in one case, partial in another, and the third remained unchanged. Thiamin chloride was given as the initial medication in nine cases, two received only one intravenous injection of 50 mgm. resulting in partial relief in one case; four received the initial dose of 50 mgm. intravenously followed by 25 mgm. orally per day; relief was obtained in all four cases in from one to four days. One patient was relieved after two days oral administration of 25 mgm. twice daily, without the initial intravenous dose. The two remaining patients were in hospital and one obtained complete relief after seventy-two hours following the administration of 50 mgm. thiamin chloride intravenously and 25 mgm. twice daily by mouth. The other patient had been hospitalized in the sixth month of pregnancy for severe nausea, vomiting, and heartburn of six days' duration. Complete relief was obtained in twenty-four hours after 50 mgm. thiamin chloride twice daily by the intra-venous route, with no other treatment except fluids by mouth when possible.—*Practitioner.*

Post Partum Hæmorrhage —ARTHUR W. BINGHAM, M.D., F.A.C.S., East Orange, N. J., Chairman, Committee on Maternal Welfare of the Medical Society of New Jersey; and Chief Advisory Obstetrician, Bureau of Maternal and Child Health, State Department of Health.

There are some cases of post partum hæmorrhage which can be anticipated and preparation should be made for treatment if necessary.

Here are some of the conditions in which post partum hæmorrhage may be anticipated :

1. Following prolonged labour. The patient is tired, her muscles are relaxed, and uterus does not contract or does not remain contracted long. Result, post partum hæmorrhage, immediate or delayed.
2. Following very short labour, cervix torn or paralyzed. Post partum hæmorrhage frequently follows immediately.
3. Following twin labours or cases of hydramnios. Uterus is so distended that the muscles are weak and unable to contract or remain contracted.
4. Retained placenta. If a small piece of placenta remains following either a normal delivery of placenta or a manual extraction, there is apt to be hæmorrhage, generally intermittent.
5. Following prolonged or excessive anal gesia or deep anæsthesia. The patient sometimes becomes so relaxed that none of her muscles contract properly. Watch out for such a case.
6. Cases of placenta previa or premature separation of placenta. These cases frequently bleed post partum and require special treatment. This can happen when a cesarean has been done.
7. Following difficult delivery for some of the reasons given already.
8. Following version. Cervix is often torn.
9. Following normal labor and delivery. Post partum hæmorrhage sometimes occurs, especially if the patient has had many children.
10. Uterine inertia. Any condition causing uterine inertia may be followed by post partum hæmorrhage.

If a patient is anæmic at the time of labour it may take very little hæmorrhage to be serious. For this reason the blood must be in good condition and the hæmoglobin should be known at the time of labour and delivery. If very anæmic, transfusion should be considered, as an anæmic patient is a poor risk. This is especially true in cases of cesareans, or difficult deliveries. More patients should be typed for transfusion so that if needed it can be given promptly.

Regarding treatment, there is a little difference of opinion. The question is whether to pack the uterus or not. There re some who believe it is rarely necessary to ck uterus, while others think it should be e frequently. The writer has never seen harm follow the packing of the uterus elieves it has been a life saver in many It is a procedure which must be done , but with the use of a metal e uterus can be safely and easily It is necessary to make sure the tip of the packer is inside the cervix or only the cervix will be packed. A sponge forceps may be used on the anterior lip of the cervix to make it easier to hold the packer in the uterus. Iodoform gauze should be used three inches wide.

The first thing to do for a post partum hæmorrhage is to find the fundus and then push down on it until all clots are expelled. Then with one hand holding down the fundus the other hand is held tightly against the vulva pad. Pituitary extract and ergotrate or similar preparation should be given if it has not already been done. However, if pituitary extract has been given, it should not be repeated, as it may cause a condition of shock. Some other preparation of ergot should be used if it seems necessary. Foot of bed or table is elevated and hot water bottles placed about patient (not too close to patient). All this time the pressure is continued on fundus and vulva. This will be all that it is necessary in the majority of cases unless there is a severe laceration. If hæmorrhage does not stop, the uterus should quickly be packed by the physician and then held again.

The case which deceives us is the one which oozes a little more than usual. The usual medications are given and the bleeding seems to decrease but is still more than normal. We put the patient to bed hoping bleeding will stop. A pupil nurse is left to hold the fundus. In half an hour the nurse, thinking all is well, puts on a binder and leaves the patient. She returns in half an hour and is surprised to find patient very pale with symptoms of air hunger. She feels for the fundus and cannot find it. Doctor is notified. When he arrives he finds uterus balooned up and full of blood. He expresses the clots and holds the fundus and gives saline or glucose intravenously. Patient is typed and when ready for the transfusion patient dies. The physician might have packed the uterus at once before giving the intravenous, for if the hæmorrhage is not controlled other treatment will give only temporary improvement. A case of this kind should not be left with an inexperienced nurse and if that is unavoidable her work should be checked every 10 or 15 minutes to see if patient is all right. Why not pack the uterus in this doubtful case and play safe ? It eliminates the worry.

Cases of manual extraction of the placenta, placenta previa, and premature separation of placenta should have the uterus packed as a precaution after the delivery of the placenta whether there is bleeding or not. They all have a tendency to bleed. The gauze packing is often removed too soon and a hæmorrhage occurs. A part of the gauze may be removed in 24 hours and the remainder in 48 hours or in severe cases the whole amount may be left in 48 hours.

Regarding retained placenta, no patient should be put to bed with a retained placenta. After a reasonable length of time, one or two hours, depending on amount of bleeding, it should be removed manually and uterus packed. If patient is delivered in bed at

home, she must not be left until placenta is delivered. If left in situ, it is apt to loosen up when no one is around and a severe hæmorrhage may occur. Sometimes while waiting for the placenta there is more bleeding than is realized. This must be watched or patient may suddenly go into shock.

When a cesarean section is done for placenta previa a good precaution is to pack the vagina with iodoform gauze before the operation is begun and then after removal of the placenta the lower segment of the uterus is packed with iodoform or plain sterile gauze. Some say that this is not necessary but every year at least one case is reported which died of sudden hæmorrhage after being placed in bed. This will not occur if packing is used as described. When a cesarean is done for premature separation of placenta, packing is also advisable but in these cases the vagina need not be packed.

The points brought out in this brief paper have been obtained from records of patients who have died in New Jersey from post partum hæmorrhage. It is a most dangerous complication and every effort should be made to avoid it.—*J. M. Soc. N. J.*

Continuous Caudal Anæsthesia in Obstetrics.—A method of continuous caudal anæsthesia, started in the early stage of labour, and assuring that the medication employed shall at no time enter the subdural space of the spinal canal, thus maintaining the patient's use of the lower extremities throughout labour, is described by R. A. Hingson and W. B. Edwards (*Jl. of the Amer. Medical Association*, January 23, 1943. 121, 225) who have used it in a series of six hundred labours and deliveries without once resorting to any other form of anæsthesia It is advised that the procedure should not be started until the patient is in actual distress with regular contractions of at least thirty seconds duration and five minutes apart; if, however, the patient is in much pain, it can be instituted earlier. The patient is placed in the modified lateral Sims position, and the sacral and coccygeal area cleansed with soap and water and prepared with an antiseptic tincture. The tip of the coccyx is palpated with the middle finger while the thumb finds the U or V-shaped notch which indicates the sacral hiatus between the sacral cornua. The middle finger of the left hand then takes the place of the thumb and marks the spot for raising the initial skin wheal. A skin wheal is raised with a 25 gauge needle, and deeper infiltration to the sacro-coccygeal ligament with a 2-inch 22 gauge needle: then a 19 gauge stainless steel needle is inserted in the midline in the direction of the hiatus at about 45° angle with the skin. As soon as this needle pierces the sacro-coccygeal ligament, the reinforced metal collar is depressed through an arc of 1 to 3 cm. and the needle thrust slowly and evenly in the midline for 1 to 2 inches within the sacral canal. The point of the needle should always be below the level of the second sacral spine. The anæsthetic employed is 1·5 per cent. metycaine in isotonic solution of sodium chloride. After the needle is correctly inserted, the tubing with special adapter is slipped over the collar of the needle. A trial dose of 8 c.cm. of the solution can be injected and ten minutes allowed to elapse to see that a low spinal anæsthesia does not ensue. The hose end of special 4-foot rubber tubing is then secured over the collar of the caudal needle. Pressing the palm of the left hand firmly over the skin area against the dorsum of the sacrum, 30 c.cm. solution is then carefully injected. If the solution is entering the peridural space, relief from uterine cramps should occur in five minutes and complete analgesia in twenty minutes. Indications that the solution is being injected outside the sacral canal are failure to procure relief from pain in thirty minutes, and the appearance of an injection tumour superficial to the dorsum of the sacrum. Supplementary injections depend on the individual patient, but in the experience of the authors 20 c.cm. injected every thirty to forty minutes should keep the patient comfortable for the entire labour. —*Practitioner.*

Ophthalmology

Sulfathiazole in Ophthalmology.—Selfa gave from 0·03 to 0·04 Gm. of sulfathiazole per kilogram of body weight for from six to nine days. When necessary, he repeats this medication after an interval of five days. Four patients with sties were cured by sulfathiazole in from two to four days. Two cases of acute staphylococcal conjunctivitis responded to sulfathiazole and mild protein silver in from seven to eight days. Sulfathiazole together with local remedies was effective also in 4 cases of chronic conjunctivitis. The action of sulfathiazole in 3 cases of acute dacryocystitis was not quite as prompt as that of azosulfamide. Sulfathiazole proved ineffective in 2 cases of fistulous dacryocystitis. In 16 cases of trachoma sulfathiazole medication was combined with local applications. There was no appreciable effect on the follicles, but the corneal lesions, the subjective symptoms and the superimposed infection yielded rapidly. This diversity of action on the palpebral and corneal localizations of trachoma is an apparent contradiction. If the corneal ulcers are to be regarded as the result of the trachomatous follicles, it is difficult to explain why the sulfonamides act so energetically on the corneal localization. This dissociation of effect suggests two stages or types in the development of the causal organism of granular conjunctivitis. The age of the trachoma may also be a decisive factor. In ocular disorders sulfathiazole produces effects similar to those of sulfanilamide, but in the case of a sty its action is more rapid and energetic than that of other sulfonamides. —*J.A.M.A.*

Proceedings of Associations

The Kistna District Branch of the Indian Medical Association.—The monthly meeting of the Kistna District Medical Association, Masulipatam, was held on 21-9-1943, at the Government Hospital, Masulipatam.

After tea, the business meeting took place with Dr. N. N. Sujeer, the President, in the chair.

Dr. Seshacharlu, N. Rama Rao, J. V. R. Sarma, and D. Raghava Rao thanked the president, who is under orders of transfer to Malabar, for his services to the Association during his term of office and wished him long life and prosperity.

Dr. N. N. Sujeer replied suitably. With a vote of thanks the meeting came to a close.

Book Reviews

Cancer of the Uterus. By Elizabeth Hurdon, C B.E., M.D., 1942. 108 pp. illustrated. Oxford University Press.

This book deals with the subject of Cancer of the Uterus. It was written by the late Dr. Elizabeth Hurdon who, a few months before her lamented death in January '41, left the manuscript in the hands of the publishers with a view to its publication. The author gave the last two years of her life in the study and practice of gynæcology. It was in Hopkins University, Baltimore, where she was several years an associate in Gynæcology, that she laid the foundation of her knowledge of the pathology of Cancer of Uterus and of the modern radiation methods of treating it. After resigning from the post of Medical Director of the Marie Curie Hospital in 1938, she gave up the idea of leisured years and bent to the task of seeing that her knowledge and experience could be handed on to others: hence this book.

The get-up of the book is very nice with a fine art paper and with 29 illustrations and tables. The first chapter deals with the cancer problem. The subsequent chapters deal with cancer, its treatment and complications etc. Chapter V deals with General Clinical Technique. Chapter IX gives Analysis of cases of revaluation of the results of radium treatment of cancer of the uterus at the Marie Curie Hospital between Octr. '25 to Dec. '37. The last chapter is on treatment of Uterine Hæmorrhage in non-malignant disease. This section was incomplete in the manuscript and it was completed by L. Martindale. We would recommend the book to workers in the field.

A Text Book of Medical Jurisprudence and Toxicology. By Rai Bahadur Jaising. P. Modi. L.R.C.P. & S. (Edin.), L.R.F.P. S. (Glasgow), 7th edition, revised throughout—with three plates (two coloured) and 166 illustrations in the text. 803 cxii pp. 1943. Butterworth & Co. (India) Ltd., Bombay.

This well-known text book on Jurisprudence has reached its 7th edition within 20 years This by itself is index enough to its popularity with students and practitioners. The present edition maintains the same excellence as the previous ones. In this edition, however, the whole of the work has been thoroughly revised, new sections having been added on Manganese, Sodium Nitrite, Cleistanthus, Collinus, Methyl Chloride, Ethyl Bromide. Dinitrophenol, Dinitro-o-Cresol, Gelsemium Elegans and Cerbera Odollam. Certain important sections of the Drug Act of 1940 have also been added as an appendix. With a view to be of great use to students and practitioners of law and medicine recent cases of medico-legal interest have been inserted in place of some old cases which have been discarded. The chapter on life insurance has been omitted. The get-up of the book is good and the price, though slightly increased, is inevitable due to war conditions. We are sure that the present edition will be useful to all students and practitioners.

Correspondence

Removal of Tattoo Marks

To The Editors,
THE ANTISEPTIC, MADRAS.

Sir,

The following method recommended by Lt. Col. E. J. O'MEARA is useful for removal of tattoo marks. Some four or five months back an enquiry about it was made in a certain issue of your journal. I hope you will kindly publish it in the next issue of the journal.

Quicklime just slaked to the quantity of one pint is made up into a paste and then two tablespoonfuls of powdered Phosphorus is thoroughly mixed with it. This paste is applied to the tattooed surface after vigorously rubbing the skin so that the outer epidermis comes off. The paste is held on by a bandage for two days. The crust of the paste is left to dry and fall off by itself in about 15 days after removal of the bandage. Generally a second application completes the treatment. Rarely a third application is necessary. Thus treated, the tattooing disappears completely without any scars.

Yours faithfully,
D.N. DEB-SARMA, F.M.B.,
Malariologist,
A.M.O., Bhelaguri, T.E.
K. D. H. P. Co, Ltd.

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P.O. Nakachari,
Assam.
27-9-'43.

A Brother in Distress

To The Editors,
THE ANTISEPTIC, Madras.

Sirs,

Private life of a medical practitioner is at times interesting reading. And when a medical practitioner is a prey to the wicked habit of opium addiction, losing his reputation, his practice, his everything in life, the story is indeed pathetic. In the following lines I have put before the readers of your Journal the letter I have received from a medical practitioner. This brother deserves our sympathy and not condemnation. Will you please publish this letter at an early date?

[*Copy of the Letter*]

"My dear Dr. Subedar,

"I feel ashmed to disclose with sinking heart that I myself am addicted to this beastly habit of opium addiction. I started taking opium for my shoulder pain. Two years later opium was replaced by morphia injections. By and by the dose reached to 15 grains per day and even more. At times I decreased the dose to 4 grains per day. I sought admission in a nursing home under the care of a sympathetic and kind Medical Brother. Unfortunately he was not experienced in this treatment. I furnished him with all the articles and notes on this subject. Lecithein prepared by Col. Chopra was given I.M. in 2 c.c. doses once a day. 25 c.c. of 50 p.c. solution of Glucose was given I.V. once or twice a day for 8 days. The first 48 hours were bearable. But the 3rd and 4th day were most dreadful and unbearable, the very thought of which shakes my nerves even now. Thrice I collapsed. But the Medical Brother treated me successfully and promptly. After 2 weeks' treatment I returned home debilitated. Owing to severe and constant vomiting nothing could be retained.

"After a fortnight I fell a prey to this wicked addiction once again. At present my daily dose is 15 grains per day. Dear brother, I have ruined my practice, my health, my career. I have ruined my wife, my children and everything in life At times I am tempted to end my life. But a sudden wave of thought reminds me of my duty towards these unfortunate dependents.

"Dear brother, I appeal to you to take up my case with brotherly feelings and save my life, not for me but for my dependents. Get me out of this beastly habit. By this you will bring one of your degraded brothers to the role of humanity and earn the blessings of Almighty and prayers of my family."

Suggestions as regards the line of treatment, etc., may be sent to me.

Yours sincerely,
DR. S A. SUBEDAR, L.C.P.S.,
Hon. Sec., Scientific Committee,
A.I.M.L.A., Kutiyana, P.O.,
West Kathiawar.

Notice

20th All India Medical Conference, Ahmedabad.

The Honorary General Secretary writes:

The twentieth All India Medical Conference will hold its annual session at Ahmedabad in the last week of December, the provisional dates being the 28th, 29th, and 30th December. It is proposed to hold in connection with the conference:

An Exhibition of Pharmaceutical Preparations, Surgical Instruments and Appliances etc. Manufacturers of such preparations, instruments and appliances or their representatives are requested to take part in the Exhibition and also those interested in the preparations of the indigeneous drugs will find a good deal of interest as there will be an exhibition of Botanical plants collected from the Himalayas, Aboo, Pawagadh and from local fields.

Scientific Section: Those who propose to read papers are requested to forward them with three copies of typewritten abstracts not exceeding 200 words to the Chairman of the Science Section not later than the 30th of November for submission to the Scientific Committee.

Papers published or submitted for publication elsewhere will not be accepted

In addition to the reading of papers it is proposed to have the following symposiums: (1) Sulphonilamide group of drugs in general practice; (2) Acute Appendicites or Carbuncle; (3) Treatment of Malaria when there is dearth of Quinine.. or/and Non-Occupational Lead Poisoning; (4) Ectopic Gestation.

Those who attend the Conference are requested to take part in the discussion.

Lodging and Boarding arrangements:—The delegates will be accommodated with the members of the Ahmedabad Medical Society as their personal guests or in a group in a hostel, but those who desire Hotel accommodation will have arrangements made for them in local hotels at the average charge of Rs. 10/-per day. As hotel accommodation is very limited, the rooms will have to be booked in advance and so members wishing the same are requested to send reservation charges of Rs 20/- in advance.

All enquiries may kindly be addressed to the local Secretary, XX All India Medical Conference, Surgical Hospital and Radium Institute, Ellisbridge, Ahmedabad-6.

A Correction

The contribution on "Infantile Beri-Beri" published in our September issue as from "A H. Haqqri" should read as from "A. H. Haqquani."

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Urethane	q. s.
Aqua (Bi-Distil and Sterilised) to	2 c.c.

Use:—Ferarchin is to be used in (i) acute & Chronic stages of Malaria including Malignant type with enlarged liver and spleen.

(ii) In anæmia arising out of repeated attacks of Malaria.

(iii) Ague and all other fevers with the exception of kala-azar.

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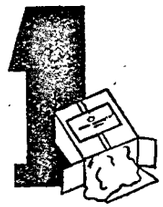

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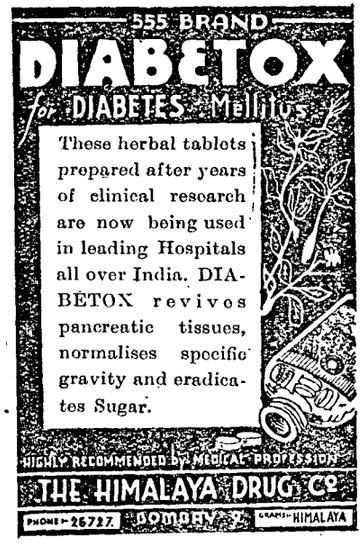

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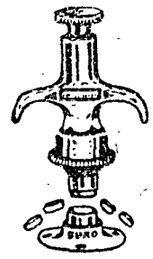

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