

The Madras Medical Journal

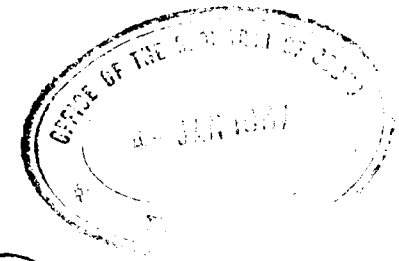
The Official Journal of the Madras Medical Association.

PUBLISHED QUARTERLY.

Vol. XV.

JULY & OCTOBER 1933. (170) Nos. 3 & 4.

Editor : Dr. A. S. Mannadi Nayar, M.B. & B.S., Ph. D., (Edin.)



Rates of Subscription.

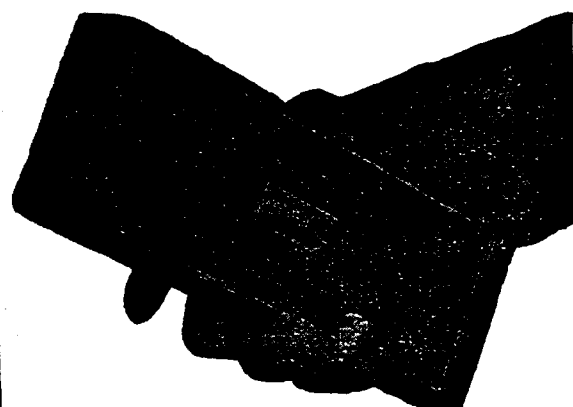
For Members of the Madras Medical Association on payment of an Annual Membership fee of Rs. Five only.—Free.

Foreign 7 sh. 6d. Post Free.

For Non-Members including Medical Practitioners Rs. Three per annum post free.

For *bona-fide* Medical Students Rs. Two per annum post free.

Single Copy Twelve Annas.



THE KOMPAK MODEL

THE LIGHTEST—THE SMALLEST—THE TINIEST

AND BECAUSE IT IS A LIFETIME BAUMANO-
METER—INDIVIDUALLY CALIBRATED AND
SCIENTIFICALLY ACCURATE AND CARRYING
THE SAME GUARANTEE OF ALL LIFETIME
BAUMANOMETERS THE KOMPAK MODEL
ELIMINATES ANY PAST REASON FOR USING
INACCURATE OR CLUMSY BLOOD-PRESSURE
APPARATUS.

THIS NEW INSTRUMENT WILL FIT INTO YOUR
BAG EASILY—IT CAN EVEN BE CARRIED IN
THE POCKET.

Stockists :

BOMBAY: Bombay Surgical Co., New Charni Road.

DELHI: H. C. Sen & Co., Fountain.

LAHORE: Beli Ram & Bros., Anarkali.

MADRAS: Seetharam & Co., 386, Mint Street.

MYSORE STATE: The Sree Rama Dispensary, 1,
Vani Vilas Circle, Basavangudi, Bangalore.

RANGOON: Burmah Chemical & Research Labora-
tory, 212, Phayre Street.

Calibration 260 mm.

Size 1½"×3¼"×11½".

Weight 30 oz.

Inflation System self-contained.

Duralumin case with backed enamel
edges.

Genuine Morocco grain leather.

Entire manometer unit chromium
plated.

Individual nameplate cast in cover.

Table of clinical averages embossed
in case.

Lifetime Guarantee against glass
breakage.

Perpetual Guarantee for accuracy.

Sole Distributors in India :—

THE SCIENTIFIC INSTRUMENT CO., LTD.,

5-A, Albert Road,
ALLAHABAD.

11, Esplanade East,
CALCUTTA.

When writing to advertisers, please mention The Madras Medical Journal.

APPAH & COMPANY,

WHOLESALE CHEMISTS AND DRUGGISTS.

WAREHOUSE AND RETAIL STORES.

APPAH BUILDINGS,

286, CHINA BAZAAR ROAD, MADRAS.

Wholesale importers of Chemicals,
Drugs, Pharmaceutical Products, Pro-
prietary Specialities, Surgical Instru-
ment and Accessories.

Stockists of Products of the principal
manufacturers of Medicines and
Surgical Goods.

Orders and Inquiries promptly attended to.

PRESCRIPTIONS
ACCURATELY AND RELIABLY DISPENSED

DISPENSARY 8 a.m. to 8 p.m.

When writing to advertisers, please mention the Madras Medical Journal.

THE MADRAS MEDICAL JOURNAL.

Vol. XV

JULY & OCTOBER 1933.

Nos. 3 & 4

A CENTRAL MALARIA LIBRARY.

A malaria library was founded in Rome by the Stazione Sperimentale per la Lotta Antimalarica in 1925, and an "Index to Malaria Literature" is issued annually by the Station.

To make this as complete a central malaria library as possible we appeal to all malariologists to send us books, reports and articles on malaria.

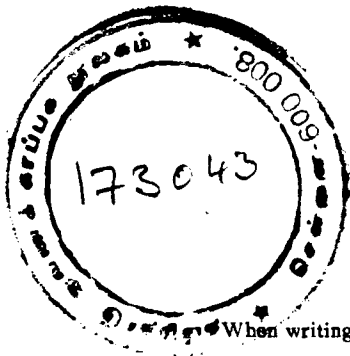
Photostat copies of any articles in the library can be had, on request at cost production.

All publications and requests should be addressed to "The Director, Stazione Sperimentale per la Lotta Antimalarica, Corso Vittorio Emanuele 168, Rome (16)".

CONTENTS.

PAGE.

1. ECZEMA.	
By Capt. S. Thumbiah, B.A. M.C., M.R.C.P., D.T.M. & H. (Lon).	... 107
2. NOTES ON LOCAL AND REGIONAL ANAESTHESIA.	
By Dr. A. R. Poduval M.D. (Hamburg)	... 124
3. DEXTROSE AS A HEART REMEDY.	
By Edward Podolsky, M.D.	... 128
4. ABSTRACTS	... 132
5. EDITORIAL	... 134
6. ASSOCIATION NOTES	... 138



JL
Lon 211, N 21111
N33.15-384

When writing to advertisers, please mention The Madras Medical Journal.

EDITORIAL NOTICE.

The Madras Medical Journal is issued quarterly, in January, April, July and October about the 20th of the month. All Editorial communications, reports, books for review and exchange should ordinarily reach the Editor, The Madras Medical Journal, 19, Victoria Crescent, Egmore, Madras, one month prior to the date of issue of the Journal, preferably earlier. Original articles, clinical lectures, case reports, abstracts, Medical Society addresses are invited. Contributors of original articles will be supplied gratis with twenty reprints of their papers, if applications for the same are received by the Editor along with the contributions.

BUSINESS NOTICE.

Subscription Rates.

To members of the Madras Medical Service on payment of an Annual membership fee of Rs. Five only.—Free.

To Non-members including Medical practitioners and others Rupees Three per annum post free.

To *Bona-fide* Medical Students. Rs. Two per annum post free.

Foreign 7 sh. 6d. post free.

Rates of Advertisement.

	One Page.	Half Page.	Quarter page.
	Rs.	Rs.	Rs.
Single insertion	20	12	7
Three insertions	40	24	14
4 insertions	50	30	20
4 insertions (inside reading)	60	...	...

All advertisement charges are payable strictly in advance.

All advertisement charges and subscriptions are payable in advance. Letters relating to the publication, sale, and advertisement department should be addressed to the Business Editor, The Madras Medical Journal, 9-A, Luz Church Road, Mylapore, Madras.

Copies of the Journal can be obtained at twelve annas each from Messrs. Solder & Co., Printers, Triplicane, Madras, or the Secretary, 9-A, Luz Church Road, Mylapore, Madras. Changes of address and complaints of non-receipt of Journals should be immediately communicated to the Secretary, to the above address. Matter for advertisement should reach the business Editor at least ten days before the date of issue of the Journal.

The Madras Medical Journal

The Journal of the Madras Medical Association.

PUBLISHED QUARTERLY.

Vol. XV.

July 1933.

No. 3.

Eczema.

By CAPT. S. THAMBIAH, B.A., M.C., M.R.C.P., D.T.M. & H. (Lon).

Fellow (St. John's) Dermatological Society, (Lon.)

Lecturer in Dermatology, Medical College, Madras & Medical Registrar, General Hospital, Madras.

Introductory.

Disease of skin as a special branch of general medicine have suffered much by the cumbersome nomenclature and the same disease has been described under various names by different authors. The former was to a certain extent inevitable, and to those of us with "little Latin and less Greek", many of the names fail to convey the exact meaning implied in the descriptive terms; a classification based on morphology was really the main cause of these lengthy Latin and Greek terms, and this is being obviated by the introduction of a classification based on etiology—a real and tenable method. Facilities of travel and inter-change of ideas between different dermatological clinics have brought out an agreed nomenclature doing away with numerous descriptive terms—a large number of these now remains as only a relic from the earlier works.

Skin diseases divorced from general medicine have no existence; diseases really pertaining to the skin are only a few as benign and malignant tumours and some of the dermatoses of unknown etiology as eczema, psoriasis, pityriasis rubra pilaris, erythrodermias, etc., etc.

Even these, when their etiology becomes established, will be grouped differently thus reducing the actual number of skin diseases. The skin, in fact, reflects disease processes of the body, and should be assessed always as such in relation to general medicine.

Eczema.

Definition.—Eczema literally means an eruption: root meaning is "to boil over" or "burst out". Eczema has been defined as "a cutaneous response, often defensive, to unknown toxins, intrinsic in origin, circulating in, or being eliminated by, local areas of the skin". This will exclude dermatitis due to plant origin (*dermatitis venenata*), drug eruptions (*dermatitis medicamentosa*)—dermatitis due to physical agencies as *erythema solare*, *erythema abigne*, etc., radiation dermatitis from radium, X-ray, U.V.L., etc., and the large and ever increasing group of trade dermatitis in connection with arts and industries. This demarcation is quite essential, as dermatitis has a known cause, and the removal of it or the patient from such influences will bring about a speedy cure of the skin condition.

Historical.—Formerly eczema included a good many heterogeneous lesions of the skin. In 1808 Willan and Bateman, in their conception of eczema as a type of cutaneous lesion, stressed the action of external irritants and divided the disease into (1) *Eczema solare*, due to direct sun or heated air; (2) *Eczema impetiginoides*, seen in grocers, bricklayers, bakers, etc.; (3) *Eczema rubrum*, caused by mercury, exposure to cold wind, etc. Of the French school, Rayer separated artificial eruptions from cases of genuine eczema. The Viennese school, under Hebra and his pupil Kaposi, was more inclined to return to the conception of Willan and Bateman, yet recognised nervous influences and constitutional states in the production of eczematoid eruptions.

Tillbury Fox in England contributed largely to the clarification of the subject. He gave the first accurate description of *impetigo contagiosa*, which was separated from the list of eczematous eruptions. Under the name of *Cheiro-pompholyx* or *dysidrosis*, Fox separated a type of vesico-bulbous lesion of the hands and feet; the wisdom of this separation is not universally accepted.

The monumental work of Unna of Hamburg established *seborrhoeic dermatitis*, which was formerly included under eczema, as a separate

entity. Unna went a step further and claimed that all eczemas are *seborrhoeic* in origin, and *psoriasis* is its severe and driest form. This has not found many adherents. In 1900, Sabouraud re-investigated the microbic question of eczema and was in complete agreement with Willan's original idea, that the primary vesicle of eczema was not microbic.

Aetiology.—The aetiology is unknown: it is probably a re-action of skin to some unknown toxic process.

Predisposing cause.—This may be conveniently considered under the following headings:—

- (1) Local structural peculiarities of the skin.
- (2) General predisposing conditions.

(1) Local structural peculiarities of the skin.

(a) *Ichthyosis*, and a milder condition known as *Xerodermia* are potent causes in the production of eczema. As the skin in these conditions is lacking in one of the most essential constituents, namely, the grease from the sebaceous glands, it becomes harsh and easily fissured. Skin is rendered sensitive to cold and damp, and cold winds.

(b) *Excessive sweating* is another cause. Hands, feet and flexures suffer most. The acrid products arising from the decomposition of sweat, mechanical maceration of the epidermis, and infection by cocci from the surface of the skin may easily predispose these localised areas to eczematous process. It is worthy of note that in dry skin the extensor surfaces are chiefly affected and the flexor in hyperidrotic skin.

(c) *Venous congestion and Lymph-stasis*:—Varicose eczema of the legs is a classical example. In India, elephantoid condition of legs and sometimes hands and forearms through fibrosis of lymph glands by *microfilariae* and consequent lymph-stasis in the area drained is another familiar example.

(2) General pre-disposing causes.

(a) *Age and Sex.*—Eczema is common in both extremes of life. Perhaps in the aged, atrophy and dryness of the skin strongly predispose. Male infants suffer more than female.

(b) *Heredity*.—No doubt, it plays a part. Eczema runs in certain families as asthma, diabetes, rheumatism, etc. Asthma and eczema may keep on alternating.

(c) *Auto-intoxication*.—In some cases at least, absorption of toxins from the alimentary canal is a probable cause. It is not uncommon to find constipation in eczematous patients; its presence is further demonstrable by the finding of indican and aromatic sulphate in urine.

Food.—During the process of digestion, foods are chemically split into simpler products by enzymatic action of digestive fluids, and then further transformed by the metabolic activities of the intestinal bacteria. It seems reasonable to presume that the small quantity of toxin set free in the alimentary canal, in a healthy individual, is easily detoxicated by the liver. When putrefactive and fermentative processes are high, and the liver is also deranged, amino-acid and bacterial decomposition products get into general circulation and produce eczema in an allergic individual. Burgess, as a result of extensive experimentation, is of opinion that the vast majority of positive intra-dermal reactions was given by toxic metabolic end products arising from bacterial action histamine, on food products, as cadaverine, cadaverine hydrochloride, scatol, tyramine, putrescine hydrochloride, etc.; a few was caused by aminoacids occurring in the normal process of digestion.

The problem of food with regard to eczema is a complicated one. Persons can partake of such foods as oyster, crabs, mushrooms, pork, etc., without any discomfort, but these very persons, at a different time, may be the subjects of urticaria, eczema, etc. This is explained by assuming that the particular food has undergone rapid changes and deterioration producing toxins. Again, a few persons are sensitive to such harmless articles as cheese, oatmeal, eggs, etc., and some infants react unfavourably to milk (the kind that is rich in cream). This kind of sensitiveness or unfavourable reaction is designated as Anaphylaxis or hypersensitiveness, and the altered reactivity of the person is known as "Allergy". Anaphylaxis is not limited to foods, as foreign proteins, sera, drugs, etc., may also produce the identical phenomena. Bloch adduced evidence to show that allergy is an antigen—anti-body phenomenon, wherein a certain group of cells of the living organisms react in a special manner when brought in contact with foreign substances as animal, vegetable and mineral, and ingested drugs—antigens. When

antigen comes in contact with its specific cellular fixed anti-body, a disturbance of cellular life takes place resulting in an inflammatory reaction (local or general).

The nature of cutaneous reaction to drugs is still undecided. While desensitization can be effected in cases of anaphylaxis to foreign proteins, hypersensitiveness to drugs is a stable condition and cannot be overcome by the injection of small amounts of the sensitizing substance.

(d) *Focal Sepsis*.—Septic infections are met with in the teeth, tonsils, accessory sinuses, gall-bladder, appendix and genito-urinary tract. In certain cases of eczema, removal of septic teeth or tonsils is followed by the disappearance of the lesions; but this happy result is not the common experience. It cannot also be vouched that the removal of a diseased appendix or gall-bladder will cure an obstinate eczema. Colon irrigation and implantation of *Bacillus acidophilus* per rectum have shown a certain measure of success while vaccines made from cases in which a copious flora has been reported on bacteriological examination of the stools gave very little encouragement.

(e) *Endocrine dys-function*.—Hypothyroidic states predispose the skin to eczema. What role the other endocrine glands play has not been satisfactorily determined.

(f) *Nervous influences*.—It is well-known that an eczematous process can be aggravated by mental worry, shock, strain, etc. How far nervous influences can precipitate an eczema *de novo* has not been determined. Reported changes in the cervical sympathetic were not of a convincing character. The skin, which receives a rich supply of sympathetic and possesses a number of specialized end-corpuscles may have its reactivity altered in some mysterious way in eczematous processes, is at best a conjecture.

Pathology.—In essential details, the pathology of eczema is much the same as that of dermatitis. It is essentially a catarrhal inflammation. All the classical signs of inflammation are present. As the process is superficial and there is free scope for expansion, the subjective sensation of pain is replaced by burning, itching or general discomfort. The initial stage of hyperaemia of the papillary tufts is rapidly followed by a serous exudation into the mucous layer (the rete). The inter-cellular protoplasmic fibrillae are burst and vesicles form in the deeper

layers of the rete, and by gradual growth from below, reach the surface. The individual cells of the rete are also oedematous. The whole process is designated as "Spongiosis."

The vesicles by confluence may form bullae. When the stratum corneum is sufficiently stretched, vesicles burst, and exudation takes place on the free surface—weeping. In eczema, the vesicles are amicrobic as shown by Willan and later by both the Foxes. When pyogenic infection takes place, leucocytic infiltration speedily sets in, the contents of the vesicles become turbid through pus-formation and the condition is termed "Impetiginisation."

The serous exudation makes the cells of the mucous layer oedematous, and the proper evolution of the cells of the corneous layer is prevented. The cells of the corneous layer are imperfectly keratinised retain their nuclei. The presence of moisture makes the individual cells cohere and desquamate in the form of scales instead of as normally cell by cell and insensibly. This process is described as "para-keratosis." In chronic cases lichenification takes place through hyperplasia of the prickle-cell layer and inter-papillary prolongations.

Symptoms.—Subjective symptoms of itching, burning, a sensation of heat and discomfort are usually present severally. These vary a good deal with regard to intensity, in different patients at different times; some may not experience anything beyond a slight discomfort, while others may complain of itching, burning, etc., much out of proportion to the lesion. The patient may be made sleepless by intolerable itching. As a general rule, constitutional symptoms are absent; in acute and extensive cases, slight fever attended by chillness may mark the onset. Whatever the type of the inflammatory process—acute, sub-acute or chronic—the disease is long continued and persistent, and in most cases, shows little tendency to disappear. Though a seasonal influence is recognised, no rigid rules can be laid down.

Certain types are marked out by special characteristics. It will add a good deal to clarity to consider them under those headings. The division is based on (1) primary elementary lesions and also on (2) special clinical features.

- Group 1. Erythematous
Papular
Vesicular
Pustular
2. Eczema rubra
Eczema madidans
Eczema fissum
Eczema sclerosum
Eczema verrucosum.

There may be a combination of any two or three of the above.

Erythematous eczema (*Eczema erythematosum*).—This is commonly seen on the face, though any part may be affected. It may start as a single hyperaemic area or several areas may appear simultaneously; they may later coalesce. The size of the areas varies and the borders are irregular in outline and ill-defined. The part is swollen and oedematous. The reddening of the area deepens and in some places scales or vesicles may appear. A serous exudation may take place spontaneously; it usually results from rubbing and scratching.

This type may retrogress and heal or may persist and become modified into one of the other types, as *Ec. squamosum*, or *rubrum*. Subjective sensations of itching and burning may be present in varying degrees.

Papular Eczema (*Ec. papulosum*).—Here papules, varying in size, from a pin-point to a pin-head may be found discrete and irregularly scattered about, or may be in clusters. Here and there vesicles and pustules may be found. This type of lesion is very common about the flexures, arms and legs. Itching is usually intense. Blood-tinged crusts may form on the top of the papules through scratching and rubbing. This is always marked by chronicity. Sometimes the lesion may persist indefinitely. It may heal in one place and relapse in another.

Vesicular Eczema (*Ec. vesiculosum*).—Discrete or clustered vesicles appear over an inflamed and oedematous-looking area. The vesicles vary in size from a pin-point to a split pea. The vesicles

rupture in the course of hours or day leaving a weeping surface. (*Ec. madidans*); if oozing is slight, it dries up into crust. The commonest site is the face and scalp of infants and in adults flexor surfaces, fingers and neck. The course is commonly chronic with a variable period as regards remission and exacerbation. This type usually results in *Ec. rubrum*.

Pustular Eczema (*Ec. pustulosum* or *impetiginosum*).—Usually affects debilitated children and adults. Its common site is the scalp of children. This resembles the preceding type in all respects except that the clear vesicles are turbid through pus-formation.

Squamamous Eczema (*Ec. squamosum*) is a well recognised clinical variety arising from erythematous or papular varieties. Its course is marked by great chronicity. Itching is variable; it is intense when the scales are adherent. The affected area is greatly infiltrated; if located over joints, movement produces painful fissures.

Eczema rubrum.—Commonly seen on the face and scalp of children and the legs of adults who are over forty years of age. It is characterised by a red, weeping, raw-looking surface with a varying amount of infiltration of the cutaneous tissues. There is usually a combination of weeping and crusting. Sometimes the oozing is so copious and persistent that crusts do not at all form (*Ec. madidans*). Varicose veins may complicate the condition. This type shows no tendency to disappear spontaneously; is very resistant to treatment, and usually an end-result of vesicular or pustular eczema.

Fissured Eczema (*Ec. fissum*).—As the name implies, the leading feature is fissuring and this type of lesion is commonly found over areas subject to constant movements. There is a certain amount of inelasticity arising from infiltration.

Eczema Sclerosum and *Ec. Verrecozum* are two rare clinical types which are very resistant to treatment. Common sites are lower third of legs, ankles and feet. There is infiltration and thickening of the affected area; the surface is rough and has a board-like rigidity to feel. In addition to the foregoing, this type has a distinct warty, verrucous or tuberculated appearance.

Infantile Eczema calls for very little notice. It differs in no way from the adult one except that the tender tissues of the child show more of the inflammatory reaction. The face, scalp and napkin area are very commonly affected. The disease tends to a spontaneous cure after the age of six. Some authorities consider that milk rich in cream is an aetiological factor, while others attribute it to a high acidity in the tissues.

Diagnosis.—Of no disease can it be truly said that the diagnosis is mainly by exclusion. In this protean disease with its polymorphism varying day after day, one should make an endeavour to exclude all diseases with known and clear-cut distribution. The large group of external irritants must be excluded by careful enquiry. The individual's occupation, his hobbies, etc., should receive attention. Drug eruptions and exposure to dyes ruled out by careful interrogations. In a word, all dermatitides separated and the diagnosis of eczema established. The advantage of this procedure in treatment was insisted on in the introductory remarks. Only common cases will be differentiated.

Erythematous type has to be differentiated from erysipelas and rosea. Constitutional symptoms, hoardly infiltration with clear cut margins of the lesion, leucocytosis, etc., will help us in erysipelas. Rosea (*Acne Rosacea*) is a chronic affection of skin; seborrhoea, dilated venules in face, gastric or uterine disturbance, history of addiction to alcohol, tea or coffee can always be elicited.

Papular type has to be distinguished from a good many skin lesions as papular syphilide, erythema multiforme, prurigo, lichen planus, pityriasis rubra pilaris, etc. Taking the last first, *pit. rubra pilaris* is a chronic skin disease characterised by branny scaling, redness and follicular papules. When the papules affect the back of hands, the diagnosis will not be in doubt. White scales of scalp with little tendency to reform on removal will also be helpful. *Lichen planus* is confined to flexor aspects, papules are angulated and show milky streaks on top. The colour is of a distinct lilac or purple on a slightly fair skin; appearance of papules in mucous membrane of mouth will clinch the diagnosis. Syphilide is hard, non-itching, erratic in distribution with no tendency to grouping. W. R. or Kahn reaction should be sought in all ambiguous cases.

Vesicular type will have to be differentiated from dermatophytosis, dermatitis herpetiformis, drug eruptions, scabies, etc. *Dermatophytosis*—Interdigital clefts (common 4th interspace); when spread beyond—ring form.—Demonstration of fungus by culture and microscope. Pot. iodide and bromide eruptions will have to be taken into account. *Scabies*: Distribution: burrow and acarous scabiei. *Dermatitis Herpetiformis*:—rare, chronic, papulo-vesicular eruption with a tendency to grouping.

Pustular type.—Differentiate from sycosis, favus impetigo, pediculosis, etc.

Squamous eczema.—Differentiate from the following: *Seborrhoeic dermatitis*, (common dandruff,) etc. *Psoriasis*.—Silvery, micaceous or asbestos-like scales showing a reddish base with vascular points (not bleeding), extensor areas, usually over joints, and scalp affected. Marked by chronicity, tendency to remission and relapses. *Pityriasis Rosea*.—Rare. Herald patch, fawn-coloured lesion, crinkled at centre showing separation into scales (collarlette scaling). *Dermatitis exfoliativa* is one of the erytherodermias. Extensive generalised erythema with scaling, constitutional symptoms, itching, burning and great discomfort.

Note.—In all cases of doubt, W. R. or Khan should be carried out before final decision. Sometimes arsenical injections in xerodermic skin react in a peculiar way resembling eczema in patches; hyperpigmentation and hyper-keratinisation of hands and feet are not apparent in these cases.

Prognosis.—This should be considered as a curable disease, if properly treated. Some chronic resistant cases may carry one, over one or two years. The patient's general condition should be well-maintained. Every minute detail should be seen to by the Dermatologist in person. How often the removal of an external irritant which passed unnoticed, effected the cure of a long-standing case!

Treatment.—One extreme view holds that eczema should not be treated for fear that the disease may be driven in; in this connection, note the derivation of the word eczema given above. The usual method of treatment is both by internal remedies and external application.

Internal Remedies Diet.—Simple, nutritious and easily assimilable diet should be aimed at. Bulkley advocated a diet of boiled rice, eaten slowly with butter, and bread and water. In widely spread and chronic cases, a vegetarian diet is an advantage. Alcohol should be interdicted in all cases, as it causes cutaneous vaso-dilatation. This may also be said of tea, coffee and cocoa. Restriction of salt from diet has been reported to have given good result. Abstinence from acid fruits may be beneficial. All digestive disorders should be corrected and putrefaction and fermentation prevented.

Internal medicine.—Rest in bed in extensive lesions, and when both legs are affected should be insisted on. This stabilizes the circulation and changes in the skin vascularity is maintained at one level. Internal remedies like arsenic, antimony, etc., have been discredited. Arsenic finds its use now in only a few types of chronic cases. Antimony is of value in acute and wide-spread cases. This is given in the form of vin. antimonale (m. 3 to 7) thrice a day. In persons with nervous debility Quin. Sulph. (grs. 5 thrice a day) has a well-marked action. When the lesions show an urticarial reaction, calcium lactate could be given a trial.

The skin being an excretory organ, purgatives may lighten its labours, by disposing off the gastro-intestinal toxæmia—a potent predisposing cause as already shown. Sulphates of magnesium and sodium, which are not at all absorbed, may be chosen, and these two salts have another advantage over other saline purgatives in that they combine with toxic materials in the gut and make them innocuous.

Colonic lavage aims at the same result, i.e., ridding of toxins mechanically. Bulkley's diet discussed above leaves little residue and is bland; hence noxious material is reduced to a minimum. Implantation of *Bacillus acidophilus* is a means of getting a speedy change in the intestinal flora.

Local application.—In the very nature of things and in a disease which is protean in its manifestation as shown above, one cannot look forward for a specific and there is no specific. Each stage will require special form of treatment.

Certain general principles for guidance may be indicated:—

(1) Removal of crust.

(2) Disinfection when pyogenic infection has taken place.

(3) Protection from external irritation.

(4) Topical remedial measures to suit the particular stage of the disease. In this connection one may be pardoned for quoting Veiel's dicta :—(a) More acute the inflammation, the milder the remedy. (b) Exercise great precaution in the use of strong remedies; experiment with small doses over limited area. (c) Persevere in the treatment till the last traces have vanished; if not relapses are bound to occur.

(1) Crusts are removed by a boro-starch poultice and allowing it to remain from 12 to 24 hours. Starch should be well cooked, till the granules are burst. And the quantity of boric acid need not be more than a level teaspoonful to four tablespoonfuls of starch powder. Poultice made from wheat flour is more tenacious than the one made from rice. Spread on thin mull, $\frac{1}{4}$ inch thick and apply when cold.

Strips of cloths soaked in olive or cocoanut oil and allowed to remain for the same period may also be used to remove crust. Thinly-spread sticking plaster will also help us to attain the same end. In non-inflammatory cases, scrubbing with soap and warm water may be safely carried out. Care should be taken to remove all traces of soap. It may be noted in passing that water produces irritation of acutely inflamed parts. Addition of a little starch to the water raises the specific gravity to the level of blood serum; less serous exudation takes place and hence less irritation.

Disinfection.—This is best carried out by means of 2 to 3% of AgNO_3 (in spiritus altheris nitrosi) painting for small areas. It also acts as an astringent at the same time in weeping cases. The same object may be attained, in addition to protection of the lesion by the addition of 3 grains of Hydrargyri Oxidi Flavi or 5 grs. of Hydrargyri Ammoniata to an ounce of zinc paste (Lassar's paste minus the salicylic acid). The following example will illustrate :—

Hydrargyri Oxidi Flavi	grs. 3	
Zinci Oxidi		
Pulveris Amyli		
Adipis Lanae Hydrosi		
Vaselini	aa	3 2
Fiat Paste		Misce

Sign.—For external use. Spread on strips of clean linen and apply over affected parts. Change twice or thrice. The old paste is easily removed by means of cotton wool swab (small) dipped in oil. The swab is gently rubbed and the paste (or ointment) will stick to it and be removed. When there is reason to believe that disinfection is complete, the yellow oxide of mercury or the ammoniated mercury may be omitted from the paste.

Protection.—In acute erythematous and papular stages, soothing and cooling application should be used. Resort may be had to pure lotions with the addition of spirit or a combination of lotions and powders. The following is a good formula for the former :—

R		
	Liquoris Plumbi Subacetatis	... 3 2
	Spiriti Vini rectificati	... 3 2
	Aquam Distillatum ad	... 3 10
	Ft. lotio.	

The addition of spirit hastens evaporation and the cooling effect is intensified. The lotion should be mopped on freely and frequently to the part. This part may be covered with lint and the lotion allowed to drip keeping it continuously moist. For lotions combined with powders, none is so popular as Lotio Calaminae. The following formulae gives the proportion :—

Calamine Lotions.—

R		
	Calaminae	... 3 2
	Zinc Oxide	... 3 2
	Glycerine	... m 30
	Aquam Calcis ad	... 3 6
	Ft. Lotio	Misce.
R	or	
	Calaminae Preparatae	... 3 3
	Spt. Vini Rectificati	... 3 2
	Zinc oxide	... 3 2
	Glycerine	... 3 1
	Aquam Rosae ad	... 3 8

Sig : For external use only.
Mop on to the affected part.

If the above measures are carried out properly, a slight thickening and reddening of the skin result. Tar in some form is indicated. A drachm of liquor carbonis detergens may be added on to the zinc paste or a paint which is a cleaner preparation, may be used.

Tar Paint:—

R		
Picis Carbonis	...	1 part
Benzol	...	2 parts
Acetone	...	7 parts

The paint shown above is one of medium strength; it may be made stronger or weaker as desired. The paint is applied once daily, and it dries in about 5 minutes. There is no necessity for an external dressing over it. Watch should be kept for any irritation that may arise; if so, the paint is stopped for a time and zinc paste substituted.

Weeping eczemas, of late, have been treated by painting with pure tar with good results. Tar from gas works, freed from leucol and soluble alkali, by repeated washing with cold water, is used without dilution. The black treacly liquid is painted on as a thin coating which takes one to two hours to dry; it may then, if desired, be covered with talc powder or linen. The paint causes a brisk burning sensation for 15—20 minutes, followed by a sense of comfort and freedom from itching. The paint need not be repeated for 2 or 3 days. If there is discharge, early renewal is necessary. Freedom from pyogenic infection is the *sine qua non* of this treatment; if sepsis is present, it should be delayed until disinfection could be satisfactorily insured. If it is desired to dilute the tar, lard should be used as vaseline and lanoline are unsuitable. It may also be incorporated with equal quantity of casin ointment, which forms a varnish, easily drying and less messy. Diluted tar does not produce such satisfactory results. Tar is contra-indicated in erythematous and papular stages.

Warty and sclerosing types of eczema require prolonged treatment. Hebra's method is still the best. The affected part is ringed with vaseline and then scrubbed with a 20% or 50% solution of potassium hydroxide till the surface becomes covered with small dew-drop-sized watery exudate. The process stopped, surface cleansed, and Hebra ointment, composed of equal parts of Emplastrum plumbi and vaseline,

is applied on lint or plaster mull. If indurated and hornified, 15 to 30 grains of acid salicylic may be added to the ointment. Biersdrof series of salve and plaster-mulls containing keratolytics may be used. Scrubbing the parts with soap and water daily will yield similar results at a longer interval.

Itching may be relieved by a dusting powder recommended by Jackson:

R		
Camphorae	...	3 ½.
Zinc oxide	...	3 2.
Pulveris Amyli	...	3 4.

Fixed dressings have a certain amount of merit as they are more protective and give support to the part—a point very much desired in varicose eczema. They can also be combined with various active medicines as salicylic acid, tar, carbolic acid, sulphur, resorcin, etc. The following three are typical examples of this series:—

(1) Unnas Glaco-Gelatin.—

R		
Zinci oxidi	}	ā ā partes æqualis
Geletini		
Glycerine		
Aquae		

Salient features are:—(a) It is a means of fixing dressings on any part where it is difficult to apply a bandage. (b) It gives an allround compression. (c) Relieves itching. (d) Acts as a protective which can be made stronger by blowing powder (talc) on or dabbing on loose wisps of wool, the fibres of which will adhere and strengthen the protective effect and support.

(2) Acacia dressing.—

R		
Mucilage of acacia	...	5 parts.
Glycerin	...	1 part.
Zinci oxidi or calaminae, or both	}	... 2 parts.

This is another fixed dressing that is easy to apply and active drugs can also be incorporated as in the above. Powdered coke will obviate the stickiness and delay in drying.

(3) *Pick's varnish*.—Linimentum Exsiccans.

This is a clean and cheap dressing—a potent factor to consider with regard to the poor and out-patient practice where cost is to be cut down. The formula is as follows:—

R	
Tragacanth	... 5 parts.
Glycerin	... 5 parts.
Water boiling	... 100 parts.

If properly titrated in a mortar, a translucent jelly is obtained. When evenly spread with the finger or a narrow paste brush, it leaves a thin invisible film; it contracts on drying and confers a cooling effect in addition to soothing inflamed lesions. Various drugs can be incorporated as desired. Note should be taken that a drug with an alkaline reaction cannot be incorporated in this varnish.

Biersdorf series of salve mulls and salve plasters can also be made to serve the purpose of fixed dressing.

X-ray, W-ray, radium and U. V. L. have been used extensively in chronic cases during the last two decades. Time cannot be found to go into a lengthy discussion of the subject. Fractional and sub-fractional in acute cases, of an erythema, dose has yielded best results. Filtered and unfiltered radiation utilized. Acute and erythematous cases give better result with U. V. L.

Vaccine treatment has not given satisfactory results. Erythematous papular and papulo-vesicular stages are a microbic and as such, vaccines are not indicated. When secondary coccal infection has taken place, an autogenous vaccine from the whole organisms grown and in the proportion in which they are found will yield better results. In an out-patient practice, one should resort to stock-vaccine.

Injection of proteose isolated from urine was tried in a number of cases. I cannot speak with any enthusiasm from the results obtained.

Non-specific protein therapy was tried in refractory cases. Over 60 per cent of cases have given uniformly satisfactory results. 2½ to 10 c.c. of sterilized cooled milk were used as a routine, time interval being twice a week, unless the patient was weak and had reacted violently as shown by persistence of fever for more than a day and other constitutional symptoms as malaise, headache, sleeplessness, etc. T. A. B. vaccine (curative) may be used, starting from 20 millions and increasing by 10 millions at each subsequent injections. Aolan, Collosal Manganese and Manganese Butyrate have been tried. Ecze-mine and thio-eczemine (Bengal Immunity Company) have been of great assistance in secondarily-infected cases and also in chronic cases, particularly the latter.

I have obtained good results in scaling types by intravenous injections of sodium thiosulphate, enesol, aurothysin, and solganol. I cannot say definitely how these substances act; the favourable clinical results are always apparent.

REFERENCES.

1. *Andrews, George Clinton*.—Disease of Skin, 1st Edn. 1931.
2. *Bloch, B.*—The role of Idiosyncrasy and allergy in Dermatology. Arch. Dermat. and Syph., February 1929.
3. *Better, J. P. and Krish, R. A.*—Absorption of Undigested Protein as determined by the direct anaphylaxis test—American Jl. of Physiology—August 1925.
4. *Hertslet, Louis, E.*—Skin.
5. *Lowe, Cranston*.—Disease of skin.
6. *Norman Walker, Sir.*—An introduction to Dermatology.
7. *Marple, E. and Myers, C. N.*—Action of sodium thiosulphate in the treatment of metallic intoxication and Skin lesion. Proceedings. Soc. Exper. Biology and Medicine, 1926.
8. *Sequeira, James H.*—Disease of the Skin, 4th Edn.
9. *Stel-Wagon, Henry W.*—From Sajous Analytic cyclopedia of Practical Medicine—Eczema.
10. *White, C. J.*—Crude coal tar in Dermatology. Arch. Der. and Syph. December, 1921.
11. *Wisfield, A.*—System of Medicine, edited by Allbut and Rolleston, Vol. 9 (Dis. of Skin)—Eczema.

Notes on Local and Regional Anaesthesia.

BY DR. A. R. PODUVAL M.D. (HAMBURG),

(1) Toxicity

Civil Surgeon, Trichur.

A drug that exerts such a powerful influence on the Protoplasma of nerve cells, must naturally be expected to produce after absorption into the circulation definite effects on nervous tissue. In this respect, the alkaloid cocain has the greatest and most unfavourable effect on the central nervous system, from the standpoint of the Surgeon who uses it for anaesthetic purposes. The toxicity of drugs of the cocain group varies with the drug itself, its concentration, the quantity used, and the individual idiosyncrasy of the patient. I have seen only one case of such susceptibility to novocain, said to be the least toxic of the synthetic group of local anaesthetics, and that was in a German at Eppendorf Hospital, Hamburg. It was a case of Herina, Inguinal, and the first syringe of injection, made the man pale, with cold sweat, and shallow breathing. It was not an instance of injecting into the blood-stream. It was a case of pure idiosyncrasy to the drug, as we were afterwards able to verify.

Three grades of symptoms of novocain poisoning have been noted (Fritz Haertal) :—

1st Grade. Side-effects, such as increase of pulse, pallor, thirst, sweating, nausea, and vomiting.

2nd Grade. Pronounced symptoms of poisoning, which generally pass off; small, frequent pulse, collapse; a condition of sleepiness; total analgesia; spasms or convulsions; difficulty of breathing, cyanosis.

3rd Grade. Fatal poisoning—stopping of respiration first; of the heart next.

Earlier in the practice of local and regional anaesthesia, the number of fatalities due to the drug used, was calculated at 1 in 100,000; and

Notes on Local and Regional Anaesthesia

125

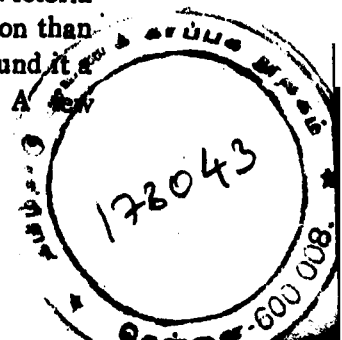
some Surgeons went so far as to say that no deaths directly attributable to the anaesthetic could be demonstrated. But with the extensive use of novocain in minor and major surgery, the number of fatalities have also increased, not to say of various, by effects of the anaesthetic which are sufficiently common. Laewen has noted nausea and collapse after the use of novocain bicarbonate solution for epidural anaesthesia. Regional anaesthesia of the Trigeminal, cervical plexus, para-vertebral block, splanchnic block, and sacral anaesthesia have on several occasions shown signs of poisoning of the central nervous system.

One of the commonest side-effects of local anaesthesia that I have noted is increase in pulse frequency. In upper abdominal surgery (exploratory laparotomy posterior gastro-jejunosomy) which I oftener do under regional than general anaesthesia, this increase of pulse has been regularly noted in quite a large number of cases. I am not sure, whether the increase of pulse is not due to the action of adrenalin; that is a possibility. I am, however, more inclined to think that it is novocaine action, because, I have found this acceleration of pulse more pronounced and more sudden, in those who use tobacco freely, in the form of smoking or chewing. I do not think that adrenalin has any special action on those who use tobacco.

Toxic symptoms of the anaesthetic used appear much more quick in deep injections, in injections into serous cavities; the nearer the anaesthetic is delivered to the central nervous system or to big blood-vessels. This is explicable on the ground of quicker absorption and action on the central nervous system.

Of all the local anaesthetics that I have used, Novocaine, also called Procaine in American Medical Literature, has given me the best results. Among the synthetic, I have used Apotheresine, Planocaine, Tutocaine and in one case Pantocaine. But leaving Pantocaine aside Novocaine still seems to me the best for all-round work. Tutocaine is more toxic than Novocaine, but a 1 : 500 solution gives as good results. So far as anaesthesia goes, as Novocaine 1 : 200. I have not used Tutocaine as often as Novocaine, and my opinion about it is, therefore, subject to correction. Mr. H. W. L. Molesworth, F.R.C.S., of the Royal Victoria Hospital, Folkestone, says that Tutocaine is quicker in its action than Novocaine, and in the strength that he uses it 1 : 500, he has found it a thoroughly reliable anaesthetic for the field-block method. A few

JL
Lon 211, N 21 MN
N 33. 15. 387



months ago, the Haverro Trading Co. were kind enough to supply me with a small quantity of Pantocaine, which I tried on a case of old Hernia, strangulated, in which I had to do so fascial plastic as well, to create a firm barrier against recurrence, and I found this anaesthetic very quick in action, and its duration of anaesthesia much longer than with Novocaine. Unfortunately the quantity of anaesthetic supplied to me was not enough to try it on another case. In Novocaine anaesthesia, it is often noted that the pain starts an hour or two after the operation, and is rather intense for a few hours. In Pantocaine anaesthesia in the patients on whom I tried it, he hardly complained of much pain even several hours after the operation. But I believe it is a more costly stuff.

Recently, I have been carefully noting the effects of Novocaine anaesthesia in upper abdominal work; and have found that as a general rule, the pulse begins to rise pretty quickly soon after the solution is injected deeply under the muscles for field block anaesthesia. Supposing that the patient starts with a pulse of 80, by the time the field block is finished, his pulse runs up to 120 or higher. The opening of the abdomen still raises the pulse; and as I am generally in the habit of injecting the peritonem from within, and sometimes of injecting the root of the mesentery, I have often found the patient showing a pulse of 130—140 while the operation is going on. In all these cases, the patient is prepared with a hypodermic of morphia and atropine an hour before the operation. In some cases, in which I have had to give a few whiffs of Chloroform, I have found the pulse dropping back to 90 thereabouts, and so I am under the impression that the increase of pulse in a large number of cases, may be due purely to nervous excitement. Very lately, I have had one case—a woman—feeling decidedly sick. I am very gentle in local anaesthesia work, and I do not think in this case, the sickness was due to dragging on the viscera. Sweating is quite common, I always have an assistant to closely watch the pulse and general condition of the patient; and have got into the habit of disregarding even a pulse of 140, and proceed with the operation to the finish, if otherwise the patient is in a satisfactory condition. I have occasionally flooded the peritoneum with a weak solution of the anaesthetic, with no untoward effects. But I am still shy of deep injection of nerves near the cerebro-spinal axis, as I have seen more cases with toxic symptoms in such anaesthesia than elsewhere, in the famous clinic of Prof. Kroeing at the University of Wurzburg.

Prevention of Toxic symptoms:—The first thing to realise is that Novocaine is not an innocuous local anaesthetic, and symptoms of poisoning must be expected to arise when it is very largely used, though a judicious use of the drug may prevent sad surprises. In this connection, a few remarks on spinal anaesthesia may not be out of place. In order to estimate the toxicity of novocain in this method of anaesthesia, one must be guided by the results of experienced Surgeons, who use it on a very large scale. I have often heard the remark, that "at present we use only spinal anaesthesia in our abdominal and lower extremity surgery" by some youthful surgical enthusiasts who have used it on a hundred or two hundred cases. Prof. Kroeing of Wurzburg uses it on large scale, and his clinic is perhaps one of the biggest on the continent of Europe, where general anaesthesia is reduced to the minimum. In a series of 30,000 cases Stranss gives a mortality of 1:3000, and others give a greater mortality.

So long as novocain is used in a $\frac{1}{2}$ per cent solution; the needle kept uniformly moving during the injection; and no direct injection is made into a vein; there is considerable amount of safety in novocain. One must be very careful in injecting stronger solution, especially in the proximity of important vessels. The largest amount of novocain was injected by W. P. Siegel. 600 c.c. of a half per cent solution, para-vertebrally, and poisonous symptoms were seen. Brown thinks 250 c.c. of a $\frac{1}{2}$ per cent solution as the maximal dose. In my experience, I have found that in injections on head and neck much smaller doses should be used than in other parts of the body.

The lesser toxic manifestations of novocain may be ignored. They hardly require any treatment. If the patient complains of thirst he may be given water or coffee. If serious symptoms are seen, such as pallor, sweating, vomiting, collapse, etc., the best thing is to put a bandage round the neck to prevent too much of the drug entering the brain circulation.

Another important thing is never to operate under local novocain anaesthesia with the patient sitting up. Even for the smallest operation, the patient must be made to lie down.

Always use fresh solution.

Dextrose as a Heart Remedy.

BY EDWARD PODOLSKY, M.D.

Dextrose is one of the most widely distributed of all glucosides. It forms the chief constituent of commercial glucose, is one of the components of cane sugar and is found free in the sap of most plants as well as in the juice of a great many plants. It is also one of the normal constituents of the blood in the human body as well as many animals. There is no doubt that dextrose is the most important of all the monosaccharides.

Dextrose crystallizes with one molecule of water at ordinary temperatures; its melting point is 86°C. From concentrated solutions it crystallizes at higher temperatures in an anhydrous form, with a melting point at 146°C. Its chemical formula is $C_6H_{12}O_6$.

The value of dextrose as a source of energy to the heart muscle was perhaps first demonstrated in 1912 by Goulston who observed marked improvement in patients with advanced cardiac failure when dextrose was added to the diet. This was confirmed a little later by the experiences of Carter, Dingle and MacGregor who noted that the addition of 4 ounces daily of sugar was of distinct benefit to their heart patients.

In 1914 Theodore Budingen demonstrated the very important role that dextrose played in the metabolism of the cardiac mechanism. He advanced the theory that the finding of stored glycogen in the skeletal and cardiac muscles following the intake of large quantities of sugar assured the organism of a valuable reserve of energy in potential form to be used in time of need. He also expressed the view that dextrose therapy supplemented the action of digitalis.

Budingen recommended the administration of dextrose intravenously or rectally in cases of cardiac exhaustion of unknown origin and in angina pectoris. This method was tried also by Nonnenbruch who confirmed its value. The same experience was also reported by Klewitz and Kirchheim who noted subjective improvement both in patients suffering from chronic heart failure and in anginal syndromes.

Dextrose as a Heart Remedy

129

Edwards and Page in 1924 were able to relieve arrhythmia in experimental animals by intravenous injections of dextrose. This was clinically confirmed in human subjects by Kisthinos Gomez, Leoper, Lemaire and Mougeot. At the same time Loeper and Lemaire brought forth additional evidence from clinical observation that the action of digitalis, strophanthus and quinidin was augmented by the daily administration of 50 grams of dextrose. Marvin in 1931 found dextrose to be of value in the treatment of pharyngeal cardiac dyspnoea.

Another phase of dextrose therapy in cardiac conditions was undertaken in a study by Edmunds and Cooper. They observed the effects of dextrose solution on the circulatory failure produced by the subcutaneous injection of diphtheria toxin. In those animals in which the circulatory collapse was extreme and in which the usual cardiac stimulants had very little effect, the introduction of a 10 per cent solution of dextrose by vein was followed by marked improvement in the heart and an increase in the blood pressure. They regarded dextrose medication as a life-saving measure in many instances. It was found by these investigators that they were able to save the animal's life if dextrose was injected into the vein before the heart stopped. These results were attributed to the energy provided by the dextrose.

These animal experiments were confirmed in clinical practice by Toomey. He found that in diphtheria with cardiac and circulatory failure a 20 per cent solution of dextrose intravenously, in doses of from 50 to 75 c.c. was of distinct benefit to the patient. This, he found, led to a rise in the systolic and diastolic blood pressure, decrease of cyanosis and general improvement.

Dextrose was found to be a valuable adjunct in the treatment of another form of toxic myocarditis, namely, that caused by the toxins of the pneumococcus organism. Nassau found that dextrose therapy is invaluable in supporting the weakened myocardium. By raising the blood sugar level a more ready supply of dextrose, and therefore of glycogen, is available for the labouring heart.

In angina pectoris Recht found that dextrose therapy was of decided value. According to Kossa and Erich Meyer dextrose causes a universal vaso-dilatation which counteracts the spasmodic state present

in cases of angina pectoris and in intermittent claudication. The hypoglycemia which follows the initial hyperglycemia and which is a manifestation of hyperinsulinism according to Staub and Traugott is effected by the complex pancreatic functions which consist of the production of the internal and external secretions. Due to the foregoing hyperglycemia the latter secretions maintain the vasodilatation.

Dextrose has two definite modes of action on the heart. The first is its angiotrophic action which is of particular value in angina pectoris and coronary sclerosis. The second is that the administration of large amounts of sugar permits of glycogen storage both in skeletal and heart muscles. This therapeutic property of sugar is important when one considers the physiological and pathological analogies of cardiac and skeletal muscles recently demonstrated by Kutschera. According to his views there seems to be no biochemical difference between the weakened skeletal muscle and the hypodynamic myocardium. According to Loeper and Demaire: "Sugar is the most important nutritional element of the heart it lowers the blood pressure, stimulates the liver, and kidneys, and reinforces the action of digitalis."

Recht in summarising the uses of dextrose recommends it being of value in hypodynamic heart, angina pectoris, ambulatory aortalgia. He favors the peroral administration of sugar. The patients are ordered to take for a period of two to three months three to four times a day 60 to 80 grams of dextrose dissolved in 200 c.c. weak tea or water. His aim is to get a gradual and lasting effect.

Dextrose may also be given by enema. Destruction of sugar thus administered by the bacteria of the colon is negligible, not exceeding one half to one per cent. It is best to inject a small volume at first, about two ounces or less. The quantity is then gradually increased until the upper limit of the patient's retentive capacity have been reached. Two ounces are absorbed by the rectum on the average of about an hour. At the end of this period four ounces are given and two hours are allowed for absorption. After this, if 7 or 8 ounces can be retained. The bulk should be increased but at a slower rate and the interval should be kept at four hours or longer, if there is evidence that the dose previously has not been absorbed.

The optimum concentration of dextrose for use as an enema is that which is just below the level of producing osmotic irritation. Thus a 6 per cent solution of dextrose is tolerated best and this is the strength to begin with.

In grave cases in which it is necessary to administer dextrose by vein it can be given in this manner with safety and with very little reaction if proper precautions are observed. The strength of the solutions used varies from 5 to 25 per cent pending upon the urgency of the case. The amounts given vary from 5 c.c. per kilo of body weight in the case of concentrated solutions to 20 c.c. per kilo in the cases of the more dilute solutions. Solutions for intravenous use should always be freshly prepared. Solution which are not crystal clear should be filtered before sterilization. Sterilization is effected by boiling or preferably by autoclaving under 15 pounds pressure for 20 minutes. The injections, particularly those of the more concentrated solutions, should be made very slowly and the temperature of the solution should not be allowed to fall below body temperature during the injection. Long connecting tubes between the dextrose solution and the vein are objectionable in allowing the solution to cool down.

In less urgent cases intramuscular injections may be used. A 10 per cent solution of dextrose may be administered with safety intramuscularly. The solutions are prepared as for intravenous injection. The most suitable place for intramuscular injection is into the muscles of the thighs, and not into the gluteal region.

Where rapid absorption of glucose is not required the subcutaneous route may be used. Subcutaneous injections of 10 per cent dextrose may be given with safety. Whether the dextrose solution, to be used by enema or injection, should be made up with normal salt solution or with distilled water depends upon whether there is a deficiency of sodium chloride in the system. In inflammatory conditions such as diphtheria and pneumonia it is best to make up the solution with normal salt solution.

In conclusion a few words should be said about the general physiological effects of dextrose. Dextrose spares protein and lessens tissue destruction in starvation and in the presence of infections, prevents toxæmias of various origins, promotes diuresis and when given intravenously increases temporarily depleted blood volume. It is a direct food for all muscular systems, particularly the heart.

Abstracts.

Studies on the Function of the Intestinal Musculature.

I. *The normal movements of the small intestine and the relations between the action of the longitudinal and circular muscle fibres in those movements.* By B. T. Krishnan, Department of Physiology, Medical College, Madras. (Quarterly Journal of Experimental Physiology, 1933, Vol. xxii, No. 1, pp. 57—63.)

The normal movements of the small intestine observed when the abdomen of an anaesthetised animal is opened under suitable conditions, are of three types: (1) rhythmical segmentation, (2) pendular movements and (3) Peristalsis.

1. *Rhythmical Segmentation* is characterised by rhythmical contractions occurring in loops of bowel distended with food material, but causing no forward movement of the contents. It has been the view generally held and stated in most text-books that, in segmenting movements, the longitudinal and circular muscle fibres of the wall contract and relax together. During a research on intestinal muscle, carried out in 1929-30, the writer had the opportunity to observe the movements of the intestine in about 60 animals (all cats) and was always impressed with the fact that there is no synchronous action of the two muscular coats. This was graphically demonstrated by recording the simultaneous action of the two muscular coats of the intestinal wall by a modified enterograph method. The records show that when there is contraction of the circular muscle layer of a segment of bowel, there is relaxation of the corresponding longitudinal muscle layer and *vica versa*. It is concluded that a reciprocal innervation exists in the two muscle layers of the intestinal wall, resulting in an inhibition of one layer while the other contracts, identical with that found by Sherrington in the muscles of the limbs and that which exists in the muscles of the iris.

2. *Pendulum movements.*—In these movements the contents seem to be thrown about from one end to the other of the loop affected. Sometimes the wall of the bowel is drawn over the contents. These movements are considered to be only longitudinal muscle phenomena with

a reciprocal effect of inhibition on the circular muscle, so that loops of bowel affected become shorter and wider and sway about to facilitate the to and fro movements of the contents.

3. *Peristalsis.*—This is a feature constantly present in all animals to drive the contents from the oral end to the caudal end of the bowel at varying speeds. As regards the relations between the action of the two muscle layers in a peristaltic movement, it was the view of Bayliss and Starling that both the layers were affected in the contraction above and the relaxation below the site of stimulation.

After careful observation in a number of animals, the writer has come to the conclusion that the nature of peristalsis depends on a reciprocal innervation in the two muscular coats. During a peristaltic movement, when the circular muscle in a segment contracts, there is a reciprocal inhibition of the longitudinal layer in that segment; simultaneously there is increased tonus and contraction of the longitudinal muscle in the segment immediately below with relaxation of the corresponding circular muscle. This is demonstrated graphically by modified enterograph method and balloon method. A wave of longitudinal muscle contraction with relaxation of the circular muscle runs ahead of a wave of circular muscle contraction with relaxation of the corresponding longitudinal muscle. The "law" of Bayliss and Starling is applicable only to the action of the circular muscle layer.

Editorial.

THE ALL-INDIA MEDICAL COUNCIL.

The passage of the All-India Medical Council Bill by the Imperial Legislative Assembly is a definite landmark in the history of the evolution of the medical profession in this country. Great as have been the controversies prior to the passing of this measure, we are gratified and extremely thankful to the Assembly that they have put on the Legislative anvil a measure that will go far to improve the medical profession in this country and to safeguard the best interests of Medical Education. It would serve no useful purpose at this stage to re-open the unfortunate history of the controversies which raged violently three years ago round the question of the recognition of Medical Degrees in this country. Suffice it to say that the medical profession and the Universities in general, took up the only attitude that they could have taken, consistent with their own self-respect and the position that they hold in the country; and we are glad that, unfettered and unmoved by counsels which were not always of the most disinterested kind, the authorities concerned took up the question of the passing of this measure. We are not of those who feel that the passage of the All-India Medical Council Bill ends the chapter; but there is one thing that must be said, and that is, now that such a bill has been passed, we do hope that every effort will be made to see that in the actual working of the Bill, the highest interests of Medical Education in this country are safeguarded.

The provisions of the Bill make it obvious that a good deal of work can be done. After repeated negotiations and conferences, the Assembly has at last passed a measure

giving a representation to the Universities, to the Medical Profession and to the Governments of the Provinces concerned. According to the Bill, one representative will be elected from the Faculty of Medicine by the Universities concerned, one representative will be elected by the Registered Graduates on the Provincial Register, and one representative will be nominated by the Government of the Province. Besides these, there will be three representatives from the Government of India, and the first President is to be nominated for a term of four years by the Viceroy and Governor-General. We have no doubt that the responsibilities which the various elective bodies have, will be discharged to the fullest satisfaction; and we believe that a body constituted as this will be, by those who have actual teaching experience, with a knowledge of the requirements of Medical Education in this and other countries, will so shape the policy of Medical Education that there can be no gainsaying that Universities in India will have no cause to feel any sense of diffidence or inferiority as compared with similar institutions elsewhere.

The problems of Medical Education are now attracting the attention of all educational authorities in this country and elsewhere. It is clearly realised in Great Britain, for instance, that in spite of whatever efforts the General Medical Council has so far made, education is lacking in several respects, and a determined effort to improve the quality of teaching has been made and is being made. We need only refer to the informal discussions that have been going on in the press, the illuminating articles that have appeared in the "Lancet" and the latest report that is expected from a committee appointed, representative of the Universities of London, Cambridge, Oxford and the Royal Colleges.

One thing, however, is certain, that Medical Education in any country should be suited to the requirements of the

country; but there are particular aspects of Medical Education which have got to be emphasised, depending upon the requirement of the country. We in India, for instance, have legitimately to emphasise the needs of a tropical country—tropical medicine, tropical hygiene, tropical surgery, and last but not least, the ever growing problems of obstetrics and gynaecology, maternity and child welfare, have all got to be faced by any constituted authority interested in producing the right type of practitioner. We hope that the institution of the All-India Medical Council will draw together in closer co-operation and harmony the different Universities in India, and that the Council will be in a position to command the confidence of the Universities and the general public. Much will depend upon the disinterested and single-minded devotion to duty of all the Members of the Council; and we have no doubt that it will be forthcoming in plenty from the members who will be elected. They will realise that as the first Members of the All-India Medical Council, they have got a great burden to bear and a great responsibility to discharge; but we can only hope they will do it in the best interests of the profession, unmindful of all other consideration.

One remark, however, we may be permitted to add. The Bill, as now passed, lays it down that recognition of Degrees approved by the General Medical Council will be given for the next four years, and thereafter recognition will be on a basis of reciprocity. We feel sure, now that the All-India Medical Council is a *fait accompli*, and that it is taking up the question of Medical Education in this country, the General Medical Council will itself realise that the wisest course is for co-operation, for sympathetic understanding and for an effort to realise the opposite point of view. We have no inclination, as we said before, to recapitulate old controversies; but we maintain that it will be in the highest

interests of the profession and of the harmonious co-operation that should exist between the distinguished members of the profession in this country and in Great Britain, that an understanding should be arrived at between the General Medical Council and the All-India Medical Council, and we hope that there will be no necessity for any strained relations to develop hereafter. Interested counsels may be available on both sides to keep apart these two great bodies; but we believe the common-sense, the good will and the spirit of sweet reasonableness of the leading members of the profession on both sides will prevail and that last chapter will be a forgotten chapter in the history of the relationship of the medical profession in these two countries.

We wish all success to the new All-India Medical Council, and we assure them of our hearty co-operation in all their legitimate activities.

Association Notes.

A clinical meeting of the Association was held on Saturday the 5th August 1933 in the Government Ophthalmic Hospital, Egmore.

The Executive Committee met after the clinical meeting and requested the President to interview the Surgeon-General with a view to urge that the memorandum was sent to Government.

A Clinical meeting of the Association was held on Thursday the 31st August 1933 at the Government Royapuram Hospital.

The Executive Committee met on the 24th September and on the 8th of October 1933 to consider what action is necessary since no reply was received from the Surgeon-General to the memorandum submitted by them in June 1933. The Committee decided that individual memorials should be sent by all Civil Assistant Surgeons through proper channel. The Secretary was authorised to have the memorandum which was drawn up, printed and circulated to all members of the Madras Medical Service in the Grade of Civil Assistant Surgeons.

THE Burma Medical Times.

The only Medical Journal in Burma.

The Best Medium for Advertisement.

	Rs.	A.
Annual Subscription, Burma & India,	5	0
Do. do. Foreign	6	0
Single Copy ...	0	8

EDITED BY

Dr. T. D. HARI RAO.

London Office :—

67, FLEET STREET, E. C. 4.

Rangoon Office :—

94, LEWIS STREET, RANGOON.

The only oldest Medical Journal in Northern India.

(Established 1903.)

THE PRACTICAL MEDICINE

This Monthly Medical Journal of great practical value enjoys an exceptionally wide circulation among the rank and file of active practitioners in every quarter of India, Burma, and Ceylon and other countries where English language is spoken. It is eagerly awaited by its numerous readers, and is read from cover to cover. Its original articles, selections and reprints are a great help to busy practitioners, it economises your expenditure for periodicals, it saves your precious time, it gives you cream of the world's medical literature and its query department is of great use to subscribers in difficult and complicated cases.

Subscription : Rs. 3-8 per year.

Specimen copy free on request.

Best medium for advertising anything and everything of use to the medical profession.

Publishers :

PRACTICAL MEDICINE,
Nai Sarak, Delhi.

THE Medical Review of Reviews.

Sixth year commenced from
January 1931.

It numbers amongst its contributors, able writers and acknowledged authorities. Its tone is bright, fearless and strictly impartial. It belongs to no clique or party, and to the CITY as well as the VILLAGE PRACTITIONER it is of equal interest.

Subscriptions, Rs. 5
(post free) per annum.

Published monthly.

Subscriptions from any month.

*Specimen copies to the Medical Profession
sent post free on application.*

318, BALLYGUNJ AVENUE,
P. O. KALIGHAT, CALCUTTA.

BULLETIN

OF THE

SOUTH INDIAN MEDICAL UNION

IS THE ACCREDITED ORGAN

OF THE

INDEPENDENT MEDICAL PROFESSION

OF

SOUTH INDIA.

REACH THEM THROUGH THE BULLETIN

For Rates and Particulars, write to :—

PUBLICITY SECTION,
SOUTH INDIAN MEDICAL UNION,

16, Kutchery Road, Mylapore,
MADRAS.

When writing to advertisers, please mention The Madras Medical Journal.

Established 1906.

*The most widely circulated Medical Journal in
India, Burma, and the Far East.*

**THE
INDIAN MEDICAL JOURNAL**
THE ORGAN OF THE ALL-INDIA MEDICAL
LICENTIATES' ASSOCIATION.

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

EDITED BY

Dr. Amulya D. Mukharji.

Published monthly at Calcutta, by the All-India
Medical Licentiates' Association.

Annual Subscription ... Rs. 6
Bona-fide Medical Students ... Rs. 3

To members of A.I.M.L. Association Free (To
pay only Rs. 4 Annual Subscription with Rs. 2.
Admission Fee on Enlistment.)

For rate cards, etc., write to

THE MANAGER,
27-C, Upper Circular Road, Calcutta.
'Phone 2995 Barrabazar.

INDIAN MEDICAL RECORD

OUR SPECIAL NUMBERS.

ARE all that could be desired containing up-to-
date information on the subject treated therein. No
medical man should be without these, which are
indispensable to them as ready reference books.

1. VENEREAL DISEASES NUMBER, 1927
NOVEMBER ... Rs. 1
2. SPECIAL TUBERCULOSIS NUMBER,
DECEMBER 1920 ... " 2
3. SPECIAL TUBERCULOSIS NUMBER,
JULY 1925 ... " 2
4. SPECIAL KALA-AZAR NUMBER IN
2 Vols. AUGUST AND SEPTEMBER,
1926 ... " 3
5. SPECIAL LEPROSY NUMBER, SEPT-
BER, 1923 ... " 2
6. GOLDEN JUBILEE NUMBER, FEBRUARY
1930 ... " 2

These six series together Rs. 8 Postage extra.

Combined offer:—The annual subscription of the
Indian Medical Record is Rs. 7-8 but those re-
mitting their advance subscription, period of sub-
scription commencing any month, shall have the
journal for one year and all the above numbers for
Rs. 12-8 only.

THE INDIAN MEDICAL RECORD,

2, Horokumar Tagore Square, Calcutta.
Tel:—1090, Cal. Tele: Tropical, Calcutta.

Radium, Radiology and Electrotherapy.

SPECIAL ISSUE OF THE ANTISEPTIC IN JULY 1931.

The above special issue of the Antiseptic will be the third of the series that has been
decided to bring out from time to time. The last two of them, viz., Silver Jubilee Issue
(April 1929, Price Rs. 2) and Eye, Nose and Throat number (October 1930, Price
Rs. 2), have been much appreciated and the forthcoming one will maintain the high
level of its predecessors, several prominent Radiologists having promised articles of much
interests to the specialists and the general practitioners alike. Subscribers to the
Antiseptic will get the copy of the special issue without extra charge in due course. To
non-subscribers the price of the special issue will be Rs. 2 a copy, and orders could be
registered now. So if you are not already a subscriber to the Antiseptic please remit
your subscription to-day to the undersigned and get the special issue free. Subscription
to the Antiseptic may begin from any period. The 28th Vol. of the Journal has begun
with the January 1931 issue. A few back copies of 1931 and the last two special issues are
available. Annual inland subscription to the Antiseptic is Rs. 5, post paid, and Foreign

particulars of the last two special issues and a specimen copy of an ordinary
issue of the Antiseptic will be sent free on application.

MANAGER,

The Antiseptic.

Post Box No. 166, MADRAS.

P. S.—Contributions to the special issue are invited.

When writing to advertisers, please mention The Madras Medical Journal.

103043
(Estd. 1904)
P. S.—Contributions to the special issue are invited.
When writing to advertisers, please mention The Madras Medical Journal.
JL
1 on 21, N 21MM N 33-15-34