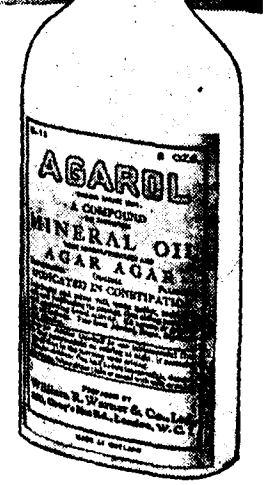
During Pregnancy



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ORGINAL ARTICLES

Small-Pox*

With special reference to cases as seen amongst patients in the Small-pox Ward of the Campbell Hospital, Calcutta

BY

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SMALL-POX (Variola) is an acute infectious disease characterised by an eruption of papules, vesicles and pustules, which upon healing produce typical scars on the skin of varying depth and extent. The causative factor of the disease is some unknown filtrable virus. The disease is highly communicable and can only be controlled by vaccination. The exact nature of the exciting factor of small-pox is still undetermined. Certain vaccine bodies, found chiefly in the epithelial cells of the skin and mucus membrane in specific lesions have been identified by some to be protozoa, responsible for causing the disease. But most of the investigators in this line believe that the vaccine bodies are the result of the irritation by the virus toxin. The diseases, small-pox, cow-pox, horse-pox, sheep-pox, if not identical are closely allied. It has been

* Specially contributed to "The Antiseptic",

clearly demonstrated that at least cow-pox and small-pox are very nearly related, if not essentially the same disease. Experimentally it is possible to change small-pox virus into cow-pox either by directly inoculating calves from a case of small-pox or by first vaccinating a monkey. Cow-pox virus derived from small-pox virus cannot change back, it is permanently attenuated.

Incidence of Small-pox. —Small-pox was for many centuries one of the greatest scourges of the human race. It was more common than measles and much more fatal. It is believed that every tenth death was due to small-pox. More than 500,000 people are known to have died in each year. Formerly, small-pox was a children's disease but since vaccination has protected the child, it has become somewhat more prevalent among adults who have not been vaccinated at all or who have received but one vaccination. No infectious disease shows a more complete independence of conditions such as race, climate, soil, age, sex, occupation and sanitary surroundings than does small-pox. It thrives wherever the infection is carried and whenever it finds susceptible persons. None is naturally immune, one attack ordinarily protects against another but not necessarily; second or even third attacks are known. Small-pox for the second time has been seen in a few of the cases in our hospital. The disease occurs in epidemics of varying extent and severity, which often occurs in waves. The reason for this is largely because of the great number of persons who after an outbreak have either had the disease or been vaccinated and have been rendered immune. Then when the scare is over, the people become careless, vaccination is neglected and greater proportion of the population remains unprotected Evidently there seem to be different strains of small-pox. In the same community cases from a first focus will be on the whole mild while those from a second focus will be quite severe. The endemic disease is usually of a milder type than the imported.

Periodicity and Virulence. —Epidemics tend to happen every 6th year, mortality is highest during the peak of the epidemic. With the onset of S. E. Monsoon it subsides in Bengal and Assam, incidence is greater in humid area. In Madras, with monsoon it actually increases. Diminution of the rains in some years is followed by increased incidence of small-pox in succeeding years. Temperature has got nothing to do with the incidence of small-pox in that year, provided that, that year is not an epidemic year and there have been heavy rains for 4 or 5 years.

Transmission question in Small-pox. —The disease is probably transmitted by more or less direct contact although the exact methods of its conveyance are still unknown. The contagion enters the body by the upper respiratory tract and is apparently absorbed from the mucus membrane without any visible lesion locally. No symptoms or signs are manifest during the growth of the virus and the simultaneous production of toxin in the organism until there has been sufficient development at the end of about 12 days to cause the onset of clinical symptoms. The infecting agent is present in the skin in all its stages and in the lesions of the mucus membranes, and also in the body secretions including the urine and the faeces. The disease is contagious before the eruption appears, possibly during the last day or two of the incubation period, but the patients are certainly markedly so during all stages of the actual disease, until all crusts have disappeared. The bodies of those who have died of the disease are highly contagious even before the development of the eruption Contagion may be carried by healthy carriers, by clothing and other contaminated objects, and by particles of moisture from the body secretions or of moist or dried scabs. Though the virus is air borne, radius of infection is probably limited to the immediate neighbourhood of the patient. There is no evidence to show that the contagion is carried by the air to any distance or outside the sick room. Flies and other insects may act as mechanical carriers of the disease.

Pathology of Small-Pox. —The virus of small-pox evidently elaborates a toxin which gives rise to the severe constitutional symptoms and fever, especially of the invasive stage; this toxin also has a vasomotor and angiolytic effect as evidenced by the initial patechial rashes and by the haemorrhagic forms of the disease. The entry of the virus into the blood stream must follow closely on the toxic invasion (Blaxall). Vaccinia virus after inoculation by any route has a tendency to become widely distributed in any tissue of the body and has been found in the blood of children several days after vaccination. The small-pox virus and its toxin act on the prickle cells of the corium and cause fibrinoid degeneration and softening with a net-like character of the substance formed in this degenerative process as well as a swelling and œdema of the cell bodies. Cavity formation takes place, which spreads peripherally with irregularly broken septa, responsible for making the pock multilocular. On cutting a section of an early vesicle it is found to be typically fan-shaped, with the handle of the fan resting on the deeper layers of the corium. There

completely but merge into the next eruptive stage of the disease and this phenomenon is frequently seen in the haemorrhagic forms of the disease.

Period of eruption.—Usually on the fourth day of the illness, the eruption first appears in the skin: particularly on the forehead, temples and around the wrists. The rash rapidly spreads to the rest of the head, to the forearms, hands and then in succession to the back, arms, breasts and finally to the legs and feet taking perhaps two or three days to complete its distribution. At any given small area, all the lesions appear at approximately the same time. The rashes are centrifugal in distribution because they are most marked on the head and beyond the elbows and knees.

The lesions are more thickly distributed on the shoulders and chest than on the lower part of the trunk and more on the extensor surfaces than on the flexors. The rashes are more numerous on the back than on the front of the chest. They are usually and especially numerous at any area of irritation or previous inflammation of the skin. No matter how modified and sparse the rashes, they never miss the face.

In the female, menstrual-like bleeding begins at once in many of the patients as noticed in our hospital, and although this phenomenon is often associated with other febrile conditions, it is particularly characteristic of variola. Thus one should not at once jump to make a diagnosis of haemorrhagic small-pox because the patient is getting uterine bleeding.

The evolution of the typical eruption of variola is unique, its peculiar interest resting on the regularity with which it passes from one stage to another at certain definite intervals, such is never seen in any other acute exanthematous disease.

The eruption appears about the third day of the disease as small red macules, which in a few hours time develop into papules about the size of a small pea, hard and shotty to the touch; when the skin over the lesions are palpated, it gives a peculiar sensation as if there are so many pearls embedded under the skin. On the fourth or fifth day (second day of eruption), the papules develop a conical point, which is the beginning of vesiculation. During the next three days the vesicle gradually fills, increases in size until it becomes circular, tense, umbellicated owing to the development of a central depression. It reaches maturity on the eighth or ninth day (sixth or seventh day of eruption). The cellular contents now become turbid owing to the accumulation of pus, the umbellication disappears and the lesions again become

rounded or dome-shaped. The inside of the lesions are multilocular because on pricking and pressing a rash, it does not collapse completely as is the case with the rash of Chicken-pox. On the ninth day (sixth or seventh day of eruption), the typical variola pustule is seen. A red ring or red areola develops around the base of the pustule, the confluence of which, when the eruption is profuse and thickly distributed, leads to a typical œdema of the face, especially around the eyelids, nostrils, lips and mouth. It is at this stage that the characteristic secondary rise of temperature sets in and during which the suffering of the patient is most intense. In uncomplicated cases this fever only lasts a day or two and on the 10th or 11th day of the disease (8th or 9th day of eruption) the pustules begin to dry up, the temperature falls, reaching to normal at the end of the second or the beginning of the third week. The drying up or desiccation process begins on the face and proceeds in the same order in which the eruption appeared. By the 14th or 15th day of the disease, desquamation will be well-advanced on the face. The eruption may be present in its different stages in various parts of the body but the different stages are never seen side by side on any particular site of the body or in other words unlike the chicken-pox eruption, that of small-pox does not appear in crops, though it may resemble chicken-pox, in that some of the lesions may abort in the vesicular stage. During the desiccating stage the skin around the lesions especially on the limbs may become inflamed and large, flat pemphigus-like bullae develop. These are filled with a thin yellowish fluid and as they rupture they leave an ulcerous surface in which crusts form. They cause to the patient intense discomfort and irritation and the temperature is again raised due to septic absorption from the septic contents of the blisters.

(To be continued.)

Tetanus: Immunization

H. H. Brown shows that injection of tetanus alum-toxoid confers complete and permanent immunity in the vast majority of cases. He suggests that in the Army two doses should be given at an interval of three months, and a third on being called upon for foreign service: this last might be combined with anti-typhoid immunization.—*Brit. med. J., Mar. 6, '37, p. 494.—The Prescriber.*

Food in Health and Disease*

BY

Harendra Nath Bagchi, M.B.,

Deputy Superintendent,
Mental Observation Ward, Bhowanipur.

Nutrition and Health.—"Every fresh enquiry in town or country reveals either potent or latent malnutrition" is the summary of the report by the League of Nations on the Problem of Nutrition (Geneva, June 24th, 1936).

Chemical elements in human body.—There are 24 elements present in human body and Oxygen, Hydrogen and Carbon are the three great force producers and tissue builders of the body. These elements are present in the structure of our body in the form of chemical compounds. Besides the inorganic substances mentioned above animal life requires organic substances from plants and animals for nutrition.

Nutrition involves the following metabolic processes, *viz.*:—

(1) Secretion of digestive juices upon food in the alimentary tract to aid digestion.

(2) Process of absorption of digested food into lymphatics and blood and their distribution to the tissues by the circulation.

(3) The elimination of waste material from the system.

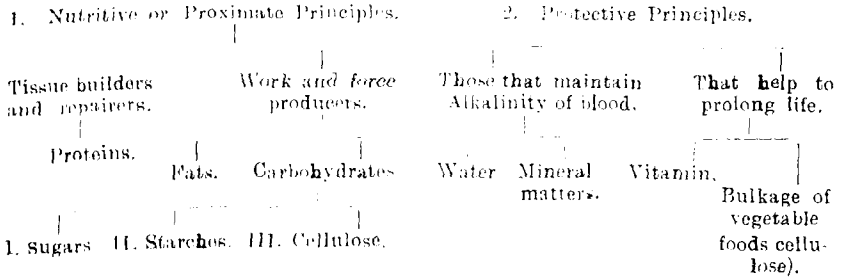
Tissue Builders.—Such elements and salts in our food as Sulphur, Phosphorus, Iron, Sodium, Potassium and Calcium Phosphates which stimulate bone formation are called 'deficiency diets' as their deficiency in the food of a growing child will result in the softening of the bones. Such foods as eggs, dried beans, potatoes which contain an excess of Iron salts if not administered will cause a change of the haemoglobin content of the red blood cells from diminished oxidation and anaemia will result. The absence of Sodium Chloride interferes with absorption as well as alters the density and reactions of the different fluids.

Food Classifications:—1. Those that are tissue formers. 2. Those that are work and heat producers.

1. Tissue formers are: (I) Protein; (2) Mineral matters: (3) Water.

* Specially contributed to "The Antiseptic".

2. Work and heat producers are: (1) Protein; (2) Carbohydrates; (3) Fats: (4) Minerals: (5) Water.



Among the tissue builders, we have protein or Nitrogenous food. Albumin of egg, casein of milk, legumin of pulses, gluten of wheat are examples.

Functions of protein.—They are the tissue builders and repairers, and they supply our body with all digestive juices. Indirectly protein is the heat producer of our body.

Carbohydrates.—All vegetable foods are of this class. It is subdivided into:

I. Pure starches. Sagoo, Barley, Arrowroot are examples.

II. Sugars which again are subdivided into: (*a*) Dextrose, Glucose or Grape Sugar; (*b*) Levulose or Fruit Sugar; (*c*) Cane Sugar *e. g.* Honey etc. or Sucrose; (*d*) Lactose or Milk Sugar; (*e*) Maltose: and

III. Cellulose or bulkage of vegetable foods.

Fats.—Ghee, Butter, Oil etc.

Functions.—They are the work and heat producers; they also increase the fat in our body, Mineral matters or Salts: 6% of our bodily composition is mineral matters and we derive them from both animal and vegetable foods.

Functions:—(I) They are the tissue builders and repairers: (II) they help digestion in forming digestive juices of the body and (III) they maintain the alkalinity of our blood.

Calcium.—Builds strong teeth and bones. It helps in the coagulation of the blood. It regulates the heart beat, muscle and nerve action. Its absence causes rickets. It subsists in milk cheese, curds, soyabeans, leafy vegetables, cabbages, lettuce, carrots, turnips, oranges, in the yolk of eggs and also in rice and wheat.

Phosphorus.—Builds teeth and helps to prevent rickets. It maintains the alkalinity of blood and the acidity of urine. It helps in the metabolism of fats and carbohydrates. It regulates nerve action.

It is present in milk, rice, whole grain wheat, cheese, beans, eggs, fish, meat, peas, potatoes, almond, oranges etc.

Iron.—It is a necessary part of blood and prevents anæmia. It is activated by copper with magnesium; it helps adrenalin and pituitrin glands. It is to be found in liver, eggs, milk, lean beef, leafy vegetables, lettuce, spinach, potatoes, tomatoes and dried fruits etc.

Iodine.—It helps to regulate metabolism especially thyroid metabolism and helps to prevent goitre. Its absence causes weakening of the body. It is to be found in various substances such as eggs, milk, butter, orange, apples, wheat, peas, leafy vegetables, salad, tomatoes, cauliflowers, animal livers, cocoa etc.

To supply daily requirements of mineral matters, use —

Raw milk (unchurned) about a pint a day, one egg, meat or fish about 4 oz. daily, dried beans, a few potatoes, a serving of either leafy or raw vegetables, a serving of whole grain bread, two servings of fruit.

Vitamins.—Groups of substances present in various foods and indispensable to health and growth. Although their composition and mode of action are not yet fully understood, yet a number of them have been differentiated by their chemical and physiological actions. Curiously enough they are only formed by vegetables. Animals get them from the vegetables they eat. Vitamins are destroyed:—

(1) by heat (only vitamin B and vitamin C are not destroyed in ordinary heat)

(2) when cooked in an open vessel in the presence of air or cooked in presence of alkalies;

(3) if rice is washed by friction and fan (foam) is rejected after cooking;

(4) in old over-cooked state in tinned or twice cooked food. The low standard of health in individuals without any especial malady is partly attributable to nutritional errors. Pregnant women and children require increased consumption of vitamins and minerals such as Calcium and Iron. Insufficiency of vitamins accounts for much of the short stature and proneness to disease observed in Bengal.

To meet the daily requirements of vitamins we should take milk, butter, egg, a serving of leafy vegetables (celery, lettuce etc.) raw fruit, whole grain bread.

The following fruits are to be recommended:—

(1) Orange, Lemon, Papaya, Pear, Plum, Tomato, (ripe), Raisin, Banana, Apple, Custard apple, Dates, Grape, Fruit, Mango, Bael, etc.

The following are recommended:—

Vegetables.

	Protein.	Fat.	Carbo-hydrates.	Calories.	Vitamins. A.	B.	C.	D.	E.	Units of Vit. A (in 100 grm)	Units of Vit. B1 (in 100 grm)	Units of Vit. B2 (in 100 grm)
Alu (Potato) ...	.7	.04	8.15	36	—	—	—	—	—	—	40	35
Bandha Kapi (Cabbage)	.39	.03	1.27	7	—	—	—	—	—	—	25	0
Cauliflower ...	.54	.06	1.67	9	—	—	—	—	—	—	—	—
Begun (Egg fruit) ...	—	—	—	—	—	—	—	—	—	—	20	100
Bean (Seem) ...	2.66	.11	6.4	37	—	—	—	—	—	—	—	—
Dhenros (Lady's finger)	—	—	—	—	—	—	—	—	—	—	28	2
Garlick (Rasoon) ...	1.92	.03	7.9	40	—	—	—	—	—	—	—	—
Onion ...	.37	.03	3.06	14	V. L.	—	—	—	—	—	—	—
Gima ...	—	—	—	—	—	—	—	—	—	—	—	—
Peasgreen (Kalaisuti) ...	2	1	4.5	40	—	—	—	—	—	—	25	0
Hincha ...	—	—	—	—	—	—	—	V. L.	—	—	—	—
Lettuce green (Salad) ...	.3	.06	.5	4	—	—	—	—	—	—	28	10
Kancha-Kala ...	—	—	—	—	—	—	—	—	—	—	—	—
Spinach ...	.5	.06	.8	6	—	—	—	—	—	—	4	8
Karalla ...	—	—	—	—	—	—	—	V. L.	—	—	—	—
Beet-root ...	.34	.03	1.75	9	V. L.	—	—	—	—	—	—	—
Kalmisak ...	—	—	—	—	—	—	—	—	—	—	20	16
Tomato ...	.2	.03	1.27	6	—	—	—	—	—	—	—	—
Kumrah ...	—	—	—	—	—	—	—	—	—	—	20	2
Kumrah Sak ...	—	—	—	—	—	—	—	—	—	—	10	2
Mankochoo (Arum) ...	—	—	—	—	—	—	—	—	—	—	8	20
Palong Sak ...	—	—	—	—	—	—	—	—	—	—	20	20
Patol ...	—	—	—	—	—	—	—	—	—	—	20	20
Palta ...	—	—	—	—	—	—	—	—	—	—	10	20
Pooin Sak ...	—	—	—	—	—	—	—	—	—	—	12	28
Rangha Alu ...	—	—	—	—	—	—	—	—	—	—	40	10
Shank Alu ...	—	—	—	—	—	—	—	—	—	—	12	10
											35	100

Pulses or Cereals

Uchcha ...	—	—	—	—	—	—	—	—	—	—	4	10
Dal (average) ...	6.5	.99	16	100	—	—	—	—	—	—	—	—
Chhala-dal ...	—	—	—	—	—	—	—	—	—	66	15	66
Kancha Mug ...	—	—	—	—	—	—	—	—	—	30	10	16
Masuri dal ...	—	—	—	—	—	—	—	—	—	45	40	25
Mator ...	—	—	—	—	—	—	—	—	—	45	40	80
Sona Mung ...	—	—	—	—	—	—	—	—	—	15	15	0

Fresh Fruits.

Pomegranate (Bodanu)	.03	tr.	2.19	10	—	—	—	—	—	—	—	—
Apple ...	.09	.06	3.5	15	—	—	—	—	—	—	—	—
Banana ...	.04	.03	2.26	11	—	—	—	V. L.	—	—	—	—
Pineapple ...	.11	.09	2.7	12	—	—	—	—	—	—	—	—
Jamrul ...	—	—	—	—	—	—	—	—	—	—	—	—
Cocoanut kernel ...	1.61	11.31	7.9	167	—	—	—	—	—	—	28	10
Kala-jam ...	—	—	—	—	—	—	—	—	—	—	—	—
Grape ...	.17	.03	3.03	17	—	—	V. L.	—	—	—	2	2
Kanthal (Jack fruit) ...	—	—	—	—	—	—	—	—	—	—	—	—
Lemon ...	.14	.14	.88	5	—	—	—	—	—	—	1	8
Khormuj ...	—	—	—	—	—	—	—	—	—	—	—	—
Orange ...	.25	.03	2.6	12	—	—	—	—	—	—	6	10
Lichoo (lichi) ...	—	—	—	—	—	—	—	—	—	—	—	—
Papaya ...	.16	—	.10	1	—	—	—	—	—	—	14	—
Mango (ordinary) ...	.04	.22	5.2	23	—	—	—	—	—	—	—	—
Mango (Bombay) ...	—	—	—	—	—	—	—	—	—	—	—	—
Water-nut (Panifal) ...	.03	tr.	5.7	21	—	—	—	—	—	20	16	35
Mango (Langra) ...	—	—	—	—	—	—	—	—	—	—	—	—
Mango (Fozli) ...	—	—	—	—	—	—	—	—	—	20	33	30
Pear ...	.09	.03	2.29	10	—	—	—	—	—	30	20	20
										—	—	—

N, B.: + + + mean rich in; + + mean moderately rich in; + means poor in; *V. L.* = means very little; *tr.* means trace.

Milk.—Milk is an opaque white fluid with a characteristic odour and sweetish taste. Its sp. gr. varies between 1028 and 1034. The ph. 6.6—6.8. Milk when exposed to the air rapidly undergoes changes in consequence of infection by micro-organisms (*i.e.* lactic acid forms by B. lacticus).

Milk is a perfect food for infants. Colostrum is the first fluid that comes from the human breast and contains a large quantity of fat and salts and so exerts a beneficial effect on the infant by clearing away the meconium. A comparative table of milk from different animals is appended below:—

		Human	Vitamin A	B	C	Cow.	Vitamin A	B	C	D	E	Buffalo.	Vitamin A	B	C	D	She Ass.	She Goat.	Vitamin A	B	C	D	Mare.
Specific Gravity	...	1027				1032						1032					1026	1032					90.58p.c.
Water	...	87 p.c.				87.5 p.c.						81.4 p.c.					89.5 p.c.	85.6 p.c.					9.12,, (Solids)
Protein	...	1.6 ,,				3.5 ,,						6 ,,					2.2 ,,	4.3 ,,					
(*a*) Caseinogen	...	1.2 ,,				3.02,,																	
(*b*) Lactalbumin	...	0.5 ,,				0.53,,																	
Fat	...	4 ,,				3.6 ,,						7.1 ,,					6 ,,	4.5 ,,					1.14 ,,
Sugar (Lactose)	...	6 ,,				5 ,,						4 ,,					6 ,,	4.5 ,,					5.87 ,,
Salts	...	0.3 ,,				0.7 ,,						0.8 ,,					0.5 ,,	0.7 ,,					

In human milk Casein and Lactalbumin exist in the ratio of 2 : 1 and in Cow's milk as 5 : 1. The fat in the former exists in fine *emulsion* whereas in Cow's milk it is not so finely emulsified and fatty acids exists in addition. The act of suckling excites rhythmic contractions of the uterus. Putting the child to the breast *shortly* after birth is an important means of causing *contraction* of the uterus, and stopping any tendency to haemorrhage from the venous *sinuses* opened up by the separating of the placenta and foetal membranes.

The salts found in human milk consist of the following:—

(1) Calcium phosphate; (2) Calcium Silicate; (3) Calcium-sulphate; (4) Calcium Carbonate; (5) Magnesium Carbonate; (6) Potassium Carbonate; (7) Potassium Sulphate; (8) Potassium Chloride; (9) Sodium Chloride; (10) Iron Oxide and Alumina.

Egg.—Egg is not a complete food for man. Eggs are obtained

from (1) hens; (2) ducks; and (3) geese. A comparative table of protein and fat is given below:—

		White of egg		Yolk of egg		Vitamins				
		Protein	Fat	Protein	Fat	A	B	C	D	E
Hen's Egg	...	12 p.c.	0.2 p.c.	16 p.c.	33 p.c.	+ +	+ +		+ +	
Duck's Egg	...	11 p.c.	0.03 p.c.	17 p.c.	36 p.c.	+ +	+ +		+ + +	+ +
Goose's Egg	...	12 p.c.	0.02 p.c.	17 p.c.	36 p.c					

In the yolk we get Calcium, Phosphorus and Iron as mineral matters and all the vitamins except C.

Meat.—4.6 oz. is the daily ration for an adult. Liver, Heart Entrails of a sheep or cattle and Bacon are good for digestion being nutritious as well as palatable. A comparative table of different meats as to their protein, fat and water contents is given below:—

		Protein	Fat	Water	Vitamins A	B	C	D	E
Mutton (chunck)	...	14 p.c.	26 p.c.	47 p.c.	V.L.	+			
Mutton (flank)	...	12 p.c.	32 p.c.	38 p.c.					
Mutton (loin)	...	14 p.c.	25 p.c.	45 p.c.					
Mutton (leg)	...	17 p.c.	15 p.c.	58 p.c.					
Goat's	...	24 p.c.	2.5 p.c.	74 p.c.		+	V.L.		
Chicken	...	19 p.c.	2 p.c.	72 p.c.	—	+			
Pigeon	...	22 p.c.	1 p.c.	75 p.c.	—	+			
Goose (young)	...	13 p.c.	30 p.c.	39 p.c.	—	+			
Patridge	...	26 p.c.	1.5 p.c.	71 p.c.	—	+			
Beef (flank)	...	20 p.c.	8 p.c.	71 p.c.	V.L.	+	V.L.	+	+
Beef (fresh) (chunck)	...	16 p.c.	27 p.c.	53 p.c.					
Bacon (smaked)	...	6 p.c.	57 p.c.	7 p.c.	V.L.				

Fish.—It is the most palatable of protein foods. It contains less protein, fat extractives and salts than to be found in meat, hence more digestible but less nutritious than meat, but is a food for the invalid. It contains the following ingredients *viz*:—

(1) Gelatin or protein Sparer:—this increases appetite but helps very little in body building. It gets mixed up in the soup during cooking.

(2) Extractives:—fish contains very small quantity of extractives.

(3) Fats:—they are less than in meat but in the liver and pancreas of fish we have an excess of A and D vitamins.

(4) Fish contains more Calcium and Phosphates and Iodine (this exists *only* in sea-fish) than in meat.

(5) The fibres of fish are not so closely woven and are more tender than in meat and hence easily digestible.

The analytical table of the Indian varieties of fish is appended below:—

Indian varieties of fish.	Protein.	Fat.	Vitamins A	B	C	D	E	European varieties of fish.	Protein.	Fat.
Fresh water fish ...	5.5 p.c.	1.15 p.c.	+					Cod. (Sections) ...	16 p.c.	1 p.c.
Singee ...	25 ,,	4.25 ,,		——						
Kai ...	24 ,,	3 ,,		——				Eels (Salt water) ...	18 ,,	8 ,,
Magoor ...	19.5 ,,	.5 ,,		——						
Rohi ...	18 ,,	5 .5 ,,		——				Halibut (Sections) ...	18 ,,	2 ,,
Mrigale ...	18 ,,	.3 ,,		——						
Vetki ...	16 ,,	2 ,,		——				Herring ...	19 ,,	3 ,,
Elish (Hilsa)...	20.5 ,,	8 .8 ,,		——				Salmon ...	19 ,,	10 ,,
Parshe ...	15 ,,	6 ,,		——				Trout ...	18 ,,	8 ,,
Prawn ...	6 ,,	.7 ,,		——				Sardines ...	21 ,,	12 ,,

Eggs of fish 30 p. c. Protein, 20 p. c. Fat, 4,6 p. c. Salts and A & D Vitamins.

Digestibility of foods:—Hen's egg.

Yolk.—Contains Calcium, Phosphorus and Iron Salts, all the Vitamins (except Vitamin C) and about 36% of fats. One raw egg takes about 2 hours to digest, half boiled egg a little over 2 hours and hard boiled egg 3 hours to digest. We get 70–90 calories from one egg.

Fish.—Obtained from ponds, and very tender, and fresh fish especially Singee, Kai, Mangoor are very easy to digest as they contain less fat.

Meat.—On cooking some of the water is lost, fats, extractives, salts and soluble proteins get mixed with the soup and make meat difficult to digest but make the soup very palatable and and digestible. On cooking meat becomes coagulated and solid, more tender and easier to masticate. It sterilises the food and destroys parasites and germs.

Vegetables.—They contain a large percentage of starch and little of protein, fats and salts. All of them contain vitamins. They are divided into 6 classes:—

(1) Cereals *e.g.* paddy, wheat etc. (2) Legumes *e.g.* beans, peas; (3) Roots and Tubers; (4) Greens *e.g.* saks; (5) Fruits and nuts; (6) Fungi *e.g.* Lichens.

Cereals	Protein	Fat	Starch	Water Salts	Vitamins A	B	C	D	E
Rice ...	7 p.c.	1 p.c.	79 p.c.	15 p.c.		+			
Wheat (Atta) ...	18 ,,	1 ,,	71 ,,	15 ,,	+	+	+		
Mill Flour (Maida) ...	11 ,,	2 ,,	71 ,,	15 ,,		V.L.			
Oats ...	20 ,,	8 ,,	64 ,,	16 ,,		——			
Barley ...	14 ,,	2 ,,	76 ,,	—	+	+	+		

Sodi Chloride and alkalies are to be taken with cereals as well as milk, fish or meat and fatty foods to give a balanced diet. Cooking increases the digestibility of vegetable foods by breaking down their cellulose coverings, thereby allowing rupture of the starch grains which aids the free admixture of the digestive juices and aids digestion. Fruits are eaten raw without interfering with digestion.

Patients seriously ill, mentally or physically, require special diet. The menu of diet in a mental hospital must be planned with care and variety should be the key-word in such a dietary. It must be remembered that the better the diet the greater is the recovery in mental hospitals. The diet for European patients in mental hospitals in the tropics should be as follows:—

Break-fast.—Tea, Coffee or Cocoa, Bread and butter, jam or cheese, fried fish or fish-cake, sausage, Egg—boiled, poached, fried or omlet; table rice, Dal (mossur), curry, Fresh vegetables (raw) boiled vegetable, stewed fruits, fresh fruits.

During summer, ice and cold drinks.

Dinner—Boiled mutton, boiled potatoes, onions. Meat stewed (mutton or chicken) dumplings. Fried potatoes, vegetable soup (pea-soup or barley soup): Roast—(mutton or chicken or beef) chicken-frie. Bread and butter, cake, tea, coffee or cocoa, custard pudding, stewed fruits, fresh fruits.

Light supper.—Tea, coffee or cocoa, ovaltine or Horlicks, milk, Biscuits.

Indian Patients.—The following articles of diet are recommended:—Rice or Atta 1 lb. 2oz: Dal 4 oz.; Fish or meat 4 to 6 oz; vegetables 1 lb; Potatoes 6 to 8 oz; Ghee 1½ oz: mustard 2 oz. Salt 1 oz; onion 1 oz: Garlic and Ginger—small quantity; condiments ½ oz; Tea ½ oz. Butter ½ oz. to 1 oz: Bread 8 oz. Sugar 2 oz: Sujee (in lieu of bread) 1 oz; Jam ½ oz; Milk 8 oz. to 1 lb.; sweets worth 2 pices only, fruits plantain or orange, Lemon, etc.

References:—

1. *Matriculation Hygiene—R. Roy, L.M.S., (1931).*
2. *Dieto Therapy Vols. I and II—Fitch (1918).*
3. *Vitaminology—Bengal Chemical, Calcutta.*
4. *Starling's Principles of Human Physiology—7th Edition, 1936.*
5. *Pharmacopœia and guide (School of Tropical Medicine and Carmichael Hospital for Tropical Diseases, Calcutta) 1936.—By Harendra Nath Bagchi M.B.*
6. *The Modern Mental Hospital 7, Bhowanipur Road, Calcutta,—By Robert Hunter Steen 29-3-1937—27-5-37.*

I. **Inspection.**—Search for oedema or swelling on the following sites :—

A.—(1) The area above and behind the upper part of the bony part of the external auditory meatus.

(2) The area below the tip of the mastoid under cover of the sternomastoid muscle fibres.

(3) In cases of children owing to the suture (masto-squamosal) the pus goes from the antrum to the exterior of the skull forming a swelling under the periosteum.

(4) Swelling over the zygoma in front of the external auditory meatus.

(5) In certain number of cases the air cells around the bony part of the Eustachian tube are involved. The swelling is around the pharyngeal opening of the Eustachian tube in the nasopharynx. This type of retropharyngeal abscess is always to be distinguished from the other varieties of retropharyngeal abscesses. History of the aural discharge helps considerably. Diagnosis is not always easy.

(6) Swelling in the upper part of the neck along with the history of the discharging ear is suggestive of lateral sinus thrombosis. If present, it calls for detailed examination of this complication and treatment.

B. Note any excoriation on the external auditory meatus due to eczema.

It is a notorious and common complication of the discharging ear due to irritation produced by the discharge. It usually leads to atresia of the external auditory meatus. It offers difficulties in cleaning and examination of the external auditory meatus and the obtaining of a good view of the tympanic membrane. In very advanced cases, a plastic operation of the external auditory meatus is inevitable.

II. **Palpation.**—1. Pull the pinna upwards and backwards. Put pressure on the floor of the external auditory meatus and its anterior wall. On manipulating the pinna in this fashion absence of pain will exclude any inflammation (general or circumscribed) in the fibro-cartilaginous part of meatus. *i.e.*, furunculosis.

2. *Tenderness over the mastoid process.*—The tenderness is a sign of very great significance, because it indicates inflammation of the mastoid air-cells. Whereas its presence clinches the diagnosis of mastoiditis, its absence does not overrule the existence of the

disease and exception proves the rule. In cases where the cortex of the mastoid is thin, the pain and tenderness are rather difficult to elicit. In such cases constitutional signs are least marked. The thicker the cortex the more pronounced are the tenderness and the constitutional signs.

3. *The method of eliciting the tenderness* :—

(1) In eliciting this important sign, hold the patient's head with one hand and firmly press the mastoid with the thumb of the other hand while the other fingers are resting on the patients' head. The pinna of the ear should on no account be touched. Pressure is made on three sides, above and behind the upper part of the meatus.

(2) About three centimetres behind the pinna run your finger from above downwards ; this will indicate the condition of the lateral sinus.

(3) At the tip of themastoid-process.

When this test is being carried out the observer should see the patient's face whether he winces or complains of pain during pressure.

III. **Examination with the aid of instruments** —

1. Nature of discharge.
2. External auditory meatus.
3. Tympanic membrane.

1. *Nature of discharge* :—

(1) If the discharge is so profuse that it fills up the meatus within a few minutes of cleaning then it indicates that the amount of discharge is out of proportion to the capacity of the tympanic cavity and is coming from tympanic cavity, aditus, and mastoid antrum. This is known as reservoir sign and indicated as mastoiditis.

(2) If the discharge is scanty and of bad odour, it is strongly suggestive of cholesteatoma. Usually the patient is not aware of it. It is associated with a perforation in the Sharapnell area and the discharge contains white pearly granules. As described by an authority ' the patient is standing on the verge of a volcanoe, no one knows when cholesteatoma is going to burst out, and do its possible worst. It is one of the most imperative indications of doing the radical mastoid operation.

(3) *Blood in the discharge.*—It usually occurs when granulations and polypi are present in the ear. They are always the direct evidence of the involvement of the mucoperiosteum of the middle ear cavity. In such cases the fistula test must be performed in order to be sure of the site of the origin of the aural polypus. *i.e.* from the external semicircular canal or the promontory. The *principle* of the test is to increase intratympanic pressure by means of politzaer bag by compressing the bulbs and finding out if there is any giddiness and nystagmus. This test will help to exclude or prove the disease of the lateral wall of the internal ear.

(4) If the discharge contains small pieces of bones, it is a clear evidence of the ossicularnecrosis. The first ossicle to be involved is the mucus. The long process incus is hanging in the middle ear cavity, and this area is peculiar in this respect that it has got poor blood supply. This explains its early necrosis.

(5) In cases of eczema of the ear not accompanied by suppuration in the ear, the discharge is not like pus but sanies.

(6) In cases of fracture of the skull the discharge is blood stained and afterwards watery. Diagnosis is very easy by the history of the accident.

2. *Examination of the External Auditory Meatus.*—Before deciding the condition of the external auditory meatus and Tympain membrane it is essential to clean the external auditory meatus thoroughly. This step of examination is greatly emphasized because it is never possible to give a definite result if the external auditory meatus is not perfectly cleaned. Moreover, wrong judgments are usually due to this neglect. Two methods are adopted for cleaning the external auditory meatus :—

(1) Dry mopping by means of cotton pledgets, until no derbis or discharge remains.

(2) Syringing the ear under low pressure with lukewarm boracic lotion. This method is used when the discharge is either profuse, or too sticky, and after the syringing hss been done the external auditory meatus should be thoroughly dried and then examined. In cases of adults the pinna should be pulled up upwards and backwards in order to straighten the meatus which is 'S' shaped in direction. In the case of children the lobula of the ear should be pulled down as the antro-inferior wall is not fully developed. The meatus is shorter, less curved and wider in the case of childern. Therefore the tympanic membrane is nearer and in a more horizontal plane than the adults. These points should be thoroughly known to the observer in examining the ears of the children.

In certain cases very small foreign bodies are lodged in the recess just lateral to the lower part of the Tympanic membrane. These also can cause discharge from the ear and the foreign bodies might easily come out by means of syringing.

Sagging of the posterior superior meatal wall.—This swelling is due to the inflammation of the group of air cells situated in this position and is the extension of the inflammation from the mastoid antrum to this group of cells. If the cells break down then fistulae results which pours the discharge to the external auditory meatus. This is the one condition in which it is possible that there may be mastoiditis without any perforation in the tympanic membrane. It is a clear indication for the cortical mastoid operation. It is to be remembered that the bony part of the meatus has no hair follicles. There cannot arise the possibility of furunculosis in the bony part which is principally the inflammation of the air follicles met with only in the fibro-cartilaginous part of the external ear.

3. *Tympanic membrane.*—For the purpose of examination the tympanic membrane consists of two parts:

(1) Pars Flaccida.

(2) Pars Tensa.

1. *Pars Tensa.* Pars Tensa is divided into four quadrants For purposes of description and localization of the perforations, quadrants are made by continuing an imaginary line along the axis of the long handle which is directed downwarrds and backwards to the lower margin of the tympanic membrane. Another line is drawn at right angles to the previous one going through the lower end of the handle of the malleus. The seriousness of perforation increases as we go from the antro-superior quadrant to the postro-superior quadrant.

2. The perforation which occupies the umbo or the central part of the Tympanic membrane is known as *central perforation.*

3. The perforation which involves a portion of the bony tympanic ring is known as *marginal perforation.*

Artificial Pneumothorax in Cases of Pulmonary Tuberculosis*

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WE have with all humility to confess that in all our contrivances to combat Tuberculosis we cannot do without having recourse to every possible help that nature can bestow. The mechanical devices, now in extensive use, were resorted to merely to fill up the gap or estrangement from nature. Of all the treatment of Pulmonary Tuberculosis, rest-general and local, has stood the test of time. Measures which will ensure or supplement rest, will advance the cause of healing. We do not feel shy to admit that there is no specific or curative treatment for the disease. We are, however, conscious of our views about the conception of our disease and our limitations in its therapeutic measures. If relief, temporary or permanent, hitherto unobtained, could be made available for a larger population, it could surely be called an advance. The credit for this advancement falls equally to the radiologists and the workers of the mechanical therapy.

It is a great scourge to humanity. Apart from the seriousness of the disease, the economic, social and demestic helplessness of the patient make his plight all the more distressing. It is evident from animal experiment that immunity could be established by repeated inoculalion of a virus. The larger and more virulent the dose, the greater and stronger is the resistance that devolops. If the number and the dose of re-inoculation are so adjusted and spaced as to be within the capacity of the individual to deal with successfully, they will lead to the development of immunity to such lethal dose which previous to the inoculation would have proved fatal. But if the operating factors are beyond the patient's control, either from underlying strata of infection being virulent or from massive and frequent reinoculations which the patient could not cope with successfully, the lesion would rapidly extend with tissue destruction.

The disease is, as a rule, curable in its early stage. Advanced disease even, has been known to yield under modern therapeutic measures. So, early diagnosis is very helpful. The physical signs of an early case and even some advanced cases are often hopelessly

* Specially contributed to "The Antiseptic".

insufficient. X-ray holds an unique place in the diagnosis. Even in advanced cases it is of immense help in localisation of a lesion, its age and character, the state and condition of a cavity, effusion and the extent of displacement of the heart, diaphragm and trachea. So, no examination of the chest is complete without a skiagram. It also controls treatment by giving us useful information about the lesion. It has a further utility in assorting the diseased among the contacts.

Of all the mechanical devices to counteract the disease, collapse therapy easily holds the first position, because it can be more extensively applied, is simple in its technique and its advantages are numerous. The history of collapse therapy is interesting. Carsen in 1821 and Ramdge, 1833 suggested treatment of Pulmonary Tuberculosis by induced pneumothorax. Forlanine carried it into actual practice. He reported his first case in 1892. In 1880 and 1881 certain facts were published in France which though they did not catch the notice of the medical world at large, still did yeoman service in inspiring one who was in search of a new rationale in the treatment of this malady.

Hydropneumothorax, occurring during the course of phthisis, constitute a grave complication, but in certain number of cases exercised a favourable influence on the course of disease. This proposition was strengthened by 26 clinical observations, 24 by Toussaint (These de paris 1880), 1 by Hearard (Gazette De Hosp 1860) and by Messnier (1881). In almost all the cases it was noticed that with the onset of spontaneous pneumothorax, with or without effusion there was sudden aggravation of all symptoms. But in a small number of them,however, slowly and unexpectedly, there was a change for the better. Even at autopsy, at variable time after the accident, the lung was found collapsed, with walls of cavities approximated and even cicatrized. This spontaneous pneumothorax with its accompanying evil of an introduction of septic material into the pleural cavity, did aggravate the symptoms, but in few cases changed the outlook altogether by ameliorating cough, repeated haemoptysis and fever and gave new lease of life to the doomed patients. It is evident, that the onset of pneumothorax could not be taken to mean a herald of immunity nor anything beneficial to the patient. It is distinctly an exacerbation of the disease itself. Here, Toussaint argued that pneumothorax could at least be expected to compress the lung against the vertebral column rendering the lung anaemic by compression thereby relieving pulmonary catarrh, cough and expectoration. But it is not necessary to take shelter under anaemia for the

disappearance of the catarrh as compression itself is enough to bring it about. Spontaneous pneumothorax invariably introduces a certain amount of septic material from the lesion into the pleural cavity. It is uncalled for and uncertain in its time of onset, duration and character of stay. It has no respect for the extent or gravity of the disease, nor does it care to maintain compression to a level which could prove beneficial to its host.

An artificially induced pneumothorax, on the other hand, could be made to maintain the pressure to the desired extent by graded refills. Moreover, it is not altogether impossible to avoid effusions by careful technique and easy and small refills. Effusion, if any, is not an accompaniment but a complication though all pneumothorax are potential pyothorax. It does not bring with it a septic material into the pleural cavity unless by overstretching or breaking adhesions. When air is introduced from outside through the chest wall the chances of a pyothorax are definitely eliminated. Artificial pneumothorax unlike spontaneous pneumothorax is thus an innocent therapeutic measure. Lung is the most restless organ in the body except the heart. The first principle of healing is rest to the diseased part. Artificial pneumothorax gives rest to the diseased focus by compressing the lung.

For a pneumothorax to be effective it must fulfil the following obligations :—

(1) the air introduced should suppress the functions of the diseased lung or at least compress the diseased lung tissue to obtain selective collapse, by putting it out of action :

(2) The other lung should remain competent to carry on the function of respiration that is, it should not be diseased or otherwise inefficient ;

(3) The volume of air introduced should not exceed or fall below the amount necessary to maintain optimum pressure or desired immobilisation. Should the pressure exceed the correct limit or fall below it, the advantage of a mechanical rest will be violated ;

(4) It should not displace the mediastinum and cause a double pressure effect by relaxing the pressure from the diseased side and transfering it to the healthy side where it is not wanted.

(5) In bilateral pneumothorax, the worst side is collapsed first, then the both sides alternately.

The ultimate process in nature's contrivance in the healing of diseased lung tissue is fibrosis and contraction. These contracting bands will naturally keep up a constant strain on the unhealed diseased tissue and effect of this strain will be exaggerated during expansion in the respiratory act and will cause delay and difficulty in healing. Compression therapy by abolishing the respiratory movements will take away the strain and facilitate healing. Nature has already been working at it by elevation of the diaphragm, sinking of the chest, shifting of the mediastinum and by a compensatory emphysema in the healthy lung to counteract the evil effects of strain If compression could be so established and maintained as to be able to fill the gap created by nature's attempt at healing, the drag on the diseased tissue will be substantially eliminated. And thus when the mechanical flaws have been corrected by induced collapse, immunological response to healing go hand in hand with forced rest thus brought about.

By compressing and reducing the size of a diseased area, the lymph and blood flow is automatically minimised ; the contents of the cavity is squeezed out and expelled, thus reducing the elaboration of toxins. The general condition of the patient is thereby greatly improved ; it enables him to return to his work earlier ; often renders his sputum bacilli free, so that the patient no longer remains a dangerous source of dessimination of the disease to others. The psychic effect of this improvement is a substancial gain though the treatment has to be carried out for a fairly long time, up to 3 to 5 years. We have always found cases coming from a distance of 10 or 15 miles on the appointed day of refill without fail. It is no insignificant gain and it is more substantial than those obtained by hygienic treatment and rest alone. In Bengal, where Hospital accommodation is scanty, collapse therapy has done greatest good to a number of otherwise helpless ambulatory cases. Without prompt efficacy of collapsed treatment these ambulatory cases would have remained a veritable source of dessemination of the disease to others. There are altogether 284 tuberculosis beds in the Bengal Presidency out of which 262 are in Calcutta and Howrah. The number of persons suffering from Tuberculosis in Bengal is one million ; thus, there is provision for one bed for each 3521 patients in Bengal.

Artificial collapse has made pregnancy safer. Though both lungs are pushed upwards, a measure which imparts a partial mechanical rest and collapse particularly towards the later months of pregnancy with the upward ascent of the diaphragm, yet pneumothorax will complete the work of rest and compression left

unfinished by the ascending womb. After parturition however, with the sudden descent of diaphragm the need of a collapse and rest becomes urgent. Presistent and serious haemoptysis which otherwise would prove fatal could be controlled by artificially induced pneumothorax.

Prepondering elements of the cases attending the chest department of the Howrah General Hospital constitutes millhands and daily labourers. The poor classes which attend our clinic are ill-fed, ill-quartered and they lack in elementary knowledge of sanitation and personal hygiene. They often do not turn up, because of loss of work and loss of wage, till the disease is fairly advanced. Underfeeding and overcrowding both leading to lower resistance also contribute to the spread of the disease.

The annexed table shows the incidence of the disease in different ages and sexes. The extremely low figure for females does point out that the incidence is less among them but, they do not attend an out patient owing to conservatism and various family obligations. (*See Tables on pages 949 and 950.*)

Among the diagnosed cases only a fraction regularly attended our clinic. Because: (1) some care for the diagnosis alone and prefer to get treated by their own doctors; (2) some owing to loss of jobs or limited means cannot pay for the cost of remedies advised or resort to their village homes where the expense of living is comparatively less; with others distance is a great discouraging factor and cannot afford to come regularly to submit to a prolonged treatment: (3) there are others, typically impatient who unable to obtain a speedy and magical remedy, prefer to keep away.

From a total of hundred A. P. done from January 1935 to April 1937, 16 died, 4 got worse, 19 remained stationary, 7 arrested, 21 improved and 19 much improved out of which 18+21, that is, 39 have resumed their normal vocations and attending our clinic at intervals for periodical examinations to ensure their fitness. We have given gold treatment to 35 cases along with collapse therapy as an auxiliary measure without any serious complications.

Regarding complications in A. P. we have been rather lucky. Out of 924 A. P's (Primary and refills) we had no pleural shock nor air embolism. Our figure for secondary effusion has not been more than 5% and out of a total of 100 cases and only 2 pyopneumothorax, as evidenced by radiological findings at intervals. We had to give up the treatment due to adhesion only in a very small number of cases. The time has been too short to say about the final relief or check of the disease, nor are we in a

Statistics of Cases in the Chest out-door.

From January 1935—April 1937.

Year.	Total number of cases attended in the out-door.	Number of Diagnosed cases either by X'ray or sputum or both positive.				Age incidence of positive cases in Years.						Sex.		A. P.		Total 39 Cases.		Other treatment C. J. Ca gold etc.	
		Lung.	Gland.	Others		0 to 2	2 to 10	10 to 20	20 to 30	30 to 40	40 to 60	60 to 80	Males.	Females.	Primary	Refill.	Gold & A. P.		
1935	763	473	15	4	× × × × × ×	1	14	73	192	129	83	×	406	86	29	299		×	
1936	916	803	15	2	· × · · × ×	1	15	57	115	79	52	1	269	51	46	300		2	
1937 Up to May	419	138	7	1	· · · · × ×	×	2	24	56	38	23	3	103	43	25	225		×	
																	86	137	181

Years.	Total.	Stage of the disease.			Sputum negative after A. P. (in stages.)			Sputum positive even after A. P.			Time period of A.P. treatment undergone.				Result of these 100 Cases.						
		I	II	III	I	II	III	I	II	III	3 months.	6 months.	1 Year	more than 1 Year.	Arrested.	Improved.	Much improved.	Stationary.	Worse.	Dead.	Could not be traced.
1935	29	7	15	7	6	12	5	1	3	2	7	7	6	9	7	21	19	19	4	16	14
1936	46	3	14	29	3	10	14	×	4	15	17	13	7	9							
1937 Up to April.	25	4	15	6	2	11	2	2	4	4	17	8	× Still continuing.	×							

STAGE I.—Unilateral early apical infiltration extending upto second rib, if bilateral limited to supra clavicular and supra spinous region.

STAGE II.—Infiltration extending upto midzone (4th rib), if bilateral situated above 2nd rib—no excavation.

STAGE III.—Unilateral or bilateral infiltration with cavitation.

position to state the exact number that will fail to re-expand or need phrenic evulsion to readjust former state of affairs in the thoracic cavity. We can only wait and watch :—

(1) It is *not* every case that will benefit by an artificial pneumo-thorax. A careful selection has always to be made.

(2) That gave excellent results in certain cases with similar lesions should not be an argument for its use in all cases with identical lesions irrespective of other relevant factors.

(3) A correct decision whether to interfere or not could be arrived at, if we keep uppermost in our mind that we are not simply obliterating or pulling a local focus out of action but treating the individual as a whole. He evidently is suffering from a general toxæmia, the ultimate aim of all our therapeutic measures is to increase his body resistance.

(4) Faulty selection of cases and inattention to details in technique of operation would bring artificial pneumothorax to disrepute.

(5) Introduction of a certain amount of air inside the pleural cavity does not constitute a collapse therapy, so long it has failed to produce the desired results. The air so introduced might do more harm than good, if it has collapsed only the healthy side or pushed the mediastinum to the other side. The aim should be to obtain a selective collapse.

(6) We should not be too much servile to radiographs. The general condition of the patient and his clinical symptoms are the most important guides; we do not deny that "X Ray" picture is not enough, as it cannot throw any light on the condition of the patients. We have to go into all relevat factors throughly in order to arrive at a correct decision about interference. Our failures in collapse therapy will be correspondingly less, the less subservient we become to a radiograph. Because we must remember that a skiagram could be a very good servant but always a bad master.

(7) Rest the primary measure for repair, gold therapy or other auxiliary measure should be availed of along

with collapse treatment: collapse could at best be an adjuvant to rest: gold therapy has minimized flaring up the disease in a contralateral long in a bilateral case. It is imperative that maximum amount of rest should be enforced to obtain full benefit of collapse Treatment. Other auxiliary measures conducive to healing should be allowed to supplement rest and artificial immobilization.

(8) The disappearance of toxic symptoms of temperature, increased pulse rate, anorexia, progressive healing of a lesion as seen under "X ray", the improvement in sedimentation rate and blood picture all taken together could tell if the case was ill or well selected for a collapse treatment. Once the toxæmic has been eliminated by correction of mechanical devices the natural forces of defence get a better scope forrepair.

* Some authors state that the most suitable cases for phrenecectomy are early unilateral cases with a lesion in the lower zone of the lung without any fibrosis around.

According to some other authorities, phrenecectomy should always be done in those cases where A. P. is indicated but it cannot be done owing to adhesions. In their opinion, in those unilateral cases with lower zone infection, A P. is always advisable (if there is not much adhesion) instead of phrenecectomy, where the diaphragm is unnecessarily damaged thereby causing permanent embarrassment to respiratory functions. So, only in those cases (unilateral basal lesion without adhesion) where the patient is too poor to afford A. P. treatment for a period of at least two years and staying at a place far away from hospital, phrenecectomy is indicated. Phrenecectomy is also sometimes done along with A. P treatment to ensure additional collapse of the lung. Again in course of A. P. treatment if there is any effusion causing A. P. treatment impossible, phrenecectomy in some cases prove beneficial. We should supplement phrenecectomy with gold treatment in suitable cases and the results are always better.

From January 1936 to June 1937, 32 phrenic evulsions were done in the Howrah General Hospital. All the cases were bilateral and phrenecectomy was done in the side most affected, the other lung remaining slightly or moderately infected. In all these cases A. P. was indicated to the side most affected, but it failed

* The notes on phrenecectomy were kindly given by Lt. Col. B. G. Mallya I.M.S., Civil Surgeon, Howrah.

due to adhesions. Except 4 cases, fever had a check during their stay in Hospital after operation. One case along with gold therapy had a marked improvement in his general condition after a stay in hospital for over one year. There was no death after operation but we could not follow up the cases after the patients left Hospital.

References:—

1. *Salvation L ojaeous—Forlanine's Original Communications on Artificial Pneumothorax-Tubercle, March 1934, pp. 55.*
2. *Pollinger—Tuberculosis in Child and Adults, 1934, pp. 453.*
3. *Fredric Heat—The Misapplication of Artificial Pneumothorax in the Treatment of Pulmonary Tuberculosis, Tubercle, Oct. 1933, pp. 113.*

Treatment of Cholera*

BY

Dr. Y. Sitharamiah,

Medical Officer, Dhania Ch. Dispensary, Sambulpur.

Prevention.—Cholera is spread mainly by the contaminated water used for drinking, cooking, washing etc. and also through the contaminated foodstuffs. The infection is carried by men and flies. The specific germ enters the bowel through the mouth. Hence prevention of the disease can be done by the measures against:—

1. Food and drink.
2. Carriers of infection.
3. The specific germ (Cholera vibrio).

1. *Food and Drink*:—

(1) Water, Milk and other articles of food should be well boiled and properly protected against flies. Food and drink should be taken while they are hot. The hands and mouth must be cleaned well before eating anything. Nothing should be taken inside the mouth in an infected house.

(2) The milkmen should be strictly prohibited from using dirty water for cleaning their phials and other utensils and from mixing suspicious water with milk.

(3) A tank should be set apart in each village for drinking purposes only and a watchman should be arranged for

* Specially contributed to "The Antiseptic".

preventing the public, from polluting it, such as washing utensils, cloths, cattle etc. therein.

(4) Disinfection of the wells and tanks should be done immediately after any epidemic breaks out with potass permang (3i to 1 gallon), eloctrolytic chlorine (roughly 5 drops to 1 potful of water) and Bleaching powder (15 lbs. for a tank 5 feet deep and 1 acre in extent)

(5) Dead bodies of the infected persons should be properly buried or burnt well away from all sources of water supply and from the village.

2. (1) Since it is common in India that epidemics of cholera break out in villages after the return of pilgrims from holy places like Puri, Haridwar etc. as they carry infection with them, all the pilgrims should be let out from the holy places after proper sterilisation of their articles and clothing by the sanitary authorities.

(2) As the house flies carry infections and as they generally breed on refuse, all the street and house refuses should be properly disposed of and burnt.

(3) Fly papers should be used to destroy them, kitchen should be made fly proof if possible.

(4) All discharges, faeces and urine and the ground that is fouled by the dejecta or vomit of a patient should be disinfected at once with creosol (2½%) or better destroyed by burning them after mixing well with saw dust and kerosine.

(5) All soiled linen and beddings should be disinfected in creosol solution or destroyed.

3. (1) Anti-cholera inoculations (of Haffkine 1893) should be taken immediately after any case of cholera occurs in a village. The mortality rate has been much reduced after the introduction of the inoculations. As it is not possible to give in two doses in villages, a single dose of 1 c.c. may be given to a healthy adult and reducing the dose according to sex, age and constitution. The immunity conferred by the vaccine lasts for about 4 months only. The chances of recovery are much greater in persons who are infected after the 10th day following the inoculations. When the disease appears within a few hours after the inoculations, the result is disastrous and mostly fatal. The immunity does not become well established until the 10th day and not at all before the 5th day following the inoculations. To get the proper beneficial effect and sufficient protection the whole population of the village must be timely inoculated long before the approach of the disease to that village. So, preventive inoculations should be carried out in a village while its neighbouring places are already infected and the village is threatened. The contra-indications for the inoculations are: (i) Those that are already infected, (ii) those suffering from fever, (iii) weak and anæmic persons. For those who refuse to take inoculations, Bili vaccine and choledo discs in the form of pills for oral administration may be prescribed.

(2) Choleraphage is gaining reputation both as a preventive and cure of cholera. The spread of cholera epidemic can be effectively checked by the use of prophylactic cholera vaccine and with choleraphage. Every villager should be given a dose of choleraphage on empty stomach as a preventive. Out of one phial of bacteriophage half of its contents should be emptied in a lota of water not treated with any disinfectants and all the inmates of an infected house must be made to drink it in small quantities. The remaining half should be opened in another lota of water and sprinkled over places infested with flies such as kitchen, stables etc. A full phial is sufficient for putting in a public well from where water is used for drinking purposes. Choleraphage is supplied in 2 oz. rubber stoppered phials by the Bacteriophage Public Health Laboratory, Patna. It is also available in 2 c.c. ampoules.

Bacteriophage of cholera of D'Harelle 1918 (a French bacteriologist) is an ultra microscopic virus parasite of bacteria which multiplies at the expense of living bacteria only. It produces dissolution of the bacterial cells, reproduces itself in course of dissolving process. It is present in the intestines of every man and develops upon the saprophytic intestinal bacteria in normal individuals. Its dessimination causes decline and cessation of the epidemic and recovery of the patient by destroying the disease producing bacteria. It produces lysins which act as opsonins favouring a phagycytosis of bacteria by body cells.

Personal Prophylaxis. — 1. Take anti-cholera inoculation at once.

2. Take dilute hydrochlor Acid ♏ 5-20 B. D. or T. D.
3. Avoid eating raw or over-ripe fruits.
4. Correct gastro-intestinal disturbances as soon as they appear.
5. Protect food from fly contamination.
6. Drink only boiled or chlorinated water.
7. Avoid visiting cholera infected localities with empty stomach.
8. Take 2 c.c. choleraphage mixed with 4 oz. of water by mouth every 6 hours for 4 doses on an empty stomach. No chlorinated or any other medicated water should be used along with phage.
9. If phage is not available 1 teaspoonful of essential oil mixture twice or thrice daily with water is useful.

Treatment—It should be done according to the clinical stage of the disease in the patient when first seen.

Stage I.—Preliminary Diarrhœa :—(1) Calomel in fractional doses is of definite value:

℞ Calomel ... gr. $\frac{1}{6}$
Camphor ... gr. $\frac{1}{6}$
Sodi Bicarb ... gr. ii
Mft. pulv. i send 6 such every ½ hour.

(2) Prodiarrhoea Mixture ♏ 10 in ℥i of water every ½ hour for 4 to 8 doses. Or Astringents like Acid Sulph Arom may be given. No active treatment is done at this stage. One or two doses of Tint opii or chlorodyne may be given very cautiously but they should never be given if the stools are like rice water.

(3) For suppression of urine for more than 8 hours five rectal saline 4 oz. every 2 hours. Mist Alkaline ℥i every 4 hours.

Stage II.—Copious Evacuation.—In this stage rest in bed with warm blankets and hot water bottles at the feet and flanks in a well ventilated room is quite essential. Inject Adrenaline chloride sol. ½ to 1 c.c. together with Atropine Sulph gr. $\frac{1}{100}$ intramuscularly at the very first visit and repeat once more if necessary within 24 hours. If the circulation is still flowing in the capillaries, adrenaline chloride sol. may be repeated often and atropine whenever cramps are severe.

The mucous membrane of the stomach and intestine at this

stage is injured and incapable of absorbing any drug. So any drug that is administered at this stage by mouth will accumulate in the intestines without being absorbed and after intravenous injection or at the reactionary stage the accumalated drug will be absorbed all at a time which will be injurious. Hence, Opium or Morphia in any form including chlorodyne should not be administered.

Pot Permanganate Pills:—Are given with the idea of oxidising the cholera toxins and scientifically they are ideal drugs but practically they are not suitable as they are always very hard and unabsorbable and induce vomiting. 2 pills of 2 gr. each are given every 15 minutes for 8 doses and then 2 pills every ½ hour for 4 doses until the colour of the stools changes to yellow or brown. Cal. permang. solution (gr. 12 to 1 pint) ℥ ss of it with ℥i of water is given to babies instead of pills.

Kaoline.—(Aluminium silicate). Absorbs the toxins and also by forming a coating over the intestine prevents absorption of toxins and checks vomiting. It has no antiseptic action. About 100 grm. are put in a glass of water and stirred to make a suspension and allowed to drink freely. Kaoline in insufficient doses will serve no purpose.

Essential Oil Mixture of Dr. Tomb:—If given within 6 or 7 hours of the onset of disease it does good. It is pungent to taste and very badly tolerated by patients. It is useful for prophylactic and very badly tolerated by patients. It is useful for prophylactic as well as curative purposes. The composition is as follows:—

℞ Spt. Etheris ... ♏ 30
Oil Caryophylli ... ♏ v
Oil Cajuput ... ♏ v
Oil Juniper ... ♏ v
Acid Sulph Arom ... ♏ 15
Aqua ad. ... ℥ iv
Mft. mixt. i every ½ hour.

Bacteriophage of Cholera:—Has been found to be very useful both for prophylactic and curative purposes. The cure of a patient depends on its early administration. On reaching a patient one or two teaspoonfuls of undiluted choleraphage should be given to the patient atonce and then empty the contents of the bottle into a tumbler of water which has not been treated with any disinfectants. The patient is asked to sip small quantities out of it at an interval of every 15 minutes. The entire solution should be finished in about 6-8 hours. The tumbler should always be kept

covered. If desired a lump of ice may be placed in it. Choleraphage can destroy cholera germs, only when they are actively growing and it is not a disinfectant and hence it should not be used as such. Cholera patients who are administered choleraphage should not be given any antiseptic or oxidising drugs by mouth Calomel, essential oils, pot permang pills and Kaoline may be scrupulously avoided. If and when required, Campher in oil, pituitrin, Sodii Benzoos, Atropine etc. may be given by injection. Whenever saline injection is indicated it should be given without delay. To stop vomiting and uraemia, Sodii Bicarb may be given by mouth whenever considered necessary. The results are quite encouraging if choleraphage is administered timely in early and second stages. In advanced and serious cases a combined treatment of intravenous saline and choleraphage does good.

Stage III.—Collapse.—In this stage intravenous Saline is indicated.

Indications for Intravenous Saline :—

(1) Specific gravity of blood above 1060.
(2) Blood pressure below 70 m.m. and specific gravity not below 1054.
(3) Patient is pulseless and specific gravity not below 1051.
(4) Too much vomiting and purging.
(5) Presence of severe cramps or cyanosis or restlessness.
(6) When patient is uræmic and passing very little urine even when the specific gravity of blood is low.
(7) Suppression of urine for more than 24 hours.

Contra Indications :—

(1) Bronchitis.
(2) Pneumonia or Broncho Pneumonia.
(3) Oedema of Lungs.
(4) Cardiac weakness after beriberi.

If intravenous injection is required inspite of above contra indications a big dose of Atropine sulph gr. $\frac{1}{50}$ should be given hypodermically before giving intravenous saline injection.

Composition of Saline Solution :

(1) *Hypertonic Saline* :—

℞ Sodii Chloride	...	gr. 120
Cal. Chloride	...	gr. 4
Aqua Distillata	...	1 Pint

for use in early cases with high Specific gravity and bad pulse.

(2) *Alkaline Isotonic Saline* :—

℞ Sodii Chloride	...	gr. 80
Sodii Bicarb	...	gr. 160
Aqua Distillata	...	1 Pint.

for use if the duration of the disease is more than 30 hours.

(2) *Rectal Saline* :—

℞ Sodii Chloride	...	gr. 90
Sodii Bicarb	...	gr. 60
Glucose 5% sol. ad.	...	1 Pint.

Technique of Intravenous Injection.—Sterelise the skin. Bandage above the point of injection. Site in adults, median basalic vein at the bend of the elbow and in children under 10 years, long sephanous vein in thigh or in front of internal malleolus.

Temperature of Saline should be as many degrees below 98° or colder as Rectal Temperature is above 98° or vice versa.

Rate of flow of Saline.—5 minutes to a pint for the first few pints till pulse returns to normal and afterwards 10 minutes to a pint.

Quantity of injection.—Generally for each rise of 1 degree of specific gravity above 1060. One pint of saline is given. More than 4 pints of saline are not given in one sitting.

Indications for alkaline isotonic Saline :—

(1) Uraemia or threatening uraemia.
(2) Intense toxaemia.
(3) Abdominal distension with locking of bowels.
(4) Suppression of urine for a considerable time.

In order to prevent dangereous complications of uraemia the first pint usually given is alkaline isotonic saline followed by hypertonic saline should be given at one time.

Dangerous symptoms during Intravenous Saline :—

(1) Intense headache—when injection is to be stopped altogether or for some time at least.
(2) Short cough.
(3) Hurried respiration.
(3) Severe rigor in which case fluid does not pass.
(5) Recurrence of restlessness after being quiet by injection of a quantity of saline.
(6) Instead of relief feeling of discomfort, dull or apathetic.

In case of vasomotor failure or in the presence of pulmonary complications accompanied by collapse and uncontrolled by any other method, great benefit occurs by giving small quantity of saline *i.e.* 2—6 oz. only repeated every 2—6 hours. One pint or even 10 ounces at a time may be dangerous and only hastens death.

Blood pressure is the guide for Intravenous saline.—A pulse pressure under 70 m. m. indicates need of intravenous saline while during infusion an increase of less than 4 m.m. of pulse pressure over the previous reading implies that infusion should be discontinued. So blood pressure should be taken after 1st pint of intravenous injection. Adrenalin chloride sol. is contraindicated in the injection as it causes rise in the diastolic pressure.

Stage IV.—Reaction Stage. — Reactionary temperature is more marked when rectal Temperature is higher before intravenous injection. This may result in hyperpyrexia and death. The reaction of Intravenous saline comes like Malaria with rigor and a rise of Temperature but without any sweating stage. If saline is prepared with freshly prepared sterile distilled water there is practically no risk of reaction. But preserved distilled water due to contamination and growth of bacteria and chemical irritants and fungus always causes reaction.

Precautions for preventing reactions :—

(1) By taking rectal Temperature every 15 minutes before and after Intravenous Saline.

(2) By regulating Temperature of Saline.

(3) By the use of proper distilled water.

Treatment.—Ice bag to the head. Sponging the body with ice or cold pack. Ice water Rectal Saline 1 Pint if necessary. If diarrhœa occurs regulate the diet only and no opium should be given.

Diet.—Plenty of barley water or pure water.

Treatment of Complications.—*Vomiting.* — Generally it co-exists with purging in all severe cases of cholera and stops before the cessation of stools. When it causes anxiety the following are tried :—

(1) Adrenalin chloride 1 in 1000.

(2) Minim doses of Tinct Iodine Rect.

(3) „ „ Acid hydrocyanic dil with Liq. Bismuth.

(4) Rubin's camphor on sugar.

(5) Chlerotone on cracked ice.

(6) Plenty of iced alkaline drink.

(7) Morphia and atropine sulph.

(8) Calochloride and grape sugar.

Cramps.—Intravenous Saline. Apply hot fomentations or massage.

Thirst.—Hot water may be given freely avoiding over distension of the stomach. Hot tea or coffee may also be given.

Tympanites.—(1) Mist Carunish. (2) Long flatus tube. (3) Turpentine Stupes. (4) Pituitrin injection ½ cc. with or without eserine. (5) Menthol gi with Ext. gentian O.S. in pill form evey 2 hours for 4 doses. (6) Oil cineamar m. ½, every ½ m. with sugar.

Uræmia.—In mild cases :—

(1) Alkaline Isotonic Saline intravenously.

(2) Rectal Saline with alkaline drinks.

(3) Digitalis and Pituitrin.

(4) Dry certping over the kidneys followed by hot poultice twice a day.

In obstinate cases :—

(1) Caffein Sodi Benzonate injection and Diuretic by mouth.

(2) Alkaline mixture :—

℞ Pot. citras	...	gr. 30
Sodi Bicarb	...	gr. 20
Glucose	...	ʒ i
Aqua a.d.	...	ʒ ii

Mft. Mix. ii every 3 hrs.

(3) Glucose 25 % sol. in 25 cc. of saline intravenously.

Hiccough signifies severe toxaemia.—Prognosis is bad if it occurs early. The following are tried :—

Tinct. Iodine in minim doses in ½ ounce of water.

Chloretone gr. x every 6 hrs.

Mustard plaster over the pit of the stomach.

Atropine sulph gr. $\frac{1}{150}$ hypodermically.
Alkaline Isotonic saline ℥ x Intravenously.
Luminol gr. 1.
Bacteriophage and anticholera serum.

In Pulmonary Oedema and Heart complication.—Subcutaneous saline is the method of choice.

Diet.—For 2 or 3 days during acute and reaction stage, so long as there is diarrhoea, only iced water, limes, and green cocoanut water should be given.

When bowels are moving 4 or 5 hours a day, whey may be given.

Generally on the next day of attack, recovery takes place and then citrated milk (3 gr. of sodicitrate to ℥ 1 of milk) is given. Gradually soft rice, fish, soup etc. are given.

References :—

1. *Manson's Tropical diseases.*
2. *Taylor's Practice of Medicine.*
3. *Indian Medical Journal 1932.*
4. *Antiseptic 1933 and '35.*
5. *Village Aid Scheme of Public Health Bureau, Patna*

Chronic Sinusitis.

The Dowling tampon still remains one of the best forms of treatment for chronic sinusitis, provided that there is sufficient drainage through the ostium The treatment consists in packing the upper chambers with cotton tampons soaked in 10 per cent argyrol. If necessary, drainage must be provided by a slight operation —*The Eye, Ear, Nose and Throat Monthly.*

Unusual Complications of Typhoid

BY

Dr. S. Sree Rama Rao, L.M.P.

Kanamole, Kistna District.

My only excuse in reporting this case is its comparative rarity and to invite the experiences of my professional brethren.

Very recently, I had a frank case of Typhoid under my charge. The patient was a Hindu lad aged 7 and I took up the case about the beginning of the second week. On the 10th day, he developed Pneumonia of both the lungs. He was delirious all through.

On the 16th day, a soft swelling appeared in and about the supra-sternal notch obliterating it altogether. It soon spread into the neck and by the next day extended to the whole of the chest and into the loose tissues of the axilla and the upper half of both arms, making a sort of a loose bag of the skin over the chest, neck and arms. By the 19th day, it extended into the face under the cheeks and eyelids and the boy breathed his last. It was air that escaped into the subcutaneous tissues through a pulmonary rupture most probably at one of the apices.

Discussion.—Surgical Emphysema following operations is common enough, but one following pneumonia in a typhoid patient is one that I have not seen before. Many of my medical friends whom I have since consulted have not seen such a case. The only treatment described in text books is the application of mechanical pressure by strapping or otherwise, at the seat of rupture. In this particular case strapping was tried and abandoned as useless and even injurious. Another peculiarity in this case is that the lungs cleared up considerably by the 19th day *i.e.*, the day on which the patient died. The boy had no other constitutional disorder since his birth.

I would request the readers to give out their experiences and any suggestions as to the treatment of this rare and fatal complication through the medium of this journal.

Organic Combination of Iodine with Sulphur

BY

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My object in writing this small article is only to stress the great importance exhibited by organic combination of Iodine with Sulphur.

In September 1936, Janakiamma, a girl aged 12 years was shown to me with a temperature of 102°—104° and excruciating pain round the left hip joint upto the middle of the thigh. The patient had no sleep and was very restless on account of the pain. There was a history of 2 months' Pyrexia. Patient was much reduced. Pulse 120—140. Was not able to take any food. The patient was not able to move the limb or turn in bed. The history and appearance of the case made me suspect Tubercular Hip Joint disease. So I had a skiagram of the hip taken which did not show any evidence of Bony Lesion. Hence, I concluded the case to be one of Arthritis involving soft structures round about, the Hip Joint being affected probably due to Typhoid Fever.

Sulphur struck my mind with the usual Iodine. But in view of the patient's emaciated and exhausted condition, I had to drop the idea of Sulphur on account of its reaction. Just then I had with me Sulfodine, an organic combination of both Sulphur and Iodine, which was further said to produce no reaction. I was really surprised to see the marvellous results produced by this. She was begun with ½ c.c. increased upto 1 c.c. at intervals of 5 days. After 3 injections, the pain subsided completely; after 6, the temperature came to normal and after 8 injections she was able to move about. Encouraged by this result, I used the drug in so many other cases subsequently and the results were very good.

Corneal Ulcer.

One of the best cauterants for a sample corneal ulcer of moderate degree is trichloracetic acid of 10 or 20 per cent strengh. When touched with this soultion the ulcerated surface turns an opaque white, like the white of a boiled egg but within a few hours begins to clear, and becomes greatly improved.—*The Eye, Ear, Nose and Throat Monthly.*

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EDITORIAL

The Congress Ministry and Medical Reforms

WE are glad to learn that the Hon'ble Dr. T. S. S. Rajan, Minister of Public Health and Medicine has in his sleeve a number of schemes aiming at thorough overhauling and reformation of the Medical and Public Health Departments, which he will soon place before the Legislative anvil. What these schemes are, we are unable to divine, but we have no doubt that in carrying out these schemes, he will not sacrifice efficiency at the altar of economy. As a matter of fact, there is no place for 'economy' and 'retrenchment' in the Dictionary relating to the Medical and Public Health Departments, but abuses, leakages and wastages, wherever they exist ought to be put down with a high hand. This is an imperative duty which, we hope, the Hon'ble Minister will not shrink from doing.

We had, in the columns of the 'Antiseptic', in the past, advocated many medical reforms, which remained either unheeded or held up on financial grounds. The cause of the Medical Profession in this Presidency, nay in the whole of India, will, we are afraid, go by default, if we fail to reiterate the demands of the Profession and press our views, on the Ministry, at this opportune moment. In these pages, we indicate the lines on which medical reforms should proceed in our Presidency, for the edification of the Ministry.

1. Provincial Medical Council.—This Council has become too old and too wooden to be of any real use to the Profession. While those who preside over the Councils of the Indian Empire, which decide the destinies of the whole Indian Nation, are now elected by the representatives of the people, in the Councils, the President of our Medical Council alone continues to be a nominated official, who is none other than the Head of the Medical Department. The anomaly should forthwith be removed and the President of the Provincial Medical Council should henceforth be elected by the Council. The Medical Register consists of as many parts as there are communities in the profession, such as, Medical men with foreign qualifications, Medical graduates and Medical Licentiates. This distinction should go and the names of the registered medical practitioners should appear in alphabetical order in the Register. The strength of the Council should be increased so as to provide for adequate or rather, proportionate representation of all classes of medical men. As matters stand at present, the L. M. Ps. who are larger in numbers are underrepresented. The private Bill that is now proposed to be introduced in the Legislative Assembly in this connection, has our hearty approval and we hope it will be passed into law ere long.

2. Abolition of the L.M.P.—This is a long-standing demand which the Congress Ministry should muster courage to satisfy during its regime. There should be no more medical men with inferior qualifications and the old slogan of 'Cheap doctors for poor people in rural parts' cannot hold water any longer, for, what with the larger output, year after year, of medical graduates by the University and what with the fewer channels for their absorption, there is growing unemployment among medical graduates, which has considerably reduced their value and brought them to a lower level than hithertofore. When the Medical graduate is prepared to accept a job for the same emoluments as the L.M.P., what is the good in manufacturing more L.M.Ps. and make them suffer in the unequal struggle for existence? The analogy of the Law Department which has abolished the old first grade and second grade pleaders and retained only the law-graduates to compete in equal combat with his brethren in the Profession, must serve as a sufficient inducement for the Medical Department to do away with these L M.Ps. and retain only a body of fully-equipped medical men in its cadre, so that the public whom they treat, be they rich or poor, may entertain no more doubts or misgivings about their qualifications and consequently the safety of their lives. If,

however, the Government are not prepared to give up their superstitions about the L.M.P. and desire to keep him on, then, at least let him be given the full course of medical training for five years, be examined by a College of Physicians and Surgeons as in England and be given a diploma, which will give him the same status as the degree holder. Of course, the general educational qualifications of the L.M.P. candidate must, in that case, be raised to Intermediate in Science. For Govt. Service, a competitive examination may be held between degree holders and diploma holders and the law of the "survival of the fittest" put into operation. The case for the abolition of the L.M.P. or his elevation to the status of a graduate is further strengthened by the fact that there is another class of medical practitioners viz. the Licentiates in Indigenous Medicine, who can take the place of L.M.Ps. to render cheap medical aid in rural parts. The Congress Ministry will be earning the lasting gratitude of the Medical Profession in Madras, if the L.M.Ps. are abolished or in the alternative, their present inferiority-complex is removed and their status is raised.

3. Honorary Medical Officers.—This is another sore-spot in the Medical Profession. The original idea of introducing the honorary scheme is to gradually reduce the number of paid men and with the savings effected, to afford more medical relief to the masses. These honorary officers ought to be men of standing and should command a good private practice, so that they might correlate their own experience with the vast clinical material available in hospitals and make use of it for the general public. As to whether the scheme has worked as successfully as its originators intended it to be, is a matter of doubt. A great many factors contributed to this, chief among which may be mentioned the fact that the right type of men in certain cases were not chosen and also the fact that those that were chosen were not given a free hand in the management of the patients entrusted to their care. Nor were any savings effected in the major branches of the hospital service, such as Medical, Surgical and Gynaecological, as the honoraries there were considered more as supernumeraries than as part and parcel of the regular Medical establishment. Under the present honorary scheme, there are three classes of medical men working, the Honorary Medical Officers, the Honorary Assistant Surgeons, and Clinical Assistants. These clinical assistants are raw hands, just fresh from the Colleges. They have spent their all in their education and they have not yet set up private practice and even if they have set up, cannot hope to derive

any income at the outset. To make these people work for nothing is uncharitable, to say the least of it. We would therefore suggest that these men be paid a small allowance, the same as is paid to House physicians and House Surgeons and after two years be disbanded, new men taking their places. The most promising among them may be taken on as Honorary assistants and from there promoted to the rank of Honorary officers in course of time. The tenure of office of Honorary officers should be limited to say seven years, as that will give an oportunity to the multitudes of medical men doing private practice to pick up, up-to-date knowledge and experience in the healing art from hospital service.

Complaints are laid against the Honoraries, for example, that they do not attend the Hospitals regularly and punctually, that they wean patients away from hospitals for treatment privately by them, that they make unauthorised use of hospital materials and equipments and so on and so forth. So far, we have not heard of any definite charges being framed against any honorary, and open enquiry held and punishment meted out. In the absence of definite charges, we must only dismiss these complaints as frivolous. Any way, these Honoraries should submit themselves to discipline and should not presume that because they are unpaid they could be irresponsible. In our opinion, the Honorary Scheme requires a thorough overhauling.

4. Rural Medical Practitioners.—This scheme seems to be on the high road to success, despite its drawbacks and the handicaps imposed by local bodies on these practitioners. A wide and rapid extension of the scheme is highly desirable not only in the interest of the thousands of unemployed medical men, but also in the interest of the millions of the masses in rural parts who suffer and die from various kinds of maladies without any kind of treatment whatsoever. We think there ought to be one medical practitioner for a group of 20 or 25 villages and he should be assisted by a compounder, a vaccinator and a mid-wife. He must treat the necessitous poor free. He should tour through his villages in the evenings, after attending to his dispensary work in the mornings at the head-quarters. In other words, he must be an itinerary practitioner and as his jurisdiction may be limited to villages situate within a radius of five miles from the head-quarter village, he may not find it difficult to return to the head-quarter in the night, after finishing even two or three villages a day. Perhaps a small cycle allowance of Rs. 5/. P.M. may help him to do this task with ease, comfort and expedition. He will also be

responsible for the sanitation of the villages and for keeping them free from epidemics. This duty is already imposed on him and can be continued with profit. It behoves the Ministry, therefore, to evolve a well-thought out and comprehensive scheme before extending it. The Taluq Hospitals may be run by Local Boards and manned exclusively by Honoraries and all the branches of Medical Science may be treated there. This will help to drive a good number of Independent Medical Practitioners now crowding in cities to settle and practise in mofussil towns, and they can be called in for consultation by rural medical practitioners in case of emergency. The District Head Quarter Hospital may remain a purely provincial one for the present.

5. Hospital abuses.—As the Hon'ble Minister is now engaged in visiting the various hospitals and getting himself personally acquainted with the state of affairs there, it will be unnecessary for us to dilate on this subject. That hospital abuses—a term which embraces many irregularities of a chronic nature—do exist in almost all the hospitals both in the City and in the mofussil cannot be gainsaid and it is hoped the Congress Ministry will make the necessary enquiries and take immediate steps to remedy them.

6. Medical services.—With regard to the services, the attention of the Ministry must be directed to the I. M. S. and their unassailable position in the Provincial Medical administration. We have already in our issue of May 1937, discussed the inequity of the recent Government of India Resolution on the subject and suggested that the posts of Surgeon-General and other non-listed appointments should be provincialised. But we find from the Hon'ble Health Minister's answers to an interpellation in the Legislative Assembly, a couple of days back, that such a course is not possible 'until all officers in Civil employ on the date of the publication of the reorganisation scheme have retired or have been provided for'. This is based evidently on the assurance given by the Secretary of State to the British Medical Association, which, we understand, is not legally binding. The Ministry should therefore address the Secretary of State in the matter and see that our Province is saddled with no more I. M. S. Officers than are officially listed in the Government of India resolution. The Secretary of State should also be asked in view of the rapidly changing conditions in India to take back all the military medical men and leave the Province free to form a cadre of its own with equal, if not greater efficiency and with much less cost.

7. Health Insurance.—The last reform we would advocate would be the provision for Health Insurance. Of course, in view of the abject poverty of the people, such a scheme may not be immediately practicable. We wish, however, that this scheme is borne in mind for consideration at a future date and we have no objection to the Ministry hastening slowly in this matter.

XIV All-India Medical Conference, Madras, 1937.

We are glad to announce that the XIV All-India Medical Conference will be held this year in Madras during X'mas Week.

This is the first time, after 13 years of existence of the Indian Medical Association, under whose auspices this Conference is held annually, that Madras has made up its mind to invite the Conference. We note with satisfaction that official and non-official medical men, graduates and licentiates in Medicine, have joined together and met on a common platform to devise ways and means to make the Conference an unqualified success. The Reception Committee that has been constituted is thoroughly representative of all shades of medical opinion in this Province, and we have no doubt that Madras would not lag behind other provinces in providing adequately for the wants and comforts of the delegates. For this purpose, funds are necessary and we hope there will be an overwhelming response to the General Secretary's appeal, which we publish elsewhere.

GLEANINGS FROM MEDICAL PRESS

Medicine and Therapeutics

Anthelmintics.—Reviewing the relative value of the anthelmintics in common use, Faust (New Orleans) states that for hookworm infection tetrachlorethylene (C_2Cl_4) is probably the safest efficient drug; oil of chenopodium and carbon tetrachloride (CCl_4) are very potent but both are toxic and frequently contraindicated. Hexylresorcinol is best for ascariasis and oxyuris infections. Gentian violet is the only known specific for strongyloides infection. The best drug for trichocephaliasis (whipworm) is ficin (the active principle of the sap of *Ficus laurifolia*), but it is not yet available commercially. For tapeworm the drug of choice is male-fern, with carbon tetrachloride as second choice. Tartar emetic is best for blood-fluke infections (schistosomiasis), and

ethyl chloride for local use in creeping eruption. No anthelmintic is completely non-toxic for the patient in therapeutic doses. Before presenting such treatment the physician should be sure of his diagnosis, should be familiar with the several aspects of the infection, and should have clearly in mind the relative efficacy and toxicity of the anthelmintics available.—*The Prescriber.*

Phenobarbitone: A Warning.—Fox (Lingfield Epileptic Colony) utters a warning against the indiscriminate use of phenobarbitone ('luminal') in the treatment of epilepsy. In cases where the drug is effective it acts promptly and the attacks cease, sometimes never to return. More often tolerance sets in and an increased dose will be necessary: many patients who started with a small dose are now taking 4 or 5 grains or more a day. Fox suggests 3 grains a day as the maximum. Omission or reduction of the medicine is apt to be followed by a grave increase of fits or even by status epilepticus. Increase of fits due to deprivation or reduction is also liable to occur in patients whose fit-incidence has not been affected by the drug. Thus a trial period may leave the patient definitely worse off than before. Quite a number of children become more irritable and difficult when they are taking phenobarbitone. The condition may be temporary and pass off in a few days or weeks, or it may persist and grow, occasionally giving rise to something approaching mania. This drug irritability is a very definite condition, and must be watched for. It is not due to cessation of fits, because it is seen also in children whose fit-incidence is unaffected.—*The Prescriber.*

Sensitiveness to Acetylsalicylic Acid.—Prickman and Buchstein (Mayo Clinic) have studied the question of supersensitiveness to acetylsalicylic acid. This is the most common form of drug allergy and is much more common than is generally believed. It is more common among females and is limited to persons with a history of allergy, being particularly frequent among asthmatics with nasal polyps: to such persons the drug should never be given. The commonest forms of reaction are asthma, urticaria, and angioneurotic oedema, and fatal reactions have been reported. Other types are vasomotor rhinitis, purpura, abdominal cramps, and salivation. Skin testing in such cases is unreliable and dangerous. The best treatment is scrupulous avoidance of the drug by the allergic patient. Asprin is a useful and effective drug and may be prescribed with safety to those who give no history, personal or familial, of allergy. It may be used with caution by

allergic patients who have previously used it without ill effect. Williams and Panting (Melbourne) report that intravenous injection of Hartmann's solution (a solution of sodium lactate made isotonic by addition of Ringer's solution) effected recovery in two infants who had developed severe toxic symptoms after swallowing large quantities of acetylsalicylic acid.—*The Prescriber.*

Experimental Studies with Sulfanilamide and with Prontosil in Hemolytic Streptococcus Infections.—Ralph R. Mellon, Paul Gross and Frank B. Cooper, Pittsburgh (*Journal A. M. A.*, May 29, 1937), report the results obtained by treating mice infected with hemolytic streptococci of different virulence levels with sulfanilamide and with prontosil. Two strains of hemolytic streptococci were used: the "Stoddard" strain, isolated from a case of septicemia at the Western Pennsylvania Hospital, and the "Pion" strain, which was obtained from the Pasteur institute. The former had spontaneously acquired high virulence without animal passage and was used at the time of maximal virulence and also during a period of spontaneously diminishing virulence. The latter culture was considered moderately virulent. Both sulfanilamide and prontosil exhibit marked therapeutic effects in mice against hemolytic streptococcus infections. This effect obtains for strains of both medium and high virulence. Their experiments show no indication that phagocytosis is a factor in the mechanism of the therapeutic action of these drugs. Proper treatment of guinea-pigs with sulfanilamide results in a localization and rapid healing of experimental intradermal hemolytic streptococcus infections, which in the untreated animals may disseminate with fatal results. No qualitative changes in the character of the histologic response to the hemolytic streptococcus as a result of sulfanilamide administration have been noted.—*Texas State Journal of Medicine.*

The Nutritional Significance of the Curd Tension of Milk.—In view of the claims made regarding the relation between the type of clot formed by milk in the stomach and the ease of digestion, the Council on Foods has reviewed the evidence on the production and properties of "soft curd" milks and the relation of curd tension to digestibility. Human breast milk forms soft friable curds in the stomach whereas ordinary cow's milk usually forms tough cheesy masses which are not digested as quickly as softer curds. The boiling of cow's milk causes changes which result in the production of a softer and more quickly digested curd.

Pasteurization has little effect, but softening of the curd may be accomplished by a great variety of methods. These include simple modifications used in the preparation of many infant feeding mixtures, for example, dilution, addition of acids or alkalis and the addition of various cereal waters. Commercial evaporated and dried milks usually have a low curd tension. Removal of ionizable calcium by means of treatment with a zeolite likewise yields a soft curd milk. Homogenization reduces curd tension but homogenized milk varies depending on the curd tension of the original milk. Some cows produce milk which yields a soft coagulum without treatment. The Council concluded that the evidence is meager that any soft curd milks are more readily digested in the stomach than ordinary boiled milk used in the feeding of infants. —*J. A. M. A.*, June 12, 1937, *ibid* June 19, 1937.—*Texas State Journal of Medicine.*

The Natural Treatment of Pneumonia.—Strict rest in bed on an open verandah or at least with windows wide open even in winter and during the night. The patient should sit up and talk as little as possible. Compresses only on the front, the chest and abdomen, and on the calves. No food but fresh fruit juices or nothing but cold tea or water; thorough evacuation of the bowels with the help of laxatives (Hamburger tea) and 1-2 enemas daily. Rapid tepid and later on cool sponging of parts or the whole front of the body (without sitting up) every two hours, after which the body should be brushed dry. Wet packs (without impermeable covering) on the abdomen, calves and forearms have a derivative and absorbing effect. By its surface evaporation the compress produces a capillary suction outward, it sucks, so to speak, at the pores of the skin (at first the compresses smell unpleasant when they are changed but not later). In more severe cases mustard packs. All these measures should be agreeable to the patient. As long as the temperature is rising and the patient shivers, the application of heat is indicated, thus hot packs (hot oil packs for the stabbing pain in the chest!), heating pads, arc-light, hot water bottles, etc. When the fever has reached the highest point and the patient begins to sweat, he should be treated with cold packs, cool sponging, air baths, etc. In cases of doubt whether treatment with cold or heat is preferable, the patient's subjective feeling is decisive. Immediately after defervescence breathing exercises; when the appetite returns, first two days of strict raw diet, then two days on a mild raw diet, afterwards a vegetarian diet. For

promoting absorption, baths of the forearms, increasing in temperature according to Hauffe-Schweningers suggestion, later baths in which the skin should be rubbed with a brush, Kneipp douching with alternating cold and hot water, sun baths.

Fifty-four patients were treated according to the above principles; five old persons died (two were moribund when admitted, two were only recognised as cases of pneumonia by post-mortem examination, one died from embolism 18 days after his recovery). Only once was a strophanthine injection given, otherwise no medicines.

The technique of the pack is described by A. Schalle, Bad Worishofen, as follows: a porous soft sheet should be folded double, dipped in cold water and well wrung out. The patient should be slightly raised in bed, a woollen blanket spread under him, on this a dry sheet and upon the last the moist one which should be applied quickly, without folds and well moulded to the thorax with both hands (from the axilla to the costal margin) whilst the patient reclines; the dry sheet and blanket should then be folded over the chest so that they reach beyond the wet sheet on every side. The blanket is fixed with safety pins. A loose pack will make the patient shiver! The patient should then be well covered up all around with eiderdown, so that he gets warm quickly in spite of the open window. The feet may, if necessary, be rubbed or warmed with hot towels or a hot water bottle. After 1-2 hours the pack should be removed whilst the window is shut without uncovering the patient unnecessarily and the skin rubbed dry; ½-1 hour afterwards he should be washed with cold water and his clothes changed. The sheets which have once been used should be thoroughly washed, the blanket well aired and exposed to the sun. To increase the irritant effect on the skin, a little vinegar may be added to the water. Excellent results have also been observed, especially with pneumonia in children, from finely stirred curd spread in a thick layer on a moist towel (curd compress). The curd which is directly in contact with the skin has a pronounced antiphlogistic and quickly defervescent influence.—*R. Habicht, Hippocrates, No. 12, 1936.—Medical World.*

Tubercle Bacilli in Stomach Washings. Estimates of the comparative importance of the clinician, the bacteriologist, and the radiologist in the detection of early pulmonary tuberculosis are apt to vary widely, if not wildly. Although the clinician keeps coming back into his own, it cannot be denied that he and his stethoscope

have lately been pushed a little into the background by the growing prestige of the radiologist. This prestige, however, should suffer a check from investigations conducted at the Oresund Hospital in Denmark by Dr. Ulf Gad, who has made a bacteriological examination of the contents of the stomachs of 271 patients whose radiological reports, as far as their lungs were concerned, had been reassuringly negative. In as many as 34 cases, or 12·5 per cent., irrigation of the stomach on two successive mornings with 300 c.cm. of water yielded a fluid in which tubercle bacilli were found. In 97 of the 271 cases the patients had been admitted to hospital for observation, despite a negative radiological report, because they had signs and symptoms that made them suspect, and in 11 of these cases tubercle bacilli were found in the stomach. Another group consisted of 75 patients who suffered from pleurisy, and tubercle bacilli were found in the stomachs of 12 of these. The only group in which the stomach-pump and radiological tests agreed consisted of 23 patients representing almost as many different diseases which ranged from undulating fever to pulmonary infarct. In none of them could tubercle bacilli be found by gastric lavage, although this group contained cases of erythema nodosum, spontaneous pneumothorax, empyema, and bronchitis. It should be noted that all Dr. Gad's 271 patients were adults, and that hitherto most of the publications on the diagnosis of pulmonary tuberculosis by gastric lavage and bacteriological examination have concerned children, who are more likely to swallow all their sputum. But evidently the usefulness of the stomach-pump test is far from negligible in adults, and we are likely to hear more of it in the future as a corrective to the interpretations set on shadows by the radiologist and on sounds by the clinician—*The Lancet.*

Surgery

Embolism after the Injection of varicose veins.—In the course of an inquiry into pulmonary embolism arising as a sequal to the injection treatment of varicose veins, Westerborn found that in Sweden the operations on varicose veins other than injections numbered 1385 in 1924, whereas in 1934 the corresponding number was only 350. If an accurate estimate is to be formed of the frequency with which pulmonary embolism follows injections of varicose veins, a study of the literature will not suffice, as the publicity given to disasters is apt to suffer from under-statement. To get a truer picture, Westerborn addressed inquiries to all the

93 hospitals in Sweden, and from 86 received answers concerning the period 1927—1934. He calculates that in the period under review some 30,000 patients were given injections for varicose veins. There were 11 deaths from pulmonary embolism, and in 6 other cases signs of severe embolism were followed by recovery. In only 6 of the 11 fatal cases was the diagnosis confirmed post-mortem. It is conceivable that in some of these cases the embolism may have been only a coincidence, for cases have been recorded of severe pulmonary embolism just after refusal of treatment by injection. But even accepting all the 11 deaths from embolism as due to the treatment, this gives a mortality of only 0.036 per cent.

Westerborn's study of the literature of injection treatment has yielded 26 fatal cases of embolism and 20 other cases of embolism followed by recovery. The records of embolism following more radical operations on varicose veins are much more alarming. In America McPheeters found that 6671 operations on varicose veins were followed by 36 deaths from embolism—a mortality of 0.54 per cent. He concluded that the mortality from embolism was 70 times greater after an operation than after an injection. In the annual reports of 82 Swedish hospitals in the 5-year period 1921–1925, Westerborn found that 6994 operations on varicose veins were followed by 18 deaths from embolism—a mortality of 0.26 per cent., which is many times greater than that after injections.

In none of the cases coming to necropsy could Westerborn find evidence of detachment of the thrombus created by the injection. In every case a secondary coagulation thrombus had travelled to the lungs. The formation of a secondary, coagulation thrombus is evidently promoted by a local or general infection, and also by defective circulation, which in its turn is favoured by lying in bed. A less preventable factor favouring secondary thrombi is old age. Westerborn warns against injecting bedridden patients, and he notes that many surgeons do not allow their patients to go to bed on the day of injection. He could not find that any one chemical is more dangerous than another, but he warns against isotonic solutions. Solutions of sugar have the advantage of not inducing tissue necrosis when a peri-vascular injection is given by mistake, but they sometimes fail to induce the desired thrombosis. Quinine-urethane is much more reliable, and has been used in Sweden in 80 per cent. of all cases. But it has latterly fallen into disfavour in many countries, and its place has been taken by sodium morrhuate, which has the advantage of not provoking necrasis when a peri-vascular injection is given.—*The Clinical Journal.*

The Characteristic Radiogram of Cancer of the Lung.—Jaquerod points out that cancer of the lung is rarely diagnosed at its onset, and often is discovered only at the necropsy. The early symptoms are sometimes those of a pleural, sometimes those of a bronchial affection. Therefore the first diagnosis is usually tuberculosis. But if a radiogram is taken on the appearance of symptoms the diagnosis can be made with considerable confidence. If, as too often happens, this is not done, in a few weeks the radiogram is so altered that it is no longer characteristic. Sometimes only an opaque mass is shown in which pulmonary elements are no longer recognizable; sometimes the whole lung is masked by a pleural effusion. The result is that the diagnosis of tuberculosis is the thought to be confirmed, in spite of the absence of tubercle bacilli from the sputum and pleural fluid. But if a radiogram is taken at the onset, prolongations, like the claws of a crab, can be seen extending from the growth. These are characteristic of cancer of the lung.

In one case the onset was by bronchopulmonary symptoms, which were thought to be tuberculous. Pleural effusion followed and was removed many times, with air replacement. The radiogram showed almost complete hydropneumothorax with a small stump of collapsed lung. The patient had been treated for six months for tuberculosis. But crises of suffocation with wheezing suggested to Jaquerod bronchial compression and made him think of mediastinal tumour. On examining a radiogram, taken at the onset, he found a large opaque mass occupying the whole of the left hilum, from which prolongations like the claws of a crab ramified to the pleural surface. There was a small pleural effusion. The necropsy showed a growth in the hilum with cords of cancerous lymphatics radiating from it.—*The Clinical Journal.*

PROCEEDINGS OF CONFERENCES, SOCIETIES, ETC.

The Medical Practitioners' Association, Nuzvid.

A monthly meeting of the above Association was held at Nuzvid on Sunday the 29th August, '37 at 4 P.M. in the quarters of Dr. Mrs. N. M. C. Seshagiri Rao who was at home to the members. Dr. P. Angaiah Naidu presided. Dr. N. Rama Rao, Secretary, read the minutes of the previous meeting which were duly adopted. Mr. Angaiah Naidu narrated the case history of a male aged 53 with High Blood Pressure and complicated by intermittent attacks of Haematuria of a very severe type. Two other cases given out by him were : (1) acute intestinal obstruction due to round worms; and (2) a difficult labour in a primapara who later on developed a severe oedema of the face for which no cause could be made out as well as dysphagia which ultimately proved fatal.

Mr. N. Rama Rao mentioned a case of Typho-Malaria in a lady after delivery, that started on the 11th day of puerperium with a sub-involuted uterus and that the course was much prolonged and protracted for about a month.

Mr. V. Ananthachari gave out a case of Quinine idiosyncrasy in a lady after delivery, manifested only after 10 grs. of quinine intramuscularly and 4 grs. orally.

Many more case reports came up for discussion as well as the above mentioned cases in which all the members took an active part and the meeting came to a close by 7-30 P.M.

The Independent Medical Practitioners Association, Tinnevelly.

A meeting of The Independent Medical Practitioners' Association, Tinnevelly was held on Saturday, the 11th instant at 5-30 P.M., at Dr. G. N. Kantayya's X ray Clinic at Palamcottah, under the presidentship of Dr. T. N. Govinda Aiyar, M.B., C.M., when 15 members and a few brother practitioners were present. The proceedings began with the reading of the minutes of the previous meeting and of the minutes of the Managing Committee meeting held on 27.8.'37. The following among other resolutions were passed at the meeting:—

(1) That the subscriptions be collected in advance both for membership and journals for 6 months from October, 1937.

(2) An Additional Journal, The Medical Press and Circular, be subscribed for.

Dr. Kantayya, B.A., M.B., B.S., then demonstrated the effect of Inductotherm on some of the members, followed by a lucid explanation of the apparatus, mode of action, the various indications including its wonderful results on gonococcal infections, neuro-syphilis etc., and contraindications. He then showed a few skiagrams taken in his Clinic.

The president then thanked the lecturer for his lucid lecture. With a vote of thanks proposed by Dr. V. Narayanachari to Dr. Kantayya for his "At Home", the members dispersed.

BOOK REVIEWS

Dental Infection and Systemic Disease.—*By Russel L. Haden* M.A., M.D., 1936 II-Edition—Pp. 163, illustrated with 63 engravings. Lea and Febiger: Philadelphia, Price $ 2.50.

The role of dental infection in the causation of systemic disease cannot be over-estimated. The present book tells us beyond

doubt the importance of dental infection in the medical diagnosis of diseases. When to remove an infected tooth, in which types of patients can improvement be expected after removal of tooth, are some of the many important problems discussed in the book. We are sure General Practitioners, Dentists and the Laboratory workers alike will find in this compact volume much that is essential for their routine work. The illustrations are good and impressive, the get-up handsome and price modest.

Notes on Clinical Laboratory Methods.—Standing Committee on Laboratory Methods, University of Glasgow. 1936; third Edition. John Smith & Sons (Glasgow.) Ltd., Price 2/-.

This little book has been compiled and approved by the Standing Committee on Laboratory Methods of the University of Glasgow, for use in the teaching of clinical medicine in hospital wards.

The book contains all methods of investigation necessary for medical students, such as for instance urine, blood, gastric contents, faeces, urethral secretion, exudate from chancre, sputum, secretion from throat, nose and nasopharynx, pleura and peritoneal and synovial fluids, hair, skin, nails, cerebrospinal fluid, etc. The book is well written and practical. Students will be much profited.

Practical Methods in the Diagnosis and Treatment of Venereal Diseases—By David Lees 1937 Third Edition. Revised and Edited by Robert Lees. Butterworth & Co. (India), Ltd., Calcutta. Pp. 608, illustrated. Price Rs. 10.

This book needs no introduction to our readers. Suffice it to say that the present 3rd edition is a tribute to the memory of the late Dr. David Lees. The book has been brought up-to-date. The chapter on syphilis of the nervous system and on cardio-vascular system has been rewritten. Chapters on Chancaroid, Phagaedena, Inguinal bubo, etc. are new. Another feature of the present edition is collaboration of the following contributors: R. Grauston Low, William R. Logan and R. C. L. Bachelor. The book is highly commended to all.

Medicine for Nurses.—*By W. Gordon Sears*, M.D., (Lond.) M.R.C.P. (Lond.). Second Edition. Pp. 424, illustrated. London: Edward Arnold & Co., 1937. Price 8/6 sh. net.

The issue of a second edition within a short interval of 2 years is proof that the book has supplied a great demand and is appreciated. Opportunity has been taken to make the present

the Medical Profession in India, and the general public, such as Medical relief, Health and Sanitation etc. will be discussed at this Conference.

A Scientific Section will also be organised, where purely professional and scientific papers will be read and discussed. May I request you to co-operate with us and contribute papers to this section ?

A Medical Exhibition will also be organised for the occasion. I would request you to make the local firms, interested in the sale of Foods, Drugs, Patent medicines, Hospital requisites, Medical publications, Health and Sanitary wares and such other commodities of public and professional use, take advantage of this opportunity to exhibit and advertise their products before the Medical Profession. The Stall rental will be very moderate to enable every firm to take full advantage of the offer.

I shall also thank you to give wide publicity to the Conference The schedule of fees, as per Conference rules, is given below :—

Members of the Reception Committee :—All Medical Practitioners possessing registrable qualifications can join the Reception Committee on payment of Rs. 10/-, which has been fixed by the Reception Committee, as the fee for its membership. Members of the Reception Committee are entitled to attend all the sections of the Conference. (This fee does not include the charges for Boarding and Lodging.)

Delegates :—All medical practitioners possessing registrable qualifications will be entitled to be delegates of the Conference on payment of certain scales of fees. They will be entitled to vote and take part in the Conference. Those medical practitioners who are already members of the Indian Medical Association directly or through its branches, will have to pay Rs. 5/- each as delegation fee and those medical men who are not members of the Indian Medical Association will have to pay a delegation fee of Rs. 8/- each.

Besides the above, those who do not want to be delegates of the general Conference may be delegates of the Scientific Section only on payment of Rs. 5/- each and take part in the proceedings of the Scientific Section. Bonafide medical students shall also be entitled to be visitors to the Scientific Section as student visitors on payment of Rs. 2/- each, as admission fee, but shall not be allowed to take part in the discussion.

Scientists who are not medical men will also be entitled to be delegates and take part in the Scientific Section on payment of a delegation fee of Rs. 5/- each. Remittances can be made to the General Secretary, 323, Thambu Chetty Street, Madras.

Arrangements will be made for the accommodation and boarding of the delegates.

Delegates or members, desiring to move any resolutions, are requested to send copies of the same to the General Secretary as early as possible.

I hope this appeal will meet with ready response from you and your friends and I can assure you that all of you will find the visit to our City very interesting, instructive and useful. If you or any of your friends would like to have any further information, I would only be too willing to furnish them."

Profuse Grey Hair in young girls.

Dr. H. Dass, M.B., F.R.C.S., *Offg. Chief Medical Officer, Jind State, writes* :—

Will you or any of your numerous readers help me with suggestions regarding methods of investigation and treatment in the following case :—

There are three young girls (18, 15, 13 years old respectively) who have developed profuse grey hair on their heads. The hair at birth was normal black, but as they came near puberty some of the hair became grey. This process goes on increasing for 5 or 6 years and then becomes stationary as is noticed in the case of the eldest girl. The process is on increase at present in the case of other two girls. All the hair do not become grey : only $\frac{1}{3}$ at the most. Apparently there is no endocrine glands disturbance and general health of each is satisfactory.

Father of the girls is 45 years old and gives history of having devolped some grey hair when he was 18 years old and this state of affairs lasted for 4 or 5 years and his hair became black Now he has only a few grey hair as is common with the age.

Mother is 36 years old and gives no particular history and she has only a few grey hair.

Research in Ultra Short Waves.

The First International Short Wave Congress at Vienna.

The following communication has been sent to us for publication :—

Comparatively little appears to be known in English speaking circles of the medical profession regarding Short Wave Therapy. Based principally on the pioneer work carried out by Esau and Schliephake in Germany since 1927, it is, relatively, still in its infancy. However, the considerable progress made during recent

years in this new treatment method resulted in the First International Short Wave Congress which took place in Vienna last July. The meeting became a forum for the exchange of experiences and the coordination of reports from many sides. Interesting and significant appears the close collaboration of Physicists and Biologists with the representatives of the medical profession.

Besides the Austrians, as hosts, there were delegates from many lands: Germany, Great Britain, Italy, France, America, Japan, Hungary, Greece, Roumania, Holland, Czecho-Slovakia. Most of the papers were submitted by German and Austrian delegates. Prof. Rajewski and Dr. Schaefer of Frankfurt a.M., both prominent Biologists, spoke on the Mechanism of the biophysical effect of Short Waves in body tissues. Of particular interest was the report of Prof. Essu-Berlin on the results obtained with wave lengths of 4.9 millimetres. The principal medical paper was read by the Doyen of Ultra Short Wave Therapy: Prof. Schliephake, Giessen, dealing with the treatment of rheumatic conditions.

Ultra Short Waves are the electrical waves below 10 metres. Prof. Esau, Berlin, in the course of his research with these wave lengths, established the technique of the "Condenser Field". The patient no longer needs to have electrodes applied to the bare skin. Rather he or a part of his body is placed between two electrodes maintaining a "Field". It was thus possible to save a child of eight months with an abscess of the lung, the size of an egg; usually a fatal disease. The child was cured after twelve treatments.

A very instructive demonstration on the "Selective Effect" of Ultra Short Waves (*i.e.* the ability to concentrate the effects in a particular body surrounded by others) consisted of placing a container with water between two ice blocks. When placed in the "Field" the water soon began to boil while the ice blocks were not affected. In another experiment, fishes in an aquarium were killed without the temperature of the water being noticeably increased.

The most important achievement of this Congress is the establishment of a broader basis for further and closer international collaboration in the research on Ultra Short Waves. The proceedings came to a close with the appointment of an International Committee for the purpose of preparing and arranging the next Congress to be held in 1940.

On the whole, the First Congress at Vienna has established the importance of Ultra Short Wave Therapy and indicates the direction of further developments on the basis of the results obtained from researches conducted in recent years.

INDEX TO ADVERTISERS.

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The Antiseptic

A Monthly Medical Journal

Edited by

Dr. U. Rama Rau, M.L.C. & U. Krishna Rau, M.B., B.S.

CONTENTS.

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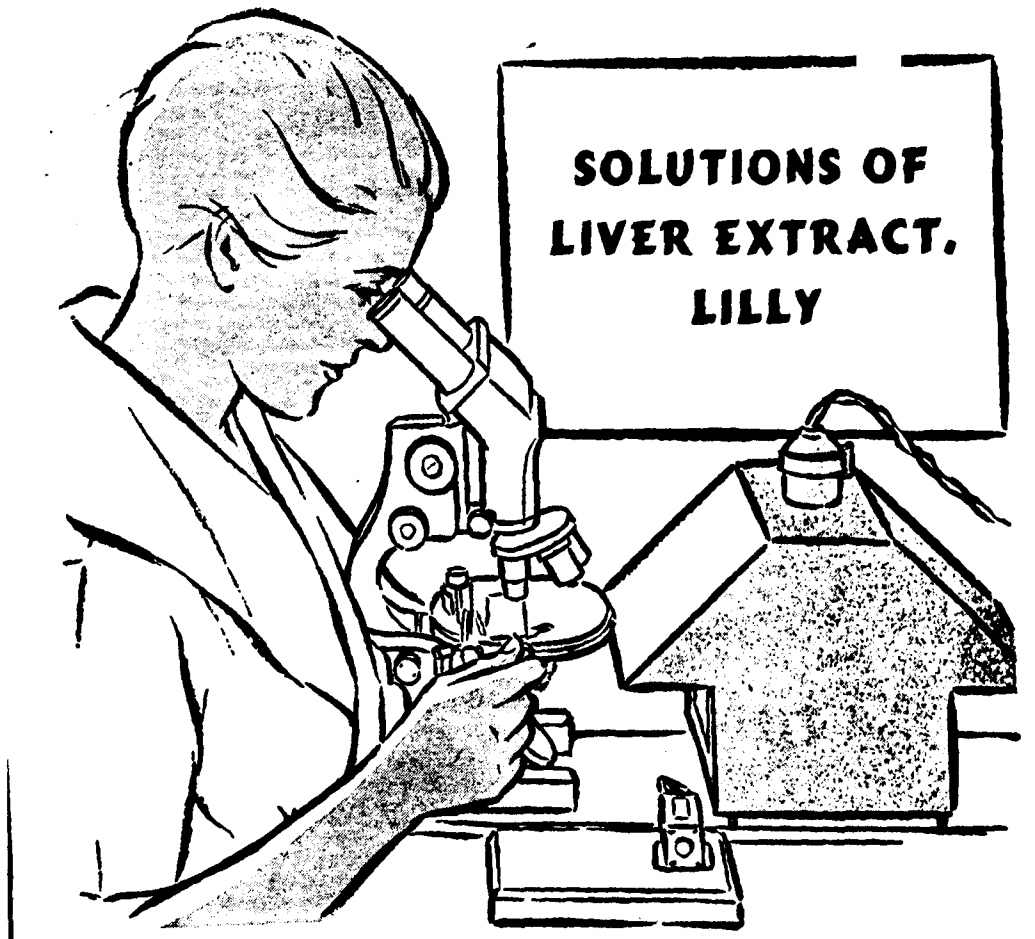
Index to Advertisements, see page 54.



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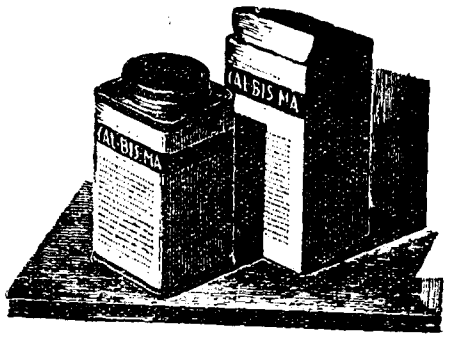

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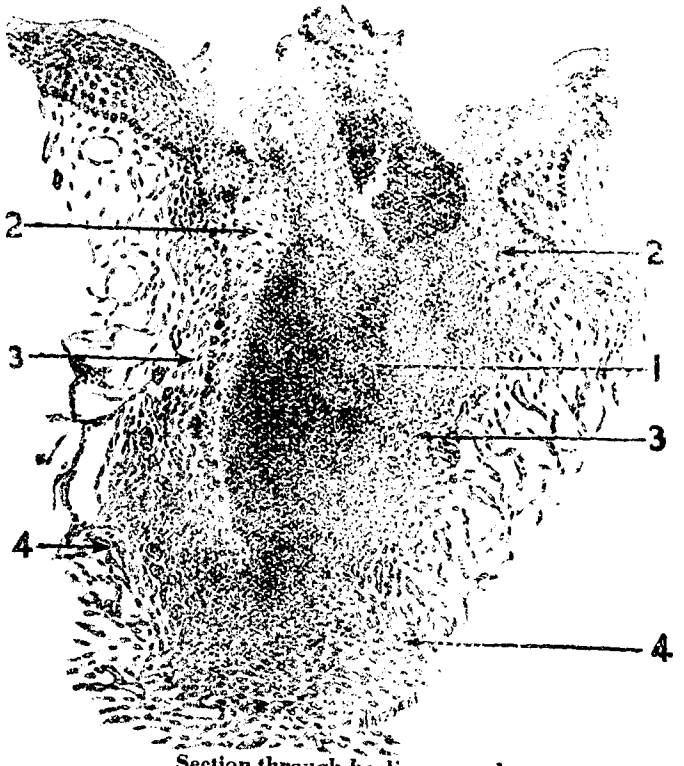

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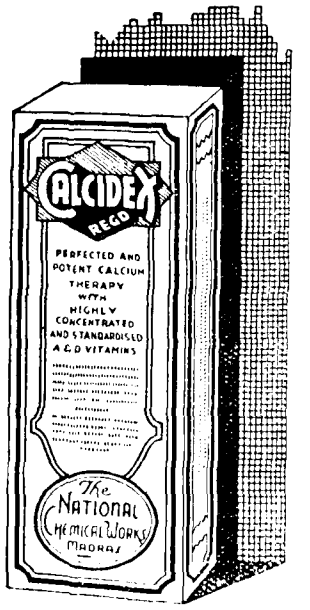

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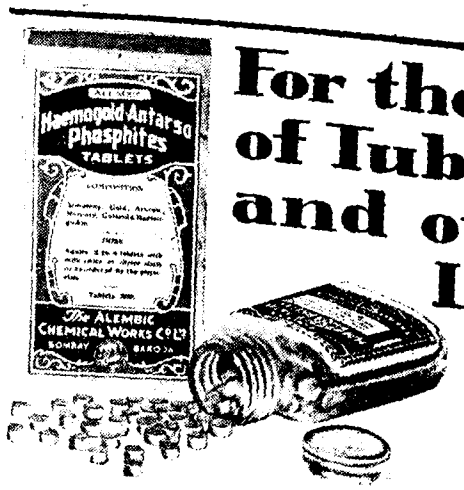

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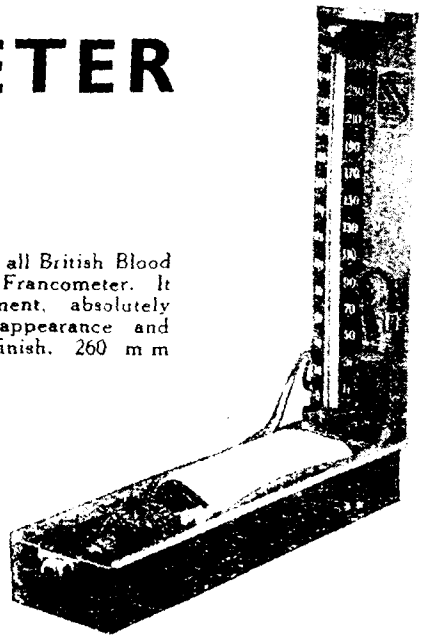

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Special Number on Skin Diseases.

The Antiseptic

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Dermatology and the General Practitioner

BY

N. P. Venkateswara Iyer, M.B.B.S.

Tripunithura.

Introduction.—Dermatology, though it only holds a position of secondary importance in medicine, has got many unsolved problems. Its study requires a greater amount of general attention than what has been hither-to given to it and the writer has here sought, with the aid of illustrations from his experience, to bring emphasis to this need.

A peep into the past.—A personal experience of the writer shows that the general practitioner's knowledge of dermatology in the past was very backward. While he was a student, about 20 years ago, he happened to suffer from an attack of acute eczema of the weeping type in the leg. This used to give him spells of intolerable itching which were followed by severe smarting, occasioned by the scratching of the lesion. As the trouble showed no tendency to make any spontaneous disappearance, the writer consulted a doctor, who was a medical graduate attached to the O. P. department of a hospital. One ointment after another was prescribed for the condition until those stocked in the hospital were each by turn tried and found useless. The names of such B. P. preparations as citron ointment, Scott's ointment, blue

ointment, etc., the writer came to learn even before his joining medical studies. The writer then consulted a senior member of the hospital staff on the I. P. side, who was then well-known for his professional experience, ability, and skill. This gentleman after casting a keen glance at the trouble, made the writer sit in a chair, and holding the leg with one hand, began to scrape the eczematous area with a scalpel in the other hand. After the operation, the writer was given a potful of iodoform ointment for application. This however did not bring about any improvement despite prolonged applications and waiting. After this the writer hesitated to consult learned doctors any more not from fear of the scalpel or loss of money but on account of the view he formed that there was something fundamentally wrong with their knowledge of the disease and its proper treatment. And this made him willingly submit to a trial of the application of some domestic remedy to which he had all along cherished a profound distrust inwardly; and to his surprise the eczema disappeared once for all in a short time, probably from the soothing and astringent effect which the application had.

More recent period.—At the time when the writer was a student in the medical college, 14 years ago, there were no courses of lectures on Dermatology in the college or clinical demonstration of skin cases in the hospital. The examiners were fair and they did not trouble the students with questions on Dermatology. The qualified medicoes were left to acquire of their own accord enough knowledge of the subject to help them in their practice. However, the writer has come across a few instances which make him suspect that little attention is paid to the proper study of the subject by some practitioners. The following is a true copy of a prescription given by a practitioner of some years' standing, to a patient suffering from scabies :—

℞ Sulphur sublimis	...	ʒ ii
Acid Boric	...	ʒ i
Zinc oxide	...	ʒ i
Acid Carbolic	...	♏ xv
Thymol	...	grs. x
Olive oil	...	ʒ ii
Lanolin	...	ʒ i

Ft. Ung. Sg. for external application. The patient had tried the daily application of the ointment for over a month with hardly any benefit and had all along patiently put up with the burning

caused by it. His trouble completely disappeared in 3 or 4 days by changing the application to Ung. Sulphuris B. P. The other instances which had been observed by the writer were cases of chronic urticaria and of dry eczema which had been given repeated courses of neosalvarsan injections. Such instances as these would be very rare, if enough attention is paid by the general practitioner to the study of Dermatology.

Books on Dermatology.—There are some good books on Dermatology written by English authors within the purchasing capacity of the average practitioner. However, the writer feels that special editions would be more useful for the guidance of the practitioners in India. For, there appears to be many kinds of skin diseases peculiar to this country. Further, its climate is different from that of Europe and the dress, the diet, the habits, the economic condition, and the skin itself of Indians are different from those of Europeans; and it is reasonable to suppose that these factors, will without doubt, play some part in the various circumstances connected with skin diseases here. A few illustrative examples will make this clear. Unlike the people of Europe, most Indians walk bare-footed on the ground and there are many kinds of affections of the skin of the feet. Of these a honeycombed appearance of the skin of the soles, involving particularly those portions of it touching the ground, is a fairly common condition, a reference to which is not to be found in some popular English books on Dermatology. Affections of the skin in the waist area are common among Indian females and these seem to be connected in part with the peculiar and tight dressing round the waist worn by orthodox ladies. Disorders of the skin of the lips such as fissuring and pigmentary changes are met with. Of these the former appears to be connected with chewing and the latter calls for some investigation. From these it would be seen that a treatise on Dermatology, including accounts of skin diseases met with in India, will be supplying a general want among practitioners in India.

The Ayurvedic System and Dermatology.—A reference to the Ayurvedic System may seem out of place here; but it is included because every general practitioner in India, from his contact at one time or other with skin cases handled by practitioners of the Ayurvedic system, will have some observation to make. No one can ignore the fact that the Ayurvedic System survives to-day and that Ayurvedic doctors have a not negligible supporting clientele. European Medicine, great as it is, built upon a solid bed-rock of

sound experimental basis, and triumphant in achievements, should not make us, its votaries, so proud as to disbelieve in the possible existence of valuable information in the Ayurvedic System. The Ayurvedic practitioners have, as a rule, a lower standard of general education; but this should not make us despise a system which has been ministering to the needs of the sick people of India for a great many centuries and which therefore may be expected to contain valuable truths. When opportunities exist for critical observation and study of cases handled with success by Ayurvedic practitioners, they should be availed of in full by the general practitioner. Publicity of observed facts in detail in the leading journals will enable others to make valuable criticisms and confirmations. This will help to make advances in the field of Dermatology in India.

A few instances are here given from which it will be seen that there are some potent remedies known to Ayurvedic practitioners. A lady aged 53 suffering from Alopecia Areata consulted the writer first and later some others with greater experience than himself and had courses of various remedial applications, excepting X-Rays for which she had objections, with not the slightest effect. At last, she consulted a gentleman, learned in Ayurveda and popular for knowing some valuable remedies, who prescribed for her a paste for external application over the bare patches. This has restored normal growth of hair in the bald areas. The writer saw the patient just before writing this note and he has been highly impressed with the effect of the paste in a disease, the prognosis of which in patients past 40, is only expressed in terms of doubtful certainty by English authors. Another instance which the writer would like to mention is as regards the treatment of minor degrees of burns by medicated oils. He has seen some cases of fairly extensive burns of the limbs of the first and second degree in children, treated by the application of these medicinal oils with satisfactory results. In this connection it is interesting to note that recent literature regarding the treatment of burns speaks highly of cod-liver oil applications. Although the writer has so far not been able to satisfy himself with proofs, he would like to note here, from the standpoint of a general observer, the existence of a strong belief shared even by many cultured people, in the specificity of certain Ayurvedic applications in the case of some skin lesions, curiously believed to be produced by poisons from spiders, rats, lizards etc. commonly found in the household.

Progress in Dermatology.—Progress in Dermatology has been

rather tardy in the past in spite of the fact that the skin affords scope for making exact clinical observations by the unaided eye. One of the factors responsible for this is probably the difficulty of carrying out satisfactory experimental studies on the skin of animals as this presents marked differences from that of the human being. Another factor is probably want of sufficient help from General Medicine. The twentieth century so far, however, has made some important advances in dermatological studies. Thus, to mention only a few, the medley of skin diseases has been brought under a scientific system of classification according to aetiological factors. The nature of some skin diseases has been made clearer to our understanding by the light derived from studies in allergy. The researches of Sir Thomas Lewis upon the capillary circulation of the skin and his discovery of a special system of nerves in the skin are some recent and valuable acquisitions in the field of Knowledge.

It is only in recent years that a special skin clinic has been attached to the premier teaching hospital in the Presidency. Many among the practitioners of the present generation have not had the advantage of receiving any sound training in Dermatology in their student days. The Editors of the *Antiseptic*, therefore, deserve hearty congratulations from all practitioners for bringing out a special issue on Skin Diseases. It will enable the general practitioner to obtain much recent and useful information on the subject and by stimulating the study of obscure problems, it will cause knowledge of Dermatology to advance.

General Diagnosis of Skin Diseases

BY

Dr. Dalip Chand Bahl,

Ambala Cantt.

THE skin is liable to the same pathological conditions as other organs and structures in the body, and the classification of its diseases is based upon these. Thus there are changes in vascularity, inflammation, new growths, structural changes due to the presence of micro-organism such as those of tubercle or leprosy, lesions resulting from the circulation of disease toxins, such as those of Scarlatina, Syphilis, Small-pox and other exanthemata, and invasion of animal and vegetable parasites other than bacteria, hypertrophy and degeneration of the separate structures of the skin, and changes of Pigments.

Most of the skin diseases are so frequently being found related to other diseases—to conditions existing in other organs—that the practitioner must not only consider the skin itself, but must also have a thought for other portions of the body and investigate blood chemistry, focal infection, endocrine factors etc. In other words, in many conditions a more or less general examination is need to be made in order to have an adequate picture of the skin condition. For the purpose of examining a skin patient, it is very important to examine the patient in good day light or good artificial illumination. Patient should be stripped as completely as circumstances permit. A good magnifying lens should always be used for the determination of lesional characteristics.

Having stripped the patient and placed in good light, proceed to examine the patient :—

Name.....

Age.—Age helps to some extent in diagnosing skin diseases, if we know the prevalence of skin diseases according to age.

Childhood.—Congenital diseases, Exanthemas, Impetigo, Ring worms, Pediculosis.

Youth.—Sebaceous gland diseases, Lupus Vulgaris, Psoriasis.

Middle age.—Rosacea, Lupus erythematous.

Old age.—Keratosis, Carcinoma.

Sex.—Erythema induration, Neurodermitis, Rosacea and Pagus disease are more prevalent among females while Sycosis, Epithelioma and Dermatitis Herpetiformis among males.

Occupation.—Occupation of the patient in adults must be inquired into, specially with regard to the actual process of the

work and the substances handled. The study of the various dermatitis and eczema shows that about 15% of the cases are due to occupational factors. The number of occupations is very large and it is impossible to give a full detail, but I give some important ones : house workers and allied workers, labourers, painters, metal workers, mill workers, oil and grease workers, physicians, dentists and nurses, cloth handlers and tailors, bakers, tannery and leather workers, chemical workers and drug workers.

The most frequent manifestations of skin diseases due to occupation are :

Acne—Occurs among youth, of oily seborrhœic skin who use little soap and water. Burns, Calluses, Chilblains, dermatitis, acute or chronic, Eczema, Epithelioma, folliculitis, keloids, keratosis Radio-derm Aititis, ulcer.

Various infectious diseases of the skin are due to the occupational factors *i.e.* Actinomycosis, Anthrax, Blastomycosis, Erysipeloids, Impetigo, Paronychia, Pus infections, Syphilis, Tinea, Tuberculosis.

Seasons.—Seasons of the year must be considered in skin diseases, as most of the diseases occur seasonally, specially at the change of the season, *i.e.* many Tropical Diseases occur in *Tropical climate*.

Perino, Pruritis hiemalis, Eczema and Psoriasis occur in *cold climate*.

Erythema Multiformis, Pityriasis Rosea occur in *Spring Season*.

Miliaria, Hydroa estivale and Dermatophytosis occur in *summer*.

Present History.—Onset : Sudden, gradual.

Duration.—It is important to know the duration of a skin disease. Many of them are chronic or recurrent, but at the same time in certain cases some acute conditions may imitate others of a longer duration, so that distinction of time may be an important factor.

Of short duration are the following:—Dermatitis Medicamentosa, ecthyma, Erysipelas Intertrigo, certain erythemas of various types, furuncles, herpes simplex, herpes zoster, Impetigo Miliaria, Urticaria, tinea corposis and many cases of dermatitis due to external irritant.

Of much longer duration are the following:—Lupus Vulgaris, Lupus erythematous, epithelioma Psoriasis, Pemphigus, dermatitis herpetiformis, dermatitis exfoliatina and others.

Past History.—Other skin disturbances and serious illnesses

must be ascertained. History of similar attacks in the past must be enquired into.

Family History.—It is very important specially in Syphilis and other congenital diseases.

Skin conditions.—*Examination* :—

1. Distribution General, Universal, Patchy or localised.
2. Types of lesions and their detailed characteristics.

(*a*)	Macule.	Scales.
(*b*)	Papule.	Crust.
(*c*)	Vesicles.	Excoriation.
(*d*)	Pustule.	Fissure.
(*e*)	Wheal.	Ulcer : Scar ; Pigmentation ; Erosion.

The distribution of skin lesions upon its surface is often highly significant and the distributional features in every patient help a lot in arriving at a correct diagnosis. The matter of a general or widespread distribution or a sharply localized area of involvement may be of considerable etiological significance, in view of the fact that localized areas frequently result from an external irritating factor. In a general eruption the area of most marked involvement will give a clue to the areas of earliest lesions and thus add a distinguishing feature. Furthermore, the involvement of areas of most perspiration—the axilla, groin, feet and palms suggest a parasitic cause.

For the purpose of facilitating diagnosis, the distribution of lesions is discussed under two headings :—

1. Distribution by diseases.
2. Distribution by site.

1. *Distribution by diseases.*—

(1) Acne—Face, chest and back.

(2) Arsenic—Chronic poisoning—Palms and Soles. Pigmentation and keratosis on trunk.

(3) Dermatophytosis—Feet, especially 4th and 5th interspace, soles, hands especially lateral surface of fingers and palms, groins, intergluteal fold, an axilla, postauricular region and umbilicus.

(4) Dermatitis herpetiformis—Extensor fore-arms, buttock and sacrum, outer thighs, sides of neck.

Epidermolysis bullosa.—Tips of fingers and knuckles, toes, elbows, knees, shins, points of trauma.

Erythema Nodosum.—Anterior lower legs, forearms.

Erythema induratum.—Posterior lower legs and ankles in young women.

Erythema Multiforme.—Hands, dorsal, fore-arms, sides of neck, lips and mouth, genitals.

Herpes.—Unilateral, over area served by sensory portion of of dorsal nerves.

Lupus Erythematous.—Face especially cheeks; nose ears: scalp.

Occupational Dermatitis.—Hands and feet.

Pityriasis Rosea.—Trunk and adjacent limbs.

Psoriasis.—Extensor arms and legs, Scalp, Sacrum.

Pellagra.—Dorsal hands and wrist, sometimes, feet.

Pigmentation.—Addison's Disease—mucous membrane and accentuation of normal pigmented area.

Pediculosis.—(1) Scalp. (2) Corporis upper middle back, (3) Pubis—Pubic region, axillae, hair in upper thighs and lower abdomen, eye lashes.

Rosacea.—Middle one third or one half of face.

Scabies.—Webs of fingers; flexor wrists, axillary borders, belt line, junction of upper thigh and buttock, breasts in women; genitals in men.

Seborrhœic dermatitis.—Scalp, centre of chest and back, Ala Nasae; eye brows.

Varicose ulcers.—Lower legs.

2. *Distribution by site.*—

(1) Scalp (*a*) COMMON: (i) Seborrhœa; (ii) Seborrhœic Dermatitis; (iii) Pediculosis; (iv) Psoriasis; (v) Alopecia of various types; (vi) Sebaceous cysts; (vii) Lupus Erythematous. (*b*) LESS COMMON: (i) Folliculitis; (ii) Furunculosis; (iii) Warts; (iv) Carcinoma; (v) Favus.

In children—Ringworm, impetigo, favus and Alopecia areata are most commonly found.

(2) Ears.—(*a*) Eczema; Impetigo: Frost bite; Keratosis; Epithelioma. (*b*) (i) Lupus Erythematous; (ii) Lupus Vulgaris; (iii) Leprosy.

(3) Face.—(*a*) Acne; Seborrhœic Dermatitis; Dermatitis Venenata; Impetigo; Furuncle; Erysipelas; Herpes

simplex. (*b*) Herpes Zoster; Lupus Vulgaris; Lupus Erythematous; Syphilis; Nevi: Ringworm: Epithelioma.

In males the *bearded* area may be involved with sycosis vulgaris, tinea sycosis or alopecia areata.

Eye brows and ala nasi.—Seborrhœic dermatitis is very common. Alopecia areata and Pediculosis pubis should not be forgotten in connection with this region.

Eyelids.—The eye lids are involved in Xanthoma and Eczema. Epithelioma is frequently seen on the edge of the lid.

Nose.—On the nose are found acne, lupus erythematous, syphilis, lupus vulgaris, epithelioma, and seborrhœic dermatitis; at the nasal orifice, Pyogenic Folliculitis of the hair follicles is frequent, as well as Impetigo and Herpes simplex.

Lips.—The lips are most frequently involved in eczema by exposure to sunlight and wind, herpes simplex, syphilis, epithelioma, local sore.

Neck.—(*a*) Furuncle: Carbuncle: Seborrhœic Dermatitis; Neurodermite: Dermatitis (due to dyes, dusts etc. (*b*) Scrofuloderma; Keloid; Leucoderma Syphiliticum.

Axillae.—(*a*) Folliculitis; Furuncle; Tinea; Hyperdrosis Seborrhœic dermatitis; Scabies. (*b*) Erythema.

Arms.—Extensor surface.—(*a*) Psoriasis; Ichthyosis; Erythema multiforme. Flexor surface: Eczema and Lichen Planus. (*b*) Xanthema; Prurigo; Papulo-neurotic tuberculide.

Hands.—(*a*) Dermatophytosis; Eczema; Dermatitis (occupational); Erythema multiforme; Scabies; Warts; Epithelioma (*b*) Leprosy; Erysipeloid; Leucoderma.

Chest.—(*a*) Acne; Seborrhœic dermatitis; Herpes Zoster; Tinea Versicolor; Pityriasis Rosea; Psoriasis; Keloid. (*b*) Keratosis; Scleroderma.

Abdomen.—Eczema, Scabies, Pityriasis Rosea, Tenia Versicolor, Syphilis, Pediculosis, Herpes Zoster, Urticaria, Drug (rash produced by them) Pediculosis pubis.

Back.—Acne, Herpes Zoster, Pityriasis Rosea, Seborrhœic eczema, Tinea versicolor, syphilis, Pediculosis Corporis, Psoriasis, epithelioma, Keratosis and dermatitis herpetiformis.

Buttock.—Scabies Acne, Furuncle, syphilis, Eczema, Bed-Sore.

Intergluteal folds.—Pruritis, Seborrhœic Dermatitis, Dermatophytosis, Psoriasis and Condylomata.

Groins.—(1) Tinea cruris: Pityriasis Rosea, Seborrhœic dermatitis, Intertrigo, Psoriasis, Pediculosis Corporis and pubis. (2) Granuloma inguinale.

Genitals.—(1) Primary syphilis, Scabies; Herpes Simplex; Pruritis. (2) Carcinoma.

Thigh.—Scabies, Prurigo, Ichthyosis.

Lower legs.—ANTERIOR SURFACE: (1) Lichen planus, Prurigo, Pruritis, Varicose ulcers, Eczema, Purpura, Psoriasis, Syphilis, Erythema Nodosum. (2) Elephantiasis. Leprosy.

Lower legs.—POSTERIORLY—Erythema, induration.

Popliteal Spaces.—Eczema and Varicose Veins.

Feet.—(1) Dermatophytosis, Verruca Plantaris (plantar warts). Hyperhidrosis, Frost bite, Eczema, Calluses Corns. (2) Psoriasis, Malanoma, Scabies in infants.

Generalised lesions occur: (1) Dermatitis and Eczema, Exanthemata, Secondary syphilis, Psoriasis, Pediculosis Corporis, Scabies, Drug eruptions and urticaria. (2) Ichthyosis, Miliaria, Dermatitis, Seborrhœic Dermatitis, herpetiformis, lichen planus, Mycosis Fungoides, and Pityriasis rubra pilaris.

Having discussed above the distribution of lesion according to site and diseases, I now proceed to discuss in detail the types of lesions and some of the distinctive characteristics of skin diseases which help to a great extent in their diagnosis:—

Type of lesions.—Erythematous and Macular eruptions are found in Erythema Multiforme, intertrigo, erysipelas, mild dermatitis from chemicals, exanthemata. These eruptions may be localized or widespread or wholly generalized.

Popular eruptions are met with in eczema, Miliaria, Keratosis pilaris, Erythema multiforme, Syphilis, papular urticaria and Psoriasis.

Vesicular eruptions are found in eczema, miliaria, herpes simplex, herpes Zoster, Dermatophytosis, dermatitis herpetiformis, impetigo, Vericella, Scabies, dermatitis medicamentosa; erysipelas also shows some vesicular lesions.

Pustules are found in acne vulgaris, eczema of scalp, Folliculitis, Syphilis, Vericella, herpes Zoster, Iodine and Bromide eruptions.

Wheales are characteristic of urticaria.

Scales are met with in eczema, psoriasis, syphilis, Pityriasis rosea, Seborrhœa, seborrhœic dermatitis; scales are also found in favus, ichthyosis, dermatitis exfoliation; but these diseases are rarely found.

Crusts are found in vesicular and pustular eczema, seborrhœic dermatitis, favus, impetigo.

Uclerations.—Syphilis, Varicose ulcer, epithelioma, herpes vulgaris, blasto-mycosis, erythema induratum, actino-mycosis, Sporotrichosis and leprosy.

Scar.—Occurs as a result of distinctive and usually ulcerative process, seen in syphilis, tuberculosis, epithelioma, lupus of both types and trauma.

Pigmentation.—Lichen Planus of legs, Freckles tinea versicolor, urticaria Pigmentosa, ichthyosis, Nevi, Chlosma.

Distinctive characteristics:—A patchy hairloss is found in ringworm, alopecia areata, favus, syphilis, lupus erythematous.

Ringed eruptions occur in Erythema Multiforme ringworm, Psoriasis, Syphilis, Pityriasis, Rosea, Seborrhœic dermatitis, impetigo, lichen planus.

Grouped eruptions appear in Herpes Zoster, Dermatitis herpetiformis, insect bite and herpes simplex.

Streaks of lesions appear in dermatitis venerata from ivy, Psoriasis, lichen planus and vernuca plana juvenilis.

The formations of arcs or segments of circles are seen particularly in syphilis and Psoriasis.

Itching.—The diagnostic point in itching includes the lack of itching, usually found in syphilis and psoriasis particularly. A generalized itching suggests some generalized disease as urticaria, Scabies, (worst at night), Pediculosis, eczema, lichen planus. A localized itching is particularly found in various types of pediculosis.

Colour of the lesion also helps to some extent in diagnosing skin lesion *i.e.* light pink colour of erythema nodosum is quite different from the slightly deeper red colour of Pityriasis rosea or the dark red colour of Psoriasis or still deeper red of erythema induration with a purplish tinge. Copper colour is found in secondary syphilis. Yellowish brown or fawn colour is characteristic of Tinea Versicolor.

The most important feature about diagnosis of a given case is the accumulation of evidence, both clinical and laboratory and secondly, the application of reasoning and common sense to the interpretation of the evidence thus accumulated. There is no royal road to diagnosis, but application of the principles stated above will aid greatly in solving the mysteries presented for interpretation.

Fungus Infection of the Hands and Feet

BY

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Two years ago, I wrote on Fungus Infection of the Feet and remarked that this infection was becoming an increasingly common ailment in Bombay. For obvious reasons it was a disease of the well-to-do class who use socks and wear boots and shoes and thus provide the necessary warmth and moisture for the growth of the fungus. Also men of this class harbour the infection in greater numbers than their women who become less vulnerable to this infection since they began discarding stockings and took to open work footwear.

Since writing the above, I have realised that Fungus infection of the Hands is also a common ailment though of a lesser extent and virulence and that there is a definite association between hands and feet in connection with the infection.

It is extremely necessary to grasp the fact that the fungus assumes a parasitic existence in the stratum corneum and that it produces a reaction which has all the characteristics of Eczema in one or other of its phases—erythematous, exudative, scaly or keratinised. The particular phase that dominates the picture establishes the clinical type.

Clinical Types.—The common types on the *Feet* are :

(1) the Intertriginous ;

(2) the Vesicular ;

(3) the Scaly ;

(4) the Hyperkeratotic.

1. *The Intertriginous* type generally begins as an interdigital infection and the fourth interdigital space is that most frequently attacked. It shows itself at first as a slightly denuded surface which very soon becomes scaly, moist and sodden. The macerated material becomes heaped up. Cracking of the skin is often discovered and the condition may become acutely inflamed at various times. Secondary pyogenic infection may set in at any time. Th eruption may extend to adjacent interdigital spaces, surface of the toes, skin of the sole and in fact any part of the

foot. It is presumed by some dermatologists that this type of infection invariably starts in interdigital spaces but I have on more than one occasion discovered the initial lesion on the dorsal surface of the foot. In mild cases the eruption assumes a dry scaly form. In this connection it is important to remember that when healing takes place, the lesion becomes dry and scaly and that, this condition should be differentiated from the other and strong fungicidal medicamentation be stopped lest a drug dermatitis is perpetuated. Toe-nails are frequently involved and recurrences are often traceable to this reservoir of infection.

2. *The Vesicular* type usually affects the soles of feet: the eruption consists of vesicles of different sizes, discrete or in groups which on account of the thick stratum corneum appear to be deeply seated in the skin. The vesicles may dry up, get secondarily infected or rupture. When ruptured, they leave a raw oozing surface, which may set up an acute inflammatory condition around it producing a wavy ridge of scales. If the inflammatory process is less marked later appearances may be of a dry scaly form.

3. *The Hyper-keratotic* type usually occurs on the soles, generally on the ball of the foot and the heal and consists of considerable thickening of the horny layer in heaped masses or linear streaks.

Infection of the *hand* generally assumes three forms :—

(1) Vesicular

(2) Scaly;

(3) Keratotic;

1. *The Vesicular* type which has been called dyshydrotic by reason of its resemblance to other conditions which go under this name, is the most frequent. It comes out as a profuse crop of deep-seated vesicles, discrete or coalescing on the palms, sides, and palmar surfaces of the fingers. The subsequent development of these vesicles is the same as on the Feet.

2. *The Scaly* type affects the palms and the palmar surfaces of the fingers and comes next in frequency.

3. *The Keratotic* type is rare and, when occurring, the thickening of the horny layer is slight. Hence it is not exactly a counter of the *hyper-keratotic* type found on the Feet.

The types described both on Hands and on Feet are seldom

found alone. This combination is in itself perplexing, but when inflammatory reactions set in or pyogenic infections mask the the picture setting up lymphangitis and adenitis and severe constitutional symptoms, both diagnosis and treatment become extremely difficult.

Association.—*Foot and Hand* infections frequently occur together in all forms described and fungus can be demonstrated in both places. The vesicular or Dyshydrotic condition of the Hands is however very often a secondary manifestation of the Feet infection possibly resulting from absorption of toxic material from the Feet. It is now definitely established by experimentation that this is an allergic condition known as epidermophytide. It is important to bear this association in mind and also the presence of a primary focus elsewhere as in the groin or in the nails. A source of fungus element which can be easily transferred or a source of toxins producing allergic conditions will baffle all treatment of the Hand if the source is not attacked also.

Diagnosis.—The clinical diagnosis of the infection is easier than the microscopic one as it is difficult to find the fungus in the scrapings of the lesions. Attempts at cultures are still less successful. The fact remains however that the demonstration of the parasite in the material from the lesion is the only factor which clinches diagnosis. Clinical evidence is often perplexing and at most means a summation of probabilities. When picking up material for the microscope, the periphery of the lesion and the roofs of blisters should be chosen and repeated examinations carried out. It must be remembered also that microscopic negative findings may be due to the fact that the condition is an allergic one.

The intradermal reaction of Trichophytine as an aid to diagnosis is being extensively used in Europe and America. It fails when the infection is not sufficiently deep seated to produce immunological changes over the skin surface. Also a positive reaction may refer to a recent past infection and not to the lesion in question. My experience of the test is that if one is able to interpret results by a perfect understanding of its limitations, it is a helpful test. The inflammatory reaction at the point of injection produced by Trichophytine can also be obtained if the substance is applied to the unbroken skin in the form of a Patch Test.

Other Skin conditions confined to Hands and Feet are not many. *Dermatitis Traumatica* (a non-sensitisation dermatitis)

generally caused by chemical irritants and mostly as a result of certain occupations, usually affects the backs of Hands and the fronts of the wrists while on the Feet where it is rare, the interdigital spaces are generally free. *Dermatitis Venerata* (a sensitisation dermatitis) caused by external antigenes is similarly distributed. *Streptococcal and Staphylococcal* infections of both Hands and Feet start frequently in the region of the nail folds, traumatic in origin. There is also a condition known as *Dermatitis Repens* which is caused by these cocci and manifests itself as groups of purulent vesicles. *Scabies Dyshydrotic* eruptions of the Hands and Feet are also a result of nervous influences or excessive sweating.

Treatment.—Treatment of Fungus Infection of the Hands and Feet presents many difficulties. The situation of the affected parts which are difficult to deal with, because it is not possible to prevent a patient walking or using the Hands ; the combating of pyogenic infections which set in : the controlling of the inflammatory reactions which appear now and again during the course of treatment ; the problem of having to overcome hyperkeratotic barriers before one can get fungicides to work, and lastly the fact that infection remains latent in the nails and makes recurrences easy, all these are factors which tax the patience of dermatologist and of the patient himself. To add to the perplexity of the case there is quite an extensive pharmacopoeia of fovourite prescriptions in the Skin Clinics of defferent hospitals and a variety of methods of treatment advocated. There are also a number of commercial preparations claiming remarkable success which tempt both the physician and the patient. In my opinion, if one does not rigidly recognise the pathology of the condition and does not adhere to a *systematic line of treatment* he is doomed to failure by being caught into a blind alley.

In commencing a *systematic treatment* of the infection, in every case it is necessary in the first instance to remove any pyogenic infection if present and to tone down the inflammatory reactions before proceeding with the treatment proper. Further, in the course of the treatment proper, these two conditions will often recur due to many reasons, the chief one being the sensibility of the skin of the patient to the drug employed ; and one has to be always prepared to meet this emergency by temporarily stopping the specific treatment and dealing with these exacerbations. This may be done in the usual way by any methods which the practitioner finds suitable. My own selections are

Boric or Pot. Permang. warm moist dressings to remove exudates followed by a cream made as follows :

Zinci Oxide	...	3 i.
Pulvis Amyli	...	3 i.
Lanoline	...	3 ii.
Ol. Amygdalæ	...	3 iii.
Aq. Calcis	...	3 iii.

For the *Intertriginous type*, if there is much horny thickening it is necessary to remove this first. I prescribe for this purpose a daily painting with Salicylic Acid in Spirit (1 dram to 1 oz.) or the application of paste of the same. The Keratolytic action of the acid will soften the horny layers. These must be removed, gradually, by soaking the feet daily in a warm Permanganate bath and rubbing the layers away by means of friction with lint or pumice stone. Every day, before the next application of the acid, the feet is soaked in the Permanganate bath and as much of the thickened layer is scraped away as possible. Only when a slight sclaing remains, we are at grips with the nidus of the fungus. We then continue with daily Permanganate warm baths for cleansing purposes and begin the daily application of the following ointment which is based on Whitfield's time-honoured formula, an ointment which, after all the rest have been sufficiently tried, remains as the least irritating to the skin and the most effective :

Acid Salicylic	...	grs. 15.
Acid Benzoic	...	grs. 30.
White Vaseline	...	3 iv.
Cocogem	...	3 iv.

If tolerated, the strength should be increased gradually. It is very essential that whenever any signs of irritation manifest themselves, the fungicidal ointment should at once be stopped and the indifferent cream indicated above be used to control the situation. It may be useful in some cases to adopt the system of using the two applications alternately day and night.

For the *Hyperkeratotic type* the same line of treatment as above is adopted. Only, it may be necessary to employ more energetic means to soften and remove the thickened layers. I have usually succeeded with Salicylic paste. Dr. Gray recommends Sabourauds Barium Sulphide dipilatory. In refractory cases ¼ B doses of X-ray, weekly, for 3 or 4 doses are useful.

In *vesicular types*, if the vesicles are few and only form a subsidiary picture they should be punctured and touched with 2% silver nitrate after which the general line of treatment as outlined above, should be followed. The acute vesicular type must be dealt with in the first instance with moist dressings of Pot. Permanganate $\frac{1}{4000}$. When the acute phase has quieted down, a soothing cream such as is indicated above for inflammatory condition, should be applied. Thereafter, when the redness has subsided and a dry scaly condition remains, the treatment outlined for the intertriginous type, may be continued.

There remain a few very important things to do in order to prevent a recurrence. Firstly, treatment must not be confined to the affected skin but must be extended to the areas surrounding it. Secondly, after all visible signs of infection have subsided, it is necessary to continue the application of the ointment for a couple of months more and thereafter to bathe the parts daily with 1 in 3 Methylated spirit and dust it with Pulv. Acid Salicylic Co. (B. P.) for many months or indefinitely if the interdigital sweat is abnormally alkaline and it is found necessary to restore its normal acidity to guard against future infections. Thirdly, if the nails are affected, these should be treated both because as infected parts they need attention, as well as because they are a potential source of re-infection. In slight infections of the nails, scraping them daily and applying Ung. Iodi after every scraping may tide the difficulties over; but the only effective way of dealing with infected nails is by evulsion followed by applications of Iodex to the nail-bed. Lastly, boilable socks should be worn by patients and they should be instructed to boil them daily. Boots and shoes should be swabbed out with 2% formalin.

If the skin is not too sensitive and is capable of tolerating stronger applications, some dyes may be used to quicken the result. I have been well impressed with the fungicidal properties of paranitrophenol, first recommended by Dr. Semon (*B. M. J.* Aug. 18th, 1934) and later described by Madge Robertson (*B.M.J.* June 29th 1935). It may be used in the form of wet dressings in an aqueous concentration of anything between .1 to .5 % according to the sensibility of the skin of the patient. The following is also definitely fungicidal :

Fuchsin	...	grs. iii.
Ether	...	ʒ i.
Glycerine	...	ʒ i.

In all types which assume a chronic form and show an

irresponsiveness to drugs, X-ray treatment has sometimes an almost magic effect.

Treatment of fungus infection of Hands and Feet is tedious and long. Sometimes one comes across cases in which a fungicide strong enough to destroy the parasites defeats its purpose by producing an inflammatory reaction. Also as a result of the infection the tissues may become so sensitised that the application of the weakest antiseptic cannot be tolerated. The solution of these difficulties lies therefore in a biologic agent such as a vaccine which would combat the local infection and immunize the patient. Trichophytine which is used for diagnosis has also been utilized for treatment and prophylaxis by intradermal injections of .1 c.c., twice a week, of dilutions beginning with 1 : 50 gradually increased to 1 : 40, 1 : 30, 1 : 20, 1 : 10, 1 : 5 and ultimately undiluted. I have not used this treatment but Traub and Tolmach (Arch. of Derm. & Syph, 1935) did not report satisfactorily after an experience of 135 cases. Recently a vaccine of lysed fungi prepared by O da Fonseca and Area Leao (Brazil) under the name of Dermatomycol has been put in the Bombay market. I have tried it on 21 cases of fungus infection of feet without any appreciable results.

Mercurochrome.

Turner (Anglo-Iranian Oil Co.) reports most encouraging results from the use of mercurochrome. Tannic acid produces a coagulum that is coarse, tough, and opaque; it is 'dirty' and destructive to bed-linen and the solution is unstable. Mercurochrome, on the other hand, forms a thin transparent crust : it does not precipitate protein, injure bed linen, or irritate the tissues, and its solution is stable. After the usual preparation of the burnt area, a 2 per cent. aqueous solution of mercurochrome is applied, and the surface is dried by means of an electric drier. Fresh applications are made on subsequent days.—*The Prescriber.*

Epidermophytosis

BY

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AN inflammatory disorder of the skin due to the fungus Epidermophyton Inguinale, and having a predilection for the genitocrural region the peri-anal area, the axillae, and the hands and feet.

Clinical characteristics.—The appearances vary according to the site affected. In the groin and axillae and the peri-anal area the condition starts in the form of circinate patches of reddish brown colour, which gradually enlarge peripherally, without regression in the centre, and form well-defined patches covered with minute scales. The margin of the patch is usually raised and infiltrated. In the genito-crural area the disease involves the area between the scrotum and the thighs and sometimes even the scrotal skin, giving a butterfly appearance. Itching is a prominent symptom and leads to lichenification of the involved skin and secondary eczematous changes. Secondary pyogenic infection and furunculosis may also supervene.

On the hands and feet, four clinical varieties of the disorder are met with—a superficial vesicular form, an exfoliative type, a deep vesicular variety, and a hyperkeratotic type. The superficial vesicular form occurs on the palms of the hands and the soles of the feet, on the fingers and toes. The vesicles being superficial rupture easily and form shallow ulcers. This variety has been the commonest in my experience. The exfoliative type is the next most frequently seen in our country. Due to the natural thickness of the horny layer of the skin, the fungus cannot spread laterally with ease and consequently exfoliation of the involved skin takes place. Deep vesicular variety known as Cheiropompholyx, occurs in the form of deep-seated vesicles like sago grains on the palms and soles, which do not rupture but undergo regression. The hyperkeratosis affects the palms of the hands and soles of the feet, and is usually associated with a certain amount of pustulation. Involvement of the inguinal and axillary lymph glands also occurs in these cases and the fungus has been isolated from these glands.

Sometimes a more general papular eruption is noticed in people suffering from epidermophytosis. This is a specific allergic

reaction to the portein of the fungus which disintegrates and enters the general circulation. These lesions are known as epidermophytids. Intra-dermal inoculations of the causative fungus give in these people a positive reaction like the tuberculin reaction in Tuberculosis. This method has been used as a diagnostic test in doubtful cases of epidermophyton infection.

Levin, Silvers and others have shown that the selective distribution of the lesions of epidermophytosis on the hands and feet, the genito-crural region, the axillae and the peri-anal area, depends upon the hydrogen-ion concentration of the sweat secretion in these areas. It has been shown by these observers that the fungus epidermophyton grows best in a medium the pH value of which ranges between 6.8 and 7.2. The normal pH value of the skin surface lies between 3.5 and 5.5. Failure of evaporation of sweat secretion on protected parts of the body, like the feet, axillae and the groin, and the absence of sebaceous gland secretion which is acid in reaction and neutralises the effect of alkaline sweat on the palms of the hands and soles of the feet, increases the alkalinity of the skin surface and facilitates the growth of the fungus.

Diagnosis.—Genito-crural epidermophytosis may be confused with scabies or with acute weeping eczema. Lesions of scabies are usually discrete, webs of the fingers will show the typical burrows and papules. Eczema also affects the scrotal skin which is rarely affected by the fungus epidermophyton and the presence of oozing will help in distinguishing. On the palms of the hands and the soles of the feet differentiation from eczema of these areas is often extremely difficult. A history of oozing, the small size of the vesicles in eczema, and their ill-defined outline will help in arriving at a correct diagnosis. In doubtful cases the microscope alone will decide the diagnosis.

Treatment.—Indications are to kill the fungus by appropriate parasiticidal remedies and to render the skin surface unsuitable for their growth. Apart from improving the general nutrition, constitutional remedies are of no avail in the treatment of this disorder. In acutely inflamed cases soothing lotions like aluminium acetate lotion (one-half to one per cent), lead and opium lotion, or calamine lotion should be used. After the inflammation has quieted down, stronger remedies will be required to kill the fungus. Salicylic acid, benzoic acid, Tinc. of Iodine, chrysarobin are all useful. In peri-anal area, I have found a two per cent solution of iodine crystals in carbon tetrachloride a very useful remedy. Thymol, incorporated in salicylic acid ointment, also acts as a

strong parasiticide. A useful plan is to apply an ointment at bed time, and a powder like thymol di-iodide one part, pulvis amyli three parts and zinc oxide four parts, two or three times during the day to absorb the perspiration and keep the parts dry.

Boric acid lotion, liquor plumbi subacetatis fortis and plain lemon juice are recommended by various workers to counter-act the alkalinity of the sweat secretion thus rendering the skin surface unsuitable for the growth of the fungus. According to Belisario of Sydney, the buffer action of plain lemon juice is far superior to that of boric acid, while the acid effect of other acids like hydrochloric acid, carbolic acid and tartaric acid is due rather to their molecules than to their hydrogen-ion concentration-and consequently their prolonged use leads to irritation of the skin.

I have found intravenous injection of 10 c.c. of calcium thio. sulphate, in association with a fifteen per cent solution of sodium hyposulphite locally, yielding remarkable results in some cases.

Vaccines prepared from the fungus are now obtainable, but the results from their use are not very encouraging. Injections of auto-blood help only those cases in which the allergic papular lesions have developed. So do other non-specific protein therapy. In very chronic cases with considerable lichenification of the skin, X-rays are almost indispensable. Even after the X-ray therapy recurrence is not unknown. Other forms of physical therapy which occasionally prove useful are the ultra-violet and the infra-red exposures.

I am indebted to Lt. Col. S. L. Bhatia, F.R.C.P. (Lon). I.M.S. for allowing me facilities for taking the photographs of the patient.

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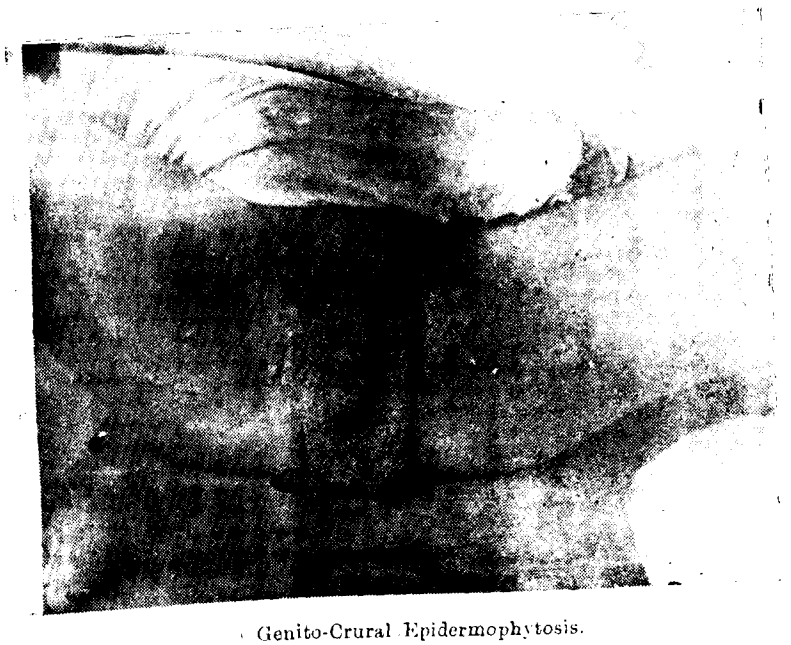
Epydermophytosis *By R. A. Desai.*

Superficial vesicular type of epidermophytosis affecting the soles of the feet.



Genito-Crural Epidermophytosis.

Ringworm

BY

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Two distinct classes of parasites produce ringworm :—

1. *Microsporum Audouini.*—They cause the commonest and most contagious and intractable form of ringworm. It is more commonly seen affecting the scalp of children in England and France and less common in other countries. It almost exclusively attacks the hiary scalps. This fungus is packed as a mosaic of spores and 90% of the ringworm of the scalp is due to it.

2. The second one belongs to the Tricophyton family. There are several varieties of it. It is the commonest cause of ringworm affecting generally the beard and skin—Tinea Cycosis and Tinea Circinata respectively. Only 10% of the scalp affection is caused by these. These are more amenable to treatment than the microsporum variety. The spores of Tricophyton are found in chains. They are mostly situated outside the hair and may be found both inside and outside. The microsporum spores are smaller in size and are scattered irregularly unlike the Tricophyton. There are about fifteen species of tricophyton that infect man (Stitt).

Hairs affected by ringworm may be detected by soaking the affected patch with a piece of cotton-wool dipped in chloroform. The affected hairs on evaporation of chloroform look white. In favus which is a common affection of the scalp, we don't get such an effect and it is the distinguishing feature.

For microscopic examination, scrapings from a patch with a penknife and the scales placed in a drop of 10% Liquor potash, covered with a cover slip and examined will show mycelium of the fungi-like branching threads with spores scattered about in groups or rows.

Hairs also can be similarly examined. They are found in broken pieces full of spores. The technique is shortly as follows : Extract the broken hair with a pair of epilation forceps, care being taken that the bulb of the hair is obtained intact. It is then washed in ether which dissolves all the fat particles, for they are likely to be mistaken for spores. Then a soak in liquor potassoe for 15 minutes will help to swell up the spores. With a drop of glycerine, and covered with a cover slip and examined will show the spores well. However for distinguishing the

different varieties, one should have recourse to staining and liquor potassæ should not be used, as it helps the spores to swell and look larger than normal.

Ringworm may be divided for practical purposes, chiefly into four varieties.

1. *Ringworm of the head.*—(Tinea tonsurous). This is commonly found among school children and spreads by direct contact. The poor class children with dirty habits are more commonly affected than the well-to-do. It first appears as a small round patch covered with small scales. The skin over the area is slightly swollen and the growth of the hairs much thinner. Broken stumps of hairs are often seen. These hairs show innumerable spores on microscopical examination by the method described already. The patch spreads in circles around the hairs and get covered with scabs, crusts and sebaceous matter or with a sort of whitish powder. The spread is slow and often the central parts spontaneously heal and extend around the edges.

2. *Tinea Circinata* (Ringworm of body). It is a circular raised patch ½ to 1 inch. in diameter or sometimes even larger. It has a well defined border covered with five scales. Scrapings from such a patch will show spores and mycelium. The patch spreads at the circumference and the centre heals spontaneously. Small papules are often noticed on the surface and sometimes they undergo vesiculation. The common sites affected are; face, neck and arms.

3. *Tinea Marginata*—(Burmese ringworm) This ringworm is very common in India and it is known as *dhobies'* itch. It is seen chiefly in the groins and sometimes in the axillae. It first appears as a few circinate patches on the inner aspect of the thighs and slowly spreads over the scrotum and the surrounding parts. It is intensely itchy and especially at night, it spreads at the margin and centre tends to heal. It is more obstinate to treatment than tinea circinata. It is caused by a fungus called Epidermophyton Inguinale.

4. *Tinea Sycosis*—(Ringworm of the beard). The fungus causes inflammation of the hair follicles of the chin and cheeks. A certain amount of suppuration takes place and hairs get loose. It differs from ordinary sycosis by the fact that in the latter the extraction of the hairs is more painful and the fungus cannot be detected.

It may be mentioned here with advantage that sometimes the nails get affected with ringworm. The fungus causing it is called onichomycosis. Perhaps this invasion of the nails is due to scratching of the affected parts of the body. The nail becomes

brittle elongated and curved, rough, and uneven and assumes a dirty yellow colour.

Treatment.—In Tinea Tonsurans hairs have either to be shaved if possible or cut as close to the head as possible and the crusts removed by softening with cocoanut oil application. Wash clean all oil and dirt with soap and water before a suitable parasiticide is applied. The application must be made twice a day morning and night after a thorough cleaning. The ointment used must be well rubbed in on the affected parts. Ammoniated mercury ointment is a good and effective application for the head. Its strength may be increased if required. Ung. Chorysarobini is also a good application for all cases of tinea but it cannot be applied on large surfaces at a time lest it should produce poisoning symptoms. The following prescription is found very suitable.

℞	Sulphur	...	ʒ i.
	Acid Salicylic	...	ʒ ss.
	Ung. Hyd. Amm.	...	ʒ ss.
	Vaseline	...	℥ i.

In ringworm of the scalp examination from time to time is essential. Unless a thick and uniform growth of hairs has been observed, it is unsafe to discontinue treatment. A careful search has also to be made for scaly spots or broken and twisted hairs. The child under treatment must be safeguarded against infecting other children. Separate towels, comb, brush and soaps must be enforced.

Tinea Circinata is easily curable by any of the common parasiticides and tinea of the groin also is not very difficult to cure. But in the latter, relapse is very common unless the parts are kept scrupulously clean and dry and underclothing properly disinfected. For tinea marginata the following ointment may be rubbed in, in the morning after thoroughly cleaning the parts with soap and water and wiping them quite dry.

℞	Acid Salicylic	...	gr. xxv
	Acid Benzoic	...	gr. xxv
	Vaseline	...	℥ i

At night the parts have to be cleaned up again and dried and the following powder rubbed over the affected parts.

℞	Acid Boric	...	ʒ ii
	Zinc oxide	...	ʒ i
	Xeroform	...	ʒ i

Even after apparent cure the treatment has to be continued for sometime to prevent recurrence and a pair of short cotton pants under the ordinary dress is to be worn.

Tinea Sycosis sometimes needs X-ray treatment. For tinea of the nails, a 5% solution of gentian violet in distilled water is a good application until healthy nails grow up.

Psoriasis

BY

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THIS skin affection takes its name from its very characteristic lesions that it produces. The silvery scales on reddish raised papules accompanied with very little general and systemic disturbance, though the whole body is erupted, demarcates it at once. The scales are detachable easily and do not leave any raw surface behind and if the surface now is seen with a magnifying lens (after removing the scales) it is not raw but smooth and dry and studded with numerous red points.

It may run in families; spares no age and may occur all over the body, often spares the face but not the scalp, back and waist.

Aetiologically, the disease is obscure. Of the numerous "may be causes", one very certain condition that produces it (as has been noticed on this side of the country) is Amœbic Dysentery. In this respect, in my opinion, it is very akin to Leucoderma. I have not been able to find references, placing them (*i.e.* Psoriasis and Leucoderma) under one classification, such as Spasmophilia or allergic conditions like asthma, migraine, angio-neurotic œdema etc., but I firmly believe, from the observations, on both these diseases very prevalent here, that they are expressions of one causative factor which mostly is connected with Intestinal protozoal infections. Whether the absorption of the products resulting from the breaking down of the tissues by the amœba or its exogenous toxins (if any ?) cause an allergic condition, resulting in Psoriasis and Leucoderma, is a matter for research. The magic results obtained by treating the patients with Emetin as proved in some cases where history of Amœbic Dysentery is certain, are worth mentioning.

I have records of two cases of Leucoderma and a case of Psoriasis with definite history of Dysentery, before the appearance of both these diseases, besides many others where Amœbic Dysentery could not be traced, but where Emetin proved beneficial.

CASE I. *Psoriasis*, 1935. A bank manager aged 45, very healthy and simple in habits, strict vegetarian, came to me complaining of passing blood and mucus and frequent painful stools. Faeces examined, amœba found; was put on mag. sulph and sodii. sulph mixture: got well and did not report for two

months, after which he came to consult me for some eruption on his body all over except the face. The eruptions were typically Psoriatic in nature. No family history of such trouble. History of Amœbic Dysentery was quite fresh in my memory and I examined his stools again, when amœbic cysts were encountered. He was put on a course of Emetin. The eruptions disappeared after the third injection and have not returned so far. I think I can call the patient as cured.

CASE II. *Leucoderma* 1934, November. A boy aged 15 years consulted me for the appearance of white patches on his abdomen below the umbilicus about the size of a rupee and another on the right eyebrow about the size of an eight anna coin. The patches were of about three months' duration and they were getting bigger. Abdomen was examined; many decoloured skin patches were found in different shades. History taken—definite history of Dysentery about six months ago. On examination of stools, many Cysts Amœbic were found in one field. He was put on Emetin Hcl; patches disappeared. His abdominal patches were exposed to Ultra-violet-rays and not the eye-brow patch, but both cleared up very well.

CASE III. was a girl of 12 years with a very similar history and positive stools and reacted very well, on a course of Emetin Hcl.

Drug Eruptions.

A number of cases have been reported of dermatitis caused by drugs: of these the following are the more striking:—

Gold.—A case of servere dermatitis with hyperkeratosis is reported by Roxburgh, Page, and Gordon (London). The patient, a woman aged 58, was under treatment for arthritis and had received twelve injections of an organic gold salt when an erythema developed with severe swelling and weeping of the skin. Later a hyperkeratotic warty condition developed over most of the body and limbs, and gold was found in the scrapings from the warty lesions. Injections of sodium thiosulphate and ascorbic acid had no effect. The condition yielded to x-ray treatment and local application.—*The Prescriber.*

Treatment of Psoriasis

BY

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VARIOUS theories have been attributed from time to time for the appearance of Psoriasis lesions, but none have been found entirely satisfactory. A gouty and rheumatic diathesis, digestive and nutritive disturbances, increase of uric acid and defective elimination by the kidneys, are assigned as causes.

If the above had been true causes of the disease, Psoriasis lesions would have been more common. Micrococcal theory has been abandoned, and revived lately in the treatment of Psoriasis by injections of alcoholic extract prepared from scrapings from the scaly lesions. Endocrine deficiency has also been given as the cause of Psoriasis; but Thyroid and Parathyroid therapy has not successfully cleared off the lesions.

In the treatment of Psoriasis, internally, drugs like arsenic, alkalies, salicylates, digestive and nerve tonics, thyroid etc. have been tried but all have been found wanting in permanently ridding the body of the scaly lesions. Various external applications as Chrysarobin, ammoniated mercury, sulphur and coal-tar preparations, have all been tried with varying success. The lesions would show temporarily signs of disappearing at places, but complete relief was out of question. Not having succeeded by treatment on the above lines, I tried injections of sterilised milk with apparent success, in two severe cases in which the lesions completely disappeared only to reappear within a short time. This was surely disappointing; as, in the case of a lady when the lesions reappeared in a mild form she was advised injection of Neo-salvarsan, after receiving which the skin lesions reappeared in a severer form on the face and body, of which she felt so ashamed that she even thought of taking her own life.

I then started with injections of Colloidal Calcium with Ostelin (Vitamin D), and application of Cignolin ointment, in a dilute form to prevent irritation of the lesions. After about more than two dozens of injections, and the application of the ointment, not on all the lesions at the same time, but in small groups of patches, the eruptions began to heal, leaving dark spots, which gradually faded away on application of cold cream and hazeline snow alternately, after which the skin resumed the natural healthy colour.

Psoriasis lesions are well known for their chronicity and recurrence after short or long intervals. It is nearly three years after treatment, some small lesions reappeared, but they subsided after application of dilute Cignolin ointment. Full strength Cignolin ointment is very irritating. Another equally severe case in a young man with lesions on face, body and upper extremities, who was elsewhere under treatment for a long time and had ultimately to give up work, as he was feeling very shy to go out of the house, and mix amongst people, got well after about two dozens of injections of Colloidal Calcium with Vitamin D and application of dilute Cignolin ointment. The dark patches, left after the lesions had disappeared, faded away after some time.

These were two very severe cases, dealt with by me, and even after three years, though there is reappearance of small patches, yet with the application of dilute Cignolin ointment, the patches fade away. If the patches are found to be larger, I have instructed the patients to come for a few more injections, but uptil now they have not done so.

The latest theory as to causation, seems to be deficiency of Vitamins A and D and perhaps some of Calcium as is corroborated from the above cases, and a case of ten years' duration described in and quoted in a medical journal by a Physician, the names of which both, I am sorry I failed to note down for future reference. This severe case and two other cases were treated by the said physician with benefit by giving two gelatine capsules containing three minims each of Halibut liver oil with viosterol daily for sixty days. The skin lesions had cleared. It appears from the above that we have approached to a solution, as to the causation and treatment of a chronic and troublesome skin disease as Psoriasis.

Acute Toxaemia.

Wilson, Rowley, and Gray (Edinburgh) report three cases in which adrenal cortex extract proved of great value in the treatment of the very dangerous early stage of an extensive burn. In these cases acute toxaemia had developed in a very severe form, and in each case injection of adrenal cortex extract (eucortone) effect recovery when death seemed imminent. The dose was 1 c. cm. for a child and 2 c. cm. or more for an adult injected subcutaneosuly every two hours. The extract appears to act by increassing the efficiency of the circulatory mechanism: there was no evidence of functional insufficiency of the adrenals.—*The Prescriber.*

Arsenical Dermatitis

BY

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LAST year, the writer had a few cases of exfoliative dermatitis following intravenous medication with Salavarsan, Neosalvarsan group of drugs which have come to occupy a place of choice in the armouryof Anti-syphilitic medicaments during the last half-a-century or so. The remarks in the following paragraphs are based on the observations of these cases.

Ætiology.—Invariably in the few cases that have come under the observation of the writer, the origin of the dermatitis could be traced to medication with one or other of these arsenical groups of drugs. No single make or label of any particular manufacture or firm could be incriminated in this general clinical observation in the absence of the necessary control—conditions which are essential pre-requisites for any such conclusive demonstration. But it was a note-worthy fact that the variation in the brand of the drug in the same patient (as he frequently changed doctors and the present medical man not knowing what had been administered by the previous colleague) was more responsible for the skin outbreak as the toxic manifestation of the drug than the intensity of the treatment or the inherent toxicity of the particular preparation. Those of my colleagues, who have more extensive experience of such cases and specialists in the line will be in a better position to throw light and offer satisfactory explanation as to the causal incompatibility, in the sanguinous fluids of the patient, of the various preparations, that are being put on the market by the various firms in the light of their chemical composition. The writer only mentions the fact for what it is worth.

Symptomatology.—The disease may begin insidiously in several scattered regions of the body and the flexures of the axillae, genito-crural region, knee flexures etc. are more commonly involved. But it generally spreads all over the body and only in very exceptional cases it may be localised in its distribution.

In many cases where the outbreak is general, there is constitutional disturbance in the way of malaise, fever, feeling of chilliness etc. The skin is red and erythematous in the beginning but after some time—from several days to a week—scaliness, the characteristic exfoliative feature, begins and the skin begins to flake

off in thin or thick scales. The process is continued, the old scales being replaced by new ones. There is general pruritis and at times the itching is unbearable and disturbs sleep. If the patient is careless, scratching of the parts leads to excoriations and general eczematous infection is superadded with bleb of formation, going on to pustulan stage etc. with all its consequent local or general baneful results. Eyes are likely to be involved and eyelids and lashes are affected and cracks appear at the outer and inner angles.

In milder cases the skin condition may begin to clear up after few weeks and assume its normal appearance. In other cases there are remissions in the intensity of symptoms from time to time. In cases of eczematous excoriations secondary infections play havoc leading to general septicaemic or pyaemic condition with dire consequences to the health of the patient. In persistent cases, when patient's health is considerably undermined and his resistance sapped some intercurrent malady like diarrhoea, dysentery or pneumonia may close the unsavoury chapter.

Even in the cases which, to all intents and purposes, have recovered, scaliness of the skin persists for a pretty long time and the patient complains, off and on, from dryness and local or general itching like a psoriatic or eczematous individual.

Prognosis.—In uncomplicated and early cases, prognosis is favourable. Cases with septic involvements are grave. Complications of diarrhoea, kidney derangement or lung involvement are unfavourable portents in the course of the disease.

Treatment.—This is mainly symptomatic and eliminatory. Patient should be confined to bed and the tone of his general health improved, his digestion looked after and emunctories encouraged to work freely. Purgatives are contraindicated as the bowels are hypersensitive and predisposition to diarrhoea is great. Diet should be mild, unirritating, easily digestible, without leaving much residue. Flesh is badly tolerated but fats are welcomed by the patient and prove beneficial. Glucose by mouth is serviceable.

External treatment is necessary in all cases, to relieve irritation and keep the skin smooth and supple, to prevent fissures and cracks to which there is great tendency. Cleanliness is very essential, otherwise, in the fissures, flextures and cracks, the scaly debris begin to decompose and give rise to obnoxious fishy odour. In cases with super-added eczematous eruption the discharges are very foul and nauseating unless the parts are scrupulously kept

clean and tidy. The eyes are regularly to be attended to, washed, cleaned and mild argyrol drops put in.

Bran or alkaline baths with soda bicarb and some Coal-tar preparation like Liq. Carb Detergens or Liq. picis etc. added, frequently given, are very soothing and comforting, This must be followed by some oily application such as olive oil, cocoanut-oil to which gr. 2 of carbolic acid per ounce has been added or in cases with tendency to cracking or eczema, calaminae preparata, zinc oxide etc. is added and the whole emulsified with Liq. Calcis, is applied frequently as a soothing salve or cream. Strong applications are to be avoided. Prolonged and continuous baths followed by emollient applications are the sheet anchor of the treatment. Eczematous complications will require appropriate remedies, dusting powders etc.

Salicylates with alkalies internally are useful auxilliary agents. Salicin helps in controlling the intractable pruritis which is a troublesome feature of the disease. The writer has obtained very encouraging results and more so with combined parenteral administration of *contramine* and *campolon* than with the former alone. It is a prolonged and persistent treatment, each drug administered on alternate days, the duration of the treatment depending on the severity of the case and the recuperative powers of the patient. Sodium Thiosulphate and Calcium Thiosulphate are other reliable remedies in suitable cases.

Phenolphthalein

Knowles, Decker, and Kandle (Camden, N. J.) describe a case of dermatitis following doses of half a grain of phenolphthalein. Experiments with skin grafts indicated that the fundamental process involved was nervous or vascular. A rather unusual eruption following the use of this drug is reported by Weiss and Kile (St. Louis). A dose of 3 grains caused an actue erythema with a generalised darkening of the skin, the pigment forming in the basal layer of the epidermis. Continued ingestion of the drug resulted in a universal bluish black pigmentation which lasted for two years, although by that time it showed signs of fading. *(See also* Pigmentation.)— *The Prescriber.*

Pemphigus

BY

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It is an important variety of the diseases of skin, the origin of which, according to some, is unknown or doubtful, and which occurs in late, middle and old age. Jews are more prone. Not contagious.

Three clinical varieties are known :—

I. Pemphigus Vulgaris.
II. Pemphigus Foliaceus.
III. Pemphigus Vegetans.

I. Pemphigus Vulgaris.

This type has a peculiar appearance of tense bullæ on apparently healthy skin. These rise from the near surface and are full of clear or straw-coloured serum, rarely blood-stained. Unless there is any septic contamination (when the contents become cloudy and a zone of inflammatory area encircles the lesion), no sign of inflammation is noticed Bullæ vary in size from that of a half pea to 3 c.m. or more in diameter. The base is exposed as soon as the thin wall easily bursts and it covers itself with a crust of dried seropurulent discharge under which a thin horny layer is formed. As soon as the crust is shedded the zone looks pink and then gradually in a week or two, assumes normal colour. In rare cases, the bases of broken bullæ may cover themselves with a greyish membranous coat and still more rarely actual sloughs may be formed. Bullæ are spread out widely and irregularly. Organs of special sense and highly sensitive structures are also very often involved, e. g. mucous membrane of mouth and fauces, the conjunctivæ and vagina etc.

Pathology.—Pathologists discovered Eosinophilia in the blister fluid and in the blood. In the lesions, protozoal and bacterial parasites are present merely as the result of contamination. In the roof of the blister horny layer with variable proportion of the Malpighian layers are found.

Course and symptoms.—Soreness, itching, septic contamination and absorption weaken the patient. Rapid loss of weight : hairs and nails get thin ; recurrence after apparent cure is the rule. Nikolsky's sign is present in many cases of advanced type.

DIAGNOSIS.—Clear tense bullae, rising steeply from healthy skin and appearing suddenly and its peculiar progress.

DIFFERENTIAL DIAGNOSIS.—1. From Dermatitis Herpetiformis (Duhring's diseases) itching is prominent, coincidence of occurrence of bullae, grouped Vesicular lesions, papules of the urticarial type and erythematous areas.

2. From acute malignant pemphigus —(*a*) Occupation of the patient, (*b*) by the origin of the first lesion of acute M. P. near a recent wound, (*c*) acute Pyrexial course (*d*) fatal termination.

3. From "Pemphigus neonatorum".—Patient's age ; more flaccid character of the blebs, the infective nature of the disease and its response to mild antiseptic treatment.

4. From bullous syphilides.—mostly seen in new-born infants, affect the palms and soles principally and are accompanied by papules, snuffles and marasmus etc. The serum re-reation also helps.

5. From Epidermolysis bullous.—The congenital nature, the traumatic origin of the bullae, mostly affecting elbows, knees, and buttocks.

PROGNOSIS.—Extremely bad in old and Hebrew patients, remissions amounting to apparent cure common, but recurrences prove fatal. The attack of persistent diarrhœa during its attack is extremely ominous.

TREATMENT —Liquor arsenicals mv, x-xv, t. d. s., well diluted and after food. NAB. 45, and 46 two or three injections intra-venously. *Quinine* in large doses ; *Opium preparation* for sleep. Auto-sero and auto-haemotherapy no good.

LOCALLY, rest in bed, good nursing and nutriment ; dress the lesions to minimize septic contamination, soreness and pains Bullae containing turbid contents should be opened and dressed with boric acid ointment. Normal saline solution to bathe away purulent discharges. In widespread eruption with extensive raw surface and crusting, a continous normal saline bath is very useful.

II. Pemphigus Foliaceus.

A rare form but sometimes constitutes the final stage of the first variety. In this, profuse and extensive exfoliation occurs, with flabby blister edges at the periphery. Fissures and clefts are formed in the folds of the skin where movement is frequent, the skin becomes dusky and looks thin and fragile, the hair is

lost and the nails are stripped and are thinned. A disagreeable sickly odour emenates from the affected areas. Nikolsky's sign is well marked. The patient becomes more and more wasted, suffers from constant diarrhoea and dies of exhaustion or of some intercurrent disease.

III. Pemphigus Vegetans.

Very rare, sparse bullous lesions are followed or accompanied by the development of extensive granulomatous or papillomatous areas which occupy the flexures especially, the axillae and groins. These areas exude a sticky and foul-smelling discharge. Hair is lost. The patient ultimately sinks and dies as a result of septic absorption and of general exhaustion.

TREATMENT.—Frequent and prolonged bathing with normal saline solution or a continuous saline bath, helps to prevent the septic involvement and the foul odour. Bismuth Oxide or Bismuth Formic Iodide, Intravenous injection of Neosalvarsan or 1% solution of S. A. T. given twice a week, beginning with 2 c.c. and increased by 1 c.c. with every injection upto 10 c.c.; Germanin and Plasmochin are good.

IV. Pemphigus Malignus (Butcher's Pemphigus).

It is a separate condition from true pemphigus in nature and origin. Butchers and hide-workers are commonly affected; a bulla appears nearly 10 to 30 days after a septic injury in the hand. Progressively the whole body is covered with bullous lesions; accompanied by high fever, albuminuria and signs of severe toxaemia. It is fatal in 50% of cases ; death occurring from 1 to 3 weeks from the onset. Quinine in large doses, and arseno-benzol intravenously are used in the treatment.

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Eczema in Children

BY

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AMONG the various diseases of children, skin affections easily constitute the most widely prevalent sickness in the home. But since it does not vitally affect or mortally wound the patient, the treatment is so often neglected and dermatology is relegated to the domain of unimportance. However people have begun to realize that a healthy skin provides the strongest resistance to the assaults of all-pervading and ever-attacking germs. Child mortality—including that of infants—is indeed very high in India and it is but natural therefore that pediatrics should assume such an important role in the modern Health Scheme to combat it. The delicate skin of the child, un-accustomed to roughness and pressure, must necessarily be treated with gentler applications and easier manipulations. Thorough cleanliness and proper attention to the flexures and buttocks would save the child from many a disease.

Eczema in children is indeed very common, but unlike that in the adult, the prognosis is exceedingly favourable. The disease appears early during infancy but it may continue into later childhood. The regions most commonly affected are the head, face, ears especially behind them, axillae, groins and neck. But the forehead and chin present the most characteristic appearance. It may be a papular eruption to commence with. Later on it turns into vesicular, and then moist and oozing, with encrustations finally taking place. It is associated with severe itching, and the child scratches it with all his might and main—thus further increasing the inflammation and the oozing. Secondary infection is too prone to occur and discharge becomes evident. Glands of the region are very much enlarged and become tender.

The aetiology is obscure, but so many factors can be made responsible for it. Sensitization of the child to a particular article of diet (say milk) or partially digested food products—protein, is considered to be highly probable. But other factors can precipitate or aggravate it—for example, the irritation of an erupting tooth, a little indigestion, an attack of constipation, a breath of cold wind and the warmth of a hot fire. Then mosquito-bites, uncleanliness and discharges from the nose and ears are all important predisposing elements.

The treatment of this condition is indeed very satisfactory. The crusts on the scalp could very easily be removed by application of Starch Boric Poultices. For oozing surfaces, dabbing with calamine lotion with or without liq. Plumbi. Subacetatis is very useful. H. P. Compresses, Collosol Argentum or Sulphur are also very useful applications. Weak silver nitrate lotion ¼ to ½ per cent also exert a beneficial effect. After the oozing and inflammation subside, the application of the following bland zinc paste has marvellously and invariably cleared the lesions :—

Zinc Oxide	...	3 1
Boric Acid	...	3 1
Starch.	...	3 1
Sandalwood Oil	...	ɱ 10
Olive oil.	...	qs.

Occasionally, Icthyol or Hydrargyri ammoniata 1 % may usefully be added to the above paste. I have made use of this paste in all varieties of Eczema and find it to be an excellent and unfailing prescription with very great healing, non-irritating and astringent properties. Sometimes application of gentian violet helps drying up the discharges.

Proper nursing of the child is an important consideration. Attempts must be made to dissuade the child from excessive scratching. Splints may be found necessary to meet this emergency. Administration of small doses of Potassium Bromide may have to be resorted to. Bandaging at night after a thick application of paste secures a rapid healing. Use of Carbolic and other medicated soaps is highly objectionable.

The following mixture could usefully be given internally with dosage according to the age :—

Pot. Bromide ; Pot. Citras ; Sodii. Sulph ; Vin Antimonial ; Liq. Arsenicalis ; Aqua.

The above treatment suffices to cure most of the cases. In only very obstinate cases, judicious administration of auto-vaccines or stock vaccines, injections of collosol calcium with ostelin and vitamin D, and for extensive secondary infections, Prontosil album or stannoxyl or tablet calcium sulphide orally may have to be resorted to. The causal factor should be discovered and desensitization carried out; injections of peptones have been suggested in this condition. And finally it must needs be emphasized that proper diagnosis, more careful attention and adequate nursing are all the more indicated in skin diseases of children in order to secure a peaceful happy home without constant worrying over a sick, crying and restless child.

Pseudo-Leucoderma

or

A Pigmentary disturbance simulating Leucoderma

BY

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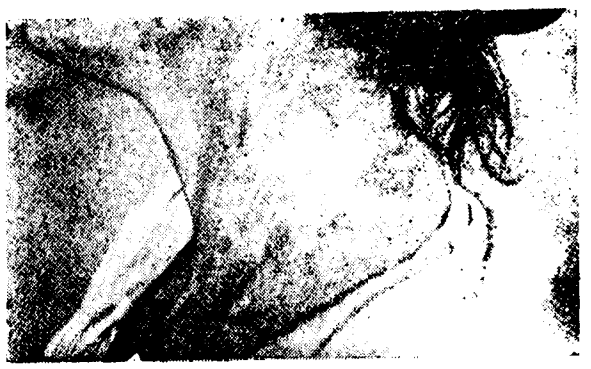
Introduction.—Since my preliminary report on the subject based on twenty cases published in the Sind Medical Journal of September 1934, I have come across several more, which make me conclude that the condition is not so rare as I first supposed. In introducing this subject in the above mentioned journal, I had invited medical men to express their views on the subject, but so far I have not heard from any or read of it anywhere. I am sure they have seen such cases in their practice but they may not have taken much notice of it and so may not have kept a record. Still, there may be some, who have taken a mental note and the present article, may bring them a recollection. I therefore repeat my request and invitation for their views. Persons affected with this disturbance consult a doctor because they fear it is Leucoderma or would ultimately progress to be such. *Per se*, it causes no symptoms even as true Leucoderma does not.

Description.—There are spots. The spots are usually few and scattered but often they are many and close together. They are irregularly outlined and irregularly round with no definite margin, merging imperceptibly with the normal skin. In size, they vary from $\frac{1}{4}$ inch to 1 inch. Sometimes when two or more spots coalesce, they are bigger. The colour is only a shade lighter than the normal colour of the skin. It looks as if the most superficial layer of the epidermis is rubbed off or more properly, as if those portions of the skin have been rubbed off a layer of dirt

Distribution.—Face and neck are the parts mostly affected (but for this, medical advice would rarely be sought) but chest, back and arms are frequently involved. Rarely it is on the abdomen but I have not seen it on the legs.

Age and incidence.—It mostly occurs in growing children and adolescents, with much less frequency in adults. In my cases no person was over 36 years old. The number of females is more than males. Onset is sudden. There may be only two or three

Pseudo-Leucoderma *By Capt. Gurbaxani.*



spots one morning and some more may appear during the course of the day or night without any warning.

AETIOLOGY.—No definite or specific cause can be assigned but to my mind it all comes from the digestive tract. In a large majority of my cases there was constipation with flatulence suggestive of fermentation and putrefaction causing auto-intoxication, which, in some way, disturbed the even distribution of pigment. The subjects were slightly pale and dull. cold and lacking in energy. In a few children, there were indented teeth, one had Osteomalacia, suggesting deficient calcium.

DIAGNOSIS.—This is easily differentiated from Leucoderma in which the spots are very much whiter and with definite and sharp margins. In Pseudo-leucoderma there are generally associated conditions above described, which are usually absent in the true one. It is very often asked if the Pseudo will not one day turn to be a true one. This is rather difficult to answer but in my cases it has not been so. There is one affection with which it is more liable to be mistaken *viz.*, pigmentary syphilide. The dappled appearance of this syphilide may closely resemble it, but this occurs chiefly in women and history and/or other symptoms of syphilis should settle the diagnosis.

TREATMENT.—No external application is needed nor will it do good; it might do a certain amount of harm by spreading the spots. The chief indication for treatment is to stop fermentation in the intestines with suitable antiseptic remedies and diet. Malnutrition and defective metabolism must be corrected. I have found thyroid very beneficial in some cases. Most cases don't require treatment of any sort and the spots disappear without any medical aid.

Quinine.

Settle (Waupun, Wis.) reports a case in which severe eruption of the hands developed after ingestion of two tablets of a propiretary remedy containing quinine. Suitable local treatment relieved the symptoms, which reappeared more than once later on ingestion of the same or similar tablets.—*The Prescriber.*

Tuberculosis of the Skin

BY

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THIS is a short resume of a chronic inoculable disease, the Tuberculosis of the Skin. Koch's Bacillus is the cause directly or indirectly of a number of skin affections.

I. In some, the T. B. is found and guinea-pig can be inoculated successfully. These are classed as tuberculous infection of skin. They comprise (1) Scrofulodermia (2) Miliary tuberculosis of skin (3) Acute tuberculous ulcer (4) Tuberculosis Verrucosa cutes (5) Lupus Vulgaris (6) Acne koposi or Lupus miliaris.

II. In others, the T. B. is not found and guinea-pig cannot be inoculated successfully or only rarely so. The name Tuberculides is given to these affections. They show the following characteristics:— (*a*) The patient is a tuberculous subject. (*b*) The eruptions are generally bilaterally symmetrical. (*c*) The histology of lesions suggest Tuberculosis.

They comprise.—(1) Lichen Scrofulosorum. (2) Erythema induration of Bazin *i.e.* indurated tumours leading to necrosis and ulceration leaving deep pigmented scars. (3) Indurated papular or nodular lesions leading to central necrosis and leaving scars *e. g.* Acne Scrofulosorum; Follicles, etc. (4) Erythema nodosum.

I. (1) *Scrofulodermia.*—The name is given to certain forms of tuberculous conditions in skin, usually seen in childhood and adolescence with or without involvement of subcutaneous lymphatics, or to sluggish and chronic ulceration as the result of disease of glands, bones and joints. Sometimes the disease originates as subcutaneous tubercles.

Painless gumma-like swellings form which enlarge, soften and become attached to skin. Resolution may take place at this stage but more often the swelling softens and breaks down discharging a thin purulent fluid. In this way, sinuses result which lead down to the underlying diseased foci. The swelling collapses and the ulcerated openings lead to chronic ulcers, a characteristic feature is that the ulcers are undermined with their dull red or purplish edges, irregular in outline, the base is uneven, scantily covered with pus or scabs. The destruction of tissue is generally only

skin-deep and skin infiltration is slight, sometimes the involvement of subcutaneous Lymphatics is so marked as to lead to tuberculous Pseudo-Elephantiasis *e.g.* in the leg and fore-arm. The common sites for Scrofuloderma are:—neck and face, breast, groin, leg.

DIFFERENTIAL DIAGNOSIS.—(1) Syphilitic gumma, which has more rapid development. There is absence of gland and bone disease. If ulceration is present, then the Syphilitic ulcers are punched out and infiltrated. W. R. is positive, besides other evidences of Syphilis. (2) Lupus Vulgaris, presence of apple-jelly nodules and involvement of mucous membranes. (3) Actinomycosis, Ray fungus in the pus is present. (4) Mycosis fungoides usually occurs in adults.

There is a pre-mycosic stage with intense itching, scaly or eczematous eruption, urticaria, etc.

PROGNOSIS.—Must be guarded. If the lesions can be removed, then it is good.

TREATMENT.—Mainly surgical: 1. X-Ray—useful after scraping and removal of over-hanging edges of skin. Usual hygienic, dietetic and tonic treatment Prolonged residence by the seaside is good. Exposure to sunlight is beneficial.

I. (2) *Miliary Tuberculosis of skin.*—The condition is rare. It occurs as part of general Miliary Tuberculosis. Sufferers are usually children and disease follows measles or other acute fevers. Lesions are minute red papules or papulo-vesicles, rarely pustules which occasionally break down into small ulcers. The eruption comes out rapidly and is widely spread

Prognosis is necessarily grave and the cause of death is generally Meningitis.

I. (3) *Acute Tuberculous Ulcer.*—The lesions start as small dull red swellings which break down to form shallow ulcers which are generally painless except in parts which are liable to friction and movement and then there is often great pain. An individual ulcer rarely exceeds half an inch in diameter The ulcers are oval or polycyclic from fusion of neighbouring ulcers; minute yellow granules are seen at the surface of the ulcer and at the margin. The common sites are:—nose, mouth, lower lip and tongue, anus genitalia. Ulceration of glands may be due to tuberculous disease of kidney, bladder, prostrate and seminal vesicles.

DIFFERENTIAL DIAGNOSIS.—Syphilis, the character of ulcer

of soft sore and epithelioma. In both, there is absence of T. B. from scrapings.

TREATMENT.—Where cause cannot be dealt with successfully only palliative treatment is possible. Touch ulcer with silver nitrate stick or in solution or paint lactic acid diluted with water (1 in 10).

Dust ulcers with orthoform, aristol with or without cocaine. X-Ray is also useful. If no visceral disease be present, excise lesions or curette.

I. (4) *Tuberculosis Verrucosa cutis* or *Verruca necrogenica*.—The affection is a localized papillary or wart-like formation which results from direct inoculation with tubercle bacilli. The lesions are peculiar brown or greyish black nodules are dull-red or purplish red in colour; or lesions are discrete, minute pustules seated directly on an inflamed base. The growth may be covered with a crust. If the growth is about an inch or so in area, there is a disposition towards central thin scarring peripheral spread with a zone of Erythema of purplish tint. The affection is generally itchy. The glands are involved early. One of its characteristics is that it rarely shows any positive ulceration. The back of hands is the common site. From dorsum of hands the disease may extend on to the fingers and interdigital folds up the wrist and rarely on to the palms. Disease seen in subjects of Phthisis from auto-inoculation; medical men, nurses, butchers and post-mortem-room-servants who handle dead tissue containing living T. B. Dhobies who wash handkerchiefs used by Phthisical patients may also show the infection.

DIAGNOSIS.—The sluggish character of the growth, its dull-red, purplish-red, brownish colour, its localization, history and the papillomatous or warty tendency displayed and the absence of distinct ulceration.

DIFFERENTIAL DIAGNOSIS.—(1) Syphilis—extragenital chancre. (2) Warts. (3) Blastomycetic dermatitis.

TREATMENT.—Remove disease tissue by excision or with salicylic acid, caustics, and electric cautery. In chronic cases, remove the warty masses by curette and then expose to X-ray. Carbon Dioxide snow also does good.

I. (5) *Lupus Vulgaris*.—Is the most important disease of the skin and mucous membrane caused by T.B. The primary lesion—the Lupoma is a brownish red, translucent nodule resembling apple-jelly. It spreads by contiguity and by the formation of fresh

foci so that a patch is formed. It destroys the tissues involved either by sub-epidermal cicatrization or by ulceration. Pressure with a lens or watch glass on the lupus patch removes surrounding hyperæmia and the pale yellow apple-jelly nodules become prominent. The surface of the lesion is covered with fine branny scales. The patch may undergo involution in the centre and form a thin white and smooth scar or it may ulcerate, as is more often the case, and form a granular sore covered with greenish black crusts. Dotted around the edge which is ragged are apple jelly nodules in various stages of devêlopment. Ulceration extends through the whole thickness of skin, sometimes necrosis of cartilage takes place *e.g.* as in the nose but it never erodes bone. In many of the ulceration cases the destruction is comparatively rapid and about the nose and mouth, may lead to grave deformity. Sometimes especially in adults the lesions are infiltrated patches raised more at the edge than in the centre and with no translucent nodule. Limited areas of ulcerative lupus covered with crusts may simulate Impetigo or Rupia.

A pustular form affecting hair-follicle may resemble Sycosis. There is, therefore, great diversity in the appearance of Lupus Vulgaris lesions. It is seldom symmetrical, the favourite point of attack is the face, especially the nose and cheeks, but it may occur on hands, feet, trunk and buttocks. No part is immune. The disease is rare on scalp, upper eyelids, genitals, palms and soles. On the mucous membrane, Lupus shows itself as a sharply raised patch with a granular or uneven surface, upon which small ulcers develop. In the nose, the lesions are usually covered with crusts. On the extremities, it may cause destruction of portions of fingers and toes by obliterations of nutrient vessels and coincident teno-synovitis. It is known as Lupus Mutitans. Lupus Vulgaris is commonly a disease of childhood and adolescence. Exceptionally, the disease may occur in advanced life. Females are more often attacked than males. Dirt, bad hygiene and insufficient food are strong predisposing causes The disease runs a very chronic course but when there is super-added pus-coccal infection, the course is comparatively rapid. Recurrences after apparent cure are common. The complications of Lupus are Erysipelas, intestinal and pulmonary Tuberculosis, tubercular meningitis and epithelioma (especially after prolonged X-Ray treatment). The apple jelly nodule, the extremely chronic course, the age of the patient the absence of pain and reaction to tuberculin, are diagnostic.

DIFFERENTIAL DIAGNOSIS.—1. Lupus Erythematosus is

nearly always symmetrical and affects nose, cheeks, auricles, and sometimes scalp. There are apple-jelly nodules and the disease starts later in life.

2. Syphilis, especially the nodular and ulcerative tertiary forms. It is quickly destructive. Lupus takes years to cause destruction while Syphilis takes weeks or a few months. Syphilitic gumma shows no apple-jelly nodule ulcers, are round and punched out; Syphilis has a special tendency to attack bones. W. R. Positive.

3. Acne Rosacea. Lump swellings on flush area of face but no lupus nodules.

4. Ringworm, demonstration of fungus; no ulceration.

5. Leprosy—nodules are more raised, dull earthy colour, anæsthetic patches, thickened ulnar nerve and presence of Hansens bacillus in nodules.

In lupoid sycosis the lesions are pustular from the start and even in the most chronic cases, pustules are seen about the hair follicles at the margin.

PROGNOSIS.—As regards life, is favourable; it is good if excision of lupus patch be possible or if Finsen light treatment could be done; unfavourable in others as recurrences after arrest and temporary cure of disease are frequent.

TREATMENT.—If circumscribed, excision. If extensive, then do linear scarification with sharp scalpel so as to cut all Lupus tissue. Use cautery for mucous membrane lesions or application of lactic acid or nascent iodine. X-Ray over long periods does good Carbon dioxide treatment produces rapid scarring and the disease is arrested. Finsen light treatment is the best if it can be carried out. General recuperative and tonic treatment must be adopted in lupus as in other tubercular affections of intestinal origin.

Intravenous injection of cyanide of gold and cantharidin has benefited. Gerson diet is good *i.e.* a diet rich in proteins, poor in salt or salt-free and limited intake of carbohydrates. Titro Salt can be given instead of common salt.

I. (6) *Acne Kaposi* or *Lupus* '*miliaris*' is a rare affection affecting the face. The disease has to be differentiated from 'acne rosacea'.

II. *Tuberculoids.*—We will take (1) *Lichen scrofulosorum* first. It is a papular eruption, the elements of which are pin-head sized, flattened and very slightly resistant. The patches are dirty reddish-brown in colour. The summit of each papule is a little scale or more rarely a small pustule.

(*a*) Scrofuloderma glands, foci bones or joints.

(*b*) Sporotrichia, finding the organisms.

(*c*) Varicose veins, nodular infiltration due to phlebitis and the patient is older.

TREATMENT.—1. Keep the patient in horizontal position. 2. If ulceration be present, then treat with some stimulating ointment *e.g.* Ung. Hydrarg oxide Rubra. Biers passive hyperaemia is of value. Tuberculin deserves a trial. X-ray will help. Usual dietetic, hygienic and medicinal treatment as for all T. B. infections.

II. (3) *Papular and nodular tuberculoides.* — There are several varieties. We will take first, Acne variolformis as the type, also termed acne necrotica It is characterized by small, reddish papules which soon show in the centre roundish necrotic points of yellowish, brownish or of blackish colour. Sites are forehead, at scalp margin, or chest and back. The necrotic core separates and a cicatrix is left like small-pox scar. Pain is a prominent feature.

DIFFERENTIAL DIAGNOSIS.—Syphilis which produces a deeper destruction.

TREATMENT.—1. Arsenic internally and sulphur paste externally.

II. (3) *Follicles* as the 2nd type. The lesions are flattened, rounded papules, surrounded by an erythematous zone, in the deep part of the skin varying in size from a pin's head to a lentil seed. The colour is dusky, red or purplish. It may disappear spontaneously leaving small pigmented stain. More commonly the papule becomes a vesicle and pustula with Scab formation On removal of scab, an ulcer is formed underneath. Ulcers leave depressed scars. Eruption is not painful but there is tenderness and sometimes itching. One lesion takes several weeks to get well but others continue to come out for several months or even years. Common sites are hands and feet, elbows and knees, sometimes palms and soles, rarely glans penis

PROGNOSIS.—Good, usual tonic treatment.

In addition to grouped papulæ, there are others arranged in arcs of circles. The seat of eruption is generally the trunk (*i.e.* back and lower part of abdomen). It may last for months without undergoing any change but finally disappears by very gradual exfoliation of the epidermis. At first it consists of isolated groups of papules but in course of time the eruption becomes generalized

by the formation of other groups near them so that the whole skin becomes covered with fine scales. In 90% the patients are the subjects of enlarged sub-maxillary, cervical and axillary glands of tuberculous nature. The disease is never seen in perfectly healthy persons. It is uncommon after the 20th year. The papule is situated close to a follicle. The homogeneity of papules seen mostly on the trunk, their arrangement in groups, the painlessness, not projecting much above the skin surface and the absence of acting.

DIFFERENTIAL DIAGNOSIS.—1. Papular eczema: characteristics too well known to need description. 2. Lichenoid syphilis; papules very hard, and have a shiny aspect; papules mostly arranged in circles, not in groups; they affect the bend of joints.

TREATMENT.—Constitutional for tuberculosis, mildly soothing and antiseptic lotions or ointments. (*b*) Erythema Induratum of bazin. The disease is characterized by symmetrical node-like swellings on the posterior and lateral aspect of both legs of young girls, with sluggish ulceration due to necrosis. Standing position helps the development of the disease. There may be associated Tuberculosis of glands. The lesions are purplish red, indurated, ill-defined node-like swellings of various sizes. But usually ½ to ¾ inch. in diameter. The swellings break down due to necrosis: deep ulcers with irregular edges are found. The base is greyish or red. They run a chronic course and when healed, have pigmented, depressed scars which ultimately become white.

DIFFERENTIAL DIAGNOSIS.—Syphilitic gumma, not bilateral, occurs later in life, other signs and history of syphilis.

II. (4) *Erythema nodosum.*—Symmetrical painful dark bluish swellings on the front of the tibia accompanied by constitutional disturbance. This disease was thought to be rheumatic in origin but now it is classed as tuberculide, as in most cases, it is of tubercular origin.

TREATMENT.—By salicylates or on tubercular lines.

Leprosy—A Problem

BY

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THIS disease is present in this world since ages. Even the oldest books mention about this disease. The medical men and the scientists of their times tried, by every possible means, to remove this dreadful scourge on humanity; but, inspite of all efforts, it is still present and in much higher percentage than one can suppose or imagine. In this article, I propose to deal with some of the factors due to which the disease could not and cannot be removed upto so far.

1. *Poverty.*—Unfortunately, it is a poor man's disease and hence it cannot draw the proper attention of the rich towards this problem. From my long experience, I can confidently say that Leprosy has a special liking for the poor. Undoubtedly it is mainly due to unhygienic conditions under which the poor live and the bad clothing, food etc., but the root cause of all this is extreme poverty. So, if the world is really keen to stamp out this disease, the rich must begin to think of their poor brethren and must learn to sacrifice some of their riches for the sake of the poor. Means should be adopted so as to remove the extreme poverty from the world. The standard of living of the poor should be raised. Every one should have at least two proper meals a day, proper clothing, proper house to live in hygienic surroundings. I am sure that if it can be done, Leprosy will greatly decrease of its own accord. Till it is done, it can never be stamped out of the world, inspite of the best efforts.

2. *Fear.*—It is of two kinds:—

(1) FEAR BY THE LEPER OF THE HEALTHY.—As soon as one gets this disease, he tries his level best to hide this fact even from his best friends and relatives as otherwise, he is sure to be socially degraded and boycotted. The net result is that the lepers do not come forward for treatment in the early and the most amenable stage of the disease. So, besides their own suffering and mental depression, they go on spreading the infection to others till their condition becomes such as cannot be kept hidden any further and there it is that they are noticed and kept aloof. But, before this, they have already spread the mischief to others.

(2) FEAR BY THE HEALTHY OF THE LEPER.—The people are afraid of the mere name 'Leper' as much as from a dreadful enemy like snakes, tigers or some demon etc. What to speak of fear from the lepers—even the doctors and workers are afraid of and hence it is that, leaving a few real workers, none likes to come forward to work in this disease as the worker is sure to get discouragement everywhere. He is sure to be hated and treated like a Harijan. This is owing to these unnecessary and inhuman fears that the disease has not been tackled properly and cannot be tackled till such fears are present. If the public is so much afraid of this disease then the doctors and the workers should be rather loved and encouraged rather than hated and discouraged as they are sacrificing their lives among those of whom everyone is afraid. But, again, the misfortune is that it is a poor man's disease. If some rich man gets this disease, who can dare hate him not even the doctor who treats him?

3. *Presence of the disease in every profession.*—Where this disease is present in a higher percentage, no profession is free from it—servants, washermen, barbers, dealers in eatables, cloth merchants, carpenters, gold-smiths, iron-smiths, clerks etc. Hence it is that the disease goes on spreading in a hidden form. Where such is the condition, how can one expect that he can remain away from the lepers. He is sure to come across and deal with several lepers daily without his best knowledge about it. Hence the disease goes on spreading.

4. Another cause of its spread is *various superstitions* about this disease. It is due to the fact that the exact cause is not known to the public. Some think that it is the curse of God. Some think it hereditary and hence the children—the age at which the infection spreads and affects most—are not separated from their *highly infectious* parents. In Nepal, it is thought to be due to the curse of snakes (Nag) and hence they go on performing various kinds of Poojas of Nagas (snakes) to please them till the disease becomes far advanced and they have infected their children and others and it is then that they think of coming for treatment. In other countries as well, there are such superstitions present. So these superstitions play a great part in the spread of the disease.

5. *Laws.*—One way adopted to control this disease and still present in certain places is to catch hold of the lepers by force and confine them in the leper asylum. Such a law was present here as well before I started work in this country. The result of such a law was that the burnt out cases of leprosy who were relatively free from infection and who had already finished doing mischief (spreading infection to others) were caught and collected *in the Asylum*. Excepting their undesirable appearance and sight, they were no danger to the Society. The atmosphere of the Asylum was kept worse than the jails and hence the lepers hid themselves in their houses to avoid notice. They went on spreading the infection rather more vigorously and hence such laws instead of checking the spread caused the real spread of the disease with a greater speed. Since the time this law has been relaxed here, the lepers bye and bye have begun to come forward voluntarily for treatment and I have noticed that all of them excepting a few are in the advanced and highly infectious stages of the disease. Hence such laws also are one of the reasons as to why this disease could not be stamped out. Force cannot bring such good effects as the voluntary efforts. It is love and sympathy which are required in such works (although, sometimes, a bit of strictness is essential) and not force and inhuman measures.

6. Another drawback is that so far *no specific* is known. It is only recently that some good and able doctors have come forward for this work and have made researches regarding treatment. Although the treatment is very efficacious now, we cannot call it specific as yet and then the treatment is a long, tedious and painful process. But we can hope that it will not be long when we will be able to find out some specific treatment for this disease.

Before closing this report, I want to state briefly what I think is needed at present in order to stamp out this disease.

(1) Public opinion should be roused by every sort of propaganda.

(2) Surveys—to know the exact numbers of lepers.

(3) No unnecessary fear and hatred from this disease.

(4) Real workers should be selected for this work.

(5) The respective governments and the rich public should be made to realize the extreme importance of this problem.

(6) Outdoors, asylums and hospitals should be erected for the lepers—their atmosphere should be made as far as possible very happy and encouraging. There should be means to occupy the lepers. They should not be kept idle.

(7) There should be institutions for the untainted children of the lepers. The children should be separated from their infected parents soon after birth.

(8) Last and the most important—means to remove extreme poverty from the world.

Diseases Closely Simulating Leprosy

BY

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Introduction.—Although "Leprosy" has been known in this country from time immemorial, it has been often confused with other skin and systemic diseases that give rise to clinical manifestations similar to those manifested by Leprosy in any one of its phases and stages. This is not surprising when one considers the fact that the natural luxuriance in plant and animal life of the tropics and sub-tropics has its counterpart in the luxuriance of diseases peculiar to such regions of the Earth. Diseases affecting the skin directly or indirectly and diseases affecting other systems but with clinical manifestations in the skin, form a large part of any treatise in Tropical Medicine. Unlike other diseases, Leprosy is a peculiar application with different types of manifestations in its numerous stages and phases and it is therefore to be expected that it will naturally be confused with or mistaken for any other skin disease or even a systemic disease. I think, it will serve the purpose of this note better, if I enumerate the diseases that are likely to be mistaken for leprosy in two sections (*i.e*) ;

(1) Diseases of the skin that have been diagnosed as Leprosy and

(2) Leprosy diagnosed as other diseases of the skin.

Both the sections may appear to be the same ; but in clinical experience both have their place as will be evident, later.

SECTION (1):—Diseases of the skin that have been diagnosed as "Leprosy":—

These are legion ; and their number and variety are governed by the region and the knowledge of the Practitioner. In urban centres like Calcutta or Bombay, such a large number of these are met with, that a big volume could be written on them. But in rural practice, many of these diseases are unknown and consequently practitioners in such areas, may consider this note as of academical interest only ! Let me begin with the commoner ones that are of universal interest ; the rarer ones will be dealt with later.

1. *Ringworm Infections.*—These are practically world-wide in distribution, though they are more commonly met with, in the

tropics and sub-tropics. It is not possible to deal with all the Tinea Infections in this short note, although several of them have been confused with Leprosy by inexperienced practitioners. The one particular infection that persists for years together and shows different types of manifestations in the different phases of man's life is that with "Malassezia ovalis" or "Malassezia Furfur." This organism is a prolific breeder in the human skin, with a very great resisting power. Infection occurs within the first month after birth. In infantile life, "Impetigo in boyhood" "Hypopigmented patches and spots," in early adolescence "Seborrhoeic Dermatitis," or "Seborrhoeic Warts," "Black heads or "Comedones," in middle life, "Seborrhoeic Sicca" or "Baldness," (premature) and in later life "Seborrhoeic Scars and pitted skin of face" are the several types of lesions induced by this organism ; and it is not surprising therefore that this infection has been mistaken for Leprosy. The Hypopigmented and erythematous patches (sometimes) caused by this disease have, even by experienced workers, been mistaken for those of Leprosy. Differences in the degree of hypopigmentation or the site of the body affected and the margins of such patches have all been suggested as differentiating these from Leprous hypopigmented patches. But in the writer's experience all these finer points of differentiation, fail in children. The only satisfactory test is "Tinea." Seborrhoeic patches appear usually in summer or in the monsoon in hot humid regions and disappear in winter. External application of Hydrarg. ammn. with or without Resorcin, effects a clinical cure. The habitual use of cocoanut oil with or without Hydrarg. amm. prevents relapses in the next summer and last but not least, a clip of the skin from the affected area, shows the (blue) bottle bacilli or acid-fast micrococci or even acid-fast thick rods, depending upon the age and stage of the lesion from which the clip is taken. The micrococci have also been mistaken for the coccoid forms of M. leprae and the acid-fast rods for overstrained groups of M. leprae, by inexperienced workers. Absence of a definite contour distinguishes these from M. leprae. "Absence of the cardinal signs of leprosy" is said to distinguish Seborrhœic Hypopigmented patches from those of Leprosy; but writers of such "copy-book maxims" appear to me to have never seen a real case of Seborrhœic Hypopigmented patches. In the early stages of Leprosy, where no other lesion except Hypopigmented patches or spots are present, specially in children, it is exceedingly difficult to come to a definite diagnosis. Usually in such cases, thickened nerves are *not* present, skin clips are negative to

M. leprae; parakeratosis even if present, can be explained by "Thyroid deficiency," the other signs of which are only too evident in such cases. Even the much-praised Histamine Test fails to help us for the simple reason that it cannot be observed satisfactorily in dark skins. In such cases, as already mentioned, "Time" alone will render the diagnosis easy; and the other eliminative external treatment already suggested.

2. *Leucoderma.*—In this country, practitioners of the ancient systems of medicine have been labelling this as "Leprosy": and this age-old stigma appears to have influenced even practitioners of modern scientific medicine. The writer has personally come across cases of Leucoderma with anaesthesia or even Paraesthesia on the margins referred to him as cases of 'Leprosy' of the 'anaesthetic' type. A little care in eliciting the Clinical History might have avoided such a grievous error. Third degree Burns in which the five nerve terminals are slightly damaged give rise to light anaesthesia in Leucodermic patches that result after their healing. Even genuine Leucodermic patches when exposed to sun continuously, are apt to suffer from sun burn and such sun-burnt Leucodermic spots when present in a man or woman of 'Below par' intelligence, who cannot respond to 'tests for anaesthesia' as usually carried out with a folded piece of paper, have been mistaken for 'Leprosy' of the 'maculo anaesthetic type'. And it has to be reiterated here that both Leucoderma and Leprosy may co-exist in the same case.

3. *Birth-mark.*—This, by itself never gives rise to serious difficulties in diagnosis; but ineffectual attempts at getting rid of it, by application of 'escharotics', introduce a serious difficulty. A scar with anaesthesia (one of the two cardinal signs of Leprosy), naturally gives rise to the suspicion of Leprosy. Clinical History alone will serve to distinguish this from Leprosy.

4. *Psoriasis and Para-Psoriasis.*—The lesions of Psoriasis are covered with whitish (silvery) scales and bleed readily on scratching; whereas leprous lesions do not bleed so readily. But, both leprosy and psoriasis may co-exist in the same case or a psoriasiform type of leprous lesion may be found. A clip from the suspected patch and the presence or absence of other signs of Leprosy such as thickened and tender nerves, areas of anhydrosis, Leprotic Infiltrations or nodules, hypopigmented, and/or Erythematous areas, and/or anaesthetic areas, will help to arrive at a conclusive diagnosis. But in rural practice where facilities for microscopic examinations do not exist, therapeutic diagnosis should be

resorted to. External application of 4% chrysarobin ointment with or without the addition of Acid Salicylic, and Parenteral Arsenic Therapy, will serve to clear up all the lesions of Psoriasis in the course of a few months and then further clinical examination of the still persisting lesions (if any) will reveal the true diagnosis. Para-Psoriasis or Pseudo-Psoriasis lesions disappear spontaneously after some time and it is in this disease that the unscrupulous but clever advertiser of patent medicines for all skin diseases, makes his fortune!

5. *Erythema Nodosum.*—This has a sudden onset with fever and sorethroat. Pinkish nodules appear on the extremities, usually on the skins; and are very tender. Several such cases, have been sent to the present writer, by General Practitioners, for a blood-test, apparently on the assumption that it is 'Syphilitic' in origin. The symmetrical appearance of coppery-coloured discrete lesions on the skins naturally leads one to suspect syphilis! But, with fever and sorethroat, a suspicion of 'Leprosy' comes in. A mild case of this nature, was even considered as suffering from 'Scarlatina' and treated accordingly! Large doses of Sodium Salicylate and Streptococcal vaccines will cause a disappearance of these nodes. The aetiology of this condition is obscure and is seen chiefly in Northern India.

6. *Dermal Leishmaniasis.*—In the later stages of this disease, when there are definite and well marked nodules, a diagnosis of nodular Leprosy is usually made only to be revised by the failure to find M. leprae in smears from skin clips. The nodules are so similar that even experienced workers are misled. It is said that unlike leprosy, Dermal Leishmania nodules are confined to the Epinasal area of the face and does not involve the Ear lobules; but the present writer has seen two cases of Dermal Leishmaniasis, in which the ears also were studded with nodules; and in one case both the diseases were found to be co-existent. There may or may not be a previous history of Kala-Azar or Antimony treatment. A clip from the affected skin alone can settle the diagnosis, together with a thorough clinical examination. As an instance of the misleading similarity of the nodules of Dermal Leishmaniasis with those of Leprosy, I may mention here that in 1925, when I was a student of the D. T. M. class, in a case diagnosed as Leprosy in the out-patient's clinic of the Calcutta School of Tropical Medicine, the skin-smears were taken and examined with negative results so far as M. leprae was concerned. Dr. Muir sent the slides to Col. H. W. Acton (now dead) who, in turn,

passed the slide to all the students for examination. L. D. bodies were found. There was no history of previous attacks of Kala-Azar or of Antimony treatment in this case. A culture of the expressed juice from the clips of nodules on N. N. N. Medium showed the flagellate phase of the Leishmania Donvani! This led the late Col. Acton to examine more carefully, a case of 'Xanthoma Tuberosum multiplex' admitted by him for observation, in the Carmichael Hospital, a fortnight before, with the result that that case also was found to be one of 'Dermal Leishmaniasis!'

In the earlier stages of Dermal Leishmaniasis, only hypo-pigmented spots are present and the degree of hypo-pigmentation usually varies with the nature of the complexion of the sufferer. In such cases, it is extremely difficult to arrive at a proper diagnosis. Skin clips, however carefully done, fail to reveal the L. D. bodies. Better luck attends on sections or culture, both of which are usually beyond the reach of the General Practitioner in the mofussil. 'Time' alone will render the diagnosis easy, by the development of further lesions characteristic of either disease.

7. *Von Recklinghausen's Disease.*—The mere mention of this disease may lead one to conjure before one's mind, a hideous creature with bull-dog-like face, containing over-hanging cheeks and eye-brows with big pedunculated nodules of varying sizes from a pea to a large lemon hanging all over the body, with a few hypo-pigmented patches here and there. A kind-hearted Municipal Commissioner, on seeing such a case, would at once phone for the ambulance or the municipal rubbish-cart and send the case at once to the nearest Leper Home, as did one in Purulia when the writer was there. And these cases do better by begging outside a Leper Home than inside it !! But the description given above is that of an advanced case. In the earlier stages, when the nodules have not become pedunculated, and if a few hypo-pigmented patches are also present, a diagnosis of Leprosy is at once made! Such a clinical diagnosis has even led to a separation between husband and wife! Here, at least, the microscope would have effected a conjugal re-union more rapidly than the law-court! Unfortunately, some of these nodules by affecting the nerves inside give rise to anaesthesia or even paraesthesia in the surrounding areas of the skin. A clinical diagnosis of Leprosy in such a case, is a pardonable mistake, although careful examination of the nerve-trunks commonly affected in Leprosy and a look-out for the other signs of the latter disease, may help to establish the diagnosis;

but the microscope of course should have the final say, in the absence of other reliable evidence or clinical signs.

8. *Mycosis Fungoides.*—In this disease one sees pedunculated and ulcerated nodules with an indurated base all around; usually very chronic; and resistant to all sorts of chemotherapy, both external as well as internal. X-rays are the only therapeutic agent, influencing this disease and even after apparent cure under X-ray treatment, relapses are common. A clip alone will help to differentiate it from ulcerating nodules of Leprosy. The absence of other signs Leprosy, also will help in the diagnosis.

9. *Rhinoscleroma and Rhinophyma.*—(literally mean thick nose or enlarged nose), usually due to Hypertrophy of the sebaceous glands in the skin of the nose, in the later stages of Acne. A clip usually clears the diagnosis.

10. *Lupus Vulgaris and Verrucosa.*—These are very chronic affections of the skin caused by the Tubercle bacillus. In the latter affection there is some other factor of imitation besides the Tubercle bacillus, that causes the hard warts. These are very chronic diseases and, when secondarily infected, lead to disfiguring deformities on the face. Uncomplicated Lupus Vulgaris usually shows apple-jelly (Pale-Yellow) coloured nodules on both sides of the nose with an isthmus over the root of the nose Sometimes the ears are also involved; but usually only one side. Frequently, such cases have been mistaken for ulcerating nodular leprosy or when there is a hyperæmic zone around, for ulcerating or reacting Tuberculoid type of Leprosy. The presence of other signs of Leprosy alone, should lead one to suspect Leprosy in such cases. A clip may not help in the diagnosis, as the Tubercle bacilli are also acid-fast; and the absence of acid-fast bacilli, does not always enable one to exclude "Leprosy".

11. *Molluscum Contagiosum.*—In this disease, pearly white (variously described as "Sago and sugar and boiled sago grains" in text books on Skin Diseases) nodules appear on the face, upper part of the chest and back and a few on the upper extremities also. In children, these nodules appear slightly depressed in the centre; on squeezing them, a whitish matter comes out; and as this material is infectious, wherever it comes into contact with the healthy skin, it produces fresh nodules. It is due to a filter-passing virus. Although these nodules resemble the early nodules of Leprosy in some respects, a closer examination shows the difference between them; and a clip will settle the final diagnosis.

12. *Granuloma Amulaire.*—As its name implies, this is an affection in which, a granulomatous lesion appears on the extremities, usually around the wrists or on the dorsum of the hand or very rarely over the dorsum of the foot. It has definitely raised margins and the surface of the granuloma consists of a collection of yellowish white granules with a slight hyperaemic ring also around them. No sensory changes are noticed. A clip will show its non-leprous character. It has been mistaken for ulcerating Tuberculoid type of leprous lesions. Hence its importance.

13. *Giant Urticaria.*—This really causes some difficulty in diagnosis. I cannot help recollecting here, the case of an old woman, aged about 55 or 60 years, the mother of a prominent Marwari cloth merchant of Purulia, who had developed Giant Urticaria on her arms and had a slight attack of "Fever" also, probably due to fright. The family physician considered it a re-acting type of "Leprosy". I was called in for consultation. To all outward appearances, it looked as if, the woman was suffering from a Lepra-Reaction. But the history of very sudden onset, with itching in the lesions, revealed the correct diagnosis. A good purgative and a few adrenalin injections intramuscularly, were all that were necessary for a spectacular "cure." Subsequent enquiries revealed the fact that she had taken some "*Laddus*" (ৰাৱ) prepared from old Areca-nuts! Marwaris prepare ', Laddus" out of any edible nut I suppose!! The Areca-nuts were found to be too old and covered with moulds. Some poisonous bases absorbed by the Gut, probably caused the Giant Urticaria.

14. *Erythrodermia.*—In this disease, diffuse Erythematous patches appear, usually on the face and give rise to suspicion that they may be due to Leprosy. But these patches have no other characteristics simulating leprous erythema. No thickened nerves are found in the vicinity of such patches; nor is there any sensory disturbance. They are of short duration and disappear spontaneously or as a result of treatment with Para-thyroid extract. It is supposed that deranged parathyroid function is responsible for this disease. How it is easily mistaken for "Leprosy," may be evident from the following instance. A milk-man in Purulia, who was supplying milk to the Superintendent of Police and also, I remember, to the District Hospital, was brought to me one morning for diagnosis. The Padre Saheb, under whom I was working then, suspected Leprosy, (he was the Superintendent of the Purulia Leper colony) and the Police Supdt. threatened the milk-man

with the withdrawal of his patronage, if he did not submit himself to anti-leprosy treatment. The very nature of the lesion and the absence of any other sign of Leprosy enabled me to give a definite diagnosis of Erythrodermia; but prejudices die hard!. The two Sahebs would not rest content, until a clip was taken and examined. A bottle of Parke Davis and Co's Parathyroid tablet 1/10 gr. each, with Cal-Lactas, orally, *cured* the condition.

15 *Naevus and Sarcoids*—Both these are similar in appearance though aetiologically and pathologically, entirely different from each other. In naevi one has to deal with small tumours, rich in blood-supply, whereas, in Sarcoids, one deals with fleshy out-growths. In dark skins, they are mistaken, the one for the other, very often. Naevus is usually "congenital," and patches of naevus are surrounded by a zone of hypo-pigmentations. Whereas, Sarcoids have no zones of hypo-pigmentation and are relatively harder to touch. The ætiology of Sarcoids is unknown. Absorption of poisonous bases from the Gut, is suggested as the cause.

16. *Dermatitis Atrophicans.*—This is a rare disease, and shows itself as small atrophic areas of skin usually on the extremities. Absence of anaesthesia and other subsidiary signs of Leprosy, will serve to distinguish this condition from Leprosy.

17. *Reynaud's disease.*—This resembles the late neural (mutilating) stage of Leprosy so closely that even experienced General Practitioners have committed mistakes in diagnosis. One such case was put into a rubbish-cart of the Purulia municipality and sent to the Leper colony, as an "Infectious case of Leprosy"!!!. The present writer had the job of his life in convincing the escort that the patient was better fitted to be in a General Hospital than in a Leper Home! Presence of pain, spasm, and cyanosis, should lead to a correct diagnosis; but road-side cases in whom, secondary infection supervenes quickly, present a diagnostic problem. The absence of atrophy of the small muscles, such as "Interossii" and "Lumbricals," etc; and the absence of thickened and/or tender nerve trunks and other definite evidences of Leprosy, should be helpful in the diagnosis of Reynaud's disease.

18. *Sclerodactylia.*—In other words, thickened fingers. This condition is usually associated with "Scleroderma" elsewhere. This is said to be due to hypo-function of the thyroid. But hypo-function of the Thyroid *per se* is not a disease and there must

22. *Muscular atrophy of non-leprous origin* :—

(1) ALCOHOLISM—Usually affects the anterior fibral nerve and consequently the atrophy is confined to the anterior-crural region.

(2) LEAD POISONING (Chronic)—Usually affects the wrist resulting in wrist-drop. Absence of anaesthesia, and thickened nerves or nerve trunks; and other signs of Leprosy, will help in the diagnosis.

Section (B) Leprosy is present in a case but is wrongly diagnosed as :—

(1) Nephritis with oedema of the legs; (2) Elephantiasis; (3) Giant Urticaria; (4) Erysipelas; (5) Raynaud's disease; (6) Ringworm; (7) Erythema Nodosum; (8) Sarcoids; (9) Cock-roach bites; (10) Impetigo or Eczema; (11) Molluscum fibrosus; Molluscum contagiosum; (13) Syphilis; (14) Seborrhœic Dermatitis; (15) Indolent ulcers etc.

As most of these have been dealt with already in Section A, it is, I think, unnecessary to deal with them again. *Erysipelas* has been diagnosed in cases of reacting tuberculoid type of Leprosy, and this requires a little consideration. The presence of fever and angry looking, sudden Erythematous patches on the face, would naturally lead to a diagnosis of Erysipelas. A prominent social worker of Orissa and a highly educated gentleman, came to me when I was in Cuttack, with a red angry looking tuberculoid type of patch on his upper lip. He was in the reacting phase; and was therefore diagnosed by the then Civil Surgeon as 'Erysipelas', and treated accordingly. But, after the subsidence of fever, the Erythematous thickened patch did not disappear. This naturally raised in his mind a suspician that he was not probably suffering from 'Erysipelas'. By the merest chance, he happened to tumble upon the Superintendent of the Cuttack Leper Asylum, a kind hearted 'Padri' who promptly brought him to me. There was definite anaesthesia over the patch and a few thickened Orbicular branches of the facial nerve could be felt on the affected side of the face near the angle of the mouth. Slightly tender ulnar nerves were also present. The Kahn test was negative. A definite diagnosis of Leprosy was made much to the surprise of the unfortunate gentleman! Further careful enquiries elicited the fact that in the village where he was doing rural reconstruction work, there was a leprous barber. A visit was

paid to that village and the barber was examined and found to be a C_3 case (highly infectious nodular case) plying his trade and distributing M. leprae to all and sundry! A cursory examination of the inhabitants of that village on another visit revealed the presence of over 70 cases of Leprosy of which, at least 15 or 20 were of the highly infectious type! The unfortunate gentleman was served by the infectious barber whose razor had inflicted a cut two years previously at the exact spot, where the Erythematous patch developed later! Patrons of shaving saloons in the endemic areas should be extremely careful and insist on a thorough cleaning of the razor and other implements used in a saloon; sterilisation of the instruments by dipping them for 5 minutes in strong antiseptic, say 'Dettol' should be compulsory, after each customer has been attended to.

The presence or absence of thickened nerves, anaesthesia over the patches of Erythema, a clip for M. leprae: and the Kahn's Test to exclude Syphilis, may all be necessary for correct diagnosis.

Ringworm of the Scalp.

Dey and Maplestone (Calcutta) report an investigation of fifty-three consecutive cases of ringworm of the scalp seen at the School of Tropical Medicine. Of these, twenty were referable to *Trichophyton violaceum* (Bodin), and the remainder (with the exception of two cases of favus) were caused by *Microsporon audouini*. The cases of *T. violaceum* included Europeans, Mohammedans, and Marwaris and all the patients were under twelve years of age. Nine cases showed secondary infection of the body—in one case, it spread over the whole body. The existence of *T. violaceum* is recorded for the first time in India: it was the only species of *Trichophyton* found among these cases. Dey and Maplestone give reason for thinking that this fungus would more correctly be classed in the genus *Achorion*.—*The Prescriber*.

A Case of Leprosy

(Cured by Colour-Treatment.)

BY

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AND

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MRS. N. aged 32 came under observation in April 1935 and presented the following picture.

Temperature ranging from 101°—103°, general anasarca, dyspnœa, scanty urine (15 ozs.), mitral flush, skin showing shining and red patches all over, particularly on the face and extremities, peculiar discomfort and pain in the foot on touching the ground, and amenorrhœa for three months.

On examination, liver was felt two fingers enlarged and tender, free fluid in the abdomen, lungs with signs of basal congestion, mitral murmur, patches of skin anæsthetic, and the Ulnar and Peroneal nerves thickened.

Nasal smear was examined and every field seen was full of B. leprae.

The treatment was commenced.

Within two months the general condition improved in that the general anasarca and free abdominal fluid disappeared, liver came to normal, lungs became clear, quantity of urine and temperature came to normal.

At this stage it was detected that she was carrying and running her fifth month.

Delivery took place in September 1935 and was uneventful in all respects.

By February 1936, the shining and red appearances of the patches almost disappeared and the nerve thickening became almost imperceptible.

At this stage a nasal smear was taken and the close inspection of three slides showed only two bacilli.

By December 1936 the skin assumed its normal colour and sensation and the nerves were absolutely normal to the feel.

In February 1937 nasal smear was again taken and all the

three slides did not show any sign of B. lepræ on very close and repeated examinations.

The treatment was discontinued from April 1937.

The mitral flush and murmur have not yet disappeared.

To all appearances here is a complete cure of Leprosy by colour treatment only; whether there will be any likelihood of recurrence cannot be said at this stage.

TREATMENT.—Both external and internal treatment was given.

External.—Red light once a day for about an hour followed by green or indigo light at times.

Internal.—Water charged in plain coloured bottles in the sun was given three or four times a day, two ounces at a time.

The colours mainly utilised were red and orange; sometimes a little green and indigo were given.

Principles of colour therapy.—Treatment is given both externally as well as internally.

External.—Light exposures are given in two ways—by sun light or lamp light. The lamp used is ordinary cycle lamp of a good quality, the oil used being the coconut or olive oil. The plain coloured glass pane is interposed between the source of light and the body.

Internal.—Water or sugar is kept in plain coloured bottles and exposed to sunlight. This water or sugar is used internally as regular medicine.

Sometimes oils are charged like water. These oils are used externally only.

We do not discuss here the rationale of colour-therapy. The very fact that X-rays, ultra-violet rays, infra-red rays, sun-light etc. have been used all over with really encouraging results is a sufficient proof in support of light therapy. It should however be noted that most of these require a costly apparatus and that their heat component is not without its beneficial advantage. What we are trying to do is to split up the sun's spectrum, make use of its individual components in their vibratory influence only. All this is achieved without any outlay in apparatus.

The individual colours in the split sun's spectrum are aptly grouped in that small word 'vibgyor'. This could be split into two halves, the left half representing electrical and the right half

the thermal influence with green in the middle, which naturally shows a blend of both the influences.

Individual Colours.—(Clinical interpretation.)

Red.—Acts as a general stimulant, enriches the blood; causes hyperæmia.

Orange.—Stimulates the glands and causes an increase in the excretions and secretions of the body in general; stimulates the Nervous system; acts as a general stimulant also.

Yellow.—This principle not being easily available in pure form, a very pale orange is made use of instead. Stimulates the nervous system; increases the excretions and secretions of the body more powerfully.

Green.—It is a blend of blue and yellow, blue acting as a sedative and yellow as a stimulant.

Blue.—Sedative; Bactericidal; causes constriction of blood vessels.

Indigo and Violet.—Being blends of Blue and Red in different proportions are treated together. Sedative—stimulants; increase the tone of undermined systems; tonic.

Impetigo.

For small infants, Frazier (Peiping) recommends ointment for ammoniated mercury. It is non-irritating, non-toxic, and an effective bactericide. For older children he advises painting the lesions with silver nitrate. After softening the crust with liquid paraffin, they can be taken off easily with forceps. A 5 to 10 per cent. aqueous solution of silver nitrate is applied to the entire surface of the lesion and allowed to dry. No dressing is needed. The coagulating action of the silver nitrate seals the surface of the lesion with a firmly adherent, smooth, black crust. This should not be disturbed. As a rule a single treatment is all that is required. It is advisable, however, to inspect the treated lesions for at least two days for signs of extension. If the crust is firmly fixed, which can be tested by grasping it with forceps, it must be left in place until it naturally separates after healing is complete.—*The Prescriber.*

Hormonic Treatment of Acne Vulgaris

BY

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ACNE vulgaris or acne simplex is a chronic inflammatory disease of the pilosebaceous follicles and periglandular structures, occurring principally on the face in the form of papules, pustules and nodules, usually mixed up with comedones. It is one of the commonest of skin diseases all over the world and is a disease of puberty. It is polymorphic in nature, meaning, that it has no characteristic lesion; the composite nature of the eruption depends partly on the fact that two distinct mircro-organisms are responsible for the production of the disease.

(1) Acne bacillus

(2) Staphylococcus albus

The therory generally put forward by older authors is that acne is caused by acne bacillus whose growth is predisposed by the presence of seborrhœa and the bacilli grow in the sebaceous follicles in the presence of fat which is utilised as a growing media. This produces an irritation which in turn produces a mild inflammation and a pimple is the result so that seborrhœa was supposed to be the main cause of acne.

But my theory is that acne is caused during adolescence because there is increased demand at this period of life by almost all the vital organs of the body, which in turn need increased blood supply. The body resources are all taken up and utilised to develop these, and the skin supply is neglected. This is specially true of the skin of the face. Now as the skin of the face is highly supplied with sebaceous follicles these glands undergo degeneration for want of proper nutrition and the acne bacilli settle down and multiply in these follicles producing acne. Now, the skin nurtrition is regulated to a great extent:—

(1) before puberty by the thymus

(2) after puberty by sex glands (i) Thyroid, (ii) Pituitary (iii) Testis or Ovary, (iv) Supra-renal.

But during adolescence the thymus is not in full power, that is to say, the thymus secretion has decreased and the secretion of the sex glands has not fully developed, hence the skin does not get a proper supply of hormones and blood, which in turn produces degeneration of the sebaceous follicles laying it open to infection by any passing micro-organism.

The above theory can be proved by supplying the patient suffering from acne with extract of thymus or extract of testis in the male, and ovary in the female; both of these hormonic extracts will cure the patient of acne, but supplying the patient with thymus is only delaying the growth of acne and it will come on as soon as the gland extract is stopped because thymus is the childhood hormone and it stops working as soon as a person reaches puberty. So, the rational treatment would be to help the patient during puberty by supplying him with testicular or ovarian extract as the case may be.

The author has treated several cases on this principle successfully curing the acne in every case. The following course of treatment is advocated by the author in all cases of acne vulgaris:—

FOR MALES

1.	Testoviron—(Schering's) Inject one ampoule every third day..... 12 such	Testicular Extracts.
2.	Viriligen—(Carnrick) 100 Pills Two pills, three times a day after meals. Continue for two months	Testicular Extracts.
3.	Easton's Syrup Two teaspoonfuls after meals, for two months	General Tonic.
4.	Petrolagar with Phenolphthalein One table spoonful last thing at night for two months	Laxative.

For external application—

Sulphur prep.		
Pulv camphor	...	℥ 1
Pulv tragacanth	...	gr. 15
Liq Calcis	...	gr. 25
Aqua rosæ	...	
	...	āā ℥ 2

Misce fiat lotio.....to be well rubbed into the face night and morning.

P. S. The lotion need not be used in this treatment unless the case is very severe and of long standing.

A course of the above treatment lasts for two months and in the author's experience even the most stubborn cases of acne are cured by it.

FOR FEMALES.

The treatment is the same as for the male except that instead of Testicular extract one has to use Ovarian extract *i. e.* Progynon B Oleosum (Schering's) one ampule every third day except during menses, and by mouth, Theelol Pills (Parke Davis) one pill two times a day after meals. This should be continued for two months, except during menses.

Ichthyosis

BY

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THIS is also called Fish-skin disease or Xeroderma. There are two varieties of this disease, congenital and acquired. They are both characterised by a dry harsh scaly skin due to abnormal Keratisation. We are more concerned with the acquired variety at present.

Acquired Ichthyosis.—In this disease there is no age restriction as a rule, but a young adult male is more liable to the disease than females. The exact aetiology of the disease is unknown but of late years many dermatologists consider it as a manifestation of Hypothyroidism (Prof. McKenna of Liverpool). The first symptoms are that the horny layers become more thickened and rough, first showing on the palms of the hands and the soles of the feet. This thickening later on spreads to the upper and lower limbs forming large scales of quadrilateral or polygonal shape and divided by furrows like the skin of an alligator or crocodile. In the most pronounced cases the fissures occur round abont the joints and I have noticed cases where the skin round the joints has become so thickened that flexion and extension are almost impossible, and an extra thick strong needle is required to give a hypodermic injection in these cases. In one case particularly I noticed that as the needle passed through the skin it made a scratching noise as if passing through sandpaper, but the peculiarity about this disease is that the skin is often very sensitive though it is thickened but in the later stages all sensation is lost. Most of these sufferers complain that the disease is more manifested during winter months, and in the early cases it absolutely disappears in the summer. Although the extremities are mainly involved cases where the trunk has been involved also are on record.

Aetiology.—The exact aetiology of the disease is unknown. It is noted that the disease is hereditary, frequently we get histories that direct anscestors of patients had this disease. Strickler suggests that Hypothyroidism may be a factor and possibly toxic conditions such as affect the nervous system. McKenna of Liverpool read a paper on the relation of ductless glands to some affections of the skin which was published in the *B. M. J.* on Nov., 18th, 1922, p. 980. He dealt with definite changes associated

with Hypo and Hyper thyroidism. He showed how thyroid substances have been administered with great benefit in some cases of Psoriasis, Ichthyosis, Eczema, Lupus, Keloid, and Scleroderma.

I have used thyroid substance as a Keratolytic agent on a considerable number of cases with great success. I have even used it on gonorrhœal Keratodermia along with the general treatment of gonorrhœa with marked success.

A Typical Case Report of Ichthyosis.—A Hindu male, aged 32, came to me in April 1935 with a history of thickening of the palms of the hand and the soles of the feet and parchment like skin of the extremities. The soles of the feet were very tender so that the patient had difficulty in walking. He gave a history that the disease started some five years ago and had progressively increased to the present condition. At the beginning, he only suffered in the winter months and the thickening disappeared in the summer. The tenderness of the soles of the feet started a year back and he had lost all sensation on the skin of the extremities. Apart from this the only other symptom noticed was that he had become extremely nervous and would start at the slightest sound and had palpitation on the slightest provocation. On general examination it was found that his teeth, tongue, throat and digestion were in perfect condition. There was no enlargement of the thyroid, and the blood picture was normal. The patient had difficulty in bending his elbow and knee joints because the skin round the joints was thickened and parchment-like

TREATMENT.—I prescribed one per cent Salicylate ointment to be rubbed into the palms of the hands and the soles of the feet after soaking them in a hot water bath for 15 minutes, and by mouth I gave him 1 gr. thyroid substance 3 times a day between meals and Easton's Syrup by mouth 3 times a day after meals. 2½cc. of sterile milk was injected every fourth day to increase his resistance, and towards the end of the treatment, injections of iron, arsenic and strychnine were given every other day. The above treatment was continued for two months at the end of which all symptoms had absolutely disappeared. The skin was absolutely soft like that of a normal person.

The patient called a fortnight ago to report his condition and I found him to be absolutely normal. He had no treatment whatsoever since I finished his course in June 1935.

Common Coccogenic Affections of the Skin

BY

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UNNA SAYS:—"No true pus coccus affection of the skin, no isolated furuncle, no felon should be taken lightly". It shows how important is this subject. I shall only describe in this article the mode of infection of the skin by these organisms and the treatment of various conditions produced by them. I shall try to be very clear and precise leaving out altogether, symptoms signs etc.

It is very easy to diagnose these affections of the skin but it is a great problem to treat them quite successfully.

Staphylococci are universally present on cutaneous and mucous surfaces, which are in contact or in communication with the external air. These cocci can be harboured on the skin for an indefinite period of time, until they get favourable conditions for their entry. These conditions are :—

1. Breach of the surface of the skin from any cause.

2. Heat in the tropics and elsewhere in the summer season opens out the mouth of the sweat and sebaceous glands, which are normally closed in the winter season, and thus the organisms which are normally present on the skin get a portal of entry to create mischief.

3. Why are boils and furuncles common in the rainy season? The answer to this question is that during the rainy season the air is surcharged with moisture and does not give to the excessive amount of sweat, a chance of evaporation, the result being the skin gets sodden. This sodden skin and the heat get a very good breeding ground and culture medium for the growth and multiplication of these organisms.

4. During rainy season there is enormous breeding of flies which are the means of transport of the organisms from the infectious place to the normal healthy skin of the human beings.

5. Want of money and the knowledge of every day hygienic principle in the average poor class of people in India. This leads to the condition becoming an intractable one.

6. Under-feeding of the poor Indians which lowers their vitality and makes them the more susceptible to the infection.

The Cocci in question infecting the skin are staphyloccoci and streptococci, which are the two genii of the big family of Bacteria. The pathological conditions produced by them in the order of the importance of the occurrences are :—

(1) Furunculosis.
(2) Impetigo Contagiosa.
(3) Coccogenic Sycosis.
(4) Bockharty impetigo
(5) Erysipelas.
(6) Icthyma.
(7) Infantile pemphigus.

But in the order of the difficulty of treatment, I place coccogenic sycosis at the top and furunculosis at the bottom.

Furunculosis or Boils.—It is a very common affection of the skin in the tropics. It is not at all difficult to diagnose a case of boils. Boils may occur scattered anywhere on the body and may be a very intractable condition. A boil may occur singly or in crops.

It is the treatment of this condition which is most important. At this stage I may mention also that prevention is better than cure, and I shall describe the ways of prevention :—

1. The skin should be kept as dry as possible as the self disinfecting power of the skin, is influenced by the amount of moisture present. During the approach of rainy season, if the skin is aired up and dusted with following powder the occurrence of boils can be avoided.

℞	Sulphur pp.	...	3 i
	Camphor	...	3 ss.
	Acid Benzoic	...	3 ii
	Starch powder	...	3 vss.

It is a universal skin dusting powder used as a prophylactic.

2. Staphylococcal vaccine is not of any great curative value but it is a good prophylactic for people who get recurring attacks of boil every summer and rainy season.

3. Camphor and cocoanut oil for external application blocks the mouth of the sweat and sebaceous glands.

TREATMENT.—1. Before starting this, the urine of the person should always be examined for sugar and albumin. A neglect of this fact has led many medical men to treat such cases without achieving any success.

2. Such patients should always be kept in low carbo-hydrate diet and should be asked to eat as little of spices as possible.

3. Patient's habit of life is to be regulated—such as the cleanliness of the skin, boiling the under-wear which has been once used and which is the constant source of re-infection and other minor hygienic principles.

4. Many such patients have infected mouth, accessory sinus, septic tonsils, gengivitis, decayed and septic teeth etc. and therefore these constant sources of infection should first be treated before we attempt to treat the coccogenic infection.

5. Local applications are of very little use when the boils are closed. Only tincture of iodine painting will sometimes give very good results. Carbolic acid tipped wooden pencils dipped in the centre of the boil may cure the condition ; lotions and ointments are useful only when the boils have burst and there is only surface or eczematous surface.

Injections useful in the staphylococcal affections of the skin:—

1. Bacteriophage filtrates have been used most widely and with the greatest success in acute staphylococcal infection of the skin of various types.

The dose is 2 c.c. of staphylococcus bacteriophage every third day. To those who showed severe reaction only 1 c.c. was given.

Local dressings of bacteriophage are also useful.

Therapeutic effect of these phages is due to :—(*a*) Protein of the dissolved Bacteria which is in the form of a very readily available antigen. (*b*) The transmissible lytic agent which is capable of dissolving homologous bacteria. (*c*) Foreign protein shock

2. *Manganese Butyrate.*—Intramuscular injection of 1.5 c.c. of this injection used once a week gives very gratifying results. The only disadvantage is that it is a rather painful injection.

3. *Sodium Cacodylate* injection hypodermically on alternate days rapidly clears up furunculosis. This is a very reliable injection. At least six injections are required to clear up the condition. Satisfactory results are obtained after 3rd injection.

4. *Aolan.*—Daily injections of this product intramuscularly or on alternate days also give good results.

5. *Auto-Haemotherapy.*—2.3 c.c. of blood under the skin once a week is very good, if crops of boils come. The blood should be taken fresh and injected at once before it gets time to clot.

6. *Prontosil (Bayer).*—2-3 ampoules, daily, intramuscular. In very severe cases—4-5 ampoules daily. It is imortant to initiate treatment immediately with large doses to get rapid and successful results.

7. *Polyvalent Toxoids.*—Start with ½ c.c. increasing the dose cautiously at weekly intervals. Smith thinks that toxoid (Wellcome product) is a more potent and reliable means of raising the antibody content of the blood than vaccine. This is still on trial.

8. *Stock vaccines* come last in the list of injections for their curative value. As I have mentioned above it is a goood prophylactic means for the seasonal recurrence of boil. There is a difference of opinion about this. Some say it gives good results; others entirely disagree with this view.

9. Collosal Manganese.

Drugs given orally.—1. If the general vitality of the patient is below par, then we give Iron and Arsenic mixture T. D. S. or any other blood purifying tonic.

2. Calcium Lactas powders give very good results, gr. xv. T. D. S.

3. Calcium sulphide is also said to give rise to good results.

4. Prontosil tabloids: One tabloid. T. D. S. along with the injection.

5. Stannoxyle is given a tabloid three times a day. It is very good.

6. Thyroid Tabloid gr. ½
   Pot. Permanganate gr. 1/6 } T. D. S.

   Along with the Iron and Arsenic mixture given very gratifying results, when it is due to endocrine deficiency.

7. Collosal Manganese orally one teaspoonful B. D. after meal gives very good results.

8. *Staphyloda (Bayer's products) for Boils.*—Besides the above mentioned injections and oral medications, it is very important to treat thoroughly the foci of infection in the nose and

the mouth as they are a menace. Frequently furuncles occur from infection transmitted by way of the blood or lymphatics from some focus of suppuration; in such condition repeated attacks are common. Unless this is treated properly, the injections etc. will not produce good effects.

In the case of Diabetics, the injection of insulin along with the dietetic restriction cures intractable and recurrent attacks of boils which have not responded to the ordinary line of treatment. In Kidney infection also the dietetic regulation is very important to eradicate the condition.

Impetigo Contagiosa.—It is a pustular infection of the skin due to staphylococci. Pus infection of the skin usually of staphylococcal type is an exceedingly troublesome condition. Impetigo is an acute infection of the skin with streptococci and/or staphylococci and is characterised by the effusion of copious seropurulent exudation from the affected area. There is formation of crusts.

TREATMENT.—Cases of impetigo caused by relatively innocuous strain of bacteria may respond to the standard treatment with dilute nitrate of mercury ointment. If the infecting organisms are of a venereal nature or the resistance of the patient is low, the condition of the patient rapidly goes from bad to worse.

Good results may be obtained by the following line of treatment:—

(1) No ointment or lotion will produce any appreciable effect unless the crusts which are the hard covering over the ulcers are removed by olive oil. Sometimes starch and Boracic poultice is used for this purpose. Remove the crusts regularly once every 36 hrs.

(2) Then apply the following lotion, six or eight times a day:—

Sulph p. pt.	...	gr. ii
Icthyol	...	gr. iii
Calamine prep.	...	gr. lx
Zinc Oxide	...	gr. xxx
Glycerine	...	♏ x
Aqua calcii	...	℥ vi
Aqua ad.	...	℥ i

This lotion is useful to dry the exudate which is seen after the crusts are removed. When the exudation ceases and the only

symptom is slight redness of the affected areas the following ointment is applied daily :—

Hydrarg, ammon	...	gr. v
Paraffin Mollis ad.	...	ʒ i

Advantages of the use of lotion.—1. To soothe the inflamed areas with a modified calamine lotion.

2. To increase the formation of crusts so that the exudate is localised and the spread of the infection is prevented.

After each application of lotion, the crusts thus formed should be removed and then the white ppt ointment is applied.

3. The frequent application of Icthyol and camphor in this lotion can exert their antiseptic action on every drop of exudate.

Cases which don't respond to this line of treatment frequently respond quickly if the following lotion is applied freely four times daily :—

Hydrarg perchlor.	...	gr. ½
Spts. methylated indust.	...	ʒ ss
Glycerine	...	♏ v
Aqua ad.	...	ʒ i

This is a very good and well tried lotion.

Ammoniated mercury gr. 5 to ʒi. of Vaseline acts as a specific. Cure is established in 3—5 days.

In some cases the weeping condition is controlled by cold compresses of acriflavine lotion (1 in 3) Auto Vaccine is of proved curative value.

Bockharts impetigo is a follicular suppuration which may arise spontaneously without any cause or may follow the application to the skin of such irritants as tar, mercurial ointment or turpentine. Any of the hair-bearing regions of the skin may be affected but the thighs are the site of election and the lesions are very small. The best line of treatment is to open the pustules and apply a mild antiseptic lotion *e.g.* a 1/5,000, solution of perchloride of mercury.

If it is due to chemical irritants, then mercury is to be avoided altogether and calamine lotion with gr. ii of sulphur to every ounce should be used. If cheapness is to be considered, then use :—

Liq. aluminum Aceti	...	ʒ i
Glycerine	...	♏ x
Aqua ad.	...	ʒ i

Apply to the affected parts on gauze thrice daily :—

Pot. permanganate	...	gr. xv
Soda bicarb	...	gr. x
Aqua ad.	...	ʒ i

The daily application of this lotion is very good in some cases.

Sycosis.—It is a superficial infection of the hair follicle causing suppuration. Folliculitis. The parts selected are the hair follicles of the moustache, beard areas, front part of the legs, front and outer side of the thighs and the pubic region as well.

There is always a tendency towards cicatrization on healing so that the hair is completely destroyed and the skin badly scarred.

In men it is a particularly intractable disease in the shaving areas and usually cure is prevented by infection of fresh follicles by the razor blades.

TREATMENT :—1. Patients should be instructed to desist from shaving but to keep the beard short by clipping or cutting with scissors. This is an invaluable instruction and when not followed by the patient leads to the condition becoming incurable.

2. The face should be cleansed carefully puncturing any pustule and expressing their contents. If a hair is visible at the centre of any pustule and is quite loose, it should be removed with a pair of forceps as it cannot under any circumstances become firm again. Cleansing of the skin is done with warm olive oil and gentle friction with a piece of soft muslin or gauze followed by swabbing with weak antiseptic lotion such as 1% carbolic lotion. Hot boric compresses are useful in cases with acute inflammatory condition.

3. Fold some white gauze so as to make a pad about six layers in thickness, soak it well in perchloride of mercury and spirit lotion and place this in close contact with the skin for ½ hour at a time and insist the patient to carry out the procedure at least thrice a day.

4. Remove the gauze, compress after half-hour and apply either :—

(1) Calamine Icthyol lotion 1%

(2)

Gentian violet	...	gr. xx
Absolute alcohol	...	ʒ iss
Aqua ad.	...	ʒ i

This lotion is painted in morning and night.

The only objection to this is the staining of the skin which is rather difficult to wash off.

(3)	Hydrarg. ammoniata	...	gr. iv
	Icthyol	...	gr. iv
	Paraffin Mollis ad.	...	ʒ i

Mft. Ung.

Any ointment containing mercury is very good and of proved value in pustular affections of the skin.

5. General treatment consists in the avoidance of exposure to bright sunlight, tonics and a course of Manganese Butyrate injections once a week 1½ cc intramuscularly.

6. If these measures fail, we may have recourse to such coal tar "Demalin" as Acriflavine or Brilliant Green. Either may be used in the ointment (1-2%) or in lotion (1 in 1000).

The following ointment occasionally cures cases of sycosis which have resisted other lines of treatment:—

Sulphur ppt.	...	ʒ i
Balsam Peru	...	ʒ i
Ung. Diachylon	...	ʒ i
P. Mollis ad.	...	ʒ ii

Apply twice daily.

If these measures still don't give gratifying results then the patient may be advised to have X-Ray exposures for epilation.

Vaccine therapy yields very indifferent results in such cases.

Erysipelas.—This is one of the most dangerous diseases due to cocci. Facial affection frequently ends fatally. It is not at all difficult to recognise this condition.

TREATMENT.—Local application:—1. Great benefit results from a daily painting of the affected area and the skin, for a short distance round it, with a 3% alcoholic solution of picric acid and then applying lint wrung out of lead and opii lotion which is reapplied as it is dried.

2. Best results are obtained by the local application of erysipelas streptococcus antivirus cream.

3. Iced cmpresses of weak antiseptic lotion *e.g.* acriflavine (1 in 5,000) which is both soothing and antiseptic.

INJECTION TREATMENT.—1. The cheapest and the most effective injection available everywhere even in the villages is Milk. Injection of milk frequently benefits apparently hopeless cases. I have never found it failing and there is no risk whatsoever. By injection of milk, the temperature drops down very

rapidly and the eruption rapidly disappears. The dose depends upon the severity of the case and the age of the patient. The refined form of milk now in the market is Aolan which is devoid of any Protein reaction and shock as it is sterilised. The injections are given intramuscularly daily.

2. Prontosil (Bayer) is a specific for this condition. The treatment is initiated with large doses by combining intramuscular injections with the administration of tablets. Surprising results are obtained. Tablets are given 1—2 tablets—three times a day after meals with plenty of water. Injections are given daily 10—15 c.c. in 2—3 ampoules daily intramuscularly.

3. Very good results are obtained by the use of sulfarsenol administered intramuscularly. The dose depends upon the age of the patient, the state of his heart, liver and kidneys and the severity of the attack.

4. Anti-erysipelatous serum injections have not given satisfactory results. Besides it is costly and gives rise to serum shock.

5. The oral administration of a new compound is said to give rise to good results. It is still on trial. The oral administration of Sulphamido Chrysoidin-Hydrochlorate causes a more rapid fall of temperature and disappearance of the eruption as well as shorter duration of the disease than any other form of treatment.

6. Last of all, Ultra-violet Rays are said to produce marvellous and very gratifying results but this treatment is rather expensive.

Personally, I have an experience that milk injection is still the most reliable, cheapest and devoid of any ill after-effects in the treatment of this condition and that is why I have given it the 1st place.

Bismuthia.

Lueth and associates (Chicago) report a case of generalized discoloration of the skin, resembling argyria, following the prolonged use of bismuth by mouth. The skin was of a dark blue-grey colour and the oral mucosa a deep purple-black. The pigmentation developed after taking for over two years large doses of bismuth subnitrate for the relief of pain due to duodenal ulcer. Chemical analysis of portions of the skin showed that bismuth was responsible for the coloration.—*The Prescriber.*

Alopecia Pathogenesis and Treatment

BY

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ALOPECIA means loss of hair. It is also called baldness. It may be partial or complete; congenital or acquired.

Shaft and the bulb or the root are two main parts of the hair. Papilla in the bulb is the most important part of the hair because on it depends the growth of the hair.

Shaft consists of two parts, the cortex and the medulla. The greater and outer portion is formed by the cortex. The central portion is called the medulla. The cortex is covered by the layer of skin called cuticle. It is made up of spindle shaped cells which are neucleated. These cells have ridges on their surface and interlock to form a resistant structure. The cells contain pigment granules, yellow colouring substance, keratohyline granules and sometimes air bubbles.

Medulla.—It is best noticed in the intra-follicular portion of the hair and diminishes gradually towards the point of the hair. It is composed of rouleux of plates consisting of three or four flattened cells which near the hair root contain keratohyline granules.

Bulb is softer and lighter in colour than the shaft and is composed of two to three layers of cells. They are more cubicle in shape. In the bottom portion of the bulb lies the papilla of the hair. The process of cornification is just the same as that of epidermis. Keratohyline granules appear in the medulla and the cells are cornified. Extra follicular portion of the hair-cells are cornified with formation of the hair keratin at the periphery of the cells. The free end of the hair becomes hard and resistant and the component cells closely pack together so as to make the hair homogeneous.

Papilla is a conical process of the corium, analogous to a papilla of the papillary layer. It contains connective tissue fibres supporting capillary loop and medullated nerves. By means of it the hair is nourished. And any disturbance there due to diseases, injuries, etc. causes cessation of growth of the hair. Hairs fall off and to this condition we give the name Alopecia. It is a very important part of the hair.

Follicle.—It is a simple invagination of the epidermis. It

covers and protects the growing portion of the hair. Upper third portion is like epidermis. Middle portion is in connection with the ærector pili muscle and sebaceous glands. In the lower portion, only prickle cell layer and basal layer persist.

Human body is covered by hair of three types.

Long hairs.—They are on the scalp, chin, axillary and pubic region. They are soft, may become hard like barbarians, come out obliquely through the skin. Cut section is oval in shape.

Hard hairs.—They are thick, found in the nose and the ear and the eye lashes. Cut section is round, and it comes out through the skin straight.

Soft hairs.—Called lanugo hair are found on the body of the foetus. The colour of the hair depends on the pigment cells and air bubbles between the cells. Black hairs are due to the black pigment and gray and red hairs depend upon the protoplasm. Due to old age, the colouring pigment is lost and hair becomes white. White hairs in young people are due to accumulation of air bubbles between the cells. After the birth of the foetus lanugo, hairs are gradually replaced by normal long hairs on the scalp. At puberty, hairs grow on the pubic region, axillary region and on the chin in the male only. In adult age, hairs grow in ears and nose.

Bulb is an important part of the hair and still more is the papilla. This we can compare with the root of the tree. Hair gets all nourishment through this bulb. Blood capillaries, nerves and glands nourish the root of the hairs and they grow.

Alopecia may be classified as follows, depending on the etiological factors:—

1. *Alopecia due to heredity.*—From the age of 16 onwards hair begins to fall. Common in males. From generation to generation, this goes on without any constitutional derangement. Hair falls while brushing, combing or drying the scalp after wash or bath by a towel. It may take years to complete the baldness.

2. *Senile Alopecia.*—In old age, the vitality of all the organs is lowered. There is poor nourishment to the bulb. Hair becomes white and gradually falls. After some years complete baldness results. Sedentary occupation and habits hasten this.

3. *Alopecia due to Systemic diseases* such as Anæmia, Tuberculosis, Influenza, Typhoid, Diabetes, Endocrine diseases, Pregnancy, Pneumonia, Syphilis, Auto-intoxication, Chronic indigestion, Insomnia etc.

4. *Alopecia due to Nervous diseases* such as shock, fright fear, anxieties, loss in business, family affairs, disappointments in delicate matters, over-studies, melancholia etc.

5. *Alopecia due to morbid condition of the Scalp* such as Seborrhœic Dermatitis, Pityriasis capitis, Eczemas, Psoriasis, Erysipelas, Keratosis Pilaris and parasitic affection as Pediculosis capitis, favus, Ringworm etc. These diseases destroy the normal function of the bulb and hair falls.

6. *Aolpecia due to Injury.*—Destruction of the bulb takes place as a result to cicatrical changes. So, there is no hope of getting hair back. It is permanent.

7. *Chemical Irritants.*—They irritate the part and disturb the normal function of the bulb.

8. *X-rays Alopecia.*—Bad technic and over doses do a lot of mischief. Hair growth may take place after a period of 3 to 4 months.

TREATMENT.—1. General and Local—General Treatment:—A thorough examination of the patient is essential. Various causes given above, with the past life history must be taken into account and suitable remedies advised. To improve the general health by regular life with exercises in open air, hygienic surroundings, good food well masticated and taken in limited amount as not to cause indigestion, removing constipation, regular habits; avoiding keeping late at night, excessive smoking, too often drinks of hot and strong tea, coffee and alcohol, all such habits must be checked. These habits gradually undermine the health even of a healthy man. A life free from worries, 'eat, enjoy and be merry' life does much help to improve the condition. Whenever necessary, improve the health by nervine tonics as iron, Arsenic, Quinine, Strychnine, liver extracts, glycerophosphates, codliver oil, and vitamins. Remove the sources of septic infections from tonsils, teeth and gums. Avoid excessive physical and mental work. All these things will help much to improve the condition.

Local treatment is very important because it directly stimulates the function of the bulb by suitable lotions and stimulating medicines.

℞	Green Soap	... ʒ ii
	Spt. Vinum Recti	... ʒ i
	Ol. Lavendulae	... q.s.

Keep it for 24 hours and decant it. Mix one tablespoonful of this in a cup of warm water and wash the scalp thoroughly

well. It is more effective to apply by a piece of flannel the undiluted lotion on the scalp and then wash the scalp with ample warm water. Washing should be done thoroughly well. Then, dry the part. This removes much of the dirt, the openings of the follicles are cleaned and it helps the stimulating medicine to get in and stimulate the bulb.

In congenital Alopecia when the scalp is inflamed and covered with dandruff, apply after washing it,

℞	Sulph. ppt.	... grs. xv
	Acid Salicylic	... grs. x
	Vaseline white	... ʒ i

In hereditary alopecia, patient should begin the treatment as soon as he notices fine hair falling. Health must be improved and strong stimulating lotions applied twice a day regularly.

Following is a good stimulating lotion :—

℞	Tr. Cantharidis	... ʒ i
	Tr. Jaborandi	... ʒ ½
	Resorcin	... grs. 15
	or	
	Salicylic Acid	... grs. xv
	Chloroform	... ♏ xv
	Tr. Lavend Co.	... ʒ ½
	Spt. Vinum Recti	... ʒ i

In senile alopecia apply :—

℞	Ammon. Chloride	... grs. xv
	Acid Salicylic	... grs. x
	Glycerine	... ʒ i
	Eu de cologne	... ʒ ii
	Aqua Rosa	... ʒ viii

Alopecia due to constitutional diseases needs prolonged treatment. General line of treatment is important and suitable tonics should be prescribed. Stimulating lotion given above after washing by soap spirit lotion, should be applied twice a day. Shaving the scalp once and applying the medicine hastens the regrowth. Systematic massage and friction is very good. Ultra-violet rays exposures to the whole body increase the absorption of Calcium, Iron, Phosphorus and Iodine, and indirectly help to improve the health. Prof. Nagelschmidt treats his patients by Ultra-violet rays. It stimulates the follicle and the bulb and re-growth takes place. In recent cases hair comes soon but long standing cases are not contra-indicated.

Urticaria

BY

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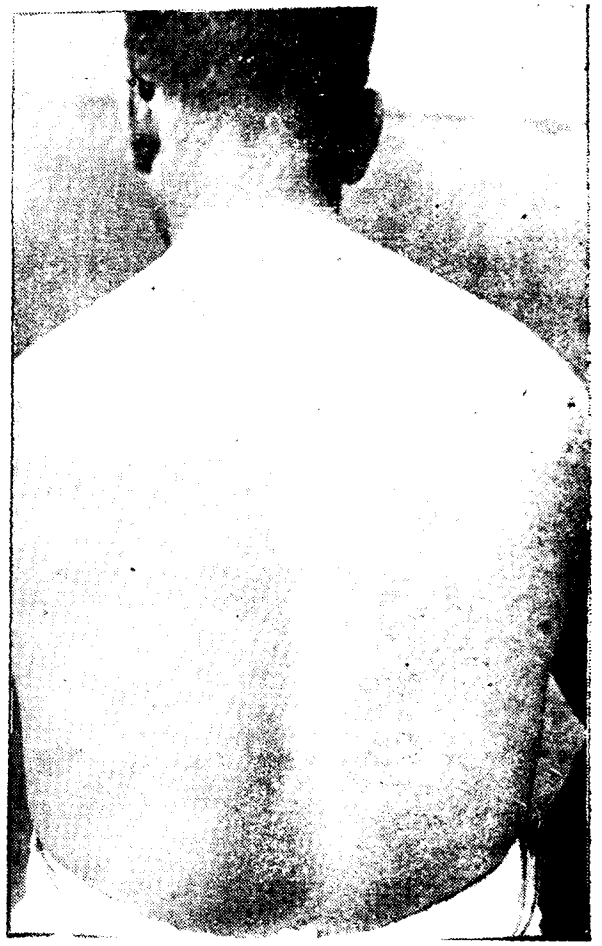
URTICARIA is one of the commonest toxic affections of the skin, the main characteristics being evanescent wheals and intense itching. The onset of Urticaria is acute, sometimes with a slight rise of temperature, but more often without. The patient's attention is usually first attracted by the intense itching. There may be gastro-intestinal symptoms, as vomiting, diarrhoea, fever etc. but even these may often be absent.

The eruptions consist of well defined white or pink swellings (wheals) of the skin (the margin being red and the centre pale). The scratching induced by itching brings out fresh wheals and mechanical irritation of any kind such as rubbing may excite them in the Hyper-sensitive skin.

A special characteristic of the urticarial wheal is its rapid development, and its equally rapid and complete disappearance. By stroking with a blunt instrument, we get a dermatograph (*vide picture*). It leaves neither scale nor stain. An individual wheal may persist from few hours to several days. Asymmetry is the rule and the remarkable variation in the extent of the eruption. In rare cases, nearly the whole of the cutaneous surface may be involved, and also the sub-mucous membrane of the buccal cavity, pharynx, larynx etc.

Certain variations from the common type require mention :— *Papular Urticaria* : the lesions are small and the papular element persists after the disappearance of the wheal : (Lichen urticaris or strophalus). In *Urt. Gegans*, the wheals are numerous, sometimes reaching the dimensions of an egg. In *U. Bullosa*, the central part of the wheal is raised into a blister by the serous effussion. Haemorrhage into the wheal is indicated by the term *Urt. Haemorrhagica. Factitious Urticaria* is the name applied to the wheal lesions produced by local irritation. For instance, stroking the skin sharply with the finger nail or sharp instrument causes an immediate development of linear wheal in susceptible subjects. If one strokes the skin firmly with a blunt instrument *e.g.*, the blunt-end of a pen holder) a red line appears due to dilatation of the skin vessels forming a linear wheal. Similarly, words could be written on the skin (Dermatographism). (*Vide picture*). The

Urticaria *By Dr. H. A. Maniar.*



A Dermatograph of the Urticaria Wheal.

normal skin if stroked reacts with a production of a red line, but this redness comes on more slowly than in Urticaria, and does not go so far as wheal formation. In a few cases, there is the usual itching but the lesions do not get beyond the red stage—no wheals being produced. They are known as *Red Urticaria*. In the involvement, Glottis Oedema is produced, which may necessitate immediate Laryngotomy. In *Urticaria Pigmentosa* there is formation of macules which become urticarial upon slight irritation.

The duration of Urticaria varies a great deal. It is usually an acute affection lasting from a few hours to a few days or a week, but in some cases, it runs a chronic course, evanescent wheals appearing over again perhaps for months or years.

PROGNOSIS.—In the acute form, Urticaria clears up in a few hours to a few days. The recurrent type is the one that tires both the patient and the physician. In the latter, one has to elucidate the causative factor and remove the same.

TREATMENT.—Depends upon the toxin playing from within or without and the brief mention of the etiological factors will not be out of place.

1. *Local irritation.*—Sting of a nettle, crawling of a hairy caterpillar, bites of insects, jelly fish etc. Contact with flannel or with dyed underclothing is sufficient to start an attack.

2. *Toxic bodies from without* (*a*) By alimentary canal: (i) Some foods are toxic to certain individuals. *e.g.*, shell fish, salted and tinned fish, meats, pork, pickles, mushrooms, strawberries etc. (ii) Ptomaines arising from decomposing food; (iii) Drugs:—Copaiba, Cubebs, Quinine, Salicylates, Mercury and others; (iv)) Intestinal parasites, probably by toxic irritants produced in the bowels. (*b*) By the blood stream: (i) By vaccination; (ii) antitoxins, Vaccines, sera etc; (iii) Puncture of hydatids.

3. Toxic bodies developed in the body.—(i) In the gastro-intestinal disorders: (ii) In perganancy; (iii) Constitutional diseases *e.g.*, Bright's disease, Glycosuria, Jaundice etc. (iv) after puncture of pleural effusions· (v) auto-intoxications from various foci of infection. (Bacterial antigen).

4. In pre-mycosic and tumour stages of mycosis fungoides, Leukæmia etc.

TREATMENT.—In acute cases. A purgative should be given *e.g.*, mist alba, black draught, calomel etc.

The local treatment consists in taking warm baths with a

clothing, scabies is cured by this method in a shorter time. In cases complicated with furuncles, Staphylococcus Vaccine, a course of six injections starting with 20 millions is needed. Calcium Sulphide internally is also good. Stanoxyl is also good. The general health should also be attended to. Iron and Codliver oil being the best. Sulphur fumigation may also be tried but it is not easy and practical.

The enormous amount of disability and distress caused by scabies among the poorer classes can be avoided by an intensive treatment as described above and the patient restored to comfort and fit to carry on his work.

2. *Eczema* is the next in the order of frequency. It is a vague term applied to cases of Dermatitis where the particular irritant or cause is not spotted. Cases beginning as Dermatitis due to irritants *failing to disappear* on the removal of the cause are classed as Eczema. There is always a constitutional cause in addition to the local irritation. The so-called *Dhobies'* and *Barbers' Itch* are also localised Eczema. How far the dhoby or the barber is responsible for these two affections is debatable. Probably, they might have acted as an exciting cause where there was already a constitutional predisposition for the Eczema. Otherwise, it cannot be explained as to why so many other people, served by the same barber and dhoby, escape and only some individuals are affected. Usually, Gout, Nephritis, Diabetes, Chronic constipation and Chronic infections are found to be responsible for Eczema. The varieties of Eczema are numerous and some of them are simple Erythematous, Vesicular, Vesiculopustular, Squamous, Weeping Eczema, Eczema crustosum and scaly Eczema.

TREATMENT.—The treatment of Eczema is the removal of the cause if it could be spotted out. Failing which the treatment of Eczemas may be taken into two parts constitutional and local, both of which are equally important.

CONSTITUTIONAL TREATMENT.—First, the digestive system should be attended to and set right. Constipation, if present, should be tackled first. Internally, alkaline Carbonates, quinine in small doses, Codliver oil and iron are useful. Calcium chloride internally or intravenously is useful. Collosal calcium, Collosal manganese, better still manganese butyrate, B.D.H. are all useful. In a good number of cases, Protein Shock therapy in the form of milk or its preparations, Lactolan, is useful when injected. Lactolan with Eczema Vaccine may be used. A change of climate is also desirable.

LOCAL TREATMENT.—Acute stages always require very mild and soothing remedies such as Lotio Calamina. This can be applied frequently to the affected part and allowed to dry. Lotio calamina is most suitable for erythematous and papulo-vesicular forms. For weeping Eczema, Lead lotion is very good. If much sepsis is present, Acriflavine solution 1 in 1000 should be used. If there is much itching one per cent. carbolic acid may be added. In subacute cases where there is crust formation, ung zinc, ung. calamina, Resorcin and Acid Salicylas are to be used. The crusts have to be removed first by application of starch poultice before the application of the medicines. In acute and subacute cases soap should never be used. Warm saline baths may be given before the application. In chronic Eczema, stimulating ointments such as Acid Salicylas, Coal Tar and Icthyol are used. In the various intermediate stages, dusting powders consisting of zinc oxide, acid boric, calamine and starch can be used for some time, if there is much oozing. In obstinate cases, X-Ray and Ultraviolet ray therapy give relief. In Eczema around mucous orifices among children particularly a powder consisting of zinc oxide, acid boric, calamine and bismuth carb should be used. A mild ointment of mercury like Ung. Hydrargyri Ammoniata is also useful. In Eczema of the scrotum and groin with raw moist surfaces, Lotio Calamina followed by ung. calamine and ung. zinc are useful. Alcohol, tea, coffee and tobacco should be forbidden for patients suffering from Eczema. A vegetarian diet helps to cure the affection.

3. *Ringworm* is a parasitic disease usually affecting the folds of skin like groin, axilla and the hip. Sometimes it is found in other situations also. The remedy commonly used is chrysorobine ointment, properly and regularly applied. It should be of weaker strength than the B. P. strength in delicate people and in face. The treatment may also be overdone producing a dermatitis, which should be avoided. When dermatitis develops soothing lotions should be applied. Saturated solution of Acid Salicylas in spirit is also useful. It should be painted and allowed to dry. A single patch of refractile Ringworm may be cured by painting the patch with 1 in 4 solution of Trichlor Acetic Acid in distilled water. Thallium Acetate internally is said to be an effective remedy causing depilation of the patch. It is a very poisonous drug and should be administered carefully.

In Ringworm, as in scabies, all clothing used by the patient should be boiled from day to day till after the patch has completely

disappeared. Many cases of Ringworm are not cured for want of this measure.

4. *Tinea Versicolor* is a very common affection. It does not cause much discomfort and hence treatment is resorted to only for its disfiguring effect. It is sometimes mistaken for depigmented patches of leprosy but can be easily decided by there being no superficial anaesthesia and also the distribution of the patches. Tinea usually affects the face, neck. front of chest and back and axilla and the arms. A solution of Sodium Thiosulphate 1 per cent. painted on the patch usually makes it disappear. Ung. Acid Salicylas is also useful. In isolated single patch 2 or 3 applications of triodine make it disappear.

5. *Psoriasis.*—It occurs in irregular patches slightly raised and covered with scales usually silvery. The common situations are elbows and knees. It occurs in face also and even the scalp is sometimes affected. Usually there is no exudation. It sometimes undergoes spontaneous involution; and the healing process starts near the centre of the lesions. Itching is slight, if present. There is always a hereditary predisposition. It must be distinguished from scaly-syphilides by the examination of blood for Kahn.

TREATMENT MUST BE CONSTITUTIONAL AND LOCAL.—The constitutional treatment is similar to that of Eczemas. Salicylate of Soda internally combined with alkalies is useful. Codliver oil and other tonics may be tried. Thyroid ext. is effective. If there are other symptoms of Hypo-Thyroidism injections of collosal chrysorobine and collosal calcium are also useful.

Locally, chrysorobine ointment is effective. Ung. Acid Salicylas, ung. Resorcin and ung. Benzoic mixed in equal proportion act beautifully. Coal Tar ointment also may be used. X-Ray and Ultra Ray are useful in obstinate cases. It is very chronic and cure cannot be effected in a short time.

Infantile Skin Diseases

BY

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IN this paper I shall only discuss the character and treatment of skin diseases common among the children :—

Napkin Erythema.—The lesion is produced by friction of the surface of the body with wet bed clothes. The characteristic features are :—Erythema, then sudden removal of epidermis, next raw surface oozing followed by ulceration. The part should be cleaned with Sodi-bicarb-lotion and then dried and locally applying dusting powder in the form of zinc-oxide with equal parts of chalk, magcarb and starch. Soap and water should be avoided. In case of ulceration calomel (1. in 10.) may be added.

Intertrigo.—Here the lesion is produced by friction of two opposed surfaces of the skin. Prognosis is worse in fatty children and over the flexor muscles. Maceration aggravates the symptom forming sometimes Intertrigo Eczema. Simply Lasser's paste is beneficial until the vesicles subside, then use the dusting powder. If there are excoriated patches with Trigone and if moist, Zinc paste with Ammoniated mercury ointment is good. The scales should be removed with a swab-stick soaked in olive oil and paraffin. If it is not moist or too much raw, weak Ammoniated mercury ointment may be applied.

Lichen Urticata.—These are little patches of red or white pimples, hard and shotty to the feel often with a translucent centre but no fluid exudes when prickled.

The following lotion may be recommended.

℞	Zinc oxide.	...	ʒ i
	Glycerine	...	ʒ iv
	Lime water	...	ʒ vi

Congenital Syphilis.—Clinical signs :—Shrivelled appearance, Bullous eruptions on Palms and soles, marked emaciation, eruptions are first coppery red or brown, depressed nose, radiating skull, enlarged liver and spleen. Treatment should be like adults with arsenic preparation, Bismuth and mercury, etc.

Urticaria.—A number of raised wheals, whitish or pale red appear suddenly; these are extended by scratching. These disturb

Common Skin Affections of Childhood

BY

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CHILDREN form the majority of patients in general practice, and skin affections are more predominantly to be met with among them. Taking the subject from this point of view, it is proposed in this article to review, in brief, a few of the most common affections that the juvenile skin is heir to.

Scabies.—The first of these affections is easily scabies, and it abounds so commonly in children that there is hardly a grown-up person who has not suffered from it in his or her childhood.

The Acarus Scabiei, the causative organism probably finds in the tender skin of children a most suitable abode for its habitat. As is well-known, the female acarus burrows itself in the deeper layers of the skin where it lays its eggs, while the male acarus guards his partner by remaining at the mouth of the burrow. In their pursuit for a partner of the opposite sex the acarii roam about at night on the surface of the skin. That is the reason why the itching is felt so intensely at night time. Millions of these organisms that inhabit the body and the clothes of the patient can easily account for the intolerable itching and burning which are the most characteristic symptoms of scabies.

The burrows that are caused by the insect as a result of its invasion of the skin are usually to be seen in the clefts of the fingers and toes, on the buttocks and the penis. The eruption begins with a tiny vesicle which gets infected by other micro-organisms and turns into a pustule in the course of a few days.

The contagiousness of scabies is so severe that the inmates of the whole household or institution suffer from it, the contagion spreading from one to the other in regular succession.

The treatment must therefore be given to all the members of the family including the carriers of the disease in whom it is not visible by external signs. A sulphur ointment consisting of 40 grains of sulphur sublimatum in an ounce of vaseline can be prescribed for the adults and weaker strengths of the same ointment for children. All of them have to take a warm bath for 3 successive nights using a sulphur soap, rubbing and scrubbing the body during the bath. The skin should be dried by rubbing it with a rough towel, and the ointment should then be well rubbed

into the skin of the whole body below the neck including all the areas that are or are not affected by the disease. The pustules must be opened and cleaned up before the bath. The ointment must also be rubbed on the following mornings. On the morning of the 4th day, a bath must be taken by all of them and all the clothes that have come in contact with the body including the bed-cloths should be boiled, and fresh clothes should be put on. The beddings should be dried in the sun during this treatment for 3 days. A powder containing 1 part of sulphur sublimatum and 2 parts of Acid Boric should be dusted on the beddings at night: from the 4th day an ointment containing 5 grains of hydrarg ammoniatum and 2 drams of zinc oxide in an ounce of vaseline can be prescribed for applying over the remaining lesions. This much of treatment suffices to cure a case of scabies. In case of relapse the whole treatment must be repeated once again.

Among the scabicides may be mentioned Betanephthol. Balsam of Peru and Virtigal.

Impetigo Contagiosa.—This forms another very common affection of the skin in childhood. The very name of it indicates that it is highly contagious.

The eruption begins as a tiny vesicle on a red, inflamed base. The vesicle turns into a pustule and discharges a yellowish gummy fluid with a loose crust on the top. This discharge is extremely contagious and gives rise to a crop of eruptions wherever it touches the skin. Thus within a few days the child's head, face and body may be covered by the eruption. The other children and the parents too may suffer from the complaint, if it is left untreated.

The treatment consists in removing the crusts by means of a starch poultice and the application of the following ointment:—

℞	Hydrarg ammoniatum	...	gr. v
	Zinc oxide	...	ʒ i
	Pulv. Amyli	...	ʒ i
	Vaseline alba	...	℥ i

Mft. Ung. to be applied morning and evening, or the following:—

℞	Hydrarg oxide flava	...	gr. xx
	Zinc oxide	...	ʒ i
	Vaseline	...	℥ i

Mft. Ung. Apply morning and evening.

Infantile Eczema.—Very often this begins as a seborrhoeic dermatitis of the scalp and spreads downwards on the face and the

extremities. Itching and oozing are the characteristic symptoms and the itching is so great that the lesions often bleed as a result of scratching. Secondary infection generally takes place with pus formation.

In simple infantile eczema the following liniment serves the purpose well and trouble heals up in a few weeks:—

℞	Camphor	... gr. xxx
	Zinc oxide	... ʒ iii
	Calamine Preparata	... ʒ iii
	Liq. Calcis	... ʒ iii
	Oil olive	... ʒ iii

Mft. liniment to be applied every 2 hours.

When the lesions are fairly on the way to recovery, the following cream may be applied:—

℞	Zinc oxide	... ʒ ii
	Pulv. Amyli	... ʒ ii
	Liq. Calcis	... ʒ ii
	Oil. Olive	... ʒ ii
	Vaseline alba	... ʒ ii

Mft. Cremor to be applied morning and evening.

It should be borne in mind that soap being an irritant must not be applied on the parts: instead gramflour may be used to cleanse the parts by making it into a paste with a little water.

If there is a *seborrhoeic dermatitis* on the scalp the following ointment should be prescribed:—

℞	Acid salicylic	... gr. x
	Sulphur Ppt.	... gr. x
	Zinci Oxide	... ʒ i
	Vaseline alba	... ʒ i

Mft. Ung. for scalp to be applied morning and evening.

If the lesions have been septic hot boric fomentations should be advised twice a day followed by compresses of a 1 in 1000 solution of Acriflavine. Application of I per cent solution of Argenti Nitras once a day will also remove the sepsis quickly. When the lesions are healthy the above mentioned zinc and calamine liniment may be prescribed.

Crude coal Tar is highly efficacious in the treatment of Infantile eczema and the following is a useful prescription:—

℞	Crude Coal Tar	... ʒ i
	Zinc Oxide	... ʒ ii
	Pulv. Amyli	... ʒ ii
	Vaseline alba	... ʒ i

Mft. Ung. to be applied on piece of lint morning and evening.

The strength of the Tar may be diminished if the skin is in an irritated state.

Internally laxatives must be given in order to keep the bowels regular and tonics like Iron, Arsenic and cod liver oil and calcium should be prescribed.

Urticaria.—The characteristic "wheal" is a sight of every day occurrence. Initially the little patient may vomit or suffer from fever, a mild bowel disorder accompanied by some fever and followed by severe itching of the body with the appearance of the "wheals". The child is restless and cries and scratches its body all the time. In *Lichen Urticatus* a tiny papular eruption is seen instead of a wheal, which is equally itchy and may be covered with a tiny haemorrhagic crust.

The treatment of this common disorder consists in eliminating the bowels by a brisk purge of Calomel or Castor oil. Internally Calcium Lactate acts like a charm in some cases. The following mixture may also be prescribed:—

℞	Soda Bicarb	... gr. i
	Mag. Carb	... gr. i
	Tr. Rhei Co	... ♏ ii
	Syrup	... ♏ x
	Aqua menth Ppt. ad.	... ʒ i

Mft. mist. sig. ʒ i t.d.s. for a child of 1 year.

℞	Calcii Lactas	... gr. ii
	Salol	... gr. i

Mft. Pulvis i t.d.s.

Locally, the following lotion will be found useful:—

℞	Zinci oxide	... ʒ iiii
	Calamin Preparata	... ʒ iii
	Liq. Plumbi Sub acetas	... ʒ i
	Camphor	... grs. xxx
	Aqua ad.	... grs. vi

Mft. lotion to be applied every 2 hours.

Soap must not be used but gram-flour should be used for cleansing the body.

If the attack of urticaria has been co-existent with malaria, Quinine and Equinine should be given.

Alopecia Areata.—Seborrhoeia of the Scalp commences with itching and the formation of scales called "dandruff". This

complaint leads, in course of time, to patches of Alopecia and the hairs come out in tufts to the great surprise and chagrin of the parents of the child. If not treated the patches multiply and leave the scalp bald.

TREATMENT:—Apply Phenol with a small cotton brush each time on a small area of baldness, washing it off in a couple of minutes with a swab of methylated spirit. A plain Zinc ointment may be applied over the areas thus treated. In a couple of weeks new hairs will be seen growing on these patches. If not the Phenol should be applied again after 3 or 4 weeks. On those areas where phenol is not applied the following ointment should be rubbed in morning and evening.

℞	Acid Salicylic	...	grs. xx
	Sulphur Precipit	...	grs xx
	Vaseline	...	ʒ i

Mft. ung. to be rubbed into the bald patches morning and evening.

Ultra-violet Rays are considered to be very useful in Alopecia areata.

The following lotion will be found to be useful, if used for a sufficiently long time:—

℞	Acid Salicylic	...	ʒ i
	Tr. Cantharidis	...	ʒ ii
	Ol. Ricini	...	ʒ iv
	Ol. Bergomat	...	♏ xx
	Spt. Rectificti	...	ad. ʒ i

Mft. lotio for the scalp to be rubbed in morning and evening.

Internally tonics should be prescribed with plenty of nourishing food and the bowels must be kept regular.

Ichthyosis.—The other name for this affection is "Fish skin disease" because scales form over the skin resembling those of fish. This affection starts in childhood and the main symptoms are the rough skin and the lack of perspiration on the body with a tendency to get worse in winter. Secondary infection is very frequent.

The treatment consists in administering cod liver oil and other fats to the patient so as to supply the deficiency of fat in the skin.

Locally massage of cod liver oil is very useful and the following cream may be applied:—

℞	Ol. Morrhuate	...	ʒ ii
	Liq. Calcis	...	ʒ ii
	Zinci oxidi	...	ʒ ii
	Vaseline alba	...	ʒ i

Mft. cream apply 3 times a day.

Very small doses of thyroid extract may be given every night. The diet should be rich in vitamines and must consist of plenty of milk, cream, butter, green vegetables and fruits.

Prurigo.—This complaint begins in infancy. The skin is rough to the feel and papular eruptions are seen to appear again and again causing severe itching. When the affection gets chronic the skin burns so rough that it is aptly described as the "nutmeg-crater skin".

The milder variety called "Prurigo rictis" manifests itself by the appearance of papules accompanied by itching. It gets well in a short time. The other variety called "Prurigo gravis" or "Prurigo of Hebra" is a more serious affection which is prone to frequent relapses specially in the cold season and lasting for months or years and is very resistant to treatment.

Internally calcium is the only drug that can claim to do some good in such cases. Tonics like Cod-liver-oil. Iron and Arsenic and plenty of nutritious food should be administered.

Locally, the following lotion does all that one can expect:—

℞	Zinci Oxide	...	ʒ iii
	Calamine preparata	...	ʒ iii
	Liq. Carbonis Detregens	...	ʒ i
	Camphor	...	gr. xxx
	Menthol	...	gr. xxx
	Aqua ad.	...	ʒ iv.

Mft. lotio to be applied every two hours.

Importance of Calcium in the Treatment of Skin Diseases

BY

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AMONG the various remedies which have been tried in the treatment of skin disorders, calcium occupies an important place. It has been known for some time that many cutaneous lesions are accompanied by a disturbance of calcium metabolism. The fundamental work on the relation of calcium to skin sensibility is that of Klauder and Brown, who found that a high calcium and low potassium content in the skin meant lowered irritability, and vice versa. Subsequent investigations have confirmed these conclusions. How calcium acts in skin lesion cannot always be determined accurately; but in the majority of cases its influence can be traced to one of its three well known basic properties: Moderation of nerve excitability, iessoning of cell permeability and limitation of transudation phenomena.

The most remarkable action of calcium in skin diseases is the relief of itching. Karrenberg, who has used calcium gluconate extensively and intensively in dermatoses, in eczema principally, and also in lichen and dematitis exfoliativa insists on this point. Downing and Blumenfeld, who have applied calcium particularly to the treatment of pruritis (toxic dermatoses, neurogenic) have confirmed this.

Next comes the limitation of transudation. Karrenberg has found that calcium seems to be particularly indicated in acute exudative processes, and the more acute the condition the greater the action of calcium. He used calcium gluconate (known commercially as Calcium-Sadoz), a water soluble salt which has the advantage of being suitable alike for intravenous and intramuscular injection and for intensive oral administration. Karrenberg insists on the necessity of high doses in order to get good results. He seems to be partial to the intramuscular mode of administration. In acute cases, an intravenous injection of 10 c. c. of 10 per cent solution was given in the morning and the same amount intramuscularly in the evening. It has been found that in quite a few cases one injection of calcium gluconate brought about a subsidence of tension, burning and itching. Local treatment, of course, also helps greatly. It is well to remember that in those cases in which calcium exerts a marked

benefit, relief from disagreeable symptoms is accomplished when the calcium is utilised by the body in the shortest possible time; and the way to get calcium into the body is to inject it in the blood stream. After relief from the itching has been obtained intramuscular injections may be substituted. The treatment may be continued orally. The oral administration has also value by itself, particularly in the chronic state of eczema. Stokes summarised the main points of the so called eczema problem when he advised this line of treatment.

" Use the X-ray sparingly, the quartz lamp often, auto-hæmotherapy oftener, calcium in large doses oftenest."

In dermatitis herpetiformis with extensive patches and intense itching, calcium injected by the vein has caused the disappearance of the very troublesome itching, with gratifying relief to the patient. After relief of the itching, intramuscular injections may be substituted until the bullæ disappear. The treatment should be continued as a prophylactic measure for two weeks or so by daily administration of calcium gluconate in 60-grain doses three times a day. The same regime may be used in the treatment of lichen ruber planus. An intravenous injection will quite readily control the intense itching within an hour. Intramuscular injection may then be substituted until the itching has completely disappeared. One injection a day given in the evening, is sufficient. The powder or tablet form of calcium gluconate may be given over a period of two or three months, and almost invariably very good results will be obtained. In arsphenamine dermatitis, calcium gluconate, used in the same way as in dermatitis herpetiformis, has given excellent results. Lichen ruber annularis may be attacked in a similar manner. Often after two intravenous injections the itching stops and the lesions become flat. Neuro-dermatitis also may be greatly benefited by calcium therapy.

Acne is believed by many dermatologists to be not merely a local disease but a systematic metabolic or endocrine disorder. For this reason calcium may be logically employed in this condition. Bloom has had considerable experience in treating this skin manifestation with calcium, obtaining marked improvement in many of his cases, with disappearance of almost all papules in some, and diminution of the oiliness of the skin, and even the disappearance of comedones, in others.

Urticaria is a condition which usually yields to calcium medication. In conjunction with ephedrine sulphate in 3/8th grain doses four times a day, this remedy has proved to be of great value in controlling the intense itching, when other methods

We shall now consider at length why the determination of dose is particularly difficult in radiotherapy. We know more or less accurately the nature of the various drugs which are dealt with by Materia Medica. This cannot be said about radiations which the radiotherapeutist uses in place of drugs and which form the subject matter of his Materia Medica.

The solar radiations have not yet been known fully. What we know is only an infinitesimal part of the solar spectrum. Even in this small portion we have not been able to separate each individual radiation. We know groups of rays but not the individual rays which compose the group. Similarly with regard to the rays which spread over the vast range of the electro-magnetic spectrum and which number millions and whose wave-length ranges from .0004 A to many killometers. Therefore, when we speak of the ultra violet rays or X-rays, we do not particularize single separate rays with the same clear cut precision as when we speak of hydrogen we refer to the individual element having the invariable atomic weight of 1. But we refer to groups of rays which come within a particular range of wave-lengths. Now, within this range, there are hundreds of different waves with varying wave-lengths. For aught we know, their actions may also be varying. We group them relying on rough similarities in their effects. Such are the indefinite materials with which the radiotherapeutist has to work Even these, such as they are, are materially affected by reflection, refraction, and atmospheric absorption, during transmission. The radiations pursue a straight course in ether but as soon as they come into contact with the earth's atmosphere their course is affected by its material contents. Where the atmosphere is thickly laden with dust particles as over big cities, the short wave-length radiations are almost entirely absorbed. This is with regard to the Sun's radiations. The quality of radiations produced by artificial methods varies according to the source of production and also at different times from the same source and the distance is also an important factor to be considered as the intensity of radiation which varies inversely with the square of the distance. A chemical substance can be controlled in production and, when produced, can be stored to be used when and where necessary. Radiations must be taken from the Sun or artificial sources whenever required, and their quality and strength may not be the same every time Accurate dosage of such variable and indefinite agents is impossible to achieve till our knowledge about them becomes perfect and till we have unerring instruments for measuring their strengths. We cannot however wait till our

knowledge has reached that stage. Patient observation and experiments have furnished us with a workable basis for radiotherapeutics. These have prescribed the limits within which we should operate. They have roughly given us the minimum and the maximum dose. It is generally experienced that a mild dose is stimulating, medium dose is inhibitive and an excessive dose is destructive to cellular life. It is for the radiotherapeutist to determine, from within the range, the dose for each individual patient Here also his task is not so easy as that of the medical practitioner, who prescribes the dose according to the age, sex and weight of the patient and the state of the malady. These are however not sufficient for fixing the dose in radiotherapy. When a medicine is administered orally or by injection, the doctor knows that the dose prescribed has gone into the patient's system. Radiations however do not get entrance into the system so readily and easily. They have to effect entrance through the most wonderful line of defence which nature has provided for our protection, against incessantly assailing enemies. The human skin is this line of defence. As its strength varies in each individual the dose has to be varied accordingly. A normal individual has about 15 sq. ft. of skin. The skin varies in thickness in different regions of the body from about one half to eight millimeters. In a general way, the skin consists of 3 layers. The epidermis, the dermis or corium and the hypodermis or subcutaneous tissue. The epidermis separates the tissues beneath from the outside air. The deeper cells of this layer are constantly growing and dividing. As they multiply, they spread outwards towards the surface. As they spread, they become cut off from their blood supply. Only the deepest, epidermal cells are well nourished. The rest are in various stages of starvation. The superficial cells, being remotest from the blood stream, actually die. The outermost layer is therefore composed of dead cells. These dead cells are dry and horny and form a tough barrier between the outer world and the living tissue. The epidermis has three other layers besides this corneal one, the lucid, the granular and the germinal. In the last named layer is developed the important pigment, melanin. This pigment is found in the deep part of the germinal layer in the form of granules and diffused coloring matter. Amongst the coloured races, the pigment is formed in the derma also and even the horny layer is stained. The derma or true skin is very dense and tough, and so canalised in all directions as to leave passages for blood vessels, lymphatics, sweat glands and nerves. Its muscles are chiefly of the unstriated type. It contains hair follicles and sebaceous glands

and a considerable amount of elastic fibres. The tactile corpuscles are located in the papillae which project into the true skin. The hair follicles are *mainly* located in the true skin but many reach down to the subcutaneous tissue. The sebaceous glands which supply the hair and skin with natural brilliantine are closely related to the hairs and empty their ducts in the upper third of their follicles. It is estimated that there are two to three millions of sebaceous glands and they daily secrete about 2 grams of serum. The ducts of the sweat glands which are located in the deepest portion of the derma and the subcutaneous tissue, pass through the true skin into the epidermis. The skin performs various functions, chief of them being protective, sensory, heat-regulating, respiratory, secretory and excretory. To the radio-therapeutist, the heat regulating and protective functions of the skin are of great importance in determining the dose. Man is a warm-blooded creature and is generally warmer than his surroundings. The body is therefore continually losing heat to the cooler atmosphere around it. To compensate for this loss of heat, there are internal sources of heat production which keep its temperature up. The continual chemical activity of our muscles and glands unremittingly replaces the heat lost by the body through the skin. The balance between this internal heat production and the external loss of heat determines the temperature of the body. Now both these factors might vary. Production of heat is greater in active hours than when we are at rest. During severe exercise, the activity of our tissues and muscles is very much increased resulting in an excessive production of heat. Similarly, the state of the air may vary. It may be cooler or warmer, dry or humid in varying degrees. As it is essential for our bodily efficiency that our temperature should be kept constant, nature has provided us with two mechanisms which perform this work in a most wonderful manner. These are:

1. Variations in the size of the blood capillaries.
2. Perspiration.

More than 1/3 of the blood in the body is always flowing along the skin. This enables the skin to exercise an equalising influence on the temperature of the blood and to stimulate its circulation in the deeper structures of the body. When more internal heat is produced, the blood vessels in the skin dilate and the hot blood rushes to the surface to be exposed to the cooling action of the air. Conversely, if we feel too cold the blood vessels contract, the blood having no excessive heat to give away, avoids

the skin. Perspiration is due to actions of the sweat glands which number from 2 to 3 millions and which throw out 700 c.c. of perspiration per day and are capable of secreting more when necessary. It consists largely of water. It evaporates and cools us. It is our most efficient temperature regulator. By its activity, it is possible for us to withstand the temperature of a hot chamber which would be sufficient to cook the dead flesh of a mutton chop. Another function of the skin with which we are concerned in radiotherapy, is its protective function. It is a rough rampart protecting the body from all harmful contact, physical or chemical. It is in fact an expansion of the nervous system. Skin has a network of sensory nerve terminals which are sensitive to the slightest touch or irritation. If the attacking irritant is mild the skin remains unaffected, but if it happens to be the cause of constant trouble the skin in course of time becomes habituated to the irritation and ceases to be sensitive to it. This adaptation of the skin is brought about by hypertrophy of all its parts. But there is limit to this power of the skin. If hypertrophy were an unending process the skin would become so thick that it will not be able to perform its various indispensable functions, and will destroy the body sooner than the irritant to protect from which it assumes such tough proportions. The body however has to be protected from the irritants against which the hypertrophy of the skin is powerless. This is done by the pigment Melanin which is formed in the germinal layer of the derma. Now, if the irritant is so strong that it pierces through both these lines of defence and enters the blood stream, then follows a battle royal in our tissues. The blood vessels in the affected spot dilate causing an increase in the blood flow. A condition follows which is commonly known as inflammation. It begins with redness and develops further stages according to the strength and intensity of the irritant. The exuded leucocytes and serum offer opposition to the intruder. After the enemy is destroyed the inflammation subsides gradually. Where the irritant is a radiation then too the same result follows. This reaction of the skin to radiations is technically called *erythema*.

Erythema and pigmentation—these are the two guiding stars for the radio-therapeutist. We have seen above that the reaction of the human skin to radiation is not uniform. It varies in different individuals. Variations in radio sensibility range from 1-75 or even one to four hundred. The result is that radiation which may be mild for one man may be quite strong for another. The measurement of this reaction would give us roughly an idea as to

the quantity of the particular radiation which can be safely administered to the subject. The maximum dose is reached when symptoms of the third or fourth stage of erythema appear. Probably the primary function of the pigment is to arrest the excess of sunlight which has a lethal effect. By absorbing most of the visible rays which penetrate the horny layer, the pigment protects the blood vessels and the living tissues, in the deeper layer of the epidermis from the lethal effects of sun rays. This is why we have coloured races in the tropics. White men who expose themselves to the Sun of the tropics become bronzed and thus immunise themselves from Sun-burn. Dwellers in the arctic snows are pigmented for protection against glare. Pigment protects the underlying structures from an excess of light. It absorbs the visible and ultra violet radiations and by converting them into heat can activate the sweat gland. The sweat in its turn cools by evaporation. The pigment is therefore an indefatigable watchman but indiscriminating. It will not discriminate between beneficial and inimical radiations. He will close the door to all. The dose therefore of the radiations must be so regulated as to be unobstructed by pigment. If deep pigmentation occurs the treatment might become ineffective. The tendency to pigment also varies in different individuals. This will necessitate variations in the dose. The skin sensibility test is therefore of great importance and will remain so till we have devised better and more efficient means for fixing the dose. In the present state of our knowledge about radiations, radio dosimetry must rely on skin sensibility test. In the Solarium we use Saidman's automatic skin "sensitometric" test. This apparatus is worked by clockwork mechanism. The apparatus consists of a flat plate about 7 inches square with 18 variously shaped holes punched in it. A small movable screen automatically covers the different apertures by rotation. The first after one minute, 2nd after two and so on upto the last which is covered when a period of 18 minutes had elapsed. This sensitometer is firmly applied to the bare skin to be tested and the point at the predetermined distance is irradiated by the Sun or lamp for 18 minutes, and the skin reactions noted :—

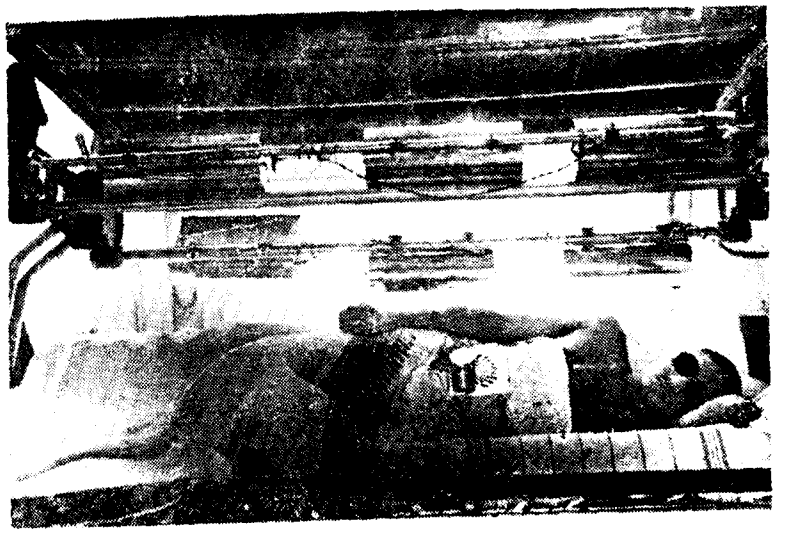
1. Immediately.
2. After a few hours.
3. After a few days.

and the results noted down.

The reactions are divided into four degrees.

Importance of Skin Sensibility test in Radiation Dosimetry.

By Dr. P. M. Mehta.



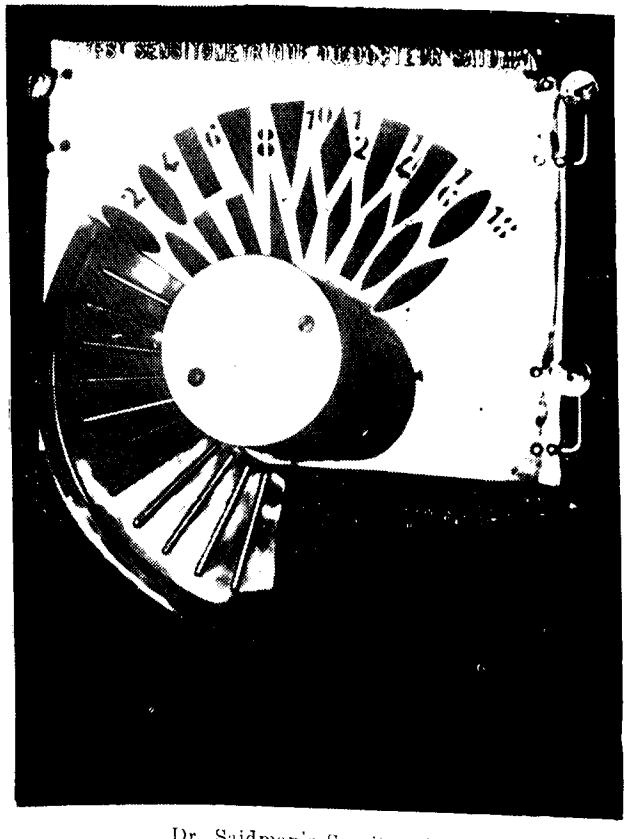
Skin Sensitometric test with Solar Total Radiations.

Skin Sensitometric test with Mercury Lamp Radiations.

Importance of Skin Sensibility test in Radiation Dosimetry.

By Dr. P. M. Mehta.

Skin Sensitometric Test with Arc Lamp Radiations.



Dr. Saidman's Sensitometer.

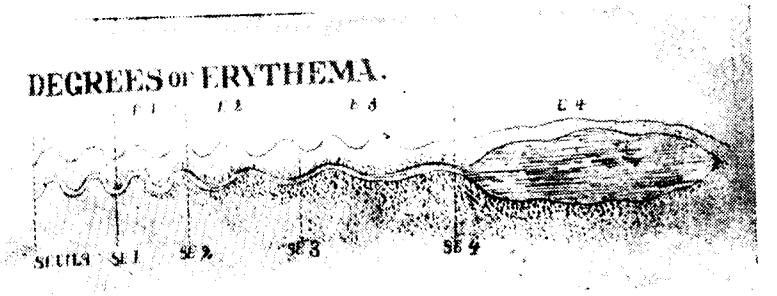
VOL. 34, NO. 10] THE ANTISEPTIC [OCT. '37

Importance of Skin Sensibility test in Radiation Dosimetry.

By Dr. P. M. Mehta.

2nd day 4th day 8th day

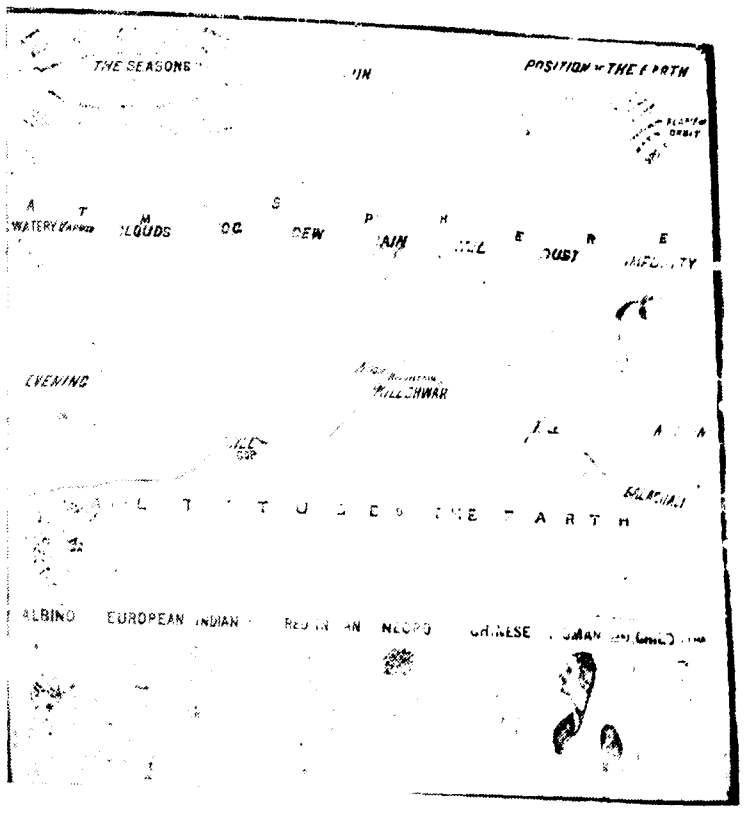
Naked-eye appearances of Skin Sensitometric Test.



Microscopic changes in skin in various stages of reaction.

Importance of Skin Sensibility test in Radiation Dosimetry.

By Dr. P. M. Mehta

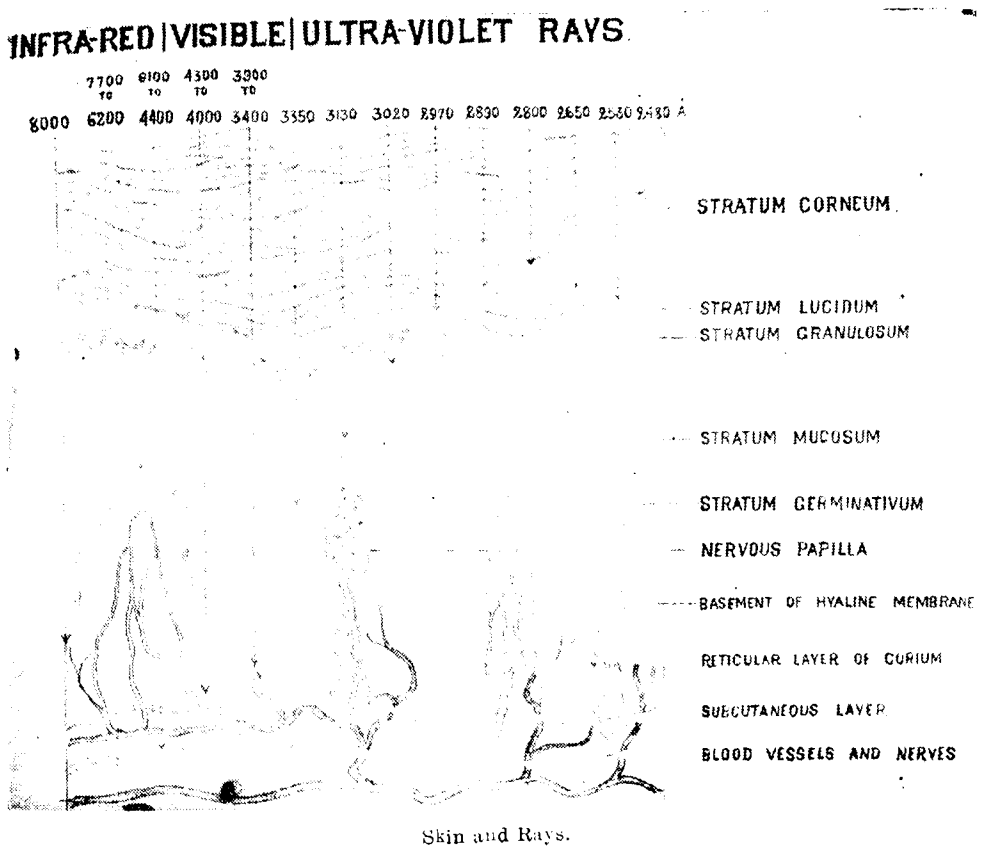


Factors of dosimetric importance for Heliotherapy.

VOL. 34, NO. 10] THE ANTISEPTIC [OCT. '37

Importance of Skin Sensibility test in Radiation Dosimetry.

By Dr. P. M. Mehta.



Skin and Rays.

Erythema	of 1st degree	... SE_1.
,,	,, 2nd ,,	... SE_2.
,,	,, 3rd ,,	... SE_3.
,,	,, 4th ,,	... SE_4.

	Naked Eye Changes.	Microscopic Changes.
Erythema of 1st Stage ...	Light Redness	Epidermic reaction.
	Disappears on pressure	Dilatation of capillaries and slowing of circulation, an increased flow of blood.
Erythema of 2nd Stage ..	Marked Redness	Dermo Epidermic reaction.
	Frank Erythema	Stasis of circulation and beginning of exudation of serum and blood cells.
	Double the dose of 1st.	
	Granular desquamation	
	Marked pigmentation follows in 1st week	
Erythema of 3rd Stage ..	Intense redness, surrounded by bright red areola and slight oedema	Marked exudation of serum and blood cells between layers of skin.
	Desquamation of large plaques of skin	
	Pigments marked most in the 2nd week	
Erythema of 4th Stage ...	Blister formation surrounded by diffuse redness	Excessive exudation and cleavage between various layers of skin.
	Very intense red blister	Necrosis of skin cells.

These are rather the various successive stages of inflammation.

The fourth stage of erythema is out of question for general use except on a very localised area and when desired for caustic action on tissue cells or destruction of localised infection.

The third stage of erythema also cannot be used for a large area of skin. This exfoliative dose can be made use of only in certain localised infection. The body is afraid of such a concentrated dose of radiation and on recovery from the local inflammatory reaction which will take about a week, puts on a protecting layer of pigment; thus, this area becomes marked by the end

of 2nd week. This dose is also not desirable, for general or constant use.

The 2nd stage of erythema is a stimulative reaction. There is marked stimulation of skin cells causing proliferation and increased activity. Chronic inflammatory condition of the skin may be stimulated to healthier reaction. Blood under the skin is stimulated leading to new formation of WBC. Vitamin D is produced. Only point of difficulty is that while stimulating all skin cells, pigment cells are also stimulated and the cells proliferating more than usual form a prominent pigment layer in a week's time which obstructs the passage of the radiation. Moreover there is some desquamation of skin cells. If the desquamation comes over the whole body, the skin is not in a fit condition for radiation treatment.

In the I stage of erythema is seen dilatation of vessels which is an effect seen in counter irritation of thermal agents or any kind of mild irritant, physical or chemical. This comes immediately and disappears with equal rapidity so soon that there is no stage of stasis reached in the vessels. This stage may be caused by Infra-red radiation (heat rays) and may appear immediately or it may be caused by U. V. rays; but here it appears after a few hours except in few exceptional conditions. Skin circulation is stimulated. There is mild stimulation of skin cells not sufficient to cause proliferation of cells; hence no new pigment layer is formed. So, it is possible to make use of this dose daily for the whole body even. No after effect is left on the skin. There is mild stimulation of skin and its function. Stimulation for circulation underneath the skin has a soothing effect on the nerve terminals. This dose is desirable when generalised function of skin is to be treated or secondary effects on general circulation or nervous system is desired.

When we have obtained the erythema value of skin sensiblity, we are in a position to determine the dose of radiation needed for the treatment of the particular cases. Radiation doses are to be calculated by multiplying the amount of radiation by the time of exposure. Surface of skin to be radiated must also be taken into consideration.

It is likely that these radiations may have selectivity like the radium radiations and X-rays. A particular cell in our body may have special attraction for a particular ray. When these affinities between the various radiations and various cells are discovered and methods of approach found out, radiotherapy would reach perfection. We shall then no longer depend upon the fortuitous

and dilatory action of masses of crude chemical substances but proceed directly to the treatment of the affected cells by their selective radiations.

But, in the present state of our knowledge, we determine our line of action in the light of statistical conclusions which are of course not conclusive. Statistics however point the direction in which investigation and research should be made. Radiotherapy is still growing from its infancy. It is therefore necessary that statistics should be collected. In India, the Jamnagar Solarium is perhaps the only institution of organised ray therapy. As far as possible, we keep classified records of cases and observations. Such record about skin sensibility are appended to this in a tabular form with the deductions drawn from them.

Dr. Saidman's skin tests as applied to Indian patients in Jamnagar Solarium.

This report is based on 1141 cases. Herewith is the report of 1141 cases to whom sensitometric test was applied in the year 1934–35. The sources of radiation for the test were as follows:—

(1) Solar radiation test with average 90% of the total radiation in the Helio-actinometer of the observatory in about 40% of the cases.

(2) Arc lamp test at a distance of 2 feet from the patient in about 45% of the cases.

(3) Mercury vapour lamp test at a distance of 3 ft. from the patient in about 20% of the cases.

The skin response in different sources of radiations differ in each case as follows :—

Tset.	No response Erythema.	Per cent Pigment.	Mean. SE1.	SP1.
STR. ...	39.9	48.1	11.4	14.8
Hg- Lamp. ...	12.6	11.4	7.6	6.6
Arc Lamp. ...	47.2	48.6	14.8	13.6

The phenomena of pigmentation after radiation with different sources of light was noted as under :—

Test.	Hg. Lamp.	STR.	Arc.
No response percentage ...	11.4	48.1	48.6
Slight pigment percentage ...	Nil	6.5	11.4
Moderate ,, ,, ...	11.4	31.2	22.9
Marked ,, ,, ...	77.2	14.2	17.1

Table No. 5

Table No. 5 gives the same data as table No. 4 but arranged in order of decreasing sensibility :—

	Mean of SE_1	Age.	No. of Patients.
Maximum ...	6.9	16 –20 years.	135
	7.1	21 –30 ,,	286
	7.4	31—40 ,,	193
	8.5	41 –50 ,,	134
	9.0	11 –15 ,,	74
	9.7	51 –70 ,,	122
	10.58	6 –10 ,,	106
Minimum ...	11.2	1— 5 ,,	91

From tables No. 4 and 5 one can note that :—

1. Cent per cent of children have mean of SE_1 between 9 and 12.

2. All adults under 50 years of age have mean of SE_1 between 6.9 and 9.0.

3. All adults above 50 years have mean of SE_1, 9.7.

4. Children are about $1\frac{1}{2}$ times more resistant to ultra violet rays than the adults.

5. The most sensitive age is from 16 to 30 and the least sensitive age is from 1 to 10.

Table No. 6

Table No. 6 gives the different diseases with the values of SE_1-SE_2 and SE_3 arranged according to the least mean of SE_1 for all patients :—

No.	Names of Diseases.	No. of Cases.	Mean of SE_1	Mean of SE_2	Mean of SE_3
1	Splenomegally ...	2	2	12	
2	Melancholia ...	1	3	12	13
3	Hyperchlorhydria ...	1	4	11	
4	Sprain injury etc. ...	12	4	10.5	11
5	Tumour, newgrowth ...	6	4.5	11	16
6	Keloid ...	3	5	12.5	
7	Pott's disease ...	14	5	9.5	14
8	T. B. Arthritis ...	17	5.5	11.2	16
9	Hemiplegia ...	28	5.6	10.1	13
10	Osteomalacia ...	1	6	14	
11	Osteomyelitis ...	11	6	10.8	
12	T. B. Peritonitis ...	4	6	11	
13	Ankylosis ...	16	6.5	18	
14	Lupus, T. B. Ulcer ...	9	6.5	11.6	15
15	T. B. Lungs ...	5	6.5	14.3	
16	Rheumatism ...	143	6.8	8.5	15
17	Abscess ...	12	7.2	8	
18	Acne ...	8	7.2	14.5	
19	Sciatica ...	43	7.3	13.1	16
20	Asthma ...	169	7.5	11	15.3
21	Eczema ...	39	7.5	9.5	15.9
22	Otitis, otalgia etc. ...	22	8.5	10	16.0
23	T. B. Glands ...	54	8.6	11	14.7
24	Psoriasis ...	7	7.7	12.3	
25	Arthritis ...	32	7.9	12.4	13.4
26	Neuralgia ...	72	7.9	10.2	13.2
27	Ulcer Chronic ...	15	8.9	12.3	14.
28	Bronchitis ...	78	8.9	12.4	13.1
29	Infantile paralysis ...	20	8.9	12.6	
30	Debility ...	11	9	12.3	16.
31	Parkinson's syndrome ...	3	9	14	18.
32	Paraplegia ...	36	9.1	11.1	16.
33	Dermatitis ...	10	9.2	16	18.
34	Adenitis ...	35	9.5	12.8	13.8
35	Anaemia ...	15	9.5	16	17
36	Boils ...	39	9.5	16	
37	Elephantiasis ...	32	9.8	13.3	15
38	Caries sinus etc. ...	20	10	14	14.5
39	Leucoderma ...	29	10	10.3	15.5
40	Myositis ...	2	10	13	
41	Deafness ...	6	10.8	12	
42	Mastoiditis ...	5	10.5	13	
43	Chirea ...	2	11	13.5	
44	Paralysis ...	16	11.1	12.6	12.9
45	Rickets ...	29	12.8	13	14.3
46	Facial paralysis ...	4	13.6	18	
47	Alopecia ...	2	18		
48	Conjunctivitis ...	1	18		

From table No. 6, one can note that :—

1. For SE_3 its value is never inferior to 11 and its mean is 15.1 ; SE_3 was obtained in 228 cases out of 1141 *i.e.* 20 %.

2. Value of SE_2 is also much, and its mean is 11.6. SE_2 was obtained in 662 cases out of 1141 *i.e.* 59.7 %.

3. SE_1 was obtained in 1033 cases out of 1141 *i.e.* in 90.5 per cent. The mean value of SE_1 is 7.0.

4. SE_4 was never obtained.

Conclusions.—1. Indians are sensitive to ultra violet but Erythema of 2nd and 3rd degree is not easy to produce. Mean of SE_1 is 7 *i.e.* SE_1 is produced in 7 minutes. Mean of SE_2 is 11.6 *i.e.* SE_2 is produced in 11.6 minutes. Therefore it can be concluded that, it requires more than $1\frac{1}{2}$ dose of U.V. for passing from SE_1 to SE_2.

2. Mean of SE_3 is 15.1 minutes. It is said that in Europeans mean of SE_3 is 10. Hence it can be concluded that Indians require about $1\frac{1}{2}$ times greater dose of U.V. to produce SE_3 than Europeans.

3. Sensitiveness varies with the age and the variations are as under :—

(1) Most sensitive age is between 16 and 30.
(2) Then comes the age between 31 and 40.
(3) „ „ „ „ „ 41 „ 50.
(4) „ „ „ „ „ 11 „ 15.
(5) „ „ „ „ „ 51 „ 70.
(6) The least sensitive age is between 6-10.

4. The mean of SE_1 in males is 7.8.
„ „ „ „ „ females is 7.2.
„ „ „ „ „ Male children 9.9.
„ „ „ „ „ Female children 10.3.
Age upto 12.

Therefore it can be concluded that females are most sensitive than the males, then the male children and the last in the order of sensitivity, comes the female children.

Though it is found the natives of tropical and semitropical countries are pigmented for protection against the injurious effects

of strong Sun light and even blonde races tan and freckle when exposed excessively to the Sun's rays and thus develop their own physiological sun-shade it cannot be laid down as a general rule that skin sensibility varies with the varying degrees of pigmentation in the skin. In the Solarium we got patients mostly from Jamnagar State which has an area of about 4000 sq. miles. The State is between latitudes 22-58° N. on the north and 21-43°-50' N. on the south ; and between longitudes 69-11° E. on the West and 71-34°-30 E. on the East.

The skin colours observed may be classified as under:—

1. Fair.
2. White : (1) Light. (2) Medium and (3) Deep.
3. Dark.
4. Black.

The skin sensibility tests carried out on these skins lead us to the conclusion that pigment does not affect skin sensibility. A black skin is often more sensitive than a fair one. Pigment may be a protective against some of the injurious effects of Sun light but so far as skin sensibility is concerned it cannot be said to have a controlling hand. Clothing, habits of living, outdoor or indoor life also do not give us any clue with regard to variations in skin sensibility. Factors which go deeper down in the make-up of our physiology may perhaps explain the divergence. This would necessitate collection of statistics on racial basis which means setting up a world-wide organisation for the purpose. If race could give any guidance it would become possible to determine the original race from which a man has descended from the skin sensibility.

My special thanks are due to Dr. V. P. Trivedi, M. B., B. S., Medical Officer, Jamnagar Solarium for helping me to prepare the statistical tables given above

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Pemphigus Vegetans.

Bailey (Plymouth) reports a case in which cauliflower-like masses were present on both legs and the patient was exceedingly anæmic. Various treatments were tried, including x-rays, ultraviolet rays, organic arsenical, blood transfusion, and germanin (Bayer-205). Under this last some improvement set in, but the patient eventually relapsed and died. Bailey thinks that this disease is uaually fatal and that cases reported 'cured' are to be regarded with suspicion as being either wrongly diagnosed or observed for too short a time.—*The Prescriber.*

The Ultra-Violet Rays on Skin Diseases

BY

Dr. O. de Loiola Pereira.

Director da Leprosaria, Central de Goa.

THE biological properties and the physiological effects of the U.V.R., known for a long time and of late, experimented on large scale, have permitted us to utilize these radiations to great success in dermatology.

Indeed, the U.V.R. being absorbed on the surface of the skin, its employment in dermatology ought to have been numerous and important. But as the physiology of the skin is still to be studied and the application of the U.V.R. in therapeutic is relatively of modern times, the mechanism is not yet known by which the U.V. Rays cure the various diseases of the skin or of any other organ. As it is, dermatology itself according to Gougerot is a very important Science there being still more to be learnt than in any other branches of Medicine.

There is no doubt, it is known by all who are familiar with the U.V.R., that these produce on the exposed skin a congestion more or less important followed by exfoliation which is an accelerated renewal of tissues of the corneal layer of the skin. Besides it is attributed to erythema and to pigmentation produced by U.V.R. a series of benefits not only on skin diseases but also on diseases of various other internal organs. It is even attributed to U.V.R. a caustic action which is the last term of revulsion, an eliminating action by which you can obtain a quick and complete cleaning of the purulent spots together with the causes (sequelæ, necrosed tissues).

The bactericidal action of the U.V.R. is also known but you can hardly be sure about it in skin diseases as the microbes remain generally cantoned in the anfractuosities of the wound or on the glandular acini where the direct action of the rays would not reach since we are aware that it is absorbed by the superficial layers. Whatever it might be, it is seen that the U.V.R. cure a good number of skin diseases, say by their direct action on the skin, or by increasing its resistance, or by helping the natural function of the defending organism or even by their action on the various glands of internal secretion.

We will not refer here to many other therapeutic actions which U.V.R. exercise at a distance on the internal organs which

are bound to influence, as I have said before, some way or other diseases of the skin.

We will summarize here some of the important cases treated by me in my private consulting room of electrotherapy.

We employ for our purpose the "Hanovia Alpine Lamp" of 230 volt. D.C.

The quantity of radiation to be applied to a patient is regulated generally by the duration of its irradiation and by the distance of the lamp from the irradiated part, having in consideration the receptivity of each individual.

We administer the U.V.R. in local baths, *i.e.*, irradiating only and directly the affected regions or general baths by exposing the whole body, first the front side and then the posterior. In any case the eyes will have to be protected by means of appropriate goggles.

1. O.S. Female. Age 14. Student. Hereditary antecedents of no importance besides Diabetes of her father. For about ten months has very itchy eczema on her feet; fine boils appear on the deeper layers of the skin, they break to give out a citrine liquid. The itching once started has to be carried till exhausted. The troubles increased at the proximity of the menstrual periods. Subjected to various treatments.

At the present moment the bubbly element can be seen at different stages of evolution coming up from the deeper layers of the skin; some boils are full of citrine liquid. The broken ones are covered by scales or crust. The skin looks to be esphacelated. An extensive erosion on the sole of the foot due to itching is covered by crusts and shows a red centre and some suppuration between the crusts.

Nothing abnormal on general examination. The diet well regulated without toxic condiments. Menstrual periods weak.

Submits to the simultaneous treatment of U.V.R. baths and those of heat rays. Receives first local bath on the feet and then general bath on both the sides of the body. The local bath is given with U.V.R. lamp at a distance of 0 30 m. and that of heat rays at 0.50 m. for six minutes starting with four and a general bath in a progression of 2 to 14 minutes on both the sides of the body.

In all had had 15 sittings of local baths and 12 of general.

Effects—completely cured of the eruption, regular menstrual periods. These results lasted at least for thirteen months after which I lost sight of the patient.

2. L. F. Age 4. Constitution weak, very pale with many palpable lymphatic glands, body covered with thick ecthymas suppurated and shows signs of old itch.

Receives 3 baths jointly of U.V.R. and heat rays on 3rd, 5th and 10th of February during 4 to 6 minutes with lamps at a distance of 1 metre. On the 13th of February when he appeared again the ecthymas were healed and had better general state.

Was prescribed a bottle of Cod Liver oil and sea-shore change. During the intervals between the baths, applied a Zinc Oxide paste which he was using before he began this treatment.

3. R. F. Female. Married. Age 23. from Hubli, British India.

Erysipelas on the ear, extraordinarily infiltrated, intense congestion around, on the face and head, acute pain in the affected region when touched and hemicrany.

2 local baths are given at an interval of two days with U. V. R. at a distance of 0.30 cm. for 8 minutes (erythematic dosages). Result—cured.

4. M. G. Female. Age 15. (from Loutolim).

Many pimples on the face: They are almost permanent for some years with recrudescence in some months; during all this time employed various drugs and other means to be free of them.

Submits to associated electric treatment, *i.e.*, U.V.R. baths both local and general and of heat rays with vibro-massage of the face.

Receives in all six sittings on alternate days of each of these treatments in due dosages. During the interval of the sittings, a methodical hand massage of the face was prescribed to her together with other attentions regarding diet and cleanliness.

Effects—all the pimples disappeared and yet (5 years) new ones have not appeared or at least if they appeared they have been few and of very small duration.

The Auto-Urine-Therapy in Dermatology

BY

Prof. J. M. Pacheco de Figueiredo,

Escola Medica (Nova-Goa)

THE old humourism, despised some decade ago, comes up again in the realm of Medicine. We witness its revival, not based on empirical data but defended with vigour and science, by its adepts. Let us look at the past, the distant past of the medicine of humours in which empirical humourism was combined with superstitious practices. Lumiere describes it in a masterly way. And none but the dermatologist is better fitted to meditate upon it. And all know the popular tradition that certain skin-diseases are the defensive processes of the organism which help to eliminate the bad humours.

The great Hippocrates, father of Medicine and pathogical humourism, had already declared that the restoration of normal equilibrium of the liquid humours, was effected by the expulsion of the altered humours, through urine, faeces, vomit and sweats. Trousseau, in his wonderful lectures on Pratice of Medicine, admitted the existence of a *morbific substance*, circulating in the blood in such quantities in certain cases, that its expulsion provoked Urticaria at times, Eczema at others and even Asthma and Gout.

New horizons are rising in Medicine and the Humorism, so violently attacked by the anatomo-pathological school, is coming up again in triumph, defended with zeal by Widal, Abrami, Lumiere, Sedillot and Leopold Levi. Widal and Abrami study the proteopeptic function of the liver and its disturbance provoking the *haemoclastic shock*. Lumiere in his famous *Colloidal Theory* explains the instability and floculation of humours. Sedillot, with clinical and laboratory data, upholds the *Leucocitary theory* and the formation of blood floculates, through shock. Leopold Levi says that the skin-diseases, such as Urticaria, Eczema, Herpes, Acne and Psoriasis which are usually attributed to arthritis, evolve in the *sphere of endocrines*. And what is all this but the *Renaissance* of humourism, however in a completely new aspect? "Indeed", says Jaccoud "two things designed under the same name, have never been so different".

The dermatological practice goes to confirm these data because

there we find the explanation of exudative diathesis (Czerny) and of certain problems which appeared complicated and inexplicable.

The new ideas have contributed to enrich the dermatological therapeutics with two valuable weapons: the *endocrinal medication* and the *medication* of *desensibility*. Lepold Levi, Pende, Maranon, Guy Laroche and many others show how in certain very bad cases of skin diseases, opotherapy, rightly employed, has given success. Ravaut (1913) and Tzanck (1921) have employed auto-hemo-therapy in dermatology to secure the desensibilisation. And successively enter into the dematological routine, the auto-serum therapy and the auto-plasmo-therapy.

However, the honour of introducing auto-urine-therapy, as a new weapon in the arsenal of therapeutics in 1929 goes to Jausion and Paleologue.

The miraculous virtues of urine or rather of urine-therapy were well-known, for a long time. In the Middle Ages, said Jausion, the urine of a child was used as a *resolvent and detersive* and that of a grown-up individual, still in puberty, as cicatrizante. The cow's urine was preferred as a hydragogue. The cure of an individual by the product of his own urine was very much in vogue. Brillet describes the case of a Breton, who used his urine as an application. Gougerot, Wildbotz, Piery and Ledru, Bezancon and Weil used *uro-intradermo-reaction* to produce elimination of antigens. "What was lacking in the formulario of uro-therapy" writes Jausion, was the intra-tissular injection.

In fact, the auto-urine-therapy has contributed to satisfy the dual object, desired by the dermatologists, namely while on one side, the urine, being the vehicle of choice of the endo-antigens, desensibilized the organism, on the other side, it served as the source of elimination of the hormones or of the susceptible products that excite or equilibrate the enodrcine system and acted as an agent of the auto hormonal cure.

The urine, thus, as Hugounencq said, which is the cemetery of molecules, is also the cemetery of hormones (Jausion).

* * * *

On the 22nd March of this year, I submitted a report to the Medical Association, in their meeting, on the auto-urine-therapy and the marvellous results obtained by us, in some cases of generalized eczemas, unyielding to different kinds of treatment. This treatment was employed in Portuguese India for the first time. Its technique is as much interesting as it is extremely simple. The apparatus required is a sterilized test-tube, a minim-glass

with pure Phenic Acid and a sterilized syringe of 5 c.c. A rigorous asepsia of the genital organs is made and then the urine is collected in the test-tube. There is no necessity of the urethral catheter. For every 5 c.c. of the urine, one drop of pure Phenic Acid is added. The mixture is then stirred for full 15 minutes. This time is indispensable, not only to make the injections painless but also to secure a better sterilization of the liquid. The injections are sub-cutaneous and quite painless and may be given every day or every 2, 3 or 4 days according to the evolution of the disease in gradually increasing doses as 1/2 c.c. 1 c.c., 2 c.c., 3 c.c., 4 c.c. and 5 c.c. The dose exceeding 5 c.c. is not in itself advantageous; 10 to 12 injections are, as a rule, sufficient.

Jausion, Giard and Martinaud, recommend the addition to every c.c. of urine of one drop of Pheno-salyl (Tercinol) or of alcoholic iodide 1/100. We have employed pure Phenic Acid, with best results, as recommended by Paleologue, whereby the injected liquid becomes very well tolerated without provoking irritation of the cellular tissues.

The external application consisted of bandages of almond oil. Fischer recommends auto-urine-therapy through enemas in cases of morning vomitings of pregnant women in initial doses of 5 c.c. in the morning and 5 c.c. in the evening, increasing the dose by 1 c.c. daily until the maximum dose reaches to 30 c.c. given twice daily.

* * * *

The indications of auto-urine-therapy vary according to the mode of action which is as interesting as complex. All skin-diseases which require desensibilisation or opo-therapy, will find in auto-urine-therapy a super-indication.

Let us take some for example:—

(1) Wet eczemas, chiefly in cases in which the inflammatory process spreads over extensive parts of the skin with abundant exudations (Jausion and Paleologue).

(2) Skin-diseases of the type of eczemas and exudations accompanied by itching and complicated with disturbances of hormones (Especially of ovaries).

(3) Herpes Zoster.

(4) Urticaria and itching.

(5) In a word, in all the cases of exudative diathesis of Czerny.

above explanation is ruled out in as much as the protein is already in circulation (unless some mysterious change takes place in the blood during the process of drawing and reinjecting). The second or pyrexial explanation could also be ignored as in many cases there is no appreciabe pyrexia following the autohæmo therapy. The term 'protein shock therapy' is applied sometime to mean the pyrexia alone which is the ostensible manifestation of the shock. But in cases where there is no pyrexia the term is either a misnomer or is to be applied to something less ostensible than pyrexia.

Hence the action is probably due to the break-down products of the introduced protein. These are mainly of the nature of amines, and are capable shock-inducers to the vegetative nervous system. (Even the 'Nitratoid crisis' after intravenous trivalent arsenic is traced by many to protein impurities in the solution).

Intravenous administration of protein break-down products and non-specific vaccines were beneficial in many infectious diseases, particularly septicæmias. As in most cases the reaction after intravenous administration was too severe, the intramuscular method was substituted. In responsive cases, the injection caused slight rigor, two or three degrees rise in temperature and malaise This reaction gives relief to any chronic ailment particularly joint and skin affections. Seven to ten c c. of sterilised milk is a common protein administered for these conditions. The possible explanation for the relief of symptoms is a vaso-dilatation caused by the protein break-down products (histamine or allied ones) and flooding the infected or injured tissue with blood antibodies. (The vascular changes are to be distinguished from febrile changes for the latter are produced even by inorganic substances like colloidal sulphur, gold salts like sanocrysin, etc).

If the modus operandi of non-specific protein therapy is understood, autotherapy (be it the separated serum or the whole blood) is a practical adaptation. One's own blood is easily secured and the possibility of sensitivity or idiosyncrasy due to introduction of foreign protein is overcome.

A young French Medical man in 1916 introduced autohæmotherapy to the medical world. His premature death in 1928 robbed the medical world of further possibilities. The wide range of diseases to which auto-hæmotherapy has been applied seems rather to suggest the big role played by the factor of Psyche. Here are some of the conditions to which auto-hæmotherapy has been applied :—Schizophrenia, rejuvenation, goitre, arteriosclerosis poliomyelitis, snake-bite, inebriety, lympho-granuloma inguinale,

peritonitis, cancer, disseminated sclerosis, and lastly opium addiction.

Burgess (1933) tried intramuscular injection of freshly drawn whole blood in a number of cases in which allergy was believed to be a factor, such as psoriasis, eczematous dermatitis, chronic urticaria, furunculosis and prurigo. About 50% of cases improved by this method alone. He claimed to have identified a specific proteose in the urine of these patients. He explained the rationale of this treatment to an antigen which is of the nature of a proteose that was released when whole blood was injected intramuscularly and the relief was due to desensitisation or production of antibodies. This assumption that all these conditions that respond to this form of treatment are of the nature of allergic phenomena, and the identification of the proteose have been subsequently doubted by many dermatologists and experimenters.

Hence, in the application of autohæmotherapy to certain skin diseases, the method has not emerged from empiricism. The technique adopted in the dermatological clinic of the King George Hospital, where the method has been tried in some skin conditions is quite simple. Five to ten c.c. of blood is drawn into a glass syringe smeared with normal saline from the anti cubital fossa and without much fuss or ado injected into the appointed region in the patient's gluteus. There is very little local reaction. In many cases the general reaction was not very appreciable either. Injections were repeated after four or five days at most bi-weekly. Ten c.c. was the maximum dose ever administered. The maximum number of injections were ten, totalling about 80 c.c. of blood.

The following are some of the conditions where the therapy was tried :—

Neuro-dermatitis and Prurigo :—The symptoms of itching was considerably relieved in these conditions by auto-hæmotherapy. The violent scratching necessitated by the itching often caused thickening of the skin and in many cases after about six injections of patient's own blood, the hyperkeratotic condition improved. One can say that auto-hæmotherapy is pre-eminently of value in relieving the symptom of itching in any skin condition.

Dermatitis and eczema of unknown etiology :—Here perhaps the rationale of treatment seems to be in obedience to the dictum 'Similia similibus curantis' of Hahnemann or homoeo-pathia. Hypersensitivity to foreign protein is the most probable causative factor and administration of yet another non-specific protein seems to arouse the necessary shock to combat the original attack. It is

said that the eczema-asthma complex or Besnier's prurigo is the one that responds best to auto-hæmo therapy. Dermatitis venanata is the inflammatory condition produced by irritants—vegetable, animal or mineral—the individual being susceptible to one irritant or a combination of irritants. Here one injection of blood is said to be very effective in allaying the irritation considerably, the other symptoms being self effacing due to sheer efflux of time. Dermatitis herpetiformis is another condition that responds to this therapy.

Allied to dermatitis is the condition of *Urticaria*. Increased permeability of the capillaries caused by some H substance (with or without the intermediary of the sympathetic nervous system) is the probable etiological factor. Individual susceptibility to foreign (unrecognised) protein is a co-related factor and hence introducing mixed or non-specific protein to combat it by induction or another shock is fairly obvious. A simple analogy to this could be had from the principle of counter irritation. Allied to this is the angio-neurotic œdema where again auto-hæmotherapy is said to be of great avail.

Seborrhœa and dermatitis.—Following extensive involvement of seborrhœa of the scalp and the dermatitis following the condition on the trunk and limbs responded to this therapy well.

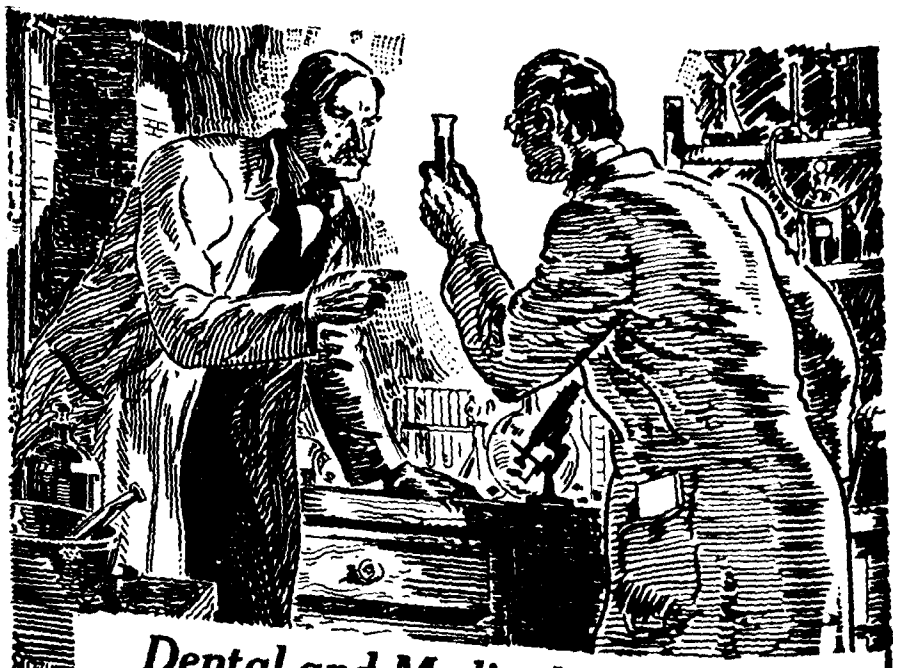
Psoriasis:—In extensive cases of psoriasis when local treatment was of no avail, protein shock therapy was tried (autohæmo). The response was not so encouraging as in the aforesaid conditions. More severe shock to induce pyrexia did better like T. A. B. particularly in the subacute and the chronic forms though the acute forms did respond to auto-hæmotherapy.

Chronic and extensive ringworm :—The itching and dermatitis following extensive ringworm of the trunk and limbs improved appreciably after three or four injections of the patient's own blood. But the hypertrophic or atrophic condition of the nails and the skin infection itself are not completely eradicated without local antifungal application.

Lichen, Pemphigus, and Furunculosis are other conditions where this treatment is of use according to some.

Cranston Low (1932) advocated non-specific shock therapy for venereal diseases like Syphilis (all stages) Gonorrhœa and its complications, soft sore etc. We tried this in a few cases of Lympho-granuloma inguinale and auto-hæmotherapy very well reinforced other treatments like antimony, Dmeloos vaccine etc.

My thanks are due to Dr. V. G. Nair, M.R.C.P., Dermatologist of the King George Hospital for initiating and guiding this work.



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DR E. WALTER, Director of the Hygienic Institute, University of Griefswald.

W. PARKER HARRISON, M.R.C.S., L.R.C.P., L.D.S., of Brighton, England.

PROFESSORS J. MORELLI and A. E. JULIA, Montevideo, Uruguay.

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Treatment of Burns in Mofussil Hospitals

BY

A. B. Mitra, M.B.,

Works Hospital, Indian Copper Corporation Ltd, Ghatsila.

THIS article does not profess to be an elaborate treatise on the subject of burns, but is just a short note on the various methods of treatment of the same and the results thereof, based on the statistics of over two thousand cases of burns and scalds of various degrees and sizes, treated in one of the hospitals (the Works Hospital) of this Corporation, during the last six and a half years.

Burns and Scalds are among the commonest accidents in India, specially in the mofussils, as people here have to deal more with naked fire; for the same reason also, it is very common in mills and factories. Mofussil and factory doctors, therefore have to deal with such cases frequently. Some still use the time-honoured Picric Acid lotion and some have taken up Davidson's Tannic Acid treatment; but most of them, though fully conversant with the more recent methods, do not use them, because of, *inter alia*, lack of special appliances and nursing facilities.

Before considering the treatment of burns and scalds, it would not be *de trop* to note the three important points which, together, should be the *sine qua non* in such treatments. As classified by Dr. George Crile Jr., they are:—(*a*) The question of immediate mortality, (*b*) that of resultant disability, and (*c*) lastly, though of supreme importance from the patients' standpoint, the relief of pain.

Considering the questions in the order they are classified, it is now generally acknowledged that immediate mortality results mainly from initial shock and later, by blood concentration. R. H. Aldrich rejects the theory of blood concentration but asserts that in all extensive burns, beta-hemolytic or gumma streptococci are found, and that this is the cause of practically all deaths after the end of the first day. Later still, that is, after about a week, mortality is generally supposed to be due to sepsis on account of pus-formation, specially under the eschars, and absorption therefrom, though Glover in his review of 310 cases of burns, observed no death after the 5th day.

Next comes the consideration of resultant disability. It is a point of vital importance and all treatments should aim at minimising, if not avoiding entirely, such end-results. It is not rarely,

that one sees the pathetic case of a child with its limb distorted and semi-useless by scars, or its head bound down to its chest by the contracture of the scar of an ald burn in the neck ; and, in a country, where villagers specially are averse to the surgeons's knife, such disabilities are rarely corrected later. This consideration, therefore, *per se*, should be kept in mind while treating cases of burns, and should guide the doctor in selecting a particular method.

And thirdly there is the comfort of the patient to be considered. In the fully equipped hospitals of big cities, many additional special appliances are, with advantage, used to alleviate the pain, but in mofussil hospitals and dispensaries, they are but seldom available. Therefore, the method of choice must also include this point; in other words, the mode of treatment of burns, which minimises mortality, aims at avoiding disability and also brings immediate relief is undoubtedly the wisest method and the consideration of these three questions must be the *mot d'ordre* in the treatment of burns.

Burns form about 21% of all injuries treated in the Works Hospital of Indian Copper Corporation Ltd. While most of them are caused by actual contact with fire, steam or red-hot blooms (Brass) or sheets, about 4% of these burns are from molten copper (matte) and these latter, are of special interest, as such burns, though of very small dimensions, invariably take the longest time to heal, are resistant to treatments and nearly always pus is formed.

In this concern, an extract from the Annual Report (1931) of the Works Hospital by the Medical Officer (the present writer), would not be out of place:—"Another feature of these injuries (copper burns) is that they invariably break into an ulcer which is very resistant to treatment, even though in 95% of these cases (Copper burns) they are of the second degree Dupuytren, and all possible aseptic and curative measures are taken to dress and clean the burns immediately after the accidents". Whether or not, this is due to any specific action of copper on the burnt area, is left out for another article, but the above remarks regarding the resistance to treatment of those burns not only applied to actual "Copper" burns but also to simple burns where the patients went back to duty before the wounds were properly healed and the wounds came in contact with copper in any form, in the works. In the same report is written that in those days "the sheet anchor for treatment of burns here is Picric Acid Soak or 2½% Tannic Acid

aqueous solution freely sprayed by means of a 'Flit Spray,' after of course due treatment of the shock".

Bancroft and Rogers' modification of Davidson's Tannic Acid treatment (use of heated dry air etc.) was not possible but during summer, a few cases were kept inside a mosquito curtain under a fan and Tannic Acid solution 2½% sprayed freely by Flit Spray and wounds kept exposed but this was not found superior to the ordinary treatment (spray, bandage and soaking) and as such discarded. The original method, Davidson's Spray, with Crooke's Collosal Tannic Acid solution and spray was also used in about 23 cases in 1932 but was found more costly than the method described below, while in no way superior to it or more beneficial to the patient.

In the year 1933, very gratifying results were obtained from a new method of treatment for these cases, specially as this treatment definitely decreased the number of "unfit for duty" days of the patients and is the cheapest according to the writer's knowledge, and as such the method is described in detail in the hope that it might prove as useful to other factory hospitals and dispensaries as well.

The method of Tannic Acid treatment for Burns and Scalds, as modified by P. H Mitchiner of St. Thomas Hospital, London was published in the British Medical Journal of 18th March 1933, and was taken up as the routine treatment in this hospital from the 17th April 1933. Every one interested in the subject should read the whole article. The essential points of the local treatment as advocated by Mitchiner are :—

(1) *The drug*:—Tannic Acid 17½ grs. and Hydrarg Perchlor gr. ½ kept in powder form and dissolved in 2 ounces of warm water, immediately before use; or the same conveniently to be had in tablet form *e.g.* Martindales' solubes, to be dissolved likewise. This makes a 2% solution.

(2) *Cleansing and preparing the burnt area* :—All blisters are to be cut away, patient given opium (a very efficiently tabulated posology of opium for all ages from one month upwards has been given by Mitchiner which is presented with this article in case of any use to some of the readers) :—Clean first with warm soap solution and then with Ether.

(3) *Application of coagulating solution* :—Compress of six layers of gauze soaked well in the solution (freshly

prepared) applied and bandaged. A mackintosh is kept under the limb and the dressing as otherwise bed sheets etc., are easily destroyed by the solution. We have named the whole process as Mitchiner's compress in this hospital.

(4) *After care*—The dressing is left untouched for a fortnight at least—when removing the dressing if adherent, the solution is to be sprayed freely.

The above method has been slightly modified in this hospital to suit local conditions. The posology of opium as given by Mitchiner works admirably; we have found it necessary to exactly double the dose for patients of 3 and 6 months. Re-cleansing ether was found to be pretty expensive and methylated spirit was used instead as a cleansing agent during the last four years and found to be quite a good substitute. As often as not, the parts were found (here) covered with oil, grease and dirt (in persons burnt while on duty) and preliminary cleansing with soap solution was found to be of little avail—as such after administration of opium and treatment of initial shock, the burnt area is gently cleansed under the fan, with methylated spirit alone, and the compress applied. Gentleness in cleansing is of prime importance and scrubbing with a brush should never be attempted. Ordinary hospital dressers can do it perfectly well, if guided and trained by the doctor and the method shewn practically for the first few times. Then instead of a fortnight or more, the dressings are removed here on the 5th day (dressings soaked fresh once every day), spraying Mitchiner's solution (instead of only Tannic Acid solution) and another compress applied. Any pus found should be wiped with Hydrogen Peroxide and the area cleansed again. This second dressing is opened again in another week when nearly all burns will be found practically healed. (During the summer months the dressings are opened every day because of frequent pus formation). If raw areas are found, the solution is applied again, otherwise the part is thinly covered with a mild sterile ointment. (Brilliant Green Ointment gr. v. to the oz. with 10 minims of Eucalyptus oil is used here and is found quite satisfactory). During the War, Ambrine 7 (an ointment containing hard and soft Paraffin, Olive oil, Beta-Nephthol and oil Eucalyptus) was very much used and has been spoken of very highly by some R. A. M. C. men.

The results are very gratifying and except in few cases all the patients are returned to duty earlier than those undergoing 'Picric

Acid Soak' treatments. It has been found in this hospital that the essential factor for success in the above-mentioned mode of treatment is thorough cleansing of the burnt area. It is however not advocated that the part should be scrubbed hard even when the patient is collapsed with shock, but nevertheless, the part should be gently but *thoroughly* cleansed before the compress is applied.

In a few cases, however, pus does form and any rise of temperature after the 3rd day should be watched for and dressings taken off and pus to be searched for specially under the eschars. Omnadin, Prontosil (preferably album tablets) or Van Cott Vaccine P.D.—any of these may be administered to control the sepsis. Glovers method (soaking the crusts off in Dakin's and removal of necrotic tissue after the 1st week) is specially recommended in these cases.

The only disadvantages of Mitchiner's Compress treatment of Burns and Scalds, as found here, are; (1) The solution must not be put in the eyes; either Tannfax, or Burnol (containing Acriflavine) can be used with good results; (2) If the patient is treated as an outpatient, he generally thinks that he is being neglected, as his dressings are not changed every day, and consequently soils the dressings to get a new one. A little patient explanation, however, would suffice in most cases.

Practically, simultaneously with the publication of Mitchiner's article in the British Medical Journal, an article advocating Acriflavine was published in Lancet. A few months later, a "Report on the Medical Treatment of Men burned in Colliery Explosions" was puplished in book form by the Mines Department of His Majesty's Stationery Office, London in 1933, where also the subject has been extensively dealt with—the coagulating solution, the writers advocate, being a mixture of 20% solution of Tannic Acid and 1 in 1000 solution of acriflavine. The writers say that application of irritant antiseptics such as ether and alcohol causes a profuse exudation of serum and loss of fluid. This might be significant in very extensive burns but in common ordinary burns the present writer has not come across this result as significant or modifying the end results. Besides, it is advocated in the report that the area, after being painted with the solution should be dried by a current of hot air from an electric dryer, which is not generally available in small hospitals or dispensaries.

The present writer went to a few hospitals in London in 1934 and found that practically each hospital had a different method, though of course, the underlying principle was the same. At St. Thomas Hospital, there were no burn cases in the wards at that

months of 1936 and early months of 1937, nine "selected" cases of burns were treated with the above mentioned saline method. Five of these were burns of the hands, one a bad one behind the knee joint, two of the neck (minor) and the last one 2nd and 3rd degree burn of the whole of the left leg. Cellophane could not be had, but a good substitute was found in "oil silk". Skin graft (Wolfe's) was attempted in only one case but sepsis set in and the graft did not take. But even with all this, all the nine cases recovered promptly and well. The case with the burned knee (behind) was interesting in having no crude scars and not resulting in any disability whatsover. But it is apparent that this method is not suitable for mofussil hospitals and dispensaries where the necessary highly efficient nursing staff are not to be had.

In conclusion, it is being pointed out that in all cases the question of deformities should be kept in mind; keloid does not form till several years and contraction of the scars does not usually result, specially in children, limiting the movements till after some time has passed. As such in all thick and unsightly scars, specially in children, complications are to be anticipated and suitably treated.

In mofussil hospitals cosmetic and plastic surgery is but rarely possible: in this hospital the Palzsche method (ointment containing Pepsin, Hydrochloric Acid and Phenol, of each 1% rubbed into the scar twice a day and cold compresses at night) has been found quite effective. But in all cases, where scars are found to be resistant to treatment, specially over joints, X-rays should be tried without delay, preferably at the hands of a specialist.

The treatment of Electric burns is slightly different and Elder's method is followed in this hospital. It consists of warm Carbolic bath 1% to the part. Secondary haemorrhage is common and is to be watched for. The necrosed tissue should be removed and in a few cases amputation may be necessary. If the smell is very offensive, Lotio. Hydrarg Perchlor 1 : 5000 and Eusol (Freshly prepared) are mixed in equal proportions and used in place of the Carbolic Acid. Immediately after the burn, cardiac stimulants should always be administered together with opium. Only 19 cases have been treated here and in only one case (Thumb) an amputation was necessary.

The writer expresses his sincere thanks to all the authors whose writings he has made free use of and to Dr. J. W. Kendall M.B. (London), Chief Medical Officer to Indian Copper Corporation Ltd., for allowing the writer to try out the different methods in the Works Hospital.

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***Postscript.*—To Treatment of Burns in Mofussil Hospitals**

Since writing the above, the writer has come across a newer method in the treatment of burns (A. G. Bettman J. A. M. A May 1, 1937) which, according to Bettman, is superior to any other method in such treatments. Skin grafting and later reconstructive measures are reduced to a minimum, least amount of scars, simplification of the nursing problem, shortened period of hospitalisation and the fact that the second critical period avoided —that of infection and late absorption of toxic products—to mention only a few, these are amongst the advantages claimed by Bettman.

This method, the Tannic Acid-Silver Nitrate treatment of a burn, according to Bettman, is: "The patient is given a narcotic, which is repeated as often as may be necessary for comfort. Fluids must be forced throughout. Grease and oil in any form should not be used. If such an application, unfortunately, has been made, it must be removed with ether, benzene or ethyl acetate before treatment is applied. All blebs are to be opened and all loose skin and other burned tissues are to be removed. A thorough application of fresh 5% Tannic Acid solution is made by means of Cotton swabs. Following this 10% Silver Nitrate solution is applied in the same manner". This completes the local treatment. "Patient is to be placed in a tent heated by electric light bulbs and the burned areas are dried and kept dry". Bettman advocates intravenous administration of fluids, though he cautions against too much fluid being pushed at any one time.

As for after-treatment, the coagulum, which begins to loosen in a few days, should be removed as early as possible.

Bettman summarises that "the avoidance of grease and oil, the giving of a narcotic, the application of tannic acid followed by Silver nitrate, during the coagulum, keeping it dry and removing it early, forcing of fluids and the stimulation of epithelisation (Oxyquinoline Sulphate Scarlet R. Gauze)" constitute a superior method in the treatment of serious burns.

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abdomen noted in pregnancy and in disturbances of the basophil cells of the pituitary are interesting in this connection.

5. An insight into the mechanism of hyper-pigmentation associated with tumours such as melanotic saroma, nevi, nerve tumours, molluscus growths of Von Rechlinghausen's disease is afforded by the researches of Needham, Dodds and others, on substances affecting normal and pathological growth. Needham differentiates them into those which act by providing for optimum nutrition, and those which act by specific stimulus, whether hormones (glandular and non glandular), vitamins, or drug-like substances. The best examples of non-glanduar hormones are to be found in the 'Organisers' of the embryo, which are not cellular structures, nor ferments, but chemicals. The best known of them is a sterol which organises the first appearance of the nervous system in the embryo. This is a sterol closely related chemically to ovarian and testicular extracts, which, in their turn, are chemically related to cancer-producing substances on the one hand, and to vitamin 'D' on the other. Readers are referred to a very interesting lecture by Professor Dodds on the Chemotherapy of such substances, reported in Lancet 3rd July 1937.

6. It is well known that hyperpigmentation is a common accompaniment of vitamin deficiency diseases. Vitamins are definite stimulants to growth. Endocrines are stimulants to growth. Carcinogenetic substances related to these endocrines are also stimulants to growth, but of a very erratic pathological type. If fertilisation is delayed in animals, the 'Organiser' escapes and teratoma is the result. The absence of vitamin E during reproduction leads often to an erratic growth of cells round the embryo, cutting off its food supply.

7. From this collection of amazing facts, two definite conclusions emerge: (1) that the overlap between the activities of various stimulants to growth is considerable and (2) that from sterols normally occurring in the human body, a deranged metabolism may produce specific carcinogenic substances which will stimulate certain cells to mild proliferation. The old distinction between endogenous hormones, and exogenous vitamins loses its validity now we know that the animal body forms vitamin A from carotene, that the embryo chick can synthesise its own vitamin C and that irradiation of the skin will lead to the production of vitamin D. Oestrogens, moreover, are found in plants, and human oestrins can cause daffodils to flower all the year round.—(Langdon Brown).

8. Hormones, and vitamins are merely special instances of substances which activate metabolism, nutrition and growth,

which are widely spread throughout the body. These metabolic energisers may give rise either to physiological or pathological effects. The activity of these energisers is conditioned by the state of the cells also to respond to them. For example, the capacity of cells to respond to gonadal extracts is different in puberty and menopause. The entrance of thyroxine into the cells is prevented if there are barbiturates. Atropine offers a barrier to acetylcholine liberated from vagal stimulation but physostigmine reinforces acetylcholine.

9. All these substances act on cells and melanin is an intra-cellular product, and hence the influence of metabolic energisers on pigmentation.

10. The intimate relation between the skin and the nervous system can be seen in another way. Both the skin and the central nervous system are embryologically derived from similar groups of cells. Secondly, in all infections of the nervous system, if the virus is capable of flowering out on the skin, the effect on the nerve cells is less. Examples are herpes and encephalitis, and various eruptive fevers like measles, small-pox etc. Whenever the eruptions are numerous, the toxæmia is generally less. In most of these cases, disorders of pigmentation are evident.

11. Hyper pigmentation and depigmentation confined to the area of distribution have been reported in cases involving irritated peripheral nerves, or in gunshot wounds of the same. Wigert has described five cases of general melano-dermia in catatonic schizophrenia. In none was there any sign of the adrenal disorder, though the pigmentation was Addisonian in character. It faded with the regression of the stupor and agitation. He thought there was probably a toxic factor which worked via the nervous system on the internal secretion. Kaufman has frequently noticed increased pigmentation in hypochondrical psychoses with hallucinations.

3. Clinical.

Disorders of pigmentation enumerated can broadly be grouped clinically into (1) Pigmentation in the mouth. (2) Pigmentation in the skin. (3) Generalised pigmentation.

1. *Buccal pigmentation.*—It was first described in connection with Addison's disease of which it is an important characteristic. Associated with it, are a low blood pressure and asthenia. In India however, buccal pigmentation is a frequent accompaniment of pernicious anæmia, pellagra and pellagra-like conditions which are quite common. It would perhaps be more preferable to call them states of 'Avitaminosis'. A deep pigmentation of the

tongue, blue on the dorsum and deep red ventrally, when the blood count was persistently over five millions, and no megaloblasts found in the blood has often been observed. On the other hand, there was plenty of evidence of vitamin B deficiency such as neuritis, and of D also. Buccal pigmentation has been described in all cachectic conditions including Phthisis. It is quite probable that where pigmentation is observed in Phthisis the adrenals may have been involved in the tubercular process. The buccal pigmentation due to arsenic, lead, mercury is outside the scope of this paper.

Non-pathological pigmentation has been described in persons who have negro blood in their ancestry.

Pigmentation of the Skin.—Anomalies of the natural pigmentation of the skin on the side of either excess or deficiency is met with in the following conditions:—

(1) Irritation of the abdominal sympathetic, particularly solar plexus.
(2) Abnormal conditions of the uterus, or of other abdominal viscera—seen most commonly on the forehead and face.
(3) Blood dyscrasias, Leukemia, Hodgkin's disease, Anæmias.
(4) Avitaminosis.
(5) Endocrine disorders.
(6) Chronic Cachexias.
(7) Rheumatoid arthritis, constipation, diabetis etc.
(8) Various irritants like T.N.T., silver, and lead.
(9) Prolonged administration of drugs, mercury, arsenic.
(10) Various types of Irradiation.

Generalised pigmentation meaning thereby, pigmentation both of the buccal cavity and skin, can arise in any of these conditions.

The list could be made more exhaustive. All these factors are mentioned to show one principle that pigmentation by itself is not a disease, but is part of a symptom-complex. Wherever there is disturbance in the origin and distribution of 'metabolic energisers', disorder of pigmentation is one of the symptoms. This leads to an important principle in treatment, namely not to concentrate too much on the pigmentation itself, but on the general constitutional disturbance responsible for it.

4. *Mental symptoms associated with disorders of pigmentation.*—The Mental symptoms are not specific. Many patients do not show any symptoms at all. But since in most of the cases,

asthenia and low blood pressure are prominent symtoms, irritability, fatigability, and emotional instability are usual. Depression is exceedingly common and almost pathognomonic of these exhausting conditions. The paranoid features of pernicious anæmia have been stressed so often that it is unnecessary to deal with them in detail. Sensory types of ataxia, hyperæsthesia, abnormalities of perception of form, shape, and time, mild and varied hallucinations and delusions, might all be noticed some time or other, in all disorders where hyper-pigmentation is present.

There is intellectual weakness, the patient cannot reason or remember as he used to, his attention is easily distracted, he is unable to understand anything complicated or abstract, and he is not sure about time or place. He is emotionally unstable, he weeps over trifles, his feelings are temporary and shallow, he is foolishly happy, or gets into a rage over trifles. Occasionally Korsakoff's syndrome is noticed, that is recent memory is defective, but is made up by fabrications. A toxic delirium, with confusion, restlessness, or stupor might develop in severe cases or cases that terminate fatally.

In pellagra and pellagra-like conditions, the four outstanding features which serve to fix the characteristic picture in mind are dermatitis, diarrhoea, dementia, and, if untreated, death. The nervous symptoms which are so serious a part of pellagra-like syndromes, are so varied and so many, that the form and content seem to be dependent on the pre-psychotic personality of the individual. Death has been set down as an outstanding feature of the disease, and so it is, in all patients who definitely become bedridden, but in those who suffer only from a mild annually recurrent form of the disease, the mortality is quite low. While discussing pellagra it must be remembered that chronic lack of appetite of psychogenic origin, or occurring in the course of chronic depression may itself lead to a pellagra-like condition so that the symptoms of mental disorder will then be those of the original illness plus those due to the deficiency. The clinical picture is sometimes hysterical, or florid confusion with varied hallucinations.

5. Treatment

Treatment resolves itself into:—

(1) Treatment of the causative condition.
(2) Local measures to alleviate discomfort.
(3) Treatment of any secondary infection.

Apart from the detailed physical examination necessary in all

cases of pigmentary disturbances, the following are specially indicated and routine weekly examinations are found to be useful in our experience at Mental Hospital at Bangalore.

(1) Blood picture, with special reference to abnormal cells like magaloblasts.

(2) Red blood count.

(3) White blood count to exclude leukæmias and secondary infections or to treat them if diagnosed.

(4) Blood pressure—The blood pressure is generally low, and a rise is indicative of improvement.

(5) Urine for sugar and albumen—various methods of estimation of Vitamin 'C' in urine are described, but they are impracticable and often unnecessary. The so-called bronze diabetes might also be kept in mind.

(6) Neurological examination with special reference to sensory ataxia, or abnormalities of sensation.

(7) Ophthalmoscopic examination to exclude retinitis or signs of early opticatrophy. Unless vigorous measures are taken, opticatrophy due to avitaminosis is progressive and irrecoverable.

It might be mentioned that too subtle a distinction regarding the type of vitamin deficiency is unnecessary. Normally in a case of avitaminosis, though the symptoms point to the deficiency of one vitamin, it is usually found that the others also are lacking though not in the same proportion. It is a point of experience, that if the symptoms point to deficiency of one water-soluble vitamin, the other water-soluble vitamins are also defective, while the fat-soluble ones are less so, and vice versa. The treatment naturally has to be guided by these factors.

A routine course of treatment in all cases of hyperpigmentation practised in our Hospital is as follows :—

1. Where the blood count in a moderate sized adult is persistently less than four million, and an occasional megaloblast is seen, liver extract is the main stay of treatment. But liver extract itself is not so useful unless it is combined with vitamin extracts. Vitamin C (Ascorbic acid) and vitamin B have been put on the market by various firms and in patients who can afford, the liver extract could be combined with them, and injected.

Campolon 5 c.c. plus Vitamin C (Coantan of Bayer's) 2 c.c. alternately with Campolon 5 c. c. plus Betaxin (vitamin B of Bayer's) 2 c.c. intramuscular usually serves the purpose.

If, however, the R. B. C. count is more than five millions, and no megaloblasts seen, there is no point in giving liver extract in such cases, a mixture of only vitamin C 2 c.c. plus Vitamin B 2 c.c. every day or on alternate days is indicated.

2. Most patients in Indian Hospitals are poor and cannot afford such expensive drugs. For them, intravenous injections of the juice pressed from oranges or lemons could be substituted. The fruit must previously have been immersed in five per cent phenol to sterilise the skins. The juice is filtered aceptically, and neutralised with 15% sodium hydroxide. Initial dose is 5 c.c. thereafter 10 to 15 c.c. twice or thrice weekly, always using a freshly prepared juice. Liver might be given orally when necessary.

3. In all cases of lowered blood pressure, Benzedrine, one to three pills daily has been found to be the best. This also reduces the depression often noted in these patients. If ¼ to ½ grain of thyroid extract is included with Benzedrine, the effects are more beneficial. Thyroid not only stimulates metabolism, which is rather low in many of these patients, but also exercises a therapeutic influence on most forms of pigmentation. It is however, occasionally noticed that even in Graves' disease, pigmentary disturbance is present, as well as in myxoedema. So, only small doses of thyroid are indicated, noting the usual contra-indications like abnormal cardiac rhythm.

It has been mentioned in the earlier paragraphs that the relationship between the autonomic system and the skin is very close. The beneficial action of benzedrine may very well be due to this action on the sympathetic of which it is a stimulator. The other stimulants in common use are adrenaline and ephedrine, but benzedrine is to be preferred for various reasons, which are beside the scope of this paper.

4. A passing reference might be made to the use of gonadal extracts in these conditions. It is usual to prescribe testicular and follicular hormones, because attendant with neurotic tendencies, and general asthenia, amenorrhœa, and weakness of sexual powers, common. There is no harm in prescribing them, but any unequivocal benefit is debatable. It must be mentioned however, that the effects of ovarian and testicular extracts overlap and strict specificity is not known. And since ovarian extracts are cheaper

and better standardised than the testicular extracts, it is preferable to use the ovarian extracts in both sexes. There does not seem to be any danger of increased femininity in men as a consequence.

5. For the pigmentation itself, it has been found empirically by many continental clinicians, that intravenous sodium thiosulphate 25 to 75 grains in 10 to 20 c.c. of water administered twice a week or more is very good. We have also found it useful with Indian patients.

6. Locally, the best medication seems to be a harmless talcum powder. Cuticura powder is quite good, but there may be a few skins sensitive to it. Then ordinary finely ground rice powder (starch) is the best. Soap and frequent baths and irritation of the skin must be avoided. Whenever a simple oil bath is taken, the oil is best removed by indigenous green gram powder. Occasional bathing of the skin with tepid rice water is useful.

7. These hyper-pigmentated skins, easily become infected. Symptoms are intense itching, and perhaps boils and eruptions. Great care must be exercised to use mild sedatives like lead lotion and calcium lotion for these skins and never irritate them unduly. If, to these solutions, some Prontosil could be added, and used as a local application, the effects are better. Prontosil might also be given as an injection.

8. *Diet*—Complete avoidance of rice in all types of hyperpigmentation, whether due to pellagra, anæmias, or avitaminosis is found to be most important. Whole meal wheat, or sojee, or better still, Ragi in any form is useful. Chillies must be avoided as well as spices Milk, butter and curds, tomatoes, eggs, and fruit and vegetables in moderation. Pommegranate juice is exceedingly good. An occasional Jillebi and Jammon are eagerly welcomed. But, since such bland diet cannot be tolerated for a long time, Rasam without chillies but which is merely a thin decoction of Dhal, with lemon flavouring could be given.

9. Gastro-intestinal disturbances are common and must be treated on general principles. An occasional sleeping draught might also be necessary. Small doses of insulin might keep the appetite.

10. Each case however must be treated on its own merits. But, with care, there is no reason why a practitioner cannot save at least seventy to eighty per cent of his patients.

Eczema

BY

D. Bharadwaja, *Gangli.*

It is a catarrhal inflammation of the skin, acute or chronic, characterized by erythema, vesicles, papules, pustules, desquamation and intense itching, with secondary rhagades and thickening, there are multiform eruptions with weeping serous discharge which stiffens linen in its typical form. Exudation is essential at one stage or other. It is regarded symptomatic of a skin irritant external or internal or both. It is one of the commonest skin affections. There is a form known as Mughli Dad in these parts.

Causes:—

(1) Irritants (*a*) Internal (*b*) external as strong soap, heat.
(2) Autogenous poisons as gant, uræmia.
(3) Circulatory defects (*a*) as valvular disease of the heart; (*b*) Cardiac weakness as in eczemas following influenza.
(4) Old age.
(5) Constitutional as dyspepsia and constipation.
(6) Diabetes.
(7) Certain professions.

TREATMENT:—

(1) Remove the cause, when known.
(2) Ordinary prescriptions recommended in text books may be tried.
(3) Bayers recommend:
(*a*) Mitigal
(*b*) Cignolin
(*c*) Pellidol ointment (O. P.)
(*d*) Rivonol
(*e*) Afridol soap
} No experience
(4) Messers. Smith Stanistreet & Co., Ltd, Chemists, also advertise a cure.
(5) Almost every Chemist, quack or man has a cure for it, sometimes it is cured, at others it fails.
(6) Fresh wheat oil and a bath in a certain tank at Kurukshetra on Solar muddy eclipse has great reputation. I know a gentleman who was suffering from spreading Eczema of the fingers; he was trying all sorts of remedies, and went to have a bath in the sacred tank at Kurukshetra on Solar eclipse, he was cured afterwards. I asked him, to what he attributed his cure, and he said, that he had tried everything

INDEX TO ADVERTISERS.