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A Monthly Journal of Medicine & Surgery

For the use of Registered Medical Practitioners, Hospitals and Laboratories only

Founded by the late Dr. U. RAMA RAU in 1904

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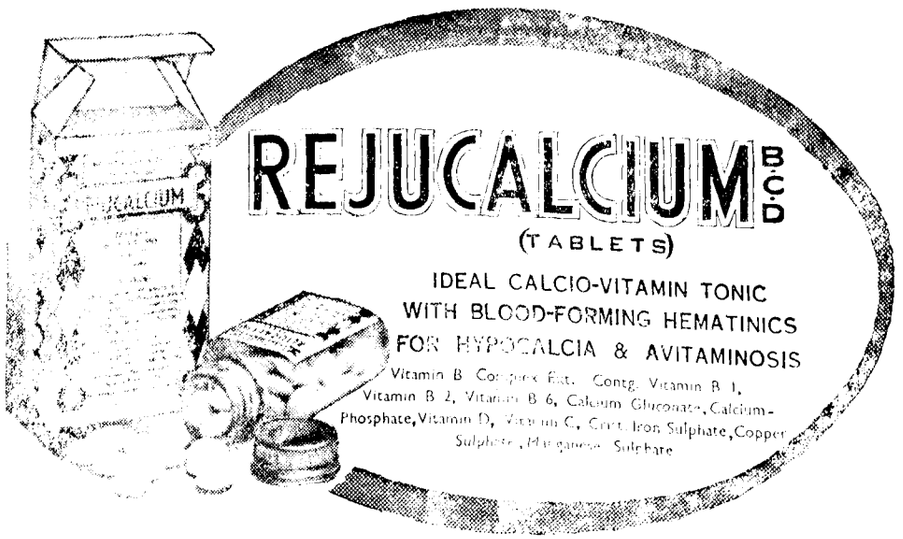

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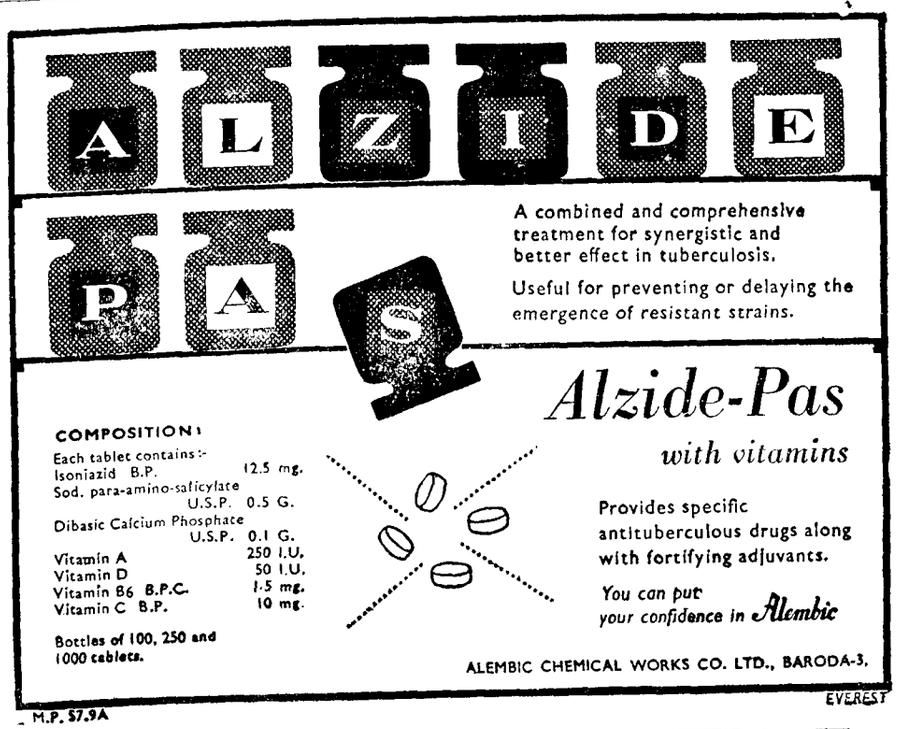

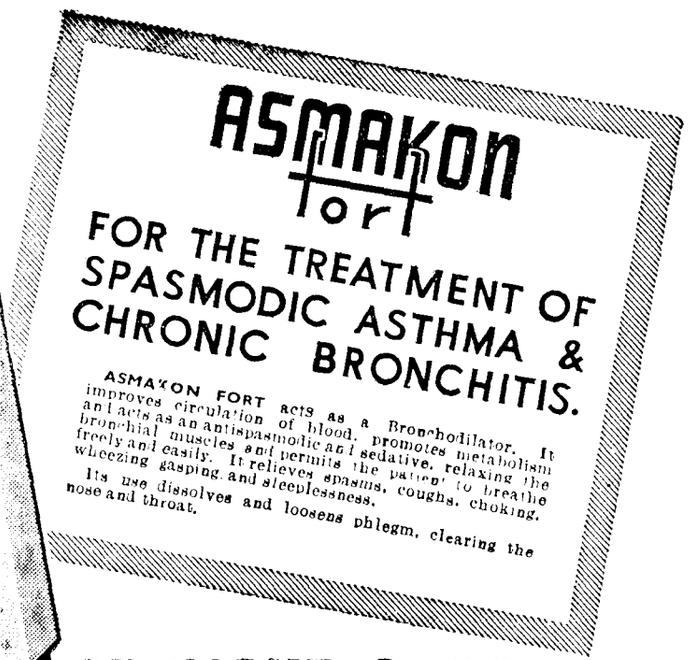

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Original Articles

VALUE OF SULPHA AND ALLIED DRUGS IN THE TREATMENT OF TRACHOMA*

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WE treated 104 patients during a period of three months and a half *i.e.*, from 1st of July to 15th of October 1957, and maintained records with their progress reports.

Selection and classification of cases.—The cases examined were those visiting the outpatient department of the Ophthalmic Department of G.M. and Associated Hospitals, Lucknow and those admitted into the ophthalmic wards.

For practical purposes and convenience they have been placed into 4 groups according to the stage of the disease :—

GROUP I :—Cases in which there was only hyperæmia of the palpebral conjunctiva and early pannus in the cornea. GROUP II : —Cases in which follicles were present along with congestion but limited to the fornices. GROUP III :—Cases with follicles involving the half of the tarsal conjunctiva in addition to the fornix. GROUP IV :—Cases with follicles all over the tarsal conjunctiva as well as on the fornices.

Thus a patient with entropion belongs to stage 4 or stage of sequelæ according to McCollen's classification but a case of sequelæ with no acute disease is not treatable with drugs and therefore, according to this classification it will not be included

* Specially contributed to the ANTISEPTIC.

in this series if it is not associated with evidence of acute disease such as follicles, pannus etc.

The patients were strictly enjoined to follow our instructions.

I. Examination of patients.—*History*:—The name and address of the patient, his age, sex, occupation, (labourer or otherwise) and the date of admission, were duly recorded.

His complaints with their duration were noted under the following headings: *viz.*, (*a*) Irritation and grittiness; (*b*) watering; (*c*) discharge; (*d*) photophobia; (*e*) congestion; (*f*) state of vision any; (*g*) other symptoms, *e.g.*, pain, heaviness etc. and (*h*) his past history of trachoma if it had been diagnosed by some doctor and any general debilitating disease.

II. Examination of the eyes.—*Conjunctiva*:—(1) The upper palpebral conjunctiva for congestion, follicles, scars, and concretions. (2) The lower palpebral conjunctiva for congestion and follicles. (3) The bulbar conjunctiva for congestion, scars and xerosis.

Cornea:—The extent of superficial vascularization or pannus noted as +; + +; or + + + (2) corneal ulcer and (3) corneal opacity.

Sequelae:—Trichiasis; entropion; ptosis; symblepharon or mydriosis etc.

The signs helping in the diagnosis and in judging of the progress of the case were specially noted:—(1) Congestion; (2) follicles; (3) pannus and (4) inclusion bodies.

The pannus was examined by lens and loupe; and the inclusion bodies were looked for under the microscope in films from conjunctival scrapings stained with:—(1) Geimsa's; (2) Wright's; (3) Toludine blue; and (4) Pollef's stain.

Films from conjunctival scrapings were made and stained as under:—(1) The eye was washed with 3% soda bicarb solution; (2) a drop of Anethaine 1% was put in each eye; (3) the upper lid was everted; (4) a thin layer of conjunctival epithelium or follicles was taken by a cover slip and (5) a thin smear was made over a glass slide, dried and fixed with pure Methyl alcohol for 3 minutes; it was then stained with Geimsa's stain 1 : 20 for ½ hour, and washed with tap water.

The film was examined under oil immersion for:—H. P. K. bodies, polymorphs, degenerated epithelial cells, plasma cells, lymphocytes and other cells.

The drugs used were:—(1) Eyemide drops 30%; (2) eyemide drops 10%; (3) Chloramphenicol ointment; (4) combined therapy (Eyemide drops and chloramphenicol ointment) specially in cases refractory to other drugs.

Other drugs used for comparison were:—(1) Aureomycin ointment; (2) terramycin ointment; and (3) sulphacetamide powder after scraping.

The following surgical procedures were adopted in this series when such were indicated:—(1) Scraping of the follicles; (2) epilation and (3) entropion correction.

In corneal ulcers the drug treatment was supplemented by:—(1) Subconjunctival injection of penicillin; (2) cauterization of non-healing corneal ulcers; (3) Atropine ointment 1% b.d. and (4) Pad and bandage.

Instructions to the patient.—The patients were instructed to apply the medicines four times a day once in the morning after washing the face, then at about 12 o'clock, then in the afternoon and lastly before going to bed. They were told to put two drops of Eyemide or a small quantity of chloramphenicol ointment 1% about the size of a pea. In combined therapy the drops were followed by the ointment.

In addition to this medical treatment the patients were advised hot fomentation thrice daily and washing the eyes when discharge was present.

The drugs were either supplied by me from a supply kindly made by M/s. Unichem Laboratories, Bombay for this study or purchased by the patient.

FOLLOW-UP OF THE CASES:—The patients were examined daily for a week, then on every alternate days for another week, then twice a week for 15 days and finally once a week thereafter.

A few patients, from long distances, who were unable to come daily, came on alternate days. They were asked to come on any day the symptoms reappeared. Out of the 104 cases studied in this period 101 became asymptomatic in varying periods; the remaining 3 showing no response did not show any inclusion bodies when examined microscopically.

Study of the cases.—In 6 cases the 2 eyes of the same patient were given different treatments in order to compare the results of chloramphenicol ointment with sulphacetamide drops; the cases were divided into the following sub-groups:—

I. Cases treated with 10% Eyemide drops were 24 in number.—(1) *Patients with symptoms less than 3 months' duration–17*; two less than a week, eight less than a month and seven less than 3 months' duration.

(2) *More than 3 months' duration—7*; five less than a year and two over a year.

II. Cases treated with 30% Eyemide drops were 20 in number. (1) *Patients with symptoms of less than 3 months' duration —12*; three less than a week, 7 less than a month, and 2 less than 3 months.

(2) *Patients with symptoms of more than 3 months' duration—8*; five less than a year and 3 more than a year.

III. Cases treated with 1% Chloramphenicol ointment numbered 18. (1) *Patients with symptoms of less than 3 months' duration 8; two less than a week, three less than a month and 3 less than 3 months' duration.*

(2) *Patients with symptoms of more than 3 months' duration 10*; seven less than a year and 3 more than a year.

IV. Cases treated with Combined therapy numbered 16.—(1) *Patients with symptoms of less than 3 months' duration 5*; two less than a week, one less than a month and 2 less than 3 months.

(2) *Patients with symptoms of more than 3 months' duration 11*; six less than a year; and five over a year.

V. Cases treated with Aureomycin-ointment numbered 8.—(1) *Patients with symptoms of less than 3 months' duration—5*; one less than a week, 2 less than a month and two less than 3 months.

(2) *Patients with symptoms of more than 3 months' duration—3*; two less than a year, and one more than a year.

VI. Cases treated with Terramycin ointment numbered 9.—(1) *Patients with symptoms of less than 3 months' duration 4*; one less than a week, one less than a month and two less than 3 months.

(2) *Patients with symptoms of more than 3 months' duration—5*; two less than a year and 3 more than a year.

VII. In 6 cases chloramphenicol ointment was put in one eye and Eyemide drops 30% in the other eye. All were of less than 2 *months'* duration.

The effects of the drug.—When the drops were put in, nearly all the patients complained of much irritation and discomfort, sometimes even pain; this irritation was so severe in some cases, as to lead to congestion in the eyes. These effects however, became less severe after a few days' instillation. Eyemide 30% gave rise to more severe irritation than Eyemide 10%. Usually it was noticed that patients with more signs had more irritation. Ointments did not produce such irritation. There was blurring of vision for a few minutes due to the formation of a thick film of the material over the cornea. No toxic symptoms were noted in any case, neither were there allergic symptoms to any of the drugs.

Results of the therapy.—(1) *The effects of the drug on the symptoms*: The earliest symptom to improve was the sensation

of irritation and grittiness. First there was some relief and then disappearance (usually in 24 to 48 hours). Pain if present was also relieved early (within 24 hours). Photophobia which was a common symptom took 48 to 72 hours to be benefited and so was the case with the discharge. Improvement in vision varied from case to case. If due to pannus, it improved as the pannus disappeared. If due to corneal ulcer or corneal opacity, improvement was according to the site and it was very slow, if at all. The watering was the last symptom to disappear and took on an average 4 to 6 days.

Table I

Showing drugs used and time taken to get relief

Group A	**Eyemide 10%**		*Group B*	**Eyemide 10%**	
No. of eyes	Percentage	Time of relief	No. of eyes	Percentage	Time of relief
3	(8·8%)	24 hrs.	1	(7·1%)	4 days
5	(14·7,,)	48 hrs.	2	(14·2,,)	6 days
7	(20·6,,)	3 days	3	(21·3,,)	8 days
8	(23·5,,)	4 days	2	(14·2,,)	9 days
8	(23·5,,)	5 days	1	(7·1,,)	11 days
2	(5·9,,)	6 days	1	(7·1,,)	12 days
1	(2·9,,)	10 days	2	(14·2,,)	15 days
			1	(7·1,,)	17 days
34			1	(7·1,,)	20 days
	Eyemide 30%		14		
				Eyemide 30%	
2	(6·6%)	24 hrs.			
4	(13·2,,)	48 hrs.	6	(37·5%)	within 1 week
8	(26·4,,)	3 days	8	(50·0,,)	within 2 weeks
10	(33·3,,)	4 days	2	(12·5,,)	within 3 weeks
4	(13·2,,)	6 days			
2	(6·6,,)	9 days	16		
30				**Chloramphenicol 1%**	
	Chloramphenicol 1%				
	Eyes treated with *Terramycin* ointment		6	(30·0%)	1 week
2	(9%)	48 hrs.	8	(40·0,,)	2 weeks
3	(13·7,,)	3 days	4	(20·0,,)	3 weeks
7	(41·8,,)	4 days	2		not relieved
8	(36·3,,)	6 days			in 6 weeks
2	(9·0,,)	12 days	20		
22				**Combined therapy**	
	Combined therapy				
2	(20·0%)	24 hrs	12	(54·5%)	1 week
4	(40·0,,)	48 hrs	8	(36·3,,)	2 weeks
4	(40·0,,)	72 hrs	2	(9·1,,)	3 weeks
10			22		

Table I —(*Contd.*)

Showing drugs used and time taken to get relief

Group A Aureomycin ointment			*Group B* Aureomycin ointment		
No. of eyes	Percentage	Time of relief	No. of eyes	Percentage	Time of relief
1	(10%)	24 hrs	2	(33·3%)	1 week
3	(30,,)	48 hrs	2	(33·3,,)	2 weeks
3	(30,,)	72 hrs	2	(33·3,,)	4 weeks
3	(30,,)	54 days			
10			6		
Terramycin ointment			**Terramycin ointment**		
1	(12·5%)	24 hrs	4	(40·0%)	1 week
2	(25·0,,)	48 hrs	4	(40·0,,)	2 weeks
4	(50·0,,)	72 hrs	2	(20·0,,)	3 weeks
1	(12·5,,)	5 days			
8			10		

2. *Effects of the drug over the signs*:—The signs considered in assessing the progress were:—Congestion, discharge, follicles, pannus and inclusion bodies.

Early signs to disappear in most of the cases were bulbar congestion and discharge, usually taking 3 to 4 days to show relief and 5 to 6 days to disappear.

Pannus:—Which was progressive started showing regressive characteristics in 4 to 5 days in the more severe cases and disappeared in about 8 days in mild cases.

Follicles:—Were considerably reduced in number in about 6 days and disappeared in 1 to 3 weeks in different cases. The tables give the effect of the different drugs over the signs.

Inclusion bodies usually disappeared in 5 or 6 days.

As the treatment progressed the number of degenerated epithelial cells and inflammatory cells, gradually decreased till, in the end, after 2 to 3 weeks there was no evidence of degenerated cells showing nuclear changes.

Criteria of cure.—The cases which could be called as cured were those in which there was a complete disappearance of the symptoms and the signs *i.e.*, follicles, pannus and inclusion bodies etc.

Discussion.—(1) In cases of less than 3 months' duration and in a few of more than 3 months, usually there was improvement within 24 hours as shown by the comparative relief of symptoms. This was more marked in cases having combined therapy and Eyemide drops.

Table II

Patients treated with 10% Eyemide drops Q.I.D.

S. No.	No. of eyes treated	Duration of symptoms	Disappearance in days of:— Discharge	Congestion	Follicles	Pannus	Inclusion bodies	Patient cured in
1	2	6 days	5 days	3 days	1 wk.	8 days	6 days	8 days
2	2	6 months	6 ,,	5 ,,	18 days	20 ,,		20 ,,
3	2	20 days		4 ,,	8 ,,	6 ,,	5 days	8 ,,
4	2	7 ,,		4 ,,	7 ,,	7 ,,	18 ,,	7 ,,
8	2	25 ,,		6 ,,	9 ,,	8 ,,	5 ,,	9 ,,
10	2	1 yr.	7 days	10 ,,		10 ,,		Not cured
13	2	4 months		10 ,,	3 wks.	20 ,,	7 ,,	21 days
15	2	1 month		6 ,,	2 ,,	22 ,,		22 days
17	2	1½ months		7 ,,	20 days	3 wks.	6 ,,	3 wks.
18	2	2 ,,	4 days	5 ,,	18 ,,	3 ,,		21 days
20	2	3 yrs.	4 ,,	12 ,,	22 ,,	Persisted	5 ,,	Not cured
21	2	28 days		6 ,,	Persisted	Persisted	10 ,,	Not cured
22	2	25 ,,		5 ,,	12 days	Persisted	8 ,,	Not cured
26	2	18 ,,		4 ,,	6 ,,	10 days		10 days
27	2	1 month		4 ,,	8 ,,	1 wk.	3 ,,	8 days
29	2	1½ yrs.		9 ,,	Persisted	Persisted	5 ,,	Not cured
32	2	32 days	5 days	6 ,,	2 wks.	18 days	5 ,,	18 days
34	2	28 ,,		7 ,,	19 days	20 ,,		20 ,,
39	2	8 months	6 days	10 ,,	Persisted	Persisted	12 ,,	Not cured
41	2	5 ,,		8 ,,	12 days	10 days		12 days
50	2	25 days		6 ,,	2 wks.	11 days		2 wks.
54	2	1 month		4 ,,	8 days	10 days	5 ,,	10 days
56	2	2 ,,		5 ,,	9 ,,	Persisted	4 ,,	Not cured (Recurreace)
58	2	1 ,,		4 ,,	10 ,,	8 days	4 ,,	10 days

Patients treated with 30% Eyemide drops Q.I.D.

62	1	5 days	2 days	3 days	6 days	13 days	5 days	13 days
66	2	4 months	4 ,,	6 ,,	1 wk.	Persisted		Not cured
70	2	25 days	5 ,,	7 ,,	1 ,,	15 days	10 ,,	15 days
72	1	20 ,,	6 ,,	4 ,,	7 days	15 ,,	6 ,,	15 ,,
73	2	2 months		9 ,,	10 days	12 ,,	9 ,,	Recurrence in 3 wks.
80	2	3½ months		10 ,,	12 days	10 ,,	7 ,,	12 days
82	1	4 ,,		8 ,,	2 wks.	21 ,,		21 ,,
83	2	1 month	4 days	6 ,,	8 days	Persisted		Not cured
84	1	1 ,,		4 ,,	10 ,,	10 days	12 ,,	12 days
85	1	1½ months		7 ,,	14 ,,	15 ,,		15 ,,
86	2	28 days	2 ,,	6 ,,	Persisted			
87	2	5 months	4 ,,	8 ,,	10 days	12 ,,	7 ,,	Recurrence
88	1	25 days		3 ,,	8 ,,	9 ,,	9 ,,	9 days
90	2	2 months	3 ,,	10 ,,	Persisted	Persisted		Not cured
91	2	2 yrs.		21 ,,	Persisted	,,		,,
92	1	1½ yrs.	6 ,,	15 ,,	18 days	,,		,,
93	2	2 months		10 ,,	12 ,,	15 days	12 ,,	Recurrence
94	2	1½ ,,		12 ,,	11 ,,	16 ,,	10 ,,	16 days
95	2	28 days		8 ,,	12 ,,	15 ,,		15 ,,
96	2	20 ,,		6 ,,	6 ,,	10 ,,	7 ,,	10 ,,
97	2	8 months		10 ,,	12 ,,	12 ,,	6 ,,	12 ,,
98	1	6 days		6 ,,	10 ,,	11 ,,		11 ,,
99	2	25 ,,	4 days	9 ,,	26 ,,	4 wks.	11 ,,	Not cured
								Recurred in 6 wks.
100	2	1yr 5 days	8 ,,	12 ,,	11 ,,	10 days	12 ,,	8 days
102	2	25 days		6 ,,	8 ,,	6 ,,	6 ,,	8 ,,
104	1	5 days		1 wk.	8 ,,	8 ,,	5 ,,	8 ,,

TABLE II *(Contd.)*

Patients treated with 1% Chloramphenicol ointment Q.I.D.

S. No.	No. of eyes treated	Duration of symptoms	Disappearance in days of :- Discharge	Congestion	Follicles	Pannus	Inclusion bodies	Patient cured in
4	2	5 months	8 days	10 days	20 days	25 days	6 days	25 days
6	2	5 ,,	3 ,,	8 ,,	15 ,,	45 ,,	5 ,,	15 ,,
7	2	2½ ,,		20 ,,	Persisted	Persisted		Not cured
9	1	5 ,,		21 ,,	25 days	4 wks.		4 wks.
11	2	2½ ,,		10 ,,	18 ,,	27 days	10 ,,	27 days
12	2	1 ,,	2 ,,	6 ,,	12 ,,	3 wks.		3 wks.
14	2	5 ,,		12 ,,	18 ,,	4 ,,		4 ,,
16	2	1½ ,,	5 ,,	10 ,,	14 ,,	21 days	12 ,,	21 days
19	2	7 days		10 ,,	15 ,,	30 ,,	12 ,,	20 ,,
23	2	1¼ yrs.		15 ,,	30 ,,	Persisted	25 ,,	Not cured
24	2	2½ months	6 ,,	20 ,,	Persisted	18 days		,,
25	2	3 ,,		25 ,,	26 days	Persisted	9 ,,	,,
28	2	1½ yrs.	10 ,,	20 ,,	25 ,,	4 wks.		4 wks.
30	2	8 months		10 ,,	3 wks.	25 days		25 days
31	2	6 days	3 ,,	15 ,,	Persisted	7 ,,	8 ,,	Not cured
33	2	6 months		15 ,,	15 days	12 ,,	7 ,,	15 days
35	2	2½ ,,		25 ,,	15 ,,	20 ,,		25 ,,
36	2	1½ yrs.	10 ,,	20 ,,	Persisted	25 ,,		Not cured
62	1	15 days	3 ,,	5 ,,	8 days	15 ,,	6 ,,	15 days
72	1	20 ,,	7 ,,	6 ,,	10 ,,	20 ,,	8 ,,	20 ,,
82	1	4 months		8 ,,	18 ,,	30 ,,		30 ,,
84	1	1 month		6 ,,	14 ,,	14 ,,	16 ,,	14 ,,
85	1	1½ months		6 ,,	21 ,,	18 ,,		21 ,,
88	1	25 days		5 ,,	10 ,,	12 ,,	8 ,,	12 ,,

Patients treated with Combined therapy

37	2	3 yrs.		8 days	12 days	3 wks.	7 days	3 wks.
38	2	6 days		3 ,,	6 ,,	12 days		12 days
40	2	4 months	4 days	7 ,,	10 ,,	2 wks.	7 ,,	2 wks.
42	2	7 ,,		3 wks.	25 ,,	Persisted	9 ,,	Not cured
43	1	25 days		6 days	20 ,,	18 days		20 days
44	2	2½ months	2 ,,	8 ,,	3 wks.	20 ,,		3 wks.
45	2	2 ,,	3 ,,	10 ,,	18 days	Persisted	6 ,,	Not cured
46	2	3 yrs.	2 ,,	18 ,,	3 wks.	,,		,,
47	2	7 days		4 ,,	10 days	8 days	8 ,,	10 days
48	2	6 months	3 ,,	2 wks.	2 wks.			2 wks.
49	2	1½ yrs.		3 ,,	4 ,,	23 ,,	12 ,,	4 ,,
51	2	8 months	4 ,,	3 ,,	4 ,,	Persisted		Not cured
52	2	5 ,,	5 ,,	8 days	2 ,,	1 wk.	10 ,,	2 wks.
53	2	8 ,,		12 ,,	22 days	20 days	13 ,,	22 days
55	2	1½ yrs.		2 wks.	28 ,,	4 wks.	11 ,,	Recurrence in 3 wks.
57	2	1 yr.	6	6 days	25 ,,	4 ,,		4 wks.

Patients treated with Aureomycin ointment

59	2	2 months	5 days	12 days	3 wks.	3 wks.	10 days	3 wks.
60	2	6 days	2 ,,	10 ,,	18 days		7 ,,	18 days
61	2	2½ months		3 wks.	4 wks.	Persisted		Not cured
63	2	25 days		15 days	20 days	4 wks.	10 ,,	4 wks.
64	2	6 months	5 ,,	20 ,,	3 wks.	5 ,,		5 ,,
65	2	20 days		18 ,,	13 days	1 wk.		Recurrence in 2 wks.
67	2	7 months		3 wks.	Persisted	Persisted		Not cured
68	2	1½ yrs.	6 ,,	25 days	28 days	6 wks.	12 ,,	6 wks.

TABLE II—*(Contd.)*

Patients treated with Terramycin Ointment

S. N.	No. of eyes treated	Duration of symptoms	Disappearance in days of :- Discharge	Congestion	Follicles	Pannus	Inclusion bodies	Patient cured in
69	2	7 days	3 days	2 wks.	3 wks.	15 days		
71	2	5 wks.		18 days	3 ,,	4 wks.	10 days	15 days
74	2	28 days		5 wks.	3 ,,	6 ,,	Patient left treatment	4 wks. Not cured
75	2	5 months	6 ,,	22 days	3 ,,	5 ,,	9 days	5 wks.
76	2	2 yrs.		4 wks.	4 ,,	Persisted		Not cured
77	2	2½ months		15 ,,	18 days	3 wks.		3 wks.
78	2	1½ yrs.	8 ,,	4 ,,	4 wks.	35 days	7 ,,	5 ,,
79	2	2 yrs.		3 ,,	3 ,,	in 6 wks, persisted	11 ,,	6 ,, Not cured
81	2	2 months	4 ,,	4 ,,	4 ,,	Persisted		,,

(2) In the 6 cases which had Eyemide drops in one eye and chloramphenicol ointment in the other, the results were more dramatic and successful with Eyemide drops.

(3) The chronic cases with a history of recurrent attacks showed a comparatively smaller number of cures (51·5%) as compared with the early cases in which the cure-rate was 66·3% *e.g.*, Case No. 3 with symptoms of less than 1 month's duration was cured within 18 days. Case No 7 with 2 months' duration took more than 20 days to be cured. But Case No. 25 with symptoms of 3 months' duration was not cured in about 6 weeks' time and Cases Nos. 4 and 49 with a duration of more than a year were not cured in 12 weeks' time and there were recurrences.

(4) Recurrences were more common in chronic cases of long duration. In this series of 104 cases eleven showed recurrence though the disease was less severe as the treatment was given immediately and continuously. But in 2 cases in which the signs totally disappeared in 3 weeks' time and the medicines were stopped a week after a cure, the disease recurred with more or less the same severity as at the beginning and the treatment had to be continued again for longer periods.

It was also noticed that chances of recurrence were remote if the 10% Eyemide drops were given twice a day for a few weeks after the cure had been effected.

(5) *For comparative study* :—The best results obtained were with those of combined therapy* in which the percentage of cures was about 80% in Group A cases and about 65% in Group B cases as shown in the table.

* A combination of Chloramphenicol 1% and Sulphacotamide 10% prepared by Unichem Laboratories, Bombay in the form of Eyemide Mycetine Ointment.

TABLE III

Showing the results of treatment with the different drugs used in this study

		Percentage of cures Group A	Group B
Combined therapy		80%	65%
Eyemide 10%	drops	75%	60%
Eyemide 30%	drops	72%	61%
Chloramphenicol	ointments	68%	50%
Aureomycin	ointments	48%	33%
Terramycin	ointments	50%	40%

In 5 cases which proved resistant to other drugs in 10 weeks' time, combined therapy was tried which was successful in 4 cases, while one case was not cured. Of the 4 cases, one case, No. 31 showed quick response to the therapy with symptomatic relief in 72 hours and improvement in the signs in 2 or 3 weeks.

(6) Scraping followed by the application of the drugs in powder form *e.g.*, Sulphacetamide powder or Chloromycetine powder or a combination of both, will be tried in a future study.

RESERPINE IN PEPTIC ULCER

Patients with peptic ulcers are usually tense or emotionally unstable. Therefore, sedatives have often been a desirable therapeutic adjunct in the routine treatment of ulcers. Drenick in a brief study has tried to evaluate the effect of reserpine on gastric acidity in thirteen ambulatory patients ranging from 51 to 72 years with known peptic ulcers, gastritis, or œsophagitis by comparing routine gastric analyses before and during a period of administration of reserpine. Subjective symptoms were recorded and evaluated.

Seven had duodenal ulcers, 3 had prepyloric ulcers, 2 had peptic œsophagitis with ulceration, and 1 had gastritis. The diagnosis was established by clinical evidence, X-rays of the upper gastrointestinal tract, and endoscopy. All patients had been on a bland diet.

After a period of observation of two weeks, during which two gastric analyses were carried out in each patient, reserpine 0·25 mg., three times daily was prescribed. The period of administration lasted an average of 30 days. During this period, gastric analyses were done at weekly intervals on a fasting stomach. No medication was given for eight hours preceding the analysis. A routine gastric analysis consisted of six samples aspirated at 15 minute intervals.

All patients were able to take the medication without any difficulty. None complained of an increase in the severity of symptoms, and no side-effects were noted.

Reserpine administered in doses of 0·25 mg. three times daily had no adverse effect in those patients with duodenal ulcers, antral ulcers, peptic œsophagitis, and gastritis. Reserpine alone does not seem to be adequate for the treatment of peptic ulcers and cannot replace routine ulcer management..... No increase in secretion of gastric acid could be demonstrated while the patients were taking reserpine. If reserpine seems a desirable mode of treatment for any reason, the history or presence of a peptic ulcer should not be considered a contraindication to the administration of this drug.—(*Amer. Jour. Digest. Dis.*, *1*: 521, December, 1956).

THERAPEUTIC PROGRESS IN SPECIFIC AND NON-SPECIFIC URINARY-TRACT INFECTIONS*

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FOR many years before the introduction of antibiotic and chemotherapeutic agents, treatment of urinary-tract infections used to present numerous problems; these have now become fewer.

It has always been the aim of physicians to deal with these infections as quickly and as efficiently as possible. Whilst sulphonamides and antibiotics have revolutionized the treatment of many such infections, the fact remains that certain bacterial strains are highly resistant to these drugs. This is particularly noticeable in cases of infection of the urinary-tract. Although chemo therapy may minimize the infection, a complete cure depends upon the removal of all obstructions, calculi, etc., as well as the eradication of distant foci of infection.

The genito-urinary tract with its extensive anatomical distribution could be the most dangerous site of diseases in the human body, and in any attempt to reduce these infections, it must be *first* recognized that the incidence of such infections is high and *secondly* there is the need for their prompt diagnosis especially in infancy and childhood; *thirdly*, immediate and thorough treatment should be instituted with the best antibacterial agent available as also surgical corrections of anatomic anomalies if present, and *fourthly*, the patient must be kept under obeservation for several months to make sure of a complete cure.

An appropriate antimicrobial agent must be selected on the basis of urine and blood cultures. Prompt diagnosis and therapy are essential, in order to prevent the spread of the infection along the urinary tract and also to minimize irreparable damage, such as replacement of nephrons with scar tissues.

The following is an illustration:—Miss D., age 20, was suffering for a long time from anæmia, anorexia, continuous and increasing polyneuritic pains. Different diagnoses were made. The symptoms of headache, restlessness, muscular twitchings, mental disturbances, nausea etc., gradually increased until one morning the patient—as a result of renal insufficiency—had a sudden attack of uræmic convulsions followed by death in uræmic coma, 24 hours after the attack.

Such unfortunate case-histories are all too common.

Failure to diagnose promptly and treat adequately a little girl's cysto-urethritis today can well mean that 20 years hence,

* Specially contributed to the ANTISEPTIC.

she may develop a condition closely approximating an acute form of cystitis; she may even have to be treated later by an obstetrician for pyelitis of pregnancy, or for pre-eclampsia; and still later by an urologist for chronic pyelonephritis and then for hypertension resulting from renal damage. One can visualize an early and untimely fatal end from uræmia of irreparable renal damage in such a case.

A search for urogenital anomalies, many of which are obstructive should be made in every infant within the first few neonatal days. In males, phimosis, pin-point urethra, mucosal valves and strictures, bladder-neck sclerosis and other types of infections, if neglected, can produce irreparable damage in time. Unfortunately the diagnosis of these anomalies in infants is difficult. In the case of a female this can be done only through urologic study. The usual symptoms are pain of the costovertebral angle and over the urinary bladder, dysuria, pyuria, hæmaturia; irritability, chills, fever and difficulty in urination. Persistent emesis with or without high fever is often too easily ascribed to some vague gastro-intestinal upset, but is very often found to be due to an urinary-tract infection.

In the female infant especially, such an infection should always be suspected when constipation, diarrhœa, apathy, anorexia, cachexia, or growth-failure occurs.

In an analysis of the histories of a group of 156 children suffering from pyelonephritis—all under 15 years of age in order to determine the age of onset of the first symptoms, it was found that nearly 60 per cent of them developed symptoms during the first year of life.

All these factors emphasize the necessity of teaching all mothers the proper technique of anal hygiene, to avoid faecal contamination of the urethra: wiping of the anus away from the vulva and not towards it.

The urinary tract gets infected with great frequency, as has been lately found from the systematic cultures of urine and examination of smears.

Another acute and chronic non-gonococcic urethral infection, prostatitis in the male has been on the increase during the last few years. This incidence of cystitis, urethritis, posterior urethritis with some degree of prostatitis which is secondary to urethritis in the young male, presents a new problem for the physician. Urinary-tract infection is much greater than is ordinarily realized. The non-venereal forms of non-gonococcic urethritis and prostatitis in the male are fairly common today.

In a recent series of 769 cases, there were 151 in which the disease had been maritally acquired. The cause of this type of infection which is now found almost as frequently in males as

gonorrhœa, is not still understood. The organism may be a filterable form of pleuropneumonia-like organism, a virus, Trichomonas vaginalis, or a non-luetic spirochæte. The bacterial urethritis of Reiter probably belongs to this group. The widespread replacement of gonorrhœa by these non-gonococcic infection has created a growing problem in venereal-disease-control, and such unfortunate case histories have become common.

Here is an example:—Mr. B., a newly married man of 27, developed discomfort, pruritus, pain in the urethra, testicles, perineum, a burning sensation during urination, and mucopurulent discharge. Smears from both husband and wife showed pus and epithelial cells, but no causative venereal organism could be demonstrated in cultures.

Sexual intercourse with the wife was the only mode of transmission of the infection. One can imagine how unpleasant the relations between husband and wife could become under such circumstances! Favourable therapeutic results from the use of antibiotics and sulphonamides in such cases vary widely, depending on the causative organism. Many cases are refractory to normal treatment.

Drug resistance in urinary-tract infection is one of the major problems that confronts the physician, especially in the treatment of mixed infections.

Infection of the lower urinary-tract, if neglected or not properly treated, rarely remains localized for any length of time. The bladder, urethra, and kidneys are often invaded unless effective treatment is started early.

Time-consuming 'trial and error' methods of treatment using different drugs must be avoided.

Studies have demonstrated rapid clinical response to a new drug, Furadantin, in cases of cystitis, acute and chronic prostatitis, pyelonephritis, pyelitis of pregnancy, including infection due to organisms resistant to the usual antibiotics and sulphonamides.

It is a nitrofuran, a new and totally different chemotherapeutic agent, in no way related to sulphonamides, penicillin or mycetes. It has a specific affinity for the urinary-tract. It is the latest of the few anti-bacterial drugs in use for urinary-tract infections that fulfil the requirements of safety, a wide range of anti-bacterial effectiveness and rapid bactericidal effect. It covers a wide spectrum of antibacterial activity against both gram-positive and gram-negative organisms especially those common in urinary-tract infections and against certain protozoa. Its clinical effectiveness alone places it in the front rank of urinary antiseptics. But in addition to effectiveness it has several other distinct clinical advantages. Its action is rapid,

it does not interfere with or endanger future systemic medication, and it is eminently suitable for children.

Patients with urinary-tract infections seek relief from such unpleasant symptoms as frequency, urgency, nocturia, dysuria and straining. These are alleviated as quickly as the infection is brought under control, so that, the rapidity of the action of this drug is as gratifying to the patient as it is to the doctor.

In treating infections of the urinary-tract, ineffective therapy becomes the most expensive. It is time-consuming to doctor and patient, is costly and it may prove to be yet more costly in causing permanent damage to the kidney. Furadantin minimizes the 'trial and error' treatment with sulphonamides and antibiotics. In just 30 minutes after the patient takes the first dose the urine becomes strongly anti-bacterial, and in 24 hours the urine becomes frequently clear. In many cases, in three to five days the urine is completely free from pus and cells and the patient is free of symptoms, and within seven days the urine is ordinarily sterile.

The following case report will be interesting in this context : Mr. S., aged 69, who had previously undergone two operations on the kidneys for the removal of two large stones which had given rise to severe hæmaturia, hydronephrosis and renal inefficiency was suffering at this time from a large vesical calculus which produced bladder irritation, with resultant pain, frequency, dysuria, pyuria and albuminuria. The age and physical condition of the patient, the size and hardness of the stone, the presence of urethral stricture and prostatic hypertrophy, offered a challenge to the experience and skill of the operator in crushing the stone. A few days after the operation the patient suddenly developed high fever, 104-6°F., increasing swelling in the testicles with severe pain, hæmaturia, spasms of the abdominal muscles and albuminuria. The condition was refractory to the usual antibiotics. The patient's condition became somewhat serious. Furadantin was exhibited at this stage, following which there was marked improvement. The temperature returned to normal within two days and the large swelling of the testicles subsided gradually day by day. After two weeks of this therapy, the patient recovered completely and the urine was negative microscopically.

Inflammations of the epididymis which cause enlargement of the scrotum, accompanied by more or less pain are frequently met with. This malady may affect young as well as old men. Such inflammation of the epididymis sometimes results from the exploration of the urethra, a sound or a cystoscope, or from any surgical operation on the prostate gland. Bacteria spreading from some other part of the body may be carried by the blood stream to the epididymis and cause it to become inflamed. The epididymis is far more often infected by bacteria than the testicle. A chronic form of epididymitis is often caused by inflammation of the prostate gland, or the seminal vesicle. An inflamed or diseased prostate gland is a veritable curse to men of middle and old age.

The disease conditions of the prostate may be due to the bacteria invading the gland from some near or distant septic focus in the body. Once the prostate has become infected it can be the source of a number of annoying ailments. Painful urination may be one of the severest afflictions, but there are many others also such as neuritis, pain in the back, iritis etc.

Attempts to treat prostate gland disturbances by a vigorous massage very often, result, in more harm than good. The prostate gland is a complex organ with many branching ducts, and when it is full of pus, massage will not clear the pus, but will only force it deeper into the gland.

Passing a sound through the urethra is not recommended when the prostate is diseased, and except as a diagnostic measure a sound should *not* be passed through the prostatic urethra. The information needed can be obtained from a urine sample, thus eliminating possible physical injury and nervous shock.

The old type of treatment in cases of the chronic forms of prostatitis with anti-bacterial therapy, combined with the local treatment *viz.*, urethral dilatation with metal sounds to promote drainage of the infected urethra and neighbouring glands, and massage, is no longer practised.

Controlled clinical investigations have shown that Furadantin is one of the most effective agents available today for acute and chronic prostatitis. In a series of 226 cases of acute and chronic prostatitis, 8 per cent were cured or derived improvement with its use. Another 13 cases of chronic prostatitis were also treated with it. Twelve showed symptomatic improvement—a reduction or disappearance of discomfort or a cessation of prostatorrhœa.

The drug has been found to be very effective in the treatment of chronic urinary-tract infection following prostatectomy, by causing an abrupt fall in the number of bacteria in the urine : the urine obtained in the great majority of these patients, had been rendered bacteria-free.

It is also well tolerated when given in the doses recommended and its high solubility makes crystalluria impossible. It does not ordinarily permit the development of resistant bacterial strains *in vitro*. It has been found to be especially useful in cases where the tetracycline group and streptomycin are ineffective. It has excellent tolerance, is virtually non-toxic and acts rapidly against the majority of pathogens found in the urinary

tract. It is active *in vitro* against *B. coli*, *Staphylococcus aureus*, *Staphylococcus albus*, *Streptococcus faecalis*, *Streptococcus mitis*, *Corynebacterium diphtheria* and diphtheroids, *B. aerogenes* and many other coliform organisms and *Proteus*, *Paracolon* species, *Salmonella* and *Shigella*, etc.

It retains its anti-bacterial effectiveness in the presence of serum and pus. Sensitivity reactions to antibiotics which often constitute an obstacle to treatment, are rare with Furadantin; this finding is supported by the numerous references to it in current literature.

Before concluding my paper, I shall give some interesting abstracts from recent world literature on nitrofuran products.

At an Ohio meeting, a physician from Toledo related a dramatic incident:—A young woman sustained compound fractures of both legs and pelvis in an accident. She developed complicating pneumonia and severe cystopyelitis. The urinary-tract infection "did not respond to the usual high potency drugs" but was controlled promptly by Furadantin as also a recurrence two months later. She is now back at school and I think we owe her existence, and the success in the treatment in a large part to this drug, without which we could't have done much for her.

A number of patients at the New England Centre, Boston Floating and Boston City Hospital, were treated successfully for urinary-tract infections, using this drug.

Of the first 20 patients treated, nine were in the age-group of 3 to 12 years. All had previously been treated with sulphonamides or antibiotics. Complicating abnormalities of the urinary-tract were present in seven of them. Furadantin was administered in tablet form in daily individual dosages of 6 to 15 mg./kg. of body-weight every four to six hours. Duration of the therapy ranged from 5 to 15 days. Thirteen patients obtained a clinical and bacteriologic cure from this therapy. Of the seven patients who failed to be cured, five had complicating abnormalities of the urinary-tract.

Stewart and Rowe of Los Angeles report on 107 cases of urinary-tract infections treated, 73 of which were chronic and refractory to all other urinary medication. Furadantin produced therapeutic action within 8 to 36 hours, causing pronounced clinical improvement, a change in the appearance of the urine, and, frequently negative urine-culture within 24 hours. Many had structural anomalies and some seemingly impossible cases were cured.

The present study indicates that in the majority of cases, Furadantin proved clinically effective and would therefore, be a valuable addition to our therapeutic armamentarium.

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THE RELATIONSHIP OF NEUROPATHY TO THE TREATMENT OF TUBERCULOSIS WITH ISONIAZID

"Isoniazid is established as a most useful and safe drug in the treatment of tuberculosis, but, if the dosage is too large, occasional toxic effects may be observed. These include restlessness, headache, drowsiness, muscle twitching and difficulty in micturition. Lesions of the optic nerve have been described.....Several authors have found isoniazid treatment complicated by a clinical picture of polyneuritis and most agree .....that this polyneuritis syndrome is proportionately more common with high dosage and long-continued dosage."

During the last two years Dixon *et al* have encountered some patients who have developed neurological signs and symptoms while receiving isoniazid in a dosage generally considered safe in the treatment of tuberculosis.

In the authors' experience, and as far as they can judge from the literature, neuropathy is not frequently associated with treatment with P.A.S. or streptomycin unless isoniazid is also exhibited. "Further, the incidence of neuropathy in cases of tuberculosis treated with isoniazid up to 8 mg. per kg. of body weight is probably low.

The authors are of the opinion that some patients develop neuropathy on moderate dosage of isoniazid and in such circumstances the drug should be withdrawn.—(*Dixon. Scottish Medical Journal*, *1*: 350, Nov. 1956).

ANDROGEN-ŒSTROGEN THERAPY FOR ELDERLY PATIENTS

There is considerable evidence that properly controlled low or moderate doses of androgen-œstrogen combinations are of value in many of the common disorders that occur in elderly patients. Some of the symptoms that respond to such combined hormone therapy seem to be primarily psychogenic in nature, such as nervousness, irritability, forgetfulness, fatigue, and depression. Some of the symptoms are due to definite physical deficiencies. Postmenopausal osteoporosis frequently responds well to œstrogen therapy, which stimulates osteoblastic activity. However, superior results are usually obtained with combined œstrogen-androgen treatment. Retention of calcium and phosphorus in the bones is greater when androgens as well as œstrogens are used. Androgens are especially effective in promoting storage of protein, which is required for formation of the bony matrix. Negative protein-balance in elderly persons is often associated with negative calcium-balance, not infrequently manifested by senile osteoporosis involving especially the spine. Protein storage is facilitated and calcium and phosphorus storage promoted by combined œstrogen-androgen therapy. Often pains in the ribs and back are definitely relieved. It is, of course, important to devote at the same time adequate attention to nutrition and protein and calcium intake. Therapeutic doses of vitamins C and D are also indicated.

The psychological orientation of elderly persons is frequently much improved, and improved general strength and energy and spirits can result from properly controlled long-term combined hormone therapy. Patients receiving such treatment must be carefully observed to be sure that undesirable androgenic effect is not caused in females and also to *ascertain that excessive storage of salt* and water or undesirable elevation of the blood-pressure does not occur. When œdema, hirsutism, hoarseness, or other untoward effects become evident, the dosage of one or both hormones may have to be decreased. Oestrogens are the hormones most often implicated in excess fluid-retention, while the appearance of acne, excess hair growth, voice changes, or clitoral hypertrophy indicates excess of androgens. When properly balanced combined œstogen-androgen therapy is employed (usually the best proportion is 1 : 20), untoward effects can as a rule be kept within minimal or negligible limits.—(*J. Am. Med. Assoc.*).

TREATMENT OF RELAPSE STATE OF TYPHOID FEVER

Following the introduction of chloramphenicol in the treatment of typhoid fever it soon became apparent that, in spite of improvement in the clinical state which was usually manifest, there was no corresponding improvement in the relapse rate..... The very striking differences in the relapse rates of patients with typhoid fever treated with short term and with long term courses, from the day of defervescence, seem to indicate the cholramphenicol *has some effect* on the immune response..... The incidence of relapse in typhoid fever treated with chloramphenicol is dependent on the period of time during which therapy is continued. Where this is less than about seven days, very high relapse rates may be experienced. The relapse state is probably initiated by intracellular forms of *S. typhi* present in reticuloendothelial cells. It is suggested that chloramphenicol *promotes* phagocytosis of viable organisms and that this creates a reservoir of tissue relapse rates in those patients who are inadequately treated.—(*Am. Jour. Trop. Med. and Hyg.*, Jan. '57, via *J.A.M.A.*, 23-11-'57).

OBSERVATIONS ON THE USE OF ISONICOTINIC HYDRAZIDE-P-AMINOSALICYLATE (ISOPAR)*

(In the Treatment of Pulmonary Tuberculosis)

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SINCE the discovery of Streptomycin by Waaksman in 1944, various other antibiotics and chemicals with antitubercular properties were reported from time to time, but only PAS and INAH have come to stay in general use throughout the world.

Even these useful and powerful remedial drugs are found to have certain drawbacks and disadvantages. Thus, when any one of them is used alone, resistant germs emerge within a short time. Combinations of two or more of these drugs have however, been able to prevent the emergence of resistant bacilli, even on prolonged use.

Another disadvantage lies in the mode of administration. As streptomycin can be given only parenterally, combinations containing streptomycin require the services of doctors or nurses for administering them. This is not possible to have in many rural areas and so this mode of administration is obviously unsuitable and costly for the poor patients who therefore, cannot continue the injections.

The combination of PAS and INAH on the other hand, can be taken orally, by the patient with as good effect as other combinations in the treatment of tuberculosis. But in order to obtain a therapeutic blood-level one has to take large quantities of PAS *viz.*, 12 to 16 g. (3 drams) of PAS being the minimum dose to be taken in one day. The best combination available requires 12 to 16 tablets per day, which are fairly large in size, and do not therefore, find favour with the majority of patients; PAS causes in addition gastro-intestinal disturbances in some patients; these so limit its field of usefulness. The combinations we do have at present though very useful, are not satisfactory from the practical view-point.

The bacteriostatic properties of Isonicotinic Hydrazide-*p*-amino salicylate–an additive compound between PAS and Isoniazide, then named GEWO 339 was reported favourably in 1953 by Smith, and Widerkehr as a result of their successful clinical trials. In 1955 Clegg drew attention to the therapeutic efficacy of an isoniazide salt of PAS in a dose of 600 mg. daily, in a clinical report on 17 cases, studied by him over a period of twelve weeks.

* Specially contributed to the ANTISEPTIC.

Encouraging results were also reported in 1956 by various workers in India.

I present here a short report of my observations on the use of this salt, sold under the trade name of ISOPAR used in the treatment of pulmonary tuberculosis.

Material and methods.–At the beginning I wished to use this salt only for in-patients but as most of them left immediately they found a little relief and against medical advice, cases treated as outpatients have also had to be included in this study. Of my 14 cases, six (6) were very irregular in taking treatment and in coming for the usual check-up, and so they are not included in this report.

The remaining eight cases were divided into two main groups *viz*:—(*A*) Those treated with Isopar along with some form of collapse therapy and modified rest; and (*B*) those treated with Isopar alone with modified rest.

[Note:—By 'modified rest' I mean that the patients were allowed to move about, instead of remaining in absolute bed-rest].

Only one of group *B* was treated as an in-patient. The others were treated as out-patients coming for check-up as directed.

In Group *A*, one case (No. 3 S.M.) had severe hæmoptysis and hence his weight and subsequent X-rays could not be taken and as soon as he got better, he left the hospital. Case No. 2 of the same group (B.V.P.) left against medical advice after six weeks' treatment and did not turn up for the check-up due at the end of the eighth week. Therefore, only two cases from this group were followed-up till the eighth week.

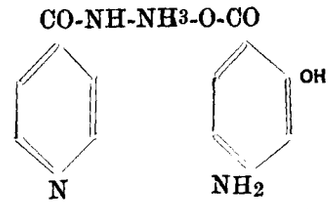
All cases in the second group attended regularly and were studied till the end of the eighth week.

The cases were classified on the basis of the standards adopted by the National Tuberculosis Association of U.S.A. *viz*., Minimal, moderately advanced and far-advanced lesions. These are again sub-divided into active, probably active and not active.

The results were noted from routine examinations which included temperature, weight, E.S.R.. Hæmoglobin percentage, radiological changes and examinations of sputum for T.B., at the end of four to six weeks and eight to ten weeks from the day of commencing the treatment. A particular standard of time such as four and eight weeks could not be maintained because of the irregular ways of the patients in turning up for the periodical check-up.

Choice of drug and dosage.—The Isonicotinic hydrazide-*p*-amino salicylate salt used in these series was supplied by M/s. Cadila Laboratories, Ahmedabad under their trade name of

Isopar. Each tablet is stated by the manufacturers to contain 100 mg. of Isonicotinic hydrazide-*p*-amino salicylate. The salt is a compound formed bythe chemical combination of equimolecules of Isoniazide and PAS. Its chemical formula is as given alongside on the left.



The suggested daily dosage is 100 mg. per 10 kg. of body weight to be given in three divided doses.

All the patients in this series were given two tablets three times a day after food.

In addition, they received iron in the form of Ferginate to combat the secondary anæmia and vitamins when found necessary to improve their general vitality. (*See Table II*, on *p. 262*).

The results were recorded under the following headings:—

1. (*a*) Type of disease, duration and previous antitubercular treatment if any; (*b*) line of treatment adopted; (*c*) radiological changes; (*d*) temperature; (*e*) sputum examination for T.B., (*f*) E.S.R.; (*g*) Hæmoglobin in gm. and (*h*) weight.

Tables I and II show the type and duration of the disease along with previous antimicrobial treatment.

Table I

GROUP A—Cases treated with ISOPAR in addition to some form of collapse therapy and modified rest

Serial No.	Name	Sex	Age	Type and classification of the disease at the time of admission	Duration of the disease	Previous antitubercular therapy (S.D. PAS INAH)	Remarks
G A-1	R.R.	M	44	Far advanced—probably not active	8 months	S.D. 20 g. Nydrazide 50 tabs. PAS & INH 60tabs.	H/o Giddiness after taking S.D. hence not given at all.
G A-2	B.V.P.	M	22	Far advanced—bilateral-active	3 months	S.D. 25-30 g. INAH quantity not known	—
G A-3	S.M.	M	22	Moderately advanced active (severe hæmoptysis)	About 1 year	Had S.D. INAH tabs. for 1 year: from time to time. Quantity not known	Present hæmoptysis. Duration 1 month
G A-4	P.K.P.	M	19	Moderately advanced—probably not active	3 months	S.D. 36 injection. INAH tabs. 100	—

S.D. :—Streptomycin sulphate ½ g. + Dihydrostreptomycin ½ g.
INAH :—Isoniazide.
PAS:—Para-amino-salicylic acid.

TABLE II

GROUP B—Cases treated with ISOPAR only with modified rest

Serial No.	Name	Sex	Age	Type and classification of the disease at the time of starting the treatment	Duration of the disease	Previous antituberecular therapy (S.D. PAS INAH)	Remarks
G B-1	F.A.P.	M	36	Moderately advanced—slightly active (Relapse)	About 3-4 months	Nil	Had pulm. Tb. about 8 years and was successfully treated
G B-2	V.A.P.	M	42	Moderately advanced -active with acute exacerbation of the disease	Active	Nil	Father had bil. p. tb. pt. got an acute attack after death of father
G B-3	P.B.	M	16	Moderately advanced probably not active	2-3 years	S.D. 105 injections Neopac 500 tablets	—
G B-4	S.K.J.	F	20	Moderately advanced—probably active	7-8 months	No definite history	—

S.D. :—Streptomycin sulphate g. ½ and dihydrostreptomycin g. ½.
INAH :—Isoniazid.
PAS :—Para-amino-salicylic acid.

In Group *A* two were far-advanced and the other two were moderately-advanced and all the four had received some form antimicrobial therapy as shown in the statement.

In Group *B* all were moderately advanced and none had previous antimicrobial therapy except No. GB 3.

Table III on *p. 263* shows the lines of treatment adopted in Groups *A* and *B* besides Isopar. All cases in group *A* received in addition some form of collapse-therapy. Collapse therapy was induced in these cases because of the presence of cavities in spite of prolonged antimicrobial therapy received elsewhere. None of the cases in Group *B* was given any form of collapse therapy.

In addition to Isopar all cases received iron to combat the secondary anæmia, and vitamins to improve the general vitality; some cases also received a few injections of Crystomycin to combat the secondary lung infections.

Table IV and V on *p.268 and 269* show the radiological changes in the two groups. It will be seen that all cases showed good improvement at the end of four to six weeks and the cases followed up to the eighth and tenth weeks showed further improvement. None of the cases deteriorated. Even the cavities [illegible]

TABLE III

Showing line of treatment adopted in Groups A and B other than ISOPAR

Serial No.	Name	Indoor or outdoor patient	Type of collapse therapy if any	Antibiotics other than Isopar	Remarks if any	Other drugs	Remarks
G A-1	R.R.	Indoor	A.P.P.	Nil	—	Ferginate 2 B.I.D.	Secondary anæmia
G A-2	B.V.P.	Indoor	A.P.P.	Nil	—	Ferginate 2 B.I.D. Liver extract and Vitamin B and C.	Do.
G A-3	S.M.	Indoor	A.P.P.	Crystomycin 1 gm. daily for 4 days	For secondary infection	Ferginate 2 B.I.D. Anticoagulants	Hæmoptysis
G A-4	P.K.P.	Indoor	A.P.P. Rt. phrenic	Nil	Nil	1. Ferginate 2 B.I.D. 2. Liver ext. and Vit. B + C. 3. Elixir Pyruvin	Secondary anæmia; nausea
G B-1	F.A.P.	Outdoor	Nil	Nil	Nil	Ferginate 2 B.I.D. Calciostelin with Vit. B_{12}	Secondary anæmia
G B-2	V.A.P.	Do.	Nil	Crystomycin 1 gm. daily for 3 days	To combat secondary infection	Ferginate 2 B.I.D.	Do.
G B-3	P.B.	Indoor	Nil	Nil	Nil	Ferginate 2 B.I.D. Liver ext. and Vit. B + C. Calci. ostelin	Do.
G B-4	S.K.J.	Outdoor	Nil	Nil	Nil	Ferginate 2 B.I.D.	Do.

G=Group. A P P=Artificial pneumoperitoneum.

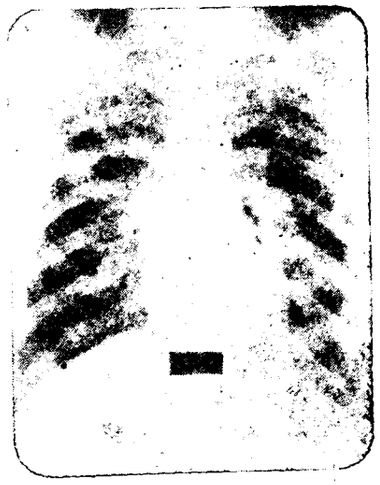
definite as shown in the skiagrams. Patient GB 4 who had a cavity at the beginning shqwed no evidence of any cavity in the X-ray picture taken at the end of the eighth week.

In consideration of the necessary limitations of space in the ANTISEPTIC only skiagrams of Group *B* patients have been published. These cases received only Isopar and hence the improvement recorded is due exclusively to that drug.

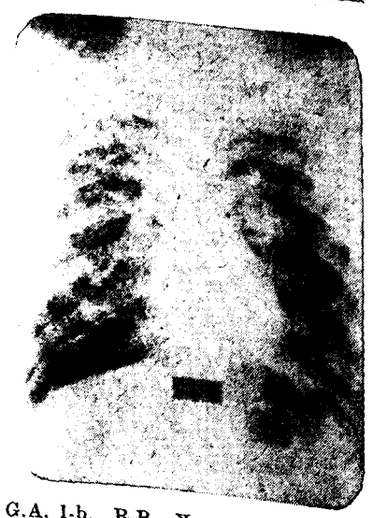
Table VI on *p. 269* shows the average rise of temperature before and after treatment.

In Group *B* excepting No. GB-3 who was treated as an in-patient, it was not possible to keep a regular temperature record because, inspite of repeated advice, the patients failed to co-operate. But the observations made when they did actually come for their check-up are noted in the table.

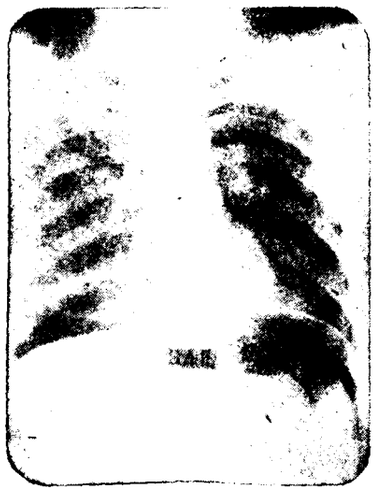
It will be seen that only case No. GA-2 had a slight rise of temperature up to 99·4°F at the end of four weeks while the other cases followed-up to the eighth week had become normal. In No. GB-3 there was practically no change in the range of temperature.



G.A. 1-a. R.R., X-ray dated 8-3-'57.



G.A. 1-b. R.R., X-ray dated 17-4-'57.



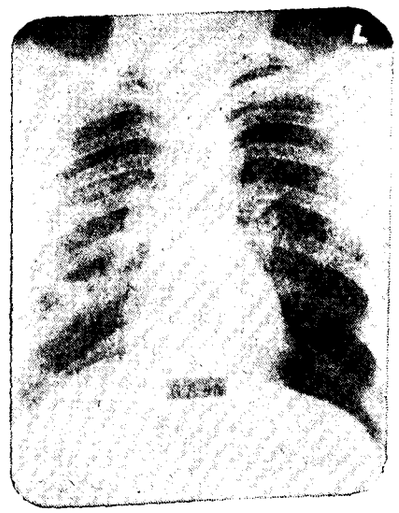
G.A. 1-c. R.R., X-ray dated 6-5-'57.

G.A. 2-b. B.V.P., X-ray dated 26-4-'57.

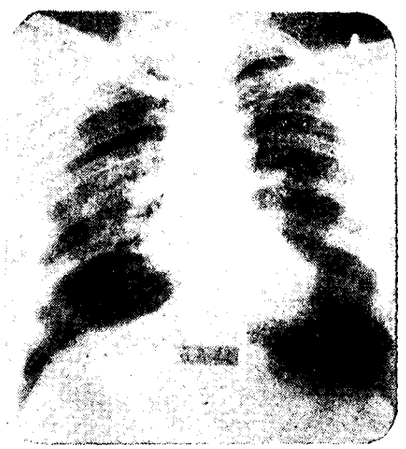
Table VII on *p. 270* shows the result of sputum examination before and after treatment. In group A all were positive at the commencement of the treatment. At the end of four weeks two

became negative and among the two cases followed-up to the eighth week GA-1 was still positive while GA-4 did not have any sputum at all.

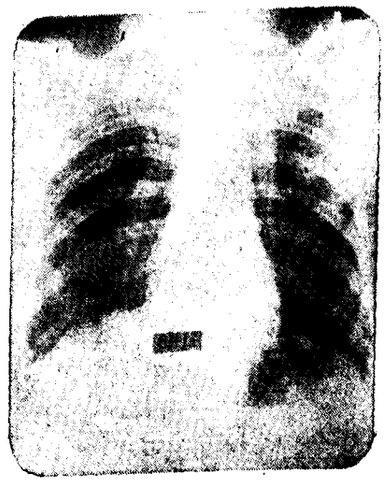
Of the four cases in Group B, two were positive at the beginning and all four became negative at the end of four weeks and none brought up any sputum at the end of the eighth week.



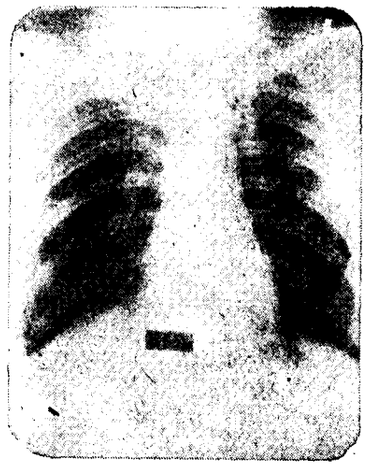
G.A. 4-a. P.K.P. X-ray dated 24-6-'57.



G.A. 4-c. P.K.P. X-ray dated 2-9-'57.



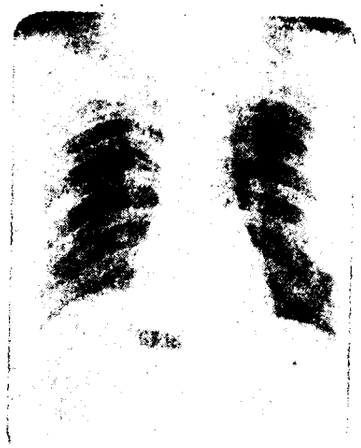
G.B. 1-a. F.A.P., X-ray dated 28-4-'57.



G.B. 1-b. F.A.P., X-ray dated 8-6-'57.

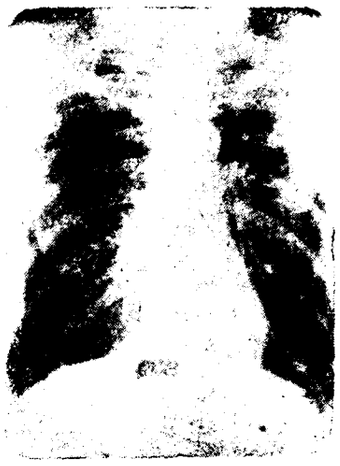
It is very interesting to note that a remarkable reduction occurred in the quantity of the sputum in all patients treated with Isopar. Out of the eight cases, six had no sputum at the end of the eighth week.

Table VIII on *p. 270* shows the changes in the ESR in both groups. All cases show a gradual reduction in the ESR after taking Isopar excepting No. GA-1 in whom the ESR came down at the end of four weeks but rose again at the end of the eighth week. This is difficult to explain for the disease had become inactive as shown by improvement in the radiological picture and the general condition of the patient.



G.B. 1-c. F.A.P., X-ray dated 11-7-'57.

G.B. 2-a. V.A.P., X-ray dated 30-5-'57.

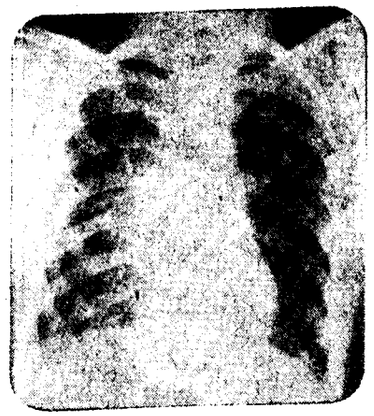


G.B. 2-b. V.A.P., X-ray dated 3-7-'57.

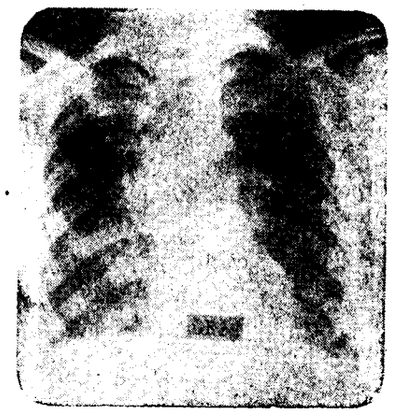
G.B. 2-c. V.A.P., X-ray dated 6-8-'57.

Table IX on *p. 271* shows the changes in hæmoglobin during the treatment with Isopar; all cases responded well to antianæmic treatment and Isopar had no untoward effect on them.

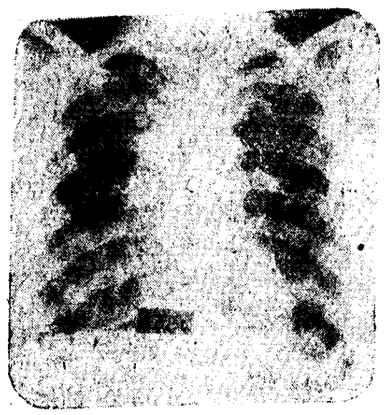
Table X on *p. 271* shows the weight in patients before and after treatment; all cases showed a steady increase in weight excepting cases Nos. GB-2 and 4, both of which showed an increase in weight at the end of four weeks but remained so even at the end of the eighth week. Both of them were villagers treated as out-patients. Case No. GB-4 had already stopped treatment against medical advice because of the good improvement. Both are attending to their routine household work.



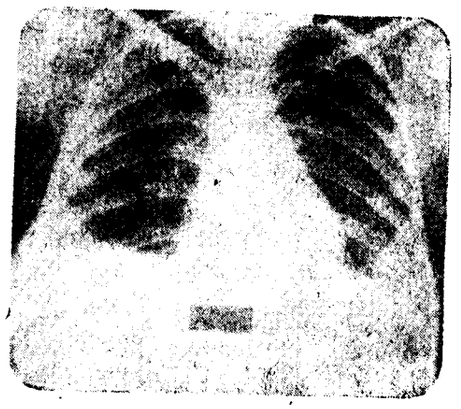
G.B. 3-a. P.B., X-ray dated 8-6-'57.



G.B. 3-b. P.B, X-ray dated 8-7-'57.



G.B. 3-c. P.B., X-ray dated 7-8-'57.

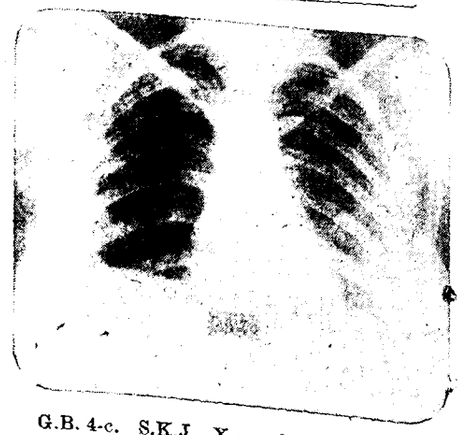


G.B. 4-a. S.K.J, X-ray dated 30-6-'57.

Toxicity.—Some of the patients complained of severe headache during the first few days which however, soon subsided of its own accord. Only one patient GA-4 complained of nausea which was controlled by Vitamin B_6 as Elixir Pyruvin. None of the cases had any serious untoward reaction which necessitated the stoppage or suspension of the treatment.

Discussion.—From the results of the study of this small number of cases, it will be seen that Isopar in doses of 600 mg. per day acted well in cases of pulmonary tuberculosis. Even cases that had previous antimicrobial therapy, such as Streptomycin

G.B. 4-b. S.K.J., X-ray dated 31-7-'57.



G.B. 4-c. S.K.J., X-ray dated 2-9-'57.

TABLE IV

Showing Radiological Changes in Group A Patients

Serial No.	Name	At the commencement of treatment	After 4–6 weeks	After 8–10 weeks	Remarks if any
G A-1	R.R.	Right : Infiltration upper 2/3 with large cavities. Left : Infiltration with large cavities in upper 1/3.	Right : Good clearing cavities smaller. Left : Marked clearing cavity much smaller	Right : Good clearing ; cavity vague. Left : Good clearing cavity not seen.	Good elevation of diaphragm with A.P.P.
G A-2	B.V.P.	Right : Infiltration in whole lung, huge apical cavity. (5 cm. diameter) Left : Contralateral spread middle 1/3 of lung field.	Right : Good clearing; cavity much smaller. Left : Good clearing	—	Good elevation of diaphragm with A.P.P. Patient left against medical advice ; did not come for check up.
G A-3	S.M.	Right : Hilar increased. Left . Small cavity at the infraclavicular region medially.	—	—	As the patient had severe haemoptysis—he was neither screened nor X-rayed. Left hospital against medical advice—when got better.
G A-4	P.K.P.	Right : Huge cavity about 6 cm. diametre at midzone towards base. Left : Increased hilar shadow.	Right : Good clearing ; cavity half its original size. Left : Same	Right : Better cavity smaller. Left : Same.	Good elevation of diaphragm due to A.P.P. + and Right : Phrenic.

PAS and INAH either alone or in combination showed a satisfactory response to Isopar, as shown by the radiological and clinical findings recorded in this study.

TABLE V

Showing Radiological Changes in Group B Patients

Serial No.	Name	At the commencement of treatment	After 4–6 weeks	After 8–10 weeks	Remarks
G B-1	F.A.P.	Right : Infiltration at the apex. Left : Infiltration of upper ⅓ with small cavity.	Right : Slight clearing. Left : Marked clearing ; cavity invisible.	Right : Slight clearing at the apex. Left : Same.	—
G B-2	V.A.P.	Right : Increased hilar shadow with calcified spots. Left : Extensive infiltration of the whole lung.	Right : Same. Left : Marked clearing of the disease (inactive).	Practically the same.	—
G B-3	P.B.	Right : Infiltration middle ⅓ near hilar region with honeycombing. Left : Increased hilar with calcified spots.	Right : Slight clearing in the diseased area. Left : Same.	Right : Better clearing in hilar and midzone region ; base—same. Left : Same.	—
G B-4	S.K.J.	Right : Infiltration with cavity below the clavicle laterally. Left : Increased hilar shadow.	Right : Good clearing cavity indefinite. Left : Same.	Right : Practically the same. Left : No definite cavity seen.	—

TABLE VI

Showing the range of average morning and evening temperatures for one week before and after treatment with ISOPAR

Serial No.	Name	At the commencement of treatment a.m.	p.m.	After 4 to 6 weeks a.m.	p.m.	After 8 to 10 weeks a.m.	p.m.
G A-1	R.R.	99·6	99·8	97·4	98·8	97·4	98·8
G A-2	B.V.P.	99	101·8	98·4	99·4		
G A-3	S.M.	98·4	100	97·4	98·6		
G A-4	P.K.P.	97·6	99·6	97	98·4	97	98·4
G B-1	F.A.P.	Low fever		Normal		Normal	
G B-2	V.A.P.	102·4		Normal		Normal	
G B-3	P.B.	98·2	99	98·2	99·2	98	99
G B-4	S.K.J.	Low fever		Normal		Normal	

REMARKS :—The patients of the group *B* excepting G B-3 were treated as out-patients hence their daily temperatures could not be recorded.

Note :—Low fever means from 99° to 100°F.

TABLE VII

Showing the result of sputum examination before and after treatment with ISOPAR

Serial No.	Name	At the commencement of treatment	After 4 to 6 weeks	After 8 to 10 weeks
G A-1	R.R.	TB plus 4	TB plus 4	TB plus 3
G A-2	B.V.P.	TB plus 6	,, plus 4	—
G A-3	S.M.	TB plus 1	No sputum	—
G A-4	P.K.P.	TB plus 1	Negative	No sputum
G B-1	F.A.P.	TB plus 4	,,	,,
G B-2	V.A.P.	TB plus 2	,,	,,
G B-3	P.B.	Not found	No sputum	,,
G B-4	S.K.J.	Did not give sputum	,,	,,

REMARKS :—All sputum examinations were done by the direct method.

The reduction in the quantity of the sputum is very remarkable. At the end of 8 weeks six out of the 8 patients did not have any sputum to bring out.

TABLE VIII

Showing the changes in E.S.R. in patients treated with ISOPAR

Serial No.	Name	At the commencement of treatment	After 4 to 6 weeks	After 8 to 10 weeks
G A-1	R.R.	45 mm.	23 mm.	44 mm.
G A-2	B.V.P.	134 ,,	126 ,,	—
G A-3	S.M.	47 ,,	4 ,,	—
G A-4	P.K.P.	67 ,,	25 ,,	9 mm.
G B-1	F.A.P.	87 ,,	27 ,,	26 ,,
G B-2	V.A.P.	115 ,,	64 ,,	58 ,,
G B-3	P.B.	36 ,,	16 ,,	12 ,,
G B-4	S.K.J.	49 ,,	19 ,,	12 ,,

E.S.R. readings were taken at the end of one hour by Westergren method.

All the three cases in Group B showed very good response to Isopar alone, even though they were treated as out-patients. A reduction occurred in the size and closure of the cavities as evidenced by the X-ray pictures.

Discussion.—Though similar encouraging results have been observed by various other workers, there seems to be some difference of opinion as to the precise nature of the therapeutic

action of this salt. Some consider that the antitubercular action of this salt is due to the Isoniazide element only, since the quantity of PAS element present in this salt is very small.

TABLE IX

Showing the changes in hæmoglobin in g. in patients treated with ISOPAR along with Ferginate

Serial No.	Name	At the commencement of treatment	After 4 to 6 weeks	After 8 to 10 weeks
G A-1	R.R.	11·2 gms.	12 g.	12·6 g.
G A-2	B.V.P.	10 ,,	11·4 ,,	—
G A-3	S.M.	11·2 ,,	11·6 ,,	—
G A-4	P.K.P.	12·6 ,,	13·8 ,,	15·4 g.
G B-1	F.A.P.	10·8 ,,	12·8 ,,	14·8 ,,
G B-2	V.A.P.	12·2 ,,	13·4 ,,	14·6 ,,
G B-3	P.B.	12·2 ,,	13·8 ,,	14·4 ,,
G B-4	S.K.J.	9·6 ,,	10·6 ,,	11·8 ,,

TABLE X

Showing the weight of patients before and after treatment with ISOPAR

Serial No.	Name	At the commencement of treatment	After 4 to 6 weeks	After 8 to 10 weeks
G A-1	R.R.	106 lbs.	112 lbs.	116 lbs.
G A-2	B.V.P.	114 ,,	126 ,,	—
G A-3	S.M.	Not taken due to severe hæmoptysis		
G A-4	P.K.P.	129 lbs.	140 lbs.	143 lbs.
G B-1	F.A.P.	112 ,,	117 ,,	120 ,,
G B-2	V.A.P.	90 ,,	93 ,,	93 ,,
G B-3	P.B.	87 ,,	95 ,,	102 ,,
G B-4	S.K.J.	80 ,,	86 ,,	86 ,,

In order to elucidate this point the following important points should be considered and investigated :

(1) Is Isopar a chemical compound formed by the chemical combination of the equimolecular salts of Isoniazide and PAS or is it only a mechanical mixture ?

(2) If it is a chemical compound, does it remain stable and is it absorbed as such or does it split up into its original elements on reaching the intestine and act individually as the Isoniazide and PAS salts ?

(3) If Isopar is a new compound formed by chemical combination of Isonizide and PAS and absorbed as such without being split up into its component parts, then its action must be entirely different from either Isoniazide or PAS or their physical combinations.

Since good response was noted even in persons who had had previous treatment with Streptomycin, PAS, or Isoniazide either alone on in combination as in all the cases in GA group and GB-3 it can be clinically presumed that Isopar is sensitive to germs that are resistant to Streptomycin, PAS or Isoniazide, but this must be confirmed by laboratory studies on various strains, to ascertain the resistance of the respective bacilli to this salt.

Unfortunately my Institution lacks the facilities and finance to undertake such elaborate research.

The ease of administration, the good tolerance and the cheapness of the drug are important points in favour of Isopar in the treatment of Tuberculosis.

Since general improvement such as increase of weight etc., among cases treated as out-patients (GB-2 and GB-4) are not as satisfactory as in those who were hospitalized, it may be inferred that a certain amount of rest and sanatorium routine will still be valuable in the successful treatment of pulmonary tuberculosis.

Conclusion.—The value of Isopar in the treatment of pulmonary tuberculosis, has been clearly brought out by this study. Further studies on the issues raised by me relating to its specific action should be undertaken by Institutions having necessary facilities for assessing the resistance of the strains etc. If the results of such further research are clearly in favour of Isopar, it would furnish the cheapest antimicrobial treatment available for Tuberculosis.

Summary.—Observations on the results obtained in four cases of pulmonary tuberculosis treated with Isopar together with some form of collapse therapy and four cases treated with Isopar alone are recorded. The good results obtained as judged by the clinical, bacteriological and radiological examinations are set forth in tabular form. The response in cases that had had previous treatment with streptomycin, PAS and INAH is also indicated. The precise nature of the antituberculous property of this salt requires to be further studied. Its cheapness, ease of administration and this good tolerance are points in favour of this drug.

Acknowledgement.—(1) I am very grateful to Messrs Caila Laboratories, Ahmedabad, for the liberal supply of Isopar tablets used in this study.

(2) I am also grateful to Messrs Sanitex Chemical Industries Ltd. of Baroda for free supply of Ferginate Tablets used to combat anæmia in these patients.

1. Clegg, J. W. (1955)—Bri. Med. Journ., *ii* : 1004.
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6. Literature supplied by Cadila Laboratories.
7. Records of David Memorial Hospital, Mehamedabad, Kaira Dist.

IS DERMATOLOGY AN INTERESTING SUBJECT?

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II

(Continued from p. 196 of the Mar. '58 issue of the ANTISEPTIC)

Pigmentary disorder of skin.–*Pigmentations* are caused by :—(1) an increase of melanine; (2) deposition of hæmoglobin in the skin and (3) deposition of fine metallic particles on the skin.

1. *Increase of melanine* occurs in chronic dermatitis, vagabond's disease, rain-drop pigmentation, in arsenical poisoning and in Addison's disease.

Riehl's melanosis :–Is a pigmentary disturbance occurring in men, women and children as dark-brown macules on the forehead, sides of the face, neck, and hands, extensor surface of the forearms, axillary folds and on other parts of the body. Exposure to sun is considered a factor in its causation. Poikiloderma of Civatte differs from this melanosis in that the lesions are localized on the face and neck, producing a symmetrical and retiform arrangement. Photosensitization is said to be responsible. The other causative factors in these two conditions are the presence of anilines in cosmetic make-up powders. Dr. Graciansky found the concentration of Vitamin A, B_1 and C, is low in these conditions. Histopathologically an increase in melanine is found in the basal and dentritic cells of the epidermis and also in the upper dermis. In Addison's disease the ætiology is said to be due to a disturbance of the M.S. hormone of the anterior pituitary. Dr. Brocq describes a peribuccal pigmentation in women extending to the nasolabial fold. The most important feature is the variation in colour from day to day. The condition is said to be due to a disturbed state of the circulatory and nervous systems producing a disturbance in the vasomotor tone of the peripheral vessels.

Treatment of melanine pigmentation :—Consists in the application of 5% Monobenzyl ether of Hydroquinone and injections of ascorbic acid.

Leucoderma :—This is a hypopigmentary disorder. The condition may be congenital or acquired. The ætiology is unknown. Various measures have been worked out. The latest is the application of Meladinine paint starting from a high dilution to higher concentration and giving U.V.R. exposures. The other treatment is the application of Oleum Bouchi.

Eczematosus dermatosis :—Eczema is a term which is a cloak for ignorance. The late Dr. Neville of Chicago wrote: "Is it not clear, that the word eczema has outworn its usefulness? The word has become the word of the man in the street, advertiser and the charlatan. The doom of the word is already

written. It will survive where it belongs with no greater repute than what attaches in general to out-worn and discredited." By using the word dermatitis instead, we admit our ignorance and constantly remind ourselves of the necessity for searching out the cause. The term dermatitis and eczema are used synonymously.

Eczema may be considered to be a non-infectious inflammatory dermatosis. The condition may be acute, subacute or chronic. The clinical picture is characterized by the polymorphism of the eruption. The primary lesions may be macules, papules and vesicles. The papules and macules tend to coalesce to form a diffuse erythema. The secondary lesions are scaling, crusting, lichenification and fissuring. The itching may be from moderate to severe.

Classification :-(1) Contact dermatitis ; (2) atopic eczema ; (3) infantile eczema ; (4) nummular eczema ; (5) dermatitis infectiosa eczematoides ; (6) stasis eczema ; (7) pyogenic eczema ; (8) eczema in the elderly ; (9) auto-eczematization and (10) general exfoliative dermatitis.

1. Contact dermatitis.—The disease results from inflammatory reaction due to contact with various substances which act as allergic sensitizers, *e.g.*, plastic strops, rubber gloves, cosmetics, cigarette holders etc. A careful history and patch-test help in diagnosis.

Treatment :—Consists in the removal of the suspected allergen and in local applications which depend on the condition whether acute, exudative, sub-acute or chronic. In the acute exudative stage calamine lotion may be used. When there is much crusting and oozing an oily solution is effective :—

℞	Icthammol	..	gr. 120
	Calamine prep.	..	gr. 180
	Linseed oil	..	ʒ iv
	Lime water	..	ʒ iv

℞	Crude coal tar	..	ʒ i
	Zinc oxide	..	ʒ iii
	Lanoline	..	ʒ ½
	Yellow soft paraffin		ʒ ½
	Ft. unguentum		

or

℞	Resorcin	..	gr. xx
	Zinc oxide	..	gr. xx
	Starch	..	gr. xx
	Yellow soft paraffin		ʒ i
	Ft. unguentum		

During the early subacute stage zinc cream may be used. In the later stage Lasser's paste should be used ; and in the chronic stage one of these two ointments may be used.

The above is the general principle for local theray in all kinds of eczema.

Antihistamines are given orally. The different drugs used may be grouped in three categories :—

(*a*) *Mild sedative* : to include Antistin, Actidil, Histantin, Ancolon and Synopen. (*b*) *Moderately sedative* : to include Anthisan, Pyribenzamine and Ambodryl and Soventol. (*c*) *Highly sedative* group which includes Benadryl and Phenergan. The mild sedative group is to be preferred in localized, mild eczema, and the other two for generalized extensive eczema.

2. Atopic eczema : (Neuro-dermatitis) is a characteristic form of eczema which may be localized or disseminated. The localized form may occur on any part of the body but the commonest site is the nape of the neck producing eczema nuchæ. The disorder commences with intermittent itching with no visible change. The patches develop later.

In a fully developed patch different zones can be seen : (*a*) an external ill-defined zone composed of minute pigmented brownish papillæ ; (*b*) a middle zone in which the lesions are discrete towards the outer zone and confluent towards the centre. They consist of flattened and rounded smooth and glistening or scale-covered papule-like lesions which seem to be due to more advanced papillary hypertrophy than that present in the outer zone and (*c*) an internal zone in which there is a marked thickening and infiltration ; the surface is divided into a small rectangular or lozenge-shaped area through deepening of the intersecting line above-mentioned. The patches are oval irregular or angular ; and may be single or multiple.

Neurodermatitis disseminata of Engman :—In this condition constitutional involvement is an important feature. There is a high degree of sensitivity to protein. Associated allergic manifestations like hay-fever, asthma, rhinitis or urticaria may be present. Some cases show a hereditary predisposition. Emotion, stress and strain contribute to the causation. The symptoms include those of eczema, *namely*, erythema, œdema, weeping, excoriation, fissuring, crusting and intense pruritus.

Neurodermatitis circumscripta is more common in women at the time of the menopause. Allergy plays an important role in the causation of eczema. The allergic factors may be exogenous or endogenous. The exogenous factors may be contactants, ingestants, inhalants, injectants and physical stimuli. The endogenous ones may be micro-organisms, parasites, or psychogenic stimuli ; important psychogenic factors are nervous shock and prolonged mental depression. Eczema may be influenced by the stock market.

Atopic dermatitis is to be distinguished from contact eczema in that the primary reaction is centred around blood vessels in the cutis and the epidermal changes are secondary. The principles of local therapy have been outlined already.

General treatment:—(1) *Aetiological therapy*:—"Search for the cause and treat it" is easily said but difficult to achieve. (2) *Symptomatic therapy*:—(*a*) Antihistamines are given orally or parenterally; (*b*) alkalies to reduce the irritability of the skin; (*c*) thiosulphate of sodium and magnesium are given as non-specific desensitizers. Bromides lessen the itching by their sedative action. French dermatologists prefer sodium bromide. I have found strontium bromide (Eczebrol and Bromostron) to be the drug *par excellence*; (*d*) autohæmotherapy is useful; (*e*) Cortisone is a good friend but a bad enemy. Carefully given in daily doses of 200 mg. and tailing off the dosage, the results have been good. Its use should be confined to cases of neuro-dermatitis disseminata of Engman. Prednisone and prednisolone are analogues of cortisone and hydrocortisone respectively. They are more effective with no tendency to sodium retention. The tablets are administered at 6 hourly intervals.

Diet in eczema:—It is advisable to commence with a bland diet containing boiled rice, cream and buttermilk and gradually go on adding in order to find out the sensitizing food. Eschew alcohol, spices, condiments, fish and eggs.

3. Infantile eczema.—This is a perplexing and exasperating d:sease. Eczematoid dermatosis occurs on the cheeks, chin and forehead. The central area of the face is spared. Other parts of the body involved are the flexural surfaces.

Aetiology:—The chief cause is still under dispute but the sensitization is due to some food, if bottle-fed or by the mothers if breast-fed. Eggs, tomatoes, oranges, milk, fish, oatmeal and codliver oil are known to produce infantile eczema in different subjects. The external irritants involved in infantile eczema are wool and soaps.

Clinical features:—The affected areas are red at first but vesiculation and oozing occur later. There is much itching, and secondary infection takes place. The child is fretful at night and the mother gets worn out due to lack of sleep.

Treatment of infantile eczema:—In the management of this disease careful enquiry is necessary regarding family history of allergy and any article of diet disagreeing with the child. Does the child sleep on a feather pillow? Is there a cat or a dog or a bird in the house? Has the child wool on or is there any possibility of the child coming in contact with dyes or plastic diapers? Inspection of the skin will give an idea of the distribution and kind of lesion. It is better to hospitalize cases of infantile eczema, so as to ensure adequate rest to the mother and child and to give careful attention to the latter.

Diet:—The offending article of diet should be withheld. Goat's milk is preferable to cow's milk. Allergilac is a food substitute.

Bath:—For cleaning the skin, soap should be avoided, since by its degreasing and keratolytic effect, soap favours the entry of environmental allergens. Starch-bath is the best. A measure of starch flour is added to a tub of hot water and the bath is taken when it is tepid.

External applications:—Will depend upon whether the condition is acute, subacute,. exudative or chronic.

Sedatives:—Elixir Nembutal (containing ¼ gr. in a teaspoon) is a good sedative.

The child will have a great tendency to scratch his skin violently and so he must be put on restraint. The baby is best spread-eagled *i.e.*, his wrist and ankles are swathed with a sheath wadding and tied by tapes to the sides of the cot. A child suffering from eczema should on no account be vaccinated against smallpox nor should he be allowed contact with any child who has been vaccinated.

4. Nummular eczema.—In this condition there are well demarcated elevated erythymatous plaques containing vesicles. The eruption is widely distributed. The ætiology is not clear. Some group them under neuro-dermatitis while others would place them under infection. Vitamin A. 100,000, *i.u.* a day for a month will be helpful. Antibiotics and antihistamines help in clearing the infection and treating the allergy. Local therapy depends upon the stage of the disease.

5. Dermatitis infectiosa eczematoides.—Is a condition which complicates a pyoderma. The disease starts near an infective focus and spreads in a short time. Antibiotics help in combating the infection. Appropriate local therapy is indicated.

6. Stasis eczema.—Many eruptions occurring in the legs particularly around the ankle are classified as varicose eczema. The eruption may be localized or may be diffuse over the legs. Most of the patients are middle-aged and varicosities can be found readily. This occurs largely in women who have stood for long hours on their feet. Traffic policemen and sentries are also prone to this affection.

Treatment:—The local treatment is the same as for other kinds of eczema. The most important phase of treatment is the support of circulation and prevention of stasis by application of elastic stockings or bandages. Those who have to stand long on their feet must change their occupation.

7. Pyogenic eczema—Is only a stage in eczematous dermatitis. Staphylococci are the primary organisms responsible. Pustulation is an important feature. Antibiotics locally and systemically help in curing the condition. They should not be

used for more than 7 days as they tend to produce hyper-sensitiveness.

8. Eczema in the aged.—The ageing skin is more susceptible to eczema than that of the younger people. The condition heals also more slowly in the aged. The dry skin does not tolerate the use of soap. The lesions may be scaly, erythematous and sometimes vesicular. The commonest sites are the extremities.

Treatment:—Consists in appropriate local therapy and the use of antihistamines. Geriatone is helpful.

(*a*) Auto-eczematization.—This refers to spread, at first locally and then generally, from a focus of eczema. The lesions may be erythematous, vesicular or pustular. The most important point is that this condition occurs often as a result of over-treatment of an old eczematous patch.

Treatment is similar to that for other eczemas.

10. Dermatitis exfoliativa.—These groups of conditions are also considered as erythrodermias and characterized by persistent extensive inflammation of the skin with redness and scaling. The following are some of the types:—(1) Generalized exfoliative dermatitis of Erasmus Wilson. This comes under primary erythrodermia. There is hyperæmia and scaling also exudation of sebum in the scalp followed by the formation of crusts. Three cardinal features are redness, desquamation and universality of distribution. The scales may be large and several inches long. The skin under the scale is dry and shiny. The conjunctivæ are inflamed. Fever and albuminuria may also occur. There is a reduction of the blood-urea due to loss of nitrogen.

Aetiology:—Males slightly out-number females and the usual age of onset is about 40 years. Anæmia, asthenia and cachexia, are generally the causes.

Pityriasis rubra of Nebra and Jadassohn:—This is a rare chronic disease which is usually progressive with wasting and delirium in the febrile attack. The scaling is usually finer and smaller than in the Wilson type. The disease may last for months or even years. The cause is unknown. The primary changes are found in the epidermis, later involving the cutis and producing skin atrophy.

The treatment of primary erythroderma:—Consists in giving rest in bed; starch bath daily; zinc cream externally; multi-vitamin therapy; and auto-hæmotherapy.

Epidemic exfoliative dermatitis:—Is called Savill's disease. The disease occurs in two distinct clinical types during summer

and autumn; one with a catarrhal exudation from the skin resembling moist eczema and the other dry, non-discharging resembling Hebra's disease. The regions frequently involved are the scalp, upper limbs and face.

The disease has 3 stages in its course:—(*a*) the papulo-erythematous stage lasting for a week. (*b*) the exudative stage and (*c*) the stage of subsidence and involution of the skin. The cause of the disease has not been satisfactorily determined, though staphylococcus pyogenes albus is incriminated in its causation.

Treatment:—Is similar to the other types of dermatitis.

Secondary erythrodermas:—Occur after arsenic, following psoriasis, seborrhœic dermatitis, mycosis fungoides and leukæmia.

Treatment:—Consists in the administration of BAL (Dimercaprol), one ampoule every 6 hours for the first two days, thrice daily for three days and twice daily for the next 10 days. Mild application of Borofax ointment and antihistamines orally, will control the pruritus.

Urticaria, toxic erythemas and drug eruptions:—Urticaria is a symptom complex caused by various factors. It may be acute or chronic depending on its onset and course. The cause may be exogenous and endogenous. (See *Table I below*).

Table I

Showing the exogenous and endogenous factors in the causation of urticaria etc.

	Mechanical	Allergic	Non-allergic
Exogenous			
(*a*)	Contactants	Plus	Plus
(*b*)	Infestants	,,	,, ?
(*c*)	Inhalants	,,	plus
(*d*)	Injectants	,,	,,
(*e*)	Physical stimuli	,,	,,
Endogenous			
(*a*)	Microorganisms	,,	,, ?
(*b*)	Parasites	,, ?	?
(*c*)	Endocrines		
(*d*)	Altered tissue product	plus	?
(*e*)	Psychogenic stimuli	0	plus

Plus. Means the factor definitely produces urticaria.
? Doubtful if it produces urticaria.
0 No evidence to show that it produces urticaria.

Some of the commonest examples of the allergic urticaria are seen in sensitivity to animal hairs.

There is a trans-epidermal penetration of the allergen. An example of non-allergic urticaria from contact is the stinging nettle. Of ingestants, food and drugs are the commonest; perfumes, insecticides and aldehydes have all been responsible as inhalants. Injectants like penicillin can produce urticaria. Physical stimuli or physical allergy causes allergic urticaria. The endogenous causes are well-known. The symptoms are the development of wheals. Most patients with urticaria exhibit dermographism. Angioneurotic œdema is a variant of urticaria. The

ubjective symptoms are itching, burning and stinging.

Treatment :—Is to be preceded by a proper investigation. There are three avenues of approach :—(1) Proper history. (2) Trial and error procedures in dieting. (3) Cutaneous testing. In eliciting the history, the questions must be searching and will bear repetition. This alone will help us to know if any particular drug or article of diet is the causative factor.

Treatment :—May be considered under 4 heads *viz.*

(1) *Elimination* of the offending allergen. (2) *Desentitization.* (3) *Prevention* of reaction through the offending allergen ; *e.g.*, we can interpose a barrier between the antigen-antibody union by giving antihistamines. Cortisone 25 mg. twice daily and prednisolone 5 mg. four times daily act as anti-allergists. and (4) *Symptomatic relief* :—This is given by colloidal baths with starch solution, epinephrine 1 in 1000, 0·5 cc., subcutaneously and Calcium bromide intravenously.

Erythema multiformis :—Is a condition producing various kinds of flushes on the skin varying from crimson-red macules to papules and nodules. They are of several types *e.g.* :—(1) *the idiopathic types of Hebra*, showing œdematous-looking papules, flattened papules and flat nodosities. Occasionally vesicles and bullæ may appear. (2) *The symptomatic type* which occurs in (*a*) infections mono-nucleosis, (*b*) brucellosis and (*c*) rheumatic fever. (3) *The Steven-Johnson type*, characterized by skin manifestations, hyperpyrexia, prostration and involvement of the oral and conjunctival mucous membrane. The eruptions are erythema and vesicular or bullous lesions. The disease is caused by a non-hæmolytic streptococcus. The lesion may also involve the respiratory system causing the mucosal respiratory syndrome producing symptoms of cough, retro-sternal pain, tracheitis and bronchitis.

Treatment :—Consists in the use of broad-spectrum antibiotics. Locally antibiotic and a methocaine ointment are helpful.

Erythema nodosum :—Is an acute inflammatory disease characterized by the occurrence of painful multiple subcutaneous nodules. The lesions usually occur on the extremities but may involve other regions also.

Aetiology :—Ætiologically the condition may be classified as the primary type, in the manifestation of rheumatic fever.

The secondary or symptomatic type occurs due to cutaneous sensitivity under the following conditions : (1) During treatment of leprosy with sulphones producing the erythema nodosum leprosorum of Wolcott ; (2) during ingestisn of drugs like bromides, iodides and sulphonamides ; (3) during the course of infections like syphilis, coccidiomycosis, lymphogranuloma, or sarcoidosis and (4) in the lesions occurring in association with tuberculosis, simulating erythema nodosum, better grouped as erythema induratum.

Symptoms :—The lesions of erythema nodosum are semi-globular painful and associated with fever, malaise and joint pains. The lesions occur chiefly on the anterior aspect of the lower part of the legs but rarely on the upper limbs and also on the face. The lesions are painful. The diagnostic features are :—(1) pain in the nodules ; (2) bilaterality of the lesions and (3) histopathological section of the skin showing changes mainly in the upper portion of the subcutaneous tissue:—(*a*) Wucher atrophy, or fat-replacement atrophy ; (*b*) endothelial proliferation of the lumen of the blood-vessels ; and (*c*) absence of necrosis and abscess formation.

Differential diagnosis :—(1) Syphilitic nodes and gummas are distinguished by :—(*a*) the absence of pain ; (*b*) paucity of lesions ; (*c*) soft scarring and hyper-pigmentation ; (*d*) unilateral distribution and (*e*) other evidence of syphilis ; *while in nodular vasculitis* :—(*a*) the nodules are slightly painful ; (*b*) evidence of involvement of the vessels is more prominent ; and (*c*) there is also evidence of obliteration of both veins and arteries.

Maculo-papulo squamous diseases :—The following diseases can be considered as belonging to this group : (1) Psoriasis. (2) Para-psoriasis. (3) Lichen planus. (4) Lichen nitidus. (5) Pityriasis rosea. (6) Pityriasis rubra pilaris.

Psoriasis is a disease that never ulcerates, never pustulates or exudates, never leaves a scar but never gets cured completely. The typical lesions in psoriasis are papules and plaques. The usual sites are the forehead and scalp producing corona-psoriatica *i.e.*, psoriatic crown ; on the back of the elbows ; front of knees, and on the small of the back.

The scales are silvery and on scraping them off, a bright red surface or membrane is seen called Buckley's membrane. This scraping and exposing the membrane is called Auspitz sign. The lesions may occur at the site of trauma, when it is called Keebner's phenomenon.

The primary lesion is a point, flat, round or oval-shaped sharply defined, slightly elevated red papule. As the lesion spreads peripherally it may become wide, infiltrated and covered with abundant imbricated scales. Larger plaques and areas are found by the gradual increase in size of the original lesion depending upon the size of the lesions.

The following different forms may be recognized :—(1) *Psoriasis* punctata—several small lesions. (2) *Psoriasis guttata* resembling drops of water. (3) *Psoriasis nummularis* having the size of small coins. (4) *Psoriasis circinata* in the form of rings. (5) *Psoriasis figurata* in fantastic figures. (6) *Psoriasis diffusa*—diffuse lesions. (7) *Psoriasis pupoides* large conical crusts with concentric rings seen in patches. (8) *Psoriasis arthropatica* associated

with definite rheumatoid arthritis. (9) *Pustular psoriasis* which does not signify a secondary pyogenic infection but is only a pustular complication rarely occurring in lesions of psoriasis of the palms and soles. These are sterile pustules and very difficult to distinguish from the pustular bacterid of Andrews.

Etiology :—The cause is not definitely known but several theories are in vogue :—(1) Toxic ; (2) metabolic disturbance causing a rise in the blood-cholesterol ; (3) endocrine disturbance for which there is no definite proof ; (4) infection due to what Kryle has described as a filter-passing virus ; (6) Psoriasis is a psychosomatic disorder.

Histopathology of the skin.—Histologically psoriasis is characterized by :—(*a*) Para-keratitis *i.e.*, imperfect keratinization with retention of nuclei in the horny layer of the skin ; (*b*) a thinning of the supra-papillous portion of the stratum malphigi ; (*c*) an elongation of the reti-ridges ; (*d*) œdema and clubbing of the papillæ and (*e*) the Munroe micro-abscesses are located in the stratum cornium and represent the small accumulation of neutrophils which have migrated there through the epidermis. The bleeding points produced by the scraping of the skin in psoriasis corresponds to the apices of the papillæ where there is capillary dilatation.

Treatment :—Psoriasis is a stubborn disease for which the treatment is external :—

℞ Liq. Picis carbonas – ʒ i ; Acetone ... ʒ i

Mix, and dispense in amber-coloured bottle to apply over the scalp.

Any of the following ointments may be used for applying on the body : *viz.*, Antipsoriatic dermose cusi, Anthraline ointment ; Pragmatar ointment or Derobin ointment.

Dr. Goeckerman's method may be used with the following modification : Liq. Picis carbonas is applied externally at night. In the morning this ointment is removed and ultra-violet ray exposure is given. This treatment is carried out for 6 months.

Para-psoriasis :—(*a*) This is a resistant maculo-papular scaly erythroderma. The lesions are persistent and occur chiefly on the trunk and limbs. The varieties are :—(*a*) the guttate variety simulating a syphiloderm, with lesions that are firm and somewhat follicular ; (*b*) the lichenoid variety, with multiform lesions, scaling papules predominating ; (*c*) the erythematous type in which the eruption is more generalized with hyperæmia in the form of a patchy net-work and (*d*) the para-psoriatic plaque in which the patches are well-defined and fawn-coloured. There are no visible scales, nor any elevation of the lesion.

Aetiology :—The cause is unknown. The disease occurs in adults and men are more frequently involved than women. The histological picture resembles that of chronic dermatitis.

Lichen-planus : It has always been a very fascinating disease, with definite characteristic clinical features ; the lesions are multiple, small, flat-topped, angular or polygonal papules often exhibiting a crimson colour ; on the surface of the papules may be seen, on close inspection, minute whitish striæ and lines called Wickham's striæ. Involution of the papules leaves a pigmentation. The lesions are discrete and isolated and the commonest sites are the flexor surface of the wrists and fore-arms and the legs immediately above the ankle, in symmetrical distribution.

The clinical variants are :—(1) The acute generalized type. (2) Lichen planus hypertrophicus showing hypertrophic lesions in the lower extremities. (3) Lichen planus obtusus ; lesions are rounded convex papules, (4) Lichen planus linearis showing linear groups or bands. (5) Lichen ruber moniliformis in which numerous bead-like masses are arranged like a necklace. (6) Lichen planus annularis showing ringed lesions. (7) Lichen planus erythematosus in which the papules are of a deep crimson tint and soft to the touch. (8) Lichen planopilaris of Pringle presenting spinofollicular papules and ordinary plain papules ; itching is absent. (9) Linear and multi-segmented lichen planus presenting the linear distributions of the lesions which are multi-segmental. (10) Mucosal lichen planus affecting the tongue, the inner surface of the cheek, the lips, epiglottis, glans penis and progenital areas, anal and perianal regions. They may be associated with cutaneous diseases. The lesions are of pin-head size and the colour varies with the individual and the areas involved. (11) An unusual variant of the disease, the diagnosis of which presents difficulties, which Dr. Sarat C. Desai calls lichen planus pigmentosus *sine* lichen. The features are a generalized mottled pigmentation of bluish black or slaty colour. During the initial stage, the lesions are faint black erythematous and macular with a distribution on the face and extremities. During the later stages, the whole skin assumes a diffused generalized black or state-coloured pigmentation with intervening areas of normal skin. Some cases may show a prepared appearance due to follicular pigmentation. The itching is either mild or altogether absent.

Histopathology of the skin :—Lichen planus shows the following features :—(1) Hyperkeratosis ; (2) an increase in the thickness of the stratum granulosum ; (3) irregular acanthosis ; (4) a destruction of the basal cell layer and (5) a bead-like infiltrate into the dermis pressing on the epidermis and intruding into it.

Aetiology :—Emotional stress may produce this condition *e.g.*, great anxiety ; some cases are associated with vascular hypertension and infection by a virus is a possible ætiology, which however, still lacks proof.

Treatment consists of :—(1) general measures ; (2) systemic therapy and (3) local therapy.

General measures :—(*a*) Treat the emotional shock with any of the drugs like Equanil, Miltown, Serpasil and chlorpromazine and (*b*) eliminate strong coffee or tea.

Systemic therapy :—Anti-histamines ; 10 injections of Bismuth salicylas in oil, 1 cc. each intramuscularly once a week ; and six injections of Diamine penicillin six lacs each *i.m.* twice a week.

Local therapy :—The following antipruritic application is useful :—

℞

Liq. Picis carbonas	... ʒ i
Menthol	... gr v
Camphor	... gr v
Zinc oxide	... gr v
Acid Carbolic	... gr xx
Hydr. ammon.	... ♏ x
Adepis benzoas	... gr x
Fiat pasta.	... ℥ i

Lichen nitidus.—In this condition small glistening papules which are sharply defined, roughly circular and polygonal in outline are produced in groups. The favourite sites are the genital region, the abdomen, the flexor-surface of the forearms and wrists.

Aetiology is unknown. Histopathology of the skin in Lichen nitidus reveals circumscribed nests of cells, in close contact with the epidermis.

Treatment :—Benzoinated zinc ointment externally and Syrup Ferri iodide internally.

Pityriasis rosea or Gilbert's disease.—This is an acute self-limiting disease characterized by superficial scaling commonly occurring in young adults. The primary lesion is called Herald patch which is oval-shaped with the long axis against dermatomes. The secondary lesions which are maculo-papular appear in a day or two and are called "*Medallions*". They are dry and covered with furfuraceous and somewhat adherent scales. There is moderate itching. Aetiology :-The cause is obscure. *Differential diagnosis* :—Syphilis should be excluded.

Treatment :—In many cases spontaneous cure occurs in about 6 weeks. Mentholated cold creams may be used externally.

Histopathologically, pityriasis rosea is characterized by two features :—(*a*) the epidermis shows spongiosis and is invaded by lymphocytes, and (*b*) the upper dermis shows a marked inflammatory infiltrate.

Pityriasis rubra pilaris.—(*Synonym* : Lichen ruber acuminatus). The papules are minute, hard, dry and pink in colour situated at hairy follicles at the apex of the papule and

surrounding the skin a horny sheath is seen. The palms and soles show different hyperkeratosis. The condition occurs more commonly in men. Vitamin A deficiency is partly responsible for this condition.

Histopathology of the skin :—(1) Follicular hyperkeratosis and (2) Liquefaction-degeneration of basal cells.

Treatment :—Administration of 1,00,000 units of Vitamin A daily, will bring the condition under control.

Dermatological viral diseases fall into five groups : *viz.*, (1) Herpetic infections ; (2) exanthema ; (3) molluscum contagiosum ; (4) warts ; and (5) orf.

Group I.—Herpetic infections include : (*A*) Herpes simplex ; (*B*) Herpes zoster ; and (*C*) Kaposi's varicelliform eruption.

A. Herpes simplex :—The virus produces two types of lesions : *viz.*, a primary infection without neutralizing antibodies recurrent attacks with antibodies. The virus may produce lesions in the skin, mucocutaneous area, mucous membrane and central nervous system.

Histopathological features :—(1) There is true coagulation necrosis in the prickle cell layer of the epidermis ; (2) the vesicles are formed by elevation of the prickle cell layer from the papillary body and (3) minute intranuclear inclusion bodies called Lipschutz bodies are found.

Treatment :—Consists of Zephiran 1 in 1000 externally and the broad-spectrum antibiotics internally.

B. Herpes zoster :—The incubation period is 7 days. The clinical manifestations are groups of vesicles on (1) the neck and shoulder, (2) the trunk and (3) cranial nerves. (*a*) Trigeminal zoster ophthalmicus. (*b*) Facial. Ramsay Hunt's syndrome. There are two types :—(1) primary and (2) secondary following trauma and leukæmia. The skin changes are due to vascular irritation produced by irritation in the posterior nerve roots. Subsequent evidence is in favour of the virus being in the skin itself.

Histopathology :—There is inflammation of the sensory nerve ganglion and posterior nerve root. The epidermal cells show ballooning degeneration. The nucleus of the infected cells show intranuclear inclusion bodies. The complications of zoster are : (1) Post-herpetic neuralgia ; (2) paralysis temporary or permanent and (3) secondary infections in skin lesions. Varicella and zoster are considered to be different manifestations of the same virus.

Treatment :—Consists of Burrow's solution 1 in 20 ; Tetracycline ointment ; and superficial X-ray therapy externally ; Tetracycline, and Vitamin B_{12} 1000 mcg. thrice a week orally.

C. Kaposis varicelliform dermatitis :—Is a disseminated cutaneous herpes simplex and may resemble eczema vaccinatum,

The differentiating points are a history of previous vaccination in eczema vaccinatum; (*b*) histopathological difference is: the inclusion bodies are nuclear in Kaposi's and intracytoplasmic in eczema vaccinatum.

Treatment:—Consists of a mild emollient externally and the broad-spectrum antibiotics internally.

Group II.—*Comprises exanthematous fevers.*

Group III. *Molluscum contagiosum*:—This order is characterized by a varying number of small discrete waxy globular-elevated nodules with umbilicated centres. When fully developed a small amount of curd-like substance can be expressed from the centre of the lesions.

Histopathology:—The epidermis grows into the dermis as multiple pear-shaped lobules. The epidermal cells undergo a peculiar degeneration due to large cytoplasmic inclusion bodies. The molluscum body is an inclusion body. Embedded in the matrix are myriads of elementary bodies analogous to Paschen bodies of variola.

Treatment consists in: making multiple punctures in the lesions, applying green soap, and then Hydr. amm. gr 40 to one ounce, and Trichlor-acetic acid externally; also using galvano-cautery.

Warts of verucae.—These circumscribed papillary growths vary in size and colour and present a sessile base with great pointed tops; several varieties are described. (1) *Verruca vulgaris*:—This occurs on the hands of children over the dorsal surface and on the fingers. Lesion is more common near the nail base. The site of the lesions varies from the size of a hemp-seed to a split pea. (2) *Verruca digitata* occurs chiefly on the scalp, sides of the neck and face, as finger-like projections from the skin. *Plane or juvenile warts* show a raspberry-like appearance. *Plantar warts* resemble a callosity, are painful and interfere with walking. They are surrounded by a horny plate and a keratotic ring. Upon removal of the horny covering the centre is covered by hypertrophied papillae and is very moist and soft. *Ent*[illegible] plantar warts have to be distinguished from corns. Corns [illegible]one-shaped and show hypertrophy of a horny layer.

Condyloma-acuminata are verrucous due to the strains of virus. The chief histopathological features are hyperkeratosis and papillomatosis. In plane warts, the horny layer shows a basket-like appearance.

Treatment of warts:—(1) Contact therapy with roentgen rays. (2) Carbon-di-oxide snow externally. (3) Bismuth salicylate in oil 2 cc I.M. once weekly for 12 injections. (4) Trichlor acetic acid externally and (5) 2% Podophyllin in castor oil externally.

Disease of the sweat glands and sebacious glands.—*Sebacious glands* occur on the skin in all parts of the body except on the palms and soles. They are also present on the vermillion border of lips, glan penis and labia minora. *Seborrhoea oleosa* is a condition of hypersecretion of sebacious glands. The males lose their hairs on the vertex and the females complain that their hair is greasy. Treatment consists in the frequent use of soap and water and of sulphur lotions.

Acne vulgaris is associated with youth and is regarded as a disease of the bloom of youth.

Ætiology:—Predisposing factors are seborrhœic diathesis and endocrinal imbalance. Exciting factors are the acne bacillus and the staphylococcus. Sex incidence is equal in males and females. The lesions are black-heads and pustules giving a worm-eaten appearance.

Treatment:—Correct the anæmia and also give vitamin *A*. Correct constipation and also give vitamin *C*. Never use any greasy applications but use only the following:—

Take exercises to improve the general health. Give endocrines: Stilbœsterol 0·5 mg. daily for 6 weeks to males and for 10 days to females for three such periods after cessation of the menstrual flow.

℞			
	Zinc sulphate	...	gr. xii
	Pot sulphurata	...	gr. xx
	Acetone	...	℥ ii
	Aq Rosae	...	℥ i

Ft. lotio

Seborrhoeic dermatitis:—*Dandruff* is a condition in which scaling of the scalp occurs. They are simple flakes of the horny layer. Itching produces secondary infection. Three diseases produce crown on the scalp, *namely*:—Seborrhœa, syphilis and psoriasis. The seborrhœic lesion may spread to the body producing seborrhœic dermatitis.

Ætiology:—Emotional instability, endocrine dysfunction and infection with pityrosporon mollasez are causative factors.

The histological picture is half-way between psoriasis and dermatitis.

Treatment:—The head should be shampooed with soap and spirit or selenium sulphide (Selsun or sudermo). The following lotion is useful for the scalp:—

℞			
	Salicylic acid	...	gr. xx
	Hyd perchlor	...	gr. ½
	Ol Ricini	...	♏ v
	Ol Lavender	...	♏ v
	Spt Methylated	...	℥ i

Ft. lotio

For seborrhoeic dermatitis ½% Hydrarg-ammoniata is used.

The patient should be instructed to take to a low fat diet; *Vitamin B* complex, especially riboflavin does good; antibacterial measures consist of penicillin and broad-spectrum antibiotics which control

secondary infections. Thyroid extract in fractional doses has been found to do good. Psychiatric therapy and drugs like *Meprobamate* are also effective.

Diseases of the sweat glands.—*Hyperhidrosis* is excessive sweating which may be generalized or localized. The localized increase of sweating in the palms and soles is important from the dermatologist's point of view. It is a great nuisance to society, since the sufferer has to hide his disease, and cannot *shake hands with friends. Emotional instability* initiates an *attack which gets aggravated in turn.* The duration of the sweating varies with the degree of emotional stress. This disease illustrates the truth of the aphorism that "the skin is the mirror of the mind." *Control measures*:—Anticholinergic drugs are helpful, *e.g.*, Centil tablets or Elixir pamine; topical application of 1% Scopolamine hydrobromide; and the use of general sedatives like Meprobamate, chlorpromazine and reserpine has been found to be beneficial.

Bromidrosis:—Is excessive coloured sweating in the axilla due to over-activity of the apocrine glands. Treatment is similar to the former.

Sudamina:—Is a condition in which the opening of the sweat pores are obstructed producing the appearance of grains of sago. It occurs in acute febrile diseases. The external application of mineral oil is effective.

Tubercular diseases of the skin.—Comprise (*a*) primary tubercular complex; (*b*) secondary cutaneous tuberculosis and (*c*) tuberculids.

(*a*) *Primary tubercular complex*:—The histological picture resembles non-specific inflammation; the lesion is at first a papule which slowly gets ulcerated.

(*b*) *Secondary or reinfection tuberculosis*:—Lupus vulgaris. The lesions are small, yellowish-white at the periphery. The lesion when pressed with a diascope produces an obliteration of erythema.

Tuberculosis verrucosa cutis:—Are warts infiltrated are sharply demarcated; tubercles are more numerous in this lesion than in lupus vulgaris. *Scrofuloderma*:—There is involvement of the skin from tuberculosis of the lymph nodes. *Tuberculosis cutis orificalis*:—There is tubercular infiltration around the mucous membrane of the mouth with virulent internal tuberculosis.

(*c*) *Tuberculids*—These lesions are produced in patients possessing a hæmatogenous dissemination of tubercle bacilli with immunity to tuberculosis. They are of 5 types:—(*a*) *Lichen scrofulosorum*, pin-head-sized papules; (*b*) *Rosacea-like* tuberculid of Lewandawsky producing rosacea-like lesions on the

periphery of the face. (*c*) *Lupus miliaris disseminated facei* are firm discrete papules occurring on the face; (*d*) *Papulonecrotic tuberculids*, indolent inflammatory papules coming in crops undergoing central necrosis occurring on the face and extremities, and (*e*) *Erythema induratum*, deep-seated lesions on the calf which ulcerate producing punched-out lesions.

Therapy in cutaneous tuberculosis:—Intralesional and intramuscular streptomycin 0·5 g. each, thrice weekly for three months produces very good results. Isoniazid 6 mg. per kg. of bodyweight per day for four months produces good clinical response.

The chronic vesiculo-bullous lesions include.—(1) Pemphigus and (2) Dermatitis herpetiformis.

1. *Pemphigus* is essentially a bullous disorder.

Ætiology:—The cause is still not definitely known but the following theories have been put forward *viz.*: (*a*) Retention of salt theory of Lever. (*b*) Toxic theory of Pels. (*c*) Bacterial theory of Wælsch. (*d*) Viral origin of Urbach. And the opinion of (*e*) Maccardle that hyaluronic acid binds water, holding it as a gel. The hyaluronidase produces bullæ by hydrolysis of hyaluronic acid leaving the water of the gel as a blister fluid.

Histological features in pemphigus vulgaris:—There is loss of coherence between the epidermal cells called acantholysis. The floor of the bullæ show basal cells. The liberated cells move about. Their cytoplasm becomes homogeneous and the nucleus is broken. These are Tzanck cells. The lesions in pemphigus vulgaris are essentially bullous. The bullæ occur in successive crops characteristically arising from the normal skin. It is possible to detach the area by movement. In pemphigus foliaceus, the bullæ rupture, leaving flaky crusting. *Pemphigus vegetans*:—The lesions are initially bullous but finally vegetative plaques occur.

Pemphigus erythematosus:—This is of a benign chronic type. There are erythematous patches and bullous lesions. In the management of pemphigus, steroids and corticotropin have been found to be effective. The present day treatment is 30 mg. of prednisolone daily in divided doses. Germanin or Bayer 205 or Suramin is given commencing with 0·2 g. and increased by 0·2 g. till 1 g. is reached with an interval of three days. Locally antibiotics in saline or Efcortin lotion has been found effective.

Familial chronic pemphigus of Hailey and Hailey:—It is a familial affection producing bullous and vesicular lesion. The sites are the neck axillæ and other flexures. Histopathologically there is a bulla which is in the centre, subepidermal and intraepidermal at the peripheral area. No Tzanck cells are seen.

Treatment:—Is similar to other types of pemphigus.

Dermatitis herpetiformis is a rare cutaneous disorder showing vesicles, bullæ, papules and pustules. The eruptions are symmetrical and occur in successive attacks. The eruptions are multiform with constant itching, burning and pricking.

Its ætiology is not known. Fright, anger and nervous shock are regarded as causative factors. Duhring states that the disease, is due to various obscure causes.

Histologically :—The subepidermal bulla shows a number of eosinophils.

Treatment :—Consists of Pusey's lotion externally autohæmotherapy and Fowler's solution internally, also prednisolone internally.

Pusey's lotion contains :—

℞	Tragacanth	...	ʒ i
	Phenol and glycerine *aa*	...	♏ x
	Zinc oxide and Calamine prep		ʒ i
	Olive Oil	...	℥ iv
	Aqua ad	...	℥ xvi

Alopecia or baldness.—(1) *Alopecia* areata or patchy baldness is characterized by loss of hair in circumscribed areas. Septic foci contribute to its causation. Dr. George Thin isolated a bacterium called B. decalvans in this condition. A contraction of capillaries due to autonomic imbalance is another possible factor. Vague neurotic sensations precede the loss of hair. In the patches, the hairs at the spreading borders leave stumps producing the so-called marks of exclamation.

Treatment :—(i) Attention to focal sepsis; (ii) locally stimulating lotions containing Hydr. perchlor. Tr. Jaborandi, Spts. Rosemarini, and Tr. Cantharides etc.; (iii) Alopecia areata responds to ammoidin-ammidin paint and U.V.R. exposures; (iv) local hyperæmia may be produced by milk-injections intradermally; and (v) attempts are being made to produce regrowth of hair by the administration of ACTH or Cortisone but the effect has not been sustained.

(2) *Pseudopelade of Brocq* :—There are circular or oval patches with atrophy of the skin, in that area. The skin is thin, atrophied and translucent suggesting onion skin. The ætiology is not known. Treatment has little effect. *Folliculitis decalvans* or scar-leaving alopecia, is bacterial in origin.

Lupus erythematosus.—The skin lesions are characterized by scarring, erythema and centrifugul spread; there are two varieties *viz.*, a localized, chronic discoid type and a generalized one, acute or subacute.

Ætiology and pathogenesis :—(1) Infections including tuberculosis. The disease has been associated with tuberculosis, pneumonitis etc.; (2) endocrine factors. As the disease occurs within the actual phase of sexual life, an endocrine cause is possible; (3) allergy and hypersensitivity. Angeitis occurs as a result of hyperglobulinosis and (4) systemic lupus erythematosus has been attributed to collagenosis. Males are very commonly affected, and the maximum age is 30 years. The clinical manifestations are :—(1) Arthralgia has been noted in S.L.E. (2) The lupus erythematosus lesions affect precisely those areas of the skin supplied by atonic vessels *namely*, flush area of the face, the inner triangle of the neck, the palms and soles the dorsa of hands, the ears and buttocks. Three cardinal features are erythema, scarring and centrifugal spread. Examination with the hand lens shows a characteristic stippling.

The S.L.E :—Apart from skin manifestations, arthralgia and fever, the other principal manifestations are cardiac, renal, splenic, retinal and hæmatological. The *heart* shows flat warty vegetations in the endocardium of the tricuspid *i.e.*, verrucous endocarditis. The *renal* manifestations are a thickening of the basement membrane of the glomerular capillaries giving a bent-wire appearance, the so-called wireloop capillaries. The *spleen* shows periarterial fibrosis; the *retinal* manifestation is the small fluff of exudate causing the so-called cytoid bodies seen on fundus examination. The *haematological* manifestations include: (*a*) anæmia which is usually normocytic, normochromic but may be hæmolytic; (*b*) leucopænia; (*c*) thrombocytopænia; (*d*) the L.E. cell phenomenon : plasma from heparinized peripheral blood from acute lupus erythematosus mixed with heparinized normal bone-marrow shows a rosette-shaped arrangement of L.E. cells and (*e*) hyperglobulinal.

Treatment :—*Local* :—Sun-screen type of ointment containing sodium para-benzoic acid may be used. Cortisone ointment is also good.

Systemic :—(*a*) ACTH 40 mg. intravenous in 5% glucóse, daily; (*b*) Chloroquine diphosphate 250 mg. twice daily for two months.

Conclusion.—An attempt has been made in this article to give a detailed account of various dermatological conditions. The subject is certainly fascinating, and there is ample scope for sustained study and research.

"Who loves not knowledge? Who shall rail
Against her beauty? May she mix
With men and prosper! Who shall fix
Her pillars? Let her work prevail."

THE SKIN'S REACTIONS TO LIFE'S STRESSES

C. S. Wright (*Arch. Dermat.*, June, 1957) states that stress factors are commonly present in psychogenic pruritus, which may be generalized or more commonly localized to erotic areas such as the vulva, perineum or anus. In neurodermatitis and atopic eczema, stresses are only one component in the total of ætiological factors. *Alopecia areata* at times seems

related to stress. Anxiety is known to cause hyperidrosis, predisposing to *tinea pedis* or a clinicallly similar condition of the hands, both of which may render a man unfit for work involving contact with potential skin irritants. Dysidrosis and pompholyx may be associated with stress. In cases of urticaria, particularly the chronic variety, stress seems to be the initial trigger mechanism. The gastro-intestinal disturbances that are believed at times to play an important role in rosacea may be partly dependent on stress factors. There are numerous other dermatoses in which stress factors are believed to play at least a partial role in causing or continuing the disease, such as *lichen planus*, psoriasis, *acne vulgaris*, and *lupus simplex*. When a stress factor may be present, the importance of history taking cannot be over-emphasized, and sufficient time must be allotted for this at the initial visit to clarify the ætiology and make the patient realize that the physician is taking a deep interest in his case. While an attempt is made to overcome the patient's anxieties, sedatives and tranquilizers may be helpful, but their limitations must be understood. —(*The Med. Jour. of Australia*, Nov. 1957).

POSTOPERATIVE HYPOTENSION

Hypotension, defined either as systolic pressure below 90 mm. Hg. in an initially normotensive patient or as systolic pressure more than 40 mm. below the preoperative readings in a hypertensive patient, developed in 180 out of 5,463 patients observed in a hospital recovery room. Onset of hypotension could usually be explained as cardiovascular, respiratory, pharmacological, neurogenic, hæmatologic, or humoral in origin, and consideration of these six possibilities was helpful in deciding on appropriate treatment. Four cases are cited to illustrate, respectively, the possibilities of cardiovascular origin (myocardial infarction during operation), pharmacological origin (cyclopropane and muscle relaxants), neurogenic origin (genitourinary surgery), and humoral origin (interruption of long-continued hormone therapy). In the fourth case recognition of the cause led to the administration of hydrocortisone intravenously with prompt restoration of a normal blood-pressure. Drs. Barbour and Little of Hartford believe, however, that the most common cause of post-operative hopotension is that group of hæmatological factors which include transfusion reactions, hæmolysis due to distilled water during transurethral resections, and acute or chronic loss of blood.—(*The Journal of the American Medical Association*, 23-11-1957).

CHANGES IN CIRCULATION CONSEQUENT TO MANIPULATION DURING ABDOMINAL SURGERY

The common response to intra-abdominal manipulation during operation, as observed in this study, was arterial hypotension, in most instances accompanied by slowing of the pulse rate. These changes were detected in 55 of 68 patients studied by recording intra-arterial and œsophageal pressures and by taking electrocardiograms and electroencephalograms. The circulatory alterations had the characteristics of a reflex; they seemed most profound in the "poor risks" and were increased by deeper levels of anæsthesia.

Further work must be directed toward discovering ways to eliminate these circulatory responses, either pharmacologically or with specific anæsthetic agents and techniques.—(*J.A.M.A.*, *164*: 14, 1957, via *Int. Jour. of Surgery*).

Cases and Comments

COMBINED CHLOROQUINE-HYDROXYQUINOLINE THERAPY IN AMŒBIASIS

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CHRONIC amœbiasis is apparently a very common condition in our country. Clinicians are inclined to consider that a large number of cases of intestinal disorders *e.g.*, recurrent diarrhœa, troublesome flatulence, colicky attacks of pain, postprandial diarrhœa etc. are manifestations of chronic amœbiasis. Repeated stool examinations are however, usually negative so far as the Entamœba histolytica is concerned. Sigmoidoscopy reveals a granular appearance of the mucosa, indicating past inflammation but no active ulceration. Barium and charcoal meal studies usually indicate hypermotility of intestinal musculature. Barium enema studies usually reveal loss of haustration of terminal colon and spasm of the colon. Misra aud Samant (1950) and Misra (1953) have demonstrated in these cases, a large increase in the viable count of the fæces. Finally they have found that any preparation containing sulpha-group or broad-spectrum antibiotics helps a great deal in these cases, chiefly by lowering the intestinal flora. For long-range treatment they advocated a low-pressure normal saline-cured enemata, along with a low roughage diet. They have labelled such cases as "Post-dysenteric colitis."

Many workers have reported some liver dysfunction in such cases (Wahi and Tandon, 1955 and Kasliwal and Bhatia, 1956). It has, therefore been thought desirable in such cases to combine chloroquin with hydroxyquinoline with or without sulphadiamine. The paper reports a series of cases so treated.

Material and methods.—Patients attending the medical outpatient wards, and those admitted to the medical wards of the Gandhi Memorial and Associated Hospitals were examined during the period August 1,1956—July 31,1957. A total of 130 cases were studied of whom 79 were inpatients and 51 were outpatients.

The diagnosis of amœbiasis was made on the following criteria:—(1) Careful history taking and clinical examination; (2) laboratory investigations including repeated microscopic examination of stools; (3) sigmoidoscopic examination with microscopic examination of smears obtained from sigmoidoscopy and (4) radiological investigations:—barium enema; screening

to note any hepatic enlargement and subdiaphragmatic adhesions on the superior aspect of the liver.

Results and analysis:—*Classification of cases*:-The 130 cases in the present series may be divided into two groups:—Group I, 40 cases presenting with a rapid onset of symptoms of *less* than 4 weeks' duration and Group II, 90 cases presenting with an insidious onset of symptoms of *more* than 4 weeks' duration.

Clinical features:—A. Symptoms.—(1) *Past history*:-Past history suggestive of amœbiasis could be obtained in 107 cases (82·31%). Fourteen cases (10·78%) of Group I, and 9 cases (6·92%) of Group II gave no past history amœbiasis. (2) *Diarrhœa*:-This was the presenting symptoms in 61 cases. The frequency of motions varied from 4 to 15 per day. In all these cases mucus was present in the stools. 10 cases belonging to Group I had both blood and mucus in the stools. (3) *Pain in the abdomen* was a marked feature in 112 cases (86·15 %). The duration varied from 7 days to 20 years. The character of the pain was dull, diffuse and persistent in 97 cases (86·61%) and colicky in 15 cases (13·39%). (4) *Anorexia* was a prominent feature in 67 cases (51·54%). (5) *Loss of weight* was present in 65 cases (50%). (6) *Flatulence* was a troublesome feature in 57 cases (34·61%). (7) *Low grade fever* was seen in 45 cases (34·61%) and (8) *Constipation* was present in 32 cases (24·61%).

B. Physical signs.—(1) *Tender hepatic enlargement*:—Was present in 72 cases (55·38%). The size of the enlargement may be graded as follows:—Less than 1 finger below right subcostal margin in 39 cases (54·03%); between 1 to 3 fingers below subcostal margin in 26 cases (36·39%); more than 3 fingers in 7 cases (9·58%). (2) Tenderness in the left ileac fossa was present in 79 cases (60·77%). This was more marked in cases of Group I.

C. Laboratory investigations.—(1) *Stool examination*:—Active Entamœba histolytica was not seen in any; Entamœba histolytica cysts were seen in 6 cases (4·61%); pus cells in 102 cases (78·46%) and no abnormal findings in 22 cases; (16·93%). (2) *Leucocyte count*: (*a*) It was 15,000/cmm. in 18 cases (13·85%). between 10,000 and 15,000/cmm. in 34 cases (26·15%); between 5,000 and 10,000/cmm. in 71 cases (54·62%); and below 5,000/cmm. in 7 cases (5·38%). (3) *Haemoglobin estimation*:—Hb. was above 9·0 gm. % in 97 cases (74·62%); between 5 and 9 g. % in 25 cases (19·23%) and below 5·0 g. % in 8 cases (6·15%).

D. Sigmoidoscopic examination was performed in 79 cases. Patients attending as out-patients were not subjected count to this investigation. In-patients on whom this was not performed were either in a low state or they did not co-operate. Marked congestion was observed in 56 cases (70·88%); ulceration in 13 cases (16·45%) and normal mucosa in 10 cases (12·67%). Cases which were normal on sigmoidoscopic examination

belonged to Group I in whom examination was performed after the subsidence of symptoms. Examination of smears after sigmoidoscopy revealed:-active E. histolytica in 3 cases (3·79%); cysts of E. histolytica in 7 cases (8·86%); pus cells and R.B.C's. in 60 cases (75·96%) and no abnormal findings in nine (11·39%).

E. Screening was done as a routine in all the 130 cases. The findings noted were as follows:—Raised right dome of diaphragm was found in 46 cases (35·38%); with limitation of movements in 33 cases and without limitation of movements in 13 cases. Same changes were found in the contour of the right dome of the diaphragm in 27 cases (20·77%)—with limitation of movements in 7 cases and without limitation of movements in 20 cases. Haziness of right costophrenic angle was noted in 5 cases (3·85%); and normal in 52 cases (40·00%).

F. Barium enema studies.—were undertaken in 57 cases in the present series. Loss of haustration of terminal colon was seen in 39 cases (68·42%); spasm of colon in 14 cases (24·56%) and normal appearance in 4 cases (7·02%).

G. Liver biopsy was done only in three cases. No abnormality was detected.

Treatment:-Two combinations were tried:-(1) *Combination 'A'* Chloroquin phos. 75 mg.; Iodochlorhydroxquinoline 250 mg.; Sulphadiamidine 500 mg. per tablet and (2) *Combination 'B'* Chloroquin phos. 75 mg.; Iodochlorhydroxyquinoline 75 mg.; Diodohydroxyquinoline 250 mg. per tablet. Combination 'A' was tried in a dosage of two tablets twice a day for ten days on 79 cases—27 of Gr. I and 52 of Gr. II; while combination 'B' was given in a dosage of two tablets thrice a day for ten days, to 51 cases—13 of Gr. I and 38 of Gr. II.

Results of therapy.—*Symptomatic relief*:—The improvement was judged by asking the patient as to how many annas he had improved in a rupee (Rupee is the standard Indian coin which contains 16 annas) *i.e.*, 4 annas improvement meant 25%, 8 annas meant 50% and so on. *Diarrhoea* was controlled in all the 61 cases which had it.

It is evident from Table No. 1 (See *p. 296*) that combination 'A' elicited a quicker response in the control of diarrhœa than combination 'B'. This was more marked in cases of Group I.

Loss of weight:—All but 14 cases gained some weight at the end of the present *regime*. *Fever* still persisted at the end of the therapy in 8 out of 45 cases, which had a low grade fever. *Constipation* was not relieved in 4 out of 32 cases. *Relapses* occurred in 15 patients within a period varying from 2 to 8 months. Among these, three cases belonged to Group I, treated with combination 'B.' Among 12 cases of Group II who had relapsed, 8 had been treated with combination 'B' while 4 had been treated with combination 'A.' *Toxicity*:—The toxic features noted in the present studies were:—Giddiness in 4; nausea in 9; abdominal pain in 2; and anorexia in 6 cases. The total number of cases that exhibited any one or a combination of the toxic symptoms was only 13 (10·00%). In none of the cases did the symptoms warrant a discontinuation of the therapy.

TABLE 1

Control of diarrhœa in present series—Comparative study
Total 61 Cases

Time of improvement after therapy	GROUP I Combination A	GROUP I Combination B	GROUP II Combination A	GROUP II Combination B
1. Control within 72 hours	16	5	5	1
2. Controlled in more than 3 but less than 5 days	11	8	7	4
3. Control in more than 5 but less than 7 days	0	0	1	3
Total	27	13	13	8

TABLE 2

Relief of other prominent symptoms

Symptoms	Complete cure	more than 75% relief	50 to 75% relief	Less than 50% relief	No relief	Total
1. Pain in the abdomen	31 (27·68%)	40 (35·72%)	19 (16·96%)	10 (8·92%)	12 (10·72%)	112
2. Flatulence	12 (21·05%)	14 (24·56%)	17 (31·75%)	5 (8·77%)	9 (13·87%)	57
3. Anorexia	28 (41·79%)	15 (22·39%)	7 (10·45%)	5 (7·46%)	12 (17·91%)	67

Conclusions.—(1) Over-all symptomatic relief was obtained in 76·25% of cases in the present series. (2) 11·54% cases showed a relapse within 2 to 8 months. (3) The drugs were very well tolerated. The toxic features were of a very mild degree in ten per cent of cases. (4) Combination 'A' was more effective in cases of sudden onset with short duration than combination 'B.' Symptomatic relief was quicker in cases treated with combination 'A' than combination 'B' The relapse-rate in cases treated with combination 'A' was 5·06% as compared with 21·57% in those treated with combination 'B.' It is regretted that controls were not run in this study. (5) The very small number of cases showing active or cystic E. histolytica in repeated stool examinations is noteworthy. This would mean that in the majority of cases, the diagnosis of amœbiasis was only presumptive.

Acknowledgement.—We are grateful to M/s. Unichem Laboratories for their liberal supply of the above combinations A & B used in this study, under the trade names of Unidys Compound and Unidys respectively and for instituting a Fellowship for the present study. Our thanks are due to Dr. Ajai Shanker, M.D., Resident Medical Officer *cum* Tutor of Unit II, for his valuable suggestions during the trial of the above drugs. Mr. R. P. Srivastava, Laboratory Assistant kindly helped us in the laboratory studies of the cases.

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HODGKIN'S DISEASE

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Sangli

THE peculiar disease first described by Hodgkin of Guy's Hospital in 1832, is always of interest to the clinician; especially for differential diagnosis in cases of lymphatic enlargements in the body. It is of even greater interest to the pathologist and it occupies the place on the 'borderland dim' between inflammation and tumours which renders a reasoned judgement a matter of peculiar difficulty.

It is customary to think of the cervical nodes as being most frequently involved. But, Symmers, from an unusually extensive autopsy experience is of the opinion that enlargement of the abdominal or abdominal and thoracic nodes are more frequent.

AETIOLOGY :—The incidence is twice as common in males as in females. It may involve any age from 6 to 60 years. But, it is common in the 2nd and 3rd decades of life. No definite cause is known as yet since the recognition of the disease, though several views on the nature of the disease have been put forward by different workers.

I. Thus, Carl Sternberg (1898) advanced the view that it is only a special form of tuberculosis. In many cases he found tuberculous lesions associated with those characteristic of Hodgkin's. But this view fell into disrepute, when in 1902 Frankel and Much, using the anti-formin method, demonstrated a granular Gram-positive bacillus which they regarded as the non-acid fast tubercle bacillus. Ewing says "Tuberculosis follows Hodgkin's disease like a shadow" which was demonstrated in an autopsy finding of a phthisis case. He examined three bronchial nodes: (i) the first of which showed miliary tuberculosis; (ii) the second, a diffused lymphocytosis and (iii) the third was typical of Hodgkin's disease. The absence of the tubercle bacillus means little, for it cannot be demonstrated even in many tuberculous lymphomas.

II. "Specific infective granuloma of unknown origin" is another view. The diversified cytological picture, the necrosis, the subsequent fibrosis are all in favour of this idea. The tubercle bacillus or diphtheroid bacillus isolated by Bunting and Yates (1913) may be a causative factor.

III. Neoplastic. Mallary and Warthin regard the condition as a form of lymphoblastoma. The mere fact that the lesions of Hodgkin's disease may show an infiltration cannot be taken as a proof of its neoplastic nature, for a similar tendency may be seen in tuberculosis, syphilis and actinomycosis.

DIAGNOSIS :—The disease presents itself in diversified forms which make its diagnosis still more difficult.

1. *The acute form* shows a widespread enlargement of the lymph nodes, though not big in size; also a very rapid progress,

leading to death within a few weeks. Pel-Ebstein type of fever suggests that the diseases progress rapidly.

2. *Localized* :—(*a*) Cervical, common site, is easier to diagnose than other forms; (*b*) mediastinal; and (*c*) abdominal—superficial nodes escaping completely. The symptoms are varied. Abdominal pain, jaundice, diarrhœa, ascites, splenomegaly and hepatomegaly. Cases have been mistaken in the early stages for appendicitis, typhoid fever, tuberculosis or liver abscess and in later stages for malignant growth. (*d*) *Splenomegalic type*—Primary involvement of spleen is very rare; it is involved secondarily in 60 to 70% of cases.

3. Bone marrow and periosteum are very rarely involved.

4. The gastro-intestinal form may end in fatal hæmatemesis.

Laboratory aids in diagnosis.—1. *Blood* :—W.B.C. count shows leucocytosis with eosinophils and leucopænia in the later stages; and R.B.C. count shows anæmia in the later stages.

2. *Gorden's test* :—Emulsion of the gland when injected into rats gives rise to meningitis; this depends greatly on the eosinophil content of the gland.

3. *Biopsy* :—Microscopic picture—proliferation of reticulo-endothelium; karyokinetic changes are infrequently found; and Dorothy-Reed multi-nuclear giant cells.

Case reports.—R.B.K., aged 35 years, fairly built and nourished, with no previous history of any illness of importance, came on 8-10-'56 with a complaint of pain in the abdomen, more marked in the epigastric region and after food; also general heaviness in the abdomen, all of one month's duration.

Local examination :—Revealed a firm mass in the epigastric and left hypogastric region, multiloculated extending up to the umbilicus; margins not clearly defined; tender on deep pressure. Liver, and spleen not palpable, nor any other gland.

Investigations :—*Blood* :—W.B.C. 8600 per cmm. Polymorph 78%; lymphocytes 17%; eosinophils 4%; and basophils 1%; R.B.C. 3·6 mil/cmm. Hæmoglobin 70%.

Nothing abnormal was seen in the urine or stools, nor in the cardiovascular system.

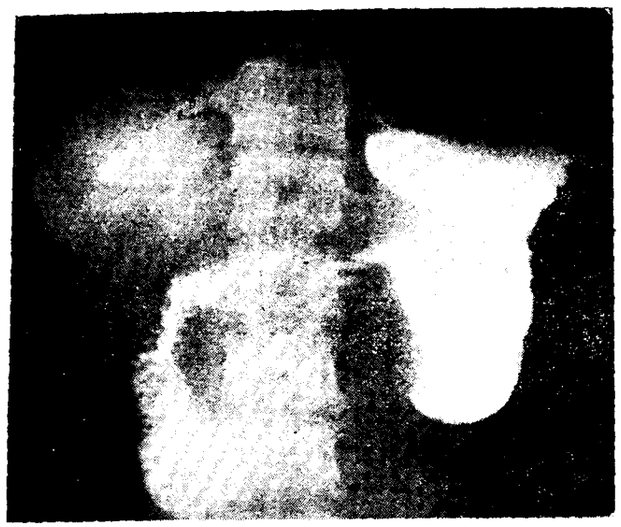
Screening of the chest showed early emphysematous changes, but no mediastinal glands were visualized.

X-ray of the stomach and duodenum after barium meal :—X-ray showed persistent uniform pressure on the stomach from the duodenal side. Duodenal cap was not well-marked. The stomach was normal in size and shape.

On corroborating all the findings, a laparotomy was decided upon in order to see actually what the tumour was like.

Laparotomy :—Numerous glands of varying sizes were seen in the retroperitoneal spaces and mesentery and extending on

either side of the vertebral column from behind the stomach to the sacral promontory. They were discrete, kidney-shaped and of rubbery consistency.

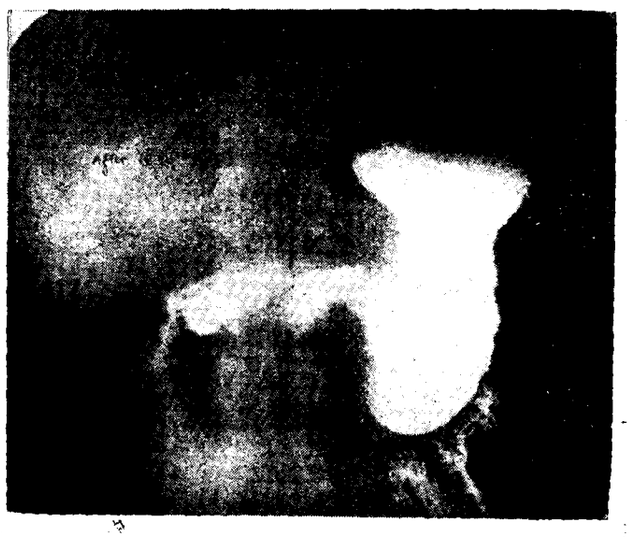


Immediately after barium

Biopsy report.—*Macroscopy* :—The specimen is an enlarged kidney-shaped lymph-node 3·3 x 2·3 x 1·7 cm. in size, moderately firm. The sectioned surface comprises homogeneous mottled pink tissue.

Microscopic :—Exhibits very marked hyperplasia almost entirely of reticulo-endothelial tissue, which had in large part replaced the normal lymphoid tissues. However, the latter were not completely effaced, as small space follicles were still found.

The sinuses were not obliterated and contained numerous reticulo-endothelial cells and a moderate number of neutrophils. The reticulo-endothelial cells exhibited enlarged hyperchromatic nuclei, but mitoses were rare and abnormal forms such as Dorothy-Reed cells were not seen.



After 10 minutes

Finding :—Reticulo-endothelial lymphoma, probably of Hodgkin's type.

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Editorials

THE FOURTEENTH T. B. WORKERS' CONFERENCE, MADRAS, 1958

THE XIV Tuberculosis Workers' Conference which was held at Madras earlier this year was a momentous session at which numerous delegates from all over the country were present and several important papers were read and discussions relating to the practical aspects of tuberculosis control were initiated.

Dr. P. V. BENJAMIN, the Technical Adviser to Government, in his brief but impressive survey of tuberculosis work in India traced the progress of the work from the pre-independence era down to the present day. He referred to the expansion of the B.C.G. Vaccination programme on a mass scale, the establishment of T.B. clinics and training centres, the expansion of domiciliary service facilities, the provision of additional beds especially for the isolation of those living in crowded areas and the establishment of After-Care and Research Centres. The most important activity during the last 3 years is the planning of the country-wide survey of the incidence of tuberculosis by mass-minature-radiography which began to function in 1955 in six selected centres, where over 1,30,000 persons had been examined up to January 1957. Such surveys in other parts of the world have shown the existence of nearly ten times more cases in the population, than what the routine clinical examinations of cases coming for treatment revealed. In the limited survey so far carried out in India, it has been found that the incidence of lung tuberculosis varied from 7 to 30 in 1,000 population, the males being more frequently affected than the females and that there were no marked differences in the incidence of the disease in villages, towns and cities. This type of survey was recommended by the International Conference held at Delhi in

Discussion.—This case is interesting as it clinically presented an absolutely different picture. At first it was thought to be a mass of tuberculous glands and the patient was put on anti-tubercular treatment, without any benefit.

After 15 days of this treatment the mass became matted and an X-ray picture gave the appearance of some growth from the medial side of the duodenal wall; this was suspected to be a pancreatic cyst or growth, which was cleared only on laparotomy.

It was later elicited from his relations that he developed glands in the neck and axilla afterwards, had hæmatemesis and died on the first of February 1957.

Here are two more cases seen during my housemanship days.

(1) A male, aged about 30 years came in with a matted mass in the left inguinal region and with a history of fever and cough. He was clinically put on anti-tubercular treatment. After 15 days, he started getting high temperature, which then resembled typical Pel-Ebstein type. Hence biopsy from the glands was taken which showed a picture of Hodgkin's type. The patient developed ascites in a fortnight and died in about a month's time.

No other gland nor the spleen was palpable. The blood did not show any leucocytosis or eosinophilia.

(2) A girl, aged 18 years, had enlarged lymph glands in the left cervical region which had a discrete and rubbery feel. W.B.C. showed a slight leucocytosis with eosinophilia. Nothing abnormal was found in the chest examination no history of cough or fever; any family history of tuberculosis. Her condition was clinically diagnosed as Hodgkin's disease and she was put on Nitrogen mustard, but was discharged soon after. She came to the hospital again after about a month for the same complaint and a biopsy was taken from the glands, which showed a typical picture of tubercular lymphadenitis and hence she was put on anti-tubercular treatment, to which she responded well.

Treatment of Hodgkin's disease:—Deep X-ray therapy is a temporary palliative, and Nitrogen mustard gas, is the other drug.

Drugs which are lethal to the growing reticular cells are harmful also to the normal tissues.

Hence we are not in a position yet to give any definite line of curative treatment for the disease.

Acknowledgement.—I am very thankful to Dr. W.A. Cecil, Superintendent, Mission Hospital, Miraj, for allowing me to make use of the hospital records. I am also thankful to Dr. Desai, M.D., Dr. Diwan and Dr. Khanapurkar, for help in the preparation of the case reports.

REFERENCES:

1. Russel and Cecil—Textbook of Medicine.
2. Boyd—Textbook of Internal Pathology.

January 1957 to be adopted as a model to be adopted by the under-developed countries of South-East Asia. Some of the more important aspects of this report which was considered by the Delhi Conference were brought up at the Technical Scientific Session during its 3-day sittings at Madras.

Sri D. P. Karmarkar, Union Health Minister, in his address to the Conference, stressed the need for a greater measure of co-operation between the public and Governments in the prevention and control of the disease by establishing new centres for treatment or contributing funds for the development of existing institutions. Mr. Karmarkar did not exaggerate when he referred to the importance of measures such as better housing and nutrition. The aid that is being given by Governments for the construction of houses for low-income groups, and the improvement of slums is valuable, though it needs to be greatly increased.

There are now over 23,000 beds for tuberculosis patients, in hospitals, which represents one bed for every 106 persons suffering from the disease; yet the number of beds is 17,000 more than 11 years ago. The number of tuberculosis clinics has increased from 103 in 1947 to 200. New training and demonstration centres have also been established; and protective inoculation is being carried out more extensively. Besides continuing to build on existing foundations, tuberculosis workers are seeking new fields. A promising activity begun in recent years is domiciliary treatment, under the supervision of clinics equipped with X-ray units and laboratories. "There is great need for such comparatively inexpensive treatment as there are few hospitals and sanatoria," said Sri D. P. Karmarkar, and "even when more medical institutions come into existence, domiciliary treatment will be a great boon, particularly to patients belonging to the poorer classes." They could, by staying at home, and not in hospital, help in the work of their families, whereas long separation from home might mean unhappiness or disruption of domestic life.

The presidential address of Dr. K. S. Sanjivi revealed a wonderful grasp of the problems which confront tuberculosis workers in India and his analysis of the situation was as thorough as it was realistic. Dealing with the problem of primary infection he advocated the exclusion of the open case as the first essential step in control; this can be effected "by segregating the open case by removing the child from the patient's home as in the Grancher system and by rendering the open case sputum-negative by adequate treatment." He then outlined the plan to be adopted by the local isolation hospital with the extremely limited funds available but with the fortunate help of modern developments in therapy. He entered a strong plea for the slogan "*Scrap the waiting list.*"

Besides mass-miniature-radiography surveys, Dr. Sanjivi advocated the routine X-ray examination of every new case admitted in the general hospitals, particularly into the medical wards and of every patient above the age of 15 consulting his doctor for any ailment, without cost to himself as an effective case-finding programme. Regarding B.C.G., after discussing the rationale and benefits of this vaccination, he referred to the new developments, reported by the Medical Advisory Committee of Research Foundation in the U.S.A., who endorse the American Trudeau Society's recommendation that "B.C.G. should be used for vaccinating infants and children in areas of high prevalence and for those who may be unavoidably exposed to infectious patients." The third and last method of dealing with primary infection is to *treat it* as soon as it occurs with drugs singly or in combination. He was against accepting the tempting suggestion which had been made on the basis of certain limited animal experiments, that 'every Mantoux-converter should be treated with INH as being a better programme of T.B. control than B.C.G. vaccination; and that such extensive use of INH in primary infections, finds the greatest application in under-developed countries like India.' His objections to the acceptance of that suggestion with which we are inclined to agree, are as under :—

"How are we going to find out when a person gets a primary infection? Have we got the means of carrying out repeated Mantoux tests in children right from the time of birth? Then there is the problem of the low-grade reactor, which may be due to a waning specific reaction or due to a non-specific cause. If people are to be treated for tuberculosis on the basis of recent tuberculin conversion, it will be unfortunate to administer long courses of treatment to those uninfected with pathogenic tubercle bacilli. On the other hand, it would be equally erroneous to consider a tuberculin reaction too mild or non-characteristic or entirely lacking to a given dose of tuberculin and thus fail to diagnose tuberculous lesions, which later on may prove dangerous to the individual and his contacts.

Even when we have decided that primary infection has occured and we start the child on isoniazid treatment, how long are we going to keep up the drug? Varying periods from six months to two years have been suggested by those in favour of the administration of isoniazid for mere Mantoux conversion. What will be the effect of such administration particularly on the production of isoniazid-resistant strains of tubercle bacilli and on the Mantoux-reaction itself? Is it wise to give a large enough quantity of isoniazid to cause a reversion of the tuberculin reaction and thus interfere with the mechanisms of acquired specific resistance? Is it safe and advisable to bring about a reversal to the Mantoux-negative state in a country like India where the chances of reinfection are so great?"

It was indeed very refreshing to hear Dr. Sanjivi breaking new ground by his most eminently practical and well-thought-out proposal in regard to the training of the T.B. specialists of the future.

"We are still manufacturing T.B. specialists of the 1939 model when we first started the T.D.D. course in Madras," said he, "since then, each of the three important constituents of the course, namely, tuberculous infection

in any part of the body, pulmonary diseases of non-tuberculous origin, and thoracic surgery, have grown into such enormous proportions that it is quite impossible to produce a *specialist* who will be equally well-informed and competent in all these three aspects. The time has now come for a re-thinking on the pattern of future teaching of chest diseases. My own opinion is that we should have two types of chest specialists, a medical and a surgical, abolishing the T.D.D. or D.T.D. courses existing now. The medical chest specialist will be one with a thorough grounding in general medicine and a special training in chest diseases, tuberculous and non-tuberculous. His surgical counterpart will similarly be one with a thorough training in general surgery and a specialized experience in chest surgery in all its possibilities, cardiac, œsophageal and pulmonary, pulmonary again being divided into tuberculous and non-tuberculous. I do not subscribe to the view that every T.D.D. should be capable of doing his own major surgical work. What is imperative is that the basic training in general medicine and general surgery should be of the highest possible order before one branches off into any speciality. It is not necessary here to go into the vexed question of the real *versus* the apparent, the acquisition of actual knowledge and experience *versus* the acquisition of degrees to ensure recognition as a specialist."

The views expressed above regarding the training of chest specialists should not be mixed up with the type of organization required to deal with tuberculosis problems. While the medical officer may be trained in the above fashion, it does not mean that chest clinics dealing with tuberculous and non-tuberculous chest diseases should replace the present model of tuberculosis clinics. Here Dr. SANJIVI would insist with equal emphasis that the Tuberculosis clinics should at an early stage of the diagnostic studies, separate the tuberculous and the non-tuberculous patients and send away the non-tuberculous ones to the chest clinics of general hospitals with a note mentioning the provisional diagnosis.

Most whole-heartedly and unreservedly do we subscribe to this most excellent advice proffered by Dr. SANJIVI, born of his vast experience and practical wisdom, and commend it for the consideration of those charged with the task of training specialists for this purpose.

At the Technical Session of the Conference which lasted for 3 days, several papers of great interest were read and discussed. They related to the treatment of tuberculosis of the spine, bones and other parts, the epidemiology of the disease as revealed by National Surveys, chemotherapy and antibiotic therapy of the disease, occupational therapy and allied subjects. The panel discussion on "Chemotherapy in pulmonary tuberculosis" was indeed very interesting and instructive as the participants spoke from their personal experience of several cases and of different drugs and their combinations. The proceedings of this technical session together with the papers that were read will, we learn, be published in due course by the Tuberculosis Association of India in a separate volume, for the benefit of all T.B. workers.

PROBLEMS IN MEDICAL RELIEF

"WHATEVER steps we take to post doctors to rural dispensaries in the State, they will not help, unless the scales of pay of the doctors are increased," said the State Health Minister, Sri M. A. MANICKAVELU, on the 13th March 1958 answering a question in the Madras Legislative Assembly.

Again while replying to the debate on the Budget demands under Medical and Public Health on the 19th ultimo, he explained the action taken by Government to implement his suggestion. In order to make service in rural areas more attractive, the Government has sanctioned the construction of staff quarters in 62 primary health centres. There is also a proposal to give a rural allowance of Rs. 50 for medical officers in such centres, in addition to Rs. 50 paid as compensatory allowance for loss of private practice. Twenty-four such centres were established between 1955 and 1957 and another 27, most of which will be included in the Community Projects, will be opened in 1958–59. Practitioners of medicine who will be posted to the primary centres will certainly welcome the proposal to construct houses for them and the additional perquisites proposed to be paid to them to the tune of Rs. 100 in all. This cannot be considered by any manner of means, to be a liberal recompense, for inconveniences and hardships incidental to the work in rural areas. But yet it certainly marks a distinct step forward and vouches for Government's *genuine* interest and sympathy with the practitioner and the patient.

On the question of integration of the Medical and Public Health Departments, the Health Minister counselled caution, and circumspection as it will not conduce to efficiency if this reform starts at the top level and in this he was perfectly right. Such integration has been found to work in the lower sections of the services in rural areas, *to wit*, the primary health and medical centres consisting of dispensaries, maternity and child welfare centres and providing at the same time public health services. But at the higer and top levels technical and administrative difficulties are bound to crop up, as we pointed out in one of our previous issues.

Though the Public Health and Medical Services have duties to perform which are mutually inter-connected from the people's welfare point of view, each of them has a very immense, wide and varied range of specialized work of its own. The District Medical Officer's work is now confined to hospitals and dispensaries, which require constant and expert guidance and help to be efficient and the District Health Officer is mainly engaged in the prevention of communicable diseases, the improvement of environmental sanitation which is fast becoming a very important and specialized item in all public health programmes and

in supervising the work of numerous Health Inspectors and Vaccinators in the many villages of the district. It will not therefore, be possible to pay adequate attention to the tasks of either. In any case, as the Health Minister sated, "if integration of the two services is at all necessary, it should begin from the bottom and proceed step by step" without any undue haste or misadventure.

As regards encouragement of indigenous systems of medicine, the Central and State Governments were keenly interested in them. There was a proposal to have a research centre in the State. The State Government was examining whether there should not be a college to teach indigenous systems of medicine *alone*, and whether and what changes should be made in regard to the College of Integrated Medicine for this purpose.

Dealing with medical education, he said it had been decided to admit 75 students for the pre-professional courses from July 1958 in the Medical College to be opened in Tanjore which had been recently approved by Government.

The Government has proposed to start from July 1958 new Post-Graduate Diploma and Degree courses in the Madras Medical College in Orthopædics, Anæsthesia, Pathology and M. S. (Gynæcology) and M. S. (Orthopædics).

"The introduction of the shift system in Medical Colleges will help to turn out more medical men, but the matter has to be examined in consultation with the University." We do earnestly hope that this will be taken up in all seriousness and the approval of the Madras University authorities to this much-needed reform obtained early. The proposal may and will almost certainly involve considerable extra expenditure, additional teachers and more facilities in hospitals for clinical instruction. But these can and should be met in the larger interest of national health in a Welfare State.

We were indeed happy to learn from the Health Minister that the scheme to train *Dais* in skilled maternity service with central financial aid has been sanctioned. During the Plan period, 3,600 *Dais*, at the rate of 900 per year, would be trained. This will certainly go a long way in reducing maternal and infant mortality in the country.

PROGRESS IN LEPROSY CONTROL WORK IN INDIA

INDIA has been in the forefront in the study of leprosy during recent years. Though there are over 1,50,000 sufferers even today in our country, the control and ultimate eradication of this dire disease are no longer considered impossible. Researches into the epidemiology of leprosy, the study of tissue responses to infection with the lepra bacilli and controlled observations

several centres on the treatment with sulphones and other chemotherapeutic drugs have occupied a prominent place in the implementation of the Five-Year Plans relating to leprosy relief and gratifying results have been obtained.

Ignorant people no doubt still dread leprosy and shun its victims. Research has shown that only a comparatively small percentage of leprosy cases is infective and the rest, though they require treatment, need not be isolated. It has now been clearly established that by protecting children against infection the spread of the disease can be controlled to a great extent. The new methods of treatment which have cured many or lessened the severity of the disease, have created greater public interest in the physical and social rehabilitation of patients The prevention of disfigurement or deformity, where the patient receives treatment in time, and the restoration of paralysed or damaged limbs by means of surgery, have brought fresh hopes to patients.

In controlling the disease and in encouraging the community to maintain a humane and enlightened outlook on its problems, the unostentatious, silent and sustained work of various missionary organizations in the country has achieved significant success, as evidenced by the recent annual report of the Mission to Lepers for 1956-57.

Among the varied activities recorded therein, special mention may be made of the new reconstructive surgery, which was begun by Dr. PAUL W. BRAND at the Leprosy Research Unit of the I.C.M.R. in the Christian Medical College and Hospital, Vellore, and has since been introduced in many other centres. Disabled arms are made active, bent fingers straightened, deformed noses corrected, damaged feet restored to usefulness, by operation, and followed by training in the use and protection of the renovated limbs.

An important aspect of rehabilitation which is receiving increased attention is the prevention of deadening of the feet. Dr. BRAND writes :

> "Patients with missing fingers, and terribly ulcerated feet, arrive from distant places. We could fill all of our beds every day with cases like this, but so many have to be turned away, either because they have gone too far for us to treat, or more often because we have no beds.....Our next task is to multiply centres throughout the country, where preventive methods can be taught, and where reconstructive surgery can be carried out."

The Leprosy Home and Hospitals, Homes for Healthy Children of Leprosy Patients, and other institutions, managed or aided by the Mission to Lepers have steadily increased their usefulness. The bulk of the expenditure incurred is met by donations and subscriptions—proof of the sympath[illegible] among whom the Mission functions, with the afflicted

The St. Joseph's Leprosy Home run at Arokiapuram by the Bishop of Tuticorin with 205 patients, and a free dispensary having a daily attendance of about 200 patients from neighbouring rural areas has started in February last a rehabilitation centre consisting of 15 houses constructed on a sandy tract named '*Lourdnagar*.' We are glad to know that cottage industries will soon be started in this centre.

Addressing the first meeting at Hyderabad on 1-3-'58 of the high-powered Leprosy Advisory Committee established in pursuance of a decision taken at a meeting in Delhi in September last of representatives of voluntary organizations engaged in leprosy control, the Union Health Minister Shri D. P. Karmarkar stated that the Delhi meeting felt the urgent necessity for instituting a short term course to train qualified personnel for leprosy work. Therefore, a short term course is being arranged at the Medical College in Nagpur in consultation with the Bombay Government. Field-training would very likely be given at the Vidarbha Maharogi Seva Mandal.

Steps are also being taken to start a similar training course at the Central Leprosy and Teaching Research Institute at Tirumani near Chingleput in the Madras State. The two courses together would train about 120 medical officers every year.

We would like, in this context, to point out that it is not enough if facilities for getting trained in field work are provided to the workers. They should receive, after training and when posted for work in various centres, adequate salaries, liberal allowances, free accommodation and essential amenities for social life; otherwise the scheme will not attract suitable willing workers. To this end we understand that, agreeing with the view expressed by the Delhi meeting, the Central Government has also written to State Governments recommending that special allowances and free accommodation be given to the staff deputed to do leprosy control work.

Mr. Karmarkar explained the other steps taken by the Government of India on the minutes of the Delhi meeting. In the current financial year, the Centre has given a total amount of Rs. 3,13,900 as grants-in-aid, mostly of a non-recurring nature, to various voluntary institutions undertaking leprosy work. Besides this the Central Government has also paid to State Governments up to date Rs. 5,93,000 for the centres established by them under the Leprosy Control Scheme. The Union Government is anxious to give further grants to deserving voluntary organizations. We earnestly call upon all institutions engaged in this noble humanitarian work to avail themselves of this very liberal gesture and unite in eradicating this scourge from the land.

GLEANINGS FROM THE MEDICAL PRESS

MEDICINE & THERAPEUTICS

Penicillin hypersensitivity.–(*The Lancet*, November 9, 1957).

Untoward reactions to penicillin are now probably the commonest form of drug hypersensitivity. Feinberg and Feinberg estimate that such reactions develop in 1 to 5% of patients treated with the drug.

Hypersensitivity reactions to penicillin may be immediate or delayed. The delayed reactions, which appear from 24 hours to 4 weeks after administration of the drug, are varied but usually take the form of serum-sickness. The manifestations include pruritus and urticaria, arthralgia, fever, albuminuria, and eosinophilia; more severe but much less common are exfoliative dermatitis and polyarteritis nodosa. These delayed reactions, though they rarely result in death, may be more disabling than the condition on account of which the penicillin was given. The immediate reactions, on the other hand, take the form of acute anaphylaxis which may be rapidly fatal. It has been estimated that there have been *more than a thousand such deaths* in the United States alone.

In the overwhelming majority of patients who suffer any type of penicillin reaction there is a history of previous administration of the drug, which has acted as the sensitizing exposure. If the drug were given only on adequate indication, patients would not be needlessly sensitized, and reactions in those already sensitive would be avoided. Parenteral administration, especially of a depot penicillin, is more likely to cause sensitivity than is oral administration, but it is well to remember that penicillin creams or lozenges may act as sensitizers. Any penicillin preparation and any mode of administration can precipitate a reaction in a sensitized person.

When penicillin is to be administered, the risk of a reaction can be avoided only by prior detection of hypersensitivity to the drug. Skin tests are especially useful for screening patients known to have allergic tendencies. Tuft *et al* list eight skin-testing techniques, and conclude that the most satisfactory is the intradermal injection of 0·02 cc. of a solution containing 10,000 units of penicillin per cc. This test may be preceded by a scratch test if extreme sensitivity is suspected. An immediate positive reaction to a scratch or intradermal test, resulting in erythema and weal formation in 20 minutes, indicates a dangerous degree of penicillin hypersensitivity and the likelihood that a penicillin injection will be followed by acute anaphylaxis. Smith has described a simpler test to detect liability to acute anaphylaxis. It consists in the application of drops of full strength (300,000 units per cc.) procaine penicillin solution, from the syringe prepared for the administration of the drug intramuscularly, to a skin scratch and into the conjunctival sac. The test areas are observed after 15 minutes; if there is no reaction the syringe, which has meanwhile been set aside, is used to give the injection. This simple procedure, which was applied routinely to all patients due to receive penicillin, is claimed to identify accurately persons liable to have penicillin anaphylactic reactions.

The treatment of acute anaphylaxis consists in intramuscular injection of adrenaline and, if necessary, intravenous administration of aminophylline. (It would be wise to have these drugs at hand whenever penicillin is being administered). In this emergency it is essential to maintain an unobstructed airway, and, if respiratory distress is acute, to give oxygen and respiratory-centre stimulants; in extreme cases artificial respiration is indicated. Delayed reactions to penicillin are usually treated with antihistamines, and, if the response is poor, corticotrophin or cortisone as well.

A trial of penicillin V: Response of penicillin-resistant staphylococcal infections to penicillin.—(J. I. Burn, M. P. Curwen, R. G. Huntsman and R. A. Shooter, *Brit. M. J.*, *2*: 193-196, July 27, 1957, London, via *J.A.M.A.*, *165*: 13, Nov. 30, 1957).

The authors treated 346 patients with septic lesions in an outpatient department by injection and by penicillin V taken orally in alternate periods of 6 weeks. Patients treated by injection received a single daily dose of 1 cc. of "abbocillin 800 M," which contained 600,000 units of procaine penicillin and 200,000 units of crystalline penicillin G. Those given penicillin V swallowed 2 capsules, each containing 125 mg. of the drug, before each of the 3 main meals of the day. Ten patients were treated for more than 5 days, 218 for 5 days, and 82 for less than 5 days; 28 did not complete treatment, and 8 failed to respond to penicillin and were treated with oxytetracycline. The authors suggest that patients with micrococcic (staphylococcic) sepsis treated with oral penicillin V respond almost as well as those treated with penicilin by injection. Infections due to penicillin-resistant micrococci have apparently responded as well to treatment with penicillin as infections due to sensitive micrococci. In severe illness the prescription of penicillin by injection means that the patient receives the drug with certainty; injection, however, takes time, and the cost of washing and replacing syringes is appreciable. For conditions treated in the outpatient department, it seems that penicillin V can be relied on to work as efficiently, with a saving of time and money.

Gastric hæmorrhage due to salicylic acid.—(L. Mellemgaard, *Ugesk. laeger.*, *119*: 925-928, July 18, 1957, in Danish, Copenhagen, via *J.A.M.A.*, *165*: 13, Nov. 30, 1957).

On the basis of the literature concerning gastric hæmorrhage due to salicylic acid and study of the case reports on 124 patients, seen from 1951 to 1955, with hæmorrhage from the gastrointestinal tract, in whom roentgen examination, gastroscopy, or autopsy failed to reveal any cause for the hæmorrhage, together with 6 recent cases of gastric hæmorrhage ascribed to acetylsalicylic acid, the author concludes that bleeding due to salicyl preparations seems to be a factor to be reckoned with in the clinic. Hæmorrhage from the upper part of the gastrointestinal tract provoked by salicylic acid occurs so often that it should be borne in mind in cases of manifest gastrointestinal hæmorrhage, anæmia, and occult bleeding without demonstrable cause, in cases of recurrent anæmia, or of chronic joint diseases with anæmia. The mechanism in hæmorrhage due to salicylic acid is not however, clear.

A controlled study of prednisone, aspirin and a placebo in degenerative joint disease.—(G. T. Williams and G. E. Welch, *South M. J.*, *50*: 1063-1064, Aug. 1957, Birmingham, Ala, via *J.A.M.A.*, *165*: 13, Nov. 30, 1957).

Twenty-nine patients with moderate or severe degenerative joint disease were accepted for this study. In 14 of these, symptoms were confined to the knees, in 4 to the spine, and in the remaining 11 to various combinations of knees, spine, hands, and hips. The double-blind method was used, and 78·2% of the patients had a satisfactory response to prednisone, 65·2% to aspirin, and 40% to placebo. Aspirin has long been the drug of choice, having stood the test of time; it possesses the merits of low toxicity and low cost, which enable it to be given indefinitely if necessary. Prednisone's mechanism of action in relieving the symptoms of degenerative joint disease is not well understood. Further studies along this line will be helpful in elucidating the mechanism of pain in osteoarthritis. It is difficult to explain why some patients with osteoarthritis have very severe pain while others with similar anatomic changes have little or no discomfort. No serious side-effects were noted during the 4 weeks of administration of prednisone. The occurrence of complications such as peptic ulcer, osteoporosis, moon-face, and hypertension preclude the long-term use of the drug.

SURGERY

Radium treatment of cancer of the tongue.—(J. E. Breed, *Radiology*, *69*: 214-223, Aug. 1957, Syracuse, N.Y., via *J. of American Medical Assocn.*).

The author reviews the therapy of cancer of the tongue on the basis of observations of 100 patients with lingual cancer observed by him between 1933 and 1951. Eighty were men and 20 were women; 78 were between 46 and 66 years of age. Sixteen patients were not treated or did not complete the course of therapy. Thirty-six had been treated previously: 17 with caustics, 8 with radium or roentgen therapy, 7 with surgical treatment, and 4 with antisyphilitic treatment. Radium therapy is now considered the best method of treating the primary lesion. The author's technique consists of 3 parts: (1) the surface application of about 500 mc. of radon in a silver applicator (or cobalt-60 in equal strength) over different sections of the periphery of the tumour, with 1 or 2 areas treated for 5 minutes daily until about 6,090*r* of gamma rays have been delivered to the surface of the growth; (2) the implantation of gold (or lead) radon seeds, each having a strength of 0·5 mc., throughout the base of the tumour; and (3) the bombardment of the lymph-node-bearing area, or of palpable lymph nodes if present, at a distance of 2 to 6 cm. with a radon applicator containing from 500 to 1,000 mc. daily until at least 5,000 gamma *r* have been given. If palpable nodes persist, a block dissection on the side of the nodes is performed.

Nineteen of the cases were considered indeterminate, and of the 81 determinate cases 31 were considered "favourable" and 50 "unfavourable." Of the favourable group 20 patients were alive and free of disease after 5 years. Of the unfavourable group, 5 were cured. The percentage of cures in determinate cases was 30·9%. The importance of early diagnosis is borne out by the fact that in 64·5% of favourable cases a complete recovery was obtained, while only 10% of patients with advanced lesions were cured.

Causalgia.—(J. C. Owens, *Am. Surgeon*, *23*: 636-643, July 1957, Baltimore, via *J. of Am. Medical Assocn.*).

A bizarre symptom-complex designated as causalgia is occasionally observed after accidental or surgical injuries. The term was first used by Weir Mitchell in 1872, but the condition has been described also under various other terms, such as neurovasospastic phenomenon, reflex nervous dystrophy, Sudeck's atrophy, and traumatic vasospasm. To emphasize the variety of initiating causes, the author presents observations on 50 patients with causalgia. The outstanding feature of the disorder is burning superficial pain. The superficial character is especially emphasized to differentiate it from deep pain, such as that caused by ischæmic neuritis, traumatic neuritis, abscess, neuroma, and bone injury. The pain may be described as throbbing, aching, or vise-like.

Hyperæsthesia is the second most prominent complaint. This may be localized to a sensory nerve. Slight stimuli, such as drafts, bed-sheets, or examiner's hands, will induce extreme paroxysms of pain. To protect the injured part from such stimuli, patients sometimes hold the extremity in one position and cover it with dry or moist cloths. There may be increased sweating. Vasomotor changes vary widely. Warm rubor may develop into the pale, cool, wet foot. Patients with arteriosclerosis may show the shiny, scaling, dry foot. Diagnosis is generally based on (1) history of overactive sympathetic nervous system, (2) superficial pain exceeding the expected, and (3) hyperæsthesia localized to a sensory nerve. Treatment consists of intra-arterial and/or oral sympatholytic drugs, paravertebral sympathetic

blocks, or sympathectomy, *plus* physiotherapy. Recognition of the syndrome is important, since these patients are miserable, and organic changes may take place over a period of time. Such persons are frequently misunderstood because the source of the symptoms is not realized.

Chest pain as the only symptom of gastric ulcer.—(A. Shedrow, *South African M. J.*, *31*: 802-804, Aug. 10, 1957, Cape Town, via *J. Am. Med. Assocn.*).

The author presents the histories of 4 patients with gastric ulcer who had no symptoms of gastric disturbance except pain in the upper part of the chest. In 2 of the 4 patients the gastric ulcer was combined with a hiatus hernia. In 1 of these the ulcer was at the site of the herniation and was associated with œsophageal fibrosis. The author agrees with those who regard hiatus hernia as secondary to gastric disease. Gastric retention may cause reflux œsophagitis and subsequent hiatus hernia. The symptoms of hiatus hernia may resemble those of peptic ulcer. This is important in view of the fact that surgical intervention is often proposed. The author has seen patients who present themselves after the operation with the same symptoms. A surgical attack on the hiatus hernia is not rational unless the gastric symptoms are treated first. The condition of the œsophagus must also be considered, because it may be irregular and fibrosed, making a surgical intervention impossible. The 2 patients without hiatus hernia had a gastric ulcer high on the lesser curvature. In 1 of the patients the pain was very mild. The localization of the pain (high in the chest) and often its mildness should suggest immediate investigation for gastric ulcer and hiatus hernia. Otherwise valuable time may be lost.

Surgical treatment of bleeding peptic ulcer.—(*Surg. Gynaec. and Obst.*, *103*: 409, 1956, via *G.P.*, Oct. '57).

During the period 1947-1955, Stewart, Cosgriff and Gray have used immediate blood replacement and early gastric resection in patients with massively bleeding peptic ulcer. Criteria for treatment were: (1) gross bleeding into the gastrointestinal tract within a week, (2) a measured total red blood cell mass of less than 60 per cent of normal, and (3) reasonably good clinical evidence for the diagnosis.

The average age of the 193 consecutive patients treated under this programme was 57·2 years, and 128 patients were over 50 years old. The postoperative mortality-rate was considerably higher in patients over 50, chiefly because of a higher prevalence of complicating cardiovascular disorders. The authors had no basis for comparing their method of treatment with a programme using adequate supportive therapy without operation.

Although one of the criteria for operation was "reasonably good clinical evidence for the diagnosis" of peptic ulcer, there were some errors in diagnosis during the course of the series, and there were some cases in which the site of bleeding was not satisfactorily determined at operation.

Gangrene of the feet and legs.—(*Circulation*, May, 1957).

W. T. Foley condemns the confinement to bed of patients suffering from gangrene of the feet and legs. This leads to decreased blood flow and other mischievous consequences. On the other hand, one of the greatest stimuli to the development of collateral blood flow in the legs is walking. Impressed by the favourable effects of the walking cast in fractures of the ankle, the author has allowed patients with gangrene of the feet and legs to walk about, with very good results. The feet were first carefully dressed, the lesion and surrounding areas being covered with antimicrobial ointment, hydrous wool fat being used to keep the tissues from becoming dehydrated. The entire foot and leg were then wrapped in absorbent cotton and loosely but securely bandaged to protect them from injury. A white sock

was then put on. Whenever possible a shoe was worn over the bandaged foot and this was regarded as especially necessary for patients who needed arch support. If the bandaged foot was too bulky a pair of slippers were used. At first some patients could stand for only a few moments. The attempt was repeated every hour. Gradually they took a few steps. Ambulation was increased progressively with pain as the limiting factor. Eventually most patients could walk a mile daily, at a pace less than that which might cause claudication.

Prognosis of intermittent claudication.—(*B.M.J.*, November 9, 1957).

More than a century has passed since Brodie (1846) first described in man the symptom-complex which we now call intermittent claudication. He clearly recognized its association with obliterative arterial disease of the main arteries of the lower limbs, and he pointed out that it was frequently a premonitory symptom of what was then called "senile gangrene." Although we still recognize these associations there is little reliable information about the prognostic significance of intermittent claudication.

Intermittent claudication is generally regarded as a chronic but rather annoying symptom which is not of serious prognostic significance. A study by Dr. Richards of Glasgow of a select series of 60 patients, all of whom have been followed for at least five years or to death, indicates that claudication is often the first symptom of general cardiovascular disease which may prove fatal within a few years. The prognosis as regards life, however, is not as serious as that of angina pectoris or that of myocardial infarction from which the patient has apparently made a good immediate recovery. The outlook so far as the claudication itself is concerned, and also for the affected limb or limbs, is probably better than is generally realized, and as time goes on the patient is more likely to be disabled by the effects of coronary or cerebral arterial disease than by his peripheral arterial disease. These facts must be taken into consideration when any direct surgical approach to the treatment of intermittent claudication, such as arterial grafting, is being planned.

OBSTETRICS & GYNÆCOLOGY

Toxæmia of pregnancy treated with progesterone during the symptomatic stage.—(K. Dalton, *Brit. M. J.*, *2*: 378–381, Aug. 17, 1957, London, via *J.A.M.A.*).

The similarity between premenstrual syndrome and toxæmia and the fact that treatment of the former with progesterone relieved the symptoms and even prevented the development of œdema, hypertension, and albuminuria in the premenstruum suggested the attempt to arrest full development of toxæmia in patients with early minor symptoms of this condition by administering large doses of progesterone. Progesterone-responding symptoms of 136 patients were nausea and vomiting, lethargy, headache, irritability, backache, vertigo, fainting, and paræsthesia. An initial dose of 100 mg. of progesterone in oil solution was used. If the symptoms were not relieved 2 days after treatment was started, it was assumed that they were not related to early toxæmia. It was noted that about 72 per cent of patients with progesterone-responsive symptoms had complained of 3 or more unrelated symptoms. These combinations of varied symptoms were all relieved by progesterone. This fact supports the theory that such symptoms arise from deficiency of progesterone or a progesterone-like substance. The dosage should be high enough to bring continuous and complete relief and low enough to avoid symptoms of overdosage, which manifests itself first as dysmenorrhœa-like pains resembling false labour. Euphoria is a sign that the dose is too high and should be reduced. Progesterone treatment was instituted during the early months and in many cases discontinued after the 4th or 5th month

of pregnancy. The prophylactic treatment with progesterone achieved worth-while results by reducing the incidence of toxæmia from 9 to 2·1 per cent.

Repeat cæsarean section and perinatal mortality.—(*West. J. Surg.*, July, August, 1957, via *Med. J. of Australia*).

J. M. Bubalo has made a study of repeat cæsarean section in relation to fœtal mortality, based on a series of 175 repeat cæsarean sections (46·6 per cent of all cæsarean sections in the deliveries studied). He states that with the vogue of repeat cæsarean sections the added complication of fœtal mortality of prematurity is becoming more evident. Approximately 5·5 per cent to 7·5 per cent of all vaginal deliveries terminate in premature labour. In the group of 175 repeat cæsarean sections under consideration there were 24 premature deliveries (13·7 per cent). In eight of these cases premature delivery was necessary because the patients were in labour, had ruptured membranes or presented obstetrical emergencies. Thus 16 (9·2 per cent) of repeat elective cæsarean sections were classified as preventible premature deliveries, since the time was selected by the operator. Of the 24 premature babies six were lost. Of the 16 babies delivered by elective repeat cæsarean section three were lost. In addition, in that group of 16, five other infants showed respiratory difficulty, and prolonged resuscitation measures were necessary. Often the prematurity was more evident than real, as 43 of the 177 babies delivered (24·3 per cent) weighed under five pounds 15 ounces. The author urges that more attention be paid to the estimated date of confinement in repeat cæsarean sections, and deplores the age-old dictum that such sections should be performed 10 to 14 days before the apparent estimated date of confinement. He holds that before the decision to operate is made the patient should be examined by abdominal palpation and also that a digital examination of the cervix should be made, either rectally or vaginally; he prefers the latter. The criteria of elective induction of labour stated by W. F. Mengert should prevail in determining the time for repeat cæsarean section: the child should be of adequate size (seven to seven and a half pounds), the cervix should be partially effaced, and the external os should be dilated to admit one finger. From the seventh month until term the average fœtus gains half a pound per week; therefore, when delivery is to be effected by repeat cæsarean section, the pregnant woman should be permitted to carry the infant as long as possible. If there is any doubt in such a case, it is wise to permit labour to occur spontaneously, rather than to perform cæsarean section in advance of the estimated date of confinement. If fœtal mortality and morbidity in repeat cæsarean sections are to be reduced, then prematurity should be eliminated.

Recurrent cancer of the cervix.—(*Surg. Gynaec. & Obst.*, August 1957 via *Med. J. of Australia*).

A. Brunschwig and W. Daniel believe that at least 55% to 60% of patients with cancer of the cervix fail to be cured by radiation, the treatment of choice in the United States. Recurrences tend to remain localized to the pelvis for a relatively long time, and are by no means inoperable. Renewed radiation therapy has proved to be disappointing, Truelsen reporting less than 5% of three-year cures. In this paper the authors record the results achieved by extended surgical treatment in 84 cases of radiation failure or recurrence after operation five to nine years previously. The procedure carried out depended upon the extent of the disease. Thirty-seven patients underwent a radical procedure short of exenteration. If seven patients are excluded in whom the procedure was intended only to be palliative, 17 out of the remaining 30 survived five years, a 57% salvage. This illustrates the efficacy of proper radical surgery carried out for recurrent cancer of the cervix after radiation treatment when the disease is still localized to the cervix and its environs. Anterior pelvic exenteration was performed in 10 patients where the bladder alone seemed involved. There were 37 total pelvic exenterations for recurrences involving bladder and rectum. Excluding five total exenterations done for palliation only, there were altogether 42 patients with exenterations of whom eight, or nearly 20%, survived five years. In no other form of visceral cancer does radical surgery appear to offer such hopes for salvage as in this type of situation. The surgical mortality of exenterations (deaths within 30 days of operation) was 13%.

OPHTHALMOLOGY

Failure of silver nitrate prophylaxis for gonococcal ophthalmia neonatorum.—(Pearson, H.E., 1957, *Amer. J. Obst. Gynaec.*, *73*: 805, via *Br. J. of Venl. Dis.*).

From a review of the literature and his own experience the author suggests four possible reasons for the failure of silver nitrate prophylaxis to prevent the occurrence of gonococcal ophthalmia neonatorum:—

(1) the drug is of little or no value; (2) it is not properly administered; (3) infection occurs from adjacent skin after the drug has been dissipated; (4) failure on occasion to implement routine use of the drug.

During the 10 years 1946-56 there were 67,200 live births at the Los Angeles County Hospital. All the babies were treated as a routine before leaving the delivery room with 1 per cent. silver nitrate eye-drops, the eyelids being held apart by a nurse and the drops inserted by a resident, intern, or medical student. Despite this there were forty instances of gonococcal ophthalmia neonatorum. Nearly half the babies involved were prematurely born. In more than half of the cases the diagnosis of gonococcal ophthalmia was made on the 3rd or 4th day of life. Two infants had gonococcal ophthalmia at birth; in these two cases the membranes had been ruptured for 24 and 48 hrs. respectively before delivery.

Commenting on his findings, the author states his opinion that liability to infection is probably conditioned by the number of gonococci present in the maternal cervix at the time of delivery. The greater risk to prematurely born infants which is apparent is presumed to be due to the poorer resistance to infection of the immature fœtus.

Combined hydrocortisone-oxytetracycline therapy in ophthalmology.—(A.M. Berman, *Illinois M. J.*, *112*: 51-53, Aug. 1957, Chicago, via *J.A.M.A.*).

The fact that hydrocortisone acts directly at the tissue level increases its usefulness in ophthalmology. Hydrocortisone applied locally to the eye has been shown to penetrate the anterior chamber in therapeutic concentration. Local therapy has been employed successfully in a variety of allergic and traumatic disorders of the conjunctiva, cornea, iris, and uveal tract. Hydrocortisone therapy alleviated pain and minimized residual corneal damage by suppressing the inflammatory reaction during the period of tissue repair. The danger of secondary infection persists, however, and in an effort to reduce the incidence of infection the hydrocortisone was combined with a broad-spectrum antibiotic suitable for topical use. This report presents the author's experience with an ophthalmic suspension containing hydrocortisone and oxytetracycline in the topical treatment of a variety of acute ocular inflammations. Forty-five patients were drawn from an industrial clinic. The results of the topical administration of the combination of hydrocortisone and oxytetracycline (Terra-Cortril ophthalmic suspension) were excellent or good in 42 of the 45 patients, and therapeutic failure occurred in only 1 instance. The therapy was highly effective in promoting rapid clearing of traumatic and allergic ocular inflammations and in preventing infection and post-traumatic corneal opacities.

REVIEWS OF BOOKS

Modern Treatment Yearbook, 1958—Edited by SIR CECIL WAKELEY. Pages viii + 312. Published for the Medical Press by Bailliere, Tindal & Cox. (Bailliere, Tindall & Cox Ltd., 7 & 8 Henrietta Street, London, W.C.2). [Price 27/6d.

The present volume of the Medical Treatment Yearbook contains a number of articles, dealt with in a very practical manner, about conditions which are met with in the day to day practice of every general practitioner. The subjects chosen are conditions which he may have to treat and the authors chosen to write are well known specialists. Among the interesting articles in this book are those on "The Management of Congenital Heart Disease in General Practice" by R. M. Marquis, "Gynæcological Disorders of Adolescence" by Constance L. Beynon, "Modern Treatment of Hæmorrhoids" by Sir Cecil Wakely, "Cervical Erosions" by H. C. McLaren, "The Treatment of Dropsy" by Ronald H. Girdwood, "The Diagnosis and Treatment of Early Cancer of the Cervix" by A. F. Anderson, "Acute Nephritis" by J. C. Harland, "Complications of Head Injury" by Bernard Harris, "Dyspnœa" by A. W. D. Leishman. All the articles are well written. The book is specially designed to keep the practitioner informed of the practical application of the latest researches. This it does in abundance. We are sure it will provide an annual refresher course in the latest accepted methods of diagnosis and treatment.

U.K.R.

Stedman's Medical Dictionary—19th Edition (revised) Edited by N. B. TAYLOR in collaboration with Lt. Col. TAYLOR. Pages xlvi+1656. (Bailliere Tindall & Cox Ltd., 7 & 8 Henrietta Street, London, W.C.2).

[Price 88 shillings.

This dictionary contains words used in medicine with their derivations and pronunciations, anatomical tables of titles in general use, the terms sanctioned by the Basle Anatomical Convention and the new British Anatomical nomenclature. It includes pharmaceutical preparations official in the U.S. and British pharmacopoeias or contained in the national formulary, as well as biographical sketches of figures in the history of medicine. Since the last edition was published, there has been an enormous increase in new medical terms and this book contains very valuable information about these. There are a number of illustrations which adds greatly to the usefulness of the dictionary. The names of pharmaceutical preparations have been changed from Latin to English in conformity with the latest editions of the United States and British Pharmacopœias. There is a key to pronunciation and an index to the abbreviations used in the dictionary. There is a small note on medical etymology and then a dictionary of medical terms. There is also an appendix which gives weights and measures, symbols, proof reader's marks comparative temperature scales and other very useful information. The book is illustrated with beautiful plates. There is also an index to anatomical tables and another index on pharmaceutical tables. The book is well got up and is one of the best medical dictionaries we have come across. Every medical practitioner should have it on his table.

U.K.R.

Lectures on the Scientific basis of Medicine, Volume Five 1955-'56, University of London. Pages xii + 473. The Athlone Press 1957,(Orient Longmans Private Ltd., 36-A, Mount Road, Madras 2). Price 45 sh.

This, the fifth volume of Lectures on the Scientific Basis of Medicine consists of 26 lectures from the series arranged by the British Postgraduate Medical Federation for young research workers and graduates seeking careers as consultants and specialists in the clinical branches of medicine and surgery. The subjects treated cover a great variety of subjects and have been specially selected to illustrate the fronts on which important advances are being made by research and the new knowledge that may shortly affect the practice of medicine. There are very useful and important subjects dealt with such as "The Isotopes in the Study of Problems of Pregnancy", "The Effects of Cold on Man," "Primary Protein Deficiencies with special reference to the Specific Plasma Aproteinæmias," "Metabolism of Collagen," Industrial Toxicology," "The Investigation of Gastric Digestive Function in Man," "The Treatment of Hepatic Coma," etc. The individual contributors are all themselves actively engaged in research. The book which is illustrated and well printed makes very pleasant reading. We recommend it to all doctors.

U.K.R.

NEWS AND NOTES

Employees' State Insurance
To be Extended to Whole State

The Government of Madras proposes to Extend the Employees' State Insurance Scheme to the whole State. At present the scheme is in force in Coimbatore, Madurai and Madras City only. The Central Government wanted the scheme to be extended to the families of the workers also side by side but the Madras Government has preferred to extend the scheme to the workers of the whole State in the first instance before extending it to the workers' families.

Resistance to Insecticides

Mr. D. P. Karmarkar, Union Minister for Health, suggested the immediate expansion and intensification of basic studies in respect of problems of resistance of insects to insecticides while inagurating a seminar organized by WHO on the subject in New Delhi. Although some progress has been made towards our understanding of the mechanics of insecticide resistance much more intensive and integrated research is essential and urgent if we have to circumvent the inevitable limitations in the field arising from the fact that the number of insects of public health importance becoming resistant to DDT rose from two in 1946 to 40 in 1957. The experts would provide ample opportunities for all of them to exchange experience, and plan new avenues of research, avoiding duplication of effort.

Delhi has been as selected the venue of this seminar as the Malaria Institute of India, which came into existence in 1927 has its headquarters here. He thanked the WHO for taking such keen interest in providing such a forum."

Anti-flu Vaccine Manufactured at Poona

The military medical authorities are manufacturing a standardized vaccine for protection against influenza at the Armed Forces Medical College, Poona.

The vaccine has been available for armed forces personnel since June 15, 1957. So far, 10,000 key service personnel have been inoculated with this vaccine. Data are now being collected and analysed to assess its efficacy.

The vaccine is of little value once the epidemic has broken out. It should be used *before* the epidemic occurs in places where it is anticipated the epidemic is likely to spread, and for non-contacts.

Fight Against Tuberculosis
An Integrated Plan

"Mass approach" will be the basis of the integrated National Tuberculosis Programme being implemented to fight T. B. during the Second Plan period.

Under this Programme, targets in respect of each scheme have been set for each State and specific amounts have been earmarked for them, in consultation with the Planning Commission.

The salient features of the integrated National Programme for the Second Plan period are :—

(1) Intensification of the BCG vaccination Programme so as to complete the first round coverage of the entire susceptible population in the country (170 million) by 1961 ; (*ii*) upgrading

of approximately 100 existing TB clinics and establishment of approximately 200 new clinics. This will provide a modern anti-tuberculosis centre equipped for X-ray and laboratory diagnosis for each district in the country; (*iii*) Establishment of 11 additional TB Training and Control Centres in association with medical colleges existing in the States; (*iv*) establishment of at least 4,000 additional beds for isolation and treatment of persons from over-crowded homes; (*v*) establishment of eight work centres for the rehabilitation of ex-TB patients and (*vi*) expansion of research activities.

The National Programme is proposed to be executed in three phases during the Second Plan period. The total national funds budgeted for all tuberculosis control activities during this period amount to Rs. 1,121·76 lakhs, of which Rs. 635·59 lakhs are earmarked for establishing district clinics and State training and control centres.

International bodies like the UNICEF and the WHO will also extend their help in defined areas that would appeal to those organizations.

White Canes for the Blind

Bombay Club's Venture

The Lions' Club of Bombay has sponsored a White Cane Project and Eyeglass Bank in connexion with the Blind Week celebrated in Bombay commencing from November last.

The White Cane Project is the first of its kind in India. Under this project, canes are manufactured and supplied to the blind, and at the same time the medium of intensive publicity and propaganda is used to create among the public a sense of recognition and respect for the "white cane," used by the blind for self-mobility. The National Association for the Blind has undertaken to distribute white canes prepared by the Club to blind persons.

The Eyeglass Bank will be another project of the Club, under which old and discarded glasses and frames and spectacles will be collected, and codified with the help of skilled technicians, and ultimately dispensed free of cost to the needy and the poor under the supervision of qualified opticians. Over 100 spectacles are issued every month by this Bank.

Drugs from Plants

Doctors engaged in research

Two medical laboratories in Lucknow are at present examining the efficacy of certain indigenous medicinal plants for regulating child-birth for family planning.

At the Lucknow Medical College Laboratory, nine such plants have been screened for their anti-fertility effect. At the Central Drug Research Institute laboratory, doctors are examining four plants, including "Til," "Alsi" and "Methi". The drugs prepared from these plants, when tested on rats, proved inconclusive.

These researches form part of the Indian Council of Medical Research plan to prepare effective medicines in India to replace those imported from abroad.

Under the plan, research is being made in medical laboratories all over the country. Though there is an abundance of medicinal plants in the country, the knowledge about their efficacy is confined only to the practitioners of Ayurvedic and Unani systems of medicine.

Interesting facts have come to light about many plants under research. For instance, the laboratory at Jammu has discovered a plant, known as "Rattanjot," which contains the medicinal values of the wonder plant "Rauwolfia Serpentina".

Another tree full of remedial potentialities is Neem (margosa). Every part of the tree—such as bark, leaves, twigs, flowers, ripe and unripe fruits, oil and gum—is endowed with properties suitable for the cure of rheumatism and even leprosy.

The Jammu laboratory has found a number of solanaceous plants containing a sufficiently high percentage of alkaloid. These are suitable for economic exploitation for the production of hyoscine hydrobromide and atropine sulphate.

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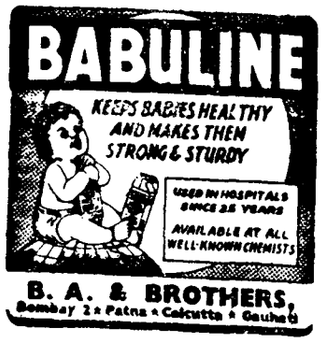

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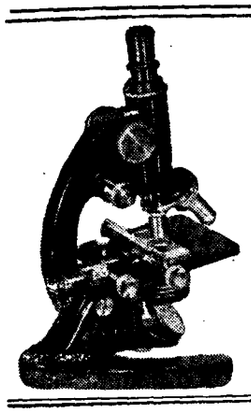

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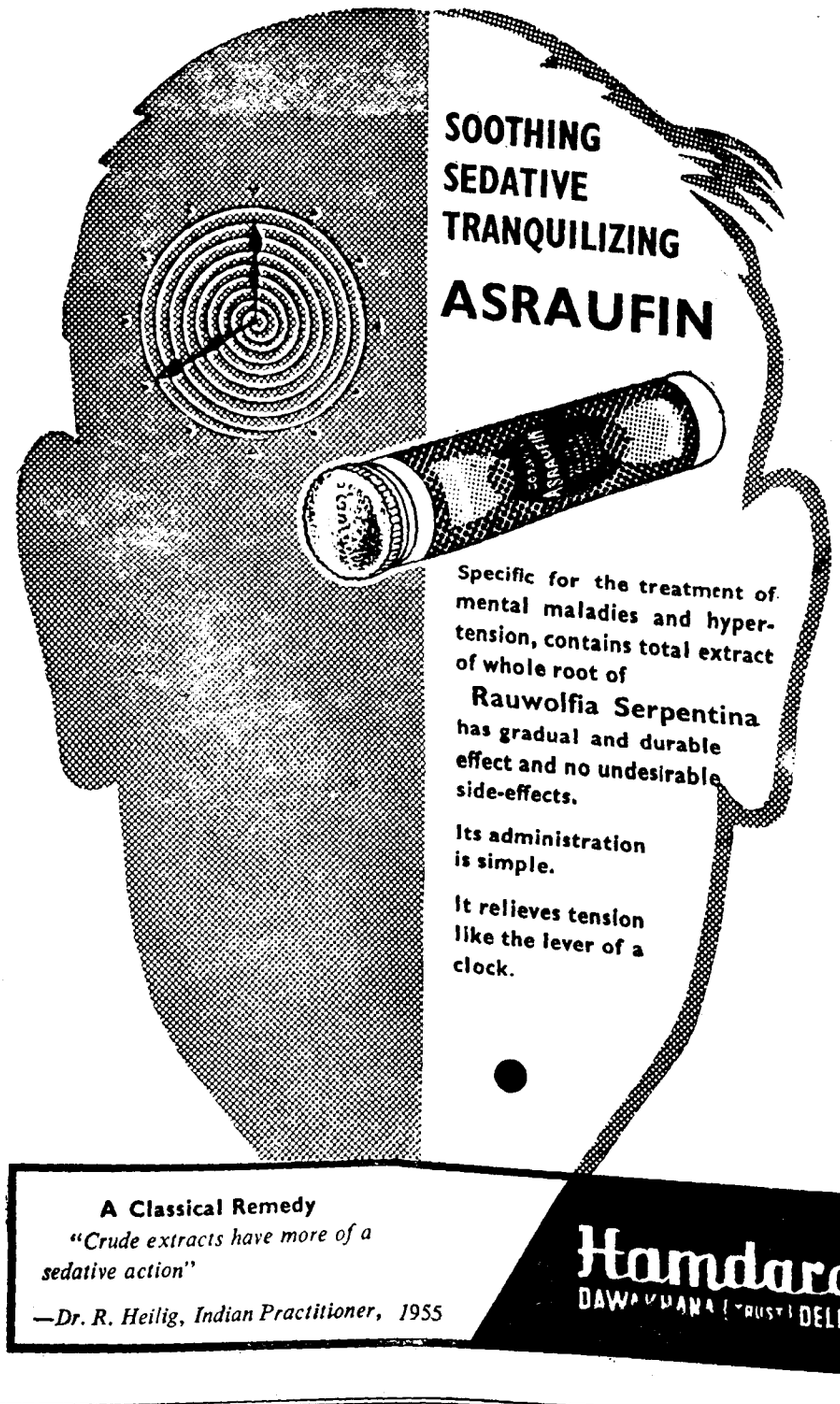

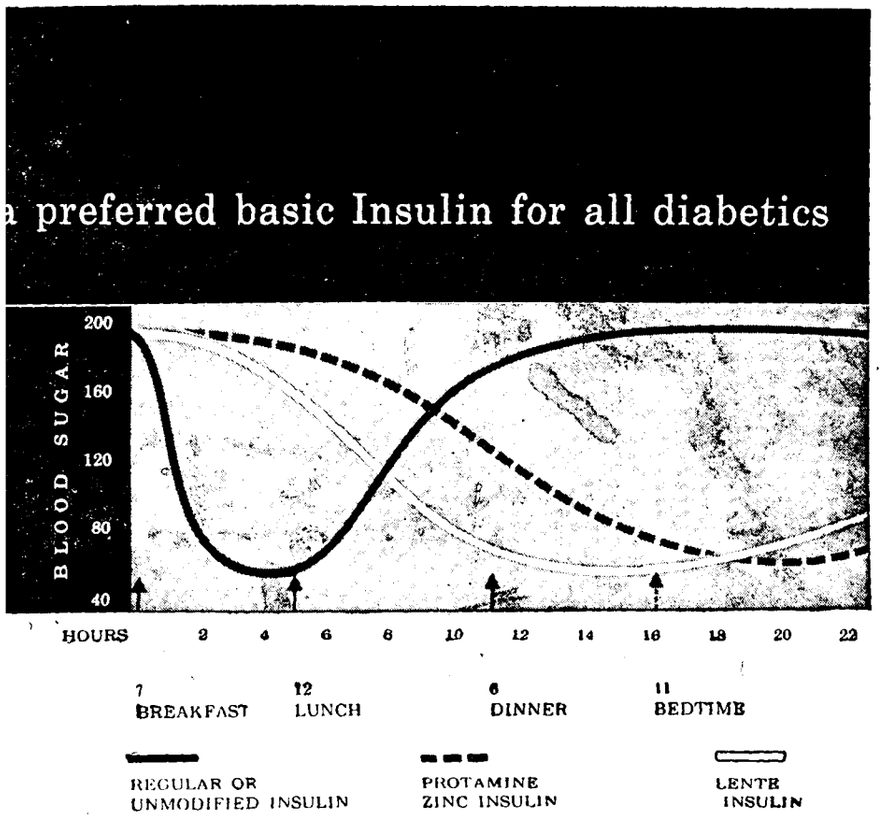

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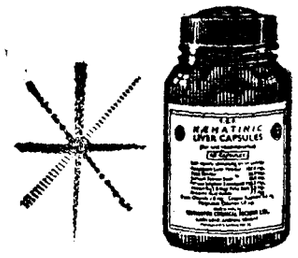

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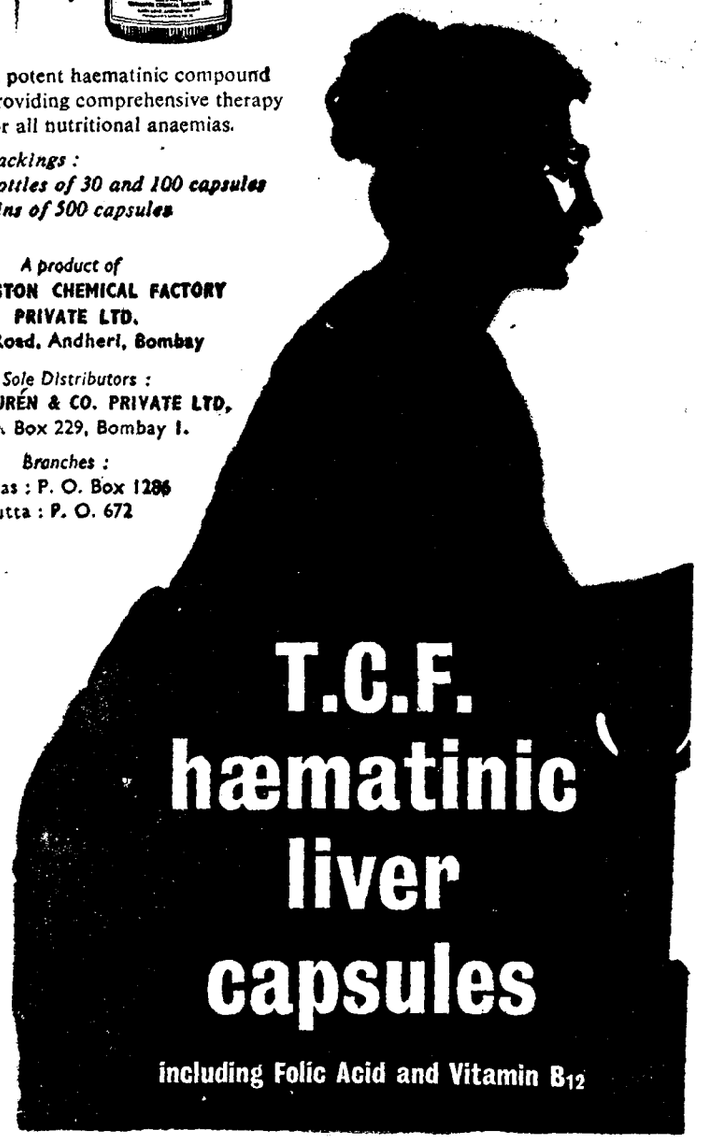

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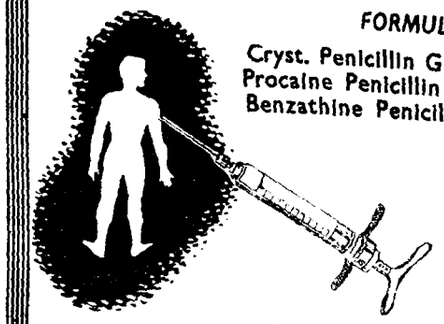

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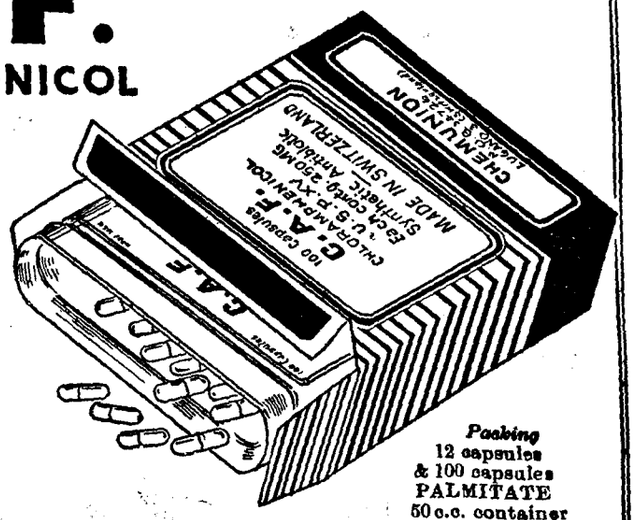

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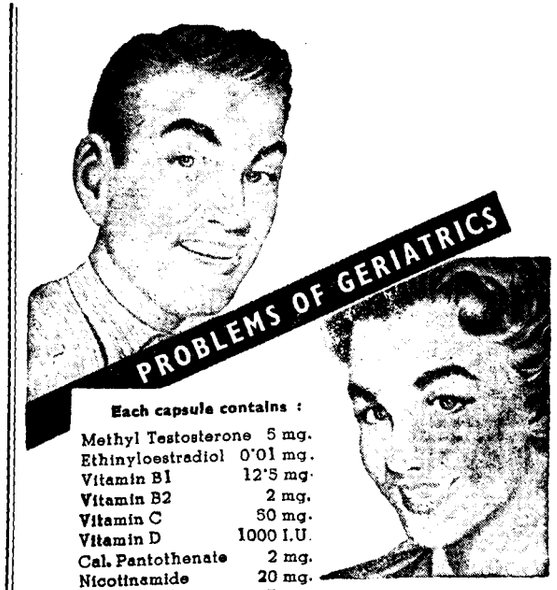

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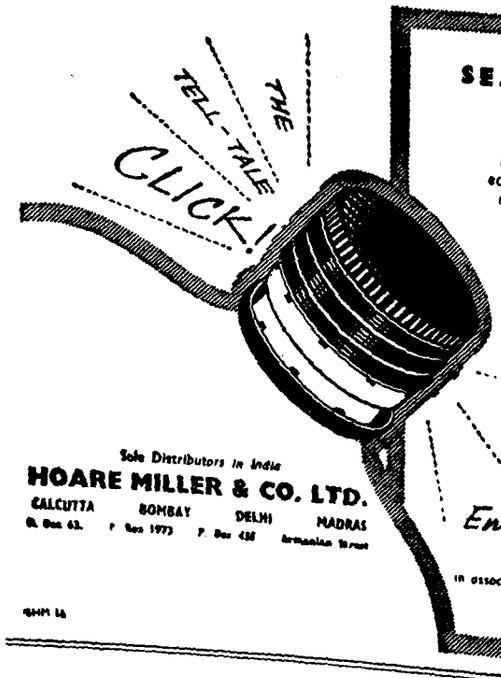

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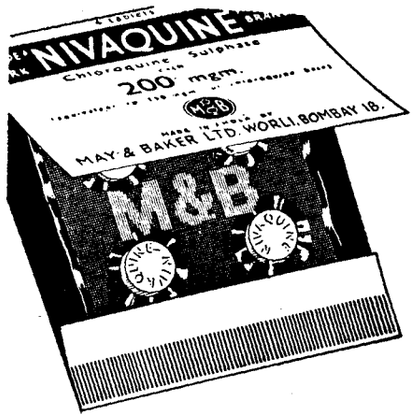

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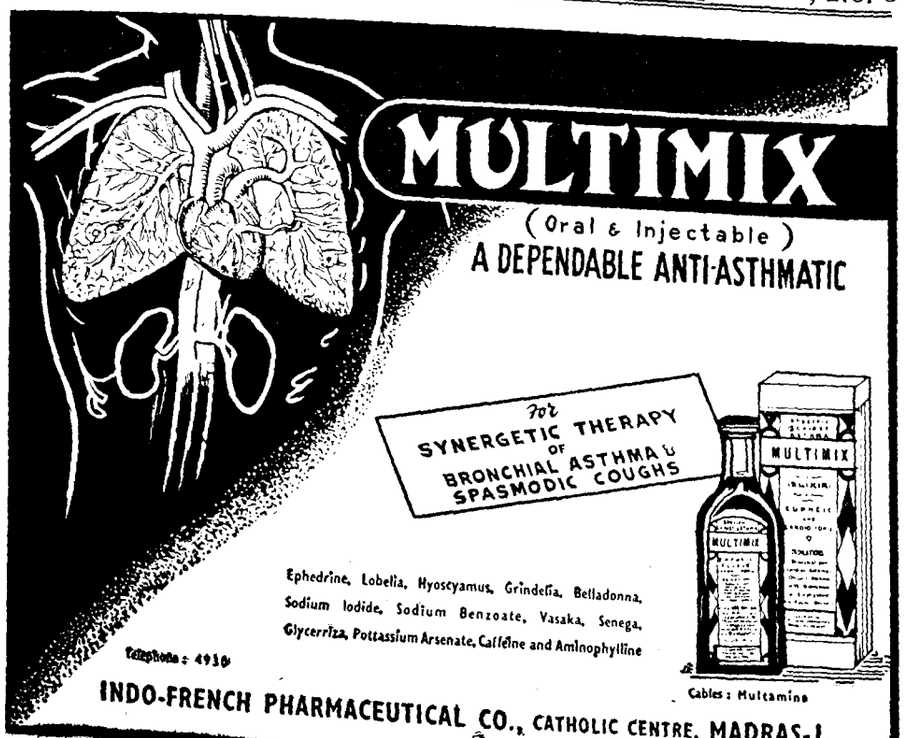

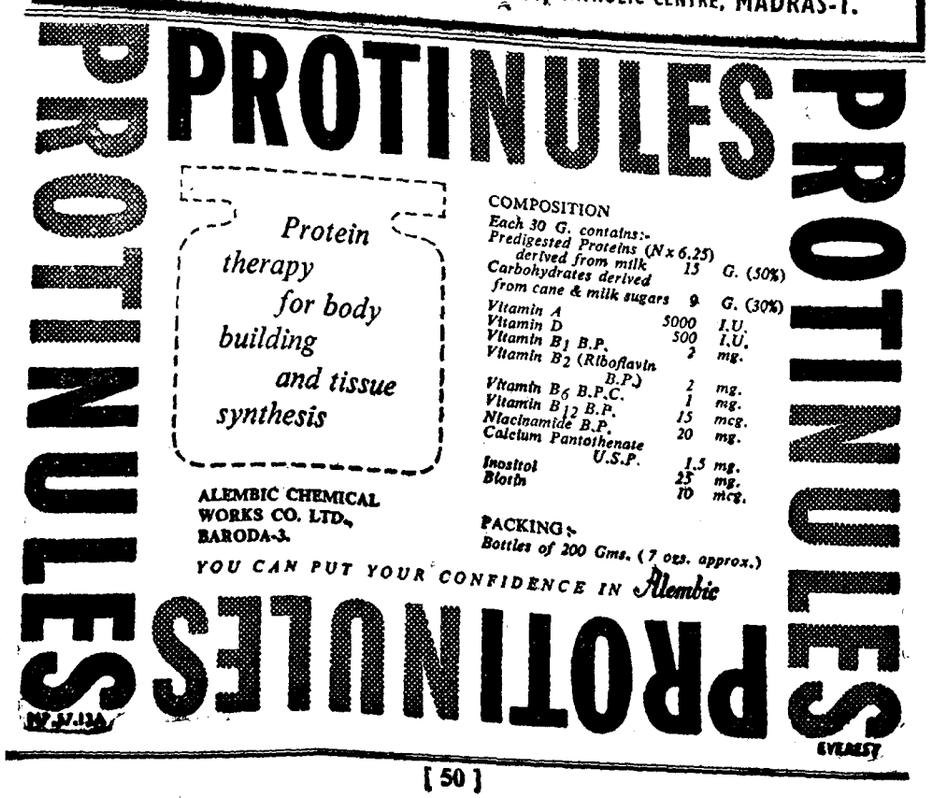

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Vol. 55 | MAY, 1958 | No. 5

Original Articles

MODERN TREATMENT OF FISSURE-IN-ANO*

T. S. CHELVAKUMARAN, B.A., M.B., B.S., M.S. (Michigan),
Professor of Anatomy, Madurai Medical College,
AND
P. GOVINDA RAU, M.B., B.S., F.R.C.S., F.I.C.S.,
Madurai

THE treatment of fissure-in-ano has become simplified, consequent on a new concept of the surgical anatomy of the anal canal. This concept was first put forward by Eisenhammer of South Africa in 1951, and has recently been confirmed by researches carried out at St. Mark's Hospital London.

Fissure-in-ano is one of the most common and important of the minor rectal lesions. It is the cause of much acute and continued suffering, and sometimes the patient is in such distress, that emergency treatment becomes necessary to relieve the severe pain.

Pain related to defæcation, is the characteristic symptom of a fissure. The pain is often extremely acute, and is felt during, or after an action of the bowel. The patient often postpones the act of defæcation for as many days as possible, to avoid the severe pain; examination shows the rectum is often loaded with fæces.

In chronic cases the patient feels resigned to the pain and does not complain much, unless he gets an exacerbation of his condition due to constipation or diarrhœa.

Bleeding is another common symptom, and sometimes the patient does not complain of much pain associated with defæcation. These cases are likely to be wrongly diagnosed as piles, and only careful examination can reveal that the source of the bleeding is a fissure at the anus.

* Specially contributed to the ANTISEPTIC.

Other symptoms of fissure are :—a slight discharge from the ulcer, occasional irritation and the almost constant constipation. Retention of urine is an occasional presenting symptom of a case of fissure-in-ano.

Although the history is quite characteristic of the condition it is necessary that inspection, digital examination and proctoscopy when possible, should be done to eliminate other conditions, and confirm the diagnosis.

Local examination, with the patient in the lateral position, may reveal a sentinel tag which is present in any fissure of some duration and on an attempt to separate the anal margins to look for the fissure, spasmodic contractions of the sphincter may be elicited and this is almost confirmatory of the diagnosis.

Digital examination must be very gentle. A well-lubricated finger, (lubricated with Nupercainal) can be passed into the anus and the fissure can be made out. Proctoscopy is difficult, and is not essential, especially in the presence of severe pain. This examination may be postponed to a future date just to make sure there is no other serious lesion.

Surgical anatomy.—Formerly, the popular opinion about the relationship of fissure-in-ano to the sphincters of the anal canal had been, that the anal fissures rested on, and were associated with spasm of the external sphincter, and that, in treatment, this spasm must be overcome by stretching or division, care however, being taken to avoid injury to the internal sphincter, for fear of producing incontinence. In 1918, Ernest Miles (who had formerly subscribed to the above mentioned popular opinion), described a circumferential band of fibrous tissue situated between the skin of the lower part of the anal canal and the sphincter musculature. He named this the 'pecten band,' and stated it could always be felt on digital examination in fissure cases like the rubber ring of an umbrella, and he said the fissure lay on this band and not on the external sphincter, and he recommended division of the pecten band for the relief of fissure-in-ano, which procedure, he added, was sufficient to secure inevitable healing. This view was however, not accepted by most surgeons. Again in 1951, Eisenhammer claimed, that he was able to show by numerous dissections, that the muscle which formed the base of an anal fissure was invariably the lowermost part of the internal sphincter, and a simple division of this muscle (internal sphincterotomy) was usually followed by cure. Later, Mr. Thompson of St. Mark's Hospital, following this suggestion of Eisenhammer, also obtained good results by the procedure of division of the internal sphincter in cases of fissure-in-ano. Because this upset the previous views about the anatomy of the anal canal, a complete investigation was worked out

at St. Mark's Hospital, London. This investigation, amongst other things, revealed that the pecten band described by Miles, and the lower border of the internal sphincter, were the same, and the anal fissure lay on the internal sphincter, and the muscle which had usually been divided was the lower edge of internal sphincter and not the subcutaneous external sphincter. Histological examination of the fibrous band described by Miles would have shown that it was unstriated muscle and not fibrous tissue. It has therefore, been shown beyond doubt that division of fibres of the internal sphincter relieves the pain and results in the healing of a fissure-in-ano.

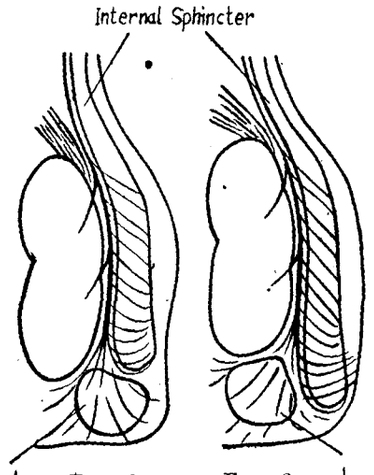

Fig. 1. Fig. 2

However, it must be emphasized that under normal circumstances the subcutaneous part of the external sphincter is the lowermost muscle seen or felt (See *Fig. 1*). But during defæcation, under anæsthesia, or when a pile mass is pulled out as during an operation, the subcutaneous external sphincter is pushed outwards and the internal sphincter now forms the lowermost structure (See *Fig. 2*). This change in the relationship of the internal sphincter and the subcutaneous external sphincter was not appreciated, and the internal sphincter was erroneously labelled as the subcutaneous external sphincter.

One more muscle has to be mentioned in connection with the surgical anatomy of a fissure. Fibres from the longitudinal muscle of the rectum pierce the external sphincter and are attached to the perianal skin in a radiating manner. These radiating fibres are known as the corrugator cutis ani and they are seen at the base of an early fissure-in-ano.

It is also necessary to consider the lining of the anal canal. The surgical anal canal is lined from above downwards! (See *Fig. 3*, p. 322) :—(1) by a pink rectal mucosa covering the upper end of the pile area ; (2) lower down is the dark red anal mucosa covering the actual hæmorrhoidal area itself. This area is thrown into folds called the columns of Morgagni, and the columns terminate in small crescentic valves ; (3) below the line of the anal valves, or the pectinate line, is the skin of the anal canal ; the skin here is delicate, smooth, shining, and most

firmly fixed to the deeper structure. The anal skin is adherent to the subjacent fibromuscular layer which is very much thickened here to form what is known as the musculus submucosæ ani. This thickened fibromuscular mass is partly the normal muscularis mucosæ of the bowel, which is reinforced here by fibres from the conjoint longitudinal muscle.

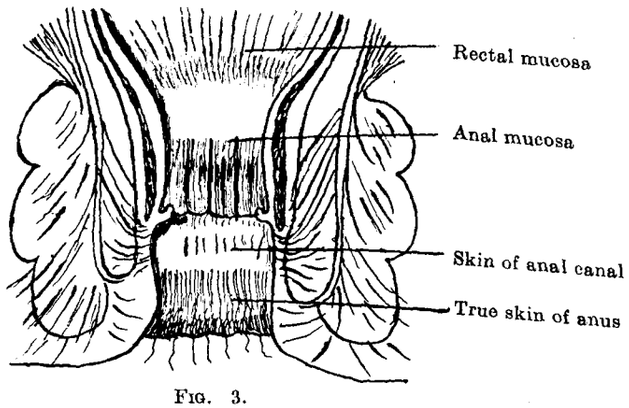

Fig. 3.

It is in this area that a fissure-in-ano occurs. The skin being adherent to the underlying fibromuscular mass, which itself is tethered to the internal sphincter, when it is stretched by a hard fæcal mass, does not yield because of the fibrosed and thickened internal sphincter and tears rather than stretches, and fissure-in-ano is produced; and (4) below this area is the true skin of the anus, which has the lax subcutaneous perianal space beneath it.

In the light of the new concept of the surgical anatomy of anal fissures, we may describe fissure-in-ano as a painful tear of the skin of the anal canal. A fissure does not extend upwards above the muco-cutaneous junction where at its apex an anal papilla is frequently present. It does not extend downwards to the true skin of the anus and inflammatory changes lead to the formation of skin tags or sentinel piles at the lower end of a fissure. The cause of fissure-in-ano may be said to be due to trauma to the skin by a hard fæcal mass in cases of a fibrosed internal sphincter, the fibrosis of this muscle being due to long-standing constipation, diarrhœa or congestion associated with piles.

Treatment:—The orthodox operation for a fissure-in-ano has been Gabriel's method in which the fashioning of a drainage wound was included in the operation. The patients should be in hospital for a minimum period of 3 weeks for complete cure by this method whereas, the operation of internal sphincterotomy described below, can even be done as an outpatient procedure. The details are given below:—

The patient is advised to empty the bowel on the morning of operation. The perianal skin is shaved and prepared with 1% iodine in methylated spirit, after thorough cleansing. With the

patient in the lithotomy position, a wheal is made with 2% xylocaine 1" behind the anus in the midline, and through this wheal, an injection of 10 cc. is made into each side of the anus; about 1 cc. of Xylocaine is also injected just beneath the fissure and a small amount of Xylocaine jelly is introduced into the anal canal. This gives sufficient anæsthesia. The operation can be commenced 5 minutes after the above procedure. When xylocaine is not available, procaine can be used in the same way, and for very apprehensive patients a low spinal anæsthesia may be necessary.

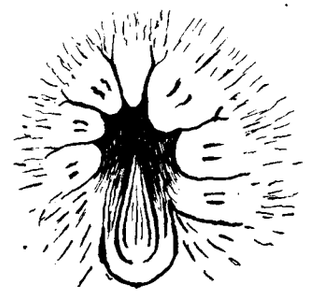

Fig. 4.

Now the gloved index finger of the left hand, lubricated with vaseline is introduced into the anal canal, as far as the terminal interphalangeal joint, and then that joint is flexed in order to evert the anal orifice. At the same time the thumb of the left hand presses the skin of the anus outwards. This manœuvre exposes the fissure-in-ano completely. With a small scalpel blade, an incision is made through the fissure, the longitudinal fibres if present (See *Fig. 4*) are divided, exposing the white circular fibres of the internal sphincter (See *Fig. 5* below). This muscle is then divided to just above the pectinate line, exposing a smooth tissue plane beneath. The incision is carried outwards into the perianal skin posteriorly, and the total length of the incision must be atleast 2 inches extending from the pectinate line above, to the perianal skin below (See *Fig. 5*). Only about 1 inch of the incision will thus be outside the closed anus, when the operation is finished. At the lower end of the incision, red fibres of the subcutaneous part of the external sphincter will be exposed, and if well-developed a few fibres may require division at the anal margin to flatten the wound (See *Fig. 6*, p. 324). Swabbing of the wound during operation with adrenalin will make out clearly the details of the various structures. If skin tags at the lower end of the fissure and psuedo-polyps at the upper end of the fissure are present, they should be removed. Small fistulæ are not uncommon in association with a fissure-in-ano. These should be laid open properly. The wound is examined, pressure applied for some time, and a small piece of

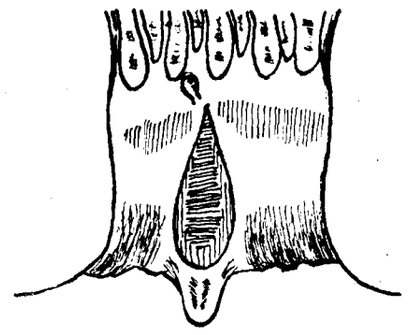

Fig. 5.

gelatin sponge applied to the wound to keep it dry. A thin piece of gauze soaked in acriflavine, 1 in 1000, may be placed in the wound along its whole length. A pad is applied over this and a T bandage to keep the pad in position. It has been recommended that once the dressings have been applied, the patient may even be sent home after half an hour's waiting to see that the dressings are dry, but it is however safer to admit him for 2 or 3 days.

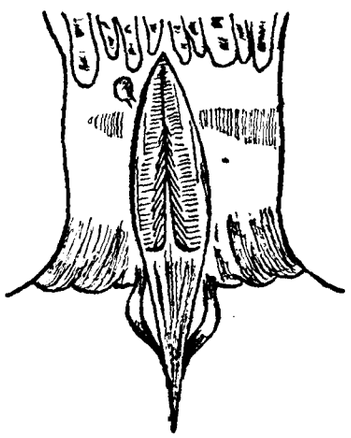

Fig. 6.

Post-operative care.—The patient may be given 5 grains of aspirin, and 30 minims of Tincture Camphor Co. twice on the day of operation for relief of pain, and 100 mg. of Pethidine at night. The same treatment may be given on the next day; and on the 3rd day of operation half an ounce of Liquid paraffin is given night and morning so that he can have a bowel action on the next day *i.e.*, the 4th day of operation. After the bowel action, the patient may have a bath and the dressing can be removed and a small piece of gauze soaked in acriflavine lotion placed in the wound. On the 5th post-operative day, the wound may be examined and a finger passed into the anal canal and along the operated wound, and thereafter the wound should be dressed every day after digital dilation of the anal canal. The patient should be placed on phenobarbitone ½ grain *t.d.s.*, during the period of healing. There is little pain even the first time, and after that, there is almost no discomfort. The patient is fit to move about in about 5 days from the date of operation. Full healing may be expected in 14 to 21 days and during the healing period the wound is almost painless. As recommended above, a long enough drainage incision is necessary, as otherwise the outside wound heals up much quicker than the inner, and this may lead to perianal irritation and delay in healing. In such cases frequent applications of 10% Silver nitrate will help healthy growth.

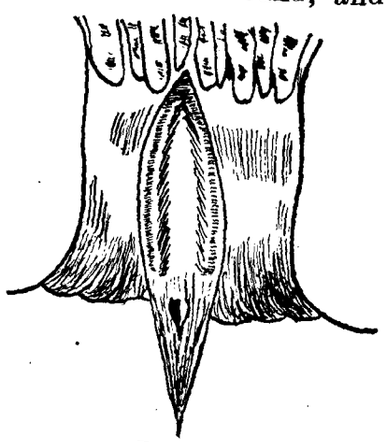

Fig. 7.

When a fissure-in-ano is in an anterior position, or when it is associated with other lesions such as piles, then the internal sphincter is divided in the region of the left posterior quadrant. Anteriorly situated anal wounds do not heal well. If there are lesions besides a fissure-in-ano, such as piles etc. then the patient must be admitted as an in-patient for the operation.

The results of this simple operation of internal sphincterotomy are very good, and the patient is fit to go about doing his work in five days at the most. The necessity for the injection treatment of fissure-in-ano does not arise as this operation may be done equally easily, and the patient in most cases sent home at the latest in two days after the operation.

Summary.—The modern concept of the surgical anatomy of the anal canal is discussed in this article, and a simple treatment of fissure-in-ano is described and recommended.

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CORTISONE THERAPY IN ACUTE HEPATITIS

When cortisone or a related drug is given to patients having acute viral hepatitis, the results on the course of the disease are rather uniformly beneficial. There is a more rapid return of serum bilirubin to normal and a marked increase in appetite. Clinical and laboratory manifestations of disturbed hepatic function are restored to normal more rapidly than in patients not receiving cortisone. However, when cortisone therapy is stopped, there is a rather high relapse rate—approximately 20 per cent relapse rate indicated in Nelson's experience.

Since acute viral hepatitis runs an essentially benign course in the vast majority of cases, it seems unwarranted to administer cortisone routinely. Nelson therefore, reserves the hormone for those patients in whom there is evidence of really severe disease. His criteria for administration of cortisone are in general as follows :—

1. Total serum bilirubin of 50 mg. per 100 cc. or more.
2. Inability to control anorexia, nausea and vomiting with intravenous glucose therapy over a period of three days.
3. Evidence of severe hepatic necrosis, as shown by disturbed sensorium, rapidly shrinking liver, fetor hepaticus or coma.

Nelson describes the beneficial effects of cortisone therapy as applied in five cases of severe viral hepatitis, one with coma. All patients recovered without evidence of sequelæ.—(*Ann. Int. Med.*, *46*: 685, 1957, via *G.P.*, Dec. 1957).

PREVENTION OF RHEUMATIC FEVER

Daily tablets of sulfadiazine may be more effective than penicillin tablets in preventing recurrences of rheumatic fever. So far, in a three-year study, six recurrences have occurred among children taking sulpha, and 12 among children taking penicillin daily. Only one child receiving monthly injections of penicillin has had a recurrence.—(Dr. Harrison F. Wood and associates, Irvington House, Irvington-on-Hudson, New York).

STEROIDS IN INFECTIOUS DISEASES

Herrell points out that the role of cortisone and related compounds in the treatment of infectious diseases is somewhat controversial at the present time. A review of the literature reveals experimental as well as clinical reports that are quite contradictory. There is no evidence to suggest that cortisone or related compounds have any antimicrobial action. The steroids can neither prevent nor control bacterial infections. When used judiciously with antimicrobial agents, they may at times be helpful and even life-saving.

There is no palce for the use of steroids in the treatment of mild or moderately severe infections of bacterial origin. However, all available evidence indicates that steroids combined with antibiotics are of considerable value in the treatment of overwhelming infections, such as meningococcæmia (Waterhouse-Friderichsen syndrome). Steroids should also be used in the treatment of overwhelming sepsis in elderly and debilitated patients. They are also of value when combined with antibiotics in the treatment of tuberculous meningitis. There is good evidence that the use of either cortisone or ACTH materially aids in preventing adhesions and spinal block, which are common complications of tuberculous meningitis. The steroids are also of value in combating toxæmia and debility during the early stages of severe typhoid fever and brucellosis. Steroids, combined with antibiotics, antiserum and penicillin, are of real value in the treatment of patients with severe tetanus.

Among the viral diseases, there is some evidence that steroids have a beneficial effect in the treatment of cases of severe infectious hepatitis. Their use was followed by a more rapid clearing of jaundice, a more rapid return of appetite, resulting in a greater gain in weight. It is not recommended that steroids be employed routinely for hepatitis, but their use is indicated in patients who do not respond to conventional treatment. There are also some reports that cortisone and ACTH are of considerable value in the treatment of severe and extensive herpes zoster. Severe orchitis, complicating mumps, has been reported to subside promptly following the administration of the steroids.

Trichinosis is the only disease of parasitic origin in which excellent therapeutic responses have followed the use of ACTH or cortisone. Experimental and clinical studies suggest that the use of cortisone and related compounds is clearly contraindicated in the presence of fungal infections.

Perhaps the greatest value of ACTH and the corticosteroids is in the management of severe reactions resulting from hypersensitivity to the chemotherapeutic and antibiotic agents so essential in the treatment of infectious diseases. Among these reactions are severe urticaria, serum sickness, toxic dermatitis, polyarthritis, polyarteritis, bone marrow depression, purpura and anaphylactic shock.—(*Antibiot. Med. and Clin. Therapy*, 4 : 297, 1957, via *G.P.*, Oct. 1957).

CLEFT PALATE CLUE

Based on findings from animal experiments, vitamin B_6 and folic acid are being given routinely during early weeks of pregnancy to women who already have had a child with cleft lip or cleft palate. So far, all children born of these subsequent pregnancies have been normal, but the series is not yet large enough to be significant. Laboratory experiments showed that cortisone given pregnant mice produced 85 per cent of offspring with cleft palates. Concurrent injection of Vitamin B_6 and folic acid drastically reduced this incidence. Emotional or other stress in pregnant women may, by theory, stimulate an excess of cortisone.—(Dr. Lyndon A. Peer, *St. Barnabas Rehabilitation Centre, Newark, N.J.*, Sept. 10).

CHRONIC ENTEROBIASIS OF THE LOWER URINARY TRACT IN AN ADULT MALE*

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AND
P. N. RANGIAH, M.D.,
(From the Institute of Venereology, Government General Hospital, Madras-3)

THIS report presents an unusual case of cysto-urethritis caused by Oxyuris vermicularis (*Enterobius vermicularis*) in an adult male patient. Before presenting the detailed case report a short summary of the biology, epidemiology, prevalence, pathogenicity and its occurrence in ectopic sites and tissues reported in the literature will be attempted, the summary being mainly based on an extensive well-documented review of the pathology of oxyuriasis with three case-reports contributed by Symmers[1] in 1950.

Man is the only natural host of Oxyuris vermicularis. The fully grown female worm measures 8 to 13 mm. in length and 0·6 to 0·8 mm. in width. The male is much smaller, about 2·5 mm. in length and is rarely recognized. The normal habitat of the mature worm is the lowermost part of the ileum, cæcum and the vermiform appendix. The male copulates with the female in this part of the bowel and is said to end its biological existence. The gravid female travels down to the rectum and may be expelled during defæcation. But more often the parasite bides its time in the rectum waiting for the host to go to bed, migrates trans-anally and lays its eggs in the skin of the perianal and perineal regions, after which it dies. The ovum when viewed under the microscope, has a plano-convex shape, one end more rounded than the other, has a double-contoured envelope and measures 54 microns in length, 30 microns in width and about 20 microns in thickness. The ovum when laid, already contains a folded tadpole-like embryo which, under the microscope, may occasionally be seen to protrude partly through the broken shell envelope.

According to Reardon[2], the mean number of eggs contained in a single female is 11,000. The itching caused by the nocturnal movements of the worm and the presence of ova results in scratching and the ova are transferred through the fingers to the mouth or nose. The ovum is swallowed and in the stomach and small intestine the shell is digested by the enzymes of the alimentary canal and the larva escapes. After a series of moultings, the larva develops into the sexually mature parasite. It is generally accepted that the worm lives and has its being in the lumen of the bowel without migrating into the tissues of the host. The gravid female does not lay its eggs either in the lumen or in the mucous crypts of the intestines.

* Specially contributed to the ANTISEPTIC.

Enterobiasis, the commonest of worm infestations in man, is global in distribution. It is stated to occur more frequently in the female, both in children and adults. Schuffner and Swellengrebel[3] described four types of infection with oxyuris :—(1) Digital infection directly from the anus to the mouth or nose ; (2) contact infection through food contaminated with the eggs ; (3) dust infection and (4) retrofection.

In the last type, the larvæ which hatch in the anal regions pass back into the anus and rectum giving rise to a recurrent and persistent type of infestation. From studies of the incidence of enterobiasis reported in the literature, it would appear that infestations are more common among the white populations of America, Canada and Continental Europe and less frequent among the negroes of America. Similar studies in Asia have not been recorded. In India, the wholesome practice of washing the anal region with water after defæcation prevalent among the majority of the population, may contribute to the lessened incidence of infection by digital or contact transmission from anus to mouth.

For the diagnosis of enterobiasis, examination of the stools for the parasite is time-consuming and for the presence of the ova it is futile. The most successful manner of detecting the infection is by one of the swab methods which is applied to the anal skin for the demonstration of the ova.

The symptoms of intestinal oxyuris infestation are rarely related to any alimentary disturbance of function but are mainly integumentary, due to the irritation caused by the perianal and peri-genital wanderings of the gravid female worm laying eggs as it crawls over the surface of the skin. In the vast majority of those harbouring the parasites the symptoms are conspicuously lacking.

Presence of localization of oxyuris vermicularis in ectopic sites :—Symmers' has given an extensive review of the presence of Oxyuris vermicularis in sites other than the intestinal lumen, reported by many workers. The vast majority of such localizations were in female children and women and limited to the genital organs and the pelvic peritoneum. The gravid female from its perianal vantage ground may wander and migrate into the nearby offices of the region. On account of the anatomical proximity of the orifices in the female, the presence of the parasite has been reported in the vagina, urethra, cervical canal, uterus and fallopian tubes and pelvic peritoneum.. Clinical signs of vulvo-vaginitis, urethro-cystitis, salpingitis have been reported as the result of the wanderings of the parasite.

The only case of the presence of a gravid oxyuris and oxyuris ova in the subpreputial exudate in a *four-year old male child* with phimosis complicated by balano-posthitis was recorded by Symmers[1]. Apart from the physical presence of live gravid oxyuris in the genital and lower urinary passages of the female, localized, granulomatous lesions with the remains of the dead worm and the ova have been reported in the peritoneal surfaces of the bowel, in the pelvic peritoneum, in the walls of the fallopian tubes and in the omentum. The presence of live oxyuris vermicularis in the puriform contents of ano-rectal abscesses and sinuses in the groin has likewise been reported. No instances of infestation of the urinary tract in the male with oxyuris vermicularis has been recorded except the interesting report by Symmers[1] of the finding of the remains of a mature oxyuris vermicularis in the upper part of the ureter and mature ova in the necrotic tissues of a hypoplastic kidney which was removed from an adolescent boy, 14 years old, who had suffered from a long-standing perinephric suppuration with a discharging sinus in the left loin. It is suggested by the author of the report that a gravid female oxyuris should have migrated from the anus to the sinus in the loin and reached the affected kidney through the sinus tract.

Symmers' in his review has quoted Max Koch[4] mentioning that oxyuris can enter the urinary bladder, through fistulas communicating with the bowel or in the female *per* urethra. Oxyuris ova have been reported in the urine but usually only after the latter has become contaminated from ova laid on the vulva or adhering to the penis after natural or unnatural intercourse.

Case report.—An adult, married male, aged 54 years, reported at the Institute of Venereology on 11-10-1956 with the complaint of urethral discharge of 10 months' duration. He admitted pre-marital contact in his 19th year and suffered from urethral discharge and penile sore, for which he received some indigenous medical treatment. Since then he never suffered from any venereal disease and has been living a strict married life. His only complaint was itching of the anus for some years. To relieve the itching, he has been in the habit of introducing his left index finger into the rectum and obtaining some relief by a vigorous in and out, up and down titillation of the rectum and anus. In January 1956, the patient suddenly developed high fever, l ower abdominal pain, frequency of micturition, stranguary, blood-stained urethral discharge and hæmaturia. He was treated by a private physician with antibiotics. The fever, hæmaturia and frequency of micturition gradually subsided during a period of three weeks, but the urethral discharge persisted. During the months following the acute constitutional upset he used to feel a peculiar sensation of something crawling inside the urethra and an urgent desire to pass urine. This

sensation and the desire to micturate was erratic in its occurrence and had no relation to the normal act of micturition. He did not take much notice of this fleeting urethral sensation for nearly 12 months, as he thought that the crawling creeping sensation inside the urethra was due to the persistent urethral discharge. On 11-10-'56, he reported at the Institute of Venereology seeking relief for the chronic urethral trouble. One evening in December 1956 while he was airing himself on the sandy sea shore, he felt the crawling sensation coming on and a sudden desire to micturate. He sat down and passed urine on the yellow sand, and when he was getting up, his attention was atonce drawn to a tiny worm-like white object actively wriggling on the surface of the sand where he micturated. He naturally got upset, came home, got hold of a shallow earthen pot and made it a point to collect the urine into the pot and observe for the passage of the worm with every act of micturition. His worst fears were confirmed during subsequent days when he started passing a single live worm every time preceded by the peculiar sensation of something moving inside the urethra and the sudden uncontrollable desire to micturate. The frequency of the discharge of the worm varied from day to day, sometimes once, sometimes twice or thrice and on a few days no worm was passed. From his history and our own subsequent observations in the hospital, it was found that the worm timed its exit from the urinary tract to late afternoons or nights.

On 11-10-'56, when he reported at the out-patient department of the Institute of Venereology, examination revealed a healthy-looking male adult past middle age, with a complaint of persistent urethral discharge of 10 months' duration. A slight mucoid urethral discharge was present and the urine was hazy. The microscopic examination of the smear was reported positive for pus cells and intracellular gram-negative diplococci. He was given 600,000 units of PAM as was also his wife although the latter did not reveal any clinical or microscopic evidence of Neisserian infection. A week later, he reported again with muco-purulent urethral discharge with hazy urine and the dose of PAM was repeated on the basis of a positive smear for Neisserian infection. From 20-10-'56 to 15-12-'56, the patient continued to attend the out-patients' department of the Institute, with no relief to his urethritis. There was variation in the quantity and quality of the urethral discharge with similar change in the appearance of the voided urine During this period, repeated examination of the smear and the urine showed only pus cells, epithelial cells and plenty of gram-negative bacilli resembling coliform organisms and a few R.B.Cs. The culture of a specimen of urine confirmed the microscopic findings. It would appear that the patient brought to the notice

of the examining junior medical officers that he was passing live worms in his urine, having noticed it for the first time in the beginning of December 1956. But instead of verifying the statement of the patient, the junior medical staff thought that the patient was suffering from an illusion, probably mistaking the appearance of the threads in the urine of chronic urethritis for worms. Inspite of his dissatisfaction with the treatment he was prescribed, which was only an alkaline diuretic mixture, he attended the department till the first week of Feb. 1957 and then stopped away. On 31-3-1957 the patient was referred again to one of us (P.N.R.) by one of the medical colleagues for examination in order to give some relief to his persistent trouble. During the interval when he stopped away from attending the clinic, the patient complained that in addition to the persistent urethral discharge, he continued to pass occasional live worms, but not with every act of micturition. On instruction, he brought a specimen of the urine containing the worm and both of us examined the specimen on 1-4-1957 and found two tiny white worms showing feeble wriggling movements. They were identified under the microscope (low power) as Oxyuris vermicularis both female, about 10 mm. long and 0·8 mm. wide and gravid with myriads of ova inside their interior. Even after the worm had apparently lost its movement, the ova-filled genital ducts could be seen violently and vigorously trying to expel the eggs. A little pressure on the cover slip helped in the discharge of myriads of ova into the surrounding field almost obscuring the outline of the worm. When the worm was almost empty of ova, the outline of the alimentary canal with the double-bulbed œsophagus was clearly visible. Under high power, the ova were identified with the characteristic plano-convex shape and a double-contoured envelope, enclosing a motile tadpole-like larva. The patient was hospitalized on the same day for further investigation. During the period of hospitalization, repeated daily examinations of the anogenital and cruro-genital regions were made by the swab method for ova and larvæ. On the first day, a swab taken from the anal region revealed a few ova under the microscope, but no ova or larvæ were identified from swabs taken from the scrotum, shaft of the penis, prepuce and glans penis either then or subsequently. The patient was instructed to call the nurse whenever he passed urine which was collected everytime in a conical glass and examined for the presence of the worm. It was established by direct observation that the worms were passed only with the urinary stream and that it was coming from inside the urinary tract. Repeated and daily examination of the urine-sediment revealed pus cells, epithelial cells, a few R.B.Cs, and plenty of coliform organisms. Proctoscopic examination of the rectum revealed a gravid female oxyuris sticking to the blade of the

instrument. The wife was examined on three consecutive occasions for the presence of the oxyuris, ova or larva on her vulva, perineum, perianal region, vagina, urethra and cervix with completely negative results. The patient on repeated and tactful questioning consistently denied the practice of pederasty, either marital or extra-marital. Through the courtesy of our surgical colleague Dr. U. Mohan Rau, a cystoscopic examination of the bladder and sigmoidoscopic examination of the lower bowel were carried out under spinal anæsthesia. The report of the surgeon was as follows:—

"No narrowing of the urethra. The turbid urine in the bladder was collected through the cystoscope. Bladder capacity 8 oz. The mucous membrane of the bladder was moderately inflamed. Ureteral orificcs were clear. A few ulcers superficial and hyperæmic were seen above and lateral to the left ureteral orifice; on two occasions a thin turbid discharge was seen to come out from the ulcers. Further pressure on the peri-vesical regions or on the abdomen did not produce any discharge. Ureteral orifices were normal. No vesical neck obstruction or projection was noticed. Indigo-carmine was excreted in 5 minutes and in good concentration from the ureteral orifice. No thread-worm or any other foreign body was noticed in the bladder. The orifice of a diverticulum was searched for and not found. The prostate was normal. Sigmoidoscopy up to 18 cm. from the anal orifice was normal. No abnormality could be detected in the abdomen on physical examination."

The urine collected from the bladder was examined for worm or ova with negative results and contained pus cells, R.B.Cs, and coliform organisms. Urethrocystogram, pyelogram and barium series of the alimentary canal failed to disclose any abnormality in the organs examined. Only once at the beginning of his hospitalization, the oxyuris ova were demonstrated in the peri-anal area and the oxyuris worm itself was accidentally observed sticking to the inner wall of the instrument when a proctoscopic examination was made. Subsequently repeated examinations for ova by the swab method and ordinary naked eye examination of the daily stools failed to reveal ova or worms. The time-consuming special flotation or concentration methods of fæcal examination were not attempted. The frequency of the discharge of the gravid oxyuris daily, the number passed each time and the interval between two successive passages of the worm with the urine showed great variations. Every worm passed was a gravid female and no male oxyuris was ever observed in the urine inspite of careful examination of every urine specimen. On two widely separated days he passed 8 and 6 worms during an abbreviated period of one to one and a half hours. Under the presumption that the origin of the lower urinary tract infestation is intestinal, attempts were made to rid the alimentary canal of the oxyuris infestation by ringing the changes on the various anthelmentics recommended for Enterobiasis. 'Antepar', one of the proprietary piperazine compounds, was administered in the prescribed dosage for four

days. For nearly a fortnight after treatment, the patient did not pass any oxyuris in his urine, but has subsequently been discharging gravid female oxyuris with his urine. As a precaution against auto-infection of the intestinal tract, the patient had been scrupulously carrying out the instruction regarding thorough cleansing with soap and water of the ano-genital region, hands and fingers after each act of micturition and defæcation.

A single course of oil of chenopodium and carbon tetrachloride followed by a purge was administered on 23-5-1957 in the early hours of the morning. Naked eye examination of the resulting stools, revealed a few worms expelled with the fæces. After an interval of 7 days, a piperazine compound in liquid form was administered at the rate of a table-spoonful daily for 7 days. For the secondary urinary-infection with coliform organisms, the new urinary antiseptic 'Furodantin' was given at the rate of 1 tablet thrice a day for 7 days. A course of Hetrazan tablets was administered for 10 days and it was during this therapy the patient passed the largest number of worms in the urine. Retention enema with Infusum Quassiæ was given daily for 10 days.

The various repeated anthelmintic treatments failed to give him permanent relief. After a short interval of freedom from passing the worms after each course of treatment, the trouble used to start again. The patient became thoroughly depressed. During a period of 10 weeks from the date of admission, 80 worms were passed through the urinary tract. In July 1957, the patient agreed for an abdominal exploration. Our surgical colleague, Dr. U. Mohan Rau was good enough to undertake the operation, but failed to discover any communication or adhesion between the bladder and the bowel wall, including that of the rectum. The patient had an uninterrupted post-operative convalescence, but even before he was discharged from the surgical ward, he started passing the worms through the urethra. A perineal exploration for any evidence of connection between the lower rectum and the posterior urethra was suggested, but the patient flatly refused any further surgical interference and obtained his discharge from the hospital.

The patient was kept under periodical surveillance as an out-patient from August 1957 to February 1958. During this period he continued to pass oxyuris through the urethra at irregular intervals of a few days. As a long-standing sufferer, he had learnt to observe a new symptom which preceded the passing of the worms through the urethra by a few minutes. An intense irritation,boring in character, was felt just inside the anal canal, and followed in a matter of minutes by the creeping sensation in the urethra and the migration of the worm to the exterior either with micturition or independent of it. This afforded a clue to

the possible anatomical localization of the fistulous opening somewhere low down in the lowest rectum or anal canal. Careful digital examination revealed a slight papular elevation on the anterior wall at the junction of the rectum and anal canal. The lesion could not be visualized with the proctoscope. Examination with the anoscope would have exposed the lesion but the instrument was not available. The patient was given charcoal by mouth for seven days in the hope of demonstrating it in the urine or adsorbed to the body of the worm as it emerged from the urethra, thus attempting indirectly to establish the presence of a minute fistulous communication between the bowel and lower urinary tract. But the result was negative, although the urine and the worms passed were daily examined for the presence of charcoal. The bladder and urethra were filled with methylene blue solution and the patient was instructed to retain the solution for 1 hour. Examination of the rectum failed to reveal the presence of the dye.

Discussion.—There has been no record or report in the literature of oxyuris infestation of the lower urinary tract in the male of such prolonged duration and inveteracy, although Max Koch[4] as cited by Symmers[1], mentioned that oxyuris can enter the urinary bladder through fistulas communicating with the bowel or in the female per urethrum. From the history obtained from the patient under report, it would appear that he was a victim of recurrent irritation and itching of the anus and lower rectum for some years prior to the onset of the present trouble. To obtain relief from the irritation, he devised an ingenious method of introducing his left index finger into the anus and rectum and titillating the same by vigorous in and out movements of the finger. Such a procedure repeated probably frequently must have traumatised the mucous membrane and in this patient who harboured a heavy infestation of intestinal oxyuris vermicularis, it is conceivable that the oxyuris would have penetrated the rectal wall, through a defect in the mucous lining and helped by the accompanying bacteria would have established a tiny fistulous track with an adjoining organ such as the bladder or prostatic urethra. It is true that the existence of such a communication between the bowel and the lower urinary tract was not visualized either by cystoscopy or proctoscopy, or sigmoidoscopy. It is possible to have overlooked a tiny opening in the depths of the mucous membrane folds of these hollow organs, with the limited area exposed and the poor illumination afforded by these optical aids. Laparotomy and meticulous examination for evidence of a communication between the bowel and bladder, by our surgical colleague was likewise disappointing. There was a suspicion that the fistulous communication might have existed between the rectum and the posterior urethra but unfortunately the posterior urethra could not be examined

due to the non-availability in the hospital of a posterior urethroscope. Repeated examinations of the urine and the prostatic secretions, failed to reveal any ova or larvæ of the parasite, but showed plenty of pus cells and gram-negative coliform organisms. The freshly passed urine was non-odorous and the naked eye and microscopic examinations did not reveal any fæcal matter. During the period of hospitalization of about 10 weeks and careful check-up of every act of micturition, the patient had passed about 80 gravid worms, *per urethrum* leaving out of account the numbers passed prior and subsequent to our observation. The repeated administration of a variety of anthelmintics during a 4-month-period failed to afford permanent relief from the urinary tract infestation. Our surgical colleague in his cystoscopic examination of the bladder had described superficial ulcers in the mucous membrane above and lateral to the left ureteric orifice but no evidence of any worm emerging from the orifice. But it may be pointed out that the migration of the gravid female worms through the urinary tract almost always occurred in the late afternoon and early part of the night, while the examination of the bladder was conducted in the forenoon. This may explain the negative result of the cystoscopic examination. The possibility of a single mature gravid female worm migrating through a temporary fistulous track between the lower urinary tract and the bowel, obtaining lodgement in a mucous crypt of the bladder or urethral mucous membrane and the production of a succession of adult progeny from the maturation of the ova, was considered, but seemed highly improbable. The ova or larvæ were never demonstrated in the urine or prostatic secretion. The maturation of the oxyuris ova into adult worms has never been observed to occur in any other organ except the alimentary canal. The digital examination of the anus and rectum on 13-2-1958 gave a suspicious clue to the anatomical site of the fistulous opening just above the anal canal, but the charcoal test was negative.

The probable sequence of events in the case under report may be stated as follows :—

The patient has been suffering from a heavy oxyuris infestation for some years. The repeated trauma to the mucous membrane of the anus and rectum caused by the digital titillation to relieve the itching and irritation, must have resulted in a breach in the mucous membrane of the rectum. The sudden onset of fever, pain in the lower abdomen, frequency of micturition, strangury and hæmaturia in January 1956 must have been the primary reaction to the establishment of a communication between the bowel and lower urinary tract and the migration of the first adult female worm into the latter. The acute inflammatory reaction subsided leaving a tiny permanent undemonstrable fistulous tract between the two hollow organs, through

which mature gravid oxyuris found an alternative route to escape outside to fulfil its life-cycle. The long continued persistence of oxyuris infestation in our patient, inspite of repeated anthelmintic therapy is probably due to 'retrofection' in which the larvæ which hatch in the anal region pass back into the bowel and a regular cycle of recurrence became established. It is not known how long the oxyuris in the urinary tract will continue to trouble this patient. He is kept under periodic surveillance with attempts to rid the intestinal infection by repeated anthelmintic treatment.

Summary.—An unusual case of chronic cysto-urethritis caused by the ectopic passage of adult gravid oxyuris vermicularis worms over a period of 2 years in a male adult is presented. Cystoscopic, sigmoidoscopic and proctoscopic examinations failed to reveal any fistulous connection between the bowel and lower urinary tract. Likewise laparotomy and meticulous search for adhesions between the alimentary canal and bladder for any possible connection between the organs, proved infructuous.

A short review of the pathology of oxyuris vermicularis infestation is attempted.

The authors are indebted to Dr. U. Mohan Rau, M.S., F.R.C.S., Honorary Surgeon, Govt. General Hospital, Madras, for the skilled surgical help rendered by him in the investigation of the case.

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ACUTE VOLVULUS OF THE SIGMOID COLON

D. B. Hinshaw and R. Carter having studied 55 cases of acute volvulus of the sigmoid colon, classify them into two main clinical types. There is the acute fulminating type characterized by its tendency to occur in younger patients, with sudden onset and rapid course, diffuse abdominal pain and tenderness and early development of gangrene, and by its frequent simulation of a perforated viscus or other abdominal catastrophe. The other is the subacute, progressive type, much more common, which usually occurs in older patients with a more gradual onset and runs a more benign course with slower development of non-viability of the bowel. An acute volvulus of the sigmoid must be regarded as a surgical disease requiring early surgical intervention. The ultimate treatment must be resection of the redundant sigmoid loop. Decompression by means of a rectal tube without operation should be reserved for the occasional patient with the subacute progressive type and no obvious clinical signs of non-viability, whose general condition prohibits laparotomy. At operation all patients with any evidence of gangrenous bowel must be treated by immediate sigmoidal resection or by exteriorization. If the sigmoid is definitely viable, the surgeon may choose between obstructive resection, simple operative detorsion and in occasional cases primary resection and anastomosis. The authors consider that the mortality in acute volvulus of the sigmoid closely parallels the incidence of gangrene of the bowel, and the only factor which can be expected to lower this death rate materially is early operative intervention.—(*Ann. Surg.*, July, 1957, via *Med. J. of Australia*).

...IMINARY REPORT ON THE TREATMENT OF CIRRHOSIS OF THE LIVER*

(With Crude Liver Extract Intravenously)

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IN 1925, Sato gave extracts of ox liver to patients having chronic liver disease, and reported good results. He attributed the improvement to the presence of a substance in the liver extract, which he thought was a liver hormone and named it as Yakriten (Sato : 1925, *Yakrit* in Samskrit means liver). Since then some American workers (Lichtman : 1953, *i*) have used specially prepared liver extracts, intravenously in large doses and have found good improvement to result. Continental workers (Wuhrmann and Jainski : 1955 and Falkner *et al* : 1954) have used a special liver extract intravenously and reported good results in chronic liver disease.

Some time ago I had an opportunity to use a special brand of liver extract 'Ripson' prepared for intravenous use by Roba Pharma, in three cases diagnosed as cirrhosis of the liver. The result was very satisfactory in all three. Before administering this preparation intravenously, the manufacturers advocate two or three intramuscular injections to test the sensitivity of the patient. Unfortunately, further supplies of this preparation were not available.

Since even this specially prepared liver extract had to be tried first intramuscularly, in order to test the sensitivity of the patient, it was felt that a crude liver extract which when similarly tested intramuscularly did not give rise to any foreign protein reaction, may, with advantage, be tried intravenously. If a crude liver extract did not give rise to any reaction, it was likely to contain a greater quantity of the active principle than the refined product which was liable to lose some valuable material in the process refinement. My attempts to obtain such a special liver extract having failed, I decided to use "Hemolon," a brand of crude liver extract manufactured and marketed by Alembic Chemicals '*For Intramuscular use only.*'

A 29 year old female patient who was clinically diagnosed to be suffering from cirrhosis of the liver who was given 2 intramuscular daily injections of 2 cc. and 3 cc. each on 2 days did not show any reaction. On the third day, with all necessary precautions to combat foreign-protein reaction, if any should occur, she was given 1 cc. of Hemolon diluted in 25 cc. of 25% glucose intravenously, very very slowly. There were no untoward effects. Thereafter the dose was increased daily by

*Specially contributed to the ANTISEPTIC.

1 cc. to a maximum of 3 cc. per day. This patient had palpable liver and spleen, ascites, enlarged veins over the abdomen and loss of appetite. She had been tapped twice before this treatment. Within about ten days, the appetite improved and the ascitic fluid which was at first increasing, decreased slowly after 18 days of treatment and at the time of discharge, 43 days later, had completely disappeared. The liver and spleen were no longer palpable and the appetite was excellent. Her R.B.C. count and hæmoglobin content remained the same throughout the treatment. She had 34 injections of Hemolon in all: 2 intramuscularly and 32 intravenously.

Fifteen more patients have subsequently been treated, on similar lines and 14 of them have shown improvement.

The General scheme of treatment is as follows:—When the patient is admitted, all possible investigations are done. A case-sheet is written on a specially prepared questionnaire. A clinical photograph is taken when there is marked ascites, engorged abdominal veins or arterial spiders. When the diagnosis is only suspected, a liver biopsy is done. After 2 or 3 preliminary intramuscular injections, the first intravenous injections of 1 cc. diluted in glucose is given with all necessary precautions. The dose is then raised by 1 cc. daily up to 3 or 5 cc. Most of the patients received on an average 4 or 5 cc. daily. These injections are repeated daily until good improvement is established after which, the injections are repeated on alternate days or twice a week. Some patients had 30, while others had 40 such injections. Being the first series of cases, the dose was increased to 7 cc. daily in a few instances. But it was found that even though this dose was well-tolerated, the patient did not derive any additional benefit over the dose of 4 cc. Sometimes, the liver extract was diluted in 50 cc. of 5% glucose for convenience. Although none of these patients developed any foreign protein reaction, they experienced a general sensation of warmth over the whole body not unlike that produced by calcium gluconate or nicotinic acid. American workers have demonstrated that this sensation of warmth is not due to the nicotinic acid content of the preparation (Lichtman: 1953–2). This sensation can always be controlled by slowing down the speed of the injection and that it disappears quickly on completing the injection. These patients were given the ordinary South Indian diet provided in the hospital, acid and gentian mixture and also at times 9 grains of ferrous sulphate daily. Whenever there was respiratory distress due to ascites, abdominal tapping was done or if the distress was not severe, 2 cc. of a mercurial diuretic was given two hours after a single dose of 30 grains of ammonium chloride by mouth. A daily weight record was maintained. Apart from the treatment

outlined above, the patient did not receive any other drug considered to be of special value in cirrhosis of the liver. Even the liver extract used for the purpose was selected mainly because it did not contain any factors of Vitamin B Complex etc., specially added to it apart from what was present in the liver. Other drugs were deliberately withheld in order to assess the improvement effected exclusively by the liver extract.

The improvement shown by the patients also followed a uniform sequence. The first sign of amelioration noticed in all the patients was an improvement in the appetite, which occurred in 7 to 10 days after starting the injections. After another 10 days or so the ascites and consequently the weight of the patient showed a decrease. Some of the patients who had marked ascites to start with, had to be tapped or given mercurial diuretics repeatedly for some time. But as the treatment progressed, it was found the interval between tappings or the diuretic gradually increased until atlast the ascites completely disappeared.

Case reports.—Case 1:—K., male, aged 32 years, admitted on 9-4-'57, with hard palpable liver and spleen of 5 years' duration, jaundice and loss of appetite of 3 years' duration and a little ascites since 15 days gave a history of repeated attacks of fever and rigor with pain in the whole of the liver area, with sudden increase in the depth of the jaundice following every attack. The attacks used to occur every six or 8 weeks. He was treated elsewhere with daily glucose injections for 30 days, I.V. methionine for 12 days, and some 300 tablets with no improvement. A liver biopsy showed "well-marked fibrous formation, practically dividing the liver into irregular nodules." He was put on the line of treatment outlined by me above, and there was remarkable improvement in the appetite within a week. The ascites disappeared quickly and the jaundice decreased, and there was an all-round improvement. He had an attack of fever on 23-4-'57 and again on 5-5-'57. Both of these attacks were promptly aborted by the intramuscular injection of 1 g. of Streptomycin daily for 2 or 3 days. His icteric index was:—42 units on 10-4-'57; 37 on 17-4-'57; 27 units on 1-5-'57; 17 units on 30-5-'57, and 16 units on 6-6-'57. He was discharged by the middle of June at his request. Towards the end of October 1957, he wrote to say that his jaundice had completely disappeared, his appetite was excellent, the liver and spleen were much softer and that he had returned to work as a school teacher feeling quite fit. During these four months, he continued to have injections of Hemolon 4 cc. I.V. twice a week.

Case 2:—D.S.B., male, aged 45 years, a chronic alcoholic of 9 years' standing, liver palpable 6 fingers below the costal margin, with no ascites but with a marked loss of appetite. He

was treated for 3½ months with Hemolon. He had 35 injections of 5 cc. I.V., almost every day and about 10 injections of 7 cc. twice a week. He showed all round improvement and at the time of discharge his liver was just palpable below the costal margin. Uptodate (four months after discharge) he has been in perfect health without any further treatment and doing his usual work as a clerk.

Case 3:—R.P., male, aged 35 years, well-marked ascites and œdema of the feet, with 7 arterial spiders on the chest wall, liver not palpable, spleen palpable four fingers below costal margin. He was tapped twice during his stay in the hospital and during the first 5 weeks, was given 2 cc. of Mersalyl once every week. During his stay of 2½ months, 59 injections of liver extract, 5 cc. on an average were given. Of these, 40 injections were given almost daily, and the rest on alternate days or twice a week. At the time of discharge on 6-6-'57, ascites was minimal and there was no œdema of the feet; he had excellent appetite and his general condition was good. Of the seven arterial spiders only two were visible. On 1st December '57, he did not show any ascites even on differential percussion. And only one arterial spider was seen and even that was disappearing. The spleen was not palpable.

Case 4:—Mrs. R., female, aged 50 years, diagnosed as cirrhosis of the liver, was treated for two months with I.V. liver extract but did not show any improvement; she became progressively worse and was discharged in a moribund condition. Liver biopsy done on admission showed "marked fatty infiltration and early fibrous formation"—ascitic fluid was straw coloured and not blood-stained on all the occasions when she was tapped.

[Note:—Please see report of another case on p. 342].

Apart from Hemolon, four other brands of liver extract marketed "*For intramuscular use only*" were tried. Of these four, one was a crude liver extract like Hemolon manufactured by Squibbs. It did not cause any untoward reaction and the patient showed the same type of improvement as with Hemolon. As Squibbs supplied only 12 vials of 10 cc., further clinical trials could not be carried out. The other three brands were proteolysed liver extracts. One of them, was tried in 3 cases in doses of 5 cc. per injection but the patients did not show any sign of improvement, at the end of 37 days with about 30 daily injections and 2 or 3 on alternate days. Two of them improved subsequently on Hemolon. The third was discharged due to the influenza epidemic. Another brand of proteolysed liver extract was given to 3 patients with no benefit. A third brand of proteolysed liver extract produced a very severe reaction when the dose was raised in the usual manner to 4 cc. diluted in 50 cc. of

5% glucose. Though the series of cases treated is small it is felt that crude liver extract administered intravenously has a definite place in the treatment of cirrhosis of the liver. Six brands of liver extracts tried, and it was found that the non-proteolysed liver extracts were alone useful. Perhaps the specific beneficial factor (liver hormone as suggested by Sato ?) is a complex protein which gets destroyed during the proteolysis of liver; and hence the good results with non-proteolysed liver extracts.

American workers who have used liver extracts intravenously in cases of cirrhosis of the liver consider that it has got a diuretic effect. (Lichtman, 1953–3). The explanation given by some of them is, that this diuretic effect is due to the neutralization of the antidiuretic hormone of the posterior pituitary by the liver extract (Lichtman, 1953–4). Others have totally disagreed with this view (Lichtman, 1953–5). Another view is that the flushing of the skin and the simultaneous vasodilatation in the kidney are responsible for the diuresis (Lichtman, 1953–6).

They are of the opinion that perhaps all the improvement shown by the patients, *e.g.*, increase in the appetite, decrease in the ascites etc., is due to the diuresis. In this series of cases, though the ascites disappeared in the end and the fluid must have been thrown out through the kidney, no diuresis worth the name was noticed such as happens when an injection of Mersalyl is given. Patients started losing weight long after the improvement in appetite and state of well-being had set in. The improvement in the appetite always occurred first, and cannot be attributed to decrease in the ascites, providing greater room in the abdomen. Moreover, no improvement in the appetite was noticed in patients with cirrhosis of the liver after tapping or Mersalyl injection before the commencement of liver extract treatment. Neither the deliberate and fairly rapid intravenous injections of 7 cc. in 25 cc. producing maximal flushing and warmth all over the body nor the slow administration of a smaller dose diluted in 50 cc. producing no flushing or warmth all over the body, had any constant relation to the quantity of urine passed in the next 24 hours. It is a well-known fact that all diuretics begin to lose their effect on the kidneys sooner or later after constant and repeated administration; with liver extract injections, it was found that the loss of weight was more marked after several injections had been given rather than at the beginning. If the liver extract were to have only a diuretic effect, this response should have been more marked at the very beginning. It is felt that the decrease in the ascitic fluid was due to the improvement in the liver condition rather than to any direct effect of the extract on the kidney. This may be compared with the diuresis produced in congestive heart failure after the

administration of digitalis. It is well known that digitalis has no direct diuretic effect on the kidney, but the increased urinary output is due to increased efficiency of the heart and of the circulation. The cause of ascites in cirrhosis is much disputed. Whatever be the cause responsible for the ascites, it is slowly reversed by the administration of liver extract and hence the decrease in ascites. In short, the improvement in the patient as seen by the increase in appetite, the decrease in weight and fluid, and the sensation of well-being are all due to an improvement in the liver condition. Further, five patients who have discontinued the treatment for over four months have not developed ascites uptodate.

Apart from the sixteen cases reported above, eleven more patients with either infective hepatitis or hepatoma (mistaken for cirrhosis) were treated with intravenous liver extract. So far, 27 patients have received 609 intravenous injections of *Hemolon* without any untoward reactions. One patient had 22 injections of Squibb's liver extract without any reaction. Three patients had 84 injections of proteolysed liver extract of brand 'A' without reaction. Another set of three patients had brand 'B' liver extract without any reaction (also a proteolysed liver extract). A third brand of proteolysed liver extract produced very severe reaction in the one and only patient on whom it was tried.

One patient, S., aged 50 years, a chronic alcoholic, not included in the 16 patients, was treated with Hemolon, for one month with a daily injection of 5 cc. He had marked ascites, loss of appetite and slight jaundice. The ascitic fluid was straw-coloured and not blood-tinged on two occasions. A liver biopsy done in the mid-axillary line was reported to show only cirrhotic change. The patient became progressively worse and died in hepatic coma. A post-mortem examination showed that the left lobe of the liver was completely carcinomatous, the left half of the right lobe being studded with many malignant nodules, and its right half having only a few malignant nodules, though it was cirrhotic. The liver biopsy needle may have picked up the tissue from this place. Perhaps patient No. 4, R., the 50 year old female who did not respond to this treatment may have possibly developed a similar malignant change which would explain the want of response referred to on p. 340, *supra*.

Summary.—This preliminary report refers to 27 patients who received intravenous injections of crude liver extract (marketed *"For intramuscular use only"*). No instance of foreign protein reaction was noticed in the series of 631 injections. Sixteen of the 27 patients were diagnosed to be suffering from cirrhosis of the liver and 15 of them improved; only one died. Improvement was noticed only in those patients who received nonproteolysed liver extracts. Six patients treated with proteolysed liver extract did not show any improvement. The factor which is responsible for the improvement is therefore, believed to be a complex protein which gets destroyed during proteolysis

of the liver. Demonstrable improvement in the physical signs was seen in some cases within 3 weeks of treatment, whereas in others it required about 40 days to show any improvement in physical signs.

Note:—At the time of sending this article to the press, further cases are under treatment almost along the same lines. A few cases are being given intramuscular injections of crude liver extract to see whether there is any additional or special virtue in giving the injections intravenously.

I am very grateful to Dr. A. Thimmappayya, M.B., B.S., District Medical Officer, Government Headquarters Hospital, Mangalore for kindly permitting me to publish this article and also for allowing me to treat cases of cirrhosis of the liver admitted in his unit: to Dr. G. D. Valiath, M.D., D.T.M., Principal, Kasturba Medical College, for according permission to publish this report as also for his valuable help in this research; to Dr. M. V. Chari, M.R.C.P. (Lon.), D.T.M. & H., Professor of Medicine, to Dr. C. H. Sivaraman, M.R.C.P. (Edin.), D.T.M. & H., and Dr. K. P. Ganesan, M.D. (Bom.), Readers in Medicine, for their kind permission to treat cases admitted in their units, and for their suggestions; to Messrs. Alembic Chemical Works Co., Ltd., Baroda, and Squibb-Sarabhai and other concerns for having supplied me the liver extracts used in these clinical trials.

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ASPIRIN AND DIABETES MELLITUS

The effect of aspirin in seven diabetics has been investigated. Four belonged to the overweight mild type; the other three were lean, more severe diabetics. Each patient was given a constant low-carbohydrate diet throughout the whole investigation, and this was given for about two weeks before aspirin administration to establish the effect of diet alone.

Aspirin dosage:—An intensive course of aspirin controlled by serum salicylate estimations (Trinder, 1954) was given to each patient for 10 to 14 days. Doses of 1 to 1·6 g. were taken four-hourly, omitting one dose in the middle of the night, to maintain as high a serum salicylate level as possible without inducing serious undesirable symptoms. The effect of this intensive course of aspirin on the clinical manifestations of diabetes as well as on the principal biochemical features of the disease has been investigated. Blood sugar was estimated by Lehmann and Silk's (1952) modification of Folin and Wu's method, glycosuria by Benedict's (1911) method, and ketonuria by the method of Greenberg and Lester (1944). Oral glucose-tolerance tests were also carried out; in addition, basal metabolic rates (B.M.R.) of four patients, calculated by the method of Robertson and Reid (1952), were determined before, during, and after aspirin therapy in view of the recent establishment of the drug as a peripheral-acting metabolic stimulant (Sproull, 1954).

Without exception, aspirin reduced the fasting blood-sugars and brought them to normal or near normal by the end of the course of treatment, and after it was discontinued the sugar concentrations started to rise again.

These striking results indicate that a short but intensive course of aspirin lowers the fasting blood-sugar level in diabetes mellitus.

Disappearance of glycosuria and the return of fasting blood-sugar to normal in a young diabetic during aspirin treatment for acute rheumatism led to reinvestigation of the effect of salicylate in diabetes mellitus.

An intensive two-weeks course of aspirin abolished glycosuria and lowered the fasting blood-sugar to normal or near normal in seven mild to moderately severe diabetics.

No decisive effect on glucose tolerance was obtained, though the blood-sugar curves were always lower during aspirin administration than they were either before or after.

Moderate ketonuria in two patients was reduced to normal with aspirin.

Clinical improvement accompanied the biochemical changes induced by aspirin, and, while serious toxic manifestations were not conspicuous, tinnitus and deafness were annoying. The possible place of aspirin in the treatment of diabetes mellitus is discussed.

The action of aspirin in diabetes mellitus has been located in the tissues, and this is of interest in the light of the proper establishment of the drug as a peripheral acting metabolic stimulant.—(*British Medical Journal*, November 9, 1957).

ORALLY GIVEN HYPOGLYCÆMIC DRUGS (*A WARNING*)

A pamphlet issued by the Ministry of Health for the guidance of physicians warns against the indiscriminate use of orally given hypoglycæmic drugs to replace insulin. It states that it is impossible to predict which diabetic patients will respond to oral treatment. Generally speaking they are those that have small requirements of insulin, are middle-aged or over, are not liable to ketosis or coma, and have not had diabetes long. The conditions of many diabetics receiving oral treatment would be better controlled by dietary means alone. Satisfactory as *orally given drugs* such as tolbutamide might be for the *maintenance treatment* of diabetes, *they are inadequate, or even dangerous*, when *infection is present*, or the patient is undergoing an operation. *A further warning* is given that the selection of diabetics for oral treatment, whether those with newly diagnosed conditions or those transferred from treatment with insulin, should be undertaken only at clinics where there are facilities for special examinations, particularly quantitative blood and urine-sugar estimations. On no account should the orally given drugs be given to a patient with glycosuria who has not been investigated. Constant supervision of the patient and attention to diet are essential. Although blood dyscrasias have not been reported with tolbutamide, the drug that is most commonly used, it is suggested that their possibility should always be borne in mind.—(*J.A.M.A.*, *165* : 13, November 30, 1957).

SIMPLE CLOSURE FOR PERFORATED PEPTIC ULCER

Two hundred sixty-two patients had simple closure of a perforated peptic ulcer, with a mortality of 1·5 per cent and an over-all post-operative complication rate of 15·2 per cent. All surviving patients were then given intensive antiulcer medical therapy as soon as the surgical phase of the treatment was complete (ten to 12 days after operation). McCaughan and Bowers believe that approximately 50 per cent of these patients will have to have gastric resection later. However, they note that an appreciable number of patients will respond to medical management and that the over-all results of simple closure, followed by subtotal gastrectomy if necessary, are better than subtotal gastrectomy as a primary surgical procedure.—(*Surgery*, *42* : 476, 1957, via *G.P.*).

ASTHMA*

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ASTHMA is a common complaint met with in daily practice and requires to be treated radically in each stage so as to avoid complications. General practitioners are usually hopeful about this condition, probably because of the maxim of Andrel "Asthmatics live long (a sign of long life);" but contrary to this popular belief, asthmatics have less than the normal expectation of life.

True spasmodic asthma is a paroxysmal affection occurring most frequently in patients with a neuropathic inheritance. This sudden paroxysmal expiratory dyspnœa brought on by a narrowing of the lumen of the bronchioles may be due to:—excessive vagal stimulation; chemical agents or cerebral influences. In other words, it may be due to: (*a*) a stimulation of the vagal nerve endings of the bronchial musculature leading to bronchial spasm; (*b*) allergic action of the bronchioles or (*c*) inflammation of the bronchiolar wall.

PATHOLOGY:—Brodie and Dixon (1903) have shown that the stimulating effect on the nasal mucosa produces a reflex bronchial spasm. Excessive emotional upsets due to fatigue, worry and fear—can precipitate asthmatic attacks. Hurst (1914) has shown that an unduly irritable bronchial centre is transmitted by heredity.

Various common substances are said to produce undesirable bodily reactions such as urticaria, dermatographia, eczema, eosinophilia, migraine etc. This 'chemical idiosyncrasy' is an inborn tendency in certain individuals and may be purely *local* pertaining to one system or organ; or *general*, *i.e.*, manifesting anaphylactic shock. This allergen may act locally on bronchioles or indirectly through the vagus. Ephinger and Hess (1917) believe that 'the foreign protein or toxin produces the asthmatic attack by inducing vagal tonicity.'

It is now generally agreed that the broncho-constrictor fibres or the vagus are the channels by which impulses discharging the asthmatic paroxysm reach the bronchi (1941).

ÆTIOLOGY:—1. *Inherent*:—It affects all ages. A third of the cases occur in persons below 10 years of age. Incidence of sex is 3 : 1. It has a familial tendency. Sedentary habits predispose to asthma. Deviated septa, swelling of the turbinates, nasal polypi, enlarged adenoids, otitis media, climatic conditions and particular localities also play some part.

2. *The exciting factors* are given in Table I overleaf:—

* Specially contributed to the ANTISEPTIC.

TABLE I

Showing the exciting factors in Asthma

Stimulation of the vagus	Allergy	Inflammation of the bronchial wall
1. Impulses from brain and high nerve centres. 2. Reflex stimulation. (*a*) nasal; (*b*) bronchial; (*c*) gastric; (*d*) intestinal; (*e*) urinary bladder; (*f*) pelvic; and (*g*) nervous. 3. Toxins in the blood may stimulate directly. 4. Endocrine influence.	1. Inhalation—pollen of grasses, flowers etc. 2. Ingestants — *Vegetable*: maize, wheat etc. *Animal*: meat, milk etc. *Drugs:* Aspirin, quinine etc. 3. Injection—Sera, vaccines etc. 4. Metabolic—Faulty metabolism. 5. Bacterial—Mostly streptococcal. 6. Unknown.	1. Primary bronchitis. 2. Recurrent attacks of severe bronchitis. 3. The allergic type may lead to secondary bronchitis and —to inflammation—Asthma.

SYMPTOMATOLOGY :—Chevalier Jackson has stated "All that wheezes is not asthma" but experts have come to a compromise and have held that "All that wheezes *is* asthma until otherwise proved." The asthmatic wheeze is chiefly an expiratory wheeze, with prolongation of this phase and should be bilateral.

We see paroxysmal attacks of expiratory dyspnœa, nocturnal diuresis and laboured breathing; also visible pulsations in the epigastrium; hyper-resonant note on percussion and louder rales on auscultation; inspiration is short and expiration unduly prolonged.

Laboratory findings :-(1) The presence of Crushman's spirals, and Charcot-Leyden crystals in the sputum; (2) over 20% eosionphils in the blood and (3) a lowering of blood sugar.

DIAGNOSIS :—Is easy enough at the time of the attack; but in between the attacks, a history of paroxysmal dyspnœa with wheezing rhonchii is diagnostic. Radiological and pathological investigations are also necessary.

Classification.—Asthma may be (*a*) bronchial, (*b*) allergic, (*c*) status asthmaticus and (*d*) pulmonary eosinophilia.

In the bronchial variety, there will always be some degree of pre-existing bronchitis but in the allergic, the onset will be sudden. In the bronchial, there will be some amount of leucocytosis but in the allergic there is no such increase. Expectoration in bronchial asthma is more than in the allergic variety.

The pulmonary eosinophilic variety simulates the allergic one—but in the former there is loss of weight and a low grade pyrexia simulating tuberculosis. N.A.B. acts as a therapeutic test. In the former, there is a *relative* eosinophilæmia but in the allergic, there is an *absolute* eosinophilæmia. In the former,

there is star-shaped or honey-combed appearance of both the lungs but in the allergic variety, the shadows of both the lungs will be quite clear.

Status asthmaticus.—History of many years; ordinary remedies do not give relief. The patient presents a picture of misery; the chest is emphysematous, shows typical signs of wheezing rhonchii and rales all over. There will be markedly prolonged expiration. This may be either allergic or non-allergic.

DIFFERENTIAL DIAGNOSIS :—(1) Bronchial asthma; (2) cardiac asthma; (3) renal asthma and (4) dyspnœa due to some obstruction.

1. *Bronchial asthma* :—(*a*) History of previous attacks of asthma or allergic diseases; (*b*) other evidence of allergic reactions; (*c*) presence of emphysema, signs of chronic bronchitis; (*d*) eosionphils in blood and in secretions, both nasal and bronchial; and polyuria on the termination of an attack; (*e*) the left heart is normal and the right side may show some congestive failure; (*f*) the dyspnœa is essentially expiratory and the attacks are usually prolonged; (*g*) tenacious sputum with Charcot-Leyden crystals and Crushman's spirals and eosinophils; (*h*) response to iodides and sympathomimetic drugs; and (*i*) normal or even shortened circulation-time.

2. *Cardiac asthma* :—(*a*) Paroxysmal dyspnœa commencing after the age of 50, should be regarded as cardiac asthma unless proved otherwise; (*b*) the dyspnœa is both inspiratory and expiratory and less disproportioned; (*c*) persistent hypertension and pulsus alternans will be helpful in confirming cardiac type; (*d*) aortic area is to be clearly looked into, and if it is doubtful, W.R. test may be undertaken; (*e*) electro-cardiography is helpful in diagnosing coronary artery disease, aortic incompetence, aortic stenosis, chronic myocardial disease etc.; (*f*) moist basilar rales in addition to sibilant sonorous ones; (*g*) sputum is fluid and frothy, occasionally blood-tinged, without Charcot-Leyden crystals or eosinophils; (*h*) circulation time more prolonged; and (*i*) good response to specific treatment, bed-rest, digitalis, and mercurial diuretics.

3. *Renal asthma* :-(*a*) Dyspnœa is expiratory and nocturnal incidence is common; (*b*) the breathing has got a characteristic hissing quality; (*c*) it may simulate cardiac asthma clinically —but urine—examination for albumen and casts will clear the doubt; (*d*) blood urea content will be more than 150 mg.% and is diagnostic; and (*e*) these can get relief from alkalies which overcome acidosis.

4. *Dyspnoea due to obstruction* :—The dyspnœa of laryngeal or tracheal obstruction and of mediastinal pressure can usually be recognized by its inspiratory type, associated with

stridor instead of wheezing. X-rays will exclude aneurisms or new growths.

In dealing with the subject of treatment, it is better to state first, *what not to administer* :—

(1) *Epinephrine* :—When the stimulant to contract is already greater than the relaxation-effect of epinephrine, there may be no justification. (2) *Atropine* :—The patient cannot cough up the mucus, because of drying though there is bronchial dilation. Atropine only dries the mucus more. (3) *Morphine or opiates* :—These depress the already depressed respiratory centre and they abolish the cough reflex. (4) *Aspirin* :—Asthmatics are to some extent sensitive to it. (5) *Saline* :—(I.V.) The sodium-ion produces retention of fluids and increases the œdema, if given in large quantities. (6) *Digitalis* is not indicated unless signs of decompensation are present. (7) *ACTH or Cortisone* should not be given except to relieve status asthmaticus when all other measures have failed. (8) Don't allow an asthmatic to get sick enough to threaten his life without putting him where he can be bronchoscoped if necessary. Aspiration of inspissated sputum is a life-saving procedure.

Treatment :—A. Immediate :—(1) The asthmatic attack, (2) status asthmaticus and (3) the associated symptoms and underlying causes.

1. The asthmatic attack of bronchitic or allergic variety :—Rest in bed ; ½ to 1 cc. solution adrenaline hydrochlor 1 in 1000 hypodermic, is the sovereign remedy. But adrenaline in oil has got a prolonged effect. The patient is to be kept warm and the chest may be poulticed with linseed, antiphlogistine etc. Solution adrenaline hydrochlor may be given orally in doses of 15 minims in an ounce of aqua chloroform.

℞ Aminocardol ... one tablet.
Redoxon ... 50 mg. tablet.
Phenobarbitone ... ½ gr. in one packet—thrice a day is very useful.

Isopronaline tablet sublingually also affords some relief. Aminophylline dissolved in 10 cc. distilled water given I.V. relieves the spasm. This however, raises the sensitivity of the asthmatic patient to adrenaline.

2. Status asthmaticus.—This condition is called refractory asthma, as it does not respond to treatment. Rigorous treatment in the meanwhile is necessary but excessive therapy should be avoided. It is better these patients are hospitalized where they will have conditioned room temperature. Diet is of no great importance as the patient will not be able to take anything at all. Give him 1,000 cc. of 5% glucose to restore the fluid lost by respiration. To this 7½ gr. to 15 gr. aminophylline may be added,

or 20,000 cc. orally or rectally per 24 hours. Oxygen may also be given immediately by the nasal route (4 to 6 litres per minute) A mixture of 20% oxygen and 80% helium may be given by a B.L.B. mask for about an hour followed again by 90% oxygen.

Recent advances in the treatment of asthma by ACTH and Cortisone :—The I.V. administration of ACTH is as good as the I.M. route. But a fourth of the dose by the former route is more efficacious and less expensive. But Arbesman sounds a note of caution that from the point of side-effects and high cost of both drugs, they should *not* be used indiscriminately for every case.

"A real medical emergency is presented by the adrenaline-fast patient. Immediate use of fluids, sedation and oxygen is in order, and aminophylline ¼ to ½ grain dissolved in 10 to 20 cc. of distilled water given I.V. is helpful. Ether and oil as a retention enema may break up the asthmatic attack and permit adrenaline to become effective again. Should all these measures prove of no avail ACTH or cortisone should be used."

3. The associated symptoms and underlying causes.—Expectorants such as Pot. iodide for adults and Syrup Ipecac for children are effective in relieving intractable asthma. Sedatives like Demoral, Chloral hydras or paraldehyde may be given in hypnotic doses at bed-time. For bronchitis etc. antibiotic therapy is in order. In asthma, the sputum is clear or grey in colour. If it becomes yellow or greenish and offensive in odour, penicillin or streptomycin may be given.

B. Intensive treatment to prevent further attacks :—Avoidance or removal of the specific cause. Overloading of the stomach is to be avoided. A thorough check-up *i.e.*, nose, ear, throat is to be made and any defects remedied. If the patient is anæmic, liver extract, B Complex or Vitamin C should be given. If there is hyperchlorhydria, Acid hydrochloric dil with orange juice may be given. If the patient is running a temperature, treat him with sulpha drugs or antibiotics.

Nonspecific therapy *e.g.*, milk, autohæmotherapy, vaccines, proteose, sulphur, gold salts and cobra venom may be tried. Physical therapy *i.e.*, deep breathing exercises may also help.

P.S. :—Recently Dr. Devi Chand and K. S. Aneja of Simla have reported on a series of 15 cases of Status asthmaticus treated by them. Their observations show :—(1) that ACTH is a life-saving remedy in some cases ; (2) the I.V. route produces a better effect than the I.M. route ; (3) Prednisolone is superior to Cortisone ; (4) the combined use of Prednisolone and ACTH minimizes side-effects ; (5) the prolonged use of Prednisolone and Cortisone for about 9 months has given them 80 per cent control and 20 per cent partial control and (6) no deaths, no failures and no side effects, have occurred in their cases.

FULMINATING INFLUENZA

In the recent epidemic of influenza, most of the cases have been mild.

In six weeks from the middle of September 1957, Dr. Roberts examined 12 cases of fatal fulminating influenza. Mitral stenosis was present in 3 of the cases and might be regarded as a major factor in producing death. The remaining 9 patients were previously healthy, and 8 of them were young. Although many large series of cases of fatal influenza were studied in the 1918–20 epidemic, it seems worth while to record at once these 9 fatalities in healthy persons, for the findings may indicate a more effective method of management.

The pathological features of these cases are similar to those recorded in the 1918–20 influenza epidemic. A main point of difference, however, is in the bacteriology, with *Staphylococcus aureus* emerging as the predominant organism in trachea and lung—a finding which contrasts with the experience in 1918–20 when *H. influenzae* was the commonest organism. The staphylococcal infection appears to have elicited very little tissue reaction. This apparent lack of response might be ascribed either to suppression of the tissue reaction by the virus, or to overwhelming of the host by the staphylococcal infection before a tissue response could occur. These explanations can scarcely be regarded as satisfactory. It is interesting, however, that in these cases the appearances were somewhat similar to those which Dr. Roberts has observed in cases of fulminating staphylococcal enterocolitis, in which the abundance of staphylococci on the surface was at variance with the relative absence of local tissue reaction. Although it would be unwise to dismiss the possible toxic effects of a massive virus infection, it seems equally unwise to regard the staphylococcus as playing an unimportant role. Dr. Roberts suggests that in the management of these fulminating cases the following points should be taken into account:—

(1) The patient should be admitted to hospital urgently in order to secure effective oxygen therapy and other supportive measures.

(2) No reliance should be placed on penicillin as *the* antibiotic. Since absorption either from stomach or muscle may be slow, intravenous chemotherapy seems desirable, and chloramphenicol or tetracycline should be administered. Staphylococcus antitoxin might be given intravenously at the same time.

(3) In view of the apparent improvement that has accompanied the use of the corticosteroids in the management of fulminating meningococcal septicæmia, steroid therapy might be considered. But in none of the present cases was there any evidence of suprarenal damage, which is such a usual finding in the meningococcal cases.

(4) The present cases lend no support to the view that endotracheal suction through a tracheotomy tube would be of help, since the secretions are very deeply situated in the lungs.—(*The Lancet*, November 9, 1957).

DISTRIBUTION OF PAIN IN MYOCARDIAL INFARCTION

Kreines analyzed the protocols of 104 cases of myocardial infarction for the purpose of learning whether there is an association between the location of an infarct and the distribution of pain to atypical sites such as the back and epigastrium. There was, in fact, no association between location of infarction and radiation of pain to atypical sites. However, the size of an infarct did have a significant influence in this respect. This fact is shown in an illustration.—(*Circulation*, *15* : 348, 1957, via *G.P.*).

URINARY FISTULA*

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URINARY fistula is still a problem in urinary surgery. Despite extensive operations, tracks persist. The treatment itself is lengthy and irksome. The patient is shunned by society and goes on changing surgeons for a remedy. A simple device tried on a patient who had traumatic perineal fistula gave excellent results.

The urinary fistula is a track through which urine leaks either wholly or in part. Such a track may occur in any part of the urinary tract. Sometimes ascending infection may set in and the whole excretory mechanism of the body may become involved.

AETIOLOGY :—(1) Gonorrhœal urethritis leading to infection of the urethral glands may completely resolve or cause narrowing or may burst out to form a fistula. (2) Traumatic.—Direct injury over the perineum (common in cities *e.g.*, as when a pedestrian by chance puts his feet over a man-hole cover which turns over and injures his urethra). Fracture of the pelvis may cause injury to the urinary tract. Sometimes instrumentation *e.g.*, Litholapaxy or sounding may produce urinary fistula. (3) After supra-pubic drainage, an urinary fistula may sometimes persist. (4) In an operation for inguinal hernia, the bladder may often be opened by accident and a fistulous track may remain. In one of my cases such an accident was narrowly averted by early detection of the bladder by passing a catheter. If injured, it should be immediately stitched and a drainage inserted ; otherwise death may occur. (5) Paracentesis abdominis done over a full bladder may cause a fistula. So the bladder should always be evacuated before this procedure. (6) Certain congenital affections may cause it *e.g.*, Ectopia vesica, Umbilical U. fistula, due to imperfect closure of urachus and/or a primitive cloacal condition. (7) Injury to ureter may lead to fistula-formation. Subcutaneous and surgical injuries occur during removal of carcinoma of the rectum and uterus, O. V. cyst etc., or during a difficult forceps delivery. It may be completely divided or its blood supply may be cut off causing sloughing and fistula-formation. (8) During and after operation on the kidneys *e.g.*, nephrectomy, nephro-lithotomy, resection and anastomosis of the pelvis of the kidney in hydronephrosis. (9) Vesico-vaginal fistula, due to difficult labour or forceps delivery. (10) Vesico intestinal fistula—due to growth or infection either in the bladder or intestine. (11) Impacted calculus in any part of the urinary tract may result in fistula-formation.

* Specially contributed to the ANTISEPTIC.

These are the possible causes for urinary fistula. Treatment lies in a perfect knowledge of the anatomy derived from clear dissection of every part. This will alone avoid any accident leading to disastrous complications. Immediate and perfect suturing will generally clear off any future sequelæ.

Anaesthesia.—Spinal anæsthesia is the best for suitable cases. Gas and oxygen also give satisfactory results. Trilen or Pentothal sodium reduces the need of anæsthesia proper, thereby diminishing the chance of post-operative vomiting, disturbance of liver and excretory organs. Chloroform should *not* be used as the deranged renal function may become worse.

Operation.—The primary line of treatment is to divert the irritating fluid. Efficient drainage of the bladder is provided and suprapubic cystostomy is *the* method of choice. For suprapubic cystostomy one slightly curved transverse incision gives a better approach to the bladder without opening the cave of Rizus. Various methods of operation have been in use. Sometimes transplantation of the ureter in the intestine is also advocated to get rid of a persisting urinary fistula. (Coffey's operation). When penile urethra is affected by a single fistula, the best way to effect a cure is by a plastic operation. In this operation, quadrilateral flap—double lateral flap—bridge flap or a flap raised from the scrotal skin have been done *e.g.* Dieffenbach's, Nelaton's, Benedict's, Guyon's and Pasteau's etc. The operation should not be undertaken in the presence of an acute inflammatory condition. Necessary antibiotics should be given to avoid recurrence.

Failures in penile fistula are probably due to erection of the penis. The stitches separate and failure results. The patient should be placed on bromides or opiates in order to prevent erection. Sometimes ice-packs may be used for the purpose. Intelligent patients may be provided with a bottle of ethylchloride which he may spray when necessary.

There are problems a surgeon has to face in cases of multiple fistula in the perineum and bulbus urethræ. Several sittings are necessary before a cure is effected. Generally all the tracks ultimately join to form one which opens into the urethra. If it is associated with stricture it may be dealt with by internal urethrotomy before dealing with the fistula. External urethrotomy may also be undertaken while excising the tracks of the fistula. External urethrotomy has served best in my experience. After a median incision over the perineum the whole thickness is cut till the groove of the Wheelhouse's-staff is felt. The urethra is cut across and Teal's gorget is passed into the bladder. A rubber catheter is introduced through the groove of the gorget into the bladder, and clamped by an artery forceps. After complete removal of the stricture, another catheter is passed through the external urethra and brought out through the stricture area. The eye-end of the catheter is now fixed with the catheter which is in the bladder and pulled out. Now one catheter which lies in the full length of the urethra and bladder is clamped with artery forceps.

All the tracks are laid open and the cicatrical tissues are excised, which cut like turnip. Some of the tracks may traverse underneath the scrotum where it is not possible to open. It may be thoroughly scraped. The surrounding area is undercut to reduce the large dissected area. After the turnip tissue has been removed the undercut skin is stitched without tension. If there is any tension, lateral incisions should be made and left to heal by granulation. The wound when lightly packed with some antiseptic cream, heals from the floor.

Operation for graft.—In cases where the track persists in the midline of the perineum the following graft method gives good result. This method was tried in this hospital and proved successful. Five years ago, a patient came by an injury over his perineum, owing to a fall on a log of wood with legs apart. He got a rupture of the urethra and later got multiple perineal fistulæ. Since then he was operated several times but one fistula in the midline persisted. He was then put in lithotomy with a slight Trendelenburg's position. One circular incision around the track was made and all cicatricial tissues were removed.

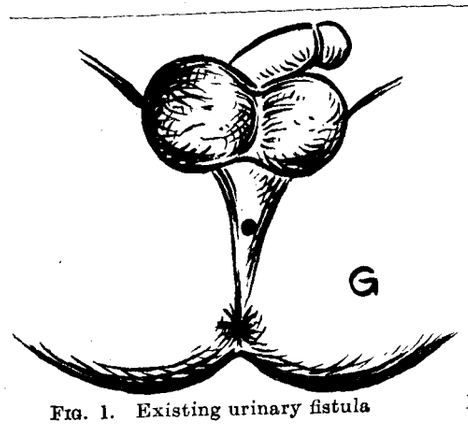

Fig. 1. Existing urinary fistula

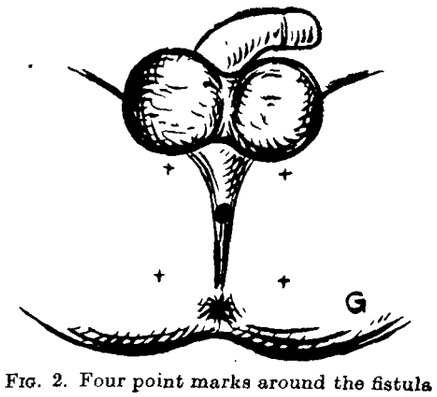

Fig. 2. Four point marks around the fistula

Four points are marked over the perineum with methylene-blue, the upper two points being below the junction of the scrotal and perineal skin and lower two points 1½" above the anus (see *Fig. 2* above). Both upper and lower points should be 1" apart from the midline. The two lateral points are joined by slightly curved incisions and the lower by straight. The incisions should be just of such a depth as to erode and make it raw looking. A flap of epithelium is removed. The lateral incisions are

deepened well below the fistulous tract. The lower incision is also treated in the same way. The depth of the incision should not be more than $\frac{1}{8}$th to $\frac{1}{6}$th of an inch. The lower border of the incision is caught by a toothed forceps and dissected up below the fistula. The flap should be even and no tear should be made during the process of dissection. The dissected flap is now turned over the upper denuded area containing the fistula. It is important to note that the line of flexion of the reflected flap

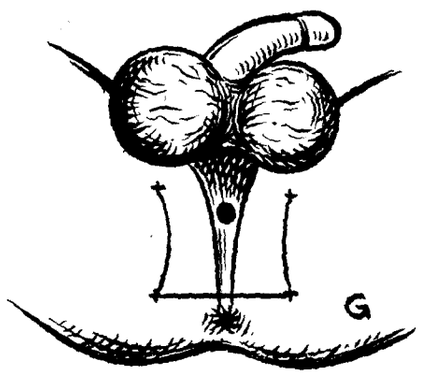

Fig. 3. Points joined by curved incisions.

Fig. 4. Thin skin flap is removed from the area.

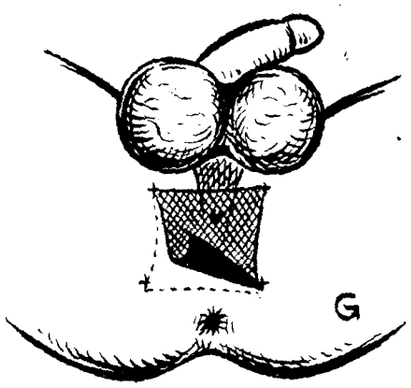

Fig. 5. Flap of graft raised by deep incision below the fistula.

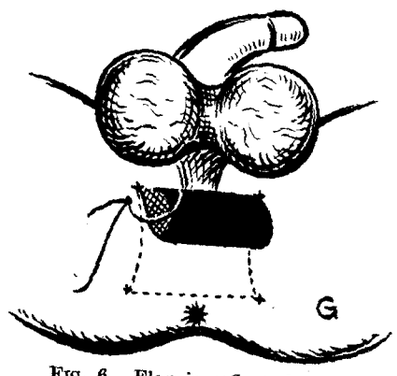

Fig. 6. Flap is reflected and being stitched.

should not be in tension or severe sloughing may follow, causing a waste of the whole labour. The reflected part is now fixed by continuous or interrupted sutures using catgut No. 0. The skin on all four sides is now undercut sufficient to cover the margins and as far as possible without any tension. The stitches over the skin should be snugly applied. The whole area is now liberally insufflated with penicillin powder and covered by gauze and cotton and held by 'T' bandage. (see *Figs.* 3 to 7 on pp. 354 and 355).

The surgeon should open the bandage on the third day to see the progress made. Any sloughing or foul smell means that the graft has not taken and will come out owing to gangrene developing. Parenteral antibiotics and supportive vitamin therapy should be instituted for rapid progress. Record of the pulse and temperature, will give a good indication of the progress made. When the wound has completely healed the urethral catheter should be removed. Periodical dilatation should be started to prevent stricture developing.

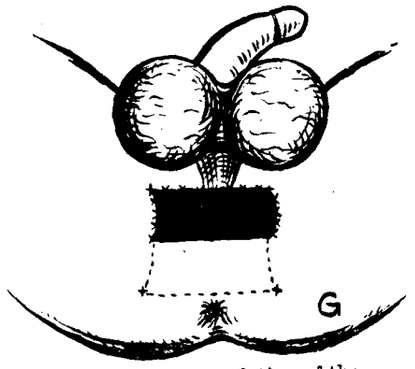

Fig. 7. After completion of the stitches.

Discussion.—Urinary fistula over the perineal area is very resistant to treatment due to uncleanness of the part and lack of rest. Operation done under strict asepsis and painstaking dissection will make the patient fit to move in society. No unabsorbable material or outdated catgut should be used in the deeper parts of the wound; otherwise there will be recurrence. The graft method should be undertaken only when one fistula is present. The suprapubic approach by slightly curved transverse incision gives best results. This prevents opening of the cave of Ritzus. A well-fitting rubber catheter should be used, in order to prevent leakage on over-stretching. The graft should be even and no tear should be made in it during the process of dissection. No operation should be undertaken in the presence of acute infection. The patient must void urine before coming for operation. The surgeon must pass the catheter himself on the operation table, without relying on nurses. Graft operation performed on a patient gave positive relief, but it is premature to counsel its universal adoption from the success obtained in a single case.

Summary.—Possible causes of urinary fistula are discussed. A case of persistent urinary perineal fistula is reported. Diagrams have been made to illustrate the various stages of the operation.

Acknowledgement.—My thanks are due to the ward-staff who looked after the case efficiently during the whole post-operative period.

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CARCINOMA OF THE LUNG WITH FIVE-YEAR SURVIVAL

Where pulmonary carcinoma is resectable, a respectable salvage rate can be achieved, says the author, and he thinks it should be more widely known among physicians. Excisional operations, when it is possible to carry them out successfully, give the patients a 25% chance of five-year survival. In lung cancer, pneumonectomy is undoubtedly the treatment of choice, he says, with chance of cure enhanced with a radical excisional procedure can be done. From a review of 3,000 cases in his experience, he concludes that irradiation and chemotherapy should not be used except, possibly, for palliation. A critical review of 61 cases of "cure" was carried out in a quest for possible factors that might be common to all patients who had been saved; unfortunately, however, the study did not reveal any common feature which would give these patients a prognostic advantage over those who died.—(William L. Watson, *J. Internal Coll. Surg.*, December 1957).

EMERGENCIES: ACUTE POISONING

While the fact that a patient has been poisoned is generally obvious, this is not always so and hence it is important when confronted with an obscure sudden illness, that the possibility of poisoning should cross one's mind before valuable time is lost. Poisons sometimes enter the body by unusual routes, *e.g.*, Camphorated oil. Blood, albumin and sugar in the urine, and even extensor plantar responses do not necessarily mean that the illness is "natural" since poisons may be responsible. It is more important to know what effects a poison is producing, and how it was taken, than to know exactly what the poison is. The two important principles in treatment are:

(1) *To remove or neutralize the poison.* (2) *To keep the patient alive by dealing with the effects of poisoning.*

There is, however, something to be said for giving a dessert-spoonful of the following "Universal Antidote" while preparations are being made to wash out the stomach. As it is very light and fluffy, it should be made into a paste before swallowing."

Powdered activated charcoal 2 parts. Magnesium oxide (or Milk of magnesia) 1 part. Tannic acid (or strong tea) 1 part.

Note: Ordinary charcoal, burnt toast, etc., are useless.—(*Emergencies in Medical Practice*, C. A. Birch, p. 5, via *G.P.*, October '57).

EARLY FEEDING AFTER ABDOMINAL HYSTERECTOMY

Decreases the need for intravenously administered fluids but increases nausea, vomiting, distention, and gas pains, Joseph Hyde Pratt, Jr., and Glenn Cantrell, of the Mayo Clinic and Foundation, Rochester, Minn., state that only 0·39 litres of intravenous fluids were given on the third postoperative day to 38 patients fed a solid, high-protein diet immediately after total abdominal hysterectomy, whereas administration of 0·89 liters was necessary in 41 patients managed in the usual manner. Nausea and vomiting occurred in 18 of the women fed the special diet but in only 8 of the controls. Moderate or severe abdominal distention was observed in 3 of the control group and 5 of the special diet group. Only 10 control subjects had moderate or severe gas pains, whereas 15 patients fed immediately after operation had such distress. More thorough preoperative explanation of the regimen to the subjects might have led to better results, since some opposition to early feeding expressed by relatives, roommates, and some of the nursing staff may have dismayed the patients.—(via ***Modern Medicine***, Dec. 15, 1957).

Cases and Comments

DIETHYL CARBAMAZINE CITRATE IN TROPICAL EOSINOPHILIA

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Introduction.—Tropical eosinophilia also known as pulmonary eosinophilosis or pulmonary eosinophilia is very widespread in our country. Its main importance lies in its prevalence and its greater responsiveness to treatment as compared to the other conditions from which it has to be differentiated.

In the past, the disease was treated quite effectively by arsenical preparations. But arsenic carries with it grave risks and we have come across over 25 cases of encephalopathy in the past three years, directly attributable to the use of arsenic in the treatment of eosinophilia. Nearly half of these cases proved fatal. Tropical eosinophilia which *per se* causes no mortality should not therefore, have such a risky method of treatment. So many physicians prefer to give only a palliative treatment, like large doses of vitamin C, small doses of ephedrine or some anti-allergic drugs in the hope of partially relieving the patient till natural remission of the disease takes place.

Recently we came to know of the potential value of diethyl carbamazine citrate in this disease, and so we tried the drug in a series of 100 patients; the results are reported in this paper.

Material and methods.—One hundred patients from all strata of society were treated. Among these, a previous history of a similar attack and arsenic treatment for the same was obtained in twelve and more than one attack in two cases.

TABLE I
Showing the main symptoms

Symptoms	No. of patients with the symptoms
Cough ...	96
Wheezing and breathlessness	70
Oppressive feeling in the chest	6
Fever ...	3
Nose-block ...	2
Loss of appetite ...	1
Asthenia ...	1

The criteria for diagnosis were :—(1) The presence of one or more of the pulmonary symptoms; and (2) an absolute count of more than 2000 eosinophils cmm.

Investigations.—*Blood* :— In every case a total W.B.C. count and differential count were done and in a few the "absolute eosinophil count" was done by the direct method. The absolute eosinophil count varied from 2000 to 40,000/cmm. *E.S.R.* :—done in some cases, was found to be raised in most of them.

X-ray chest :—In 52% cases X-ray chest was available. Twenty-two cases showed the typical mottling. In others only increased lung markings were seen. *Examination of stools* :—Round-worm ova were seen in 21 cases and ankylostome and other ova in a few. *Night-blood examination* for microfilaria was done in six patients who either had some evidence of filariasis or atleast gave a suggestive history. Microfilariæ were seen in only one of them.

Treatment :—All these patients were put on diethyl carbamazine citrate (*Banocide* 50 mg. tablets, Burroughs Wellcome & Co.). The first 20 cases were given 2 tablets thrice a day for six days and only one tablet thrice a day thereafter for three weeks.

Later, it was found that a shorter duration of treatment is equally effective *i.e.*, 2 tablets thrice a day for 10 days.

Observations :—Day to day response to the treatment as judged by the symptoms was noted ; the majority of patients began to show some relief of symptoms in 96 hrs., and by the end of 10 days, they were found to be symptom-free. A few of them showed an initial exacerbation of symptoms only for two or three days and this was quickly followed by improvement. The average period taken for complete symptomatic relief was found to be 9 days and 93 cases were completely all right within 15 days. The remaining seven took nearly 20 days to become asymptomatic.

Table II

Showing results of treatment with Banocide

No. of days	Percent of patients with asymptomatic relief	Percentage of patients who reached normal count
1 to 5	39	...
5 to 10	31	20
10 to 15	23	26
15 to 20	7	30
20 to 30	—	23
more than 30 days	—	1

Blood counts were regularly made every five days till normal counts were reached and maintained. It was found that the response started at the end of a week in most cases and reached normal limits in the majority of them in two or three weeks. The average period was 18 days. In three weeks 76% had reached normal counts. Twenty three of the remaining 24 took another week ; while the only one remaining did not reach normal count even at the end of a month, though symptomatic relief was almost complete within 10 days. Unfortunately this patient did not turn up for further follow-up.

Toxicity :—No toxic or untoward symptoms were observed in this series. A minor symptom, which was noted, *viz.*, palpitation did not necessitate the stopping of the drug.

Follow-up :—Many of these cases were available for follow-up for more than one year. Only two patients came back with relapse at the end of one year but were successfully treated with Banocide.

Discussion.—The ætiology of this disease so prevalent in our country is still shrouded in mystery. Till Frimodt Moller's description in 1940, the disease used to be confused with bronchial asthma and tuberculosis. In fact, Moller described the disease as pseudo-tuberculosis of the lung.

The disease seems to be commoner among males. We have not observed any definite geographical distribution though in the literature it is described as occurring in certain coastal area. The disease is seen in all age-groups but more commonly in young adults.

Various theories have been put forward in an attempt to explain the ætiological factor. One theory stresses the factor of allergy to some parasite infections often latent. Ascariasis, amœbiasis, ankylostome-infection, filarial infection have all been blamed in turn. But we found no invariable correlation between the two. True eosinophilia is very common in patients with worm infection, but this factor alone cannot explain all cases of tropical eosinophilia.

Carter demonstrated the presence in the sputum of certain mites belonging to the families Tyroglyphidæ and Corpoglyphydæ. But this would appear to be purely a coincidental finding, for the mites can be demonstrated in the sputum in quite a number of other conditions. Recently however, the pathogenicity of the mite Pneumonyssus to the monkey has been established. This may eventually throw some light on the problem.

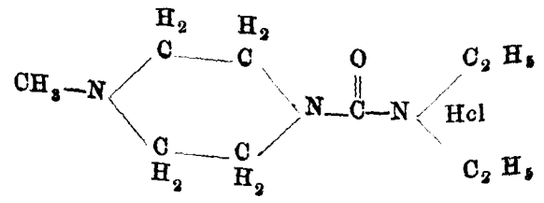
The most acceptable hypothesis at the present moment seems to be that of Aitken (1953) ; *viz.*, that the disease is of viral origin. Its prevalence amongst the poorer classes, and its relationship to insanitary surroundings are believed to indicate the possibility of transmission by flies. The shadows in the lung as seen by X-ray bear a superficial resemblance to other virus infections of the lung. The presence of cold agglutinins would also support this hypothesis.

Other theories in vogue are less convincing, as for instance, the suggestion that this disease may be one form of the collagen diseases.

Clinical features :—The onset is insidious with general weakness and cough, sometimes fever. In a few cases asthmatic wheeze may be the salient feature. Remissions and exacerbations often mark the course of untreated cases. The disease may go on for years with intervals of varying freedom. An oppressive sensation in the chest seems to be a particularly common symptom. Examination of the chest reveals vesicular breath sounds with a prolongation of the expiration. Often cooing rhonchi and a few rales may be heard : In some cases the spleen is palpable and very rarely also the liver.

The severity of symptoms is not related to the intensity of eosinophilia. Whether eosinophilia and the bronchospasm are independent, unrelated results of the infection or whether the bronchospasm is secondary to the release of histamine from eosinophils (which have been shown to be rich in this substance) is unknown.

Chemistry and pharmacology of D. E. C.—Diethylcarbamazine is a piperazine derivative and has the structure given alongside.



The pharmacological actions of this drug have been extensively studied by Harned *et al* on dogs. It is relatively non-toxic. The prominent pharmacological response is a rise in blood-pressure followed by a fall. The pressor-response is accompanied by tachycardia and peripheral vasoconstriction. Toxic doses cause vomiting, muscle tremors and convulsions. It was originally noticed that this drug had an anti-filarial action. In all probability it not only kills the micro-filariæ but even the adult worms as well. It is believed that the action is by increasing their susceptibility to phagocytosis. It was on the hypothesis that eosinophilia is a sensitive phenomenon to these worms that Banocide was originally tried in cases of tropical eosinophilia.

Toxicity:—With therapeutic doses toxic manifestations are rare. Reactions which are believed to result directly from the use of the drug are headache, malaise, weakness, joint-pains, anorexia, nausea and vomiting.

Conclusions.—We have not made a controlled comparative study of the efficacy of arsenic and Banocide in the treatment of tropical eosinophilia. But the results with Banocide compare very favourably with our past experience of treatment with arsenic and the former has the definite advantage that it has no serious toxicity and thus claims recognition as the drug of choice.

Summary.—(1) A study of 100 cases of tropical eosinophilia treated with Banocide, is reported; (2) all the cases showed symptomatic relief within three weeks, the average period being 9 days; (3) hæmatological response appeared at the end of one week in most cases and was complete within a month in all cases except one; (4) no toxic symptoms were met with in any case; (5) the ætiological and clinical features of tropical eosinophilia and the pharmacology of the drug are briefly discussed; (6) and it is concluded that Banocide is as effective as arsenic and perhaps also superior to it because of the absence of toxicity.

Encouraged by the results of the above study, we undertook a clinical trial using the "single dose therapy" for tropical eosinophilia and a paper was read at the All India Physicians' Conference held at Trivandrum in 1958; this is awaiting publication.

Our thanks are due to (1) the Dean, Stanley Hospital for permitting us to undertake this study; (2) to Messrs Burroughs Wellcome & Company for the supply of Banocide tablets and (3) to Dr. U. Mohammed and Dr. D. R. Varman for their help in this study.

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UNILATERAL TOXIC AMBLYOPIA

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Case report.—P., an young boy of sixteen came to the hospital with the history of loss of vision in his left eye for the past one month. The patient was a goldsmith by profession—an engraver to be more precise. He had fever for the past two months which was treated by his physician. After one month he was given quinine to take orally in therapeutic doses. Soon after this the sight in his left eye diminished and he started seeing distorted objects smaller than their normal size. The eye gradually went on to complete blindness.

At this stage, the patient came to the eye department, two months after the onset of fever and one month after the involvement of the eye-sight. He was anæmic and the spleen was not palpable. The eyes looked normal externally, and while the visual acuity in the right eye was normal, there was poor perception and projection of light in the left eye in all quadrants. Only finger movements were appreciated at half a metre. Fundoscopy of the left eye showed a slightly hazy media. The disc was acutely inflamed with hazy margins. The retinal vessels were engorged and dilated; there were superficial hæmorrhages along the superior and inferior nasal and temporal veins and a few scattered soft exudates in the central region. There was œdema of the whole retina which was grey in appearance, resembling that of venous thrombosis except that there was no swelling of the optic disc. The fundus of the right eye was normal.

Treatment:—Locally atropine and dionine in 1% aqueous solution was applied three times daily. Priscol and Birutan tablets were given one each, three times daily and Becozyme tablets and Benerva injection (100 mg.) once daily were also given. The patient was examined after a week when the vision in the left eye had improved to 6/18. The media had considerably cleared; the disc was still inflamed; and there were no exudates

but a few hæmorrhages were present. The treatment was contin ued for the second week during which he had an attack of feve and when he was examined the vision had reduced to 6/60 in th left eye ; otherwise the general appearance of the fundus was th same as in the previous week. The right eye continued to b normal all along. At the beginning of the third week Depro panex injections 1 cc. intramuscularly was given and repeated biweekly. In the fourth week the vision returned to 6/12, there were no hæmorrhages and no exudates but the disc was still inflamed and the retina was grey.

At this stage Birutan alone was stopped, the rest of the treatment being continued as before. By the end of the fifth week the visual acuity returned to normal, the retina was less grey and disc less congested. Atropine drops were stopped as the patient had to return to work, dionine drops and Becozyme tablets once daily and Depropanex and Benerva injections twice weekly were continued for another three weeks, at the end of which the patient was found quite fit and cured.

Discussion.—The case under review presents certain prominent features:—(1) Unilateral involvement of the fundus ; (2) slow deterioration of vision going on to complete loss of vision ; (3) the appearance of the fundus resembling a case of venous thrombosis ; (4) deterioration of vision with the recurrence of fever and (5) gradual but rapid restoration of vision to complete recovery without any trace of hæmorrhage, exudate or pigment.

Acute infective diseases and septic foci in the body are known to be associated sometimes with optic neuritis, either a papillitis or retrobulbar neuritis, the defect appearing usually as a central scotoma. We could not map out the fields in this case because of poor vision at the beginning and in the second week the vision was fairly good with no field defects, by the confrontation test. The amblyopia found in these cases is caused by either exogenous or endogenous toxins, the dividing line between the two being more artificial than real and the action of these toxins on the eye is not clear as to whether all of them are essentially neurotoxic or some of them act primarily upon blood vessels and cause a secondary neuronic degeneration owing to vaso-constriction. The action of these toxins is always bilateral and does not tend to be permanent. Our case is unique in this respect because the visual deterioration set in gradually with the intake of quinine in therapeutic doses without the usual symptoms of tinnitus and deafness. Moreover the picture of the fundus did not point to any specific drug or infection. The examination of the patient did not reveal any septic foci or nor a history of any acute infective fever and yet the picture of the fundus was very severe. The fact that loss of vision was

gradual and recovery was complete within such a short period precludes the possibility of any venous thrombosis. There is a possibility of acute retrobulbar neuritis but the appearance of the fundus, the absence of pain, the age and sex of the patient are against such a diagnosis.

The possibility of acute papillitis setting in with retinal hæmorrhages and exudates due to toxin which caused pyrexia as well, is to be considered. The recurrence of fever leading to deterioration of vision is a point not to be lost sight of. That the deterioration of vision in the first instance set in with the intake of quinine seems only incidental. The real thing is the severity of the involvement of the fundus with a complete loss of vision followed by complete recovery without even a slight residual trace of the inflammation.

Acknowledgement.—My grateful thanks are due to our Superintendent Dr. R. L. Mehra for permitting me to publish this case report and to Messrs Sharp & Dohme for their liberal supply of Depropanex. I am indebted to Dr. N. S. Jain, in-charge of our department for valuable advice in preparing the case.

AGENESIS OF THE SPLEEN

Blattner reviews recent studies of congenital absence of the spleen. Asplenia in infants has been associated with serious anomalies such as cardiac malformations, situs inversus with mesenteric anomalies and congenital pulmonary lesions. The malformed hearts occurring in association with absence of the spleen display a high proportion of atrioventricular and conotruncus anomalies.

Serious infections have occurred in a very high percentage of reported cases. In one series, meningitis was the most common type of infection. Combined with recent reports on the high incidence of serious infections in splenectomized children, these observations emphasize an unknown but vital role of the spleen in defence against sepsis.

Serious infection in a child with evidence of congenital heart disease should suggest coexistent asplenia. In this regard, certain hematologic findings may aid in the diagnosis of splenic agenesis. These include Heinz inclusion bodies in the erythrocytes of the peripheral blood, target cells, decreased osmotic fragility, normoblastæmia and leukocytosis.—(*J. Paediat.*, *51* : 350, 1957, via *G.P.*).

RADIATION SAFETY

Experiments with human kidney cells support the belief of numerous geneticists that there is no such thing as a "safe" dose of radiation. Cells exposed to 25 roentgens of X-rays produced about six chromosomal breaks per 100 cells. Fifty roentgens more than doubled this breakage in the tissue culture experiments. Results indicate the "average maximum permissible dose" of radiation set by the National Academy of Sciences may be too high. That dosage is ten roentgens to the reproductive organs from conception to age 30.—(*American Institute of Biological Sciences, Polo Alto, Calif.*, Aug. 26, Dr. Michael A. Bender, *The Johns Hopkins University*).

A PRELIMINARY REPORT ON THE USE OF PRISCOLINE AND VIT. B_1 IN OPTIC ATROPHY

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PRISCOLINE, 2-Benzyl imidazoline hydrochloride, an efficient vasodilator belongs to the imidazoline group. Pharmacologically it has been shown that the drug acts on the peripheral vascular system in 2 ways. In small doses it has a histamine-like local action on the blood vessels, while in larger doses it produces an adrenergic block. Physiological studies of the effect of priscoline on retinal circulation have proved the vasodilatory properties of the drug but the locus of the action has not been definitely established.

Bailliart has noted marked dilatation of the peripheral arterioles and perivascular vessels of the retina after retrobulbar injections of priscoline.

European ophthalmologists have utilized the vasodilator property of priscoline in a variety of pathological conditions including central retinal artery spasm and macular degeneration.

Hoang-Xuan and Baillairt noted that vasodilatation with retrobulbar injections of priscoline (1 cc. of 1% sol.) once a week in chronic glaucoma improved the visual acuity in a number of cases though the visual fields showed only slight improvement.

Levitti and others used priscoline with advantage in cases of acute retrobulbar neuritis. According to them the only purpose of vasodilator therapy was to improve the blood-supply to the tissues, thereby relieving tissue-anoxia.

In the present study, eight cases of different types of optic atrophy were treated with retrobulbar injections twice a week of priscoline (½ cc. of 1% sol.) and Vit. B_1 100 mg.; also ½ cc. of priscoline twice a week parenterally.

Only those cases of optic atrophy were included in the series in which no ætiological factor could be detected after routine investigations.

Of the eight patients, six were males and two females:—there was one male in each of the 4 age-groups:-20 to 29; 30 to 39; 40 to 49; and over 60 and two males in the 50 to 59 age group; among the females one was in the 30 to 39 age group while the other was over 60. The incidence was thus greatest in the elderly type, males predominating.

Four of the 8 cases showed an appreciable improvement in the central acuity of vision. Three showed some little improvement and one was a failure. (see *Table 1*, p. 365).

There was no change in the appearance of the fundus after treatment in all the cases.

TABLE 1

Showing the Results of Treatment with Priscoline and Vitamin B_1

No.	Name	Vision: Before treatment R.E.	Vision: Before treatment L.E.	Vision: After 5 injections R.E.	Vision: After 5 injections L.E.	Vision: After 12 injections R.E.	Vision: After 12 injections L.E.	Fundus: Rt. Eye	Fundus: Lt. Eye
1	H.D.	2/60	6/60	6/60	6/12	6/60	6/12	Primary type of optic atrophy. Rt. lenticular opacity.	
2	E.M.	6/60	2/60	6/60	6/60	6/18	6/24*p*	Pallor of discs.	
3	J.B.	6/60	6/60	6/12*p*	6/12*p*	6/12	6/12	Secondary optic atrophy	
4	P.M.	P.L.	1/60	M.B.	6/60	M.B.	6/60	Pallor of discs: Thinning of blood vessels.	
5	A.K.	2/60	M.B.	3/60	F.C. 1 foot	3/60	F.C. 1 foot	Rt. Aphakia sec: optic atrophy	Lt. Len. opacity; pallor of disc.
6	P.S.	5/60	5/60	6/60	6/60	6/60	6/60	Temporal pallor Thinning of vessels	
7	R.N.	F.C. 1 foot	6/60	1/60	6/60	1/60	6/60	Prim. type of optic atrophy	
8	Y.K.	1/60	6/24	3/60	6/24	Did not turn up		Rt. Lenticular opacity; fundus not visible	Aphakia sec: optic atrophy

Though it is premature to draw definite conclusions of value from 8 cases, the treatment suggested would appear to merit a trial in otherwise hopeless cases. The study is being continued to find out if improvement in the field of vision also occurs and will be maintained.

Summary.—A report is presented of 8 cases of optic atrophy treated with retrobulbar injections of priscoline and parenteral injections of Vitamin B_1, seven of which showed varying degrees of improvement in the central acuity of vision; this therapy may be tried even in cases where no specific cause is found and which appear to be hopeless or bad cases.

I am grateful to the Dean, B. Y. L. Nair Hospital and Topiwala National Medical College, for permission to use the hospital records.

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HYDROCORTISONE FOR URETHRAL STRICTURE

Circumscribed strictures of the urethra may be relieved by injection of an aqueous suspension of hydrocortisone directly into the tunica propria at the base of the lesion. Intraurethral, low spinal, or general anæsthesia may be used. A McCarthy Forqblique panendoscope is inserted, and 12·5 mg. doses of hydrocortisone are administered at the 5 and 7 or the 3 and 9 o'clock positions, using a long, rigid needle. Meatal strictures are injected directly, without anæsthesia.

Treatment may be repeated at intervals of two days if necessary. Usually, an adequate urethral calibre is achieved by 3 or fewer treatments. More injections may be required if the medication is not delivered to the proper location initially ; the needle must reach into the tunica propria to assure good results.

Dense elongated or multiple strictures may be corrected by internal urethrotomy and hormone injection at the line of incision. Vesical neck contractures usually require transurethral resection and hydrocortisone therapy.—(*J. Urol.*, *77* : 1957 via *Modern Medicine*, Dec. 15, 1957).

DANGERS OF ATOMIC ENERGY

In his article, "The Genetic Hazards of Nuclear Radiations," in *Science* for August 9, 1957, Bentley Glass stated that the development of atomic energy for peaceful applications is most likely to create future hazards from radiation. There are ambitious plans in Great Britain and the United States for the development of heat reactors. These will produce enormous quantities of long-lived fission products.

Glass goes on to say that although the fission products will normally be contained, this does not avoid the problem of ultimate disposal. Underground storage has potentialities for contamination of soil and water supplies. Storage in the ocean depths carries the possibility of an overturn of even stable waters sufficient to contaminate marine plant and animal life, and thus eventually all that of the lands adjoining the sea. Added to this is the danger of release of radioactive materials when accidents occur.

Glass concludes: "The threat to mankind of exposure to radiation arising from the peaceful development of atomic energy may thus far outstrip not only that from current exposures due to weapons testing and fallout but even that from the exposures necessary for medical and dental diagnosis. The only immediately obvious escape from so dire an outcome may lie in the rapid development of the hydrogen fusion process as a source of energy."—(*G.P.*, *xvi* : 160, Oct. 1957).

SURGICAL TREATMENT OF DISSECTING ANEURYSM

The authors offer a modification of the method devised by DeBakey, Cooley and Creech for dissecting aneurysm. The outer coat of the dissected wall is divided transversely, the posterior wall being left intact. After gentle loosening of the clamps and milking of the aorta, the clot in the outer chamber is removed. The distal split coats are sutured together with No. 4-0 arterial silk. The proximal outer coats of the dissected aortal wall are sutured to the entire distal reconstituted wall, which will then allow blood to flow proximally in both the outer dissected channel and in its true path into the reconstituted distal aorta.—(Gilman, R.A., and Bailey, C. P., *J. Thoracic Surg.*, *33* : 670, 1957, via *Int. Jour. of Surgery*).

The Antiseptic

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Editorials

THE WORLD'S HEALTH:

Ten Years of Sustained Progress

THE eradication of diseases is an age-old problem in the history of the human race. The growing development of medical science has removed much of their terrors and man has been in hopes that in the foreseeable future, diseases will have been largely controlled if not eliminated. This is not just an expression of pious optimism but a fact based on actual progress that has been made in many scientific fields. The W.H.O. one of the largest specialized agencies of the U.N.O. has played a great part in modern times in this crusade against disease and the work of the W.H.O. and allied special agencies like the FAO, UNICEF, and UNESCO have been of outstanding effectiveness. The WHO has devoted itself to the eradication of diseases in the belief that the ensuring of the nation's health is a great contribution to world peace. Its labours are of particular significance to our country where the toll of disease is beyond computation. While poverty breeds sickness it is also true that sickness in its turn breeds poverty. And the result is a problem of great complexities. It is to solve this that the WHO addresses its energies. It provides consultants and specialists to offer advice on various medical problems. What is equally if not more important, local experts are trained in the methods of public health with the result, the effort will be continued after the consultants of the WHO leave the country. Another aspect of the organization's devoted labours relates to the training of the very large number of public health workers needed for the world's requirements. The scarcity of qualified doctors and nurses in India is well-known. The WHO endeavours to remedy this grave

shortage, which is also felt in many other parts of the world, by means of a comprehensive educational programme.

The achievements of medical science during recent years have been very great indeed. Malaria, it is believed, will be completely eradicated in other ten years and many other diseases may also be controlled, though perhaps not so quickly or spectacularly. Tuberculosis has been brought under control in the Western Countries, but here in India, it continues to be deadly and kills one person every minute and 5 lakhs of persons die of it every year. The position is scarcely any more satisfactory. With regard to other diseases, especially smallpox which has shown a tendency to spread in recent months, the Government of India has felt itself obliged to urge the states to make a study of the incidence of this disease as well as of cholera. The causes of these outbreaks are known :–poor environmental sanitation and lack of power of resistance, due to poverty. What is required therefore, is sustained effort, every day of the year and not merely spurts of activity. We hope that the special measures, which have been recommended against cholera and smallpox will be fully implemented by all the States. Municipalities, too, have a special responsibility in this regard, for public health is tied up completely with other problems like the provision of clean water supply, adequate sewage facilities and decent housing.

The Government of India and WHO have worked in unison on about 50 projects in the last ten years. It has assisted the Government's Health Programmes over a wide field, including Malaria, Venereal Disease, Nutrition, Maternal and Child Health and Vital and Health statistics. By 1957 out of 450 million people exposed to malaria, 200 million have been protected, and in the BCG campaign against tuberculosis, 112 million people have been tested and 38 million vaccinated. As regards yaws, 27 million out of 77 living in endemic areas, have been examined and five million treated. Pilot projects, were launched on plague, leprosy, and trachoma and on the basis of these, large campaigns are being planned. We are glad to be told that to-day tuberculosis, one of the most serious communicable diseases of the South Eastern Asian region, is being tackled by extensive and intensive measures for domiciliary and ambulant therapy with modern drugs which, in our opinion, should make for economy and added happiness to the patient and his relatives.

The sum total of results of the ten years of the WHO's programme of work, so far as our Bharath is concerned is that much has been achieved though more still remains to be done. As Dr. C. Mani, the Regional Director of South East Asia, rightly observed in his Press Release dated 1st April 1958,

"Efforts to banish disease have made a good beginning in this part of the world." We should all therefore, be profoundly grateful te the WHO and allied organizations including the Rockefeller Foundation, the Colombo Plan and other agencies for the generous help given by them to the underdeveloped countries of the world.

CHRONIC OVERCROWDING IN STATE HOSPITALS

In the course of the recent debate in the Madras Legislative Council in April 1958, the State Finance Minister, Shri C. Subramaniam is reported to have stated "that during his visit to several hospitals in the state during his tours, he had seen such overcrowding that, if it happened in any private institution, it would have perhaps resulted in the prosecution of the parties concerned and "having looked into the problem" said he "I would give a suggestion whether the General Hospital which contained specialists should deal with all sorts of cases coming up for attention ; the facilities available there have not been put to the best use. Chronic patients were blocking the admission and chances of other deserving patients to get admission. I would therefore, like the Health Minister to consider if the treatment in the general hospital should not be on the basis of reference by qualified doctors alone ; for then alone the specialists could be put to the best use."

Chronic overcrowding has been a serious problem in all our State hospitals for a quite a long time during recent years. We have on several occasions since 1950 referred pointedly to this very unsatisfactory state of affairs, and at every session of the State Legislature during these years, members have expressed critical views in no uncertain terms only to be told by Government, that lack of funds stood in the way of providing more accommodation and staff and greater amenities.

A report published in the daily press on the 21st March 1958 said that "about 500 patients in the general wards of the Government General Hospital (in Madras) are obliged to lie on mats on the floor as the hospital is *terribly* overcrowded. The total number of patients was 1,584 against a sanctioned strength of 1,048; this includes the patients lying on the mats. Similar, perhaps not so acute, conditions prevail in other hospitals in the State. In fixing the bed-strengths, the authorities, we presume also fix the number of doctors, nurses and other staff in accordance with the needs of the increased beds. What happens, we ask, when the number of patients increases, as it probably often does by more than 50% ? There is no provision that we know of which can be promptly requisitioned for an increase of staff, provisions and medicaments and so the doctors have to do

half as much work again. This is indeed, a sorry state of affairs that cannot be allowed to continue indefinitely.

We referred at length in our editorial of October 1954 to this vexed problem and said at that time, quoting in our support, the speech of Sri Dr. A. Lakshmanaswamy Mudaliar, the veteran Doctor *cum* Educationist, that there was an urgent need for the opening of a chronic and convalescent hospital in the vicinity of Madras City and we even pointed out that the Avadi area where the Congress was to be held that year would be an ideal place, a recommendation to which effect had been made, several years ago by a Committee of responsible medical and laymen. The arguments in favour of the proposal which are even more powerful to-day than it was in previous years may be reiterated. A teaching centre can function fruitfully, efficiently and well only when there are opportunities to select cases from the point of view of adequate teaching facilities for turning out competent doctors. The number of cases that are more or less chronic should not be mixed up with the acute cases which alone deserve to be treated in a well-regulated General Hospital. It is from this point of view that we have been pleading for a chronic and convalescent hospital in the vicinity of the city, so that the rush into the City's State Hospitals and consequent overcrowding as also the lack of nursing and want of other facilities will stop and no longer interfere with proper diagnosis and efficient treatment.

We agree with Dr. A. Lakshmanaswamy Mudaliar, Leader of the Opposition in the Madras Legislative Council, who wanted the Government to put a stop to this unfortunate state of affairs at once and suggested that discretion should be given to the authorities to select and admit at least in certain hospitals to begin with, only the proper type of cases.

The state of overcrowding in the Mental Hospitals is even worse. Replying to a question in the Madras Legislative Assembly early in March of this year, the Minister of Health said that in 1957 there were 3,594 patients in the Madras Mental Hospital, the only one in this state now. Overcrowding, to which the question referred, is revealed more clearly by the latest Report on the Working of the Mental Hospitals in Madras State for 1956 (which includes the hospital at Kozhikode, which then formed part of Madras). The daily average number of patients in the hospital at Madras was 2,055·6 whereas the sanctioned accommodation is only for 888! The number of patients in the year was 30,049 and it speaks a lot for the work of the doctors and nurses that despite the difficulties caused by so much congestion, as many as 430 were cured and many others improved. If greater facilities are provided, this hospital will certainly better its record. A single hospital for this State is totally inadequate and more will be needed. It is good to

know that the Government intends to establish one at Madurai, which will relieve the pressure to some extent on the Madras Mental Hospital. Also to benefit the sick who do not require hospitalization, it is necessary to open, in all the bigger hospitals, out-patient mental departments. A domiciliary or welfare-service is also needed for those unable, or unwilling, to enter a hospital as well as for the rehabilitation of discharged patients. Incidentally, such an organization will help to economise on hospital expenditure. The need for a welfare service will be realized and appreciated when the causes for mental illness are sought to be discovered. Very often insanity arises, as shown even in the report on the working of the Mental Hospitals for 1956, by moral distress, business and domestic worry and the increased tension due to the stress and strain incidental to the fast *tempo* of modern life. Such cases are even more numerous than those traceable to injuries and poisons. Many if shown sympathetic attention or allowed suitable relaxation, at the initial stage, may be restored to full mental health.

Social workers conversant with psychiatry will be able to assist a great deal in this important direction by visiting the sick periodically in their homes and by combating *tactfully* the prejudice and ignorance which sometimes make people, including the patient's near relatives dread and avoid the presence of the mentally afflicted.

CONTROL OF INSECT-BORNE DISEASES

The problem of insect-resistance to insecticides

Inaugurating an one-week technical seminar at the Vigyan Bhavan, Delhi, on the 27th of February last, the Union Minister for Health stressed the need for immediate expansion and intensification of basic studies in respect of problems of resistance of insects to insecticides.

The Seminar was sponsored by the W.H.O. and research workers from 15 countries belonging to the World Health Organization's South-East Asia, Western Pacific and Eastern Mediterranean regions participated. Welcoming the delegates, Dr. C. Mani, WHO Regional Director for South-East Asia, said that the problem was one of those challenges to public health which needed for their solution scientifically planned and co-ordinated effort. Mr. D. P. Karmarkar said, "Although some progress has been made towards our understanding of the mechanics of insecticide-resistance, much more intensive and integrated research is essential and urgent if we are to circumvent the inevitable limitations in the field, arising from the fact that the number of insects of public health importance becoming resistant

to DDT is reported to have risen from two in 1946 to forty in 1957 !"

The countries which participated in the Seminar belong to regions where the large-scale malaria eradication programmes could be threatened if the resistance of the malaria mosquito developed seriously before they came to full fruition.

Further, the WHO release in this connection states that the resistance to DDT which has been noted among common household pests such as the body-louse, the bed-bug, the flea and the housefly has, in some areas, shaken the faith of the people in insecticides and severely hampered acceptance of anti-malarial schemes even though the malaria-carrying mosquitoes are still susceptible.

In South-East Asia, malarial-mosquito-resistance to DDT has been noted in several parts of India, in Burma and in Indonesia but so far it has, fortunately, not lowered the effectiveness of the eradication programmes, and we hope that the accelerated malaria eradication programme in India will be pushed through at a reasonably rapid pace, so as to defeat the wiles of the resisting mosquitoes.

Certain chemicals are now known which, in laboratory tests, appear to be more toxic to resistant strains than to normal. The use of one compound resulted in a DDT-resistant strain becoming again vulnerable to DDT. Experiments are continuing but it is yet too soon to say whether the limited trials can be successfully duplicated in the field.

Among insect pests the common housefly figured prominently in the discussions. Of all the insects which spread disease among human beings, it has shown the most widespread resistance to modern insecticides. Its resistance to DDT is now almost universal and several countries have reported its resistance to another group of insecticides.

One aspect of the housefly's resistance to Dieldrin is reported to be even more startling in that, in a number of countries, it has been claimed that a *marked increase* in fly densities has *followed spraying* with this insecticide. This has been confirmed in laboratory experiments, which have shown that some of the first-generation survivors of Dieldrin laid as much as 70 per cent more eggs !

We are told that the proceedings of the Seminar were conducted at a high technical level with particular accent on the fields of genetics and biochemistry ; for it is generally felt that it is in these directions that a clue to the problem of insect resistance may well be found. We hope that an early solution will be evolved by the co-ordinated research now in progress.

GLEANINGS FROM THE MEDICAL PRESS

SURGERY

Elongated styloid process and its surgical treatment.—(*J. Iowa St. Med. Soc.*, Decr. 1957).

Neuralgias of the head, face and neck often present a most enigmatic and obscure problem in diagnosis and treatment. There are two syndromes of pain that may vary from a mild discomfort to a severe one closely resembling glossopharyngeal neuralgia. These syndromes are produced by an abnormal elongation of the styloid process of the temporal bone, and their relief requires surgical intervention.

A wide variety of symptoms may be present : (1) sensation of fullness in the throat, usually on only one side ; (2) sensation of foreign body in the pharynx similar to that of a globus ; and/or (3) pain or soreness in the region of the soft and hard palates. (4) In severe cases, the neuralgic pains may resemble that of a glossopharyngeal neuralgia, for there is pain on swallowing which radiates toward the ear and/or the larynx.

Roentgenograms are essential for diagnosis and confirmation. One should have postero-anterior views to show the degree and type of projection. A lateral view is essential for visualization of the length, and for an indication of the length of the portion that will have to be removed surgically.

The possibilities in differential diagnosis are many. One should consider (1) foreign body in the pharynx ; (2) temporomandibular joint syndrome ; (3) tumour anywhere in the pharynx ; (4) unerupted and impacted third molar tooth ; (5) globus hystericus ; (6) various types of vascular pain ; (7) glossopharyngeal neuralgia ; (8) myalgia ; (9) arthritis of the cervical spine ; and (10) disease of the central nervous system or base of the skull, with pain referred to the area.

The styloid process can be approached surgically by the external or intraoral routes, the intraoral approach being preferable, as it is much simpler. After the usual preoperative preparation, the area is infiltrated with novocaine, and a short vertical incision is made through the overlying mucosa. The constrictor muscle and pharyngeal aponeurosis are split vertically, exposing the styloid tip. The stylohyoid ligament is severed, and the tip is stripped of its muscular and ligamentous attachments as far as is necessary. This can easily be accomplished by means of a ring curette, and all the attachments must be thoroughly stripped from the section that is to be removed, since the remainder of the styloid becomes a fragment and may be pulled out of sight if any muscle is still adherent. Extreme care should be taken so as not to fracture the process. The tip is grasped with a hemostat and severed with a small, sharp bone forceps. One should be sure to remove the necessary amount in one piece, since the remainder of the styloid becomes buried in the surrounding tissue and re-exposure is quite difficult. The wound is closed with plain 0 catgut. Bleeding is very minimal. It is probably advisable to give a prophylactic antibiotic for a few days, but the post-operative reaction is mild in most instances, and the patient can usually leave the hospital after a day or two.

Respiratory and cardiac arrest during anæsthesia in children.—(*British Medical Journal*, November 2, 1957).

Stephenson *et al.* (1953) pointed out that cardiac arrest is by no means rare in children. Out of 212 fatalities, 20% were found to have occurred in children under 10, the highest incidence of any age-group reviewed.

Following the occurrence of two deaths on the table in 1951 and 1952, *a method of resuscitation was developed by one* of us (E.H.R.) which has been *employed successfully on eight occasions without a single failure.*

We claim that in young children it is possible in most-if not all-cases to restore heart and lung action by a single, simple, and effective manoeuvre which can, when necessary, be carried out single-handed. Of our eight cases only two can be described as "poor risk" cases. The patients' ages varied from 8 weeks to 13 years. In all cases respiratory failure preceded cardiac arrest.

Description of method:—As soon as it appears reasonably certain that cardiac arrest has occurred no time-wasting manoeuvres for confirmation of diagnosis are employed. It is then possible to start effective resuscitation in a matter of seconds, as follows:

1. Any blankets, towels, instruments, or other impediments close to the patient having been quickly discarded, the table is lowered to approximately 10 degrees Trendelenburg by the anæsthetist, while the surgeon positions himself at the patient's right side.

2. A nurse is instructed to check the time and call out each minute (as suggested by Bailey, 1941, 1947).

3. Having made sure that the airway is clear, the anæsthetic rhythmically inflates the lungs with 100% oxygen. Unless an endotracheal tube is already in position or can be inserted immediately, no time is wasted over intubation at this stage. The lungs can be adequately ventilated through a face-piece and reservoir bag connected to a Boyle's machine.

4. Meanwhile the surgeon places his right forearm under the patient's knees and his left forearm behind his neck.

5. The patient's bent knees are raised and the hips fully flexed, forcing the thighs against the upper abdomen and chest, the spine being flexed at the same time.

6. When full flexion is reached, the surgeon compresses the patient's chest with the bent knees, using some of his own weight *judiciously* to add to the pressure.

7. He then lowers the patient's legs, fully extending them on the operating table. At this point the anæsthetist inflates the lungs.

The manoeuvre is repeated 12 to 15 times a minute, which appears to be the optimum rate. If there is no response after one to one and a half minutes, the chest must be opened and the heart massaged (always provided the airway is satisfactory).

Even if the manoeuvre is not successful in restoring the heart-beat within that time, both surgeon and anæsthetist have been doing something active to the child (and, as we believe, maintained a cerebral circulation) while the theatre nurse prepares for thoracotomy.

In one of our cases the above manoeuvre was continued for one and a half minutes before a heart-beat could once more be felt.

An effective method of resuscitation should fulfil the following criteria: *viz.*, it must be simple to apply; it must not be too fatiguing for the operator: it must be effective in providing adequate ventilation, and at the same time have an effect on the circulation sufficient to maintain a cerebral blood flow so as to prevent cell damage. To this, we might add that it must be successful every time. In our experience to date, it has been so.

In conclusion we want to say that there is both theoretical and practical evidence to support our belief that artificial respiration carried out in the manner described by us is a life-saver, and that it should be tried without any delay when unexpected respiratory failure in a child is followed by cardiac arrest and carried out for 1½ minutes before proceeding to thoracotomy, as there is a very good chance that the latter may prove unnecessary. Ideally, the time to start using it is before the heart has actually stopped beating.

We furthermore believe that this method may have wider applications beyond those of the operating theatre —for instance, in coal-gas poisoning, drowning, electric shock, and so forth.

Improved treatment for allergic rhinitis. —(*The Lancet*, October 26, 1957).

Most sufferers from allergic rhinitis derive some relief from anti-histamine therapy. There are many antihistamine drugs on the market, and treatment becomes a matter of finding the one which produces the maximal benefit to the individual with minimal side-effects.

A total of 43 patients with chronic allergic rhinitis were treated with a standard dose of one 5 mg. capsule of 'Histryl Spansule' (diphenylpyraline) night and morning. Symptoms were completely relieved in 34 patients. Side-effects were negligible, 2 patients complaining of slight drowsiness.

In a "double-blind cross-over" trial, 15 out of 18 patients were symptoms-free on active capsules but obtained no relief from inert capsules.

The preparation used in this investigation represents a definite advance in the treatment of allergic rhinitis.

Temporomandibular joint disturbances. —(*New York State Journal of Medicine*, 1-9-1957).

The modern knowledge of temporomandibular joint disturbances began with Prentiss and Summa. In 1918 they called attention to the fact that malocclusions and loss of teeth without replacements cause damage to the joint. Costen and his work in 1934 are probably the best known.

The temporomandibular joint is a ginglymodysarthrodial joint with a wide range of motions.

Our knowledge of the anatomy and actions of the temporomandibular joint is still far from complete, although recent years have added considerably to it.

Temporomandibular joint derangements are widespread in their occurrence.

Bauerle and Archer investigated the incidence of what they termed subluxation of the temporomandibular joint. Bowman found temporomandibular arthrosis present in a third of the 1,350 adults examined. Markowitz and Gerry found 28% of 700 adults had temporomandibular disturbances.

The ætiology of osteoarthritis of the temporomandibular joint is not perfectly understood. Microtrauma, overclosure of the mandible, and trismus of the mandibular muscles all play their part.

The symptomatology is debatable in certain respects. Local and referred pain and clicking or snapping sounds in the joint are the outstanding diagnostic symptoms. Loss of hearing, tinnitus, vertigo, and neuralgias are also accepted as symptoms by a large number of investigators.

The pain in osteoarthritis of the temporomandibular joint is a dull, constant pain which is always present and seems to give the patient no peace.

Roentgenography of the temporomandibular joint can offer little, at this time, to our knowledge of the physiologic and pathologic processes occurring in the joint. It is of uncertain value in diagnosis.

The challenge of painful syndromes.—(Winchell Mck. Craig, M.D., *Military Medicine*, September 1957).

Painful syndromes represent a challenge to the entire medical profession. They comprise a very definite category of pain problems, and should be kept in mind when a differential diagnosis is being made.

In the analysis of painful syndromes a very carefully elicited history is of paramount importance. From the story which the patient gives with regard to his pain may develop certain trends which may lead to a definite diagnosis.

Certain painful syndromes have a very definite pattern which is sometimes difficult to construct on the basis of the patient's story. After a carefully taken history, a complete neurologic examination may assist in arrival at a definite diagnosis.

Treatment varies with the nature of the painful syndrome. It consists of elimination of irritating factors and division of painful tracts in the brain, spinal cord and nerves. Neurophysiologic studies have been greatly assisted by experimental studies on certain animals. By the results of these studies, lives have been saved, cripples have been rehabilitated and painful syndromes have been relieved.

In our consideration of painful syndromes we have perhaps managed to acquire some conception of how vast the general problems is. Unquestionably, the store of facts which we possess now will be changed as increasing knowledge in this largely uncharted field discloses what is presently obscure to us and as the therapeutic attack enlarges, as it inevitably must. For my own part, impressive as such advances of the future are bound to be, in an area opened only comparatively recently to the ministrations of the clinician and the surgeon, as well as animal physiologic studies, I hope we shall never be satisfied with them. To surrender to complacency and to turn aside from the incessant task of propagating surcease from pain would be a most cruel denial of the indomitable spirit of inquiry.

Of immense value in the analysis of pain syndromes and in attempts to apply the proper surgical procedure is the well-placed injection of procaine hydrochloride. The actual injection discloses information about the pain threshold, the patient's reaction to his pain problem and, most important, the achievement or failure to achieve temporary relief of pain. It is always wise to inject the agent on one day and to see the patient again the next day, a plan which will help to evaluate the effect of the injection. As experience increases, it usually will be possible to analyse the pain-problem and to apply the proper surgical procedure.

First-aid in injuries resulting from street traffic accidents: experiences of physicians at the site of the accident.—(E. Carstenson and W. J. Ewerwahn, *Deutsche. Med. Wchnchr.*, *82*: 1338-1340, Aug. 16, 1957, Stuttgart, Germany, via *J.A.M.A.*, Dec. 1957).

The observations reported were made in Hamburg where between 1953 and 1956 the number of motor vehicles increased from 93,668 to 144,546 (54%). The number of traffic accidents increased by 69% and the number of persons injured by 23%; the percentage of traffic deaths decreased somewhat, that is, 2% instead of 2·4% of the injured died. Autopsy reports of 134 persons who died in traffic accidents revealed that brain injury was the major cause of death and that many who died of such injuries had aspirated blood or blood and gastric contents. An attempt was made to ascertain to what extent aspiration could be prevented and what first-aid measures would be helpful in cerebral concussion, shock, and profuse hæmorrhage. Two physicians were assigned to an ambulance that was equipped with respiratory and suction devices, equipment for intubation and infusion, circulatory stimulants and opiates, as well as bandage and splinting materials. The ambulance was radio-despatched by the accident centre but reached only 5·7% of the total number of persons injured during the period it was in operation. To reach all persons injured in traffic accidents in Hamburg would therefore, require 17 such ambulances and 68 physicians (doing 6 hours of service). At present, Hamburg has 17 accident ambulance stations, but no physicians accompany these ambulances. The physicians reached the scene of the accident on an average of 4·6 minutes after the accident. The average for the usual accident ambulance service is 5 minutes, and patients usually reach ahospital within 15 minutes after the accident.

Then observations on the special accident ambulance service convinced the authors that aspiration is a frequent complication of severe head injuries. If the injured person is thrown on his back, the first breath will aspirate blood escaping as the result of a fracture of the cranial base or of injuries in the oral and nasal cavities. The blood is generally sucked into the alveoli, so that even early suction will not prevent the development of a bronchopneumonia. Immediate clearing of the mouth, drawing forth of the tongue, and placing the patient in the prone position or on his side will prevent primary aspiration and suffocation. Policemen, firemen, and the public are now given instruction in these measures. The shock that accompanies severe cranial trauma requires only that the patient be

covered and that oxygen be given, infusions are not immediately necessary and circulatory stimulants are contraindicated. Intubation is extremely difficult at the scene of the accident, even for an experienced person, and is rarely necessary. Fractures of the lower extremities should be splinted to prevent pain and fat embolism. Massive external hæmorrhages are rarely fatal, because lay persons recognize them and apply tourniquets. Infusion of blood substitutes rarely become necessary at the scene of the accident, it should be carried out only by a physician. The first sight of the injured may give an erroneous impression of the gravity of the accident. A completely smashed vehicle does not necessarily imply a poor prognosis for the injured. The most important measures to be taken at the site of the accident are placing the patient in the prone position or on his side and drawing the tongue forward and fixing it, giving oxygen by mask if respiration is reduced, inspecting the mouth and removing obstructing artificial dentures, and splinting fractures. An infusion device should be ready in case a physician is on hand and would deem immediate infusion necessary. The patient should be hospitalized as quickly as possible.

Renal injuries.—(*Lancet*, Nov. 23, 1957).

Owing to the protection afforded by the lower ribs and adjacent muscles of the trunk and abdomen, injuries of the kidneys are relatively uncommon. Such injuries may give rise to difficulties in diagnosis and management. A majority are caused by severe direct violence, and some penetrating wounds; and a few follow sudden muscular exertion. In deciding on treatment, it is important to remember that neighbouring viscera, such as the liver and spleen, may have been seriously damaged at the same time, and that where rupture follows trivial violence the kidney may have been rendered vulnerable by pre-existing disease. In such instances early intervention may be imperative. Otherwise the choice between conservatism and surgical treatment will depend largely on the presumed degree of renal damage and the risks of hæmorrhage and urinary extravasation.

Renal injuries are classified into four grades, ranging from minor contusion to major shattering of the kidney with urinary extravasation outside the capsule; the two intermediate types comprise severe parenchymal injury with rupture of the capsule but without damage to the drainage system, and combined rupture of the parenchyma and drainage system with the capsule remaining intact and thus limiting extravasation.

In cases of major renal damage associated with extravasation, early operation is the treatment of choice, though in nearly all cases diagnostic procedures can first be undertaken.

This view suggests a compromise between the opinions of the protagonists of immediate surgery on the one hand and of conservatism on the other. Most urologists agree that severe sustained hæmorrhage is an indication for early intervention, but that urinary extravasation does not call for the same urgency. The relation of renal scarring and infarction to subsequent hypertension remains problematical; but experience indicates that such an association, if it exists, is so unusual, that consideration of it need not affect the initial management.

Foreign bodies in the ear canal.—(*Journal of Iowa State Medical Society*, Dec. 1957).

Foreign bodies in the ear canal are common problems seen often by the general practitioner as well as by the specialist. True, many of them are simple to diagnose and treat, but the occasional difficult case presents a challenge which should stimulate some careful thought and planning, if a satisfactory result is to be obtained.

The general principles involved in the removal of the foreign body are as follows:—

1. The patient must be properly controlled. This may mean general anæsthesia when the foreign body is large and tightly impacted, when the patient is completely un-cooperative,

or when the operator is inept and awkward. It is essential that the removal shall do no more damage than the foreign body has been doing by its presence.

2. A good light must be available.

3. A knowledge of the anatomy and physiology of the ear canal and its adjacent structures is essential.

4. Proper instruments must be used. More damage has been done through the use of makeshift instruments than through careless use of proper instruments. One should have available a good metal ear syringe, a good suction apparatus, a sharp and a dull ear hook, a sharp and a dull ringed curette and at least one good ear forceps.

5. Gentleness is necessary in the handling of the instruments, but at the same time the operator must have the ability to use force where it is necessary.

6. A good supply of common sense is, of course, of paramount importance.

Regarding the relative merits of irrigation and instrumental removal of a foreign body, irrigation is recommended provided that two questions can be answered in the affirmative: (1) Is the eardrum intact? and (2) Is the foreign body one that will not be unfavourably affected by moisture? Vegetable foreign bodies may swell considerably if moistened, and thus moistening may preclude removal. Certainly there is less danger to the canal wall or the ear drum if irrigation is used.

Treatment of Bell's palsy.—(L. B. W. Jongkees, *Neurology*, 7: 697-702, Oct. 1957, Minneapolis, via *J.A.M.A.*, Jan. '58).

The author reports the case of a woman with a total paralysis of 12 days' duration of the facial nerve. She had distressing pains deep in the ear, which itself proved to be normal. At operation a swollen, fiercely red facial nerve was found. The swelling was limited to the vertical segment inside the facial canal. The chorda tympani was also swollen and red. A small piece of the chorda tympani was examined microscopically; there was no sign of inflammation, the nerve fibres were degenerated, the myelin sheaths were strongly swollen, and the axis cylinders showed sections of different dimensions. There was no trace of inflammation, but degeneration only, provoked by compression and œdema, was revealed by the histological examination. These findings support the concept that Bell's palsy is the consequence of an arteriolar spasm of the nutrient vessels of the facial nerve. Conservative treatment should be directed against the arteriolar spasm and must, therefore, pursue vasodilatation of the feeding arteries. It should be started as soon as possible, but a large number of patients may never recover from Bell's palsy if treated by conservative means only.

The function of the paralyzed nerve was restored by an operative decompression of the diseased nerve in all 10 patients in whom this procedure was carried out within 3 months after the onset of the disease. Four of 5 patients with more than 3-months' duration of the palsy were improved by the operation, but a paresis remained. In 1 patient no improvement followed the decompression performed 4 months after the onset. No disturbance of lacrimal secretion which could not be explained by a concomitant conjunctivitis or a lagophthalmos was observed in any of the patients. Treated conservatively, the patient who shows no trace of improvement and total electrical degeneration after more than 6 weeks has an extremely small chance to recover. The duration of the palsy is of primary importance for the prognosis. A patient with a total Bell's palsy who shows no improvement after 2 months should be subjected to decompression treatment. Nerves showing an increasing paresis or a recurrence also should be decompressed. An operation may be indicated much earlier in patients complaining of severe pain deep in the ear and loss of taste, especially when the electrical reactions of nerves or muscles show degeneration.

OBSTETRICS & GYNÆCOLOGY

Significance of the signs of fœtal distress.—(*Am. J. Obst. & Gynaec.*, August, 1957 via *Med. J. of Australia*).

S. J. Ginsburg has studied the significance of the signs of fœtal distress in a total number of 1363 deliveries with 152 instances of possible fœtal distress—an incidence of 11·2%. The total intra-partum and neonatal mortality following the signs was over twice that of the general population. Most common factors to account for the signs were accidents to the cord, labour defects, disproportion, spasm due to "Pitocin" and placental accidents. Age, parity, prematurity and post-maturity were not important factors. Meconium-stained liquor in vertex presentations without any other signs indicated a generally favourable outcome; but slowing of the fœtal heart-rate below 100 per minute indicated significant fœtal distress. Meconium staining in addition to a slowed heart-rate indicated even more severe trouble. A rapid heart-rate, above 170 per minute, did not signify severe fœtal distress; but the presence of meconium staining as an additional factor did indicate some increase in fœtal jeopardy. Fluctuation of the fœtal heart-rate by 40 beats per minute within the limits of 100 to 170 per minute with meconium staining did not appear to indicate fœtal distress. In the 152 cases of fœtal distress, two babies (1·3%) were stillborn, four babies (2·6%) died in the neonatal period, 28 babies (18·4%) were affected at birth, and four babies (2·6%) were in poor condition after four days.

The hazards of intrauterine pessaries.—(*West. J. Surg.*, May June, 1957 via *Med. Journal of Australia*).

R. W. Weilerstein reports an evaluation of the intracervical and intrauterine use of pessaries on the basis of replies to a questionnaire sent by the Federal Food and Drug Administration, Bureau of Medicine, to geographically selected diplomates of the American Board of Obstetrics and Gynecology. These pessaries are chiefly used in contraception; but uterine stem pessaries are occasionally used in the treatment of dysmenorrhœa, in the correction of stenosis of the cervix, and in selected cases of sterility. Such pessaries are available through surgical supply firms and comprise coil springs, button or disk-end pessaries, stem and wishbone varieties. Questionnaires were sent to 187 diplomates, and 129 replies were received; these permitted an analysis of 179 cases reported in which deleterious effects followed the intrauterine use of pessaries. Among 129 physicians who replied, 101 were opposed to the continued distribution of pessaries for intracervical insertion for any medical purpose. Eighteen physicians were opposed to their use, but considered it legitimate under certain circumstances. Nine physicians favoured the continued intracervical use of pessaries, but thought that some restriction should be observed, and one physician considered them to be absolutely safe and efficacious. The following five distinct types of sequelæ were described among 179 patients wearing pessaries within the cervix: there were 126 cases of pelvic infection or its complications; 30 patients suffered from trauma due to irritation, embedding, perforation or migration of the pessary; 15 cases involved pregnancy and its complications including several ectopic pregnancies; six cases of carcinoma of the cervix were found in patients wearing these pessaries. The author considers that the chief hazards in the intrauterine use of pessaries are as follows:—(i) loss of control over the patient following the insertion of such pessaries; (ii) cervical ulceration, which may predispose towards cancer; (iii) migration of the foreign body and the risk of pelvic infection. The conclusion is drawn that the hazards outweigh the advantages of the intrauterine insertion of pessaries in the treatment of dysmenorrhœa and anteflexion of the uterus. The consensus of this group of informed experts overwhelmingly condemns the continued intracervical and intrauterine use of pessaries as a method of contraception.

Painless childbirth.—(*J.A.M.A.*, Oct. 26, 1957).

Read's method and the psychoprophylactic method for painless child birth have certain doctrinal differences but are similar in their aims, Dr. Francisco Cerruti (*Rev. gynec. e obst. 50:* 745, 1956) found the results of both methods to be the same; 41% of his patients withstood childbirth well and gave birth with the use of only a local anæsthetic in the perineum. If the patient, not withstanding good cervical dilatation in the second stage of labour, showed marked signs of exhaustion, restlessness, and pain, after reasonable delay, he resorted to analgesia to spare her a greater psychic trauma. This group included 27% of his patients. Another 27% obtained some benefit and 5% no benefit from this procedure. Although analgesia was necessary in 45·4% of normal deliveries, the psychophysical preparation was useful, and all patients were enthusiastic, attributing their success to the preparation. Sedatives and anti-spasmodics must still be used to supplement psychophysical training, and, when properly used, greatly help the patient. Considering, the rather high proportion of partial or total failures, the expression "childbirth without pain" is something of a misnomer and should not be used. "Psychophysical preparation" is a more exact term.

OPHTHALMOLOGY

Ophthalmic diseases and hormonal therapy.—(*Am. J. Ophthal.*, Oct. '57).

Corticotropin and the adrenocortical steroids have approximately an equal therapeutic effect in the group of ophthalmic diseases which respond favourably to hormonal therapy. The present trend in ophthalmology, however, is away from the use of corticotropin and towards the use of the corticosteroids.

The general rule is, that hormonal therapy is indicated in ophthalmic diseases, where the inflammatory reaction is so severe it threatens the functional integrity of the eye and the ocular tissues require protection from such inflammation. Systemic therapy with either the corticosteroids or corticotropin is contraindicated if the patient has an associated tuberculosis, a peptic ulcer, a severe hypertension or cardiac disease, diabetes, or an acute infection for which there is no specific antibiotic therapy available. In those cases, however, the topical use of the corticosteroids to control an anterior ocular segment inflammation is permissible. Topical therapy offers little serious threat of accelerating a systemic disease process.

It is generally agreed that hormonal therapy is used in ophthalmology for the sole purpose of controlling inflammation. These hormonal agents have no curative effect on ophthalmic diseases, they do not supply a hormonal deficiency, they do not stimulate tissue regeneration, they have no bactericidal action. They do inhibit and suppress the inflammatory reaction irrespective of whether it is caused by an allergic, toxic, or infectious insult.

In ocular inflammations caused by infection, the use of hormonal therapy must be somewhat guarded. In suppressing the inflammation of infection, to a certain extent the mobilization of leukocytes and mononuclear macrophages and the initiation of the fibroblastic reaction may also be inhibited. Since neither corticotropin nor the corticosteroids have any bactericidal powers, the suppression of nature's first line of defence against infection may permit a rapid proliferation and dissemination of the pathogenic organisms.

In chronic ocular infectious, especially those caused by the so-called granulomatous pathogens, the use of hormonal therapy must be even more guarded. In the eye these chronic infections, tuberculosis, syphilis, brucellosis, toxoplasmosis, and so forth, are not easily overcome. Infectious foci may be circumscribed and walled off, living parasites may be encysted, and the infection thus lie dormant, but it will often flare up if there is a depression in the patient's immunity.

Topical (and systemic) therapy with the corticosteroids and the parenteral use of corticotropin give favourable results in such external ocular inflammations as contact dermatitis, rosacea, keratoconjunctivitis, allergic conjunctivitis, marginal corneal ulcers, phlyctenulosis, and allergic keratoconjunctivitis.

In nongranulomatous iridocyclitis and posterior nongranulomatous uveitis, these agents reach their highest usefulness. The therapeutic response of iritis to topical therapy and of posterior nongranulomatous uveitis to systemic therapy is prompt, and if treatment is continued over the natural life of the inflammation, the result simulates a complete cure. Hormonal therapy, especially corticotropin by intravenous drip, is the best treatment as yet available for sympathetic ophthalmia. Intensive hormonal therapy is indicated in ocular sarcoidosis, but it does not prevent recurrences when treatment is terminated.

Cataract extraction in retinitis pigmentosa.—(Alberth, B. *Klin. Monatsbl. f. Augenh., 130*: 737-741, 1957, via *A.J.O.*, Oct. 1957).

In 10 patients 17 operations were performed; the extractions were intracapsular even in young patients. The operation is indicated when vision is less than 6/60 and the field smaller than 15 degrees. Five patients experienced considerable and two patients some improvement. A few patients could again be gainfully employed.

Severe ocular lesions caused by tear gas.—(Durix, C. and Gallet, M., *Bull. et Mem. Soc. frauc. d'opht., 69*: 124-137, 1956, via *A.J.O.*, Oct. 1957).

Tear gas, the ethyl esther of monobromacetic acid (CH_2 $BrCOOC_2H_5$) has been used widely for years, especially by the police. Mostly it only causes harmless but very uncomfortable tearing and burning of the eyes, photophobia and coughing. Nevertheless *severe injuries* to the eyes with permanent disfigurement and visual impairment *have been observed* especially in a population infected with trachoma and other ocular diseases. Eleven patients with severe ocular disturbances caused by exposure to tear gas were observed. They were divided into three groups, depending on the severity of the individual signs and symptoms. The patients of group 1 had been exposed to diluted tear gas in the open air. They had considerable photophobia, lacrymation and hyperæmia of the lids and conjunctiva without corneal injury. They mostly recovered in a few days, even in hours. The patients of group 2 had been exposed to concentrated tear gas in a poorly ventilated indoor space. They also showed a more or less severe corneal œdema, desquamation of the epithelium and folds in Descemet's membrane and pronounced conjunctival irritation. In otherwise healthy eyes and with adequate treatment recovery was complete. Considerable permanent damage was added in eyes already affected with trachoma. The patients in group 3 had chemical burns of the cornea after a direct contact with a tear gas bomb. Sloughing of the conjunctiva and intricate corneal ulcers were the sad result. Complete recovery from these injuries was considered doubtful especially in the presence of other diseases, for example, trachoma and glaucoma. Immediate medical care is recommended. Subconjunctival hydrocortisone injection proved to be of great benefit in severe but uncomplicated corneal injury.

Early operations in chemical burns of the eye.—(Krahnstoever, Max., *Klin. Monatsbl. f. Augenh., 130*: 741-747, 1957, via *American Journal of Ophthalmology*, Oct. '57).

This is a survey of the author's experience with 700 cases of chemical burn in 35 years. The damaged corneal and conjunctival tissue is excised. The operations can be done on outpatients. Grafting and suturing is not necessary. Healthy granulation tissue will cover even large defects.

Naib, Hallett, and Leopold found that erythromycin is an effective antibiotic agent *in vitro* for the gram-positive bacteria most frequently cultured in ocular infections, that it penetrates

the ocular barriers moderately well, and in proper dosage is well tolerated by animal eyes.

This report is based on our experiences with one-percent erythromycin ophthalmic ointment in the treatment of 147 patients seen privately or in the clinic. The ointment was ordered to be instilled four times daily. For the the most part adjuvant topical medication was avoided except for nonspecific measures such as hot or cold compresses, mydriatics, and so forth, where they were indicated.

It appears to be of value in acute infections particularly those due to gram-positive bacteria. It appeared to be of prophylactic value in a small series of traumatic and operative cases. There were seven local reactions of the allergic type; five were severe enough to require cessation of treatment.

Treatment of amblyopia with excentric fixation.—(Krause, Gebbard. *Klin. Monatsbl. f. Augenh., 130*: 617-628, 1957, via *A.J.O.*, Oct. 1957).

In 12 of 47 patients with nonfoveal fixation who were treated pleioptically, full vision was regained. When fixation is peripheral (outside of the macular reflex) there is no chance of improvement.

The motor component of excentric fixation and its surgical correction.—(Boehme, G., *Klin Monatsbl. f. Augenh., 130*: 628-637, '57, via *A.J.O.*, October 1957).

It was noted that the degree of excentricity (and with it the visual acuity) may vary in an esotropic, amblyopic eye with the direction of gaze. The eccentric fixation is usually more marked in abduction. Early operation is advised. A combination of advancement and recession is regarded as the treatment of choice. Of 138 patients with excentric fixation the visual acuity improved in 48 after an operation brought about orthophoria.

Analysis of results obtained in 300 cases of convergent concomitant strabismus.—(Vancea, P. and Vancea, P. P., *Ann. d'ocut. 190*: 417-456, June 1957 via *A.J.O.*, Oct. '57).

The authors report various surgical procedures followed in 300 cases of convergent concomitant squint. By and large the best results were obtained by recession of internal rectus muscles and advancement and resection of the lateral. In amblyopes better results were obtained with advancement of the lateral rectus muscles and elongation of the medial. The authors recommend early surgery (from one to five years) except in amblyopes where the optimal age is between 16 and 30 years.

Emergency treatment of eye injuries.—(*Journal of Iowa State Medical Society*, December, 1957).

The initial treatment of eye injuries is usually given by someone other than an ophthalmologist. Therefore, it is well to ask all physicians to consider this medical problem. In some injuries the initial treatment determines whether the end result is to be useful vision or blindness. Eye injuries fall into four large groups: (1) foreign bodies, (2) abrasions and lacerations, (3) contusions and (4) burns.

Foreign bodies in the epithelium and Bowman's membrane can be successfully treated by any physician. Foreign bodies within the corneal stroma may be handled by any physician, but the hazard is considerably greater. All intraocular foreign bodies should be managed by one capable of performing intraocular surgery. Early referral of intraocular foreign bodies must take place if the best results are to be obtained. Whenever there has been a corneal or scleral perforation, avoid the use of ointments in the conjunctival sac, but rather, use antibiotic solutions immediately and when indicated, use antitoxin therapy. Whenever in doubt, be sure to obtain any X-ray for evidence of a foreign body.

Corneal abrasions and lacerations that do not penetrate the anterior chamber may be treated by any physician. Careful treatment of corneal abrasions is indicated to avoid the development of recurrent erosions. Corneal lacerations should be cleaned of foreign particles, and during the healing stage, regular observation for evidence of corneal infection is important.

All contusion injuries to the globe are potentially dangerous. If possible, these patients are best cared for by an ophthalmologist, for rapid deterioration of the eye may occur at any time. The most critical time is the first three to seven days. Poor prognostic signs are the development of hæmorrhages or repeated hæmorrhages and secondary glaucoma. During the first few days, rest and no medication usually will be the safest procedure. The pupil should not be dilated in the early period following injury, and when dilation is performed, it should first be obtained through the use of a short-acting mydriatic.

There are four types of burns to the eye: (1) thermal, (2) radiation, (3) acid, and (4) alkali.

Thermal and radiation burns to the eye are not, as a rule, serious, and they produce more discomfort than permanent damage. Treatment consists of the control of pain through systemic medications and minimal treatment to the eye itself. The disease process is usually self-limited. Acid and alkali burns are very serious, and the greatest hope for saving the vision of their victims lies in immediate, profuse irrigation of the eye. The treatment should be started at the place of the accident and not delayed until a physician has been called. If there is any evidence of tissue damage other than hyperæmia, it is probably advisable to have treatment directed by an ophthalmologist. Permanent damage is the rule, and frequently there is a legal problem in this type of burn.

In the control of pain of ocular injuries, avoid the repeated use of local anæsthetic agents in any form. Rather, prescribe systemic analgesics, narcotics and sedatives.

First aid for chemical injuries of the eye.

Immediate first aid is essential for chemical injuries of the eye. The eye is held open with a towel or handkerchief, and water or isotonic saline is poured over the exposed surfaces for at least ten minutes. Almost any source of water can be used. The patient should be questioned to determine the identity of the chemical. If hazard of chemical eye-injuries is great, a bottle of sterile isotonic saline or water with a siphon hose connection should be kept over a bench near the work location.

After the eye is washed for ten minutes, 2 or 3 drops of a topical anæsthetic such as 0·5% tetracaine is instilled and irrigation is continued ten minutes longer. The eye is examined by a first-aid nurse with a magnifying lens, and solid particles of chemical are removed. Fluorescein is then applied; if green staining appears or if the chemical is thought to be an alkali, irrigation is continued for another ten minutes.

A pad is applied tightly over the closed eye. If the injury is severe or if fluorescein staining is observed, the patient is referred to a physician. Otherwise, the patient must return in twenty-four hours for removal of the pad and re-examination. A combination of an anæsthetic ointment, such as phenacaine or tetracaine, and a sulphonamide or antibiotic ointment may be applied. *Penicillin should not be used*, because allergic symptoms may occur. Corticosteroid drugs are not suitable for first aid because of the danger of undiagnosed herpes simplex virus-infection of the cornea.

Severity of injury of the eye resulting from contact with chemicals depends upon the nature of the agent. Acids coagulate the protein of the skin covering the eye, creating a barrier to further penetration. Alkalis penetrate deeply and combine with the tissue, and injury often becomes progressively worse. Injuries from organic solvents are seldom severe if infection is avoided. Soaps, detergents, irritants, and allergens seldom cause permanent damage, but the worker may be temporarily incapacitated by inflammation.

MEDICINE & THERAPEUTICS

The correct method of diagnosing rabies —(*Military Medicine*, December 1957).

The most common laboratory procedure for the diagnosis of rabies is the demonstration of Negri bodies in the cytoplasm of neurons by microscopic examination of stained tissue applications or sections of fixed tissues from the brains of animals suspected of having rabies. In some cases where Negri bodies are not found, no further diagnostic procedure is performed.

Twenty-five strains of virus originally identified as rabies virus were evaluated by a combination of diagnostic procedures. Sixteen of the test viruses were originally identified solely on the interpretation of inclusion bodies as Negri bodies in touch preparations of brain tissue from animals suspected of being infected with the rabies-virus. Negri bodies were not demonstrated in the brains of the suspect animals from which nine of the test viruses were recovered.

Caution should be exercised in the identification of Negri bodies in brain-tissue preparations from suspect animals.

If Negri bodies are not demonstrated in brain-tissue preparations from suspect animals, animal inoculation procedures should routinely be done.

The diagnosis of rabies in inoculated laboratory animals should never be based solely on the interpretation of clinical symptoms. Brain tissue preparations should routinely be made from those animals which die following inoculation. These should be critically examined for the demonstration of Negri bodies.

If Negri bodies cannot be demonstrated in the brain tissue of those animals which die subsequent to inoculation with suspect rabies-virus, serum-virus neutralization tests should routinely be performed.

If less than 100 LD-50 of virus is neutralized, brain tissue preparations from those animals which succumb in the neutralization tests should routinely be examined for Negri bodies.

If Negri bodies are not demonstrated in brain tissue of those animals which succumbed in the neutralization tests, in which the LD 50 of virus neutralized was less than 100, the tests should be repeated.

Leprosy and tuberculosis.—(*Arquivos Mineiros de Leprologia*, vol. 16, 1956, via (*Sao Paulo*), *J.A.M.A.*, Oct. 26, 1957).

According to Dr. R. D. Azulay there is an immunological inter-relationship between leprosy and tuberculosis. BCG vaccination can change the lepromin reaction in man or animal. This vaccination helps lepers who show clinical, bacteriological and histopathological cure by converting the lepromin test from negative to positive, thus indicating an increase of resistance to the leprotic infection. BCG vaccination confers a partial immunity to Mycobacterium lepræmurium infection in the white rat. By an injection of lepromin in guinea-pigs, it is not possible to produce a sensitivity to a second inoculation of antigen. Dr. Azulay's results agree with those of N. S. Campos and J. Rosenberg.

Revolutionary dentrifice.—(*J. A. M. A.*, Oct. 26, 1957).

Irwin and Leaver, of the Otago Dental School, have tested a tetradecylamine acetate tooth-paste that they hope will protect dental surfaces. New Zealand's inhabitants have the highest incidence of dental caries in the world. The dentifrice will enter its most spectacular stage of testing next year when researchers in Wellington conduct a large-scale clinical trial. The tooth paste is not complementary to or a substitute for fluoridation. Some aspects which are not yet completely known are: how long the protective film remains on the tooth and how many surfaces are reached by the protective agency. This tooth-paste was first envisaged after some laboratory tests by Prof. J. P. Walsh 20 years ago and perfected with the aid of Drs. Irwin and Leaver. In some preliminary tests with the free amine, insoluble in water, the test showed a protection averaging 44% efficiency. An abrasive has been added to the originally chalk-free cleanser, and the manufacturers have used the acetate rather than the free amine as the protective agent. *In vitro* tests with this product have given almost complete protection from a buffer solution of lactic acid (*p*H 4) for 24 hours. It is believed that the acetate, added not because of its more favourable properties, but because of its ease of combination in a chalky base, will be even more successful than the original product, since its solubility may insure greater covering of dental surfaces. The paste, dissolved in the saliva, reaches more surfaces and has an effect as good as that of the oil emulsion of the free amine compound.

Cystic fibrosis of the pancreas.—(*The Guthrie Clinic Bulletin*, Oct. 1957).

Any infant or child who presents with a history of failure to thrive, frequent respiratory infections, passage of abnormal stools or the history of a sibling who died in early infancy from intestinal obstruction or pneumonia should bring to mind, for serious consideration, cystic fibrosis of the pancreas. This is a systemic disease involving the exocrine secreting glands of the entire body. It is congenital and believed to be transmitted as a Mendelian recessive trait. The exact proportion of the population who are carriers of the genes responsible for the disease has not been determined. However, it appears that a carrier will produce affected children if married to another carrier. Once the condition has become manifest in one offspring, the statistical chances of sibling affection are one in four.

The disease is characterized by dilatation of the small pancreatic ducts which are plugged with yellow eosinophilic material. There is atrophy of the acini and a progressive extension of the connective tissue resulting in marked fibrosis of the entire gland. The lungs show emphysema and atelectasis by obstruction with mucus; later on there is evidence of lobar pneumonia, bronchiectasis and pneumonic abscesses. The liver is enlarged and infiltrated with fat. There is a biliary cirrhosis secondary to the introhepatic biliary obstruction. The salivary glands show distension of the acini.

Dr. Allen and Malliakas have reviewed all the cases seen in the Robert Packer Hospital during the past 10 years and presented 3 cases under their care.

They have demonstrated that cystic fibrosis of the pancreas is primarily a disease of infancy and early childhood, though it may also be seen in adolescents and adults.

The barrel chest and corpulmonale of the later stages of this disease may occasionally lead to the erroneous diagnosis of bronchial asthma or acute heart failure of unknown ætiology. The disease is not solely, or even primarily, one of the pancreas but involves all of the exocrine glands. This is the basis of the test for sweat sodium and chloride which was first devised by Darling and his associates in 1953. Owing to the excessive losses of sodium and chloride, affected infants are extremely hydrolabile and subject to crises of dehydration and heat prostration.

Finally, the condition is progressive with death terminating from acute pulmonary disease or corpulmonale. The characteristic X-ray findings in a well-defined case are those of a chronic, obstruction emphysema. No cysts are present.

The primary aim in treatment is a replacement of pancreatic enzymes, the prevention of further pulmonary damage by prophylactic antibiotic therapy and intensive antibiotic therapy of acute infections. The diet must be adequate for replacement of stool losses and normal growth needs, and an effort must be made to prevent serious water and electrolyte losses.

The endocrine problems of asthma.—(*The Journal of The Royal Institute of Public Health and Hygiene*, Nov. 1957).

Docteur Louis Zizine, Member Centre National de la Recherche

Scientifique, Researcher in the "College de France," in his *Bengue Memorial Award Lecture* stated that the experience of several hundred cases studied in Hospital Bichat with Professor Turiaf seems to show that the occurrence or the exacerbation of asthma together with the presence of various endocrinopathies is not infrequent, and that, conversely, a new hormonal balance may be beneficial to pre-existing respiratory paroxysms.

The role of the different endocrine glands is not identical as far as their relation to asthma is concerned. The adrenal cortex does not seem to exert a great, if any, influence.

The pancreas does not appear to be involved in the dyspnœic disorders. It seems that the incidence of diabetes is extremely rare in asthmatics. Personally, we have noted on three occasions only, the existence of a true diabetes in two thousand cases of asthma. In recent experimental works, we have shown that reactions of hyper-sensitivity are profoundly altered in diabetic rats.

The influence of the thyroid gland on asthma has long been recognized. The importance of this gland has, however, been at first over-estimated, due, perhaps to improper method of measuring its activity. In our own statistics, we have found a very small number of thyroid disturbances in asthmatics.

The endocrine glands which are the most frequently involved in the course of asthma are the gonads, especially in the woman. The influence of menstrual periods, pregnancy or menopause on dyspnœic disorders exemplifies the influence of endocrine events on the course of the various diseases. Many morbid phenomena have a cyclic evolution during the menstrual cycle. Pathological conditions, such as asthma, which remain in a quiescent state may be suddenly precipitated in the precatamenial period.

But, whatever the ætiology of the so-called premenstrual syndrome may be, the hormonal treatment of this pathological state is beneficial to asthma. We have used two varieties of hormones successfully in such a condition: progesterone and testosterone, either alone or combined. It must be said that in a fairly high proportion of cases this therapy has given us favourable results. Other androgens such as methylandrostenediol have not been so successful in the management of the pathological condition of this type of asthma.

We had the opportunity of studying, in 224 cases, the possible effects of parturition on asthma and found that the influence of parturition on asthma is not negligible, and that it appears quite complex. Many endocrine and non-endocrine factors are deeply altered during pregnancy.

Non-endocrine factors are modified too, in the pregnant female, which may account for the alteration in the asthmatic condition. There is a modification of the metabolism of histamine in the pregnant state. It is well known that the level of histaminase is increased in physiological pregnancy. Rose has shown that in several asthmatic patients a low level of histaminase was frequently encountered. It is possible that other enzymatic mechanisms related to asthma may be altered, too, during pregnancy. But whatever the nature of the favourable or unfavourable influences of pregnancy may be, we have always treated the "gestatory asthma" by hormonal therapy. Dyspnœic disorders have been successfully handled by the administration of progesterone.

If we consider the effect of asthma upon pregnancy there has never been, in our experience, any abortion due to dyspnœa.

At the end of the menstrual cycle the hormonal equilibrium is deeply altered. Various pathological conditions may then be precipitated, aggravated or, more seldom, improved. If the neurovegetative disorders do not deserve a long description, the respiratory disorders are worthy of comment. They usually start as soon as the cycles become irregular. A long period of bronchorrhœa has often preceded the onset of the asthmatic attacks. Furthermore the intensity of these paroxysms needs to be stressed since this variety of asthma is among the most severe we have encountered. The therapy of the dyspnœic paroxysms precipitated or aggravated at menopause is essentially hormonal and follows the treatment of the neurovegetative disorders. Androgens in the great majority of the cases, sometimes œstrogen, or a combination of the two kinds of hormones have given us in many cases a definite improvement of the respiratory condition as well as of the other accompanying symptoms.

In a study devoted to the relationships between the endocrine glands and asthma, problems concerned with the use of cortisone in the treatment of dyspnœic disorders deserve a short comment. It was hoped, with the advent of corticosteroid therapy that cortisone and corticotropin might offer a chance of cure to the asthmatic. Early reports indicated that these drugs were efficacious, but the initial enthusiasm later gave way to some scepticism and caution. Recently, a sub-committee of the Medical Research Council has analysed the results of therapeutic trials of cortisone in patients with chronic asthma and in patients with status asthmaticus. Although the trials showed that patients receiving cortisone responded more rapidly and more completely than the controls, it was reported that in allergic asthma the early improvement was not maintained beyond the period of about two months, after which there was no real difference between the treated patients and the controls. The serious risk of complications from continued administration must be underlined and sometimes sudden death occurs as a result of acute adrenal insufficiency.

The various facts seem to show that the connections between the endocrine glands and asthma are not merely coincidental from a practical standpoint; the recognition of endocrine factors, although they are not clear, forms a basis for a better understanding of asthma, and may be beneficial in the management of some of its forms.

Pitfalls in the care of cardiovascular patients.—(*Journal of Iowa State Medical Society*, December 1957).

The numerous pitfalls in the rehabilitation of a patient who has had a heart attack or breakdown of blood vessels include:—(1) a common tendency of physicians to treat the disease, rather than the patient; (2) the failure to recognize the value of long-term anticoagulant therapy; (3) the failure to evaluate adequately the serious hazards resulting either from constipation or, in the absence of constipation, from straining at stool; (4) failure to recognize the psychologic stress imposed on the patient by business or interpersonal relationships; (5) failure to realize that a patient who has undergone cardiac surgery may suffer various side-effects, including constipation, as a result of anæsthesia or pain-killing drugs; and (6) the dangers arising from mistakes in diagnosis, as between cardiovascular and gastrointestinal conditions.

As regards the first of these in deciding what activities are permissible for such a patient, the physician should be careful to consider the sort of life he led prior to his illness.

Anticoagulant therapy has preventive as well as therapeutic aspects. The patient who has a tendency toward embolism should be so treated in order to prevent minimal or trace thrombi from becoming a threatening factor.

The use of a bed pan rather than a commode, was shown to result in twice as many straining episodes of sufficient intensity to satisfy the accepted criteria for the Valsalva manœuvre (a sustained, forced expiration against the closed glottis or other suitable external obstruction to air flow), in non-constipated patients. Constipation increased that incidence five-fold.

The most common complaint of surgical patients is bowel dysfunction, resulting either from the effects of anæsthesia or the effects of a drug used to kill pain. The doctor urged the cardiologist, the gastro-enterologist and the surgeon to pay more

attention to the physiology of the colon because of the crucial nature of complications that can result from constipation.

Treatment of influenza with cortisone and antibiotics.—(*J.A.M.A., 165*: 12, Nov. 23, 1957).

Dr. R. Cruz-Coke and co-workers reported to the Medical Society of Santiago on the pandemics of influenza which recently swept over Chile causing many deaths. The case fatality rate was not high, but because of the large number of persons involved the toll was great. Pulmonary complications were the main causes of death. They developed in persons whose general condition was poor and who did not respond to antibiotics. During July and August 1957, they treated 365 hospitalized patients with influenza complicated by pneumonopathies. The death-rate in this selected group of patients was 21·6 per cent and 50 per cent in those with bronchopneumonia. As soon as these patients were admitted to the hospital, they were given 800,000 units of penicillin, 1 g. of streptomycin and 2 g. of tetracycline daily. All the patients with severe pulmonary complications, died, notwithstanding the fact that in many cases the complications occurred when the patient was already hospitalized. Because of this high case fatality rate, it was decided to add 100 mg. of cortisone or 20 mg. of prednisone to the routine treatment. The dosage was gradually reduced after 5 to 10 days of combined treatment.

The results of the combined treatment were excellent. The general condition of the patient rapidly improved, the fever abated, the pulse become slower, and the dyspnœa rapidly disappeared. Viral hepatitis, which was a complication in two of the authors' seven patients, followed a favourable course with cardiac insufficiency; and bronchopulmonary complications of influenza were given cardiotonics and were restricted as to use of salt in the diet, in addition to the combined treatment. The cortisone or prednisone had no influence on the retention of liquids by the tissues. In one patient who had diabetes, cardiac insufficiency, and severe complications of influenza, the combined treatment did not affect the metabolism of carbohydrates. The combined treatment was of great benefit to a patient with active bilateral pulmonary tuberculosis when he became ill with influenza. This patient received antibiotics, cortisone, and isoniazid.

Treatment of typhoid fever and paratyphoid fevers with the exclusive use of phenylbutazone.—(*La Presse Medicale, 65*: 71, Oct. 5, 1957).

Floris and Pasqui (*Progreso Medico*, April 30, 1957) report 24 cases of typhoid or paratyphoid B in children and adults treated exclusively with phenylbutazone in an initial daily dosage ranging from 150 to 600 mg. according to age and body weight. This dose was repeated for three days then gradually reduced in relation to results obtained. It was intramuscularly administered in adults and by means of suppositories in infants.

The fever and all symptoms, neurotoxic phenomena in particular, cleared up rapidly; apyrexia was nearly always achieved within 24 hours. All patients recovered. Only one case of recurrence was to be noted, but it proved of short duration.

In conclusion, phenylbutazone was shown to ensure results superior to those obtained with antibiotics and to be perfectly tolerated.

Detection of gastrointestinal bleeding.—(*Am. J. Roentgenol., 78*: 698-704, 1957 via *Mod. Med.*, Dec. 15, '57)

This is possible roentgenographically by addition of 8 to 12 cc. of hydrogen peroxide to the contrast medium, Veriopake. In patients with current or recent tarry stools of fæcal occult blood, contact of the mixture with at least 1 cc. of blood causes bubbles and foam and smudging of the barium image on roentgenograms. Air contrast and erect pressure views must be made to reveal foaming in the stomach and duodenal cap, explains George W. Henry, of Honolulu. Localization is only approximate.

ERMATOLOGY

lycyrrhitinic acid as an anti-inflamatory agent in dermatology.—(*Med. . Australia,* 14-12-1957).

In the "*Current Comment*" columns of this journal of August 1953, and of May 5, 1956, attention was drawn to papers dealing with the action of liquorice and of its active principle, glycyrrhitinic acid, in causing retention of water, sodium and chloride in man and to its cortisone-like activity. Colin-Jones and Somers have since found that active fractions of crude glycyrrhitinic acid are active anti-inflammatory agents both when applied locally and when injected systemically. Artificially induced inflammatory changes in animal skins were quickly inhibited when ointments containing the acid were applied locally. Systemic administration of glycyrrhitinic acid suppressed both acute and chronic swelling in the paw of a rat following the injection of a 3% solution of formaldehyde into the joint.

Ointments: greasy and non-greasy, were prepared containing 2% of the isomers of glycyrrhitinic acid shown to be biologically active and used in the treatment of skin diseases in man. Dramatic results were often obtained in acute inflammatory conditions such as contact dermatoses, but the results in chronic diseases were much less convincing, or there was no reaction at all. A comparison between hydrocortisone ointment indicated anti-inflammatory action. Careful controls seen to have been used to eliminate psychosomatic factors in the patient. In general the effects were very similar to those obtained with hydrocortisone ointments, but sometimes one succeeded when the other failed and *vice versa*. In some cases better results were obtained by using an antibiotic in the ointment as well as glycyrrhitinic acid.

If the results recorded by Colin-Jones and Somers are confirmed, the ointment may be very useful in cases in which it is considered inadvisable to use hydrocortisone.

Acne vulgaris.—(*J.A.M.A.*, 27-7-'57).

Torre and Klump describe cyclic œstrogenic hormone therapy of *Acne vulgaris*. Seventy-one female patients between the ages of 13 and 30 years were treated by oral administration of œstrogens. There is some evidence that androgens may help to cause acne, for instance, acne is said to be more frequent in young men and that œstrogens may relieve acne, *e.g.*, in pregnancy and in the middle of the menstrual cycle, when œstrogen levels are highest. The patients treated were investigated by a vaginal smear technique. Then a conjugated œstrogenic preparation was given orally for 14 days before the expected date of the menses. One and a quarter milligrammes per day of this preparation were given, and with each succeeding menstrual cycle the dose was raised by 1·25 milligrammes per day until a good clinical result or the vaginal smear showed adequate physiological response. The dose taken was decreased by 1·25 milligrammes in succeeding cycles, the average dose being 3·9 milligrammes daily. In general, the results of treatment were good in 57%, satisfactory in 31%, and poor in 12%. The average length of treatment was six and a half months.

RADIOLOGY

The indications and contraindications for Cobalt^{60} teletherapy.—(*Journal of Iowa State Medical Society*, Oct. '57).

Advantages and disadvantages:—The principal physical advantage of CO^{60} radiation under 250 kv. X-rays is the hardness or increased penetration of the rays. This quality facilitates the delivery of the desired amount of radiation to deep-seated tumours. There is less sidescatter of radiation, and consequently the integral dose is less.

As a result, there is a decrease in the amount of radiation sickness. The skin reactions are minimal when compared with those produced by a similar amount of X-rays, for the maximum intensity CO^{60} irradiation occurs 5 mm. beneath the surface of the skin.

We do see some subcutaneous lymphœdema and fibrosis in those cases that have had large doses of cobalt irradiation. Because of the hardness of the cobalt rays, there is less effect on bone and cartilage and less danger of bone necrosis when one is treating lesions adjacent to bone. Another advantage of Cobalt^{60} over supervoltage X-ray units is the lack of equipment failure.

Lesions of the head and neck:—In general, the principal indications for Cobalt^{60} therapy are deep-seated lesions and those lesions adjacent to bone. We have found it useful in lesions about the head and neck. The patients with carcinoma of the mouth, tongue and pharynx tolerate radiation from CO^{60} much better than conventional X-ray therapy. Our patients are treated daily, and we have been able to deliver a larger tumour dose with less discomfort because there is much less skin reaction. The mucositis that develops seems to be no different from the reactions we obtained from X-rays.

Lesions in the thorax and abdomen:—We have had very little if any more response of primary bronchogenic tumors to Cobalt^{60} irradiation than to X-ray therapy. I do think that patients tolerate the treatments better, and we are able to deliver a larger tumour dose with CO^{60} irradiation.

In carcinoma of the œsophagus, significant palliation can often be obtained. In cases of partially obstructing lesions we have seen the re-establishment of a good-sized lumen, permitting the patient to eat and drink without difficulty.

The carcinomas of the stomach that we have treated with CO^{60} have all been advanced, inoperable lesions with metastases. The epigastric region is the worst area that we have to treat, because of radiation sickness. If the patient is in fair physical condition, we have found that he tolerates small doses of radiation without too much discomfort.

Inoperable carcinoma of the colon and recurrent lesions after surgery have often shown an excellent initial response to Cobalt^{60} irradiation. There is a reduction in size of the tumor, relief of pain and a general improvement in the patient's physical condition.

Gynaecologic and urologic cancer.—Papillary cyst adenocarcinoma of the ovary with widespread metastases and fluid have not responded as well as we had hoped.

In carcinoma of the cervix, the response to treatment has been very good. In those cases that have radium treatments, we use split fields in cobalt therapy in order to protect the bladder and rectum. When transvaginal X-ray treatments to the cervix are given, we use one large anterior and one posterior port to include the cervix. The main difference between CO^{60} and X-ray treatments in these patients is the lack of skin reactions and the reduction of radiation sickness. Also we are able to deliver a more homogeneous and a larger dose to the pelvic lymph nodes, especially in the larger patients.

Contraindications:—In our opinion, those lesions in which CO^{60} treatments are usually contraindicated are skin lesions of any type because the maximum intensity of radiation is beneath the surface of the skin. Cobalt treatment is not usually indicated in widespread malignancies. We prefer to treat patients with cobalt who do not have metastases to the liver or distant metastases to the lung, etc., for the results obtained usually do not justify this type of treatment. At present, we are not treating postoperative carcinoma of the breast with CO^{60} because of the lack of skin effect and the increased amount of radiation that would be delivered to the lungs.

REVIEWS OF BOOKS AND REPORTS

The Indian Council of Medical Research—(A review of its activities during 1950-'57). Pp. 169. Issued by the Director of the I.C.M.R., P.O. Box 494, New Delhi.

Though medical research was given a definite place by the Government of India in the field of medicine so long ago as 1911 and major problems like cholera, malaria, kala-azar, leprosy, plague and rabies were vigorously tackled by the Indian Research Fund Association in co-operation with the Medical Research Department of the Central Government, a new era began when in 1950, the I.R.F.A. came to be known as the Indian Council of Medical Research, which coincided with a considerable expansion of its activities in several hitherto unexplored fields of medicine and public health under the able direction and guidance of Dr. C. G. Pandit, Director of the I.C.M.R.

In 1955 the I.C.M.R. issued a memorandum outlining its research programme (which was reviewed in the ANTISEPTIC of September 1956) fort he Second Five-Year-Plan, which was estimated to cost Government about Rs. 4·12 crores. The present review covers the work done during the First and the beginning of the Second Five Year-Plan. The purpose of the programme is not only to find practical solution for the host of problems confronting the medical profession in a country where the people are riddled with a host of diseases and weakened by malnutrition, but to do the kind of fundamental biological research which has yielded valuable results in the advanced countries.

An Institute of Medical Biology is to be set up near Bombay where fundamental studies will be made on animal genetics, cytology and experimental biology. It will include a field laboratory for studying the effects of radiation on animals and plants and develop schemes for the cultivation of algæ and other aquatic plants as well as fungi of medicinal importance.

The Nutrition Research Laboratory and the new Virus Research Centre at Poona set up with the help of the Rockefeller Foundation, have permanent staff but the other research workers employed under the Council have to depend on annual grants from the Government and work on a year-to-year basis.

The report draws attention to the fact that while some of the old killers like small-pox, typhus, kala-azar, plague, etc., have been largely controlled and while the current campaigns against malaria, tuberculosis, filariasis and syphilis have yielded fair results, much work has still to be done with other scourges like trachoma and cholera. More recently epidemics of polio, jaundice, encephalitis and Asian influenza have worked much havoc and require much more detailed investigation. The Pasteur Institute is working on the 'flu virus and keeping in close touch with the World Influenza Centre in London which is on the track of the virus as a carrier of the disease around the globe.

The report stresses the importance of environmental sanitation of clean water and clean food in keeping down the disease and mortality rate. Less than ten per cent of Indians enjoy the benefits of a protected water supply. Despite half a century of public health work in this country, the majority of the people still have to be persuaded of the need for environmental hygiene.

Regarding the manufacture of indigenous drugs and medicines, the report points out that under the guidance of Col. Chopra, the Calcutta School of Tropical medicine has, since 1926, been working on the classification and analysis of these medicines. The pharmacological action of a large number of drugs derived from plants has been studied and the active ingredients isolated and assayed. The National Pharmacopœia of India was published in 1955. The manufacture of drugs in India is an infant industry and requires very careful handling by experts with special training and experience.

The review is in fact a highly condensed account of the wide and varied research activities in progress and will require to be carefully studied by all

interested in keeping abreast of the rapid progress being made in India in the field of medical research.

T.N.S.R.

Mankind Against the Killers–By James Hemming: Published by Messrs. Orient Longmans, Bombay. Abridged edition. Price Rs. 2.

This is indeed a most interesting book dealing with health on a world-scale in a most fascinating manner written in a lucid homely style; it is bound to interest the young people as well as the old. Hemming has marshalled facts relating to health and disease with remarkable skill and the spirit of adventure into the realms of diseases and health pervades the book from beginning to end. It is bound to inspire all its readers, young or old, with a high sense of co-operation and mutual help and lead to the achievement of the noble ideal of 'World Citizenship.' T.N.S.R.

Psychosomatics—By Joh. Booji, Professor of the Neuro-bio-chemical Laboratory of the Fee University of Amsterdam. A series of five lectures published by Elsevier Publicity Co., Amsterdam, London, New York, etc. Published 10, Dec. 1957. Distributors: Messrs. Cleaver-Hume Press Ltd., 31, Wright's Lane, Kensington, London W-8. Price 24 sh.

Booji's book presents an up-to-date modern survey of psychosomatic medicine as it stands to-day and brings out, in a fairly easy-to-be understood manner the many problems and concepts, as discussed by seven most eminent neurologists of Europe.

The possibilities and limitations of the subject are first outlined; then follows a discussion of the psychosomatic aspects of syndrome-shift and syndrome-suppression. Anthropology in its bearings on psychosomatic medicine is well discussed and the relation between psychosomatic medicine and organic pathology is also considered in their relevant perspectives. The achievements of psychotherapy in the treatment of psychosomatic diseases form very instructive and enlightening reading.

The book has been well got-up in clear bold type, and the information it contains will certainly be of interest to all medical men, neurologists and pathologists. T.N.S.R.

The Doctor, His Patient and the Illness—By Michael Balint, M.D., Consulting Psychiatrist, Tavistock Clinic, London. 1957. Pp. 353. Published by Messrs. Pitman Medical Publishing Co. Ltd., London. Price 40 sh. net.

This very interesting and informative book gives a very cogent account of the systematic researches carried out in the intimate atmosphere between the doctor and his patient, by a selected team of 14 able and experienced doctors in general practice and a psychiatrist. This team met routinely once a week for many years to report on their day-to-day experiences with their patients and to compare notes. During the discussions they naturally met with several snags and difficulties, successes and failures about all of which they maintained faithful records. In this well written book, these are analysed with a view to seeing if any workable solutions to the various difficulties could be evolved. No cut and dried solutions or hints are offered in the book nor does the author try his hand at teaching psychotherapy to his numerous medical readers.

The book is divided into 3 parts: (1) Diagnosis which deals with the general problem and also the teacher-pupil relationship and allied matters, (2) psychotherapy by general practitioners from their practical experience and (3) general conclusions in six somewhat disconnected chapters.

The value of the book as a whole lies in the author's desire and attempt to make the doctors aware of the factors and forces involved and to present the results of a properly planned and ably conducted research into what is really a most elusive function of medicine. In this, we think, Dr. Baliant has succeeded admirably well and both he and his wife, who ably collaborated with him deserve to be warmly congratulated. T.N.S.R.

Structural Psychology—By Dand K. Stanley-Jones. 1957. pp. 180 + viii. Published by Messrs. John Wright & Sons Ltd., The Storebridge Press, Bath Road, Bristol 4. Price 21 sh. Postage 9 d.

Structural psychology as used in this book is an edifice erected on the basic sciences of anatomy and physiology. The primary theme of this book is the Unity of Mind and Brain, and has been traced from neurology and neurophysiology and related point by point to speculations in the field of psychology. The Freudian System, as developed by the English School of psychologists, has been confirmed though not in its entirety and fundamental tenets which were found incompatible with ascertained physiological facts have been amended or revised, *e.g.*, the origin of anxiety and the oral stages of the œdipus complex.

The authors have propounded an entirely new theory of the origin of the human emotion and its biological import.

"Anxiety" according to these authors is quantitatively due to aggression which has been rudely repressed due to orthosympathetic activity (be it in rage, fear, hate, or the animal responses of flight or fight) which has failed to achieve its proper motor release by reason of the inhibitory factors operating *from within the organism itself*. This definition is tested successfully against the two chief kinds of anxiety seen in clinical practice, *viz.*, anxiety-neurosis and thyroid disease.

Although written primarily for doctors, this book seeks to interest the non-medical psychologist, biologist, and even the intelligent layman and philosopher. The esoteric jargon of the specialist has been rigorously excluded. An irreducible minimum of medical terms is used and explained as they occur in the text and in addition a glossary is given at the end. All the seven chapters are interesting and we confidently recommend this book to all who are interested in the problem of sex-relations and emotional tensions and anxieties arising from deviations. T.N.S.B.

Antibiotism and Family Medicine of Tomorrow—By Alexander Komis, M.D., Director, Scientific Department, Institute of Fermented Vaccine, Athens. 72 pages. John Wright & Sons, Bristol 1. Price 8/6.

Dr. Komis has carried out extensive researches on the importance from the medical point of view, of antibiotism in immunology. In this small book under review, from very early times up to the present day and as a result of the research work carried out by him and numerous other Italian and continental workers, he advocates the reinforcement of antibiotics by immunity in the shape of specific bacterial vaccines, autogenous or polyvalent. Although chemotherapeutics inhibit to a certain extent the organismal process for immunity-production, the combination of chloramphenicol and vaccines *in vivo* have been definitely proved to enhance the elaboration of antibodies. Dr. Komis has not only united antibiotism with immunity but has also utilized antibiotism as a method to perfect immunity. By his researches extending over 30 years since 1928, immunity has been installed on the solid basis of antibiotism for the solution of the problem of treatment and prevention of diseases.

The newer concept advanced in this booklet on the basis of solid research deserves to be tried on a large scale with a view to countering the resistance shown by various organisms to antibiotics like penicillin, streptomycin etc. The rationale of the new therapy is well explained and must be read in detail to get convinced. T.N.S.R.

BOOKS RECEIVED

Aids to Medical Diagnosis—By G. E. F. Sutton. VIII Ed. 1958. Pp. viii + 400. Bailleire, Tindall & Cox, 7 & 8, Henrietta St., W.C. 2. Price 12s. 6d.

Maharashtra Medical Journal—Special Number on Obstetrics and Gynæcology, Vol.V, No. 1, pp. 112, April '58. 538, Narayan Peth, Poona. Price Rs. 2/-

International Social Review—March 1957. Pp. 76. Dept. of Public Information, United Nations, USA. Price U.S.S.O. 80.

PREPARATIONS AND INVENTIONS

We have received from M/s Ruma Laboratories, 248, Tardeo Road, Bombay-7, a vial containing 10 cc. of **Folic Acid *plus* B12** for intramuscular injection; this preparation is claimed to be very stable and quite painless on injection and to be useful in macrocytic and nutritional anæmias as also in cases of malnutrition. It is said to contain 7·5 mg. Folic Acid and 50 mcg. Vitamin B_{12} per cc.

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Further information and literature are available upon request from John Wyeth & Brother Limited, P. O. Box 1423, Steelcrete House, Dinshaw Wacha Road, Backbay Reclamation, Bombay-1.

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Nu-san gauze. This gauze which is a product of Nu-San Ltd., Nottingham, England claims to be antiseptic and non-adherent and to be a good surgical dressing for wounds, burns, ulcers etc. It is stated to contain 1 in 1000 Aminacrine Hydrochloride B. P. and 1 in 1000 Mercury Succinimide. It is claimed that it does not stick to raw wound surfaces and can be painlessly removed without damage to the delicate healing tissues

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CORRESPONDENCE

To The Editor, The Antiseptic, Madras

Sir, A didactic discussion on the following points through your esteemed journal will be highly appreciated.

What should be the ideal physique (height, weight and body surface) of a human being, taking into consideration all relevant factors such as race, sex, climate, habits of living, etc., all of which go to make up the personality of the individual? The idea underlying this query is to enable the framing of a suitable well-balanced diet for an adult, that would bestow optimum health, long life and capacity for sustained and efficient work? Will your readers kindly offer their considered views?

With regards,

Yours faithfully,

D. N. DEBSARMA.
Dietitian,
Assam Medical College Hospital.

31-3-'58
Dibrugarh, Assam.

To The Editor, The Antiseptic, Madras

Dear sir,

I have already spoken in person about the subject of this letter, in which, I am sure, you are interested. At Bangalore a number of young medical licentiates saw me and sought my advice regarding the condensed M.B., B.S. Course to be instituted there, after the winding-up of the University Medical School which has been upgraded into a Medical College. Not being sanguine of success in their own State they approached me to obtain facilities in other States where the Course is being continued. I have helped such students who were able to secure seats in Calcutta, Bombay and Ahmedabad through the influence and cooperation of my friends and colleagues in those places. Now some Universities have suspended this course for some reason or other. Mysore is still continuing the course which lasts for 3½ years unlike other places and the chances are few and far between; also there are communal and other considerations. Meanwhile I had learnt there is a move to select about 25 candidates from Bangalore for the Kasturba Gandhi Medical College and a Selection Committee formed for the purpose; restrictions have been made as regards admission between those in Government Service and private candidates and the levying of fees for the Course. This has found publicity in the Press and subsequently I note the Kerala Government is starting a similar Course for their own candidates.

I thought it best to give publicity in the Press to my rejoinder to the two official Communiques issued by the Kerala and Mysore Governments. The enclosed statement of mine speaks for itself. The restrictions placed by each Government are ununderstandable and the barriers undesirable and so should be removed in the interests of medical education. The Madras Government did the right thing for the choice of candidates as and when found necessary. The R. G. Kar Medical College at Calcutta became an All-India Institution for giving facilities to licentiates both in and outside Bengal. Unfortunately the University of Calcutta suspended the course from last year. The slogan now is "Each State is for its own candidates" which is an additional disadvantage. Such parochialism should go, if justice is to be meted out to those aspiring for higher medical educational facilities not only in our country but abroad. Moreover to establish one standard of medical education as many aspiring and deserving Licentiates should be absorbed at the earliest possible opportunity to unify the profession without further distinctions. I therefore, thought it fit to approach you to lend your valuable help and cooperation in this deserving matter.

Yours sincerely,

D. V. VENKAPPA,
President
Indian Medical Assocn., Madras.

26-1-'58
3, Dinadayalu St., Madras-17.

To the Editor, The Antiseptic, Madras

Sir, Kindly suggest the line of treatment for the following case:—

One of my female patients, aged 30 years, mother of four children, gets severe pain in abdomen and back sometimes in right and sometimes in left iliac fossa on the 14th or 15th day from the 1st day of menstruation *that is on the ovulation day every month.* For the last seven years, that pain remains for 12 to 24 hours only, during her two last pregnancies and lactation periods there was no pain at all which confirms that the pain is due to ovulation.

D. S. CHOHAN,
Asstt. Surgeon,
I/c. N. Rly. Dispensary

Merta Road, 19-3-'58.

Reply

Sir, The pain complained of by this patient coincides with ovulation time—rupture of the follicle. This mid menstrual pain is transient and is rarely serious enough to disable her from her duties. It is not unusual to find some women complaining of this pain about the middle of the cycle.

Apart for explaining the situation to her (a psychological suggestion) nothing special is needed. If, however, the pain is severe—by administration of stilbœstrol 1–2 mg./day from 5th to 20th day of the cycle, ovulation can be abolished and painless anovular periods for 3 cycles may give her the required relief.

K. BHASKER RAO, M D.

11-A, Police Com. Office Road, Madras 8, 31-3-1958.

NEWS AND NOTES

The Association of Medical Specialists of Kanpur, at a meeting held on April the 7th, '58, have passed a resolution requesting the Government of U. P. to withdraw the privilege of private practice from the clinical teachers of the Medical Colleges of the State at an early date.

Dhankuta Sanatorium

Sri Ram Narayan Shrestha, Secretary, Himalaya Swastha Mandir, Dhankuta (Nepal) writes to us expressing the grateful thanks that is due to His Majesty the King of Nepal for having accepted the Chief Patronship of the Tuberculosis Sanatorium to be started at Dhankuta in Nepal. He requests that the Indian Medical Profession must come to know about this and also requests the philanthropic societies in India who are working to fight tuberculosis, to do their best for this sanatorium by sending donations in cash or kind to the doctor.

Music programme pleases and Educates Deaf Children

50 deaf or hard-of-hearing boys and girls are among the music lovers of the Theodore Roosevelt Elementary School in California. The handicapped children range in age from 3 to 13. The training of children comprises of regular teaching and teaching by one who is specially trained to work with the deaf and heard of hearing. They are trained in the special technique the deaf need to hear; speak and read lips and expressions. Bells and simple music instruments are used. Wearing special ear phones the children listen to the striking of the bells. Later they are made to hear the school orchestra. By a series of training they have learned to understand the loudness, tone and rhythm. Musical therapy also helps greatly in their learning how to say sounds they cannot hear. Dancing and singing also play their part in the education of deaf children.

Glaxo Scholarships for Research in Pædiatrics

Further scholarship awards are announced by Glaxo Laboratories (India) Private Ltd. This time the awards are for research in pædiatrics, and they have been granted through the Association of Pædiatricians of India. The Governing Council of the Association has selected Dr.(Mrs.) P.E. Bharucha, Hon. Assistant Pædiatrician at the Bai Jerbai Wadia Hospital and Dr. V. D. Arora, Hon. Assistant Pædiatrician at the Bombay Hospital and the Nair Hospital as recipients of the scholarships.

VII International Congress of leprology, New Delhi, India

The VII International Congress of Leprology will be held in India at New Delhi from *10th to 16th November 1958*; the registration of the delegates will begin on the 8th. A preliminary Information Brochure giving necessary information for the intending delegates is in press, and will be mailed to all persons and organizations likely to be interested in participation in the Congress. In the Brochure will be included an Enrolment Form and the intending delegates are requested to return this form duly filled at an early date. Further literature will be sent only to those from whom these forms have been received.

All functions of the Congress will be held in Vigyan Bhavan, Edward Road, New Delhi, which is equipped with facilities for simultaneous interpretation of three languages.

Membership fees:–The full membership fee will be Rs. 50/- for members of the International Leprosy Association and Rs. 100/- for non-members. The Associate membership fees will be Rs. 25/-. There will be an increase of 20% over these rates in case of those registering after 31st July 1958.

Themes for discussion:—(1) classification; (2) therapy; (3) epidemiology; (4) Immunology; (5) Bacteriology and Pathology and (6) Social aspects.

Submission of Abstracts and papers:—Abstracts of not more than 200 words should be prepared in duplicate; both copies to be sent to the Secretary of the International Leprosy Association, 8 Portman St., London, W. 1, so as to be received not later than the 1st August, 1958. Abstracts and papers should be addressed to the International Leprosy Association, c/o Dr. Dharmendra, Central Leprosy Institute, Chingleput, South India, so as to be received before the end of September, 1958.

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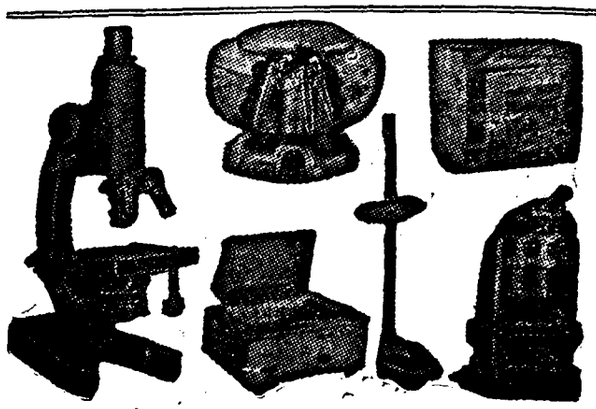

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Proc. Pen. 4 lac ICAR 0-36, 200vials lot	0-35
do ,, SEPBA ...	0-42
do ,, 20 lac RIT ...	1-69
do in oil 30lac. SEPBA 1-12, 50 vials lot	1-10
do in oil 30 lac. Pfizer ...	2-60
Ramacillin 12 lac (Long acting Pen.) ...	1-50
Strepto-Penicillin ½ gm. SEPBA 1-03 RIT	1-18
Vitamin B-12 10ccx100 mgm ...	2-25
Vitamin B12 5ccx500 mgm ...	5-50
Vitamin B complex 10cc. Forte, Imp. ...	1-35
Vitamin B comp. Tab. Super Forte 1000s	15-50
do Hewlett's 1000s ...	13-25
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FOR QUICK RELIEF

FOR THE TREATMENT OF PYORRHOEA, TOOTH ACHE, TOOTH DECAY AND OTHER DISEASES OF GUMS AND MOUTH.

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A HAEMOPOIETIC & RESTORATIVE TONIC

Hemasto-Hepatine is a hæmopoietic and restorative tonic of exceptional palatability with a comprehensive formula.

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Each 30 cc. contains :

Proteolysed-Liver Extract derived from	10 g. of fresh Liver
Stomach Extract derived from	1g. of fresh Stomach
Hoemoglobin	0.5 g.
Vitamin B1 B. P.	6 mg.
Riboflavin B. P.	2 mg.
Nicotinamide B. P.	50 mg.
Calcium Pantothenate U. S. P.	10 mg.
Pyridoxine Hydrochloride B. P. C.	1 mg.
Folic Acid B. P.	2,5 mg.
Vitamin B12 B. P.	10 mcg.

DOSE : One to two teaspoonfuls thrice daily will improve the appetite and will tone up the digestive system of the body. Two to three teaspoonfuls thrice daily helps in enriching the blood in patients having anæmia and will help them to attain full vitality.

PRESENTATION :—Bottles of 4 oz. and 8 oz.

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