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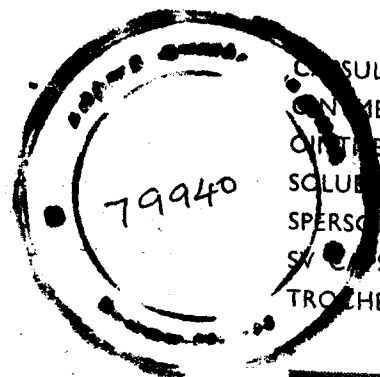
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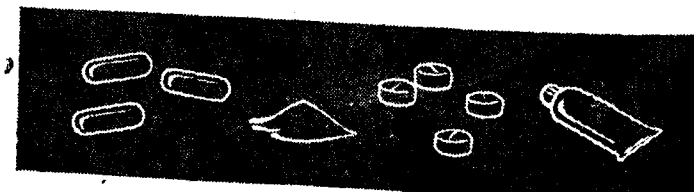
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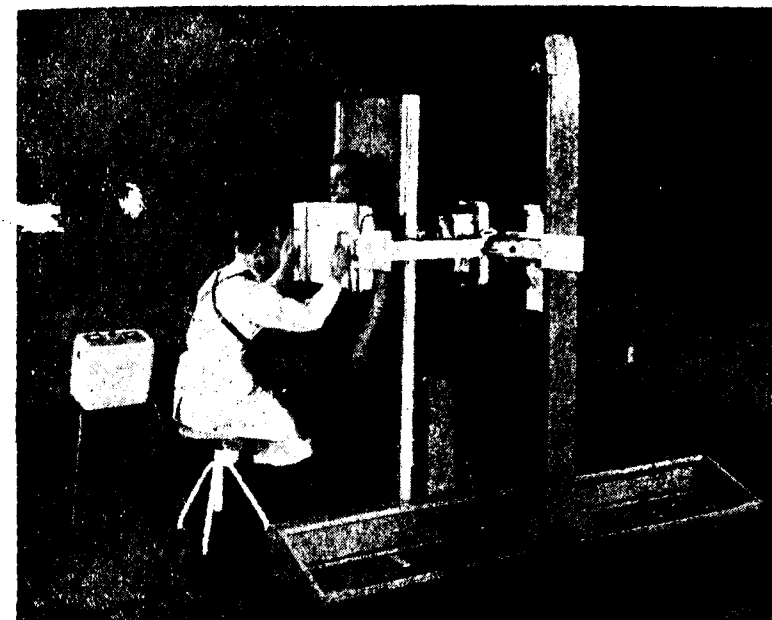


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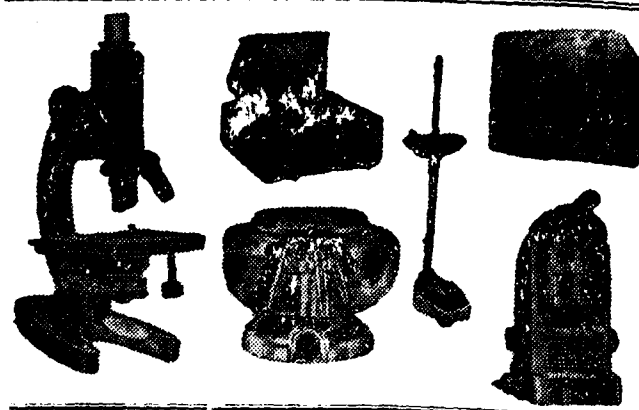
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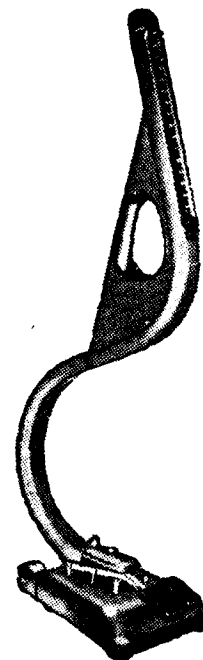
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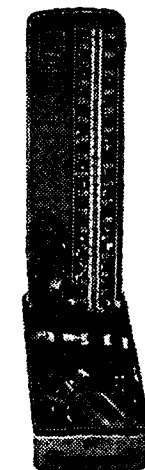
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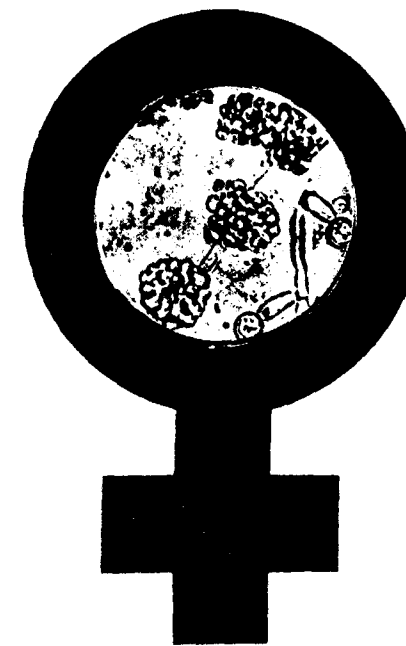
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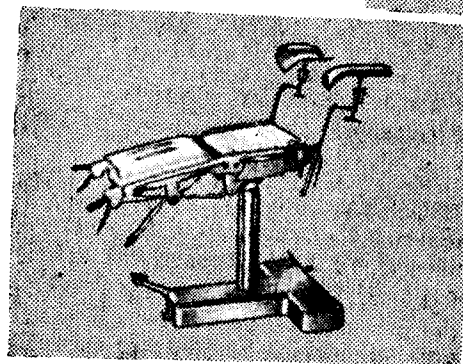
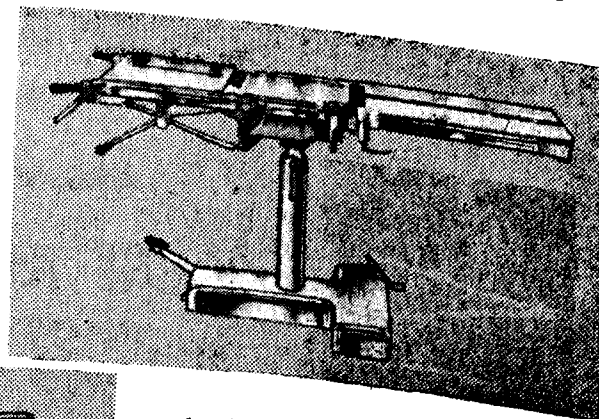
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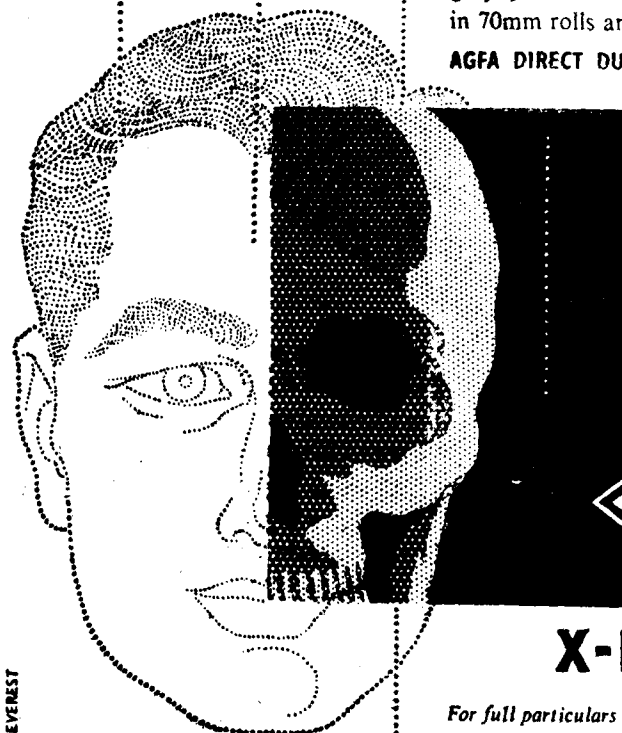


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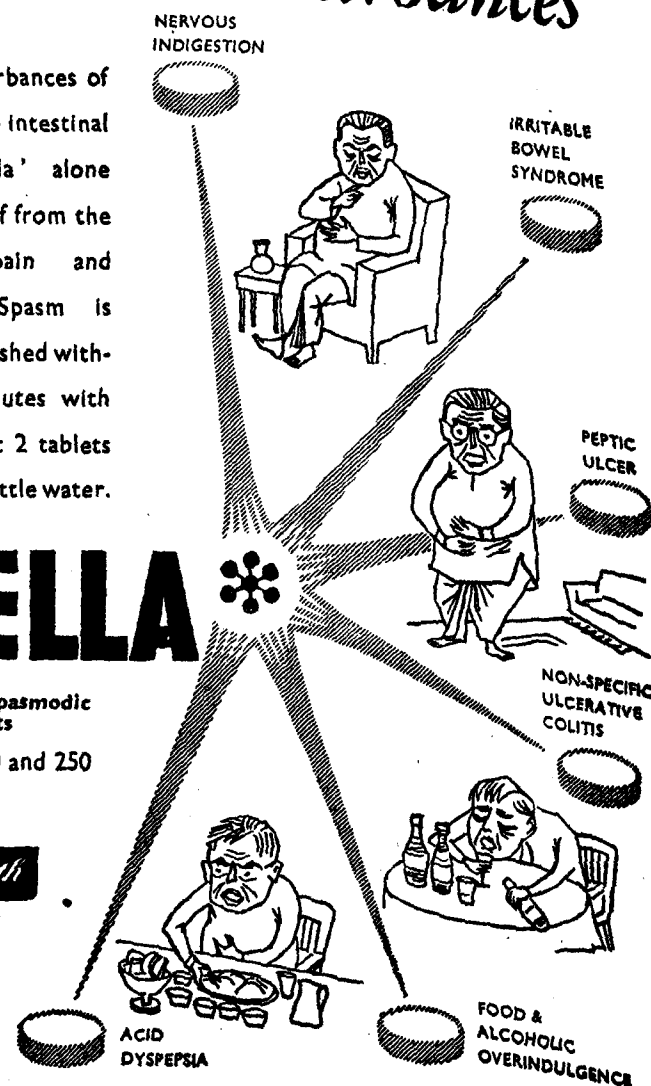
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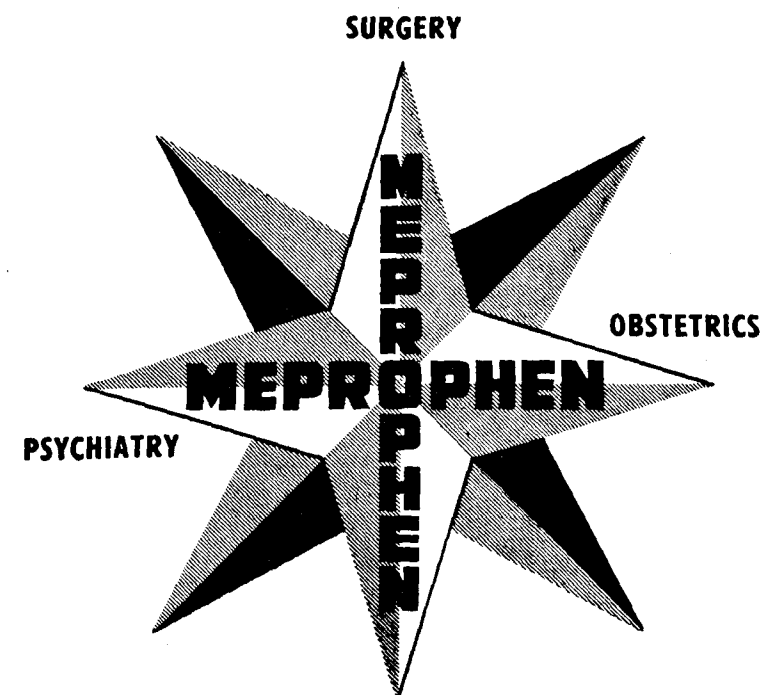
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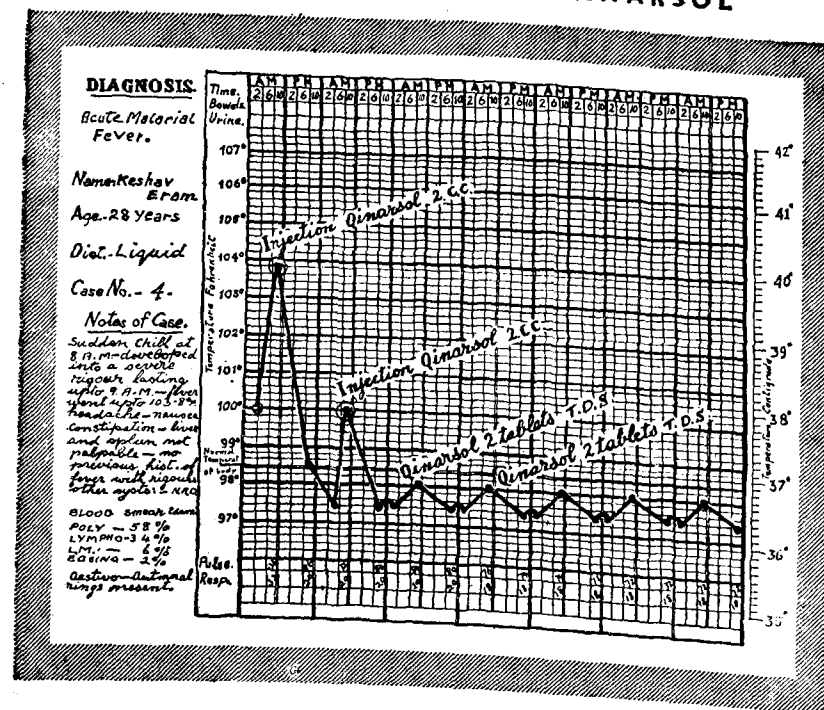
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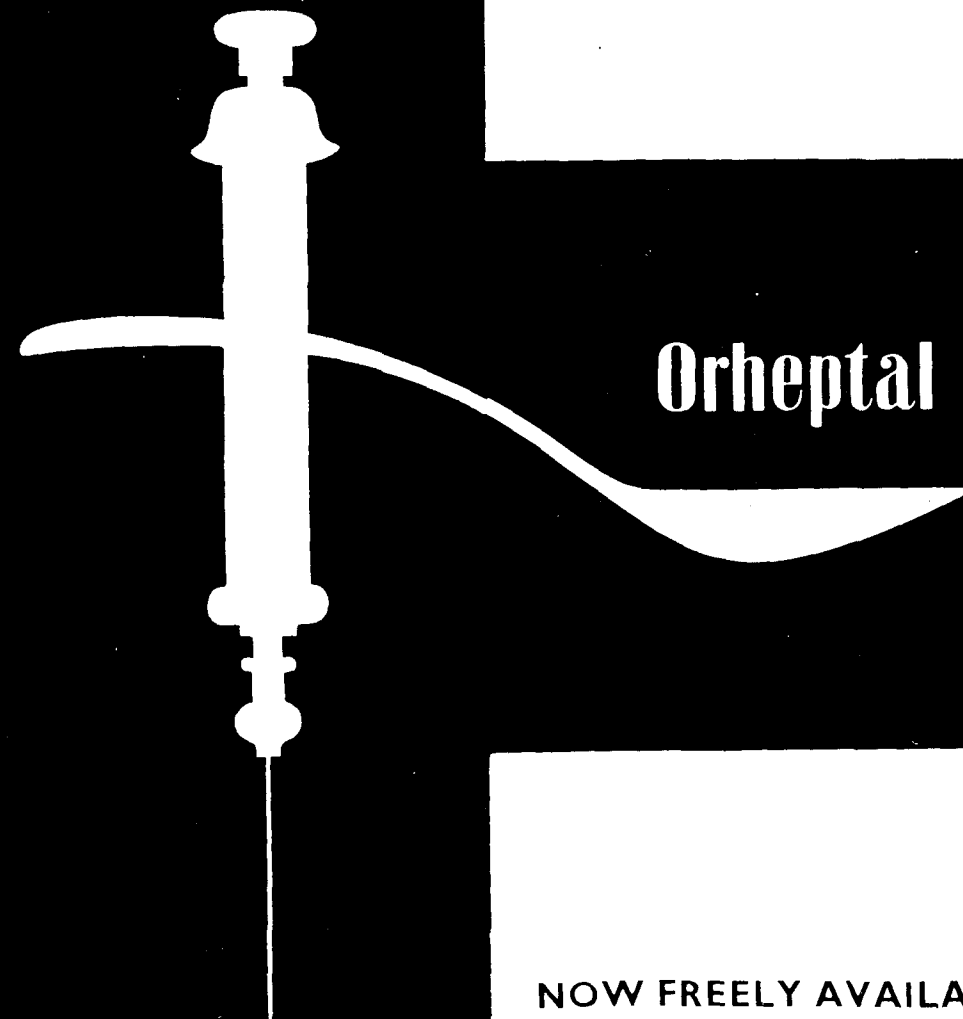
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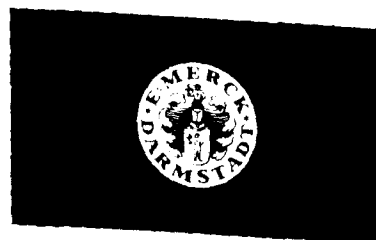
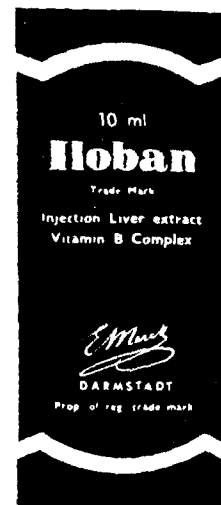
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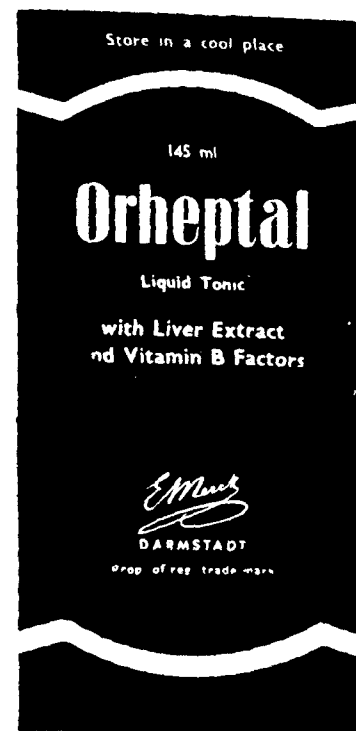
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1. Braceland, F.J.: Texas State J. Med, 51: 287, (June) 1955.
2. Lemere, F.: Northwest Med, 54: 1098, (Oct.) 1955.

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* Konar and Dasgupta.
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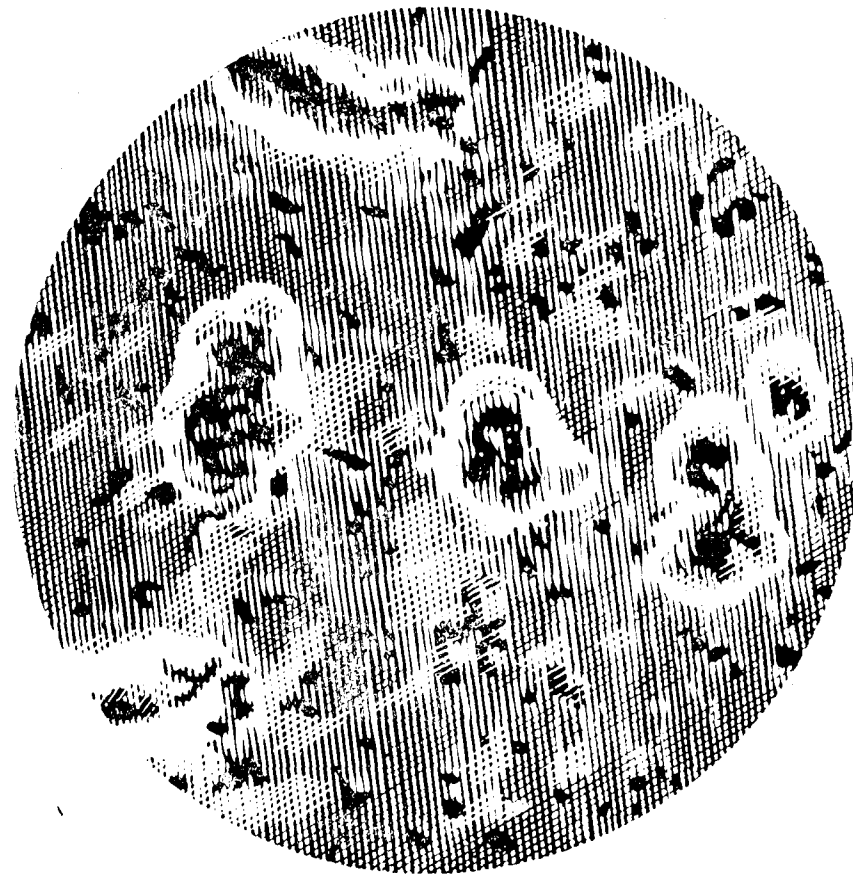
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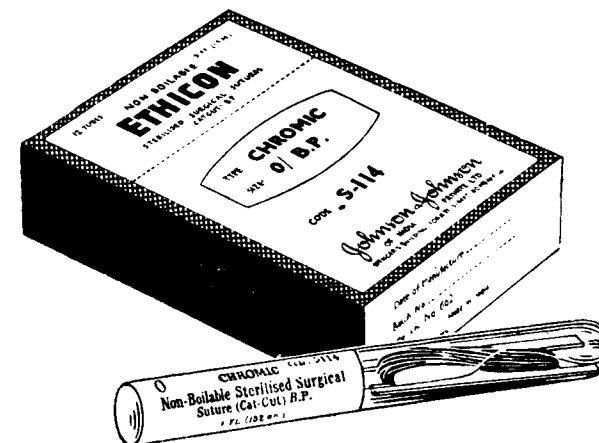
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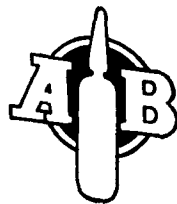
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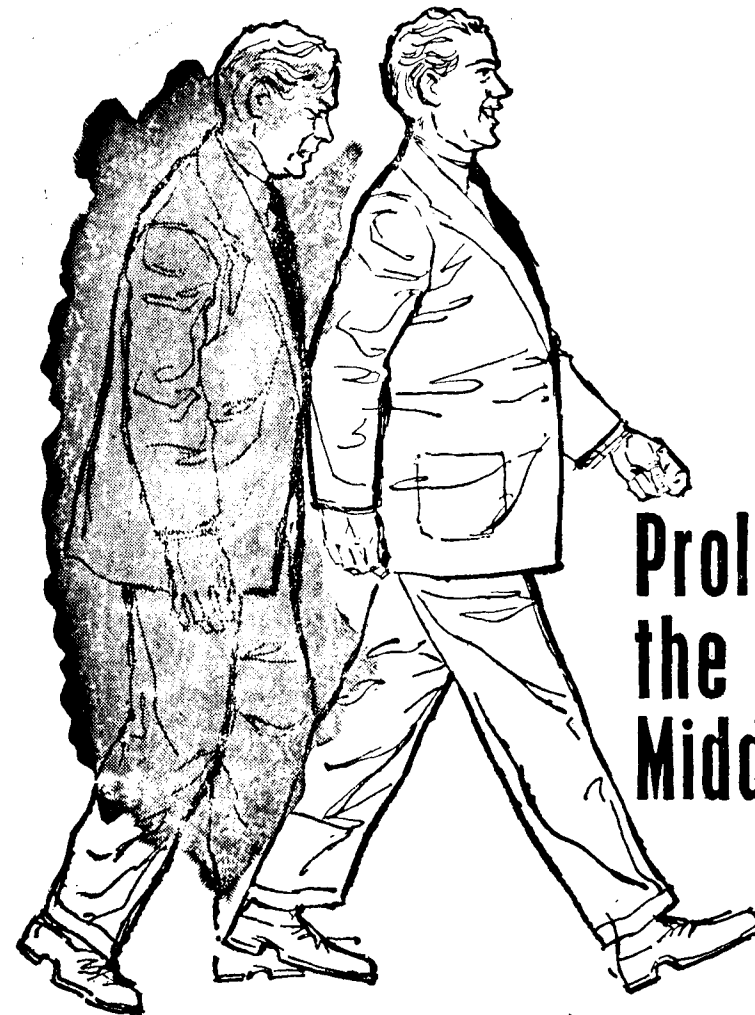
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each cc. contains:-

Vitamin B ₁ (Thiamine Hydrochloride)	25 mg.
Vitamin B ₂ (Riboflavin)	1 mg.
Vitamin B ₆ (Pyridoxin Hydrochloride)	3 mg.
Nicotinamide	50 mg.
Panthenol (d-pantothenyl alcohol)	4 mg.
Choline Dihydrogen Citrate	25 mg.
Benzyl alcohol as preservative	1.5%

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BOXES OF 6, 12 & 50.
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Nicotinamide	80 mg.
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Vitamin D	1600 I. U.	500 I. U.	400 I. U.
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Vitamin B ₁	2 mg.	5 mg.	4 mg.
Vitamin B ₂	1 mg.	1 mg.	2 mg.
Vitamin B ₆	0.5 mg.	1.5 mg.	2 mg.
Vitamin B ₁₂	—	2 mg.	4 mg. (Cal. Pan- tothenate)
Panthenol	4 mg.	—	10 mg.
Nicotinamide	50 mg.	12.5 mg.	—
Choline Dihydrogen Citrate	2 mg.	7.5 mg.	2.5 mg.
Vitamin C	80 mg.	25 mg.	30 mg.
Methionine	5 mg.	—	—
Folic Acid	—	—	0.15 mg.

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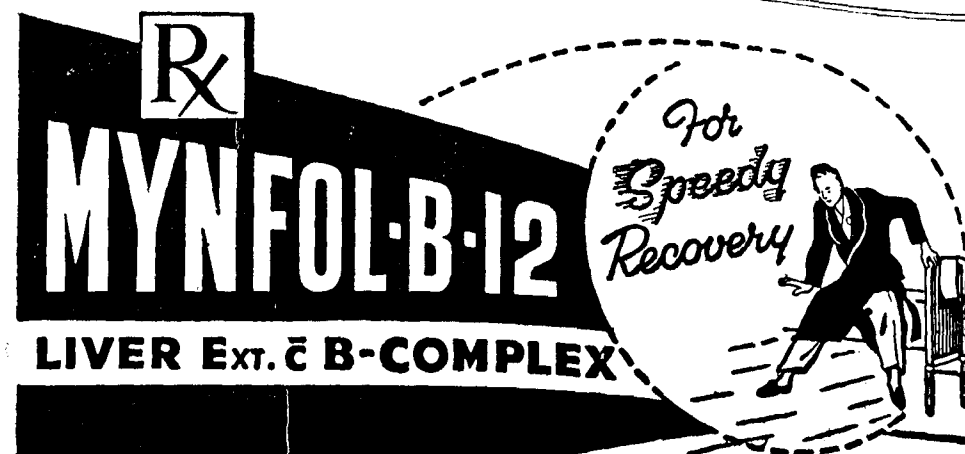
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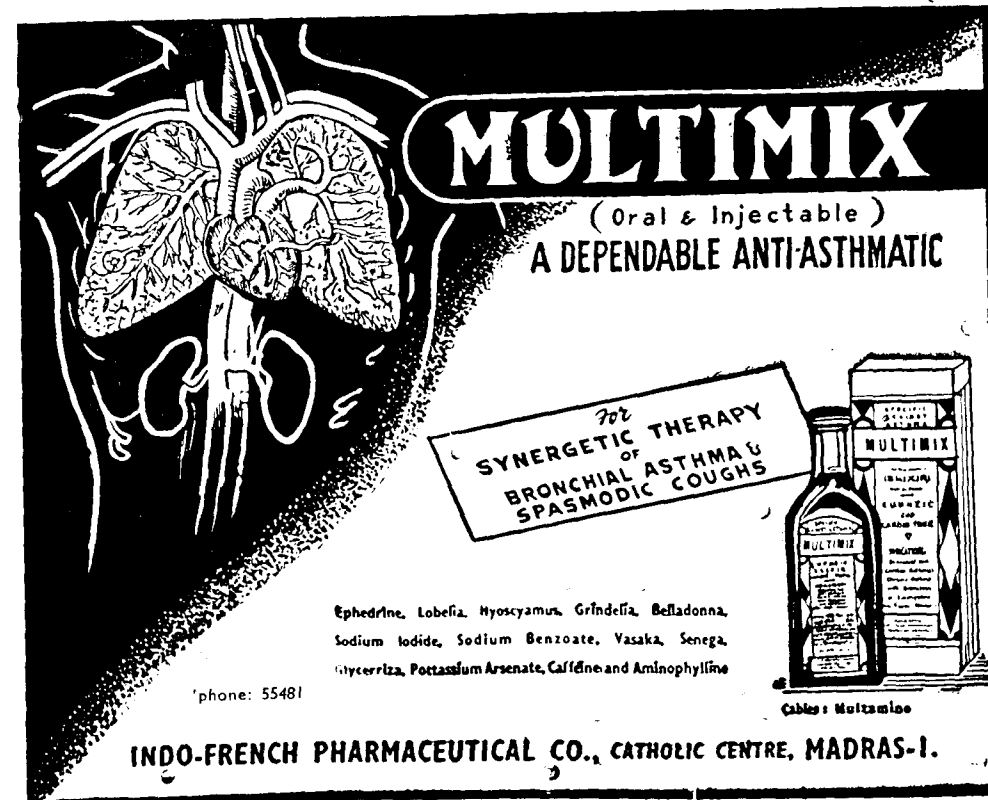
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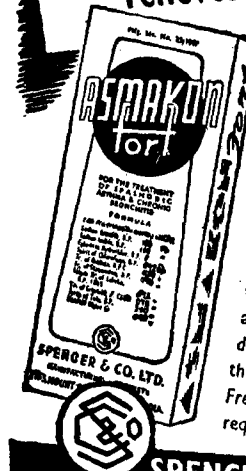
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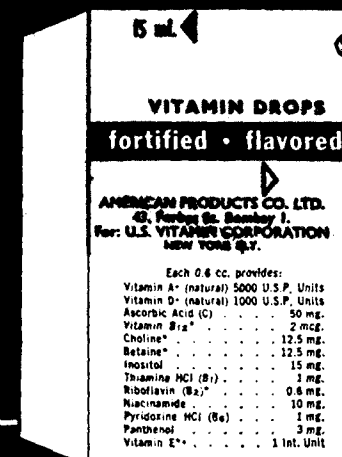
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Also available
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WITH OR WITHOUT OPIUM



The relief afforded is soon observed as it rids all pain, facilitates digestion, neutralises excess of acidity and dispels the flatulency. In bowel complaints it has been taken with decided success. Recommended by the Medical Profession.



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Lively children don't have worms!

Family doctors know only too well the ill-effects which helminth infestations have on growing children. That is why 'ENTACYL' is making such an important contribution to the health of families throughout India

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	AGE	TABLETS (number)	SUSPENSION (teaspoonfuls)
THREADWORMS: Daily Dosage 7-day Course of Treatment:	Under 2 years	2	1
	2 to 6 years	4	2
	6 years and over	6	3
ROUNDWORMS: 1-day Treatment May be given as a single dose or in divided amounts	Under 2 years	3	1½
	2 to 6 years	10	5
	6 years and over	15	1 ½ oz. (28.5 ml)
Daily Dosage 3-day Treatment	Under 14 years	4	2 (teaspoonfuls)
	Over 14 years	8	4 (teaspoonfuls)

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Tablets: Bottles of 25, 100 and 1,000
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NEO-FERRUM (INFANTS), readily miscible with milk and easily incorporated in the feed.

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NEO-FERRUM

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When oral iron is contra-indicated or when it is necessary to raise the haemoglobin level rapidly, **NEO-FERRUM INTRAVENOUS** should be used.

Infants— ½ oz. bottles: Liquid—4 oz. bottles
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Oral Therapy

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Diorin Tablets contain in each 0.5 G. of Tolbutamide, an orally active hypoglycemic agent, found useful for the management of diabetes mellitus in carefully selected patients.

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VERY EFFECTIVE IN RELIEVING BRONCHIAL SPASMS. CONTROLS COUGH AND COLD—SPECIALLY INDICATED IN WHOOPING COUGH AND ALL OTHER AFFECTIONS OF THE UPPER RESPIRATORY TRACT.

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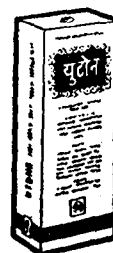
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Pancreatin N.F.	18.0 mg.	Pot. Phosphate N.F.	42.0 mg.
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(from wood)	0.14 ml.	Riboflavine B.P.	1.0 mg.
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Alcohol (absolute) 11%v/v (approx.)



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Ascorbic Acid (C)	500 mg.
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DOSAGE: 1 tablet twice daily.

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Vol. 56

OCTOBER, 1959

No. 10

Original Articles

ULCERATIVE LESIONS OF THE INTESTINES*

(A review based on a study of autopsies from the Department of
Pathology, Andhra Medical College, Visakhapatnam from 1926-to date)

D. BHASKARA REDDY, M.D.,

Professor of Pathology, Andhra Medical College, Visakhapatnam

AND

DAVID EDWARD,

Tutor in Pathology, Andhra Medical College, Visakhapatnam

CLINICAL manifestations of gastro-intestinal disorders are com-
monly seen all over the world and particularly so and more
frequently in the tropics. The causative factors may be numer-
ous: from disorders of the stomach to those of the rectum. They
are mostly in the nature of inflammatory lesions and neoplastic
conditions. The inflammatory disorders are of an ulcerative
nature of the gastro-intestinal tract. A decade or two ago the
prognosis used to be grave in some of the ulcerative lesions like
typhoid, and the morbidity much greater in some others like
dysenteric ulcerations. The whole outlook has changed today
with the advent of the antibiotics, which have reduced the
mortality and morbidity in these conditions. In order to find out
the exact incidence of the various ulcerative lesions of the intes-
tines, a study of the autopsies that have been conducted over a
33-year period was undertaken from the records of the Depart-
ment of Pathology, Andhra Medical College, Visakhapatnam.
All the autopsies are reviewed with particular reference to the
incidence of the various ulcerative disorders of the intestines and
a detailed statistical analysis regarding age, sex, site distribution,
complications and associated disorders is presented on p. 740.

*Specially contributed to the ANTISEPTIC.

TABLE I

Showing the incidence of the ulcerative lesions of the intestines

Total number of autopsies	2,917	
Total number of intestinal non-malignant ulcerations	351	12.03
Total number of malignant lesions	44	1.05
Total	395	13.53

It will be seen that 395 ulcerative lesions were met with in a total number of 2,917 autopsies, an incidence of 13.53% which is an indication of the frequency of prevalence of ulcerative lesions of the intestines. Of these 395 lesions, 351 were non-malignant ulcerative lesions and only 44 were malignant showing that non-malignant ulcerative lesions accounted for nearly 90%.

Tuberculous ulceration of the intestine is the most common lesion with an incidence of 21.2%. Intestinal amœbiasis ranks next, closely followed by duodenal ulcers. Ulcerations of the rare type were:—leukæmic ulcers in 2 cases, anthrax ulceration and diphtheritic ulceration in one case each. Equally significant among the findings is the occurrence of large number of cases of malignant lesions and ulcerative colitis.

Tuberculous ulceration.—85 cases showed tuberculous ulceration of the intestine (*Fig. 1*). Of these 85 cases 62 were in males and 23 in females showing a preponderance of these lesions in the males.

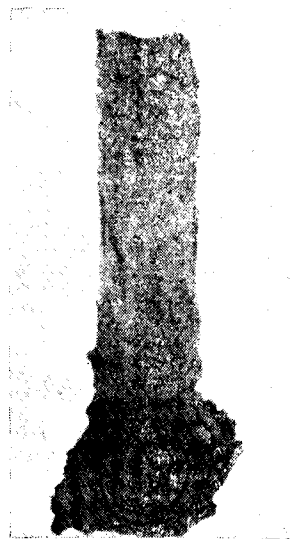


FIG. 1. Shows tuberculous ulceration of the small intestine.

It will be seen that nearly 60% of the cases were in the 20 to 40 years age-group, which is also the maximum incidence in

TABLE II

Showing the different types of lesions met with in the intestines

1. Tuberculous ulceration	85	21.20
2. Intestinal amœbiasis	69	17.49
3. Duodenal ulcers	68	17.21
4. Ulcerative colitis	44	11.13
5. Malignant ulceration	44	11.13
6. Bacillary dysentery	38	9.61
7. Non-specific ulcers	30	7.59
8. Typhoid ulcers	13	3.29
9. Leukæmic ulcers	2	0.50
10. Anthrax ulceration	1	0.25
11. Diphtheritic ulceration	1	0.25
Total	395	

tuberculous infection of the lungs. Only six cases were seen in the age-group of 50 to 70 years, indicating the rarity of these lesions in old people. The ulcers were confined to the small intestines alone in 45 (52%) of cases and in 22 (25%) cases the lesions were distributed all over the intestines. Ulcers were seen in the large intestine alone in only 12 cases (14%) contrary to the belief that the tuberculous ulcers almost always occur in the small intestine. The ileocecal region alone was involved in 6 of the cases.

TABLE IV

Showing associated lesions in tuberculous ulceration

Lesions	No.	%
Pulmonary tuberculosis	52	61.18
Tuberculoma of the brain	2	2.35
Meningitis	1	1.18
Tuberculous arthritis	1	1.18
Miliary tuberculosis	12	14.18
Leprosy	1	1.18
Liver disease	3	3.50
Malignant disease elsewhere	2	2.35
Other diseases not stated	11	12.90

TABLE V

Showing the causes of death in tuberculous ulceration

Cause of death	No.	%
Toxæmia and generalized dissemination	43	50.56
Hæmorrhage	2	2.35
Perforation and peritonitis	29	34.11
Miscellaneous causes like liver disease, shock (post-operative) etc.	11	12.94
Total	85	

Many of these lesions are associated with pulmonary tuberculosis which shows that the intestinal ulceration may be due to constant infection from the lungs.



FIG. 2. Illustrates the amœbic ulceration of the large gut. Dark gangrenous areas could be spotted out.



FIG. 3. Shows the bacillary dysenteric ulceration seen throughout the mucosa of the large gut.

Toxæmia and generalized dissemination form the common cause of death in these cases. Equally important are perforation

and peritonitis which occurred in 29 of these cases. Only in 2 cases the death was attributed to hæmorrhage.

Amoebic ulcers.—Amoebic ulceration formed a fairly good percentage of the lesions (17.4). (Fig. 2, see p. 741) 59 of these cases were seen in men and 8 in women. Though it is often said that bacillary dysentery is more common than amoebic dysentery, we have come across only 38 cases (9.68%) of bacillary dysentery (Fig. 3, see p. 741) which shows a comparatively lower incidence than amoebic dysentery.

TABLE VI
Showing the age incidence of amoebic and bacillary dysentery

Age in decades	Amoebic ulcers No.	%	Bacillary dysentery ulcers No.	%
0-10	3	4.3	1	2.63
11-20	5	7.2	4	10.52
21-30	17	46.35	4	10.52
31-40	24	34.7	9	23.68
41-50	8	11.6	17	44.73
51-60	2	2.85	1	2.26
61-70	—	—	2	5.26
	59		38	

General Hospital at Madras between 1941 and 1946, found a slightly higher incidence of bacillary than amoebic dysentery and they were of the opinion that the disease was more common in men than in women. The age-incidence of these cases is given in Table VI (above). In children the incidence of infection is low and only 3 cases have been recorded in the age groups 0-9, whereas a higher incidence rate has been recorded by Willietes (1941) in Filipino children. Chaudhuri and Rai Chaudhuri found that 2.5% of infection occurred in children below 5 years. In Gharpure and Saldhana's series the incidence among children was only 1% whereas in Reddy and Thangavelu's 1,100 cases, 8% occurred in the age-group 0 to 10 years. Again there is a decline in the incidence of infection after the 40th year. The probable cause of the lower incidence of infection in children may be that they are less exposed to the infection, while the decline in number in the older age group may be due to possible immunity having developed as a result of previous infection.

TABLE VII
Showing the distribution of amoebic ulcers in the intestines

Situation	Present series No.	%	Reddy's series No.	%
Entire colon	48	69.06	27	71.05
Cæcum only	7	10.14	4	10.52
Cæcum and ascending colon	2	2.90	3	7.89
Hepatic flexure	1	1.30	—	—
Transverse colon	1	1.30	—	—
Descending, pelvic colon and rectum	8	11.59	1	2.63
Rectum and anal canal	2	2.90	1	2.63

Though in the majority of cases the primary lesion starts in the cæcal area, the entire colon becomes involved with the progress of the disease. This has been noticed in 70% of our cases which is in agreement with the findings of other observers. Though, appendicular lesions are said to be fairly common and whenever the cæcum is extensively involved, we have failed to find any amoebic ulceration of the appendix. Reddy and Thangavelu in their series came across only 2 cases of appendicular involvement in their series.

It was found that liver abscess occurred in 20 of these cases and was the most common complication of intestinal amœbiasis. Perforation and peritonitis were the next frequent complications in cases of intestinal amœbiasis, which was observed by us in 4 cases. The sites of perforation in these cases were cæcum 1; pelvic colon 2; multiple perforation small and large intestine 1; gangrenous changes of colon was noticed in 3 cases and intussusception in ileocæcal region in one case. An unusual case of amoebic ulceration of the colon with multiple complications of perforation, peritonitis and liver abscess is recorded below for its rarity.

CASE REPORT:—(P.M. No. 2716). A Muslim male, A.S., aged 48 years, was admitted on 11-9-'57 in the medical wards of King George Hospital, Visakhapatnam with a complaint of dysentery since 28 days. The present complaint started with passing 10 to 12 motions per day mixed with blood and mucus and was associated with pain in the abdomen and fever. Examination of the motion revealed cellular exudate. The abdomen was distended throughout and showed no improvement after having had treatment with chlorostrep, starch-opium enema, intravenous saline, having been diagnosed clinically as infective colitis. The patient expired on 1-10-'57 and an autopsy was conducted on 10-10-'57.

Autopsy findings.—Large intestine showed gangrenous ulceration extending upto the serosal layer, typical of amoebic ulceration. No amœbæ were seen in the section studied evidently due to the long time that had elapsed before conducting the *post-mortem* and also probably due to the treatment with chlorostrep. The liver was enlarged and the cut-section revealed 3 abscesses in the right lobe. Sections taken from the wall of the liver abscess showed necrosis of the liver cells surrounded by compressed liver cords showing various degrees of degeneration. Amœbæ could be seen as few eosinophilic circular bodies. Lungs showed fibrocaseous tuberculosis at the right apical lobe and scrapings from the cavity showed acid-fast bacilli. There was perforation of the intestine at the junction of the sigmoid with descending colon. Death was due to toxæmia and peritonitis in a case of perforation of the colon due to amœbiasis.

Duodenal ulcers.—Duodenal ulcer has been recognized since 1735 and brought to wide notice by Curling 1892. There is a good deal of evidence to indicate that during the past century there has been remarkable changes both in the overall frequency of peptic ulcer and in the many special features of its incidence. Peptic ulcer once thought to be rare is now of common occurrence. Gastric ulcer predominated in previous years but now duodenal ulcers predominate. Women were supposed to be affected most frequently but now men were found to be more often affected; 68 cases of duodenal ulcers have been encountered in our series (17.1%), (Fig. 4); thus, 63 were in males and only 5 in females, thus clearly indicating its preponderance in males over females.

TABLE VIII
Showing the age incidence in duodenal ulcer

Decades	No.	%
0-9	—	—
10-19	3	14.42
20-29	7	10.30
30-39	18	26.48
40-49	31	42.05
50-59	6	8.83
60-69	2	2.85
70-79	1	1.48
	68	

The disease is most commonly seen in the age-groups of 30-49 years. Duodenal ulcers are rare in infants and young children and we have not come across any case in the age-group of 0-9. It is commonly seen in all age-groups in adult life. There is a steady decline in the older age-group.

TABLE IX
Complications associated with duodenal ulcers

Complication	No.	%
Hæmorrhage	9	12.8
Perforation and peritonitis	33	43.8
Stenosis	21	28.8
Post-operative shock	5	6.8

tion is pyloric stenosis which was seen in 21 of our cases. Hæmorrhage as a complication occurred only in 9 cases (12.8%); this is in agreement with the observation of Ritchie and Lowther who noted hæmorrhage in 202 out of 1,544 cases of duodenal ulcers (13.1%).



FIG. 4. Shows a duodenal ulcer.

Perforation and peritonitis seem to be the most common complaints and were seen in 33 of these cases (43.8%). There has also been an increasing rise in the incidence of this type of complication in duodenal ulcers in recent times. The most frequent complication

Malignant ulceration.—All the cases of malignant ulcerative lesions of the intestine were carcinoma of rectum and 44 cases belonged to this series giving a percentage incidence of 11.13. (Fig. 5).

TABLE X
Showing the age incidence in carcinoma of the rectum

Decades	No.	%
0-9	—	—
10-19	—	—
20-29	2	4.54
30-39	3	6.81
40-49	12	27.27
50-59	24	54.54
60-69	3	6.81
	44	



FIG. 5. Shows carcinoma of the rectum above the anal canal.

Carcinoma of the rectum frequently occurs in the 5th and 6th decades of life; this accords with the findings of Duke (1940) and Wolfman (1957). Duke, in an analysis of 1,000 cases of rectal carcinoma found 650 cases in males and 350 in females. A similar experience is reported by several other authors. In our

series the sex-incidence ratio of males to females was 10:1.

Adenocarcinoma forms the most important type of carcinoma. The mucoid type of carcinoma was observed in 12 of our cases. Whether mucoid adenocarcinoma is a separate entity or only a variant of adenocarcinoma with mucoid change is controversial. Willis,

TABLE XI
Showing the histological variants of carcinoma of rectum

Histologic types	No.	%
Adenocarcinoma	20	45.45
Mucoid carcinoma	12	27.27
Anaplastic carcinoma	4	9.09
Squamous cell carcinoma	8	18.18

Boyd and Bauber are in favour of the latter view *viz.*, a variant of adenocarcinoma. On the other hand Wolfman *et al* (1957) from a 16 year study of 880 cases feel that mucoid carcinoma of the colon and rectum are histologically different tumours. But the weight of opinion appears to lean in favour of its being called a variant of carcinoma. Wolfman *et al* further divided the mucoid adenocarcinoma into extra- and intra-cellular types and discussed certain differences between them in respect of their malignancy and dissemination. They observed that the signet ring type indicates a high degree of malignancy. The prognosis in this condition was relatively low and in these cases

the tendency to recur was more common. The overall survival period was relatively shorter than in non-mucoid adenocarcinoma after operation and attended with high mortality. In none of our autopsies were associated lesions like polyposis or ulcerative colitis. The chief methods of spread in these cases was by direct extension and later to regional lymph-nodes, and still later by blood-spread to the distant organs. It has been observed that lymph-nodes are the most frequent sites of metastasis.

TABLE XII

Showing the sites of metastases in carcinoma of the rectum

Metastases	Lymph nodes	No.	%
Liver		6	10.00
Lung		2	3.33
Bladder		1	1.66
Uterus		1	1.66
Prostate		1	1.66
	Pararectal	20	33.33
	Pelvic	12	20.00
	Aortic	11	18.33
	Inguinal	6	10.00
		60	

Ulcerative colitis.—During recent times, there has been much talk about the incidence, ætiology, and treatment of ulcerative colitis. Fortyfour cases (11.13%) belonged to this type of lesion in our series (Fig. 6).



FIG. 6. Shows multiple small ulcers in ulcerative colitis distributed throughout the gut.

TABLE XIII

Showing the age incidence in ulcerative colitis

Age	No.	%
0-9	—	—
10-19	—	—
20-29	7	15.90
30-39	15	34.09
40-49	9	20.44
50-59	8	18.18
60-69	3	6.81
70-79	2	4.54
	44	

The sex incidence of the disease showed that 38 males and only 6 females were affected. The disease was found in all ages except the first and second decades; but appeared to be most frequently seen in the age-groups of 30 to 60. Gangrene ulcerative colitis was seen in 2 cases and ileal involvement alone in 5 cases, focal necrosis in liver and spleen in two cases, while 6 cases were associated with cirrhosis of the liver. How far we can attribute cirrhosis of the liver to ulcerative colitis is difficult to say from this small series. It may after all be a co-existent lesion.

Typhoid ulceration.—Autopsies revealing cases of typhoid ulceration are becoming rare probably due to the advent of antibiotics and improved methods of sanitation. We have encountered only 13 cases (3.29%), six of them were seen in males and 7 in females.

TABLE XIV

Showing the age incidence in typhoid disease

Decades	No.	%
0-9	2	15.37
10-19	4	30.75
20-29	3	23.05
30-39	3	23.05
40-49	—	—
50-59	1	7.75
	13	

It will be seen that the disease occurred in all ages of life. All of them had one or the other complications like perforation, hæmorrhage and toxæmia. Perforation was seen in 5 cases, hæmorrhage in 2 cases and toxæmia in 6 cases. An unusual case of typhoid fever with hæmorrhage where

the bacilli were isolated at autopsy in the blood, intestines, bile, and urine even 10 days after death is recorded below.

CASE REPORT :—A Hindu lad, S.A., aged 10 years, was admitted on 7-2-'59 in the pædiatric wards of King George Hospital for a complaint of continuous fever for 10 days. Fever was sudden in onset. Two days before admission the patient was having loose motions. One day prior to admission the patient was passing blood mixed with stool, later started passing frank blood for which he was admitted. He came from a poor socio-economic family living under insanitary conditions.

On examination the patient was anæmic and dehydrated. The abdomen was moderately distended. Respiration: 26/minute, pulse 134/minute. Motion, urine and blood were sent for culture. *Bacillus typhosus* was isolated. The patient expired on the same day on which he was admitted.

Summary of autopsy notes.—(P.M. No. 2941). There was marked palor of the entire body with blood-stained effusions in both the pleural cavities. Congested and raised Peyer's patches with nodules were seen 16" from the ileocaecal junction. Multiple raised areas varied from 3 to 10 mm. in diameter with irregular margins and whitish in appearance, covered with blood were seen 10" from the ileocaecal junction. The entire large gut was filled with dark, altered clotted blood with no faecal matter. The ileocaecal and mesenteric glands were enlarged (Fig. 7, see p. 748). All the other organs were pale. Blood from the right auricle, material from Peyer's patches of the intestine, bile from the gall-bladder and urine were inoculated into tetrathionate broth, brilliant-green and bile broths, under aseptic condition. Blood-culture, intestinal-culture, bile and urine-cultures were all positive for *Bacillus typhosus* which specifically agglutinated with *Bacillus typhosus*.

Anthrax ulceration:—The rarity of the intestinal lesion in anthrax ulceration is well known and very few cases are reported in the literature. We have come across one case of intestinal anthrax lesion involving the colon resulting in peritonitis; it was recorded by Bhooshana Rao, Meenakshi and Ramamurthy in 1942. The salient features of the cases are as follows:

(1) Purulent peritonitis due to anthrax infection with 6 ounces of blood-stained, turbid, foul-smelling fluid in the peritoneal cavity; (2) an oedematous hæmorrhagic lesion involving the



FIG. 7. Shows the raised and ulcerative lesions of Peyer's patches in typhoid ulcerations. The enlarged mesenteric lymph nodes is seen by the side of the intestine.



FIG. 8. Shows the ulcerations in the intestine in a case of diphtheria.

wall of the descending colon, with darkish and hæmorrhagic mucosa showing pale yellowish necrotic patches; (3) 12 ounces of blood-stained fluid in the pleural cavities; and (4) slight enlargement of the spleen. Death was regarded as due to peritonitis from leakage through the circumscribed intestinal lesion.

Diphtheritic ulceration:—Diphtheritic ulcerations of the intestine is very rare and we have come across only one case (Fig. 8).

Leukaemic ulcers:—Ulceration of the intestines in a case of leukaemia is also very rare. We came across ulcerative lesions in two cases of leukaemia as recorded below:—

CASE 1:—(P.M. No. 2462). Autopsy revealed an ill-nourished boy of 15 years with generalized lymphadenopathy and mediastinal tumour with infiltration into the thoracic and diaphragmatic pleura. Sub-epicardial hæmorrhages and patent foramen

ovale were present. All the organs were pale with fatty changes in the liver, kidneys and heart. The small intestine showed ulceration 2 to 3 mm. in diameter and lymphatic hyperplasia. The large intestine also showed lymphatic hyperplasia. Death was caused by respiratory obstruction due to mediastinal enlargement of the lymph nodes.

CASE 2:—A Hindu male, Y.Y., aged 40 years was admitted in the medical wards of King George Hospital, Visakhapatnam on 27-5-'58 for a complaint of a mass in the abdomen, progressive weakness of 9 months' duration. He was markedly anæmic. The

spleen was very much enlarged and was palpable below the umbilicus and the liver was enlarged to 2 fingers' width below the costal margin. It was clinically diagnosed as Myeloid leukaemia. The patient died on 11-6-'58. An autopsy was conducted on 20-8-'58.



FIG. 9. Shows multiple ulcerations in leukaemia.

Autopsy notes:—(P. M. No. 2811). The entire mucosa of the large intestine showed raised circular or oval ulcers (Fig. 9). The sizes of these ulcers varied from a few mm. to 2 to 3 cm. Most of them were solitary and some confluent. The intervening mucosa appeared healthy. The liver and spleen were markedly enlarged. The mesenteric lymph nodes were enlarged and the bone-marrow was greyish white in colour and showed leukaemic deposits. Histologically the

sections studied from the liver, spleen, bone-marrow and lymph nodes showed infiltration with myelogenous cells. The diagnosis was:—Myeloid leukaemia with extensive ulceration in the intestine.

Summary and conclusions.—(1) 395 ulcerated lesions of the intestines have been studied during a 33-year period from the autopsy statistics of the Pathology Department, Andhra Medical College, Visakhapatnam. 351 were non-malignant ulcers and 44 were malignant. (2) The most common intestinal lesion was tuberculous ulceration (85 cases). The other lesions met with in their order of frequency were:—amœbiasis 69 cases; duodenal ulcers 68; ulcerative colitis, 44; malignant ulcers 44; bacillary dysentery 38; non-specific ulcers 30; typhoid ulcers 13; leukaemic ulcers 2, anthrax and diphtheritic ulcerations one each. (3) The details of the various types of ulcers are also recorded. A few rare cases of leukaemic, anthrax and diphtheritic ulcers are recorded in detail. (4) Tuberculous ulceration occurred frequently in the age-groups of 20 to 40, usually associated with pulmonary lesions, indicating that the method of spread may be by constant infection from the lungs. (5) Amœbic ulcerations were much more frequently met with than bacillary dysenteric ulcerations and the entire colon was involved in 70% of the amœbic ulcerations. The appendix

was not at all involved. (6) Duodenal ulcers were commonly seen in all age-groups in adult life and perforation and peritonitis seem to be the most common complications. (7) Only 13 cases of typhoid ulcerations were met with, which occurred in all ages of life; the patients died of one or other of the complications *viz.*, perforation, hæmorrhage and toxæmia.

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REFERENCES:

1. Bhooshana Rao, I., Meenakshi, V. S., Ramamurthy, B. (1946) *Indian Journal of Surgery*, *viii*: p. 2, and 3, 150-153.
2. Chaudhuri, R. N. and Rai Chaudhuri, M. N. (1946) *Indian Med. Gaz.*, *81*: 66.
3. Curling, T. B. (1842)—*Med. Chir. Trans. Lond.*, *25*: 260.
4. Duke, C. E. (1940)—*J. Path. Bact.*, *50*: 527.
5. Gharpure, P. V. and Saldanha, J. L. (1931)—*Indian Med. Gaz.*, *66*: 132.
6. Govinda Reddy, D. and Thangavelu, M. (1948)—*Ind. Med. Gaz.*, *lxviii*: 12.
7. Illingworth, C. F. W. (1953)—*Peptic ulcer*, Livingstone Ltd., London.
8. Payne, A. M. M. (1945)—*Lancet*, *i*: 206.
9. Ritchie, J. and Lowther, C. P. (quoted by Illingworth).
10. Willets, D. G. (1914)—*Phillipino J. Sci.*, *9*: 81.
11. Willis, R. A. (1953)—*Pathology of tumours*, Butterworth & Co., London.
12. Wolfman *et al* (1957)—*Surgery*, *42*: 5, Nov.

SYNTHETIC OXYTOCIN

Oxytocin which was originally extracted from the posterior lobe of the pituitary body, is amongst the active biological substances that are now synthesized and frequently used in obstetrics.

A number of polypeptides are known to have a stimulant action on smooth muscle, and amongst these there are two, *viz.*, oxytocin and vasopressin, which are extremely active. They are both substances composed of 8 amino acids. The sources of these two hormones are the hypothalamic nuclei of the brain (principally the paired supraoptic and paraventricular nuclei), together with their non-myelinated axons, found most closely associated in the infundibular stem, and the posterior lobe of the pituitary body, in which these axons terminate. These hormones are also referred to as the neurohypophyseal hormones, and it is believed that they are not only secreted by the neurones mentioned but that the rate of their release is controlled in response to changes in the osmotic pressure of the plasma, reflex excitation, and humoral stimulation. The two hormones have 6 amino acids in common and the remaining 2 amino-acids are leucine and isoleucine in oxytocin, and arginine and phenylalanine in vasopressin.

The development of a synthesis on a commercial scale enabled the first synthetic oxytocin preparation (Syntocinon) to be placed on the market at the beginning of 1956, followed by the synthesis of a number of other polypeptides closely related chemically to oxytocin. This synthetic oxytocin is of unvarying potency and completely free from vasopressin; there are no differences between this synthetic material and the 'natural' hormone when tested in women or on animals or animal tissues. In physiological doses synthetic oxytocin, being free from vasopressin, has neither a pressor nor a depressor effect, but high doses sometimes produce a transient fall in blood-pressure. Slight antidiuretic action would appear to be inherent in the oxytocin molecule. However, the relative freedom from an antidiuretic effect and the absence of a pressor effect are great advantages of the pure preparation, and are of importance in patients who have a tendency to water retention or toxæmia and in the rare cases where large intramuscular doses of oxytocin need to be given.—(*S. Afr. Med. Jour.*, 13-6-1959).

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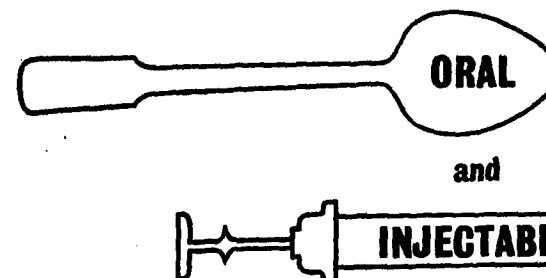
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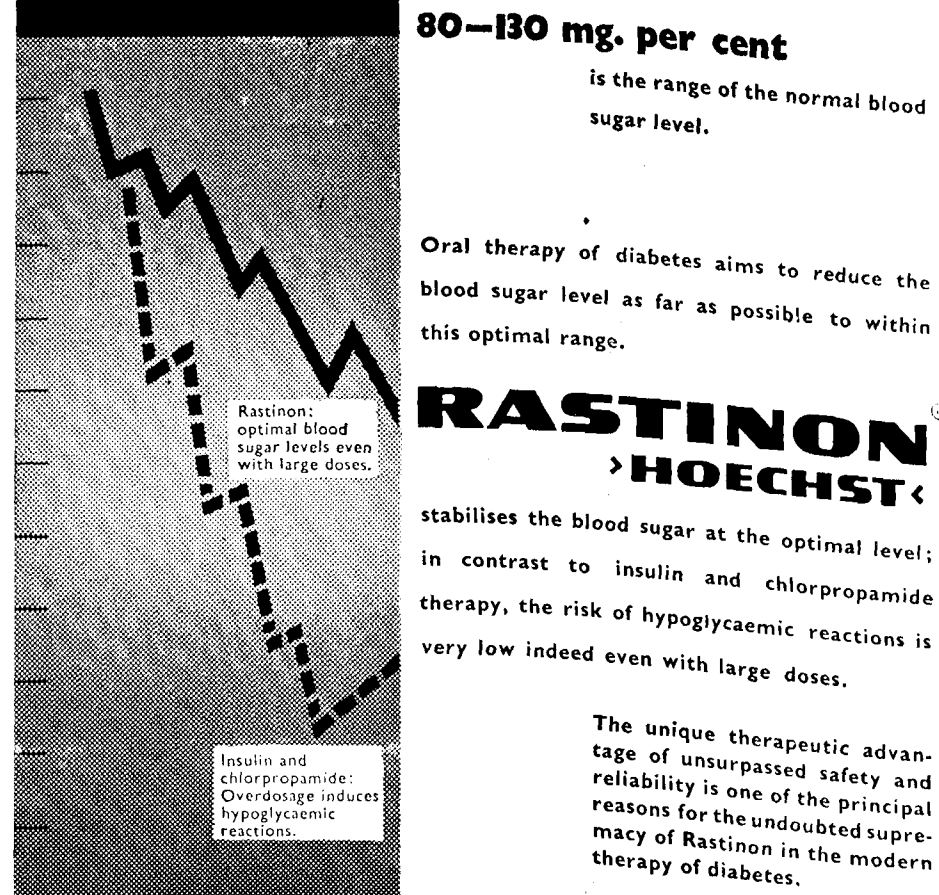


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CLINICAL TRIAL OF PARENTERAL DIETHYL-CARBAMAZINE CITRATE* (UNICARBARZAN IN TROPICAL EOSINOPHILIA)

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THE syndrome commonly known as "Tropical Eosinophilia" is widely prevalent in this country and has also been reported in Ceylon, Burma, Malaya and China. The Phillipines, part of Africa and Southern U.S.A. The aetiology is still unknown though a large number of medical workers believe that it is an allergic response to parasitic infestations. Several drugs are used in the treatment of this condition. Arsenic, ACTH, Cortisone, Calcium gluconate, Ascorbic acid and antihistaminics were tried with favourable response. In 1943, Weingarten observed that one of his patients with tropical eosinophilia responded well to injections of arsenic, and has since been considered specific and so organic arsenical preparations have been used parenterally and orally in the treatment of this condition. The drawback in the use of arsenicals is the relatively high incidence of untoward reactions.

Recently extensive trials using Diethylcarbamazine have shown uniformly beneficial results (Ganatra and Lewis (1955), Danaraj (1956) and Chaudhri (1956). We have tried Diethylcarbamazine citrate (Unicarbarzan) intramuscularly in 100 cases of Tropical eosinophilia, the results of which are here reviewed.

Methods and material.—One hundred cases of tropical eosinophilia attending our clinic in the Government General Hospital at Madras were given this drug. Most of them were treated as out-patients while a few were admitted in the hospital for purposes of close observation.

Selection of patients:—Patients presenting with respiratory complaints like cough with or without expectoration, dyspnoea becoming worse at nights, chest pain with absolute eosinophil count above 2000/cmm. were chosen for this study. (Table I, see p. 752).

In our series of 100 cases, 96 had predominant respiratory symptoms; thirtyeight had in addition low pyrexia towards the evenings, 11 had hæmoptysis, 2 had urticarial rashes and one had

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enlargement of the cervical group of glands with hepatosplenomegaly. A physical examination was carried out in all cases before, during and after treatment. The patients were X-rayed before and after treatment and their motions examined for evidence of helminthic infestations; they were asked to report every week or earlier if there were any untoward symptoms.

TABLE I
Showing the Presenting Complaints

Number of cases showing the undermentioned complaints					
Difficulty in breathing	Cough with or without expectoration	Chest pain	Fever	Hæmoptysis	Other complaints like general debility, loss of weight etc.
90	96	60 (2 cases had this as the chief complaint)	39	11	62

Dosage schedule:—A dose of 400 mg. of Diethylcarbamazine citrate* was given once a week for 4 successive weeks to 84 patients. To 16 others a dose of 800 mg. per week for two weeks was given.

Blood-count:—The total leucocyte count and the total eosinophil count were made on each patient, before starting the therapy and at weekly intervals, after each injection. The counts were repeated, one month after the last injection for a follow-up.

In our series, the absolute eosinophil count varied from 2000 to as high as 20,000 cells per cmm.

TABLE II
Showing the absolute eosinophil count in this series of cases

Absolute eosinophil counts	No. of cases
2000 to 3000/cmm	14
3000 to 5000/cmm	30
5000 to 10,000/cmm	40
10,000 to 15,000/cmm	7
15,000 to 20,000/cmm	5
Above 20,000/cmm	4

One hundred patients suffering from Tropical eosinophilia were treated with parenteral Diethylcarbamazine citrate. Sixtyfour of them were males and 36 females; 14 of the 100 were between 10 and 20 years, 75 between 20 and 40 years, 10 between 40 and 60 years and one over 60 years of age.

The patients were of different occupations and came from different localities around Madras. Ten cases showed evidence of helminthic infestations, (8 with ascariasis and 2 with ankylos-

*The drug was supplied by Messrs. The Unichem Laboratories.

tomiasis) and none of the patients gave a previous history of allergy. Twenty patients gave a family history of a similar complaint. The duration of the illness varied from a few days to several months. A history of previous episodes of eosinophilia was elicited from 55 cases and 10 of these cases responded favourably to arsenical therapy. The clinical examination showed physical signs like rales, rhonchi and wheeze in 75 cases while the rest had no lung signs. Radiological evidence of coarse infiltration of the lung fields or mottling was found in 81 of the one hundred patients.

Clinical and hæmatological improvement after the injections was shown by 94 of the 100 patients; 50 of the cases had clinical improvement even after the first injection, 23 after the second and 10 after the third injection. In the majority of these cases the dyspnoea was relieved earlier than the cough. Follow-up of cases for a period varying from 4 to 8 months showed no relapse in the cases which showed improvement.

Blood-pressure was recorded in every case before and after treatment; 47 cases showed a fall in pressure by a few mm. of Hg; eleven showed a rise, while the pressure was stationary in the remaining 42 cases. The weight recorded for all cases, before and after treatment, showed an increase by a few points (2 to 5 lbs.) in 58, a decrease in weight in 28, and showed no change in the rest.

Of the six cases, which did not respond to therapy, 2 on subsequent follow-up, proved to be frank asthmatics. Their absolute eosinophil counts were less than 2000 cmm. One case had cardiac failure. Two cases showed a diffuse reticular pattern of the lung fields, suggestive of honeycomb lungs. The only case which failed to respond to Unicarbarzan obtained prompt relief with arsenic injections.

Relationship of relief of symptoms to absolute count.—Generally speaking, there appears to be a close correlation between the fall in the eosinophilic count and the relief of symptoms. The relief was dramatic in cases where the fall in the eosinophil count was precipitous. In cases with poor response to therapy the eosinophilic reduction was low or only moderate.

Side-reactions:—Twenty six patients did not complain of any untoward side-reaction; 58 complained of giddiness after the injection which however, passed off in a few hours; forty had vomiting once or twice after the injection and 16 had low fever for a few hours after the first injection. The reactions were all mild. No fatality occurred in our Tropical Eosinophilia Clinic or in any other clinic in Madras to our knowledge. The reactions were less after the subsequent injections and minimal when given to the patients on empty stomach.

Discussion.—Diethyl-carbamazine was tried in two dosage schedules:—(1) 400 mg. per week for 4 successive weeks in 86 cases; and (2) 800 mg. per week for 2 consecutive weeks in 16 cases.

In our series of 100 cases, 94 showed good improvement to the therapy. Six cases did not show any improvement, in five of which the persistence of the symptoms was due to co-existing diseases like congestive failure, bronchial asthma and bronchiectasis. We could not find any difference in the clinical response

TABLE I

Showing details of the thirty cases of tropical eosinophilia treated with Unicarbarzan

S. No.	Name	Sex, and age in years	Duration of symptoms in months	Severity	Previous treatment	Before treatment			Drug dosage in mg.	After treatment			Symptom of relief
						Total WBC /cmm	Eosinophil %	Absolute Eosinophil count/cmm		Total WBC /cmm	Eosinophil %	Absolute Eosinophil count/cmm	
1	K.K.T.	M. 27	3	++	nil	9600	27	2492	400 400 400	7600	12	912	++
2	H.	M. 25	5	+++	nil	12800	59	7552	..	5200	6	312	++
3	S.	M. 20	6	+	nil	11400	29	3306	..	10600	5	530	++
4	N.P.R.	M. 24	8	+++	Arse	24000	75	18000	..	6600	8	198	++
5	J.	F. 30	1	++	nil	16800	33	5544	..	6600	8	528	++
6	T.M.	M. 26	4	+	..	9800	40	3920	..	6400	2	192	++
7	R.S.	M. 22	24	++	..	10200	42	4284	..	6200	5	310	++
8	R.K.C.	M. 30	84	++	Cortisone & arsenic	9800	68	6664	..	7000	6	420	++
9	S.	M. 52	24	++	nil	22000	39	8580	..	8800	6	528	++
10	S.F.	F. 35	6	+	..	11600	65	9490	..	6000	5	300	++
11	P.	M. 19	8	++	..	14000	28	3920	..	7600	7	532	++
12	S.K.	F. 15	35	++	..	12200	28	3416	..	5000	8	480	++
13	M.D.	F. 27	1	++	..	26000	64	16670	..	6000	8	480	++
14	L.	F. 40	7	++	..	10800	31	3348	..	6000	4	240	++
15	S.B.	F. 15	12	++	..	10200	21	2142	..	5600	12	672	++

Severity: + = Cough with occasional dyspnœa; ++ = Cough with dyspnœa daily; +++ = Severely dyspnœic.

Symptom of relief: + = Relief of symptoms only after the 4th injection; ++ = Prompt relief after the 1st injection; and - = No relief.

TABLE I—(Contd.)

Showing details of the thirty cases of tropical eosinophilia treated with Unicarbarzan

S. No.	Name	Sex, and age in years	Duration of symptoms in months	Severity	Previous treatment	Before treatment			Drug dosage in mg.	After treatment			Symptom of relief
						Total WBC /cmm	Eosinophil %	Absolute Eosinophil count/cmm		Total WBC /cmm	Eosinophil %	Absolute Eosinophil count/cmm	
16	M.	F. 25	132	+	nil	11200	42	5704	400	6200	8	496	++
17	J.D.	M. 55	210	+	..	15400	25	3850	..	7800	4	312	++
18	T.V.V.	M. 14	8	+	..	16900	48	8112	..	5100	8	432	++
19	D.J.	M. 45	5	++	..	14200	52	8804	..	11200	15	1680	+
20	D.T.	M. 19	1	++	..	67200	87	58464	..	7600	28	2128	++
21	A.	F. 30	10	+	..	13400	65	8618	..	5800	6	348	++
22	M.P.	M. 41	1	++	..	10400	22	2228	..	5000	6	300	++
23	D.	M. 28	4	++	..	15600	45	7020	..	9000	42	3780	-
24	P.	M. 28	144	++	..	10200	21	2142	..	9400	12	1128	-
25	S.	F. 35	35	++	..	14200	32	4544	..	5000	7	350	++
26	M.Y.	M. 32	1	++	..	17800	48	8544	..	8200	4	328	++
27	N.	M. 21	1	+	..	7280	53	4134	..	8400	28	2352	+
28	N.A.	M. 48	6	++	..	14400	36	5184	..	7200	4	288	++
29	M.A.	M. 21	36	++	..	12400	45	3580	..	9600	8	768	++
30	A.	F. 40	48	++	..	14000	62	8680	..	12400	45	5580	-

with these doses; but those who received 800 mg. doses, showed signs of toxicity, especially vomiting and giddiness. Hence, we recommend 400 mg. doses at weekly intervals for 4 weeks in preference to the higher dose of 800 mg. per week.

Summary.—The results of treatment with parenteral Diethylcarbamazine citrate (Unicarbarzan) in 100 cases of tropical eosinophilia are reviewed. Two dosage schedules were tried viz., a single dose of 800 mg. intramuscularly, and 4 doses of 400 mg. intramuscularly at weekly intervals. A remarkable relief of symptoms and a fall in the eosinophil count were noted in 94 cases. The latter dosage schedule is recommended to avoid side-effects. The causes of failure in six cases which did not respond to the therapy are discussed. The total dose of the drug required for parenteral therapy is much less than what is required for oral therapy.

Conclusion.—Safe to use in all cases of Tropical eosinophilia, it is specially indicated in cases where arsenic has failed to give relief. A few cases of Tropical eosinophilia did not respond to diethylcarbamazine. From May 1958 we are using as a routine measure, Diethyl-carbamazine injections in our Tropical eosinophilia Clinic. So far 304 cases have been treated, the first 100 of whom are alone reviewed in this paper. These cases are being followed-up and a subsequent report will follow.

Acknowledgement.—We are thankful to the Dean, Government General Hospital, Madras for permitting us to follow-up these cases and to M/s. Unichem Laboratories, Bombay who gave us a regular supply of the drug.

BIBLIOGRAPHY:

1. Annotation, (1957)—Lancet, 7: 478.
2. Ball, J. D. (1950)—Tr. Roy. Soc. Trop. Med. and Hyg., 44: 237.
3. Bannerji, N. R. (Sept. 1953)—The Antiseptic.
4. Chakravorty, R. N. Souvenir. Ind. Med. Ass. (Tollygunj Branch)
5. Chaudhuri, R. N. (1950)—Ind. Med. Gaz., 85: 583.
6. Chaudhuri, R. N., Aikat, B. K. and Sanjivi, K. S. (1954)—Ind. J. Med. Res., 42: 635.
7. Chaudhuri, R. N. (1956)—J. I. M. A., 27: 6, Sep.
8. Danaraj T. J. (1956)—Proc. Alumni. Ass. Malaya, 9: 172.
9. Editorial (1943)—Ind. Med. Gaz., 78: 599.
10. Editorial (1956)—J. I. M. A. 27: 210.
11. Epstein, W. L. and Kligman, A. M. (1956)—J. A. M. A., 162: 2.
12. Frimodt-Moller, C. and Barton, R. M. (1940)—Ind. Med. Gaz., 75: 607.
13. Ganatra, R. D. and Lewis, R. A. (1955)—Ind. J. of Med. Sc., 9: 11.
14. Gaull, E. W. Webb, J. K. C. (1947)—Lancet, 2: 471-472.
15. Goodman, L. S. and Gilman, A. (1955)—The pharmacological Basis of Therapeutics 2nd Ed. The Macmillan Company, New York.
16. Jhatakia, K. V. (1946)—Indian Medical Gaz., 81: 179.
17. Kamdar, H. R. (1958)—Antiseptic, 55: 10, 731.
18. Mahotra, S. L. (1950)—Lancet, 1: 181.
19. Mehta, J. K. (1955)—J. of Post Med. (Bombay), 1: 184-189.
20. Mukerjee, B. B. and Ghose, S. K. (1959)—Antiseptic, 56.
21. Parekh, J. G. Kulkarni, V. B. Babhubai Patel, Journal of J. J. Group Hospital and G. M. College, 3: 4.
22. Rao, C. K. P. and Krishnan, P. (1952)—Ind. J. Med. Sc., 6: 302.
23. Ravindra, M. Kapadia (1959)—Indian Practitioner, xii: 4.
24. Shah, V. R. et al (1958)—J. Assoc. Phys. Ind., 6: 253.
25. Sheth, V. K. (1958)—Current Medical Practice, 11: 5 May.
26. Viswanathan, R. (1947)—Quar. J. of Med., 17: 257.
27. Viswanathan, M. Krishnamoorthy, M. (1958)—Antiseptic, 55: 11.
28. Viswanathan, M. (1958)—Jour. Ass. Phy. Ind., 73.
29. Weingarten, R. J. (1943)—Lancet, 1: 103.
30. Chaudhuri, R. N., Rai Chaudhuri, M. N., Sen, P. and Basu, S. P. (1956)—Bull. Cal. S.T.M., 10: 4, pp. 150-151, October.

DURATION OF CHEMOTHERAPY IN PULMONARY TUBERCULOSIS

The duration of chemotherapy is determined by the particular features and conditions of each case, the course of which cannot be accurately predicted beforehand. Instead of bringing about the hoped-for reduction in the length of treatment, the application of tuberculostatics has, on the contrary, led on the whole to more prolonged treatment.

There is a general tendency these days to prolong chemotherapy, a tendency which possesses undeniable advantages. This is the result not only of experimental investigations, but also of clinical findings.

The eminently successful attempt to use *prolonged tuberculostatic treatment* as a means of diminishing the incidence of relapse, particularly during the first year after treatment has been discontinued, has also shown that prolonged treatment may have immediate advantages. In certain ulcerocaseous forms of the disease this method has produced a number of belated regressions, especially in elderly patients. One may, therefore, rightly wonder whether chemotherapy prolonged over a period of years might not play a decisive part in stamping out the infection as a whole, or at least in ensuring the stabilization of local lesions. The possibilities of necessary surgical treatment. Ambulatory treatment must, however, not be allowed to make us neglect a tained if the regression of the pulmonary lesions should only be entered-throughout the period of hospital treatment.—(*International Tuberculosis Yearbook*, 1959).

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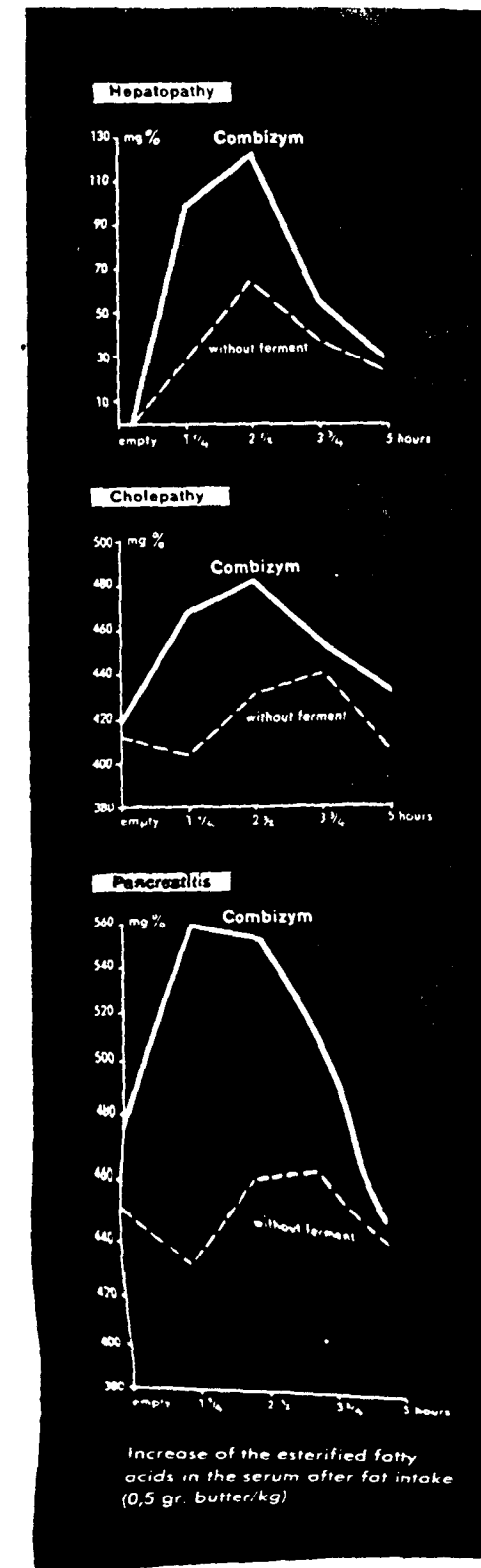
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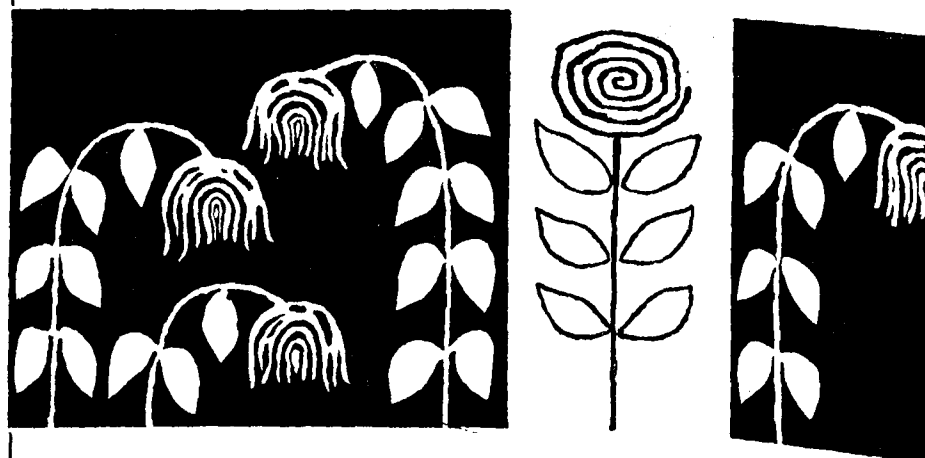
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NEURO-SYPHILIS

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(Continued from p. 680, September 1959 issue of ANTISEPTIC)

LECTURE III

TREATMENT OF NEURO-SYPHILIS:—The past fifty years have witnessed more dramatic and radical changes in our knowledge of syphilis and its treatment than can be said of any other disease. So it will be useful to begin with a brief resume of the evolution of our knowledge of the treatment of syphilis. Schaudinn and Hoffmann, in 1905, ended the long search for the causal organism of syphilis by their discovery of the *spirochaeta pallida*. Ehrlich, in 1910, announced the discovery of the first potent and successful spirochaeticidal drug, Salvarsan. Before these two epoch-making discoveries, syphilis was treated empirically by various drugs. Guaiacum and China root, which were used, in the early sixteenth century, in the treatment of syphilis, are now only of historic interest. Mercury, in the treatment of syphilis, comes into view almost as early as the disease itself. Paracelsus is often given the credit for having introduced it, but it had long been used by the Arabs in the treatment of scabies, psoriasis, leprosy and other skin diseases and was doubtless tried early, in the treatment of the skin lesions of syphilis also. It was used internally, as early as 1525, by Benedictus. It is interesting to note that the Indian physician Bhava Misra, who practised in the Uttar Pradesh in the middle of the sixteenth century, used mercury in the form of Rasakarpura (a mixture of mercurous and mercuric chlorides) internally, as well as, by inunction and fumigation and noted its effectiveness in syphilis. "Ever since" Osler remarks "the leutic cloud has had a quick-silver lining."

In 1836, Wallace introduced the use of potassium iodide in the treatment of syphilis. "The introduction of the iodides in the treatment of syphilis was perhaps the most important contribution to its treatment that was ever made" remarks Pusey. Ricord used it in the treatment of the tertiary manifestations of syphilis.

In 1910, Ehrlich discovered salvarsan as a potent spirochaeticidal drug and the search for anti-syphilitic drugs has continued unabatedly ever since and as a result Neo-salvarsan, Myo-salvarsan, Silber-salvarsan, Solu-salvarsan, Mapharsan and other arsenicals have been introduced in the treatment of syphilis. Arseno-therapy became the treatment of choice for all forms of syphilis. Mercury, either internally or in the form of intramuscular injections, was employed along with arseno-therapy as an adjunct.

In 1922, Sazerac and Levaditi announced that bismuth was comparable to the best of anti-syphilitic remedies and rated its effectiveness greater than that of mercury, though less than the more active arsenical drugs. Since then, bismuth has slowly but surely displaced mercury in the treatment of syphilis. It is now used in conjunction with arseno-therapy in the standard schedule of treatment of syphilis. It is given by the intra-muscular route only.

Mahoney and his co-workers, in 1943, announced their discovery of the spirochæticidal action of penicillin and recommended its use in the treatment of infectious syphilis. It has now established itself as the drug of choice in the treatment of all forms of syphilis and has as completely displaced arsenic, as arsenic displaced mercury fifty years ago. Other antibiotics, such as aureomycin and terramycin, have also been found to possess spirochæticidal action and are used in the treatment of syphilis where penicillin is contra-indicated. The role of these drugs in the treatment of syphilis is still under trial and a final verdict will not be possible for several years.

The treatment of neuro-syphilis may be considered under three heads:—(1) Prophylactic; (2) specific and (3) symptomatic.

I. Prophylactic treatment.—It has now been definitely established that vigorous treatment in the early stage of the infection greatly reduces, but an inadequate amount of treatment tends to increase, the incidence of neuro-syphilis over that which occurs without treatment. Prompt treatment of the initial chancre and of the early somatic infection minimises the risk of neuro-syphilis, which appears most often in those whose constitutional treatment had been either neglected or was insufficient. So the prophylactic treatment resolves itself into vigorous treatment of the early stages of the infection. This treatment should consist in the regular use of arsenicals and bismuth, according to some definite plan. No uniformity as to the best method has been reached. The most widely authenticated and accepted systems in use are the British-Scandinavian intermittent system and the American continuous system called the "30-60-03" system. The British-Scandinavian (League of Nations) system consists of eight weekly injections of 0.6 to 0.75 g. of neo-arsphenamine and ten weekly injections of bismuth salicylate (containing bismuth metal 0.20 to 0.24 g.). The American continuous system is known as the "30-60-03" system. Here 30 represents the number of weeks of arsenical injections; 60 represents the number of weeks of bismuth therapy equivalent to 60 injections of bismuth sub-salicylate and the 0 and 3 representing respectively no rest periods and 3 years combined treatment observation.

The avowed aim of this standard initial treatment is to abort infection when it is still localized or when, though diffuse

it has not caused any nervous signs (beyond, perhaps, positive reactions in the C.S.F.); to kill the spirochæte wherever it lies: to prevent neuro-syphilis from developing later. There is no absolute criterion whereby to judge whether this object has been attained. For this reason full courses of treatment, at intervals of perhaps two years or longer, should be given and re-examination of the blood and the C.S.F. should be made after each course. If, in spite of rigorous routine treatment, "a Wassermann-fast" state exists, it is advisable to repeat the programme at least once a year.

Since the discovery of the spirochæticidal action of penicillin, it has become the treatment of choice in infectious syphilis. Whereas all forms of penicillin are effective against *spirochæta pallida*, procaine penicillin G in oil with 2% aluminum monostearate (PAM) and benzathine penicillin G are most commonly used. The suggested schedules are: (a) PAM 4,800,000 units (first injection 2,400,000 units, second and third injections 1,200,000 units each) given at 2 or 4 day intervals; (b) Benzathine penicillin G, 4,800,000 units given in two doses of 2,400,000 units each, six days apart. Either schedule (a) or (b) is given.

II. Treatment of meningo-vascular syphilis.—SPECIFIC TREATMENT:—*Aims of the treatment*:—(1) To kill the organisms; (2) to neutralize the toxins; (3) to remove, as far as possible, the products of its attack on meso-dermal tissues. With this aim in view the blood and the C.S.F. are first examined completely and the findings noted. An intensive course of bismuth with potassium iodide is then begun and either from the first or after a week or two supplemented by a series of arsenical injections. The course should include bismuth by injection, some preparation of iodine by mouth or the intravenous route, and a selected arsenical according to the scheme laid down for the treatment of infectious syphilis. This schedule of treatment is adopted in the treatment of asymptomatic neurosyphilis, syphilitic meningitis of all varieties, syphilitic spinal pachymeningitis, syphilitic encephalitis, and syphilitic myelitis of all varieties. For some unknown reason syphilitic amyotrophy is not amenable to standard therapy as the other forms.

The successful use of penicillin has greatly simplified the treatment of this form of syphilis. All the above mentioned varieties of meningo-vascular syphilis are now treated with penicillin therapy. The schedule of treatment recommended is, 15 to 20 million units of PAM given intramuscularly, in a period of 14 to 21 days and repeated if necessary after an interval of six months. Aureomycin or terramycin is substituted, if the patient is sensitive to penicillin. Focal cerebral meningeal neurosyphilis (gumma) and syphilitic spinal pachymeningitis do not respond to the above treatment and so they must be treated

surgically. Penicillin treatment should be given following the surgical treatment.

TREATMENT OF PARENCHYMATOUS NEUROSYPHILIS:—Parenchymatous neuro-syphilis differs from meningo-vascular syphilis, by the greater incidence of the morbid process on the neural parenchyma than on the mesoderm, though the latter is never free. Once the neuron tissue is destroyed within the neuro-axis it will not regenerate, hence, the sooner these cases undergo vigorous treatment the better. In this form, the spirochæte has left the blood stream to wander through the parenchymatous tissue spaces and chemicals intended to reach it, have to gain the C.S.F. system. Therefore much depends upon, whether they can pass the barrier of the choroid plexus and the meninges, which are more permeable to some drugs than others. Among the arsenicals Silber-salvarsan or its 'neo' derivative is as good as any, while Tryparsamide has been increasingly employed. Tryparsamide is a pentavalent arsenical which has the extraordinary ability to penetrate the nervous system through the meninges.

Tabes dorsalis.—SPECIFIC TREATMENT:—Regular courses of bismuth, iodide and some arsenical must be given. Among the arsenicals Silber-salvarsan or its 'neo' derivative is as good as any, while Tryparsamide has been increasingly employed. Tryparsamide is given in doses of 2 to 3 g. weekly, for perhaps two months. Some physicians confine the treatment to arsenicals only but Wilson advocates combined treatment with bismuth, iodide and arsenic. Induction of aseptic meningitis has been tried in cases which do not respond to arsenical therapy, in view of the fact that artificial aseptic meningitis increases permeability and favours the passage of the drug from the blood to the C.S.F. Drainage of the theca has also been utilized in these cases. Malarial therapy has been tried, not only in cases apparently resistant to other methods, but also from the outset in cases that are moderate and early. Other forms of pyro- or pyreto-therapy have also been tried. In the opinion of Wilson, systematic courses of bismuth, iodide and some arsenical, are not surpassed in their results by any rival procedure.

The introduction of penicillin therapy has simplified the treatment of tabes dorsalis. The results to date indicate that penicillin in a total dose of 15 to 20 million units is effective in arresting the course of the disease and in reverting the C.S.F. abnormalities. With adequate penicillin therapy the progress of the disease can be arrested, with improvement of symptoms, in practically every case. Persistence of symptoms like lightning pains, or gastric crises or development of Charcot's joints should not be considered as evidence of persistence or progress of the disease. These symptoms are the result of the healing of the lesions and their presence does not necessarily indicate activity

of the syphilitic infection. Penicillin is of little avail in the treatment of lightning pains, gastric crises, ataxia, bladder disturbances or Charcot's joints, where the symptoms persist after the C.S.F. has become normal.

TREATMENT OF OPTIC ATROPHY:—Primary optic atrophy occurs frequently as a complication of tabes dorsalis. Moore and Woods expressed the opinion that the pathogenesis of syphilitic primary optic atrophy is identical with that of tabes dorsalis. In the case of optic atrophy it seems very important to reach the spot of the process, if it is to be checked. Wilson recommends the following method: Ten minims of a solution of mercuric bichloride (equal to 1/50 gr. of the metal) are dropped in a syringe filled with 10 cc. of C.S.F. derived from cisternal puncture and connected by rubber tubing with the needle; after pinching the tube and shaking the syringe the operator allows the mixture to run back into the cistern by gravity. Two or three such injections may be required. Treatment must be commenced early if any good result is to be obtained. Fever therapy or I.V. arsenicals are not of much help. Moore recommends I.V. salvarsan and intrathecal Salvarsanized serum in these cases.

Penicillin therapy has now become the treatment of choice in these cases. If the patient's pre-treatment visual acuity is worse than 6/20, progression of the lesion takes place in spite of treatment. If visual acuity is above that level, arrest of the process may be expected.

TREATMENT OF GENERAL PARALYSIS OF THE INSANE (G.P.I.):—G.P.I. was hitherto considered as therapeutically hopeless. An average case ran its course to a fatal termination in from three to five years. Spontaneous remissions occur in a minority of cases but they do not last long. Even with arseno-therapy the results are very unsatisfactory, although better than before. Non-specific therapy has so far proved more efficacious than any other treatment. Non-specific therapy consists in the induction of fever, based on the long recognized beneficial action of fever on certain morbid states and on psychosis. The various procedures for the induction of fever are:—(1) Inoculation with living organisms of certain infectious disease, *viz.*, malaria, recurrent or relapsing fever, rat-bite fever, etc.; (2) Injection of avirulent substances derived from organisms, *viz.*, tuberculin, T.A.B., saproviton, pyrifur (B. coli derivatives), 'dmeleos' vaccine (different strains of Ducrey's bacillus in emulsion), etc.; (3) Non-organismal preparations, *viz.*, sodium nucleinate, phlogetan (an albuminoid), milk, peptone, casein etc. and in particular, sulphur preparations such as intramine, sulfosin, sufrogel, colsul, etc.; (4) physico-chemical methods, *viz.*, diathermy, hot-baths, and the like. Of these various therapies the ones most commonly employed are malarial therapy, T.A.B. injections and sulphur therapy.

excretion. Protect the patient from external stimuli, cold, chills, wetting etc. Pain and vomiting may call for injection of morphine but the use of morphine is to be condemned. Wilson recommends intravenous hypertonic saline, 50 to 70 cc. of 15 per cent sodium chloride or 1 to 2 cc. of a freshly prepared sterile 25 per cent solution of magnesium sulphate by lumbar puncture; a watery solution of chloral hydrate and sodium bromide, 40 per cent, by a rectal catheter is efficacious; these processes can be repeated several times if required. Intravenous injections of $\frac{1}{2}$ to 1 mg. of atropine sulphate, followed by $1\frac{1}{2}$ mg. to 2 mg. some hours later cuts short an attack. Hyperdermic injections of 10 minims of 1 in 1000 solution of adrenaline is also useful. Gastric lavage is useful when there is distention of the stomach. (b) *Laryngeal crisis*. Spasm of the larynx is relieved by cocaine spray or amylnitrate inhalations. (c) *Rectal crisis* is to be treated by saline enemata followed by some anodyne suppository. The use of morphia is undesirable. The colic and diarrhoea of intestinal crisis can be controlled by atropine or by large doses of bismuth salicylas. *Genito-urinary crises* are to be treated by local anodynes, vaso-dilators or anti-spasmodics. Small doses of barbiturates act as anti-spasmodics.

7. *Trophic ulcers*:—Require the removal of narcotic tissues and protection from trauma and weight-bearing.

RISKS IN MODERN DRUGS USED FOR EYE DISEASES

The dangers in local treatment of eye infections with anti-bacterial drugs were discussed in a recent symposium at the Dutch Ophthalmological Society, summarized in the *Survey of Ophthalmology* for October 1958. R. Voorhorst, a bacteriologist-allergist, L. H. Jansen, a dermatologist, and the ophthalmologist G. M. Bleeker warned against haphazard and prolonged use of antibiotics, steroids and other modern drugs.

As distinct from toxic reactions which are caused by excessive pharmacologic action there are allergic reactions of two sorts. The immediate type manifests itself by transient reactions such as rhinitis, and may produce shock and sudden death. The delayed or tuberculin type may produce more or less refractory skin reactions weeks after application of the drugs, and thus not be traced to them. Sensitization may cause acute reactions at a future date if the same drug is given locally or parenterally. The third risk in using these agents is that quiescent bacteria which have escaped the treatment may develop resistant strains.

Dr. Bleeker said that the ophthalmologist must keep these risks in mind, but pointed out the necessity of using some of these drugs in certain types of ocular inflammation. Penicillin or chloramphenicol (the latter rarely leads to reactions) must be used in the prophylaxis of penetrating wounds. In superficial inflammations of the cornea, conjunctiva and adnexa the drug should be chosen on the basis of sensitivity tests, and streptomycin should be avoided if possible, while the sulpha drugs should be abandoned.

Dr. Irwing H. Leopold, commenting on this symposium, agreed heartily, and added warnings against the steroids.—(*via Sight Saving Review*, April 1959).

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THERAPY OF CIRRHOSIS OF THE LIVER*

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CIRRHOSIS of the liver is often due to:—(1) Nutritional imbalance, mostly protein malnutrition; (2) alcoholism, which however, is not an important cause in our country; (3) viral hepatitis; (4) prolonged cardiac failure; (5) disturbances of iron metabolism (pigment cirrhosis); (6) biliary-tract disease (biliary cirrhosis) and (7) certain infections *e.g.*, syphilis, *Schistoma mansoni* etc.

The most important of these in our country is the one due to nutritional imbalance coupled with worm or protozoal infestation. The best results of treatment are obtained in those in whom the dietary factor is important in pathogenesis. The major complications seen in these cases are ascites, gastro-intestinal hæmorrhage and hepatic coma.

General measures.—*Rest*:—When in failure, the patient should have rest, as it is a prolonged disease, needing complete bed-rest. Even minor upsets like tooth-extraction, upper respiratory infection etc., should be properly attended to as they may cause œsophageal hæmorrhage.

The diet should consist of a generous amount of carbohydrate 250–400 g. and 80 to 100 g. of proteins a day in mild cases. The intake of fat should be moderate; if it is completely restricted food becomes unpalatable and there is no evidence that it is harmful. Too much protein should not be given to those who show ammonia-toxicity symptoms *viz.* signs of hepatic encephalopathy, lethargy, loss of memory, flapping tremors etc.

The diet should comprise of milk, curds, green vegetables, fruits, *chapathis*, rice, etc.; highly spiced and fried foods should be avoided, as they are not easily digested. Vitamin supplements are given, especially, B complex group which may be given *i.v.* along with glucose. Vitamin K is also given in cases where there is prothrombin deficiency, 2 to 4 mg. orally in mild and 4 to 10 mg. *i.v.* in severe deficiency.

Crude liver-extract is given intravenously to those with poor appetite. It increases the appetite, causes diuresis and gives them a feeling of well-being; reaccumulation of ascitic fluid is delayed and in quite a good percentage of cases the ascites disappears. We start with 0.5 cc. diluted with 20 cc. of 25 per cent glucose given slowly and increase the dose gradually every day till 5 cc. is reached. The first fifteen injections are given daily and then only on alternate days. We have not come across any

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severe reaction except flushing of the face or headache in a few cases. Treatment must be continued for at least six months in cases which show signs of improvement.

Adrenal steroid therapy.—Is not of much use except in hepatic coma. Prednisone and Prednisolone are used as these do not cause salt-retention. The bleeding tendency and fluid retention are however, aggravated. Bacteraemia has been recorded after their use, and these may promote infection, so whenever it is used tetracycline should be used simultaneously in order to combat bacteraemia. The usual dose is 30 mg. per day. In the presence of severe jaundice which shows no signs of regressing, steroid therapy may be useful.

Control of ascites.—Ascites presents a special problem and is one of the prominent symptoms requiring prompt relief. The main thing is salt-reduction; the ideal way is not to add any salt while cooking, but the patient is allowed to add just a little afterwards to make the food tasty. A few patients may not tolerate rigid sodium restriction and show signs of profound weakness, muscular cramps and anorexia due to its lack. Mercurial diuretics—mersalyl, neptol etc. once or twice a week, should be given preferably early in the morning, so that the night's rest is not disturbed. Half of one cc. intramuscularly may be quite sufficient. If there is no diuresis, it means a severe grade of hepatic insufficiency and a repetition of the dose may prove hepatotoxic. It may be combined with aminophylline when there may be better diuresis. Ammonium chloride may precipitate coma, and so should be avoided. Glucose solution 1000 cc. of ten per cent strength may be administered by the drip method in 3 to 4 hours; 50 per cent glucose solution usually causes thrombosis in the veins and should be avoided.

Chlorthiazide.—A dose of 5 mg. per kg. of bodyweight produces a significantly negative balance of sodium-chloride and water in oedematous patients with cirrhosis. The diuresis response is prompt and begins a few hours after administration. In many cases an increase in salt-excretion appears on the 2nd and 3rd days of excretion. Chlorothiazide is given orally 2 g. a day for 15 days in cases of Lænnec's cirrhosis complicated by ascites and peripheral oedema and has proved quite useful in controlling ascites. More important is the fact that Chlorothiazide is effective in cases which are refractory to mercurials. Hypopotassæmia should be guarded against as it can be particularly dangerous in cases of cirrhosis of the liver, and hepatic coma may be precipitated.

Paracentesis.—It is useful in cases showing respiratory or circulatory difficulty and in intractable cases. It should not be used as a routine measure as the loss of albumen with a large amount of fluid is detrimental to the patient. With patients

having a low blood-pressure it should be done in the recumbent position. Repeated tapplings may lead to peritonitis. At times, paracentesis is followed by shock, hæmorrhage or liver failure and coma; one should therefore, always be careful in cases with marked jaundice.

Serum albumin.—This may be tried in cases with severe hepatic failure and marked ascites. It should be given preferably in repeated small doses, about 25 g., per transfusion to those whose serum albumin is much reduced. It may give rise to toxic and febrile reactions, œsophageal hæmorrhage and at times pulmonary oedema. This may also be given to control hypoproteinaemia.

Lipotropic factors.—Choline and methionine are useful in the precirrhotic fatty stage of the disease, but in confirmed advanced cases they may be harmful and precipitate stupor, and coma in some.

Androgen therapy.—Testosterone has been given in severe cases to improve conservation of proteins. It definitely fosters a sense of well-being, and improves the appetite and sexual libido.

Management of complications.—*Pruritus*: Any obstructive lesion present in the biliary tract, should be surgically got rid of. If this is not possible, anti-histaminics like pyribenzamine 50 mg. three times a day be tried. Calcium gluconate 10% solution 10 cc. i.v. and occasionally dihydroergotamine tartrate hypodermically or ergotamine tartrate orally may help. Methyl-testosterone injections also relieve but may prove toxic.

Hæmorrhage.—This is due chiefly to portal hypertension from œsophageal or gastric varices and ulcers. Severe gastrointestinal hæmorrhage is a grave emergency; the patient may bleed to death in a few minutes or may pass into hepatic coma. Emergency treatment is balloon tamponade with Sangtaken tube and repeated blood transfusion. The balloon may be kept for 24 to 72 hours and later some operation to relieve portal pressure can be carried out. Most of the anti-coagulants like Coagulen, Claudin etc. are useless. Postpituitary preparations may be tried as they are supposed to reduce portal-pressure and they may be of some benefit.

Hepatic coma.—It should be treated in the impending stage without waiting till full-fledged coma has developed. The early symptoms and signs are inattention, failure to respond, euphoria or confusion, flapping tremors, inversion of sleep rhythm etc. Give Achromycin 250 mg. every 4th hour, if necessary by a nasal tube so that the bacterial content of the intestines is controlled. Neomycin sulphate 500 mg. orally three times a day is perhaps better. Intravenous glucose 10% solution 1000 cc. with Vitamin B Complex and Vitamin C 500 mg. may be given once or twice daily.

Some have tried a solution of Sodium gluconate (25 g. dissolved in 500 cc. of 5 or 10% dextrose solution) every 6 hours hoping to neutralize the ammonia. Arginine has also been tried. (25 g. of Arginine hydrochloride is added to 400 cc. of distilled water and sterilized by auto-claving for 20 minutes at 15 lb. pressure; 100 cc. of a 50% dextrose solution is added just before use and the total 500 cc. is given intravenously in 1 to 2 hours. The lower intestines should be opened by an enema and concentrated Mag-sulph solution 15 cc. should be given daily to keep the bowels open. A.C.T.H. and Cortisone are also useful and should be tried in these cases. They are more useful in acute hepatic coma following viral hepatitis than in cirrhosis of the liver.

Proteins should *not* be given to these patients but glucose drinks in the form of a 20% glucose solution should be freely administered.

Acknowledgement.—Our grateful thanks are due to Mr. Mody of the Unichem Laboratories who gave us the supplies of Uni B₁₂ with Folic acid used in this study.

REFERENCES:

1. Avery Jones, F. (1958)—Modern Trends in Gastro-enterology, Butterworth & Co. Ltd., London.
2. Barbagallo Sangiargi, G. (1958)—Treatment of Chronic Liver Diseases with Crude and Deproteinized Liver Extract—Review in J.A.M.A., 26th April.
3. Davidson, C. S. (1955)—J.A.M.A., 159: 1257.
4. Litchman, S. S. (1953)—Diseases of the Liver Gall Bladder and Bile ducts, Lea and Febiger Philadelphia.
5. Sarin, L. R. and Mittal, B. S. (1955)—Antiseptic.
6. Sarin, L. R. (1956)—The Indian Practitioner, 9: 453.
7. Schiff, L. (1956)—Diseases of the Liver, Pitman Medical Publishing Co. Ltd., London.
8. Sherlock, S. (1955)—B.M.J., 1: 1381.
9. Twiss, J. H. and Oppenheim, E. (1955)—Practical Management of Disorders of the Liver, Pancreas and the Biliary Tract, Lea and Febiger, Philadelphia.
10. Wantz, G. E. (1958)—Surgical Clinics, North America, 38: 407.

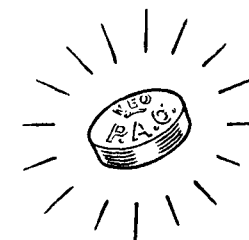
RETROLENTAL FIBROPLASIA IN PREMATURE INFANTS

At a practitioners' conference held at the New York Hospital-Cornell Centre and reported in *New York Medicine* of January 5, 1959, several professors of paediatrics discussed the problems of newborn babies, especially those prematurely born. There was considerable emphasis on the prevention of retrolental fibroplasia (RLF) by withholding supplementary oxygen from premature infants.

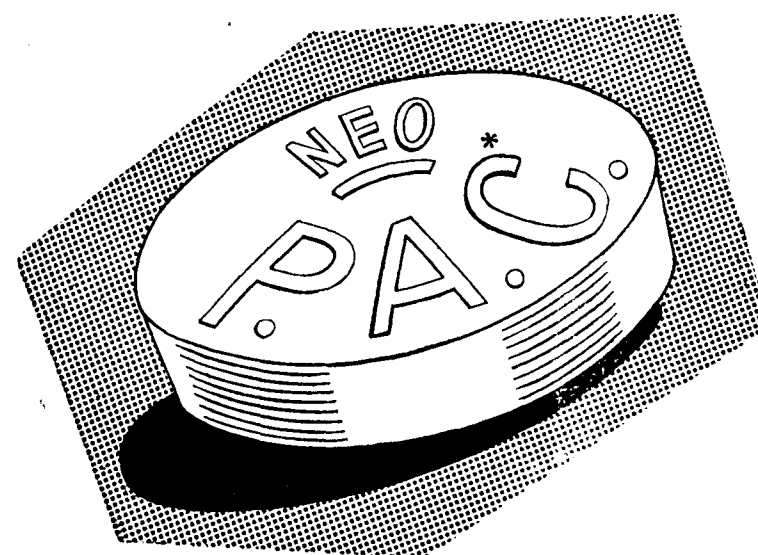
"Oxygen administration is *not* essential to the survival of the babies," said Dr. Mary Allen Engle of Cornell University Medical College. "I think most paediatricians now believe that oxygen should not be administered to prematurely born infants unless there is a clear indication for its use, such as cyanosis which is persistent and is relieved by oxygen. The oxygen is withdrawn as quickly as possible, if it is given."

"Most paediatricians four years ago would have been startled to hear that a 1,100 gram baby did all right in an incubator without the addition of extra oxygen. Actually most of them do well without it."—(*Sight Saving Review*, April 1959).

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THE VALUE OF PREDNISONE IN INFECTIONS *

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CORTISONE was added to our therapeutic armamentarium in the year 1949 and within a short time it has established itself as a very powerful important drug in a variety of diseases. The drug has however, not yet been sufficiently and completely known; there are many lacunae in our knowledge of this steroid. Its use with benefit in the management of rheumatoid arthritis, rheumatic fever, Type II nephritis, cholæmia, periarteritis nodosa, disseminated lupus erythematosus, pemphigus vulgaris and psoriasis has no clear scientific basis, but has been quite empirical, like salicylates in rheumatic fever, colchicine in gout, and gold and chloroquin in rheumatoid arthritis.

A note of warning was sounded against its use in infections. Experimental and therapeutic evidence was adduced by Thorn *et al*¹⁰ (1950) and others to show that cortisone therapy aggravated infection. Simultaneous and subsequent reports from other workers have however been favourable. Successful treatment with cortisone and A.C.T.H. of cases of typhoid fever by Roche *et al*¹¹, of severe pneumonia by Finland⁷ and of staphylococcal septicaemia by Bertrand-Fontaine *et al*¹² was reported. The role of cortisone in the successful management of acute forms of tuberculosis like tuberculous meningitis, tuberculous pneumonia, and miliary tuberculosis has been well established. Tonutte¹⁸ showed experimentally, that among the animals receiving diphtheria toxins those having cortisone also did definitely better. Heilmeyer¹⁹ used cortisone in 12 severe cases, Smandell¹⁴ in 3 cases and Durand and Renoux⁷ in 60 cases of enteric fever, with good results. Choremis and his associates reported on a control trial on 100 cases with chloramphenicol and cortisone together and a similar number with chloramphenicol alone. This study showed the superiority of cortisone with regard to early defervescence and marked improvement in the general condition with the elimination of toxæmia. No untoward effect attributable to cortisone was noted.

Prednisone is a synthetic product obtained on dehydrogenation at the I position of cortisone. It is a Δ^1 dehydrocortisone and its therapeutic effects are similar to those of cortisone. It has however certain advantages over cortisone—it is 5 times more powerful, does not produce sodium-ion retention in the body, hence hypertension, water-logging and cardiac failure and does

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[769]

not produce loss of potassium from the body. This product has been tried in a few acute cases of enteric fever and bronchopneumonia and in a case of septic meningitis.

1. There were five cases of bronchopneumonia in children under 3 years; one of these was tuberculous. They were all markedly toxic, and had suitable antibiotic, chemotherapeutic and supportive measures either outside the hospital or inside; prednisone was used in addition only when the routine treatment cases showed marked alleviation of the toxæmia within 24 to 48 hours of prednisone therapy. There was not much of a rise in temperature in these cases and hence the effect on temperature was not conspicuous.

One case of septic meningitis due to *D. pneumoniae*, going downhill on penicillin, sulphonamide and achromycin tided over the crisis when prednisone was used in addition.

2. Six cases of enteric fever all of them in a highly toxic condition, with marked abdominal distention and high temperature were treated. Most of them were in the classical typhoid state. Prednisone was added to the standard therapeutic regimens for enteric fever only when chemotherapeutic and supportive measures proved ineffective; on the addition of prednisone the toxæmia diminished, the abdominal distention subsided and the temperature came down to near normal level in 24 to 48 hours in all the cases. There was no untoward effect attributable to prednisone.

The dosage schedule of prednisone was individualized. Details of the cases, the treatment schedule and the results obtained have all been shown in the charts. (See Chart I, p. 771).

Case reports.—Bronchopneumonia.—CASE 1:—M., a child, one year old, was admitted on the 6th day of continuous fever with marked toxicity, dehydration, wide-open eyes covered with mucoid matter, cyanosis, moving alæ nasi, irregular shallow breathing, rapid pulse, feeble heart-sounds and crepitations all over the lungs. He had had achromycin outside without any improvement. Prednisone was started immediately after hospitalization and within 24 hours the patient showed marked improvement; toxicity lessened, cyanosis disappeared and he could take milk. The lungs cleared on the 4th day and he made an uneventful recovery.

CASE 2:—Child, S., 2½ years old, was admitted with diarrhoea of one month's duration, swelling of the feet for 15 days and cough with temperature for 10 days. She was found listless, toxic, dehydrated, cyanosed, with hurried respiration and a vacant look. She was put on achromycin and given skimmed milk diet. Two days later the diarrhoea improved a little but

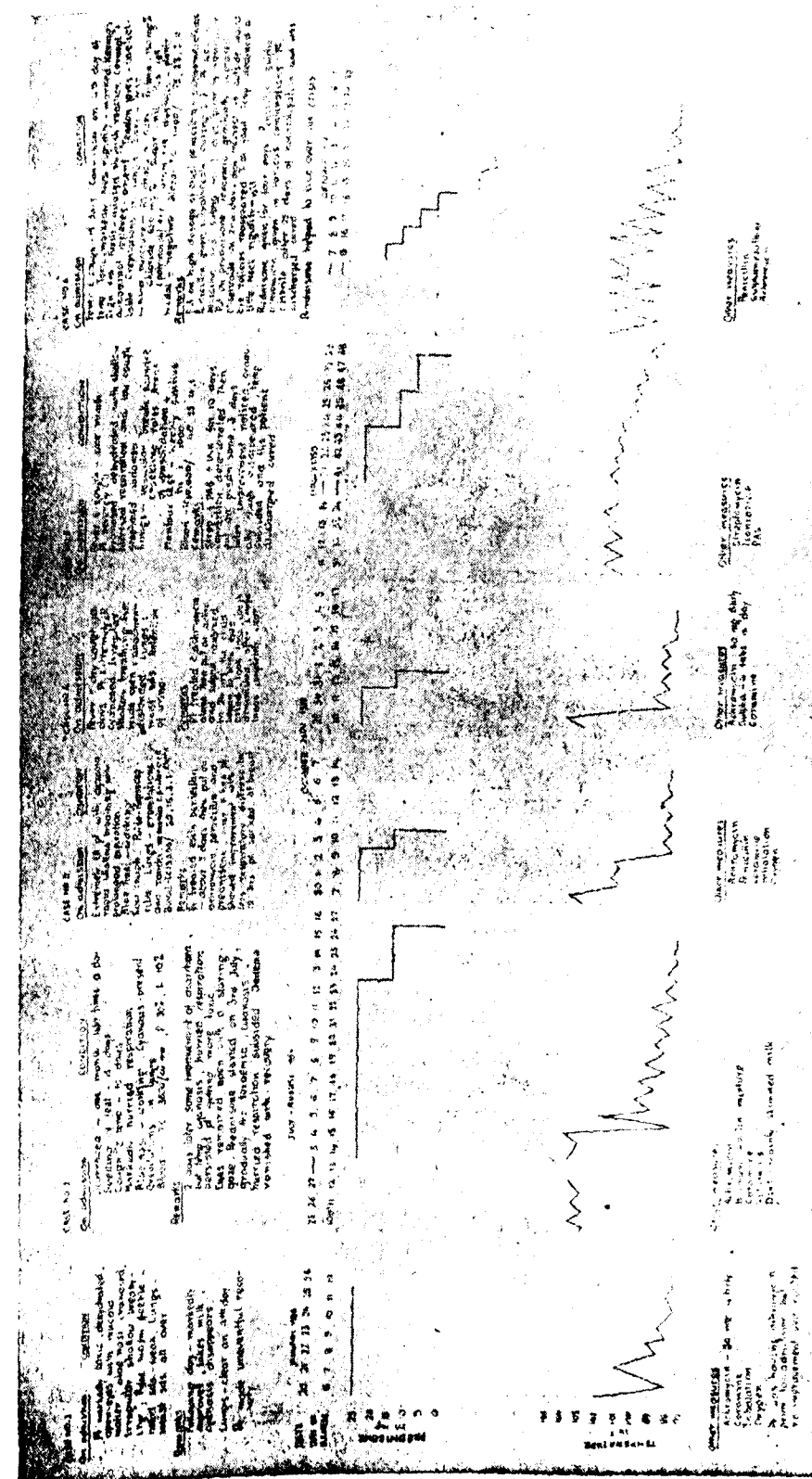


CHART I

the temperature, cyanosis and hurried respiration persisted and she looked more toxic. Then prednisone was started and the patient's condition improved dramatically. Toxæmia, cyanosis and temperature all subsided and respiration improved. Gradually the œdema subsided and recovery was complete.

CASE 3:—Male baby, D., 3 months old, was admitted with high fever, low cough and difficulty in breathing of 7 days' duration. He was found to be extremely ill with cyanosis, moving alæ nasi, rapid shallow breathing, imperceptible pulse and rhonchi and crepitations in the lungs. He was treated out-achromycin, penicillin and prednisone; he showed improvement in 6 hours and respiratory distress lessened and cyanosis gradually disappeared, breathing improved, the lungs became clear and he started feeding at the breast. Thereafter the child rapidly progressed to complete recovery.

CASE 4:—Male child, K., one year old, was admitted with fever and dry cough of 10 days' duration. He was seriously ill with cyanosis, irregular laboured breathing, open eyes, distended abdomen, crepitations in the lungs and retention of urine. So far he was treated with achromycin alone without effect; then sulpha and prednisone were added. Within 24 hours, the child began to blink eyes, cried and took food; cough disappeared gradually, abdominal distention subsided; retention of urine was relieved and the lungs became completely clear.

Tuberculous bronchopneumonia.—CASE 5:—Male child, H., 2 years old, was admitted with low-grade fever and cough of one month's duration. On examination he was severely ill, dehydrated, cyanosed with shallow hurried respiration and low cough. Abdomen was scaphoid; lungs; vesicular breath sounds with crackling rales and areas of consolidation. Mantoux test-positive; Blood—T.C. 10000 cmm.; P. 40%; L. 55%; M. 4%; E. 1%.

He was treated with streptomycin, PAS and INH for 10 days; the condition deteriorated. Then prednisone was added. Three days later improvement was noticed—the child looked brighter, appetite returned, cough gradually disappeared, temperature subsided and after the course of prednisone, temperature made excellent progress on the anti-tubercular regimen.

Septic meningitis.—CASE 6:—Male child, G., 2 years old was admitted with cough and fever of 15 days' duration with a history of convulsions on the 4th day of fever. He was found to be extremely toxic with marked neck rigidity, positive Kernig's sign, sluggishly reacting dilated pupils, absent corneal and abdominal reflexes, inelicitable tendon jerks, crepitations in the lungs and no abnormal condition in the ears. L.P. 85 drops/min. hazy; protein: 150 mg. %; chloride 650 mg. %; sugar—nil; pus

cells + + + + (polymorph); gram-positive diplococci in plenty. Blood: T.C. 9400/cmm.; P. 75%; L. 23%; M. 2%.

The child was treated with penicillin and sulpha for 3 days prior to admission; then penicillin and sulpha were continued in the hospital in high dosage, penicillin was also given intrathecally during L.P. Achromycin was also administered in various combinations with sulpha and penicillin. The response was poor. Then prednisone was added for 4 days and the effect was dramatic, and observed on the 2nd day. The patient took interest in the outside world, eye reflexes reappeared; he took food; temperature declined a little, toxæmia gradually improved and neck rigidity disappeared. He became afebrile after 25 days of hospitalization and was discharged cured. Prednisone helped the patient to tide over the crisis. (See Chart II, p. 774 & 775).

Cases of enteric fever treated with prednisone. CASE 1:—K., 29 years, was admitted with continuous fever of 10 days' duration. The patient was stuporous, dehydrated, delirious with neck rigidity, dry coated tongue, bleeding gums, markedly distended abdomen, palpable spleen and coarse moist sounds in the lungs. Pulse 80 m soft; B.P. 110/60; heart sounds: muffled, apical impulse slightly outside the normal position. Plantar response: right-flexor, left-extensor. Pupils—dilated, reacting sluggishly to light. Bowels—constipated. Bladder with retention of urine. Blood—Hb. 20%; T.C. 5000 cmm.; P. 88%; L. 10%; M. 2%. Widal: positive; T. 1/125 rising titre. C.S.F.: pressure increased, otherwise normal.

The patient was treated outside with chloromycetin which was continued in the hospital for another two days combined with other supportive measures. The condition of the patient deteriorated. Then prednisone was added and the condition began to improve from the second day; the patient became quiet, responded well and asked for food; abdominal distention gradually subsided; he took more food and all the complications disappeared; complete recovery followed.

CASE 2:—L., male, aged 45 years, was admitted on the 10th day of continuous fever in a stuporous and delirious condition, with slight neck rigidity, dry coated tongue, a little jaundice, dry cough, markedly distended abdomen, palpable spleen and crepitations in the lungs, feeble rapid pulse, soft heart sounds, low B.P. and loose bowels. Blood: Hb. 40%; T.C. 8000/cmm.; P. 85%; L. 14%; E. 1%. Widal: positive T. 1/250 rising titre. He was on chloromycetin and supportive measures; response was poor, the condition was going rather rapidly downhill. Then prednisone was added on the 13th day of illness. On the second day of prednisone he became quiet and restful. Abdominal distention lessened, diarrhoea abated and he could take more food from the fourth day. He made an excellent recovery.

CASE 3:—Boy, A., aged 12 years, was admitted on the 12th day of continuous high fever in a markedly prostrate and delirious state. He was semi-comatose, dehydrated with a tumid abdomen, palpable spleen, retention of urine and diarrhoea. Lungs and B-P was low, with muffled heart sounds. *Blood*: Hb. 50%; T.C. 4600/cmm.; P. 47%; L. 45%; M. 4%; E. 4%. *Widal*: positive T. 1 in 250 rising titre.

The boy failed to show any improvement on the chloromycetin regime. Then prednisone was added on the 13th day followed by improvement, observable on the 2nd day; he became brighter, talked coherently, distention subsided and stools improved; and the temperature came down a little. At the end of the prednisone therapy he had passed the critical period. But unfortunately on the 5th day, after stopping prednisone, he collapsed when he attempted to take food himself in a sitting posture.

CASE 4:—Male, G., aged 23 years, was admitted with continuous high fever of 5 days' duration with 4 to 6 loose motions a day. He looked ill, was toxic, restless and semi-comatose. The tongue was coated and dry, the abdomen was distended, tympanic and tender with a palpable spleen. Heart sounds were soft, the pulse rapid and thready and the lungs were full of moist sounds. *Blood*: Hb. 62%; T.C.-8600/cmm.; P. 52%; L. 40%; E. 7%; M. 1%; *Widal*: positive; T-1/125 in rising titre.

The patient was given chloromycetin, (which he was already getting outside) for another two days in the hospital; the condition deteriorated; he became severely ill, toxic and delirious; the abdomen became more distended and he developed retention of urine. Then prednisone was added. Improvement was noticed on the second day, he became quiet, the toxicity lessened, the distention started subsiding and the retention of urine relieved. He also made feeble attempts at responding to questions. At the end of the course of prednisone, the patient's improvement was remarkable. He became calm and quiet and co-operative, accepted food cheerfully; and all the complications disappeared.

CASE 5:—Male, P., aged 19 years, was admitted on the 9th day of high fever. Patient was found to be moderately ill, restless, reluctant to talk and he resented handling. He appeared worried, had a flushed face, dry coated tongue and constipated bowels. The spleen was palpable. *Blood*: T.C.-11,500 cmm.; P. 54%; L. 33%; E. 6%; M. 7%. *Widal* positive; T. 1/125 in rising titre.

Chloromycetin was continued in the hospital. No improvement was observed. His condition worsened, and he became more toxic and restless and talked incoherently. Then prednisone was added. On the 2nd day of prednisone, he became quiet and

co-operative. The abdominal distention markedly subsided and the lungs became clear. Thereafter the patient improved rapidly and recovered.

CASE 6:—Girl, P., aged 13 years, was admitted with continuous high fever for 7 days; she looked very ill and toxic with a dry coated tongue, congested eyes, distended and tender abdomen with iliac gurgling, palpable tender spleen, constipated bowels and basal crepitations in the lungs. *Blood*: Hb. 68%; T.C. 9100/cmm.; P. 60%; L. 27%; M. 7%; E-6. *Widal*: positive T. 1 125 in rising titre.

Chloromycetin started outside was continued in the hospital with poor response. Then prednisone was added; on the 2nd day she looked brighter, the abdominal distention subsided, the temperature came down and the appetite returned. The progress led to complete early recovery. With prednisone the temperature and toxæmia were markedly alleviated and consequently the patient was able to take more food and to digest and absorb better and successfully fight with the organisms.

The available data relating to the use of cortisone and its rationale in the treatment of infection may be summarized as follows:—The manifestations of a disease in the resultant effect of the reactions of the body to the invading organisms and its toxins. The effect of cortisone should be considered from the standpoint of its effect on the host and on the organism and the toxins it produces. (1) EFFECT ON THE ORGANISM:—Cortisone has not been proved to have any effect on the organism *in vivo* or *in vitro*. It remains unaffected there being no bacteriostatic or bactericidal effect of cortisone.² (2) EFFECT ON THE TOXIN:—Investigations by Chedid and Boyer³ and by Tonutte¹⁸ have shown that cortisone exercises a protective action against the toxin. This effect is variable in different animals. It has however got no toxin-neutralizing effect. It probably increases the resistance in the host to the toxin.³ (3) EFFECT ON THE HOST:—Infection produces several types of reactions in the human body—local, inflammatory, cellular, humoral and allergic. Seyle formulated the adaptation-syndrome to stress, as the causative factor in disease-processes; the underlying factor of mal-adaptation is a dysfunction of the endocrine system. This concept of adaptation therefore, needs consideration.

1. *Effect on the inflammatory reaction*:—Cortisone exerts an inflammatory effect irrespective of the animals studied. It reduces the capillary permeability⁹ and diapedesis of the leucocytes, thus interfering with the first line of defence. The organism finds a suitable nidus to multiply and spread to contiguous areas. However the antiphlogistic action has a salutary effect on the host also⁹; the painful red swollen and tender joints

of rheumatic fever and rheumatoid arthritis subside and the patient gets relief of pain.

2. *Effect on the cellular defensive mechanism*:—Cortisone inhibits mobilization and proliferation of lymphocytes, macrophages and fibroblasts; this spares the organism, the destructive and encapsulating effect of the cellular defensive mechanism. Though this facilitates the spread of the organism which is inimical to the welfare of the host, it also facilitates the specific antibacterial agent to act directly on the organism preventing its baneful effect¹¹. Some observers however believe that cortisone stimulates phagocytosis².

3. *Effect on the humoral mechanism*:—There are two schools of thought based on experimental and clinical findings. Lentini¹² and Steinberg *et al*¹⁵ observed a depression of antibody-formation but Haughton and Davies¹¹ could not confirm it in his experimental animals infected with tuberculosis. Heilmeyer¹⁰ in 12 and Choremis *et al*⁴ found in a series of 100 cases of enteric fever, an increasing response of the system to immune body formation during cortisone therapy.

4. *Effect on allergic response*:—Cortisone has been effectively used to control allergic dermatitis, intractable asthmatic state and a variety of other allergic conditions⁶. Haughton¹¹ and Heilmeyer¹⁰ used it with great success to control the allergic reaction during the treatment of tuberculous patients. It is not definitely known, to what extent the different manifestations in infections are allergic in nature¹⁰—temperature, toxæmia and the pathological lesions, whether due to the toxin of the organism or to allergic reaction. Tissue destruction and toxæmia during reinfection with *Mycobacterium tuberculosis* and Koch's phenomenon, would appear to incriminate allergy as the primary factor. Rich holds that allergic reaction is injurious to health. It may well be, that the usefulness of cortisone in an acute infection like tuberculous meningitis, tuberculous pneumonia, severe cases of nontuberculous pneumonia and enteric fever is due to its capacity to control toxæmia and temperature which are probably the manifestations of hypersensitivity.

The experience of Truelove¹⁷ is however, different. Out of 24 tuberculin-negative reactors, 20 became tuberculin-positive during cortisone therapy. The mechanism of allergic manifestation has not been fully worked out and the mode of action of cortisone is unknown, and should therefore, wait till more detailed information becomes available.

5. *Effect on adaptability*:—Seyle conceives that disease is but a phenomenon of mal-adaptation of the body to the different stresses. When any stress-factor like cold, mental worry, infection or trauma operates in the body, the "first mediator" liberat-

ed at the site of operation stimulates the pituitary body to produce A.C.T.H.; this in turn acts on the adrenal cortex from which mineralo-corticoids and gluco-corticoids are liberated. If a normal balance exists, between these two groups, no disease is produced, the body passes through the stages of alarm and reaction and adapts itself to the stress. Disease is the sign of exhaustion—a failure on the part of the body to adapt itself to the stress. It occurs from an imbalance of mineralo- and gluco-corticoids. It is held that when cortisone is administered it helps the body to adapt itself to stress and the disease condition is eliminated. No proof is however, available to establish that corticosteroids during diseases are of an abnormal nature and no scientific verification regarding their connection, if at all necessary, with extraneous cortisone is known. However "it seems that the hormone is intimately involved in the efforts of the cells themselves to adapt to the changing environment⁶."

6. *Substitution therapy*:—Clarke *et al*⁵ noted that the output of the 17-ketosteroids in urine is diminished in proportion to the severity of infection. Wilkins¹⁹ noted that people above 65 having depressed adreno-cortical function got a flare-up of the tuberculous focus. Waterhouse-Friederichson disease, an example of acute meningococcal septicæmia, is associated with adreno-cortical damage, and needs corticosteroids. Cases of Addison's disease with infection badly need corticosteroids. These are all instances where hormonal substitution to correct deficiencies helps to control the infection.

Conclusions.—From the above findings, it is not possible to formulate without reservations the indications for cortisone therapy in infections. Bertrand Fontaine and his associates² opined that the divergent results obtained, may be due to:—

(1) Different species of animals behaving differently to cortisone so that the results of animal-experiments are not necessarily applicable to human beings *in toto*.

(2) The dosage-schedule applied to experimental animals with baneful results are proportionately higher than that used for human beings with beneficial effects. Leutim¹² remarks that "good functioning is synonymous with normal functioning without deficiency but also without excess." Lower physiological dosage should therefore, be used for therapeutic effect as large or pharmacological dosage produces harmful results.

(3) Small dosage when administered for several days before microbial inoculation tends to aggravate the disease. Physiological dosage for a short period given during infection is beneficial.

Summary.—The beneficial effect of cortisone, may be due to:—(a) *Substitution therapy* which replaces the deficiency of adrenocortical function brought

about by infection. (b) It facilitates antimicrobial drug to have a direct easy access to the organism by suppressing the inflammatory and hypersensitive reactions. (c) It increases the body-resistance by alleviating the toxæmia and allergic effects, thus helping the patient to eat better and assimilate food properly. The rapid fall in temperature and reduction of toxæmia in 24 to 48 hours are most probably due to cortisone therapy. Cortisone therapy in infection is indicated in (i) markedly toxic patients; and (ii) for cases where a deficiency of adreno-cortical function is present, or is likely to occur.

As cortisone has no direct effect on the organisms, specific antibacterial drugs should be used in full dosage while treating cases of infection.

Acknowledgement.—Our thanks are due to the Superintendent, Assam Medical College Hospitals, to the house and nursing staffs of Med. II and the photographic department of the College. We are grateful to Messrs. Farbwerke Hoechst & Co., who kindly supplied Prednisone (Hoecacortin) for our tests.

REFERENCES:

1. B.M.J., i: 1131, 1957.
2. Bertrand-Fontaine Tand Cheymal, P. (1958)—*La Medicine en France*, 6: 9.
3. Chedid and Boyer—quoted by Bertrand-Fontaine *et al.*
4. Choreimis, K. *et al.*—quoted by Heilmeyer, L.
5. Clarke, E. R. *et al.* (1954)—*Amer. Rev. Tuberc.*, 69: 351.
6. Cope, C. L. (1955)—*Practitioner*, 175: 537.
7. Durand, P. and Renoux, G.—quoted by Heilmeyer.
8. Finland—quoted by Bertrand Fontaine *et al.*
9. Hartfall, S. J. (1955)—*Practitioner*, 175: 553.
10. Heilmeyer Ludwig (1958)—*Seminar International*, 7: 2.
11. Houghton, L. E. and Davies, D. (1954)—*Tubercle*, 35: 2.
12. Lentini Sirio (1958)—*Rossenga Medica*, 34: 29.
13. Roche *et al.*—quoted by Bertrand-Fontaine.
14. Smandell, I. E. *et al.* (1951)—*Ann. Intern. Med.*, 24: 1.
15. Steinberg, R. W. and Moore, F. D. (1955)—*Practitioner*, 175: 600.
16. Thorn *et al.* (1950)—*New Eng. J. Med.*, 242: 865.
17. Truelove, L. H. (1957)—*B.M.J.*, 2: 1135.
18. Tonutti, I. *et al.*—quoted by Heilmeyer.
19. Wilkins, E. G. (1956)—*B.M.J.*, 1: 882.

RISK ASSOCIATED WITH INDUCTION AND STIMULATION OF LABOUR

Pitocin, whether used for induction or stimulation of labour, is valuable, yet its use is not without danger. Intended to induce labour, it may not. Or given to shorten labour, it may actually prolong it, bringing about a chain of events not anticipated by the physician. It may add to the hazard of hæmorrhage before and after delivery. It may add to uterus or cause foetal death.

If complications should follow its use for the elective induction of labour, the physician must be able to defend his induction.

In the hospital where the obstetrics service is organized, the director will, no doubt, guide the practice of the staff; the facilities of the hospital will be adequate. Elsewhere, the use of pitocin should be restricted to the multipara at term, with vertex presentation at—1 or lower. Her prævia. The cervix should be more than half effaced and not less than 3 cm. dilated. The pitocin solution should run slowly, and the obstetrician must remain with the patient throughout the entire period of its administration. (*N.Y. St. Jour. Med.*, 15-2-1959).



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EXFOLIATIVE CYTOLOGY IN THE DIAGNOSIS OF CANCER*

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DIAGNOSIS by cytological examination is not a new method. So early as 1843 Walshe noticed some tissue fragments expectorated from the malignant growth of the respiratory tract and Pauchet in 1847 reported, on his examination of normal cytology, the existence of morphological changes related to the normal ovulatory process. Thereafter Beale (1860), Hampeln (1876; 1887), Menetrier (1886), Betscharelt (1895) and others reported their findings of malignant cells in smears made from the sputum of patients suffering from carcinoma of the lungs. Similarly examination of cytological smears from other body-fluids were also utilized for the diagnosis of cancer in different systems of the body.

Finally, Papanicolaou (1928, 1933) suggested the use of the cytological method of diagnosis of genital cancer and Papanicolaou (1943) and Traut fully described the criteria essential for the interpretation of exfoliated cells. Besides finding the ovulatory process in the normal uterus from cells and diagnosis of cancer from the exfoliated cells, these cells are used to determine sex with fairly accurate results even while the foetus is in the uterus. In this paper, only the importance of cytological examination in the diagnosis of cancer is dealt with. The exfoliation of cells occurs due to loss of adhesiveness of the cells, due to a lack of calcium.

The value of the cytological method of diagnosis has been clearly demonstrated by Graham, Sturgis and Megrow in 181 proved cases of epidermoid carcinoma of the cervix. If the correct procedure and technique are followed, the diagnosis of cancer by this method gives a 100% accurate results.

Beginning with the examination of the vaginal smear for endometrial activity, its use has been extended to other body fluids, like prostatic secretion, sputum, bronchial, gastric, rectal, colonic aspiration, pleural, pericardial and peritoneal exudates, secretion from the breast, urine etc. The diagnosis of cancer in organs like the lungs, breast, bladder, rectum or stomach is now easier and gives fairly accurate results.

The value of cytological examination of smears is that it not only helps in the diagnosis of advanced cases of carcinoma but also to a large great extent aids in the diagnosis of pre-invasive carcinoma *i.e.*, carcinoma *in situ*. The very early type of cancer of the cervix is rapidly diagnosed as the cervix is easily accessible to biopsy for confirmation of the results from smears.

Specially contributed to the ANTISEPTIC.

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We often fail to see in our routine cytological examinations malignant cells even in cases of carcinoma proved by histological examination. Again, on the other hand we see in many cases the presence of malignant cells in the smears through the histological sections do not reveal malignant changes. These variations in results are due to the following factors:—(a) Selection of unsuitable site for biopsy; (b) the part may not be visible or easily accessible and (c) insufficient tissue material may be removed. Similarly in cytological examination, false results may be due to the following reasons:—(a) There are certain tumours which may not easily exfoliate its cells; (b) it may be due to inexperience or careless examination or (c) to defective technique. With adequate and proper care, the diagnosis of cancer by the cytological method will be quite accurate.

Advantages and disadvantages of the cytological method of diagnosis.—Though the cytological method of diagnosis of cancer is getting more and more popular due to its many advantages, it has also got some *disadvantages*:—for example (a) specialized training is required to identify the exfoliated cells to obtain correct diagnosis; (b) a grading of the malignancy cannot be made merely by seeing isolated cells; (c) the type and actual site of origin of malignancy is not always clear from the cells and (d) it is difficult to know the extent of the malignancy.

The *advantages* are manifold:—(a) The test is simple to perform; (b) the results can be had in a very short time; (c) no discomfort is felt by the patient during the collection of material; (d) the test can be repeated as desired without harming the patient, enabling a close follow-up of the case especially after treatment; (e) hospitalization is not required to collect specimens for smears; (f) cases can be diagnosed in the early stages, even in the pre-invasive stage and (g) the test in the hands of experts is as reliable as biopsy.

Accuracy of diagnosis by smear examination.—Though the microscopical examination of exfoliated cells for diagnosis of malignancy is an old method, it was always followed by a biopsy examination for confirmation till a few years ago; the diagnosis is now made by cytological examination alone as it is very reliable. We sometimes however, fail to correlate the cytological findings with the clinical or histological ones; this failure occurs only in cases of the pre-invasive type or cancer *in situ* but not in the case of very malignant tumours. The question of experience and of correct technique therefore, assumes great importance.

In cases of highly malignant tumours or in very advanced cases the exfoliated cells will show marked variations in their appearance from the normal cells. Only in very early cases without clinical signs or symptoms or in pre-invasive type is great

experience required to observe the changes occurring in the exfoliated cells and then note how they differ from the normal ones. Atleast three or four slides should be very thoroughly and carefully examined in order to obtain accurate results; and this is a point which cannot be sufficiently stressed.

Cases are on record where the vaginal cytology from a smear in cases without any gynæcological complaints, revealed carcinoma. But the clinical and histological examinations of that case 2 to 4 months after the cytological examination, were found to be non-malignant. But eight months later, cancer was diagnosed in the same woman by biopsy and confirmed later by hysterectomy. So once carcinoma is diagnosed after careful and proper technique by cytological examination a follow-up of the case is imperative.

Similarly exfoliated cells may show malignant cells but no malignant changes on repeated histological examination; this may be due to the growth not being visible or accessible for biopsy.

Papanicolaou and Traut have reported cases showing carcinoma cells in vaginal smears which, due to the inaccessibility of the growth, could not be proved positive even by repeated biopsy examinations.

Application of the cytological method of diagnosis.—The cytological method is now-a-days a routine procedure, before subjecting the patient to a biopsy, as the smear showing cancer cells nearly always reveals malignant changes sooner or later in the histological examination either by biopsy or post-operative. It is now freely applied where the affected part is inaccessible or where facilities for biopsy do not exist.

Gates, Mcmillan and Middleton (1949) have stated that it is much easier to diagnose exfoliated cells during the early stages of cancer than in the late ones because necrosis and degeneration of the cells may set in as the condition advances. The early diagnosis of cancer will help early treatment and give a good prognosis.

Criteria of malignancy.—In recognizing a malignant cell we should consider the many changes they undergo as compared to the normal cell. These changes relate mainly to the nucleus. All the characteristics of malignancy that are found in a biopsy specimen will not be manifest in cytology; thus mitosis which is an important factor in malignancy is not usually seen in cytological examination. Other characteristic features of malignancy, like variation in size and shape become more prominent in cytological smears. The following changes in the cells should be looked for to label the cells as 'malignant':—(a) The nucleus is greatly enlarged surrounded by a thin rim of cytoplasm; (b) there

is hardly any cell border; (c) an alteration in the nuclear-cytoplasmic ratio is a very important change; (d) the nuclear membrane is very prominent; (e) there may be variation in the nuclear shape and size; (f) if when and if the nucleolus is it takes acidophilic stain, in contrast to the purple-black colouration of the large chromatin particles; when seen in large form it greatly helps in the diagnosis of malignancy and (g) the hyperchromatic nucleus is the most important and significant factor. All malignant nuclei are hyperchromatic due to the clumping of the chromatin particles in an irregular pattern.

Though in cytological examination, cells are at times found scattered throughout the smear they arrange themselves in typical pattern of flat groups or clumped groups when the actual nature of the growth in squamous cell carcinoma or adenocarcinoma can be determined. Usually from the cytological examination, a diagnosis of this is often a difficult matter. Sometimes differentiated cancer cells like tadpole cells, fibre cells, superficial dyscariosis cells etc. are seen in examination.



FIG. 1. Shows malignant cells in the cytological examination of a smear.

Technique of cytological examination of smear.—
(1) *Collection of sample for smear*:—This depends upon the type of fluid and the site from which the secretion is to be collected. (a) Fluids, like urine, gastric secretion, peritoneal or pleural exudates are collected in a container containing 50% alcohol. The fluid is then centri-

fuged as soon as possible and smears made from the deposit.

(2) *Colonic wash*:—For this, the patient requires some preparation. On the following morning an enema is given and 2 to 3 hours later, a saline washing is obtained from the lower bowel, about 100 cc. of which is immediately mixed with an equal part of 95% alcohol. It is then centrifuged and smears made from the deposit.

(3) *Sputum*:—Morning sputum is collected in a receptacle containing 70% alcohol and the blood-flecked material is usually selected for preparation of the smear.

(4) *Bronchial secretions*:—These are collected during bronchoscopy by the aspiration chamber and smears made.

(5) *Vaginal, cervical and mucous membranes of the cheek*:—These can be collected with the help of a wooden spatula, glass slides, non-absorbent cotton wool, or pipette and smears made.

Preparation of the smear.—Several clean and thoroughly well-dried glass slides are taken and albuminized with a mixture of egg albumin and glycerin which makes the cells adhere to the slides. The material to be examined is placed over the slide and an uniform thin smear is made rapidly. This thin and uniform smear helps in the separation of the cells from one another, thus providing a clear view of the details of the cells. The slide is immersed immediately in a fixative containing equal parts of ether and 95% alcohol, before the smear gets dry. The fixative is essential when Papanicolaou's method of staining is used. If this fixative is not available then 95% alcohol alone or 10% formalin may be used. At least ten or fifteen minutes should be allowed for proper fixation. If the smear is allowed to remain in the fixative for more than a week there will be great deterioration of the cells. When the sample contains a large amount of blood a few drops of 0.5% acetic acid should be added to the fixative for haemolysis of the blood.

Where there are no proper facilities for cytological examination smears prepared in the above way may be sent to distant laboratories by the following method suggested by Ayre and Dakin. The fixed slide with the the smear is covered with 2 or 3 drops of glycerin without being allowed to dry and is covered by another clean slide. The two are then packed and sent for examination. On receipt at the laboratory they are placed in the ether-alcohol mixture till the slides become loose. The slides are then separated and stained.

Staining of the smear.—The method recommended by Papanicolaou is considered the best but it requires considerable precision born of experience. But the Haematoxylin-eosin stain can be used satisfactorily in all laboratories. Only the staining should be properly made and the reagent should be fresh. Besides Papanicolaou's and Haematoxylin-eosin stain, Giemsa's stain may also be used to diagnose the cells.

Report on the cytological examination of smears.—We usually come across normal desquamated cells, malignant cells, degenerated cells etc. So the result is given as 'the smear shows presence or absence of malignant cells.' Sometimes many cells are seen which are atypical but without any characteristics of malignancy. At times cells are highly suspicious of malignancy but not typical. For purposes of convenience in diagnosis and treatment, the cells are grouped into five classes:—*Class I*: Absence of atypical or abnormal cells. *Class II*: Atypical cells seen but no evidence of malignancy. *Class III*: Suggestion of malignancy but not conclusive. *Class IV*: Strongly suggestive

of malignancy. *Class V*: Conclusive of malignancy. This class may be considered as giving an accurate diagnosis of malignancy.

Conclusion.—Cytological examination gives results similar to those of the histological method; the malignant characteristics are more conspicuous in isolated cells than in sections of tissues. The great importance of cytological examination lies in the fact that it is done from the exfoliated cells; cancer without any clinical signs or symptoms or even in preinvasive cancer can be diagnosed as such which may not be revealed even after repeated histological examinations. As a result of early diagnosis, treatment can be given early with a far better prognosis. This method of cytological examination of a smear, is of great help in the follow-up of cases after treatment by radiation. Though cytological examination of smears for diagnosis of cancer has been very widely used for all secretions it has been found from experience, that vaginal and sputum smears alone give the most accurate results.

REFERENCES:

1. Papanicolaou's—Atlas of Exfoliative Cytology.
2. Earnest Ayre, J.—Cancer Cytology of the Uterus.
3. Gates and Warren—A Handbook for the Diagnosis of Cancer of the Uterus
4. S. Chales Kasdon—Applied Exfoliative Cytology—The Physiopathology of Cancer, Chapter 30.

THERAPEUTIC ABORTION ON ACCOUNT OF X-RAY EXAMINATION DURING PREGNANCY

In recent years X-ray examination of pregnant women has in some instances been either the sole or a contributory indication for therapeutic abortion.

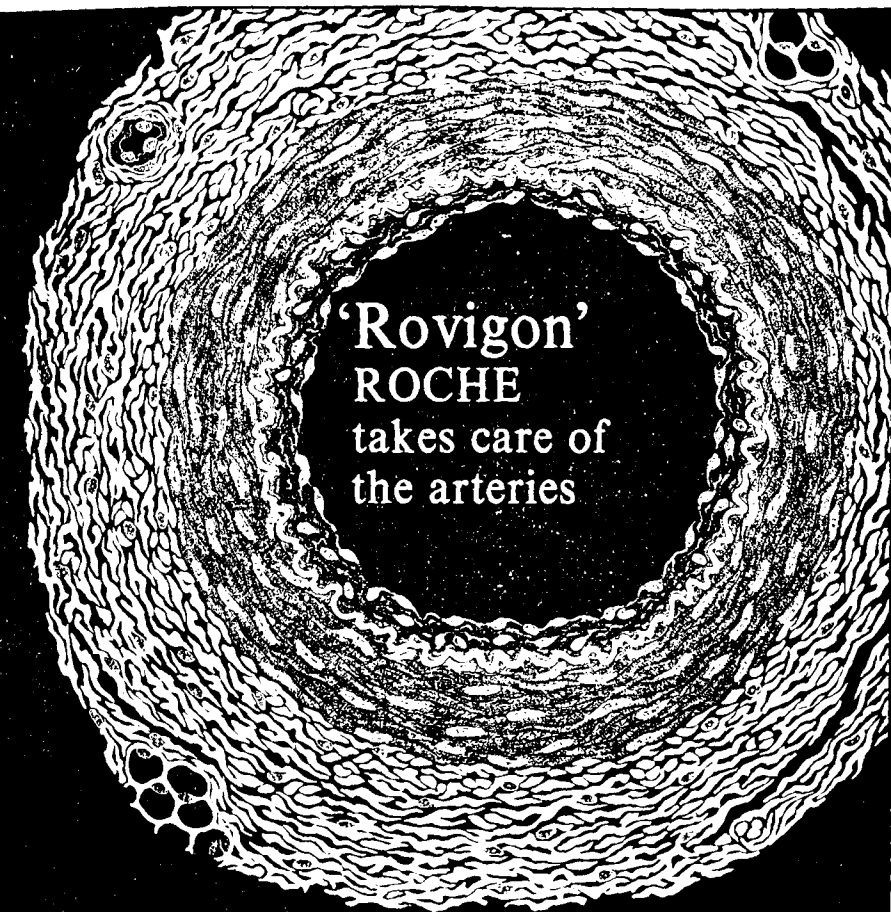
Eleven pregnant women had one or more abdominal X-ray examinations during the first three months of pregnancy. Subsequently, 8 had therapeutic abortion, whereas 3 went to term. The case histories are reported. The calculated foetal doses range from 0.03 to 3.7r (0.01-18.9).

The author makes the following preliminary suggestions about irradiation during the first four months of pregnancy: Foetal doses below about one r do not indicate induction of abortion. Foetal doses between about one r and about ten r indicate therapeutic abortion only in the presence of additional indications. Foetal doses above 10 r presumably always indicate abortion.

One of the pregnancies that was carried to term ought to have been interrupted. Four of the induced abortions ought not to have been performed.

X-ray examinations of the abdomen should not be performed during the first four months of pregnancy.

In order to avoid irradiation in the early stages of pregnancy, the following routine precaution is suggested: *In fertile women X-ray examination of the abdomen should be carried out only during the first ten days after a regular menstrual period of normal intensity and duration.*—(Erling Hammer-Jacobsen, *Danish Med. Bull.*, June 1959).



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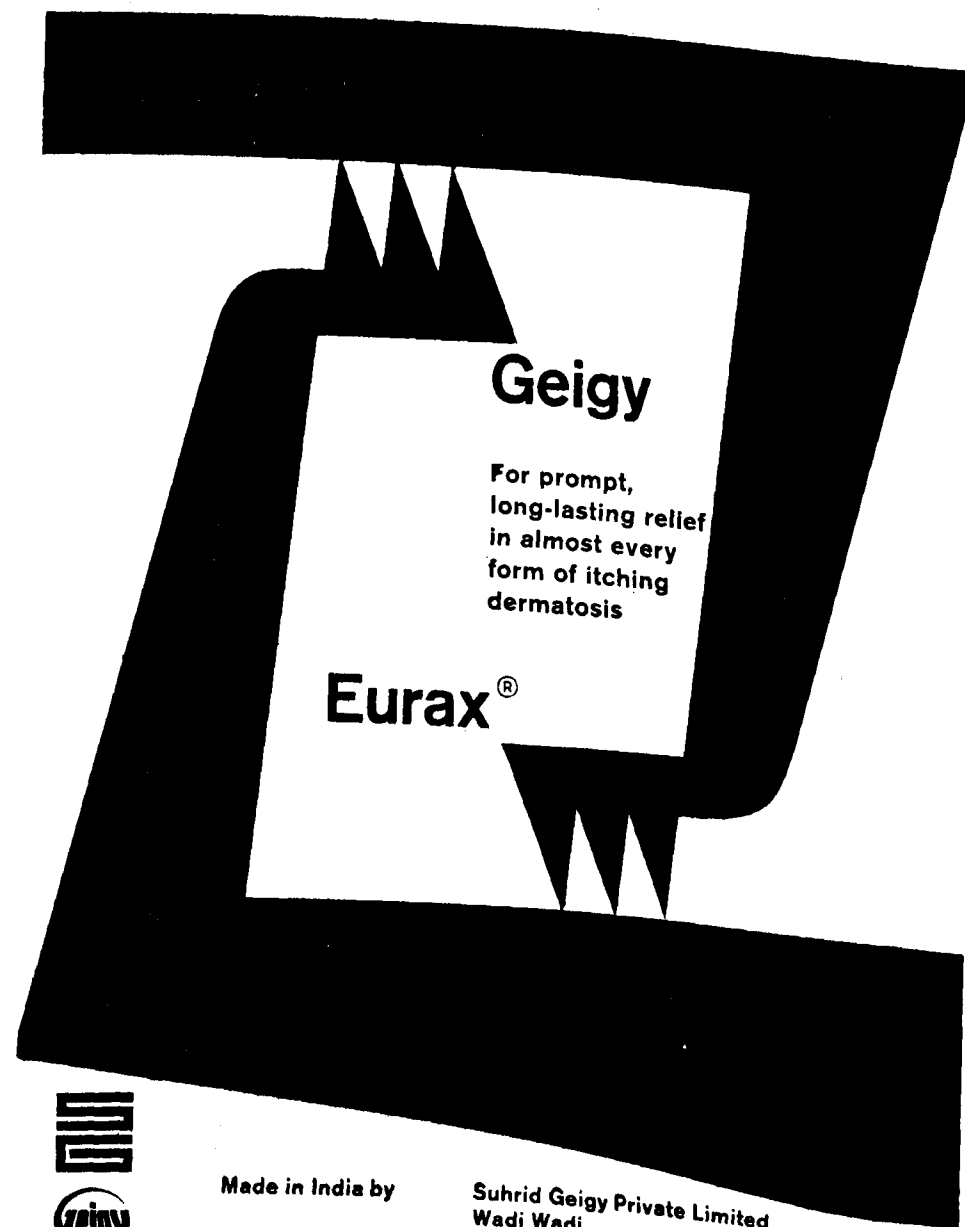
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Cases and Comments**PARALDEHYDE AND ITS USES**MAN MOHAN SINGH WALIA, L.S.M.F., L.T.M. (Cal.),
M.O. I/c. Dispensary, Shaina Distt. Sangrur, (E. Punjab)

PARALDEHYDE is an excellent drug which has however, unfortunately fallen into disuse chiefly because of its abnoxious taste and disagreeable odour; it can very safely be administered through the intramuscular route. The stock solution is sterile and so can be straightaway taken into a sterilized syringe and administered.

Paraldehyde is a clear, colourless liquid having a strong pungent odour and an abnoxious taste. The oral dose is 4 to 16 cc. (3 i to 3 iv). Through the rectal route, $\frac{1}{2}$ to 1 ounce is given. Intramuscularly up to 10 cc. can be given deep into the gluteal region. About 1 to 2 cc. may also be very slowly given intravenously but this may cause respiratory arrest or pulmonary oedema. So the intramuscular route is the safest, most convenient and effective.

The drug acts chiefly on the cerebrum. Previously its use orally or rectally was restricted to its value as a hypnotic in insomnia of cardiac or respiratory diseases or as a basal narcotic preliminary to the administration of any anæsthetic. It is also a perfect sedative. It is now liberally used in mental and nervous diseases. I have found it to be very effective in all types of convulsions, especially in children such as in hyperpyrexia; epileptic fit; tetanus and other allied nervous disorders. It acts instantly inducing blissful sleep. Its use in cases of concussions after head injuries is life-saving. It has no after-effects and does not depress the heart.

Case reports.—I will give short reports of 6 of the cases successfully treated by me with this drug.

CASE 1:—A small girl, G., aged 4 years, suddenly fell down unconscious while playing. She was immediately brought to the clinic by her father. On examination, I found her in a severe convulsive stage. Her facial muscles were twitching violently and her gaze was fixed. I immediately injected 2.5 cc. of paraldehyde intramuscularly and gave her a $\frac{1}{2}$ grain tablet of Gardenal sodium orally. The child was asked to be taken home, but after about three-quarters of an hour I was again called to see the patient. The patient had relapsed into a similar convulsive stage. Due to the severe contractions of the muscles, the temperature had risen to 105°F. The pulse could not be felt or counted due to the convulsions. The prognosis appeared to be grave. I gave another 3 cc. of paraldehyde intramuscularly. The convulsions stopped within 10 minutes and the girl slept throughout

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the night. She was kept under Gardenal sodium hypnosis ($\frac{1}{2}$ gr. b.d.) for a few more days. But it was found that she could not move her left arm and leg. Injections of vitamin B₁₂ and vitamin B₁ for a month restored her normal functions. In this case it is clear that paraldehyde saved the child's life.

CASE 2:—A lad of 12 years was suffering from an attack of epileptic fits, which lasted for about 20 minutes. A history was elicited of epileptic fits lasting for a few minutes for the last two years. The present attack was unusually severe. I gave him 3 cc. of paraldehyde intramuscularly. The fits stopped at once and the boy fell into normal sleep. The attack did not recur for six months.

CASE 3:—During the last summer, child A., aged 3 years, developed a temperature of 102 F. I gave Seclomycin intramuscularly and prescribed a diaphoretic mixture. I was again called after an hour as the child was having convulsions due to hyperpyrexia, the axillary temperature being 104 F. I at once gave 2 cc. of paraldehyde intramuscularly. The convulsions stopped within a minute and the patient fell into asleep. He awoke after a few hours with a normal temperature.

CASE 4:—M.S., aged 23 years, was attacked by a ruffian on the top of his head. He received a cut through the skull and membranes of the brain. The brain matter protruded out of the wound like a cauliflower. He was brought to my dispensary on 21-11-'58 at 10-30 a.m. in a delirious and unconscious state. I immediately gave him 2.5 cc. of paraldehyde intramuscularly and put him on intravenous glucose-saline along with other necessary treatment. As the patient was very restless, Gardenal sodium injection was given at 2 p.m. and again 2.5 cc. of paraldehyde intramuscularly at 7 p.m. He was also catheterized. He became uncontrollable at 5 p.m. on the next day and could not be kept in bed even by four men. An intramuscular injection of 4 cc. of paraldehyde calmed him. He also passed urine in the bed after that. He remained calm but was unconscious on the bed after injection of 2.5 cc. of paraldehyde was given on 23-11-'58. He awoke up next day with his consciousness restored.

CASE 5:—A boy, S., aged 12 years, was accidentally struck on the head by a put-shot weighing 10 lbs. He instantly fell down unconscious. I was called in to see the case in his village 4 miles away in the night. On examination I found the boy unconscious and delirious. The skull bone at the site of the blow was fractured. There was a contused wound, one inch long; in addition to other treatment, 3 cc. of paraldehyde was injected. I advised the guardians to fetch him out to the dispensary in the morning. I found him on arrival in a semi-conscious state. I administered 2.5 cc. of paraldehyde and glucose saline intravenously. He regained complete consciousness on the next day.

CASE 6:—A boy, B., aged 5 years, was kicked on the head by a camel and he fell down unconscious. I gave him an intramuscular injection of 3 cc. of paraldehyde. He was then brought to the dispensary, where he was catheterized in the evening. Gardenal sodium $\frac{1}{2}$ grain was given in the night. Next morning he regained consciousness and passed urine freely.

Summary.—The value of a forgotten but still valuable drug—Paraldehyde—is discussed. It is an ideal sedative for use in convulsions of all sorts especially those occurring in children e.g., epilepsy, tetanus and convulsion due to head injuries. It can be safely and effectively administered by the intramuscular route. By the other routes it may be harmful or disagreeable. The intramuscular dose is 5 to 10 cc. I have given children from 1.5 to 2.5 cc. with no untoward symptoms. The liquid being sterile, there is no need for elaborate sterilization. It has practically no after-effect.

Conclusion.—Paraldehyde is an essential drug which should be kept handy by every medical practitioner.

REFERENCES:

1. Chatten, Mangen and Brainerd (1954)—Handbook of Medical Treatment.
2. Ghosh, B.N. (1946)—Pharmacology, Materia Medica and Therapeutics.

CHEMOTHERAPY OF RENAL TUBERCULOSIS

As the result of ten years' work with chemotherapy as the most essential treatment, renal tuberculosis is found to respond well to rational chemotherapy; it is indicated in all cases with intact tissue to preserve in a tuberculous kidney; to treat conservatively with INH+DHS PAS for six months. There is no reason to treat the patients longer than six months, as such a course will produce stable conversion in about 85 to 90 per cent of the patients. The combination mentioned will obviate the risk of development of resistance; and the treatment may be repeated if necessary.

A putty kidney which gives no symptoms is not in itself an indication for operation. But in a severely or completely destroyed kidney which gives rise to fever, pain, haematuria, etc., conservative chemotherapy has no purpose, and so nephrectomy under cover of chemotherapy must be done.

Resection of the kidney may be considered only where a chemo-resistant recurrence may be attributed with certainty to a definite localized focus. Persistent cavities after a chemo-course suggest nothing about activity, as the radiologically characteristic picture of a chemotherapeutically healed renal tuberculosis shows persistent, well-defined cavities. Ignorance of this phenomenon has led to many superfluous and harmful kidney resections.—(*Danish Medical Bulletin*, June, 1959).

BEEPER BROADCASTS HEART ACTION

A "heart monitor" has been developed to reduce surgical risks by signalling physicians instantly the need for heart massage or other resuscitation measures during an operation. Its beeping sound amplifies and translates the electric-wave activity of a patient's heart. The unit is strapped to the arm and an electrode is strapped to another part of the body, completing the "net-work" without other connections. It can alert all personnel in an operating room to the possible need for heart massage, injection of stimulants, administration of oxygen, electrical shock, or other life-saving measures.—(*Today's Health*, Chicago, August 1959).

A CASE OF RAT-BITE FEVER

TRIBHUVAN NATH, M.B., B.S.,
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Mrs. R.N.M., Hindu, aged about 30 years, of a poor family came to my Clinic on the 10th June, 1959, complaining of a daily rise of temperature with rigor of about 2½ months' duration, looseness of bowels with abdominal pain, and extreme weakness.

She gave a history of having been bitten by a rat in her right foot a few days before the fever; it caused a small ulcer and a painful swelling in the foot and an enlargement of the inguinal lymph glands followed by fever with rigor. After some time, the ulcer and swelling of the foot subsided but the fever with rigor continued.

On examination:—Her general health was very much run down; she was highly anæmic and a little toxic also. Her pulse was 100/m, regular but of low volume and tension; her temperature was 98°F. The abdomen was tender on pressure, more so in its lower part; liver not enlarged; spleen not palpable. Nothing abnormal was noticed in her heart and lungs and her urine was also normal, with no sugar or albumin.

TREATMENT:—10-6-'59:—Acetylsarsan (adult)—2 cc. by intramuscular injection; Enterovioform one tablet thrice daily by mouth and alkaline mixture.

11-6-'59 to 13-6-'59:—Enterovioform 1 tablet *t.d.s.* and alkaline mixture.

14-6-'59:—Acetylsarsan 3 cc. by intramuscular injection. Ferilex, two teaspoonfuls twice daily with water after the principal meals.

RESULTS:—The temperature with rigor shot up to 104°F. on 10-6-'59. From 11-6-'59 there was no rise and an all-round improvement was maintained.

DIAGNOSIS:—From the history of rat-bite causing local lesion with lymphangitis and adenitis followed by recurrent fever with rigor and the prompt response to Acetylsarsan treatment, there can be no doubt that this was a case of rat-bite fever. Laboratory investigations for confirmation of the clinical finding could not be made for want of facilities.

HEART WORK TOLERANCE

Thousands of heart patients are probably able to perform jobs believed too rigorous for them. Standard classifications to determine the energy expended in various tasks may err on the side of over-caution, for they make no distinction between continuous and intermittent work. But most work and domestic activities are intermittent. "By further eliminating heavy peaks with the cooperation of the employer, many patients may undertake their previous jobs on return to society. It appears quite possible that over-caution has been the rule in regulating physical activity."—(Dr. Edward E. Gordon, Director of Physical Medicine, Michael Reese Hospital, Chicago, *Proc. Amer. Med. Assocn., Minneapolis*, Dec. 2).

A CASE OF INTESTINAL OBSTRUCTION CAUSED BY MECKEL'S DIVERTICULUM

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Civil Hospital, Gauhati, Assam

MECKEL'S diverticulum is an uncommon developmental abnormality but it may account for a good proportion of cases of acute abdominal emergencies.

Meckel published his authoritative literature on the diverticulum in the early part of the last century. It forms a finger-like diverticulum at the antimesenteric border of the ileum in about 2% of persons, is 2 inches in length and situated 2 feet proximal to the ileocaecal valve. Keith defines Meckel's diverticulum as the persistence of the intra-abdominal part of the Vitello-intestinal duct, which is the communication of midgut to the yolk-sac in the early developmental embryo-stage; it may be situated in any part of the midgut and may vary in size and shape. It is made up of the same three layers which make up the small intestines and the lumen of the diverticulum communicates with the lumen of the small intestine. The inner lining of the diverticulum may be like the gastric mucosa with acid-secreting property in 12% of cases. Accessory pancreatic tissue may also be present in its wall. It may end blindly and be free or attached by a fibrous band extending from the tip to the adjacent mesentery and to the abdominal wall or other intra-abdominal structure. A remnant of the Vitelline artery as a hard fibrous cord, extending from the umbilicus to the mesenteric border of the small gut might be present in rare cases.

When the diverticulum is short with a broad base, it predisposes to intussusception; and when long, to obstruction (Drummond). Strangulation is frequently seen when the diverticulum is attached with a fibrous cord extending to the abdominal wall or other intra-abdominal structure (Lejar). It might cause volvulus of the small intestine acting as the axis of rotation, as reported by Hashemian and Murrey.

In the case reported here the Meckel's diverticulum was projecting from the middle of the transverse colon (near the postero-inferior tænia) and firmly attached to the tip of the appendix—thus it behaved like a long, stretched-out cord extending from the middle of the transverse colon to the cæcum and it was the axis round which the volvulus of the small intestine turned.

Case report.—A Hindu female, aged 28 years, was admitted into the Civil Hospital, Gauhati in an extremely shocked condition. She complained of severe colicky pain in her abdomen, absolute constipation and vomiting for the last 48 hours. She was extremely dehydrated. She had an acute attack of colicky pain which started in the lower abdomen in the morning and

after some time she started vomiting. The vomit contained ingested food material at first and afterwards it was watery, occasionally bile-stained. Her bowels moved once. At noon she had taken a dose of purgative outside and it caused severe vomiting and her condition greatly deteriorated. Next morning (2-5-'59) she was admitted into the hospital when she was found to be in severe shock, extremely dehydrated and restless. Her face and eyes were shrunken and her tongue was dry and red. The abdomen was moving with respiration, but no distention. Visible peristalsis in a ladder pattern was visible at intervals of 5 to 10 minutes. No tenderness or rigidity was present. The liver and spleen were not palpable. Liver dullness was present, but no shifting dullness; borborygmus was heard; no abnormality was detected in the heart or lungs. Rectal examination showed no abnormality either.

The pulse was 160 per minute of regular volume but low tension; respiration was 36 per minute, abdomino-thoracic; blood-pressure 60/40 mm. of Hg. Blood picture:—Hæmoglobin 70%; total W.B.C.—9800/cmm.; poly-76%; lympho-22%; mono 1%; eosino 1%.

A low plain-water-enema was given without any result. Two ounces of high coloured urine was catheterized. In view of the bad general condition of the patient, 5% glucose in normal saline drip was started intravenously. Aspiration was started with a Ryle's tube and 12 oz. of foul smelling bile-stained fluid was brought out within 8 hours. Crystalline penicillin 40,000 units 3 hourly and dihydro-streptomycin $\frac{1}{2}$ gram 12 hourly, intramuscularly and anti-tetanus serum 1500 units intramuscularly were given.

After 8 hours the condition of the patient showed improvement. Her tongue was moist and the B.P. rose to 90/70 mm. of Hg. and the pulse was now 110 per minute. She passed 8 ounces of coloured urine. Exploratory laparotomy was decided upon.

Operation note.—Under spinal anaesthesia with 2 cc. Xylocaine between the lumbar 2nd and 3rd spine, the abdomen was opened through a right para-median incision. The abdomen was of sero-sanguinous fluid in the peritoneal cavity which was aspirated.

The transverse colon was pulled down from the middle of which near the postero-inferior tænia, a Meckel's diverticulum two inches in length was projecting. It was firmly fixed to the tip of the appendix and the cæcum was pulled up and slightly to the left. Omentum was adherent to the tip of the appendix and Meckel's diverticulum. It was like a cord extending from the middle of the transverse colon to the cæcum and it was behaving like an axis around which the lower jejunum and ileum were twisted and a volvulus occurred. A loop of ileum 2 ft.

in length, about 6 ft. proximal to the ileo-cæcal junction was projecting through a gap between the cord and a loop of the jejunum and tightly kinked at the neck—a close loop obstruction. The obstructed loop of small intestine was congested and bluish in colour. Peristaltic movement was present.

The adhesion of the omentum was released as also of the volvulus and then covered with moist warm saline gauze pads. The wall of the kinked part of the small intestine was reinforced. Appendicectomy was performed and the Meckel's diverticulum excised. After some time, the colour of the loop returned and pulsation in the mesenteric arteries was felt. The abdomen was closed in layers. The post-operative period was uneventful. She had moderate distention of the abdomen for 48 hours and her bowels moved after 48 hours. She had a temperature ranging up to 100 F. for the first three days during which penicillin and streptomycin were continued. She was discharged from the hospital after three weeks.

Summary.—A case of intestinal obstruction caused by Meckel's diverticulum and appendix is reported.

Acknowledgement.—I am thankful to Dr. S. K. Chakraverty, M.B., Civil Surgeon, Kamrup for his kind permission to publish the case. My thanks are due to Dr. S. P. Mazumdar, M.B., B.S., and Dr. A. P. Chakravarty, M.B., B.S., for their valuable help.

REFERENCES :

1. Treves, F.—Surgical Applied Anatomy.
2. Keith, A.—Human Embryology.
3. Handfield Jones and Porit—The Science and Practice of Surgery.

THE PATIENT AND PHYSICIAN IN CARDIAC SYMPTOM FORMATION

This study is an attempt to evaluate the part of both patient and physician in the formation of symptoms suggestive of angina pectoris, especially in patients with normal hearts. The data indicate that the majority of such patients have neurotic patterns well established and that excessive concern with their hearts already has taken place by the time a physician is consulted. However, the doctor may fail to recognize that the symptoms are primarily related to anxiety and as a result may misinterpret them, making a diagnosis of angina pectoris or myocardial infarction, when in reality there is no heart disease.

Fifty-five consecutive patients with chest pain were studied and followed during a six-year period. Each patient had a thorough history and physical examination, routine laboratory studies, and X-rays of the chest, gall-bladder, and upper gastrointestinal tract. Master's two-step test was performed on all patients who did not have electrocardiographic evidence of myocardial infarction. Other studies were obtained when indicated. Social and personal data were secured from the patient, his relatives, social workers, and hospital records. Because the community was rural and the population relatively stable, in many instances the medical records of the patients' entire lives were available for study. Psychological evaluation was carried out by psychodynamically oriented interviews. A minimum of two hours and, in most cases, more than four were spent with each patient, in addition to time required for the medical aspects of diagnosis, treatment, and follow-up.

Twenty-seven of these 55 patients had no evidence of heart disease but were convinced of its presence. The neurotic pattern was well established and the cardiac fixation had already taken place by the time they came to the physician. They tended to dramatize their symptoms and often would refer to their "heart pain." They were all intensely anxious people whose neurotic behaviour was readily apparent. In 17 of these patients organic conditions not related to the heart contributed to the pain. Monetary and other forms of compensation were strong forces in prolonging and aggravating the incapacity. They consulted many different physicians, occasionally receiving independent treatment from two doctors at once. All patients were convinced that they had heart disease whether or not they had had previous contact with the physician. These patients often misinterpreted and exaggerated the physician's remarks.

The physician was found primarily culpable in precipitating the cardiac neurosis in four of the patients. The physician confirmed and aggravated pre-existing fears in 12 patients. In the remaining 11 of the 27 patients, he was considered to have had no direct effect. The physician often failed to recognize that the symptoms were due to anxiety and, as a result, misinterpreted them. A diagnosis of angina pectoris had been made one or more times in these 12 patients in whom no evidence of heart-disease had been demonstrated. Eight patients without evidence of heart-disease had been diagnosed as having myocardial infarction 27 times. They were said to have had normal hearts 22 times during the same interval of time. A misdiagnosis in favour of organic heart disease was made most frequently by the family physician. On the other hand, the physician often dismissed the diagnosis of coronary artery disease when in reality it was present because of the bizarre nature of symptoms that did not fit rigid clinical criteria for the syndrome.

The criteria for the diagnosis of angina pectoris and cardiac neurosis must be re-evaluated in the direction of the total individual response and not simply of the disease entity itself.—(J.A.M.A., Nov. 22, 1958).

CHORIOADENOMA DESTRUENS AS A "LESS MALIGNANT FORM OF CHORIOEPITHELIOMA"

Chorioadenoma destruens is the term applied by Ewing and accepted by most pathologists—to that form of chorioma wherein amidst a group of trophoblastic cells, the pattern of a chorionic villus may be seen.

1. Eighteen cases of chorioadenoma destruens diagnosed by the microscope from growths obtained from the hysterectomized uterus are presented by Dr. Acosta-Sison.

Of the 18 cases, 13 or 72.22 per cent showed complications in the form of either uterine perforation (7 cases) or metastasis (6 cases) which endangered the life of the patient. In 3 perforated cases the intraperitoneal hemorrhage encountered at laparotomy was from 500 to 2000 cc. One perforated case also involved multiple (5) intestinal perforations which liberated fecaliths into the peritoneal cavity.

2. Because of the complications listed above gravely endangering the life of the patient, chorioadenoma, early destruens in the uterus requires, just as in choriocarcinoma, early hysterectomy before uterine perforation or metastasis take place.

3. In the diagnosis of chorionic malignancy which should indicate immediate hysterectomy one should give value to the persistence of the clinical picture after a repeat curettage rather than to rely on the verdict of the negative microscopic evidence of malignant trophoblasts in the curetted tissue and the reason for this has been discussed.—(Philip. J. Surg., June 1959).

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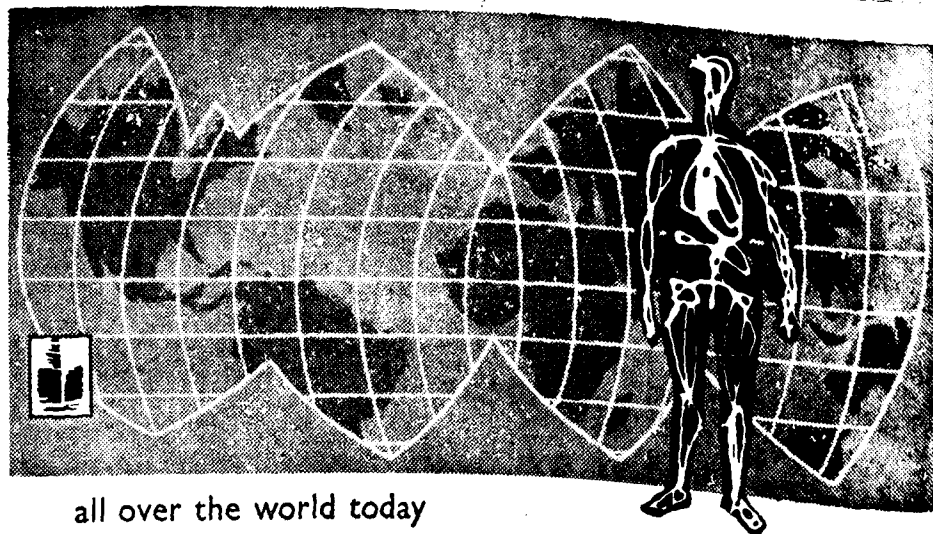
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REPRESENTATIVE PAPERS

- Gillot, F., and Raoux, J.P., *Algérie méd.* 61: 789 (July) 1957.
- Mosqueira, M.S., *Dia méd.* 29: 3520 (Dec. 23) 1957.
- Hainaut, H., and Mélon, J., *Rev. méd. Liège* 12: 184 (July) 1957.
- Ribeiro Vianna, D., *Canais radiculares*, Belo Horizonte, 1957.
- El-Ghaffar, Y.A., and El-Ghaffar, M.A., *Gastroenterology* 32: 475 (March) 1957.
- Edwards, G., Buckley, A.R., Fear, E.C., Williamson, G.M., and Zinnemann, K., *Brit. M.J.* 2: 259 (Aug. 3) 1957.
- Loughlin E.H., Joseph, A.A., and Alcindor, L., *Antibiotics Annual* 1957-1958, p.99.
- De Sa, A.E., Paper presented before Association of Surgeons of India, (Dec.) 1957.
- Nazari, G.D., *Med.-Surg. J. Iran* 2: 117, 1957.
- Biasco, G., and Torrielli, F., *Clin. odontol.*, (Oct.) 1957.
- Babudieri, B., *Bull. WHO* 16: 911 (May) 1957.
- Ruiz Sánchez, F., Ruiz Sánchez, A., Cham, J.L., and Naranjo Granda, E., *Antibiotic Med.* 4: 460 (Aug.) 1957.
- Florentin, A.A., and Sison, A.B., *Antibiotics Annual* 1957-1958, p.941.
- Rodríguez Lucca, B., Paper presented before Puerto Rico Medical Association, (Nov.) 1957.
- Johnson, R., and Landsman, I.B., *Scottish M.J.* 2: 383 (Oct.) 1957.
- Nussbaum, W., *Schweiz. med. Wschz.* 88: 107 (Feb. 1) 1958.
- Williams, S., *Antibiotics Annual* 1956-1957, p.316.

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Editorials

OVERCROWDING IN HOSPITALS

(A Hardy Perennial)

WE have frequently referred in the past to the chronic state of overcrowding in hospitals, not only in this State but all over the country. The public have been painfully aware of the inadequacy of hospital and health services in the States for quite a long time. The state of over-crowding appears to have been steadily increasing.

A statement furnished on the 14th September, 1959 by the Madras State Health Minister to the *Legislative Council* during its last session relating to the admissions to the General, Stanley and Kasturba Gandhi Hospitals in the city during the last three months of 1958, would appear to have created the impression that the overcrowding was phenomenally excessive and in the order of three to four times the bed strength. This was however, corrected later by the Health Minister when, in answer to categorical questioning, he told the *Legislative Assembly* on the 18th September 1959 that the monthly figures furnished to the *Council* represented only the arithmetical total of all cases admitted without allowing for the number of cases that were discharged during the respective months. "What was more relevant," said the Minister, "for purposes of comparison with the bed-strength of the hospitals was the daily average number of in-patients under treatment in each hospital and from the relevant figures now furnished it would be seen that the excess over the sanctioned strength was not abnormally excessive" as the original figures supplied to the *Legislative Council* unfortunately made it appear.

There is no doubt however that, as the Health Minister himself admitted, there has been much overcrowding which

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continues to be on the increase. Thus, we are told that during the months under discussion there were 400 and 300 extra admissions over the bed-strengths in the General and Stanley Hospitals respectively. Sri M. A. MANICKAVELU, the State's Health Minister, in answer to questions raised in the *Legislative Council* on 14th ultimo stated in extenuation that "those in charge felt it inhuman to turn away sick persons on the ground that no beds are available." Accepting the view that humanity demands that as many as possible of the sick and suffering who knock at the hospital doors for relief should be admitted, even though it means the creation of a new category of patients called "floor-patients" whom the Government "have supplied with mats," it must be conceded that these patients will be experiencing acute discomfort due to over-crowding and inadequate attention. The Health Minister also stated that the Madras General Hospital with its 1,125 beds has exceeded the optimum strength accepted in Western countries of 750.

We have all too often in our editorials, referred to the low priority given by the Central planners as well as the State Governments to matters of public health. It has often been the excuse of the Central authorities that matters of health are largely concerned with the States and that their executive responsibility for our health services is limited. Perhaps they are justified to some extent, as we have found that in practice during the last five years, even the funds allocated by the Centre for specific health projects are tardily utilized by the various States and the short-fall in fulfilment of plan targets is among the largest in this field. The Madras Government are spending only 8 or 9 per cent of their income on health, while West Bengal allocates 13 to 14 per cent of their income for it. This is certainly, therefore, a matter for careful consideration and reappropriation.

The overcrowding has another and an even more important aspect, which cannot be lightly ignored as it has a very profound influence on the *morale*, endurance, and health of the medical, nursing and other staff. The assurance by the Health Minister that the Government is doing everything possible to provide all the sick patients admitted, with facilities for stay and treatment, loses much of its strength and value by his later confession that "there has been no increase in staff proportionate to the increase in the admission of patients," which appears to be steadily mounting up.

The medical and nursing staff are thus called upon to do much more than the normal work which would be expected of them and even under much less abnormal conditions, the staffing position in these hospitals was not all that could be desired. Without meaning any disparagement to the integrity and

devotion to duty of the existing staff who are working under great stress and strain to afford relief to suffering humanity, we would like to say that with the best will in the world, human nature and human physique cannot be expected to stand such strain for any considerable time and the quality of the work and attention must necessarily suffer, and the blame will not lie at the doors of these hard-worked members of the staff.

It is imperative therefore, that the Medical and Public Health Services in India as a whole should receive top priority and considerably enhanced grants during the Third Plan period, and that an all-out effort should be made in Madras immediately to provide all State Hospitals with more staff, medicaments and other essential amenities for the numerous extra-patients admitted, if necessary by axing other less urgent schemes which can await the Third Plan period.

CONFERENCE OF STATE HEALTH OFFICERS

A CONFERENCE of the State Health Officers was held at Coimbatore on 20th August 1959 and the two following days. Sri M. A. MANICKAVELU, the State Minister of Health, Sri Dr. V. R. THAYUMANASWAMI, the Director of Medical Services, Sri Dr. N. PARTHASARATHY, the Director of Public Health and his assistants were present on all the 3 days.

Inaugurating the Conference, the State's Health Minister, stated amongst other things that the Health Officers who are solely responsible for the welfare of the people in the areas under their jurisdiction, "should not always be thinking of the emoluments they were getting, but should put up a cheerful face and do their duty to the best of their ability." Sri Dr. N. PARTHASARATHY, in his welcome address gave a detailed account of the various problems facing the public health workers and stated that conferences such as this must be held at least once in 3 or 4 years in order to enable different important problems to be discussed dispassionately, and agreed solutions reached.

There was a general feeling that the Primary Health Centres should be in charge of and managed by the Public Health Department; and the Director of Medical Services, supported a resolution moved to that effect at the Conference. We are glad to note, that he accepted this position and stated that owing to the peculiar position of the present set-up of medical officers he was unable to transfer the personnel to the Public Health Department. In due course, however, he said steps would be taken to recruit medical officers to the Health Department first to work in the primary centres and later to become health officers themselves. We do hope that this will become a *fait accompli* at no distant date.

We have noted with pleasure that "unlike in the previous Conferences a departure was made in the procedural conduct of this conference—a welcome one indeed. The Health Officers who attended the Conference formed themselves into several groups, each one discussing a particular aspect of the public health problem as already fixed in the agenda for the Conference. Obviously this helped the health officers to have a full and frank discussion on the different subjects and to formulate their agreed opinion in the form of resolutions. The decisions reached in these groups, sub-committees as we would prefer to call them, were ultimately discussed in the open session in which all the Health Officers took part.

The final resolutions as adopted at the open conference in the presence of the State's Health Minister and other high Officers of the two Departments, were in the form of recommendations to Government. The chief among them were: (1) a resolution wanted that the supervision and control of primary health centres should be vested in the Director of Public Health and District Health Officers. (2) The Conference then requested the Government to make provision for the construction of six-bedded Infectious Diseases Sheds in the premises of every Primary Health Centre in the State and to give full grants for construction of I.D. hospitals in urban areas and to subsidize liberally for the maintenance of these institutions. (3) The Conference urged the Government to vest the control of all dispensaries, maternity homes, maternity hospitals, etc., with the Municipal Health Officer. (4) It requested the Government to give priority in the rural water supply schemes to provide permanent safe water-supply in festival areas and to grant 75 per cent of the cost of the schemes and to treat the contribution from temple funds as equivalent to public contribution for the execution of the schemes. (5) The Conference was of the view that the Block Development Officers should be asked to watch the expenditure under 'Hygiene and Rural Sanitation' and report to the D.H.O. quarterly, so that the latter might suggest ways and means of spending the amount sufficiently early before the completion of the period of the first stage of the block so that the amount provided under 'Health and Rural Sanitation' might not be diverted to other heads. This, to our mind, is a sound suggestion, essential for all progress in public health. (6) The Conference recommended that a Study Committee and an Industrial and Occupational Health Bureau might be formed at the Office of the Director of Public Health, Madras, "to consider ways and means of implementing the expert-committee-reports on tanneries, hotel sanitation etc. and to study occupational hazards and plan for the educational aspects of industrial health and research on hazards in occupational and industrial fields."

It is not enough if Committees are formed with the pious objects referred to; for, in actual experience it is often found that comparatively little is achieved owing to want of enthusiasm, and earnestness in the members. Every one of them should feel strongly about the need for reform and pull together as a team and implement the resolutions for effecting improvements. We consider that the recommendations made in the resolutions are quite modest and so should meet with favourable response from the Government.

THE TREATMENT AND CONTROL OF LEPROSY

DR. R. G. COCHRANE, the eminent Leprologist and Adviser to the British Ministry of Health on Leprosy stated recently:—"Looking back more than thirty years, I have seen advances in the treatment, management and prevention of leprosy as great as in any other disease." This statement must be truly encouraging to all workers in this field.

The modern concepts and teachings relating to the treatment and control of this disease, incline to the view that its victims need not be segregated; and domiciliary treatment has therefore, come to stay. It has been clearly shown that only a small percentage of cases is really infective, and that the others need not be isolated, though they need intensive treatment. This is indeed a distinct advance both in holding out hope to the unfortunate victims and in providing them with a more simple yet efficient and less expensive treatment than before.

During the First Five-Year Plan, the Government of India established the Central Leprosy Teaching and Research Institute at Tirumani, near Chingleput, and launched the National Leprosy Control Scheme. Under the latter, two types of centres have been set up:—(1) "the subsidiary centre, which surveys a population of about fifty thousand in order to detect early cases and treat them on a mass scale with sulphones, and (2) "the treatment and study centre which, in addition to what the subsidiary centres perform, carries out detailed surveys to study its epidemiology and an assessment of the effects of treatment with sulphones." One of the study and treatment centres is located in Tirukoilur, in South Arcot district, which, according to official figures, has surveyed a little less than sixty thousand people out of a total population of slightly over sixty-five thousand up to the end of last year. There are seven subsidiary centres in Madras State, six in Andhra Pradesh, three in Kerala and two in Mysore State.

The results of a survey made six years ago into the incidence of leprosy in India, revealed the presence of about 15,00,000 people

suffering from leprosy, the areas of high incidence being Madras, Kerala, Andhra Pradesh, Assam, Bihar, and Madhya Pradesh States, certain parts of Uttar Pradesh and Bombay. South Arcot is the worst affected district in the Madras State; the progress made against the disease here, was indicated when Sri M. A. MANICKAVELU, the Madras State Health Minister, recently opened a building for physiotherapy and surgical work in the 'Study and Treatment Centre' at Tirukoilur. It was then stated that the Thakkar Bapa Kusht Nivaran Sangh and the Study Centre had together covered about two-thirds of the taluk. It was also stated that out of 3,550 cases at the centre, 805 patients had been definitely cured since 1955. This indeed is a highly encouraging and satisfactory record of progress in leprosy control work.

It was welcome news to hear from the District Medical Officer, South Arcot, that the incidence of this disease in many villages, particularly among the children, had decreased. This observation would carry greater weight if precise figures had been obtained and made available. Even otherwise, it may be seen that tangible progress has been made. This will be greatly assisted by the mobile van provided by the Thakkar Bapa Sangh, for domiciliary treatment, which is now accepted to be quite efficacious. More such vans would be needed if the present experiment proves thoroughly successful.

The International Congress on Leprosy held last year at Tokyo stressed the value and importance of sulphone therapy, as it has yielded consistently good results. Luckily, this drug is cheap and its administration is simple too. Trained medical workers are lacking who would visit centres, diagnose cases and the stages of the disease, and prescribe the correct doses of the suitable drugs. The W.H.O. International Conference on Leprosy Control Programmes can be implemented by trained lay workers; provided they are enthusiastic and earnest they can be relied upon to implement the recommendations just as well as the trained medical workers. But ultimately the burden will rest on the doctors who have specialized in the treatment of leprosy.

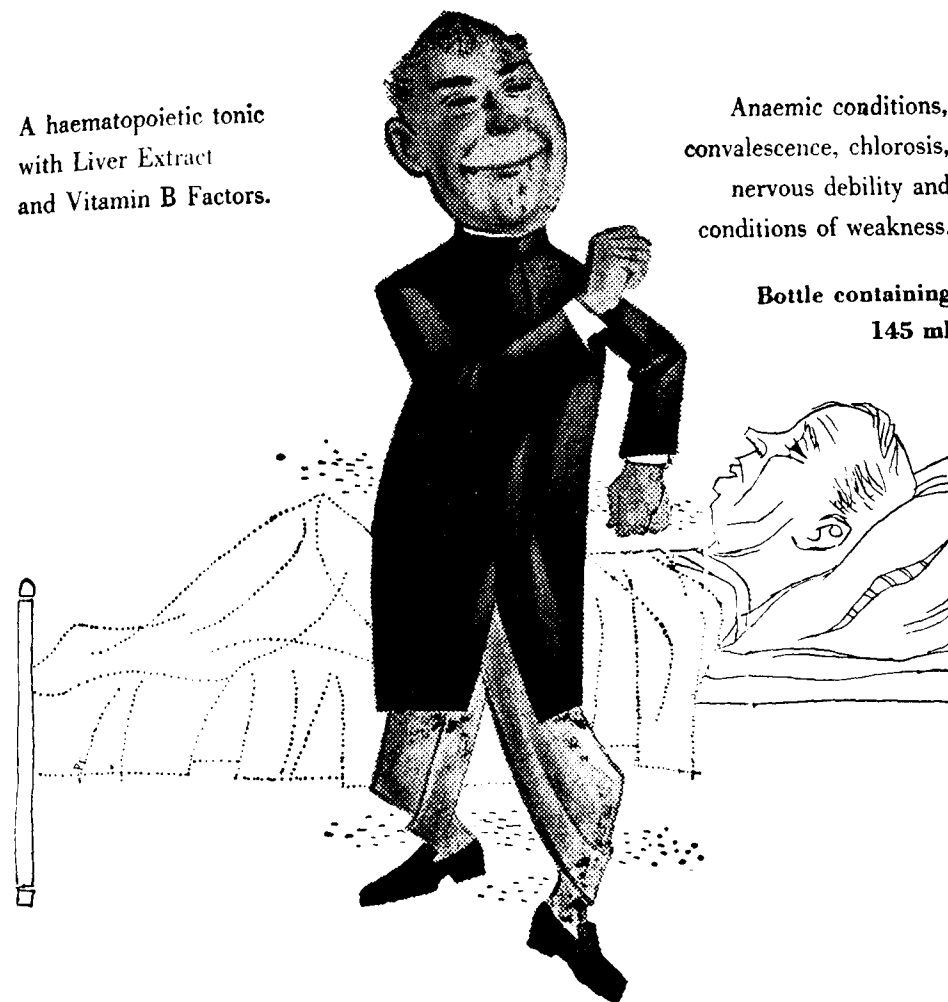
This naturally raises the old problem of getting doctors to settle in rural areas. It is now a well-established fact that out-patient treatment is quite efficacious and that in-patient leprosaria should discourage long-term residence of patients and encourage "short-term" hospitalization whenever necessary. Leprosy treatment, as we all know, is being now gradually integrated with general medical and health work. All these augur well for the unfortunate victims who suffer odium and misery for no fault of their own.

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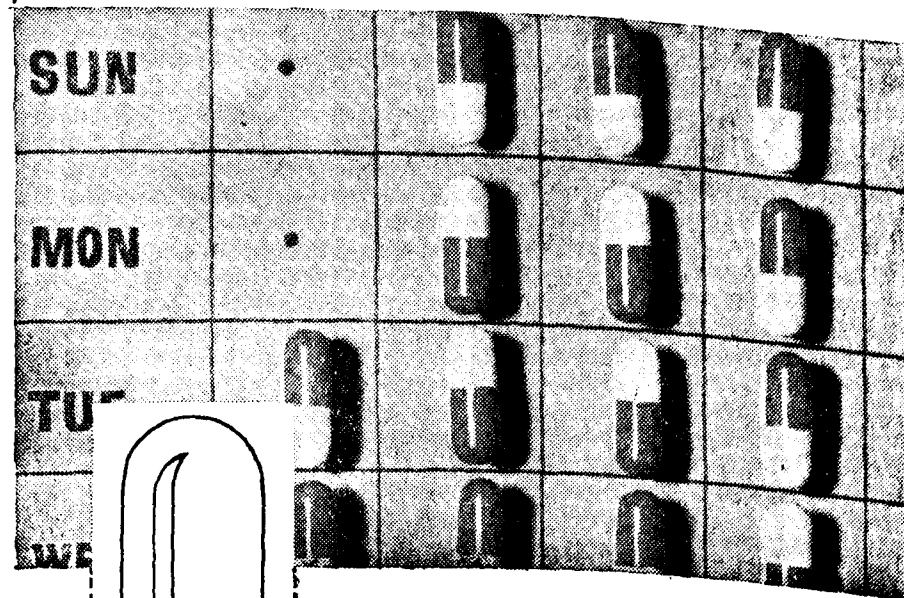
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Uncommon presentations of typhoid fever.—(*Brit. J. Clin. Pract.*, Aug. '59).

Typhoid fever may present in an abortive form, giving rise to a fever with headache and somatic pains, lacking a distinctive rash and often without a palpable degree of splenomegaly, which terminates spontaneously after 7-10 days. Bacteremia is of short duration but antibody production is prompt and generous. An ambulant form of the disease is well-recognized and, as pointed out by Clinton Manson Bahr (1958) in Mau Mau detention camps, is probably common during epidemic periods. The subject feels far from well, yet remains almost afebrile except on exertion when moderate transient pyrexia may develop.

It has occasionally been reported that acute cholecystitis, even proceeding to suppuration and gangrene, may be the presenting symptom after a period of mild systemic disease. The initial ambulant illness may terminate without incident, only to be followed after 10 to 20 days by a relapse in which all the characteristic features of the disease are manifest.

A rare form of chronic irregular pyrexia, accompanied by bacteremia, may be seen in elderly or undernourished patients, and may persist for months in the absence of antibiotic therapy. Though symptoms and signs of tracheo-bronchitis are an integral part of the characteristic picture during the second week, occasional patients present initially with clear signs of lung consolidation. Such examples of 'pneumo-typhoid' are usually distinguishable from cases of pneumococcal pneumonia by the more marked toxæmia which they display.

Meningeal irritation may be so marked at the onset of the exanthem that a primary bacterial or viral meningitis is initially diagnosed. Lumbar puncture will show, however, a sterile fluid with only a moderate increase in pro-

tein and leucocytes, and within a short time additional signs will usually appear to clarify the picture. Very rarely, a true typhoidal meningitis may develop between the fifth and the tenth day and will cause a most grave illness. 'Nephro-typhoid' is an uncommon though not excessively rare manifestation of this disease. The clinical picture is one of an acute hæmorrhagic nephritis due to multiple bacterial embolization of the kidney. Renal function is little impaired and suppression of urine does not ensue. In the author's experience, recovery with complete restoration of renal efficiency is the rule.

A further rare and very atypical presentation is that known as 'hæmorrhagic typhoid,' in which a petechial or purpuric rash is accompanied by hæmorrhagic effusions into serous cavities and by bleeding from any mucous surface. This condition, which is a form of thrombocytopenic purpura due to toxic depression of the bone marrow, carries a very grave prognosis. Genital ulceration, attributable to the lodgement of bacterial emboli beneath the delicate epithelial surfaces, has recently been recalled by Roberts and Barron (1958) as a presenting symptom of typhoid fever which was well-known to our forefathers.

ATYPICAL PRESENTATION IN CHILDHOOD:—Though the disease is very rarely encountered in infancy within the United Kingdom, it is not uncommon in tropical countries, notably in India (Vyas, 1958). The picture is almost invariably one of an acute gastroenteritis rapidly leading to toxæmia, convulsions and dehydration, without specific features which might give a clue as to the identity of the causal organism.

In later childhood also, the clinical diagnosis may be extremely difficult. Though fatalities do certainly occur, the disease tends to be relatively benign at this age. A disproportionately slow pulse-rate is unusual and a rash seldom develops.

LATE SEQUELÆ TO TYPHOID FEVER:— Late sequelæ, whose development may be delayed until several months have elapsed since apparent recovery from the acute disease, may cause considerable diagnostic difficulty. Osteitis, with or without periostitis, often proceeding to a chronic bone abscess, is perhaps the best known of these. Acute synovitis may develop as a recent or late complication; it is usually mono-articular and tends to attack the larger joints. The effusion is generally serous and sterile, but very rarely a true suppurative arthritis has been reported. The 'typhoid spine', though notorious, is now rarely seen.

UNTOWARD RESULTS OF ANTIBIOTIC TREATMENT:— Treatment with chloramphenicol, especially when enthusiasm has moved the physician to give a loading dose of 2 grammes at the beginning of treatment, may produce a disconcerting and dangerous collapse of peripheral vascular tone from a massive release of bacterial endotoxin. A special watch should be kept for this complication in elderly or malnourished patients, and at its advent treatment with oral cortisone, 100 to 200 mg. daily, should be started promptly, for, as noted by Clinton Manson Bahr (1958), such therapy is highly successful.

Watchfulness, imagination and humility are required of those who may encounter typhoid fever. A physician is unwise, however experienced he may be, who feels confident that he can recognize at once the disease in any of its diverse manifestations.

Experiences with tolbutamide in a diabetic clinic.—(*N. Y. St. J. Med.*, July 1, 1959).

This report is concerned with some experiences with the use of tolbutamide (Orinase) in the diabetic clinic of the Coney Island Hospital. The purpose of the study, over an eight-to-twelve-month period, was to evaluate the applicability and practicability of this hypoglycæmic agent in a general clinic population. By extension, this would apply to diabetic patients seen in general practice.

Seventy-seven patients were selected for this study in conformity with the general requisites set by previous studies. These were diabetic persons who fell into the following category:—

(1) Used 40 units or less of insulin daily. (2) Had no history or record of repeated ketosis or acidosis. (3) Had no history or record of significant renal or hepatic dysfunction. (4) Responded to a loading dose (tolerance test) of 3 gm. tolbutamide by a 25 per cent or greater fall in fasting blood sugar four hours after administration of the dose.

Insulin was omitted for forty-eight hours prior to the test.

The loading dose test was included to indicate which patients might respond to therapy, and to preclude the development of keto-acidosis in potential non-responders.

The 77 patients observed over an eight-to-twelve month period were preselected on the basis of criteria indicating mild to moderate diabetes. No change in regimen was made other than the substitution of tolbutamide (Orinase) for insulin. The following conclusions were reached:—

(1) Tolbutamide is an effective hypoglycæmic agent in properly selected cases. (2) Diabetic control was equally good or improved in all but 8 of 77 patients. (3) No toxic effects were noted. (4) No patient developed ketosis or acidosis. (5) Patient acceptance was good. (6) The tolbutamide loading dose test is of only limited prognostic value for long-term response. (7) The use of an oral hypoglycæmic agent is a boon to the aged, infirm, incapacitated, allergic, or insulin-recalcitrant patient whose degree of diabetes justifies its use.

Kanamycin.—(*The Practitioner*, 182: June 1959).

The increasing difficulties encountered in the treatment of infections due to resistant strains of such micro-organisms as the staphylococcus and many of the gram-negative bacilli have led to the intensification of the efforts to develop new antibiotics active against these bacteria. The

discovery of Kanamycin is one of the most important results of this effort. Kanamycin was isolated from *Streptomyces kanamycetus* by Umezawa at the Japanese National Institute of Health and Tokyo University in 1957.

Kanamycin is usually administered by the intramuscular route in systemic infections. The currently recommended daily dose in adults is 1.0 to 1.5 g. and in children 15 mg./kg., given in divided doses every 6 to 12 hours. In severe infections this dose may be doubled for short periods of time.

Kanamycin appears to be one of the most effective anti-staphylococcus antibiotics available today. It is also active against most strains of *E. coli*, *Proteus* sp., the *Klebsiella pneumoniae*-*Aerobacter aerogenes* group, and many strains of *Pseudomonas aeruginosa* resistant to other antibiotics. It is usually ineffective in the treatment of infections due to *Diplococcus pneumoniae*, *Streptococcus* sp. and the anaerobic bacteria. It is bactericidal in its effect and is absorbed rapidly following intramuscular administration. It has the disadvantage of producing acoustic nerve injury when it is administered for long periods of time, or extremely high blood levels are maintained for short periods of time. Nephrotoxicity has not been a frequent serious complication, but it is a potential hazard.

Kanamycin has been administered successfully in virtually every known staphylococcal infection. In many instances its effect has been dramatic and life-saving, but when the causative organism occurs in avascular areas, systemic administration will not usually eradicate the staphylococci and surgical therapy must be used as a supplement to antibiotic therapy.

Because of the toxicity associated with intense or prolonged use of Kanamycin it should not be used in mild or self-limited infections or in patients with renal insufficiency, but it should not be withheld in moderately severe or severe infections.

Present day importance of parasitic infection of man.—(Dr. Seaton, M.B., M.R.C.P., D.T.M., *Liverpool School of*

Tropical Medicine.—*Br. J. Clin. Prac.*, pp. 874-76, 1959).

HELMINTHIASIS.—The three great classes into which all parasitic worms fall are the cestodes or tapeworms, the trematodes or flatworms and the nematodes or roundworms. Infections with adult tape-worms are hardly sufficiently common to be considered important, save by those who harbour them, and infections with larval tape-worms, cysticercosis and hydatid cyst are even less common, though they may be serious matters indeed to the unfortunate hosts.

Schistosomiasis.—The only trematode worms of great importance are the schistosomes, which provide the principal helminthic problem in the world to-day. The three species which affect man are *Schistosoma haematobium*, *S. mansoni* and *S. japonicum*. The first occurs chiefly in Africa, the second in Africa and parts of South America, and the third in China and certain of the Philippine Islands. The adult schistosomes, which are almost as long-lived as their hosts, dwell in the pelvic venules, where the female worm lays eggs. Most of these reach the exterior of the body by penetrating into the cavity of the bladder (*S. haematobium*) or bowel (*S. mansoni* and *S. japonicum*). Other eggs lodge in the substance of various viscera, where they provoke some degree of damage leading to fibrosis, the degree depending directly upon the weight and duration of the infection. If urine or faeces containing schistosome eggs are passed into fresh water, the eggs will hatch to produce larvæ infective to certain species of fresh-water snails, which are the intermediate hosts. These after serving as a site for enormous asexual multiplication by the parasite, shed into the surrounding water, larvæ which can infect man by skin penetration. Human infections are therefore acquired by contact with water containing the infective larvæ.

The foregoing sketch of the life-cycle of the schistosomes is necessary for an appreciation of the possibilities of controlling these infections. This

could, in theory, be effected by mass treatment of cases, or by killing the snails, or by persuading the people at risk to refrain both from depositing their excreta in water and from personal contact with infected water. So far none of these things can be done. Although it is possible to give a course of treatment which can be depended on to kill the schistosomes in a given case, the drug used (tartar emetic) is for various reasons unsuitable for mass treatment and no dependable drug has yet been discovered for this purpose, in spite of much effort.

Much research has likewise been devoted, so far without much success, to the search for a means of exterminating snails. If something were found as poisonous to molluscs as D.D.T. is to insects, the problem would be much easier. Educational campaigns designed to instruct populations on how to avoid schistosomiasis have not yet produced any notable reduction in the incidence of the diseases. They have indeed tended rather to increase, for the extension of irrigation schemes in infected areas has led to an increase in snail breeding.

The nematodes furnish the most successful examples of helminthic parasites of man. Among intestinal worms the hookworms and *Ascaris lumbricoides* each outnumber all the remaining helminths, while the various species of filariæ provide a less numerous but more interesting range of tissue parasites.

Hookworms:—The two species of hookworm, *Ancylostoma duodenale* and *Necator americanus*, are widespread throughout the tropical and subtropical world, where it is usual to find that considerably more than half the population harbours some of these worms. Whether or not any symptoms are produced by the infection depends to some extent upon the initial nutritional state of the host, but the most important determining factor is the number of worms present. Each worm causes a trivial loss of blood, but when the number of worms reaches three or four figures the blood loss becomes significant, and a pro-

gressive anæmia ensues which, if not checked, may be fatal.

Thus it is easy to see that, if hookworm disease is prevalent in a primitive community which depends for its survival upon its agricultural efforts, the general lowering of physical efficiency by the disease may well lead to famine, owing to the inability of the debilitated populace to grow and harvest the crops. Much good has been done in such communities by the mass treatment of the population with the object, not of eliminating the parasites, which is not feasible, but of reducing their numbers to a point at which the blood loss that they occasion is too small to be of importance. Hookworm infection does not survive in communities that make use of a sewage disposal system of any sort which does not involve leaving human faeces lying about the ground.

Ascaris lumbricoides:—The roundworm, as it is commonly called, is on the whole a benign parasite living harmlessly in the intestine and browsing upon its contents. It seldom gives any indication of its presence other than by making an occasional dramatic appearance at one or other of the natural orifices. These worms must, however, be accorded considerable importance in a world where food is none too plentiful, on the grounds that by reason of their enormous numbers they divert a significant amount of their hosts' food to their own use. In China, for instance, where the worm is commonest, it has been calculated that several thousand tons of *Ascaris* eggs are annually excreted by the population, the members of which support on an average about ten pairs of worms each. *Ascaris* is more susceptible than most worms to the action of anthelmintics. A recent and convenient method of treating an infected population is by single doses of piperazine given in one of its palatable preparations, such as 'Antepar' elixir. Although this will not eliminate every worm, it will substantially reduce the numbers.

Threadworms:—*Enterobius vermicularis* is the commonest parasite of

temperate climates. It is occasionally troublesome by causing itching when laying eggs on the perineal skin, but it causes no real physical damage and usually requires no treatment beyond indifference and contempt. If more active treatment is thought necessary, however, piperazine should be given to all members of an infected household for two periods of a week each, with one week's interval between them.

Filariasis:—This group of infections includes those due to *Wuchereria bancrofti* and *W. malayi*, which are responsible for elephantiasis and other syndromes due to lymphatic obstruction. These parasites are transmitted by a rather wide range of different species of mosquitoes in different parts of the tropical world, and are responsible for a good deal of disability.

The most successful of the control measures introduced have been those directed against the mosquitoes. The necessary steps are first to identify the responsible mosquito in the area, secondly to learn as much as possible about its biology and habits and then, armed with this knowledge, to apply D.D.T. in the way appropriate to the case. This has been successfully done in British Guiana. Another method of controlling these infections is chemotherapeutic. The drug diethylcarbamazine ('Banocide') has a powerful action upon the larval forms of these filariæ, which occur in the bloodstream, and it can therefore be used to render a population non-infective to mosquitoes.

Onchocerca volvulus:—Onchocerciasis, under its alarming name of river blindness, has in recent years become familiar to people visiting those parts of Africa where it occurs. It is transmitted by small troublesome biting flies, of the genus *Simulium*, which breed in running water. The adult worms live subcutaneously, sometimes in palpable nodules. The larval worms occur in the substance of the skin where they may provoke an itching papulo-urticarial reaction which waxes and wanes for many months. The larvæ also commonly occur in the conjunctivæ and cornea, though eye-

changes of a serious character are seldom found, except in long-continued heavy infections where blindness consequent upon keratitis and iritis may occur.

Onchocerciasis can be diagnosed with reasonable certainty in persons coming from an endemic region who have an eosinophilia in excess of 10 per cent and an itching papulo-urticarial rash affecting especially the back. Confirmation of the diagnosis should be sought by examining skin snips for the larval worms, but failure to find them is not unusual and does not exclude the diagnosis. The most satisfactory treatment of this condition is the intravenous injection of Antrypol, 1 gramme weekly for 5 weeks. The drug is inclined to damage the kidneys, however, and must be stopped if heavy albuminuria occurs during its administration. It kills the adult worms, and thereafter the larvæ slowly die off.

Use of biological products in therapeutics—Safe period of currency and storage.—(*New York State Med. J.*, 15-4-'59).

The question has frequently been asked if a biologic product can be safely used beyond the date marked on the label?

Obviously there must be an element of arbitrariness in the selection of the dating period for any particular product. A decision on dating is arrived at after considering a number of factors, such as stability of the product, storage temperature, type of container, and, in some cases for which the dating period is long, the type of closure used because it is subject to deterioration and must be taken into account. In general the safety of the product is not involved, and the main property implicated in dating consideration is, of course, potency which gradually deteriorates during storage...

The potency stability varies quite considerably from that of the antitoxins which are extremely stable to that of some of the antigens which are much more labile and to that of live vaccines, such as smallpox and yellow

fever vaccines, which require special precautions to maintain stability. Clearly this loss of potency is a gradual process and can be expected to be gradual also at the time that the date on the label is reached and exceeded. Although no untoward consequence may result from the use of such a product after the period prescribed for its use has expired, and in some instances such use may have value, the simple fact is that there is no way of extending the dating period once the vials in question are on the market or in various storage places, such as dispensaries or doctor's offices, without considerable misunderstanding and difficulty and even legal implications.

Once a particular lot of material has moved into distribution channels, it ceases to be a homogeneous group of containers. If the entire consignment were maintained under identical storage conditions by the manufacturer, it would be possible to re-assay its potency and, if this were satisfactory, to assign a new expiration date according to existing regulations and requirements. If a physician uses material which has exceeded its expiration date, he does so on his own responsibility.

Except in the case of biologics, such as smallpox or yellow fever vaccines, for which continuous maintenance at low temperatures is imperative even during transport, the determination of the dating period of most biologic products takes into account periods of time up to seven days at ambient temperatures to permit distribution through normal channels.

SURGERY

Open reduction of fractures.—(R. Roaf, F.R.C.S., *Br. Jour. Clin. Pract.*, 13: 7, July 1959).

In the present state of knowledge, it can be stated that fractures will unite most quickly and certainly if the bone ends are held in apposition and maintained in position without any open operation being performed. Open operation has a number of disadvantages.

Firstly, it appears that in itself it upsets the biological processes of repair and delays union. *Secondly*, there is always the risk of sepsis being introduced and *thirdly*, in the course of open operation, however skilfully it is done, there is a risk of stripping bones from their blood supply, damaging soft tissues and otherwise interfering with function. The indications for open operation may be *absolute, relative and optimal*.

The only *absolute* indication is where there is gross pressure on nerves or blood-vessels, which may cause serious impairment of function and where the pressure can't be relieved by closed means; e.g., dislocations of knee and shoulder, supra-condylar fractures of the lower end of humerus in children, fractures of the upper end of the tibia, also Lisfranc's dislocation. In the majority of fractures associated with pressure on blood vessels and nerves, the pressure can be relieved by conservative manipulation, but if this fails to relieve the pressure, open operation is usually desirable as a matter of urgency. The mere fact of diminution of a peripheral pulse is not an indication for open operation, but the presence of gross ischaemic signs is usually an indication that the artery should be explored.

Relative indications are certain fractures of the elderly in whom long-continued splinting or bed-rest might have disastrous results on their general health. They can be divided into those in which the fracture is irreducible and those in which it is reducible but unstable. A fracture may be irreducible because: (1) the fragment is so small that it cannot be manipulated; (2) there is interposition of soft tissues; or (3) the fragments are comminuted. Fractures are unstable if the line of fracture is oblique or if the muscle pull is parallel to rather than at right angles to the line of fracture.

Separation of the capitellar epiphyses in children, separation of the medial epicondyle of the humerus associated with a dislocation of the elbow and inclusion of the epicondyle in the elbow joint and fracture of the

head of the radius with tilting commonly occur in children and should all be treated by open reduction of the fracture and fixation of the fragment, usually by a trans-fixation, with a vitallium screw in the case of the capitellum and medial epicondyle.

Similar fractures occur in adults, for instance, when the anterior articular surface of the capitellum is knocked off, or there is gross comminution of the head of the radius.

Examples of comminuted fractures are fractures of the os calcis due to falls from a height, fractures of the lower end of the tibia due to falls from height, some fractures of the upper end of the tibia, fractures of the lower end of the humerus in elderly people and fractures of the head of the radius.

In general, operation should only be performed on comminuted fractures when displaced fragments are interfering with vital function and it is remarkable how often such fractures, if they are treated by early non-weight-bearing movements, give very gratifying results in the end.

Unstable fractures due to muscle pull include the common avulsion fractures, namely, fracture of the patella, fracture of the olecranon and fracture of the posterior tuberosity of the os calcis can frequently be reduced by positioning the limb in an unphysiological position, for example, putting the elbow in hyper-extension and the foot in forced equinus.

The list of optional fractures includes: fracture dislocation of the ankle (Pott's fracture) excluding fractures of the medial malleolus with displacement, which must always be operated on and Dupuytren's fracture, that is, gross tearing of the inferior tibio-fibular ligament with upward displacement of the astragalus, which also must be operated on (fractures of the astragalus, as mentioned above, occasionally require operative reduction although, even then, the results are frequently disappointing); fractures of both radius and ulna in adults may require operative reduction, although not so frequently as an isolated fracture of

the radius: Y-shaped fractures of the lower end of the humerus sometimes require open operation and fixation although on the whole, the results of conservative treatment are satisfactory.

Fractures in which it is undesirable to perform open operation, are those of the clavicle, of the shaft of the tibia, humerus and femur, of the forearm in children, supra-condylar fractures of the humerus in children, excluding those with gross pressure on the brachial artery, fractures of the pelvis, fractures of the phalanges and of the metacarpals and most comminuted fractures.

Hypertension and unilateral kidney disease.—(*J. Iowa State Med. Soc.*, June 1959).

The incidence of unilateral kidney disease among hypertensives has been said to be from one to six per cent. With the diagnostic methods used in the past, no more than 25 to 35 per cent of patients with hypertension and a preponderance of disease in one kidney were relieved of their hypertension by nephrectomy or corrective surgery when followed for one year or longer. The majority of those patients having successful operations had parenchymal kidney lesions from chronic pyelonephritis. The remaining ones had primary vascular lesions such as aneurysms, congenital anomalies, fibrous bands, emboli or atherosclerotic plaque formations in the renal artery. Unilateral kidney disease with hypertension has been reported after ischaemia of a portion of one kidney had developed from vascular lesions in small arteries of the kidney.

Although milder forms of hypertension may be seen with unilateral kidney disease, most patients present with accelerated or malignant hypertension. Thus, Perera and Hælig have pointed out that the disease often starts abruptly and runs a severe and rapid course, with high diastolic pressures and signs of necrotizing arteriolitis. Others have been impressed by the heavy proteinuria and at times polyuria demonstrated by these patients,

The disease is more likely before the age of 20 or after the age of 50 years. When the diagnosis is suspected, it often can be supported by certain diagnostic procedures. Intravenous pyelograms sometimes will demonstrate a smaller kidney shadow on one side than on the other. *The Howard test*, a differential kidney function test done by bilateral ureteral catheterization, has been helpful occasionally. In this test, a diminished volume of urine, together with a lower concentration of sodium in the urine from the abnormal kidney, suggests a favourable result from nephrectomy. This procedure is difficult to standardize, and both false negative and false positive results have been described. Visualization of the renal parenchyma by aortography done by the trans-lumbar or percutaneous femoral technique is probably the most dependable single procedure for demonstrating renal arterial abnormalities. This examination, however, has a significant morbidity, primarily because high concentrations of the contrast medium get into the vascular beds. For this reason, some physicians don't use it routinely when screening for unilateral kidney disease. More recently, the measurement of the accumulation of ¹³¹I-tagged Diodrast in the kidneys has been developed as an index of renal blood flow. Other radioactive labels also have been used for this purpose.

Diagnostic small thoracotomy in idiopathic pleural effusion.—(*J.A.M.A.*, 18-7-'59).

Exploratory thoracotomy with pleural biopsy was performed by Lansden and Falor in 17 patients who had idiopathic pleural effusions. In each case the operation was done because the usual procedures of thoracentesis, sputum examination, bronchoscopy, and scalene lymph node biopsy had failed to settle the diagnosis. The thoracic cavity was entered by an incision not exceeding 20 cm. in length through the sixth, seventh, or eighth interspace, which permitted exploration of the corresponding half of the thoracic cavity and removal of biopsy

specimens. The diagnoses were post-pneumonic effusion in seven cases, carcinoma in six, sarcoma in one, tuberculosis in two, and lymphoma in one. Two cases are described in detail to illustrate chronic tuberculous pleurisy in one patient and lymphoblastoma in the other. This method of "small thoracotomy" is suggested for cases in which idiopathic effusions remain unexplained after careful medical and laboratory examinations.

It has definite advantages over other methods in that the entire disease area can be observed, palpated, examined by biopsy, and, where practical, treated. Many hospital days and much morbidity can be eliminated when the aetiology of the effusion is ascertained and definitive therapy is started. The establishment of prognosis is an invaluable by-product of the procedure.

Steroid therapy in surgical patients.—(*J.A.M.A.*, 18-7-1959).

The increased use of steroids in the treatment of general medical problems has been paralleled to a moderate extent by the increased use of these drugs for surgical patients in the pre-operative and postoperative periods, as well as during operative procedures.

The most important condition in which steroids are useful in surgical patients is that of acute adrenal insufficiency after severe injury or illness. The most prominent sign of this condition is persistent hypotension which cannot be explained by blood loss or coronary disease and which does not respond to adequate blood replacement. In these conditions, rapid, adequate therapy with hydrocortisone is life-saving. Patients requiring operation who have been on long-term steroid therapy present the hazard of adrenal depression and an acute insufficiency during operation. We believe that the safest procedure is to prepare all of these patients with steroids prior to operation. Corticotropin may be of value before operation by effecting a feeling of well-being and increasing appetite and food

intake. Other beneficial effects of corticotropin include suppression of fever, toxicity, and malaise in conditions such as regional enteritis, and diminution of hypersensitive reactions in hæmolytic anaemia or thrombocytopenic purpura. Under such circumstances, when operation is contemplated in patients acutely ill with ulcerative colitis or purpura (less commonly with regional enteritis), administration of corticotropin may result in so much improvement that operation is made safe instead of being extremely hazardous. Contraindications to the use of steroids include active tuberculosis, malignant hypertension, uræmia, psychoses, and the presence of active ulcers in the gastrointestinal tract.

OBSTETRICS & GYNÆCOLOGY

Oxytocics in the induction of labour.—(*Hawaii Med. Jour.*, 18: 5, June 1959).

Dr. Bowles, M.D., of Honolulu writing in the June issue of the *Hawaii Medical Journal* on the dangers, uses, and precautions relating to oxytocics, states that the induction of labour with these drugs is potentially dangerous and that the obstetrician must be sure that he can justify it, if he uses it at all.

The following rules should be mandatory in all hospitals where oxytocics are in use for the induction of labour. It would seem logical to be more strongly positive that we *must* have these rules if mothers and their babies are to be properly safe-guarded.

The attending physician must be in constant attendance during the administration of oxytocin. On one large obstetrical service in New York, the delivery room staff are required to remove the needle from the vein if the attending physician leaves the patient.

It must be used only in a hospital, where facilities for anaesthesia, oxygen administration, and other emergency equipment are immediately available.

It should *never* be used:

1. In cases of suspected disproportion (one may add, never use it when in doubt as to position or relative

sizes of the maternal pelvis and the foetus).

2. Where caesarean section or myomectomy has been done.

3. In the presence of foetal distress.

4. In malpresentation including breech presentation.

5. In grand multiparas. (Usually this term is applied to a woman who has had eight or more children).

6. In placenta prævia.

7. In polyhydramnios.

8. In plural pregnancies.

PROCEDURE FOR ADMINISTRATION:—When oxytocics are to be used in the induction of labour, the following safeguards should always be taken:

(1) Follow a standardized dosage of the oxytocic (Bishop recommends one international unit of oxytocin in 100 cc. of diluent—saline, glucose, or water). This should be checked and double checked. Measure the oxytocin with a tuberculin syringe and add to it the diluent in the bottle after the drip has been started and flow regulated.

(2) Start the drip slowly and check frequently for unusual sensitivity of the uterus. Be content with a minimum number of drops per minute: say five initially, increasing very slowly. Keep a continuous written record of the number of drops per minute, and frequency and duration of the uterine contractions.

(3) Check the foetal heart tones frequently.

(4) Keep oxygen on hand at all times.

(5) Use double bottle technique so the flow of oxytocic solution can be cut off instantly and the plain diluting fluid allowed to flow instead.

The Stein-Leventhal syndrome: A curable form of sterility.—(I. F. Stein, Sr., *New England J. Med.*, 259: 420-423, Aug. 28, 1958, Boston, via *J.A.M.A.*, November 22, 1958).

The Stein-Leventhal syndrome consists of a history of secondary amenorrhœa and sterility, the finding of bilateral and symmetrically enlarged

ovaries, and the excretion of normal amounts of 17-ketosteroids and follicle stimulating hormone in the urine. In approximately 30% of the patients there is a varying degree of hirsutism; there is no virilism. The breasts are smaller than normal in 50% of the patients, and there is uterine hypoplasia in 75%. The direct diagnosis of the Stein-Leventhal syndrome rests upon the history and upon physical and pelvic findings corroborated by or first revealed by one of the following visual methods of diagnosis: (1) gynaecography (pneumoroentgenography); (2) culdoscopy; (3) colpotomy; and (4) laparotomy.

Trials in patients with the Stein-Leventhal syndrome with endocrine therapy, roentgenotherapy, and no treatment at all have failed to result in permanently restored reproductive function. By proper wedge resection more than 85% of the patients in the author's series have been rendered ovulatory, as proved by the occurrence of pregnancy, and the fertility has been maintained throughout the woman's normal reproductive span. The operation is essentially one of decompression of the ovaries rather than the removal of ovarian tissue. In all probability simple incision and puncture or multiple punctures alone may render a favourable result. Seventy-one of 96 patients were included in follow-up studies, from the standpoint of fertility, with the following results: (1) Sixty-three patients (88.7%) became pregnant one or more times. (2) One hundred forty-three pregnancies resulted, with 119 live births, including 4 sets of twins. (3) Two patients were undelivered at the time of this report. (4) Twenty-four patients had either miscarriages or stillbirths. In this series there was no ectopic pregnancies, no carcinoma of the endometrium, and no recurrence of bilateral polycystic ovaries. Although menses were restored in 95% of the women after surgical resection of the ovaries, one patient was amenorrhoeic for an entire year; she then began to menstruate spontaneously and has continued to do so regularly. Selectivity of patients for wedge re-

section is of prime importance. Neither the complaint of sterility nor amenorrhoea alone is sufficient basis in itself to justify surgical intervention.

Female suburethral diverticulum.—(N.Y. State Jour. Med., 15-2-59).

When present, a suburethral diverticulum in the female is frequently missed, ignored, or passed off by the examiner.

By definition, a diverticulum is a pouch or pocket leading off from a main cavity or tube. A suburethral diverticulum fits this description easily; not so easy is the demonstration of its communication to the urethra. Despite willing aid from our urologic colleagues, confirmation of the diverticulum by means of cystoscopy, endoscopy, or radiographic visualization is in most cases not attainable. This primarily is because the urethral opening or openings of the diverticulum may be small or exceedingly hard to find and at times situated where they are impossible to visualize urologically. The greatest incidence is between the ages of forty to fifty.

Suburethral diverticulum in the female results from a congenital anomaly or from an acquired disease. When infection appears, the diverticulum enlarges and symptoms develop.

The most common complaint is dyspareunia, often of long duration. The number of times physicians are consulted about this leading symptom without being able to prescribe active relief should give rise to suspicion that the diagnosis is being missed. Dysuria, frequent urination, and dribbling after urination are other symptoms consistent with suburethral diverticulum. One symptom we have regularly found is foul smelling urine, complained of by the patient herself. The examiner as he approaches a vulva prior to examination will concur. The pockets and pouches contain old urinary deposits which readily can become infected.

A diverticulum usually has a communication with the posterior wall of the urethra. Differential diagnosis

must include anterior vaginal cyst, relaxed anterior vaginal wall, cystocele, urethrocele, and urethrocystocele.

The treatment of suburethral diverticulum in the female is surgical and requires meticulous technique in excising the sac and making an accurate closure in layers. It is suggested that fine absorbable catgut chromic sutures be used (numbers 00 to 0000) throughout. Post-operatively, an indwelling catheter inserted for five days is sufficient and the customary antibiotics and sulpha drugs are administered.

Clinical evaluation of Ritalin hydrochloride in the newborn infant.—(J.A.M.A., July 18, 1959).

Methylphenidate (Ritalin) hydrochloride was administered intramuscularly to a group of 54 moderately or heavily medicated obstetric patients. It effectively reduced the depression of their newborn infants. The optimum dose appeared to be 0.1 to 0.2 mg. per pound (0.045 to 0.090 mg. per kilogram) of body weight. Subsequently it was found more practical to administer the drug intracutaneously directly to depressed infants after performing adequate oxygenation. Methylphenidate is not a substitute for oxygenation. Methylphenidate produced a marked increase in respiratory activity within 1 or 2 minutes and increased crying and body activity within 5 to 10 minutes. If the depression recurs, repeated administration of the drug is suggested. The drug produced mild side-effects, consisting in mild rise of the blood pressure and momentary nausea or retching. Methylphenidate may be used to supplement a specific narcotic antagonist, if the depression is attributable to a narcotic or to a combination of a narcotic and other depressants.

Abortion and corpus luteum deficiency.—(Obstetrical and Gynaecological Survey, April 1959, via Cur. Med. Dig., July 1959).

The group of workers at the Royal

Women's Hospital in Melbourne under the direction of Dr. Krieger for the past 8 years have attempted to establish the therapy of habitual abortion upon a firm aetiological basis with adequate laboratory background. The labour involved in performing some 5,000 pregnanediol assays reported can be appreciated only by those who have personally attempted this type of investigation. There are several points in the study which, in our mind, are open to question (Rawling, W. J., and Kreiger, Vera: Studies in the Prevention of Recurrent Abortion Due to Corpus Luteum Hormonal Deficiency, *Med. J. Australia*, 2: 567, 1958). One is the assumption that the increase in the pregnanediol excretion after the administration of ethisterone is actually due to the ethisterone. In our experience ethisterone does not cause a rise in pregnanediol excretion in the pregnant state. Our initial dosage has been between 60 and 75 mg. daily, continuing to 8 or 12 weeks, when 100 to 250 mg. daily is used. If the pregnanediol values remain low after 4 months it has usually been necessary, in our experience, to shift to some form of injectable progestogen.

However, most authors as well as the workers in Melbourne have neglected the great importance of quantitative chorionic gonadotrophin determinations as well as a better knowledge of the pathology of the abortuses in a study of this scope. Both of these studies in any investigation of habitual abortion are certainly invaluable. One would also like to know what the urinary oestrogen values were, as there has been no recent series published with this information. It currently seems to us that it is possible that a group of relatively late miscarriage problems, that is, between 4½ to 6 months, with normally developed foetuses, and normal pregnanediol excretion, having no evidence of anatomical uterine defects, may be due to an oestrogen failure.

In the June 1959 issue of the *American Journal of Obstetrics & Gynaecology*, Goldzieher and Benigno state that the evaluation of urinary pregnanediol

excretion should certainly be made and that, if possible, a double blind study should be done on those patients showing pregnanediol deficiency.

OPHTHALMOLOGY

Management of congenital cataracts in children.—(*The Journal of the Louisiana State Medical Society*, February, 1959).

Ellis and Haik of the Louisiana State University School of Medicine review the various forms of an important congenital anomaly and its surgical treatment, in which good judgement and skill are essential factors.

The newborn infant keeps his eyes closed most of the time and sleeps a great deal. He has small pupils and does not have good fixation. Since it is not apparent that he cannot see, an infant is usually several weeks or months old when his congenital cataracts are discovered. Partial cataracts may be overlooked for a long period of time because the patient will have enough vision to get along fairly well. Sometimes the diagnosis of cataracts is not made until the patient develops a strabismus or it is noted that one eye fails to grow in size as rapidly as the other one.

In about half of the cases of congenital cataracts there are other ocular anomalies. Some of these include microphthalmus, subluxation of the lens, nystagmus, strabismus, amblyopia, aniridia, choroidal and retinal diseases.

A moderately high percentage of these children will have mental retardation. It may not make its appearance until the child is 4 years old or older. The mental retardation is not necessarily due to the lack of vision for there are many blind patients who are mentally normal. Some children do improve after their vision is restored, but many do not.

Frequently, there are other associated congenital anomalies or metabolic disturbances of a constitutional variety found in these children. These include cardiac, skeletal, central nervous system, visceral, and various other anatomical anomalies.

Most congenital cataracts are stationary, and if they are small, will cause little or no disturbance of vision. There is a definite hereditary tendency in congenital cataract, embryonal nuclear cataract, lamellar cataract, coralliform cataract, spear cataract, floriform cataract, and disc-shaped cataract.

The surgical prognosis in congenital cataracts must be guarded because it is not as good as it is in the senile type of cataract. At least half of these patients have other congenital ocular anomalies which may complicate the surgery. Only about 50 per cent of the patients have postoperative visual acuity of 20/100 or better. Nine per cent have 20/200 visual acuity and 17 per cent are blind for all practical purposes. Only 8.4 per cent have reading vision and all patients with nystagmus have a visual acuity of less than 20/50.

A visual acuity of one-fourth of normal usually seems rather poor. For postoperative congenital cataract surgery it is considered a good result, and the parents of these children must be told the facts so they can understand them and will not be disappointed. If a child with congenital cataracts has 20/50 visual acuity or better, it is much better judgement to leave the cataract alone.

Cinematography of human retinal vessels.—(*J.A.M.A.*, 18-7-'59).

A practical, clinical and research technique:—Ophthalmoscopy has become a part of the routine general physical examination; however, fundus studies with the hand ophthalmoscope primarily have been directed toward the recognition and evaluation of morphological changes in the retinal vessels and other structures of the fundus. These changes generally can be recorded satisfactorily with commercially produced cameras which take single-frame pictures. In contrast, functional changes such as in the character and amplitude of pulsation of the retinal vessels or in the movement of blood through them have received relatively little attention. In recent years these

functional changes have become increasingly important to clinicians and investigators in several fields of medicine, but there has not been a satisfactory way to record these alterations for research, teaching, or records of individual patients. For example, in systemic vascular disease such as atherosclerosis, early clinical manifestation are difficult to detect; therefore, criteria for evaluation of therapy early in the course of the process generally are inadequate. An effort has been made to recognize changes in elasticity or reactivity of the retinal vessels as possible early manifestations of systemic vascular disease. In hypertensive disease, Sieker and Hickam have evaluated this factor by studying the constriction and dilation of the retinal arterial tree while the patient breathed oxygen. They have demonstrated these changes by still photographs of the fundus, but in our experience alterations in calibre and amplitude of pulsation are more readily discernible in cinematography.

Such changes not readily discernible with ophthalmoscopy or serial still photography can be demonstrated by a practical technique of cinematography designed and in use at the University of Oregon Medical School. With a special camera, variations in amplitude, character, and rhythm of pulsation of the retinal arterial system can be detected for research and teaching purposes, and to aid in differential diagnosis, or to permit early evaluation of therapy. The camera contains three basic units; a mounted 20 D. condensing lens a light source with means of changing magnification, and the camera body containing film and a continuous focusing device.

Ophthalmodynamometry.—(*J.A.M.A.*, 18-7-'59).

The use of the Bailliant ophthalmodynamometer makes it possible to apply increasing, measured pressure to the anesthetized sclera while the observer watches the retinal arteries.

Ophthalmodynamometry is a clinical method for determination of ophthalmic

arterial pressures in a rapid, safe fashion. Its usefulness as a diagnostic method for internal carotid arterial insufficiency appears well established. The determination and comparison of the ophthalmic artery pressures with the patient in the supine and the standing positions appears to enhance the diagnostic sensitivity of this test. Indications for ophthalmodynamometry are:—(1) clinical evaluation of cerebrovascular disease (strokes due to carotid artery occlusion, pulseless disease, aortic arch syndrome), (2) study of any case of amaurosis fugax, (3) evaluation of carotid ligations and endarterectomies, (4) evaluation of response to anticoagulant therapy in carotid disease, and (5) routine examination prior to arteriography.

Use of ophthalmodynamometry in study of cerebro-vascular disease has given rise to these observations:—The posture test appears to facilitate the diagnosis of carotid insufficiency in some cases. Systolic pressures should be obtained in patients in whom no unequivocal difference in diastolic values exists. Ophthalmic artery pressure in carotid artery disease may rise with anticoagulant therapy. Difficulty in obtaining reproducible values on ophthalmodynamometry should suggest auricular fibrillation or other arrhythmia. The technique is of definite clinical value in following carotid ligations and the effectiveness of endarterectomy.

Diabetic blindness related to type, length of illness.—(*via New York State J. Med.*, 15-4-1959).

Blindness as a complication of long-term diabetes may be prevented by early detection and adequate control of the disease, a new study has suggested.

The study, conducted at Joslin Clinic, Boston Diabetes Detection Centre lends support to the "growing conviction" that complications of long-term diabetes are related to the degree of control maintained over the years.

Writing in the Feb. 28, 1959, *Journal of the American Medical Association*, Drs. Howard F. Root, Stanley Mirsky,

and Jorn Ditzel said the prevalence of blindness due to diabetes has been rising as more persons survive diabetes for long periods.

Diabetes is a disease in which the body's utilization of sugar is impaired. The usual treatment involves diet control and injection of insulin, a substance necessary for the breakdown of sugar in the body.

Diabetes appears to seriously disturb the body's whole metabolism (the physical and chemical changes in the body). The disturbance apparently plays a role in the development of a degenerative eye-condition known as proliferative retinopathy in which there are changes in the retina and blood vessels. It may lead to blindness.

The doctors studied the records of 847 persons who developed *proliferative retinopathy* during the last thirty years. They found that none of the patients had good control of diabetes through diet or insulin therapy from the onset of the disease. All had severe diabetes of long duration, usually beginning at a relatively early age.

However, many other patients are known to have survived diabetes with onset in childhood for periods of twenty to thirty years without any evidence of retinopathy when their diabetic treatment had been adequate.

The authors feel that proliferative retinopathy can be prevented and postponed by *early diagnosis and continuous control*. They said physicians are "obligated to plan treatment and supervise management in such a way as to provide the best control attainable at the present time...."

The study showed:—

—That the 847 patients had diabetes for an average of seventeen years before developing proliferative retinopathy.

—That nearly half of them had diabetes before they were twenty years old and the rest before the age of forty. Most of them had difficulty in controlling the disease.

—That among the last 206 consecutive cases there was no case of blind-

ness in a patient under twenty years of age, but that 25 per cent of those over twenty were blind.

In summary the doctors said that *three factors appeared to influence the development of retinopathy in diabetics: namely; long duration of the ailment; the inability to maintain adequate control over the disease; and most important, the early age of onset.* Generally when diabetes begins early, it is severe, whereas diabetes developing late in life is generally mild. Thus early diagnosis and continuous control of diabetes is of "maximum importance in postponing and preventing" proliferative retinopathy.

Alpha-chymotrypsin in cataract extraction.—(*Br. Med. Jour.*, 1-8-1959).

The description by J. Barraquer of the use of alpha-chymotrypsin in cataract extraction before the Royal Academy of Medicine of Barcelona, 8-4-1958, led to trial of this method by ophthalmic surgeons both in Britain and abroad. The ideal method of extracting the lens from the eye is by the intracapsular method whereby the lens is removed complete within its capsule. To do this, the suspensory ligament of the lens must be ruptured—a manoeuvre normally effected by a combination of traction on the anterior lens capsule and pressure on the surface of the globe. In the aged the suspensory ligament is weak and it tears readily, but in younger patients and the lens capsule is liable to tear before the zonule.

Cataract is not uncommon in those between 40 and 60 years of age, and in these presenile cases intracapsular cataract extraction may present operative difficulties. Because of its proteolytic action, alpha-chymotrypsin weakens the suspensory ligament of the lens. After irrigation of the posterior chamber of the eye with a solution of alpha-chymotrypsin (1:5,000) the suspensory ligament becomes soft and will tear readily, while the lens capsule, which is more resistant to the action of the enzyme, remains strong. Other intraocular structures do not

appear to suffer damage. The iris and the deep layers of the cornea are protected by their epithelial and endothelial coverings. The vitreous, too, appears to be unaffected, probably because the suspensory ligament itself acts as sufficient barrier.

Cogan, Ainslie and Zorab independently treated with this drug almost 200 cases, and no complication which could be definitely attributed to the use of alpha-chymotrypsin was reported. It would appear that this enzyme can be of assistance even in senile cataract extraction, but is of the utmost value in the treatment of presenile cataract and cataract affecting the young adult. Whether it will be as valuable in the treatment of congenital cataract, however, seems doubtful. In infants and children there are often adhesions between the posterior lens capsule and the vitreous face, so that even if the alpha-chymotrypsin completely dissolves the suspensory ligament of the lens intracapsular extraction in such cases is apt to be followed by serious vitreous loss. Certainly much more research will be required before it will be possible to advocate intracapsular extraction as a substitute for the usual method of dissection in the early treatment of congenital cataract.

PÆDIATRICS

Cardiac murmurs in the first few days of life.—(*Proc. Royal. Soc. Med.*, January 1959).

Estimates of the incidence of congenital malformations of the heart are rising with better observation and methods of investigation. Keith *et al* (1958) says 5 per 1,000 live births; Carlgren (1958) says 6 per 1,000 live births. It may well be even higher.

The recorded incidence of murmurs heard in neonates depends upon the diligence and acuity of the observer more than anything else. But the definition of the neonatal period also contributes. The excellent paper on this subject by Richards *et al* (1955) puts it as high as 17 per 1,000 live births.

The recorded incidence at University College Hospital has varied widely with the keenness of hearing and otherwise of the observers, but average around 10-12 per 1,000 live births. We became interested in these noises ten years ago and have been following them since. All have been heard by two people, the majority by three or more.

For the purposes of this discussion I propose to deal with those heard in the first 14 days, though we have 11 more heard in the second fortnight of life.

The teaching has been that most of these murmurs are not significant. Our experience is that this is not so (*Table I*).

TABLE I

Total live births 9 years to 1957	.. 11,855
Total murmurs heard 1—14 days	.. 99
Total followed	.. 88
Persistent	.. 49
Significant (investigated)	.. 29
Dead	.. 15

The next group (*Table II*) are particularly interesting and would not have come to light but for the follow-up. They are recurring murmurs.

TABLE II

Murmurs disappearing and recurring	... 17
Significant (investigated)	... 8
Persistent (not investigated)	... 7
Disappeared again	... 2

The importance of this study is only that murmurs heard in the first few weeks of life are in the majority significant. Those that vanish apparently for ever do so usually within the first week of life. Some murmurs recur and are significant. So all murmurs heard at this time should be followed.—(Dr. R. E. Bonham-Carter, London).

DERMATOLOGY

Sudden graying of hair may be a form of skin disease.—(*From New York State J. Med.*, 15-5-1959).

History and legend are full of stories of people who grayed suddenly after severe emotional stress. Medical reports tell of graying after acute organic illness.

Among the famous who reportedly grayed suddenly are, Queen Marie

Antoinette, after hearing her death sentence, and Ludwig the Bavarian, after having condemned his wife to death. Rapid whitening has been reported to occur in mental patients, in paralysed patients, and in persons with eye ailments.

Just why such sudden whitening occurs is not known, but a Brooklyn dermatologist has come up with a possible explanation for at least some of the cases. Dr. Alfred J. Ephraim of New York University writing in the February *Archives of Dermatology*, published by the American Medical Association, thinks some of the cases may be a form of vitiligo, a skin disease in which the skin loses its pigment.

He reported the case of a man whose hair turned white within six weeks after an accident. At first, the change was attributed to a head injury suffered in the accident. However seventeen months later, the doctor again saw his patient and realized that he was suffering from vitiligo. The doctor examined pictures taken immediately after the man's hair changed colour and found that his skin even then showed signs of vitiligo.

Dr. Ephraim is convinced that his case resulted from vitiligo and he believes that some other reported cases may also belong in the group of vitiligos. "It seems physiologically difficult to understand how the hair, which, once formed, is a structure without nerves or blood supply, can throughout its length undergo rapid physicochemical changes directly due to emotional influence," Dr. Ephraim said.

Exactly why hair suddenly turns white is not known. In fact, it is not even definitely known whether the usual graying process starts at the root or at the tip of the hair or whether the pigmented hair falls out and is replaced by a white one. Dr. Ephraim questioned hairdressers who said they believe that pigmented hair turns white at once. They never observed short white new growth but only long white hairs during the period of graying.

Because it takes an average of five months for a plucked hair to regenerate and to grow to a length of four-fifths of an inch, it is impossible for a pigmented hair to fall out and be replaced overnight by a white one. The slow growth also negates the explanation that persons forget to dye their hair.

One of the most accepted theories of what happens in sudden graying is that air bubbles enter the hair while the pigment is fully retained. These air bubbles make the hair appear white through light reflection. Another theory is that some subtle damage is done to the cells that contain the pigment.

Dr. Ephraim also pointed out that it is known that the pigment-producing cells originate from the same area as the central nervous system cells. "This neurogenic origin may perhaps lead to an explanation of the phenomenon of rapid pigment loss." Until then, the fact remains that sudden whitening does occur in relation to emotional and organic upheaval. Dr. Ephraim does not know why, but he does believe, on the basis of his one case, that some occurrences may be related to the development of vitiligo.

RADIOLOGY

The hazards of X-rays.—(*The Practitioner*, June, 1959).

No-one would deny the undoubted benefits of diagnostic radiology. This is all the more reason why those responsible for ordering and carrying out such examinations should ensure that they are reduced to the lowest possible number and that the exposure for each patient should be the least necessary for effective examination. In its interim report on 'Radiological Hazards of Patients' the Adrian Committee gives a reassuring account of the safety of mass miniature radiography. 'Properly conducted examinations of this kind,' they say, 'make a negligible contribution to the total radiation to which the population is daily exposed.' The only restriction they propose is that mass miniature radiography should not be used as a

case-finding procedure in children or in pregnant women.

Although the report is an interim one, and concerned primarily with mass miniature radiography, the authors lay down some general principles for the reduction of unnecessary X-rays. Two of these are of paramount importance to the clinician:— (1) 'There should be clear-cut indications before an X-ray examination is requested.' (2) 'Strict control of progress and repeat X-rays is essential.' It is to be hoped that all clinicians will give serious attention to this warning that, by the unnecessary use of diagnostic radiology, the profession is adding to the radiation hazards to which the population is now exposed.

The usefulness of neomycin in retrograde pyelography.—(*N. Y. State Jour. Med.*, July 1, 1959).

Although retrograde pyelography is invaluable as a diagnostic procedure for studying the upper urinary tract, experience has placed certain limitations on it. Intravenous pyelograms may be contraindicated because of impaired renal function or a history of certain allergies. Infection may be spread from one area of the urinary tract to another, or there may be systemic reactions, particularly in hydronephrotic kidneys or in those obstructed by stone, stricture, or tumour. These risks are especially evident when the condition of the kidneys is unknown prior to examination.

Since we have seen untoward reactions following retrograde pyelography at Bellevue Hospital, we undertook the present study, that of determining the effect of neomycin as an additive to the contrast medium in this procedure.

The prerequisites of the antibiotic additive may be briefly summarized as follows:—

(1) Lack of toxicity in effective concentration. (2) Significant bactericidal activity against the organisms commonly found in the urinary tract. (3) Chemical compatibility with the urographic contrast media. (4) Stabi-

lity of the combination for long periods of time at room temperature.

A controlled study comprising 140 consecutive unselected pyelograms was carried out. Renografin, both without and with 2.5 per cent neomycin base (as sulphate), was used as the contrast media. Left pyelograms were performed in 61 and right ones in 79 patients; 18 patients underwent simultaneous bilateral pyelography. All left pyelograms were performed with the medium containing the antibiotic, while the right studies were carried out without the addition of the antibiotic. In all instances the medium was introduced with a hand syringe, with various operators performing the task. Doses of the media ranged from 3 cc. to 35 cc.

Renografin either with or without neomycin, in the strength and the amounts used in our studies, caused no untoward reactions or signs of toxicity. Although in some patients evidence of pyelotubular and pyelovenous backflow was observed on both sides, no systemic toxic reactions were noted.

It appears that the use of neomycin sulphate as an additive to pyelographic contrast media has considerable value. The addition of neomycin has not affected the quality of the films. It permits retrograde pyelography in the presence of urinary infection and in cases in which it was previously contraindicated.

BOOKS RECEIVED

A Treatise on Hygiene and Public Health—Dr. B. N. GHOSH, F.R.F.P. & S. (Glas.), F.R.S. (Edin.), M.S. Scientific Publishing Company, 85, Netaji Subhas Road, Calcutta-1.

Chemotherapy (A Symposium)—Dr. B. MUKHERJI, F.A.A.S., F.A., Ph. S., F.N.A., Director, Central Drug Research Institute, Lucknow.

Your Keys to a Happy Home—M/s. Jaideva Bros., Atmaram Road, Baroda.

NEWS AND NOTES

Doctors for Rural Service

The Working Groups on Health of the Union Government and the State Governments of Mysore, Kerala and Madras, which met at Vidhana Soudha, Bangalore considered how some vital health programmes are to be implemented in the Third Five-Year Plan.

Training of necessary personnel for implementing the several schemes and also the question of post-graduate medical education in the light of the preparedness of the Union Government to extend its full assistance to the States were also discussed. It was pointed out that all doubts of the State Governments were set at rest.

The need for the creation of conditions which will help to overcome the shortage of medical and para-medical personnel for rural health services was also discussed in the light of the successful measures taken in this regard by the West Bengal Government.

It was impressed on the State representatives that until service conditions were improved, it might not be possible to overcome the difficulties in this regard merely by producing more doctors.

A suggestion regarding reversion to the licentiate course of training was also discussed in detail. While conceding that the suspension of the licentiate course might have been premature under the conditions prevailing it was considered that revival at this stage was neither desirable nor would help to obtain medical men for rural health schemes.

Drive Against Malaria

The Government of India has received another grant of Rs. 8 crores from the United States out of P.L. 480 Funds.

According to a recent agreement between the Government of India and the U.S. Technical Cooperation Mission, these funds which have been given to finance the *Malaria eradication programme* will be used for the local purchase of materials, equipment, and

DDT, and staff salaries, allowances and expenses.

The National Malaria Control and Eradication Project, initiated seven years ago, has received Dollar grants worth Rs. 23.7 crores from the U.S. The project is directed at eradicating malaria from India and affording full protection to the entire nation within the next few years. The latest allocation brings the total of PL 480 rupee assistance to India to Rs. 162 crores.

Next W.H.O. Session to be held in India

The next session of the World Health Assembly will be held in India in 1961. The expenditure to be incurred by India to hold the session will be about Rs. 10 lakhs.

Madras Pharmacy Council

The Madras Government have nominated the following five persons as members of the Madras Pharmacy Council with effect from September 15, 1959:—Messrs. Wilfred Pereira, K. Venkatapathi, K. S. Srinivasavaradan, A. R. Govinda Rao and (Dr.) K. P. Sarathy.

Kurnool Medical College Increase in Strength Permitted

The Syndicate of the Sri Venkateswara University granted permission to the Government Training College, Kurnool, to increase the number of admissions from 110 to 120.

Regarding the increase of admissions from 50 to 75 both in Pre-Professional and First M.B. B.S. classes in the Medical College, Kurnool, the Syndicate sanctioned the request of the State Government, subject to the approval of the Medical Council of India.

Training of Opticians

A School of Opticians is proposed to be started at the Ophthalmic Hospital, Madras, under a scheme for the training of opticians sponsored by the Government of India in the Second Five-Year Plan. In this connection the State Government has sanctioned an

expenditure of Rs. 4,26,700 for the acquisition of a building in Egmore together with the lands in its compound for the expansion of the Ophthalmic Hospital.

Family Planning Scheme

A Committee has been set up to review progress of the family planning programme and to suggest proposals for inclusion in the Third Five-Year Plan.

The chairman of the committee will be Shrimati Dhanvanti Rama Rau, the members, Shrimati Shakuntala Paranjpye, Shrimati Soundaram Ramachandran, Dr. Unwalla, Dr. Kamala Ramaier, and the Secretary, Lt. Col. B. L. Raina, Director, Family Planning Directorate-General of Health Services.

India's First Central Medical Library

A Long-felt Need

India will have its first Central Medical Library by the end of the Third Five Year Plan if the recommendations of the D.G.H.S. Advisory Committee are accepted by the Planning Commission.

The need for such a centre for use of medical research workers and scholars has been stressed in view of the increase in the number of medical institutions, coaching medical graduates, in the country. The Bhore Committee, it is recalled, had also recommended such a project about a decade ago.

The D.G.H.S. Advisory Committee has recommended a 15-acre plot near Medical Enclave in south Delhi, for the purpose. A Rs. 4,000,000 project, the library will be completed in three or four phases and be on the pattern of a national library. Branches will also be opened at Bombay, Madras and Calcutta, which may borrow books from the Central Library in New Delhi for the use of research workers and scholars in their respective regions.

The main library hall in New Delhi will have a capacity for about 350 people to sit and read. A rich collection of books on medicines will be available to medical students. All the books and periodicals received by the

D.G.H.S. library will also be housed in this centre.

It is proposed to house back-numbers of all the important medical journals for the past 30 years in the library, which will also subscribe to about 5,000 journals to begin with. Recommendations have also been made to amalgamate the present Medical Library in the D.G.H.S. and C.R.I., Kasauli, with the new project. The library will also serve as a headquarters for bibliographical work in the country.

A microfilming section, which will supply photostat copies of articles appearing in rare medical journals, is also proposed to be attached to it. The library will also possess its own darkroom and photographic processing equipment.

The proposed library will also undertake translation of foreign medical journals into English.

Considerable aid by way of equipment and money has been assured for the project by a foreign agency.

A medical graduate was sent abroad for special training as librarian to man the proposed library, about 10 years ago. His services will now be fully utilized.

New Research Machine Measures

Radioactivity in Human Body

The Walter Reed Army Institute of Research in Washington is operating a unique machine that directly measures natural and acquired radioactivity present in the human body.

Elements emitting gamma radiation can be identified, localized and their total activity quantitated rapidly and with remarkable accuracy on the device.

The Walter Reed facility measures potassium-40 and cesium-137 contained in the human body.

Several thousand persons have been examined since the machine was installed last year, with the bulk coming from the millions of tourists who come to Washington, Walter Reed personnel going overseas and returning and members of Embassy staff. To

determine the total amount of radioactivity in the body, a person is placed in an armour-shielded cylindrical tank for 200 seconds. The shield reduces natural background radiation. Gamma protons from natural and acquired radioactivity in the body, cause light flashes in organic scintillating liquid contained inside the wall of the tank. The flashes are electronically counted and recorded on instruments outside the tank.

If it is concluded that an unusual amount of radioactivity is present, the patient is placed in the spectrometer room. The room is erected from seven-inch armour plate taken from a World War II battleship to ensure absence of man-made radioactivity. It takes one hour for the spectrometer to identify and locate the radioactive materials by means of a copper-plated sodium iodide crystal suspended over the individual.—(U.S.I.S. Bulletin, dated 19 May, 1959).

The XI All India Pædiatric Conference, Bombay-1

December 6th to 8th, 1959

The XI All India Pædiatric Conference will be held at Bombay from 6th to 8th December, 1959. Dr. J.K.G. Webb, President of the Indian Pædiatric Society, will preside.

The agenda will comprise of :—

1. Symposia on (a) Disorders of liver in children; (b) the institution of Pædiatric Training Courses in the Universities and the creation of training facilities in the Medical Colleges and (c) poliomyelitis in children.

2. Original papers will be presented on various aspects of Child Health by pædiatricians and members of the medical and allied professions interested in pædiatrics from all over the country as well as foreign delegates.

Pædiatricians, Maternal and Child Health personnel and members of the general medical profession, are all cordially invited to attend and participate in the deliberations of the Conference.

Those who wish to present papers will kindly intimate at once to the Hon. Secretary, Indian Pædiatric Society, 95, Dilkhusa Street, Calcutta-17 and send abstracts of their papers to reach him before the 31st October, 1959. Enquiries regarding accommodation and other facilities may be addressed to the Secretary, Reception Committee, "Roxona," 109, Queen's Road, Bombay-1.

Railway concession will be available to persons attending the Conference.

The Plantation Medical Association of India

At a meeting of tea-garden doctors of Dibrugarh and Tinsukia circles held on April 26 at Chabua with Dr. N. Bhadury in the chair, it was resolved unanimously to start an association of all medical personnel in plantations (including doctors, pharmacists, nurses, midwives, health visitors, antimalaria and line inspectors etc.) under the name of "The Plantation Medical Association" of India. The aims and objects of this Association are :—(a) to safeguard the interests of the medical and auxiliary personnel in plantations and (b) to help the plantation authorities, the Government and the people on medical matters. This Association is not a Trade Union and has no political bias of any sort.

A committee consisting of nine members has been formed with Dr. N. Bhadury as President and Dr. K. L. Sen Sarma as Secretary. Further particulars may be had from the Secretary, Gillapukri Tea Estate, P.O., Tinsukia, Assam.

CORRIGENDUM

ANTISEPTIC, Vol. 56: No. 9, September 1959, page 693. For 'Hydrarinophthalarine', in lines 2 and 5, Read 'Hydrazinophthalazine.'

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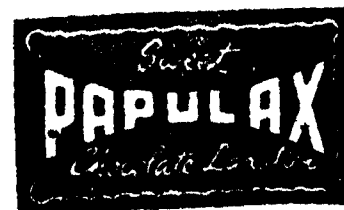
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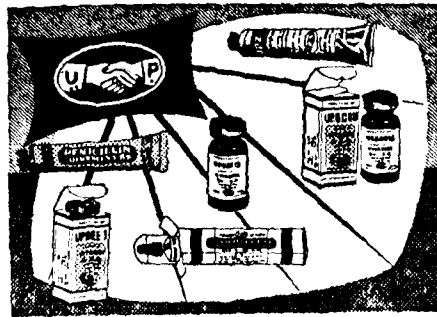
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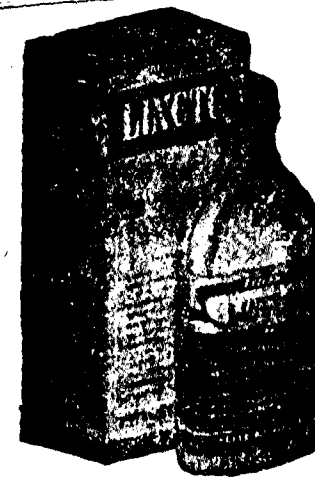
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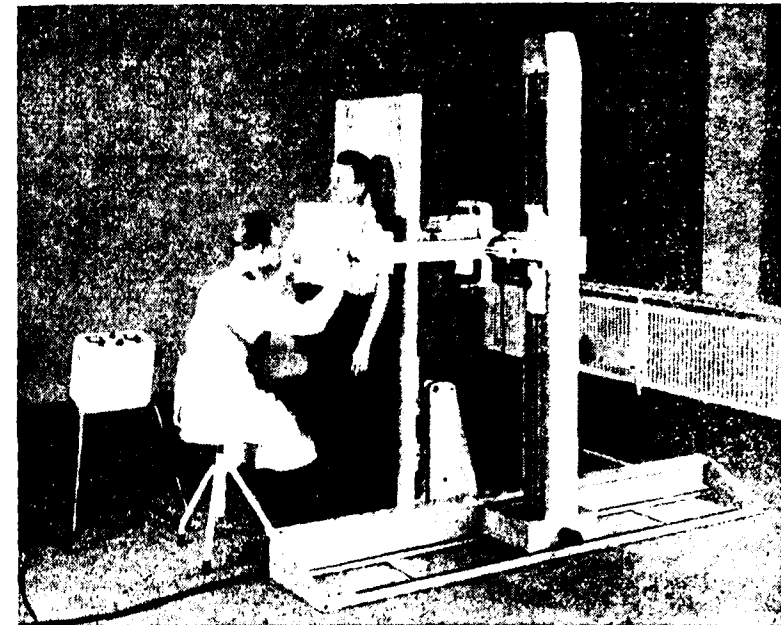
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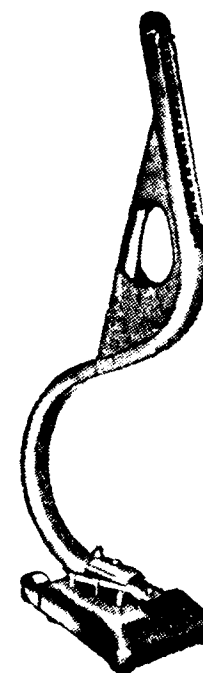
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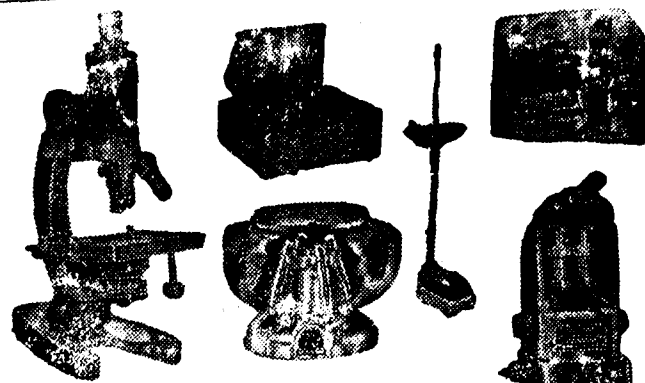
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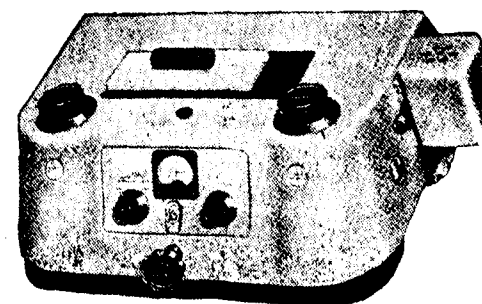
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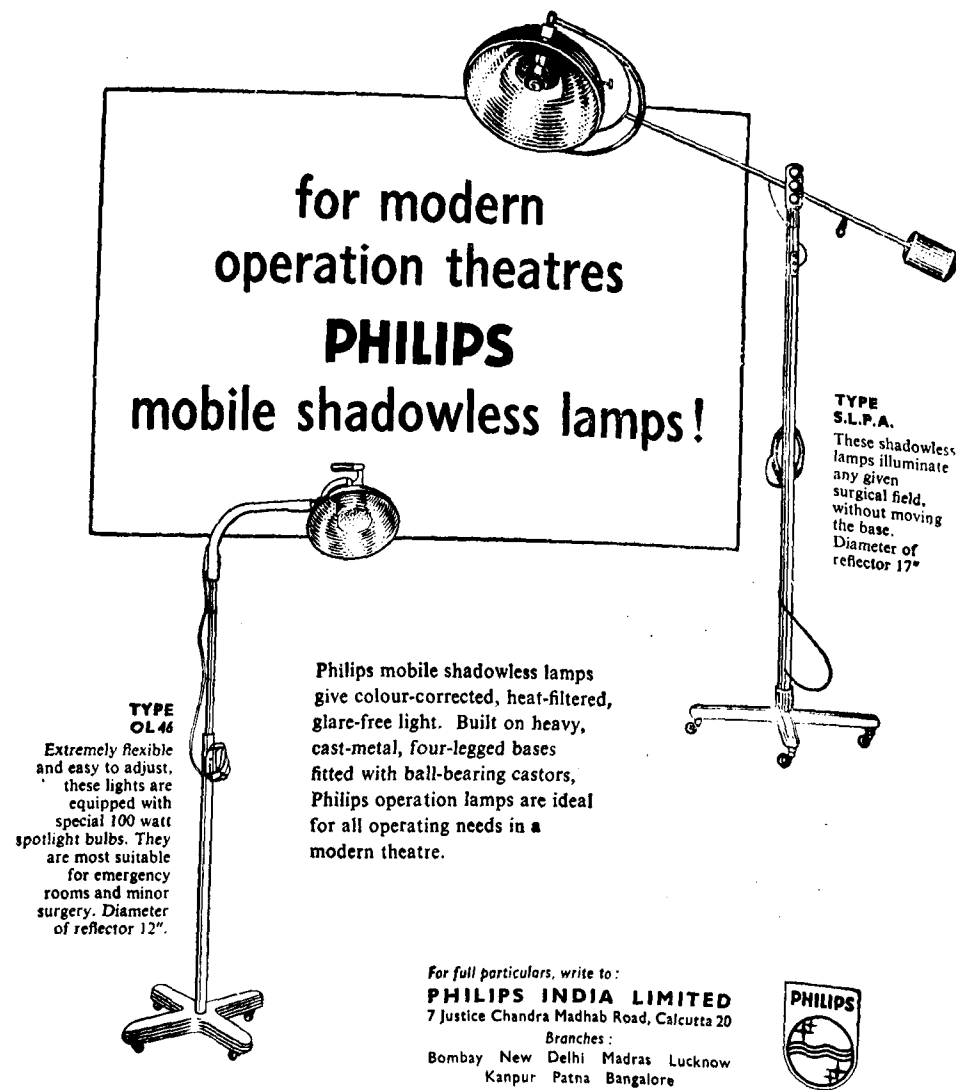
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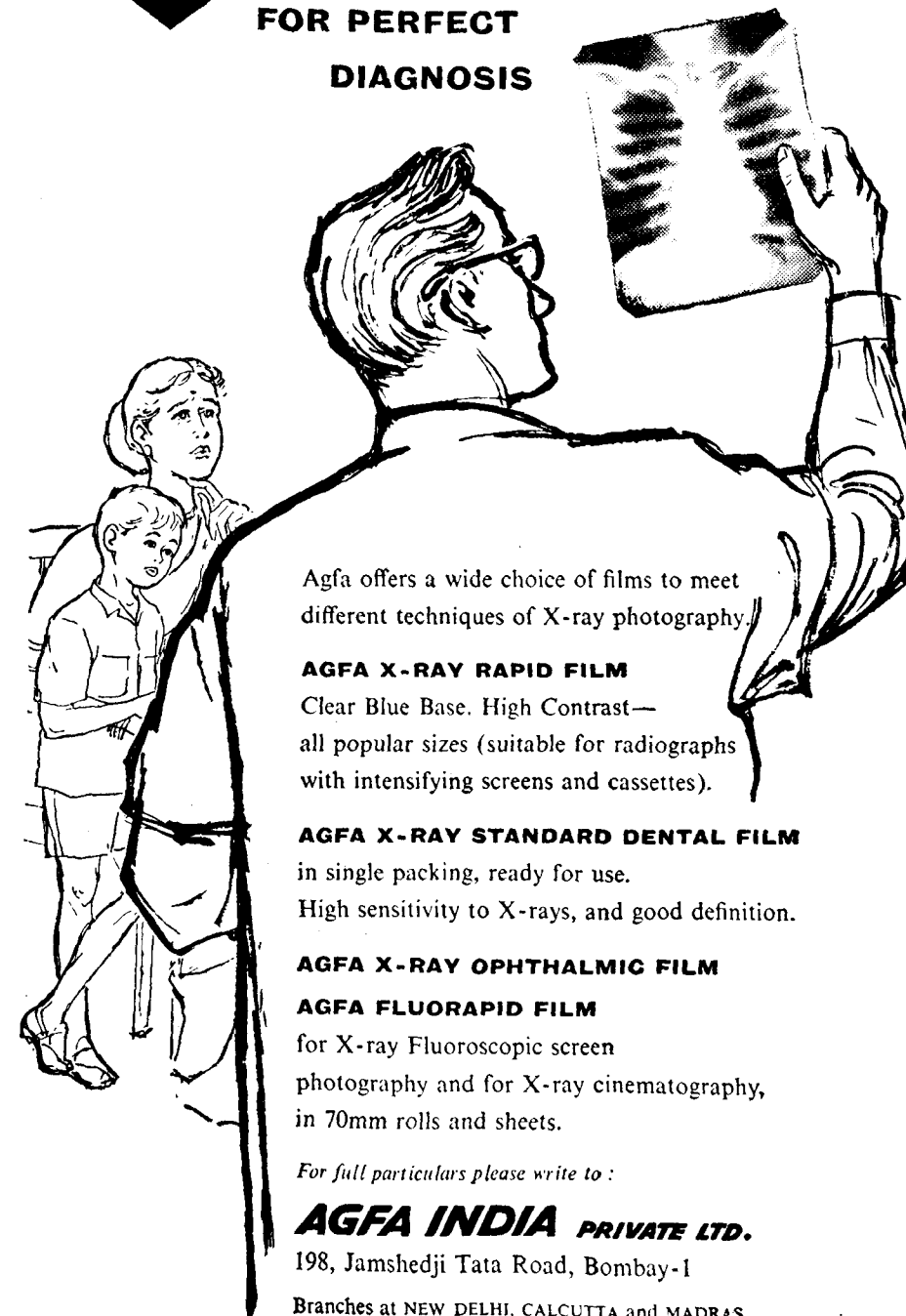


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Vol. 56, No. 11]

THE ANTISEPTIC

[Nov. '59]

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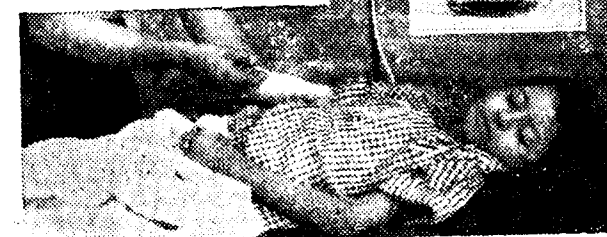
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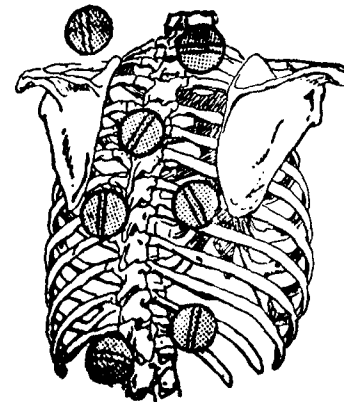
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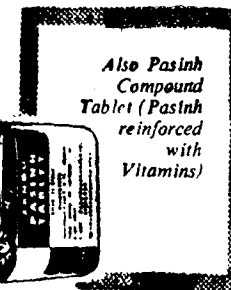
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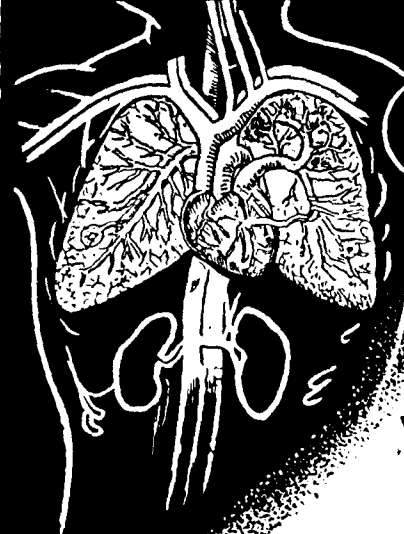
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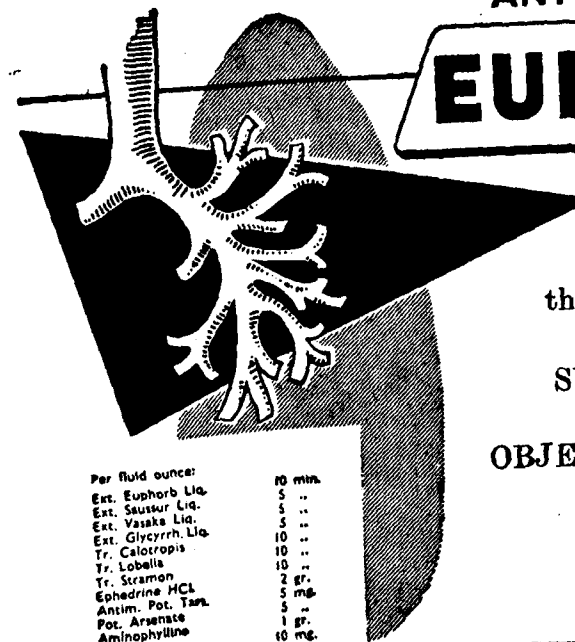


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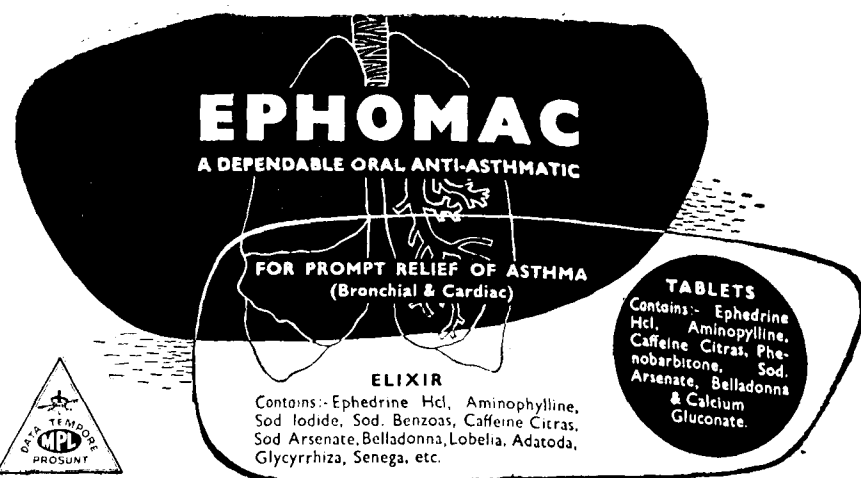
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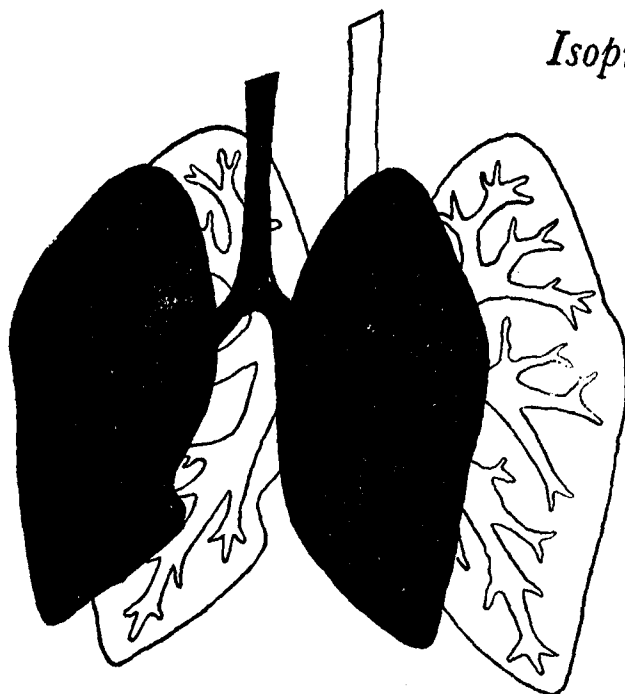
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In general practice, at least 40% of patients have symptoms of purely functional disorders.

(Lancet, 1958. 1525)

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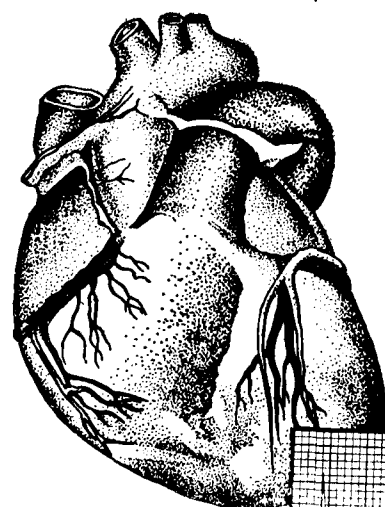
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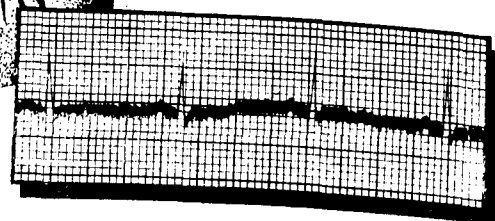
Few people need to be reassured about DALDA and its value as a food. But those who do have many facts available to help them. These facts may guard against the Psyche disordering the Soma and, so, swelling the '40%' who visit the doctor with imagined troubles.

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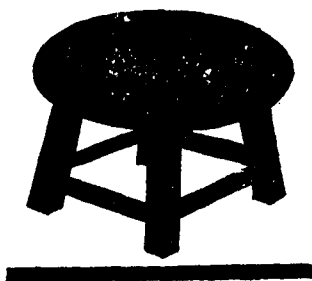
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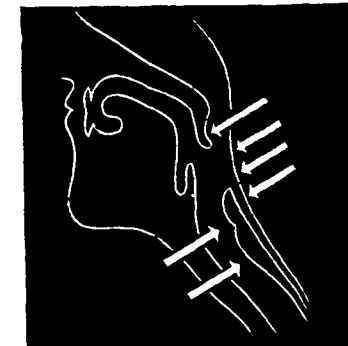
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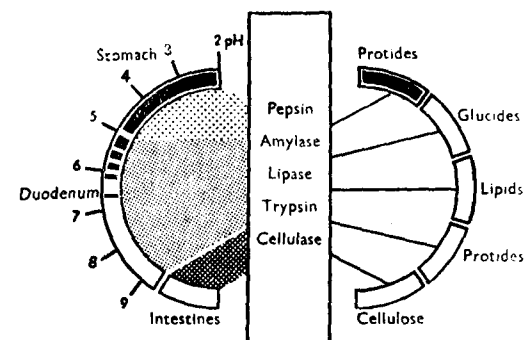
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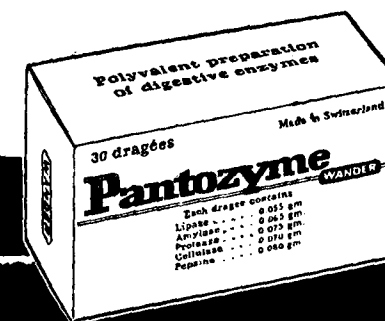


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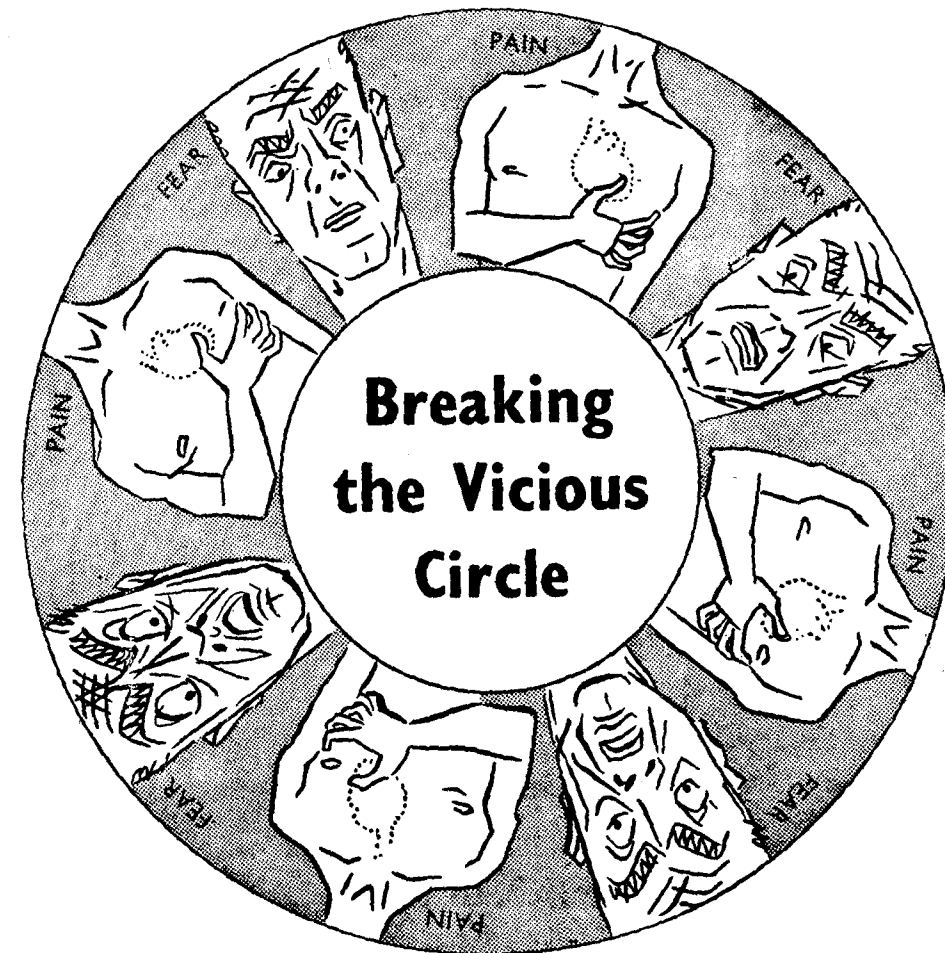
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I. Shapiro, S.: Angiology, 8: 504 (Dec.) 1957.

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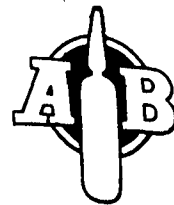
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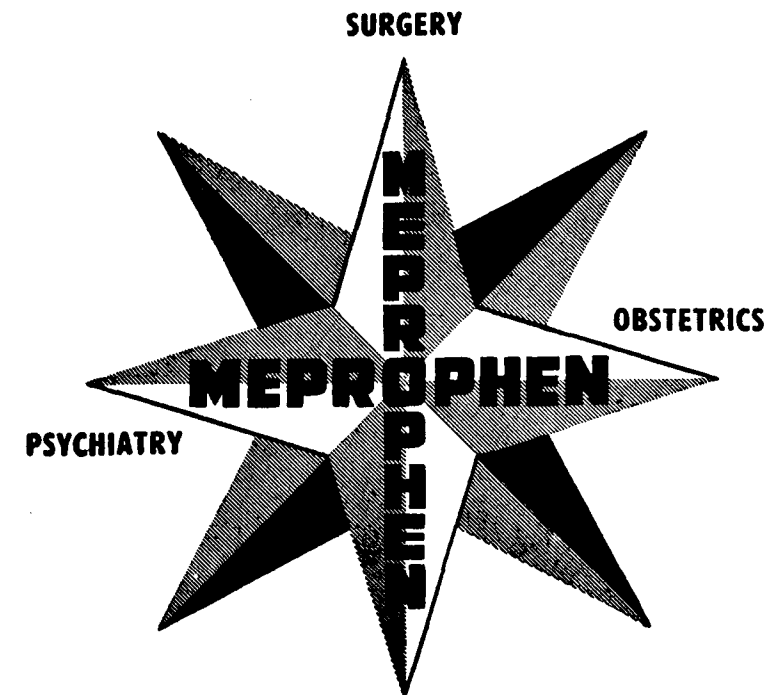
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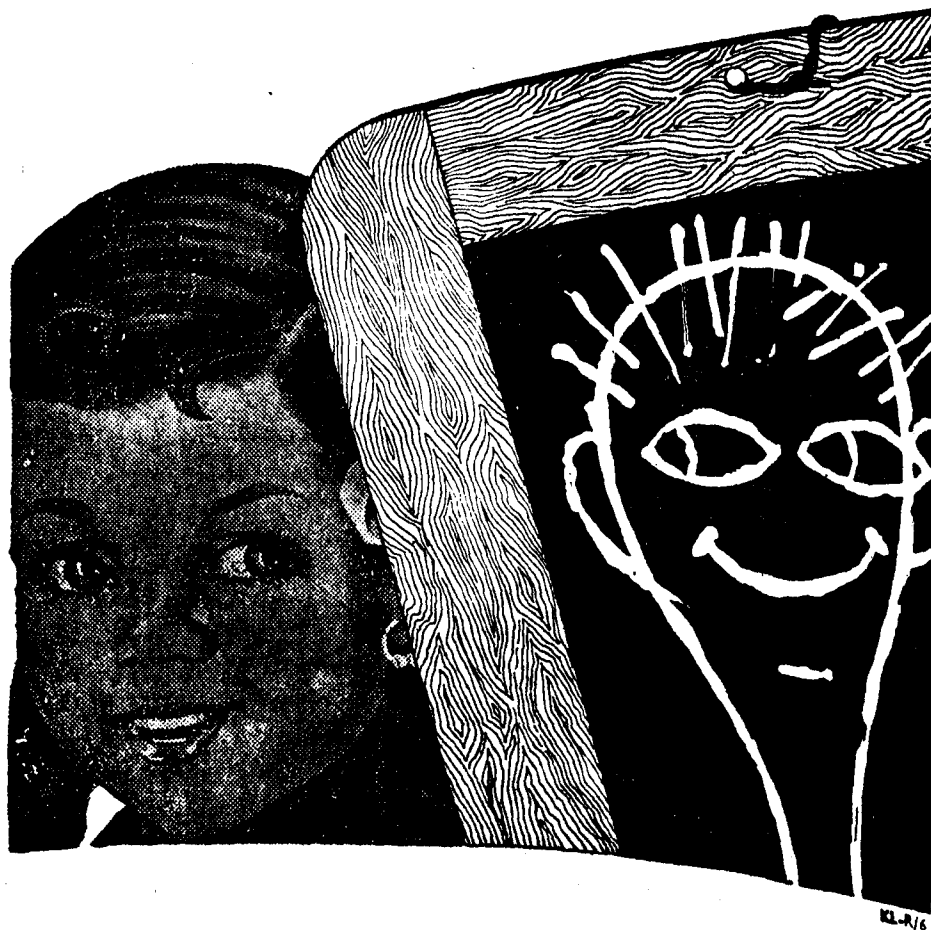
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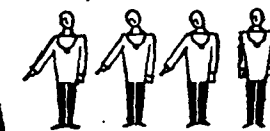
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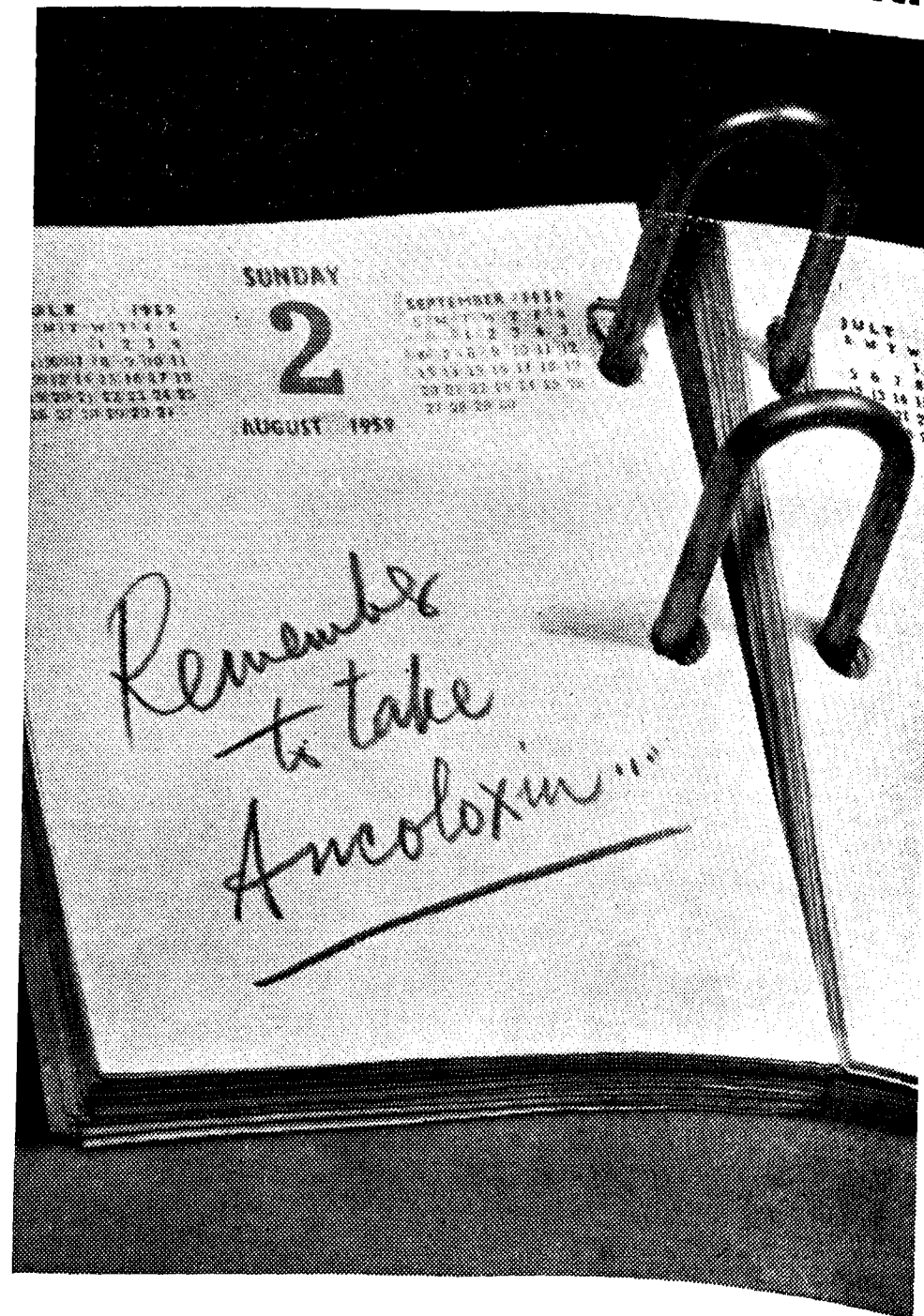
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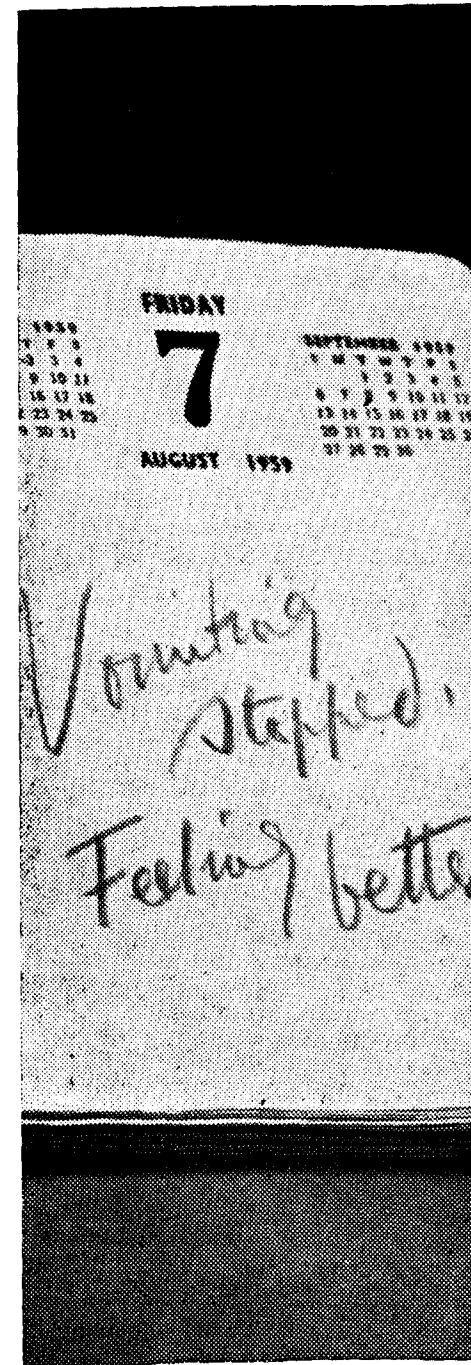
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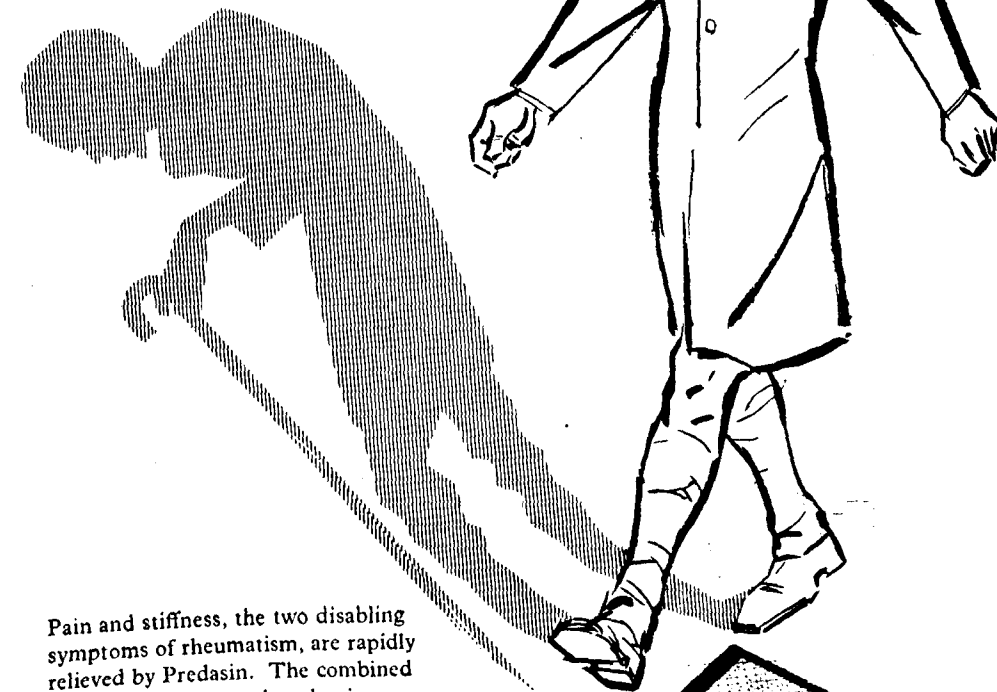
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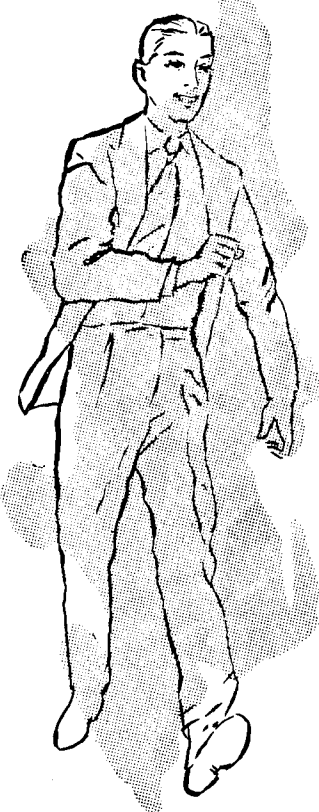
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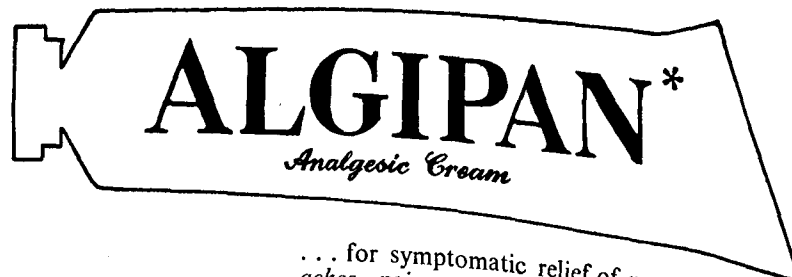
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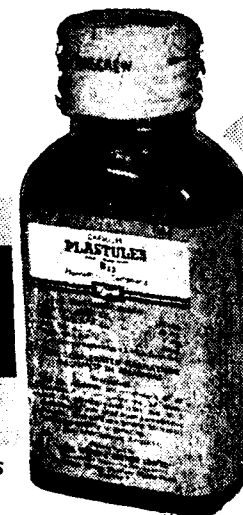


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Indian Journal of Otolaryngology,
1958, 4, 141.

R. A. F. Cooper, M.S.,
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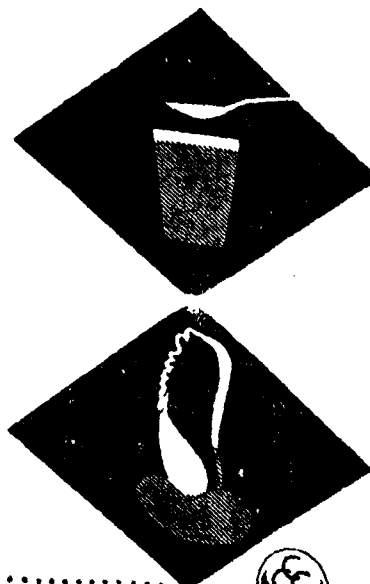
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Dehydrocholic Acid	0.10 Gm.
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Vol. 56

NOVEMBER, 1959

No. 11

Original Articles

FUNCTIONAL DEFECTS OF RENAL TUBULES*

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THE kidneys are the chief organs responsible for maintaining the bio-chemical homeostasis in the human body, and in this vital function the tubules play a leading role. The glomeruli are merely passive-filters, and due to the size of the pores of these filters, certain constituents in the blood are filtered out while others are retained. The glomeruli do not regulate this filtration but may be modified by the afferent and efferent blood supplies so that this filtration does not involve any oxygen consumption. On the other hand, the tubules perform certain highly selective and specialized functions which are regulated by the endocrine glands, viz., reabsorption, excretion and also certain enzymatic functions. In spite of the multiplicity of functions which the tubules have to perform in maintaining the bio-chemical homeostasis, it is indeed a matter of surprise why these functions do not get deranged frequently. Many derangements have come to be recognized, during recent years but have not been properly classified. So a classification on the basis of congenital and acquired aetiology has been suggested.

I. Defects of tubular reabsorption.—These may occur due to acquired or congenital causes and are as follows:—

A. SALT-LOSING NEPHRITIS:—This may occur in: (a) chronic glomerulo-nephritis, (b) chronic pyelo-nephritis, (c) congenital cystic disease of kidney, (d) the recovery phase of necrotizing-nephritis, (e) injury following prolonged administration of alkalis and (f) subacute bacterial endocarditis.

Specially contributed to the ANTISEPTIC.

In these conditions sodium or potassium-losing nephritis occurs, as the injury is slight and disproportionate involving salt reabsorption chiefly. As the progress of the disease is mild there is usually no other overt renal functional derangement and the patient presents symptoms predominantly those due to salt loss. But this syndrome may also occur when there is marked uræmia and azotæmia and sometimes also when there is pronounced hypertension. Such cases are however few, and treatment by the administration of salt produces dramatic improvement in them.

The characteristics of this syndrome are weakness and weight-loss, dehydration, anorexia, nausea and vomiting, hypotension, intermittent pyrexia, mental apathy and confusion etc.

On investigation one may find either completely normal kidney-function tests or some derangement together with azotæmia and acidosis. The urine may show proteinuria and casts etc. The degree of kidney involvement may be variable. The most important diagnostic criterion in these cases is that there is excessive excretion of sodium in the urine, despite hyponatræmia.

There is usually hyperkalæmia, as in all clinical conditions associated with salt loss there occurs a rise in serum potassium. This is explained in different ways:—

(a) As extracellular sodium is less, the potassium comes out of the cell-membrane to prevent over-hydration of the cells; (b) less excretion of potassium by the kidneys, or (c) the tubules are not reacting to cortical hormones.

This high level of potassium may cause muscular paralysis and electrocardiographic changes. On the other hand, when these cases are treated with saline there is a tendency for hypokalæmia to develop. Hence, one should be careful about potassium balance in these cases.

As a few cases have been noticed with hypertension, one should be cautious in treating hypertension with a low-sodium diet.

Salt losing nephritis must be differentiated from Addison's disease by the lack of pigmentation in the mucous membrane, the presence of normal adrenal cortical function tests and by the fact that while sodium has got good effect in both the conditions, cortisone alone will show improvement in adrenal cortical insufficiency.

B. POTASSIUM-LOSING NEPHRITIS:—This is a still rare condition than salt-losing nephritis, as in most of the renal conditions there is usually a tendency for the retention of potassium and the production of hyperkalæmia. Two distinct syndromes of loss of potassium in renal diseases may be distinguished:—

a common state which is usually associated with acidosis and another comparatively less common state without acidosis but showing signs of renal disease. The latter is a less well-defined syndrome and some of these cases have been shown to be cases of primary aldosteronism in which excessive potassium excretion is caused by hypersecretion of aldosterone. Milne and his co-workers described a case of potassium-losing nephritis in which there was excessive urinary excretion of aldosterone-like substances. The diagnosis was later changed into primary aldosteronism. It is possible that excessive secretion of aldosterone found in some cases of potassium-losing nephritis may be secondary to alteration in the internal environment brought about by primary disease of the kidneys.

The characteristics of this condition are general muscular weakness, or attacks of periodic muscular weakness, excessive thirst probably due to the high level of plasma-sodium, rarely hypertension or hypotension, tetany due to potassium depletion and polyurea (not a constant feature).

Diagnosis depends on demonstrating excessive excretion of potassium despite hypokalæmia. The kidney function tests may or may not show renal impairment. This condition must be differentiated from the primary aldosteronism, which is a very difficult matter but the following hints may be of help.

(a) The renal potassium: insulin clearance ratio is high in aldosteronism while it is normal in nephritis; (b) the serum bicarbonate is high in aldosteronism while it is low in nephritis; and (c) the sodium-potassium ratio of saliva and sweat is low in aldosteronism.

C. RENAL OSTEODYSTROPHY:—This condition has been seen in certain congenital and also in acquired renal diseases, mostly in children. The congenital diseases associated with this condition are: (a) polycystic kidney; (b) other congenital anomalies giving rise to hydronephrosis or pyelonephritis and (c) Fanconi's syndrome; while the acquired diseases associated with this condition are (i) chronic glomerulo-nephritis and (ii) chronic pyelonephritis.

Clinically, these cases present the features of rickets and sometimes infantilism or dwarfism may be present. Rarely, this condition may occur in adults with long-standing renal disease and may present the picture of osteomalacia. X-rays show generalized rarification and other epiphyseal and bony changes similar to those of rickets. There may be metastatic calcification near the joints etc. and rarely osteosclerosis of the skull.

This condition occurs mostly in growing infants and children before the union of the epiphysis. In long-standing cases kidney failure supervenes sooner or later and death may occur. The

causes responsible for the production of this condition are: (1) The tubules are unable to excrete acid urine, and so fixed bases which is in turn excreted in the intestines and interferes with the absorption of calcium; (2) impaired tubular reabsorption of calcium is also regarded as one of the factors; and (3) secondary hyperparathyroidism. According to Albright the cause of osteophosphorus retention. Whatever be the cause, *secondary* hyperparathyroidism is present in all cases.

This condition should be differentiated from *primary* hyperparathyroidism. Primary hyperparathyroidism may cause calcinosis and renal failure in the later stages. The most important differentiation is biochemical. In hyperparathyroidism there is a high serum calcium and low serum phosphorus level, while the reverse occurs in cases of renal osteodystrophy. Sometimes a high serum phosphorus and calcinosis may occur in both conditions but osteodystrophy may show some derangement of renal functions in the form of fixed specific gravity, low clearance tests, azotæmia and acidosis etc. Treatment consists in the (1) administration of alkalis if there is acidosis; (2) a low phosphorus and high calcium diet and (3) the administration of vitamin D.

D. Other conditions in which tubular functional damage may occur are myelomatosis, gout and hæmosiderosis etc., but in all these conditions there is also the involvement of the renal parenchyma, arteries and glomeruli. The picture is of kidney failure. In some of these conditions the tubular injury may occur first and then of the other parts of the kidney but the picture is not mainly of tubular functional defect. Hence, all these conditions do not come into this picture.

E. Congenital defects of the tubular reabsorption (Fanconi Syndrome and allied disorders). Fanconi for the first time demonstrated that some of the classical cases of rickets were due to defects in the renal tubules. In these cases he noticed also non-diabetic glycosuria, phosphaturia, amino-aciduria and cystinosis. Since then a number of syndromes have been recognized due to defects in the renal tubules. In all these cases, some degenerative changes in the form of atrophy were noticed in the proximal portion of the renal tubules. The shape of the proximal tubules somewhat resembled the neck of a swan. Defects of renal tubular absorption may occur either singly or in a combination of 2, 3 or even more. Hence, they have been classified as unifactorial or multi-factorial defects. All these defects are however, very rare.

Unifactorial defects are as under:—

(i) Defects of reabsorption of water giving rise to renal diabetes insipidus or pitressin-resistant diabetes. These cases show symptoms of polyuria,

dehydration and can be differentiated from diabetes insipidus by demonstrating resistance to pitressin.

This type of pitressin-resistant diabetes insipidus has also been described in cases of myelomatosis (probably due to a deposition of protein in the distal tubules). Sometimes it may occur in head injury and in cases of virus and syphilitic infections of the brain.

(ii) Defects of re-absorption of glucose giving rise to renal diabetes. This defect is attributed to a lack of enzyme phosphorylase. It is a well-known condition. Recent literature has nothing to add except that these cases are not more liable to develop diabetes mellitus as was previously thought.

(iii) Defect of reabsorption of phosphorus giving rise to vitamin-D-resistant-rickets though very rare is well recognized. It is recognized as it persists in adult life, serum phosphorus is usually raised and there is no response to Vit. D, otherwise clinically there is no difference from classical rickets. Recently improvement has been obtained by giving Vit. D in massive doses *i.e.* 15 lacs units per day.

(iv) Defect of excessive absorption of phosphorus giving rise to pseudo-hyperparathyroidism is not a well recognized syndrome only a few cases having been noticed.

(v) There may be defective reabsorption of aminoacids giving rise to (a) simple congenital cystinuria or (b) Wilson's disease. Aminoaciduria here must be distinguished from other causes of aminoaciduria such as (a) liver diseases (b) phosphorus and carbon tetrachloride poisonings and (c) katabolism during wasting diseases. Prolonged cystinuria has been known to cause cirrhosis in hepatolenticular degeneration or Wilson's disease. The same cause has been attributed to account for cirrhosis in Fanconi's syndrome which occurs in about 20% of cases. But recently it has been proposed that probably hepatolenticular syndrome is due to excessive absorption of copper from the intestines giving rise to damage of the liver, basal ganglion, renal tubules and cornea. The ætiology is still disputed; cystinuria may sometimes give rise to renal stones.

(vi) Defect of reabsorption of bicarbonates giving rise to hyperchloræmic acidosis. Many cases of this condition have been recently noticed in infants. The onset is usually after 4 months. Infants present the picture of dehydration without any obvious cause in the form of diarrhoea and vomiting and despite an adequate intake of water and salt. These infants fail to thrive and show signs of dehydration in the form of dehydrated and inelastic skin, shrunken eyes, constipation, anorexia, vomiting and sometimes intermittent pyrexia, apathy and mental irritability. Diagnosis can be confirmed, by the simple examination of urine which is persistently alkaline or rarely neutral.

Blood examinations usually shows a lowering of plasma bicarbonate and high plasma chlorides though not always, a few cases show hypercalcæmia and calcinosis. These cases eventually die of renal failure. The hypercalcæmia occurs due to secondary hyperparathyroidism. The nephrocalcinosis present in these cases must be distinguished from other causes of hypercalcæmia and renal calcinosis. Some cases have been reported in elderly persons. Now hyperchloræmic alkalosis is regarded as an acquired condition due to poisoning by mercury present in popular teething powders. In others, sulphanilamide may be the cause of this syndrome, as it destroys carbonic anhydrase. Physiological acidosis has been blamed for this syndrome. Others put it down to delayed maturation of renal tubules.

[NOTE:—The malady has been shown to be essentially reversible if one tides over the crisis by administering alkalis and water and removing the cause if discovered. These cases must also be differentiated from idiopathic hypercalcæmia which is regarded as being due to hypersensitivity to Vit. D].

(vii) Defect of re-absorption of calcium giving rise to idiopathic hypocalcaemia, is not a well defined syndrome and only a few ill defined cases have been reported.

(viii) Defect of reabsorption of potassium giving rise to a picture like that of potassium losing nephritis is also not well established as a primary defect but sometimes this defect may occur together with Fanconi's syndrome.

Multifactorial defects are as follows:—(i) Defect of reabsorption of glucose and phosphorus giving rise to Vitamin D-resistant glycosuria, rickets.

(ii) Defect of reabsorption of glucose and aminoacid which is also not a well-defined entity but these defects have been observed with Wilson's disease.

(iii) Classical Fanconi's syndrome which is characterized by phosphaturia, glycosuria, amino-aciduria and cystinosis. Some authorities regard that demonstration of cystinosis is the final proof of this condition. It can be demonstrated by slit lamp examination, bone-marrow picture and by microscopic examination of lymph-nodes. Other authorities do not regard cystinosis as an essential feature for establishing the diagnosis. Fanconi's syndrome may also be associated with the failure of reabsorption of potassium, bicarbonates and water, giving rise to dehydration, acidosis and hypokalaemia. Therefore, the picture of Fanconi's syndrome may be extremely variable.

Clinically the picture is that of dehydration, acidosis, rickets, dwarfism or infantilism and polyuria or a combined one. Hypokalaemia gives rise to periodic paralysis. Diagnosis is achieved by demonstrating glycosuria, aminoaciduria and phosphaturia in a case of rickets. Several specimens must be examined before excluding this disease as these defects may occur intermittently.

In later stages, kidney failure may occur and then serum phosphorus rises while serum calcium falls giving rise to a typical picture of renal osteodystrophy. A few cases have been reported in adults with osteomalacia. Hence, the possibility remains of its being an acquired condition of unknown aetiology. Pathogenesis is explained by lack of phosphatase in the renal tubules which gives rise to glycosuria and phosphaturia. Cystinosis has been explained by defective synthesis of protein from aminoacids.

Aetiologically, all these disorders are regarded as being due to congenital defect of proximal tubules and have been explained on the basis of dominant or recessive genes. Marked familial incidence has been noticed in many of these conditions. Multifactorial defects are regarded, genetically different and not merely abortive forms of multifactorial syndromes. The possibility that these may be all acquired conditions still remains, as I have already mentioned that hyperchloraemic alkalosis has been explained on the basis of some poisons and doubt has been thrown on the aetiology of Fanconi's syndrome.

TREATMENT:—Consists of (a) correction of the particular deficiencies produced by lack of reabsorption, (b) vitamin D administration in high doses, which has been noticed to influence

phosphaturia, aminoaciduria and glycosuria favourably. The mechanism has been explained on the basis of a stimulation of the alkaline phosphatase by Vitamin "D", (c) alkalis should be administered if there is acidosis, and (d) testosterone has recently been shown to correct aminoaciduria in some cases.

[In all these conditions one must think in terms of the amelioration of symptoms and prolongation of life and not in terms of effecting a cure].

II. Disturbances of renal tubular excretions.—Tubules excrete creatinine, water and certain dyes. No syndrome has been recognized due to a disturbance of this mechanism, but this mechanism gets disturbed in renal diseases. Therefore, a useful kidney function test like the creatinine excretion test is helpful.

III. Disturbances of tubular enzymatic activity.—(1) Failure to excrete an acidic urine, various clinical syndromes of which have been already discussed. (2) Defect in synthesis of hippuric acid from benzoic acid and glycine. This disturbance is noticed in liver diseases and when the liver fails in its detoxicating function, then the kidney suffers. As there is no glycine available due to liver disease, kidney failure also occurs and gives rise to hepatorenal failure. This is seen after operation on the hepato-biliary system, in acute hepatic failure, in traumatic pulpefaction of the liver and sometimes in phosphorus and CCl₄ poisonings.

The clinical picture is that of a combination of liver and kidney failure. A few cases have been reported to improve on the administration of decholine. But it is now regarded that the kidney failure is essentially due to shock and dehydration and that the liver has nothing to do with renal failure in this syndrome.

Some authorities still maintain this as a separate and definite entity. No doubt in certain conditions like chloroform poisoning and Weil's disease, the clinical picture may be a combination of failures of both organs due to direct injury to these systems.

IV. Tubular injury.—May be found in the following conditions.—(1) Nephrotic syndrome; (2) phloridzine poisoning causing transitory glycosuria; and (3) necrotizing nephritis or lower nephron nephritis.

Sometimes the injury may be so mild that it may give rise to a defect of only one function without marked renal failure. This is possible in cases of hyperchloraemic alkalosis due to mercury poisoning. After recovery from lower nephron nephritis, the patient usually develops polyuria. Then there may be a transitory potassium-losing-nephritis or sodium-losing nephritis which should be properly recognized and treated.

The pathogenesis of lower nephron nephritis.—(1) A decrease in renal blood-flow leads to less glomerular filtration and is probably the cause of the damage of renal tubular epithelium; (2) a blockage of the tubular lumen by pigments or sulpha drugs etc.; (3) injury to the tubular epithelium by substances entering from the glomeruli like sulphonamides etc.; (4) secondary to tubular damage, occur intertubular oedema and cellular infiltration which cause a decrease in the glomerular blood-flow; (5) different proportions of these play a part in different diseases; the obstruction of renal tubules may produce a picture resembling internal hydronephrosis so that there is no glomerular filtration.

Clinically two stages occur: *viz.*—(1) An initial oliguric stage due to back-diffusion. The blood-pressure usually rises after a few days. There is no oedema or/and congestive heart failure unless fluid is administered; (2) a diuretic stage due to the impairment of tubular reabsorption so that there is polyuria, hyposthenuria and a tendency to potassium and sodium losing nephritis. This stage disappears after some time.

This type of nephritis may arise as a result of:—(1) Shock due to any cause. (2) Excessive hæmolysis due to mismatched blood-transfusion. (3) Black water fever etc. (4) Poisons, chemical or vegetable including sulphonamide drugs etc. (5) Alkalosis, multiple myeloma, hepato-renal syndrome etc.

BIBLIOGRAPHY:

1. Chalmers, T. M. (1956)—*B.M.J.*, *II*: 230.
2. Darmdy, (1954)—Ciba Foundation Symposium.
3. Dent, C. E. and Rose, G. A. Wuart—*J. Med.*, *20*: 205.
4. Fishberg, A. M. (1954)—Hypertension and Nephritis, Lea and Febiger.
5. Holzel, A., Komrower, G. M. and Wilson, V. D. (1952)—*B.M.J.*, *I*: 194.
6. Jackson and Linder (1953)—*Quart. J. Med.*, *22*: 133.
7. Lanter, A. L. and Burnard, E. D. (1950)—*Quart. J. Med.*, *19*: 285.
8. Lowe, K. G. (1952)—*Lancet*, *I*: 1086.
9. Raymond Daley and Henry Miller (1956)—*Progress in Clinical Medicine*, *147*.
10. Thorne, G. W., Kolpf, G. F. and Clinlon, M. (1954)—*New Eng. J. Med.*, *231*: 76.

TREATMENT OF ACUTE GOUT WITH INJECTION OF COLCHICINE

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PRINCIPLES OF INFANT FEEDING*

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GENERAL:—Infant feeding has been complicated by the ever-increasing commercial brands of tinned milks and other infant foods so widely advertised. A commonsense and realistic attitude of self-demand-feeding, is the more natural method governed by the baby's individual needs, and is becoming so recognized.

The most suitable and satisfactory food designed by nature for an infant is breast milk. When for any reason, breast milk is not available, the next best to substitute is cow's milk. But cow's milk differs from breast milk in its composition and so it is necessary to modify it so as to render it as easily digestible as breast milk; in other words we have to humanise cow's milk; by the simple device of dilution. Digestive disturbances and nutritional disorders in infancy are due not so much to defects in the composition of the milk, as to errors in the quantity fed or to faulty technique in feeding.

QUANTITY OF FOOD:—A safe maxim is that an infant needs two and a half ounces of breast milk or some suitable substitute for each pound of body weight. The total quantity of food for each day, must then be divided into the number of feeds that the baby is to get. Feeding every three hours (6 a.m., 9 a.m., 12 noon, 3 p.m., 6 p.m. and 10 p.m.) means 6 feeds a day, four-hourly feeding (6 a.m., 10 a.m., 2 p.m., and 10 p.m.) means only five feeds, so that obviously a baby fed every four hours will need more at each feed than if he is fed every three hours. For example an infant weighing 12 pounds will require $12 \times 2\frac{1}{2} = 30$ ounces of fluid in the day. If he is being fed every three hours he should have five ounces at each feed, but if he is fed every four hours each feed should be of six ounces.

It must be borne in mind that owing to their relatively large skin surface infants lose fluid easily, and in hot weather especially they may become fretful owing to thirst. An ounce or more of boiled water should then be given between regular feeds irrespective of the allotted $2\frac{1}{2}$ ounces of fluid (milk) per pound of body weight.

Caloric requirement:—An infant requires fifty calories daily for each pound of body weight and a diet may be built up to satisfy the number of calories required. This demands a knowledge of the caloric value of the various milk preparations.

Protein requirement:—1.5 to 2 g. of protein daily per pound of body weight is the optimum need.

* Specially contributed to the ANTISEPTIC.

Feeding regime:—Two schedules are followed *namely*: (1) demand schedule meaning that the infant is fed whenever he cries and (2) strict schedule by which the child is given three or four hourly feeds by the clock.

Both schedules have their advantages and disadvantages. One which is most advantageous and at the same time has the minimum of disadvantages is what is wanted.

Weighing the infant:—The best guide to an infant's progress is afforded by regular weighment, the weight being recorded once a week during the first six months, and once a fortnight after that, until the first birthday. A satisfactory weekly gain is four to six ounces. As long as the weight gain is satisfactory and the infant is contented, his progress must be deemed to be normal.

ADVANTAGES OF BREAST FEEDING:—As an infant-food breast milk is the ideal because it meets all the physiological requirements of the infant's nutrition; it has an adequate content of the vitamins and possesses certain protective antibodies of specific value to the growing infant. It is also available at body temperature all the time and has the added merit of being always pure and clean. Breast milk is often a deciding factor in the survival of a premature infant or in any child enfeebled by disease.

TABLE I
Showing the percentage composition of Colostrum, Cow's milk and Human breast-milk

	Protein	Fat	Lactose	Ash	Water
Colostrum	8.6	2.3	3.2	0.3	85.6
Cow's milk	3.5	3.5	4.5	0.75	87.0
Breast milk	1.25	3.5	7.5	0.2	87.0

During the first few days after a child is born, the breasts of the mother secrete a slightly alkaline thin yellow fluid called colostrum, which is relatively richer in protein and poorer in fat and sugar than breast milk (see Table I, above). Colostrum is a very easily digestible form. Whether antibodies from the mother to her infant is thereby transferred is doubtful; for it is more a function of the placenta. The colostrum is secreted for about a week or ten days. This is followed by the secretion of transitional milk till the end of first month of life when the milk attains its normal maturation, and is so maintained for about 9 months or more.

The protein in human milk is present as lactalbumin and caseinogen, approximately in the ratio of 2:1 while in cow's milk the caseinogen is from three to five times as plentiful as the

lactalbumin. The fat in breast milk is present in a fine emulsion and the carbohydrate is entirely in the form of lactose.

Iron is however present only in small amounts both in human and in cow's milk. The iron content of breast milk is about 0.16 mg. per cent. This amount of iron is insufficient for the needs of the growing infant, and so during the early months of its life, the reserves of iron and copper stored in the liver during foetal life is utilized. This satisfies the infant's requirements for about 6 months, and then iron in some assimilable form must be added to the diet; otherwise a hypochromic (nutritional) type of anæmia may appear. The vitamin content of the mother's milk is adequate for the child's needs, if the mother is healthy and has daily access to free open air, exercise and a good vitamin-rich diet. Breast milk provides 20 calories per ounce to the infant.

The quantity of breast-milk which the baby obtains is estimated by weighing the infant at the beginning and again at the end of a feed, care being taken not to change napkins, if the infant has voided any urine or faeces during the meal which must be included in the second weighing. The difference of the two weighings will give the amount of milk taken per feed. It is essential to test feed the baby at each meal for 24 hours and then arrive at the average amount per feed because the quantity of breast-milk varies at each feed. The first feed of the day is usually the largest. Tallerman and Hailton, from a series of analysis, concluded that the midday breast-feed was only slightly more than half the early morning-feed, while the last feed at night tended to be a little greater than the midday-feed.

The quantity of breast milk not only varies during the day, but also with the age of the infant, and also with the stimulus of sucking; Budin has shown that the quantity of a wet nurse's milk increases with the number of infants she is suckling.

Domestic anxieties and worries have an adverse effect on the flow of breast-milk and therefore rest for an hour or so in the middle of the day is necessary.

Efforts to increase the amount of breast milk includes light massage of the breasts, and douching them alternately with hot and cold water. Proper emptying of the breasts is also an essential stimulus for the maintenance of an adequate quantity of breast-milk.

Fat is the most variable constituent of breast-milk. At the midday and afternoon feeds it may be about 2% above the amount in the early morning feed, and not only does it vary at different feeds, but also it varies during each feed. The milk taken at the end of a feed (the strippings) may contain 3 or 4% more fat than the milk at the beginning of the feed. The practical importance of this is that if the infant is to derive full benefit from his breast

feed he must empty one breast properly before being put on to the other. It has been found that mothers often feed their infants for ten minutes from each breast, which is satisfactory, provided that ten minutes suffice for the infant to empty each breast, but otherwise it is better to advise that alternate breasts are properly emptied at consecutive feeds, utilizing the other breast to make good any deficit.

Certain drugs given to the mother may be excreted in the milk, and so may affect the child. Cathartic salts, belladonna, arsenic, salicylates, iodides and bromides may reach the infant in this way.

The mother should see that the infant's face does not become buried in the breast and interferes with proper breathing.

Breast milk is normally pure and sterile, but as there is always the risk of infection from outside the breasts should be cleaned with clean water and wiped with a clean towel before and after each feed.

Contraindications to breast-feeding are.—A. DISEASES IN THE MOTHER:—(1) Acute infectious fevers; (2) chronic nephritis eclampsia; (4) pulmonary tuberculosis; (5) malignant conditions like cancer etc.; and (6) a subsequent pregnancy starting even during lactation.

B. DISEASES OF THE BREAST:—(1) Severe degrees of retraction of the nipple making sucking almost impossible, when breast milk may be expressed and given. Actually this condition can be detected during pregnancy and corrected by wearing a Waller breast-shield during the last trimester. (2) Fissures of the nipple make sucking a very painful process. This should be treated by bathing the breast with boracic lotion several times a day and then painting it with Friar's Balsam. It usually heals in about a week, and then the infant may be returned to the breast, protecting the part with a nipple shield; (3) suppuration of the breast and (4) cancer and tuberculosis of the breast.

C. DISEASES OF THE INFANT:—The deformities of hare-lip and cleft palate may be sufficiently severe to prevent suction either from breast or bottle. Pipette feeding has then to be resorted to.

Inadequate reasons for weaning.—Often we hear the mother saying that, "her milk did not suit the baby" or "gave the baby a lot of wind" and so the child was weaned. Generally these defects are remediable as they are often due to faulty technique in feeding.

Supplementary feeds are usually advocated if a breast fed infant is not progressing well and the test-feeds reveal a diminished flow of breast-milk.

Supplementary food should not be too sweet, as the infant may develop a liking to it and may refuse breast milk. Two parts of milk to one part of water with a teaspoonful of sugar to every four ounces is the proper feed; or half-cream dried milk, one (drachm of milk powder to an ounce of water) may be used instead.

Artificial infant feeding.—A. Cow's MILK:—Cow's milk is more than twice as rich as breast milk in protein; caseinogen being three to five times more than lactalbumin. The amount of fat is the same as in human milk. The amount of lactose is considerably less than in human milk, which should be compensated by adding sugar. Mineral salts are present in sufficient amounts for the infant's requirements, calcium, sodium and potassium salts being particularly plentiful. The proportion of iron is 0.06 mg. per cent, *i.e.*, even less than in human milk. All the vitamins are present in cow's milk, but heating cow's milk destroys its content of vitamin C. Cow's milk provides approximately 18 calories per ounce. All milk used for infant-feeding should be boiled and this is done in all Indian homes. The destruction of vitamin C, should be corrected by subsequent additions of this vitamin to the diet.

The proper cleaning with a brush and soap of the feeding bottles and adequate rinsing must be carefully attended to as otherwise the stale remnants of previous feeds will start fermenting and upset the infant. After each feed the bottle should be rinsed in boiling water and kept immersed in a clean basin of pure cold water.

The teat and its hole must be of proper size. If the hole is too large, the milk will enter the mouth very quickly along with a good deal of air, and noisy eructations follow with regurgitation and colicky attacks. If the hole is too small, the infant may become exhausted before the bottle is emptied and this will lead to a rejection of the feed. The infant during feeding should be propped up to facilitate swallowing and prevent aerophagy. The bottle should be kept tilted so that the teat is always filled with milk, otherwise air will also be swallowed. Some infants thrive satisfactorily on undiluted sweetened cow's milk from birth, but it cannot be safely recommended for use in all cases. It may be used after 6 months when there may be no need to dilute it.

Dilution of cow's milk renders it readily digestible, particularly with regard to the casein and fat contents. Apart from diluting the milk, enough sugar must be added to bring the carbohydrate level of the diluted milk to that of breast-milk.

TABLE II
Showing the Extent of Permissible Dilution and the Quantity of
Sugar for Different Age-periods

Age-periods	Proportion of milk to water		Quantity of sugar
0—2 weeks	1	1	One tea-spoon for every 3 ounces of milk-mixture
2 weeks to 4 months	2	1	
4 to 6 months	3	1	One tea-spoon for every 4 ounces of milk-mixture
6 to 9 months	4	0	

Ordinary cane sugar is quite good and one tea-spoon of it provides 16 calories. Starch as a form of carbohydrate is avoided till after the child is 6 months old as the secretion of amylase ferment is negligible till then. Extra cream is unnecessary and it is unwise to add it to the diet of healthy infants. Clean water is a perfectly good diluent. Barley water, lime water and whey may also be used for diluting if required.

B. PROPRIETARY INFANT FOODS:—The proprietary infant foods which are now luckily becoming scarce and difficult to get, fall into three classes.—(1) *Condensed milks*:—These are evaporated milks concentrated to about $\frac{1}{3}$ rd of their original volume usually sweetened. Actually these are not really well-suited for tropical conditions.

(2) *Dried milks*:—which may be—(a) full cream, (b) half cream or (c) skimmed milk.

(a) *Full cream dried milk (dried-whole-milk)*:—When fresh cow's milk or other liquid milk is readily available, dried milk should be considered only a good substitute. There have been quite a large number of such milks, e.g., Ostermilk, Glaxo, Cow and Gate, Dumex, Trufood etc., which are all practically the same. It is not however desirable to switch over from one brand to another.

These dried milks are reconstituted to full strength by mixing one level scoop of the powder to one ounce of water i.e. in the proportion of 1 in 8. It is necessary to remember that reconstitution at this strength gives a fluid which virtually amounts to whole cow's milk. Sugar must be added before feeds. These reconstituted milks give an average of 18 calories per ounce.

Some brands claim to have a trace of iron added to them, and all are fortified with vitamin D to the extent that a pint of reconstituted milk is said to contain about 800 I.U. of this vitamin.

(b) *Half cream dried milk (modified whole milk)*:—The amount of protein and carbohydrate in these are made to approximate roughly the proportions present in human milk and therefore the addition of sugar is not required. In several instances

the fat value has been slightly reduced, which probably accounts for the fact that these milks are particularly suitable for the feeding of young infants. When it is intended to rear an infant on dried milk, the principle to be followed is to give a half cream or "humanized" brand for the first three months, selecting one in which the fat is not above 2.5 per cent, and then gradually introduce one of the dried whole milks. These are also to be reconstituted by adding one dram of powder to one ounce of water. The dried modified milks after reconstitution with water provides from 16 to 18 calories per ounce.

(c) *Skimmed milk*:—In skimmed milk the fat has been entirely removed; so it should be used only as a temporary measure in cases of fat-intolerance.

(3) *Food intended only as additions to milk*:—Nearly all the foods of this class contain starch, and must be avoided for children below 6 months of age. They are useful later, not only as a means of introducing starch in an easily digestible form, but also as a means of thickening the feed, and so increasing its nutritive value, without adding to its bulk.

Some of these like Benger's food, Mellin's food, contain little or no starch when made according to the manufacturer's directions, and therefore can be used for infants under 6 months of age. There are others like Farex, etc. given usually after 6 months of age. These are not required for infants who are thriving satisfactorily, but are of use in the case of undernourished infants with small stomach capacity, who can only tolerate small amounts of food without vomiting. They are useful for thickening a feed in such conditions as aerophagy and rumination. They are used in the strength of one or two tablespoonfuls to a pint of milk or milk and water mixture. Their caloric value is between 100–200 calories per ounce of powder.

C. *BUFFALO'S MILK*:—Recently the use of buffalo's milk in infant feeding has come into vogue and is being used for infant feeding in Bombay and the Punjab and also in some parts of Madras. It is somewhat more difficult to digest.

TABLE III
Showing the Percentage Composition of Buffalo's Milk

Product	Protein	Fat	Lactose	Ash	Water
Buffalo's milk	4.3	8.8	5.1	0.8	81

The total protein, casein and albumin contents of buffalo's milk are similar to those of cow's milk. The fat content of buffalo's milk is however, nearly twice that of cow's and human milk. The lactose content of buffalo's milk is nearly the same as that of cow's milk but much less than that of human milk.

The mineral content of buffalo's milk is slightly higher than human milk. The iron content of buffalo's milk is said to be the same as that of cow's and human milk. The vitamin content of buffalo's milk has been reported to be almost of the same order as cow's and human milk. It is matter of common experience that both buffalo's and cow's milk form a tougher curd than human milk. Both buffalo's and cow's milk differ essentially from human milk in their chemical composition and in the firmness of the curd formed from them in the stomach. Further the buffering capacity of both buffalo's and cow's milk is very much higher than that of human milk. Further, buffalo's milk contains excessive amounts of fat and has to be partially skimmed to bring down the fat content to about 2 to 3% before being used in infant feeding. Both partially skimmed buffalo's milk and cow's milk can be modified and made suitable for infant feeding, by boiling the milk, diluting it with water and adding sugar.

Recently a process for the preparation of infant food from buffalo's milk has been standardized by Subrahmanyam *et al* of the Mysore Central Food Technological Research Institute. Feeding experiments on infants carried out at certain centres in India have shown that this product is readily digestible and favours satisfactory growth in children. The food contains about 22% protein and 15% fat and is adequately fortified with vitamins A and D.

D. GOAT'S MILK:—Goat's milk and cow's milk are very similar in composition, and therefore, when goat's milk is used for infant feeding it should be diluted in the same way as cow's milk. It has a strong odour and taste.

Vitamins.—The vitamins important in infant feeding are, C and D, which should be added to the diet of an infant about the end of the first month, the daily average requirement of C being 25 mg. and that of D being 700 I.U. The vitamin C can be supplied in the form of orange juice starting with one teaspoonful at the end of the first month and gradually increased to the juice of one orange at 6 months.

Iron should be added to the diet of normal healthy infants 5 to 6 months old and at the end of the 1st month to premature infants. It may be given in the form of Ferrous gluconate 1 gr. or Ferri et ammonium citras 2 to 3 gr. daily.

Weaning.—It is a process of transition from breast-feeds or other milk-feeds to a diet of semi-solids and solids. It is a gradual process starting at about 6 months of age and complete by 9 months.

The actual reason for weaning is to supply a greater variety of food containing vitamins and iron which are not present in breast milk; also to supply extra calories and accustom the infant to new flavours and tastes. Weaning consists of two phases:—(a) *Partial weaning*, i.e., introducing other foods while

breast milk or other brands of milk are being continued; and (b) *complete weaning*, i.e., where the child is completely weaned to semisolids and solids.

The infant learns to like soups, broth, mashed potatoes, and other vegetables, egg-yolk, cereals, and custards. Ripe banana is a commendable infant food; from about 6 to 7 months, the infant manages to hold a rusk or crust or biscuit in his hand and carry it to his mouth and bite on it. By 9 months to a year an infant is able to take a mixed diet which provides him all his requirements and so enables the parents to wean the baby completely.

Before the infant can chew, he should be given thickened feeds or semisolids *e.g.*, Farex, bone-soup, custard, jelly, mashed banana, egg, mashed potato, or carrot and grated cheese.

When the infant can chew, he may be given toasts, rusks, bread with butter and jam, biscuits, minced meat, fish, bacon, raw apple, banana, orange, cakes, chocolates etc.

For the first two weeks the 2 p.m. feed should be gradually replaced by bone and vegetable broth or other foods mentioned above, starting with one tea-spoonful before breast-feed and increasing to two table-spoonful or more. The breast-feed may then be stopped. Between the 3rd and 4th week the 10 a.m. feed may be replaced by any one of the foods mentioned above and in the 6th week the 6 p.m. feed is replaced by these.

BIBLIOGRAPHY:

1. Manchanda, S. S.—*I. J. Ch. H.*, 6: 409-425.
2. Nelson, W. E.—*Text Book of Paediatrics*, 95-123.
3. Sheldon, W.—*Diseases of Infancy and Childhood*, 47: 76.

THE DIAGNOSIS OF THYROID DISEASE

The impact of the hormones on the body cells, and the resultant consumption of oxygen by the tissues, are measured by the basal metabolic rate. The isotope tests all measure the dynamic activity of the thyroid gland, by making it possible to observe the way in which the thyroid handles iodine, one of the basic components of thyroid hormone.

Most centres use I^{131} as it is simple and easy to handle, but the short-life isotope, I^{132} , is more appropriate for use in young people and for repeated tests. Tests involving the use of I^{132} usually involve bringing patient and counting apparatus together for direct measurements. I^{131} makes it possible to collect urine and plasma samples in a laboratory many miles from the patient. The most important fallacy regarding thyroid function tests is the previous use of iodine-containing drugs or radiological contrast media which can vitiate tests for many months.

TREATMENT:—In the majority of instances of hypothyroidism the use of dried thyroid is the most successful treatment but in a proportion the non-absorption, or inactivity, of the tablets lead to difficulties. The substitution of thyroxine for the thyroid results immediately in improvement. There is now no tenable argument for continuing to use thyroid tablets instead of pure thyroxine. The latter drug is not significantly more expensive.—(*Practitioner*, 182: June 1959).

EXAMINATION OF FORMALIN-PRESERVED FÆCES: RESULTING IN AN INTERESTING OBSERVATION DEMONSTRATING THE RESISTANCE OF FERTILIZED EGGS OF ASCARIS LUMBRICOIDES

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THE examination of faecal smears was a compulsory item in the practical test for medical students in Pathology at the University of Rajasthan. Therefore, the staff of the department had to preserve some specimens of stools containing the common helminthic ova. In former years, fresh specimens of faeces known to contain helminthic ova and protozoal cysts were collected from patients of the S. M. S. Hospital at Jaipur on the day of the examination and given to the examinees. This practice obviously had many drawbacks and so could not be trusted to yield uniformly good results.

Towards the end of 1951, the authorities of the local Mental Hospital were requested to send specimens of faeces from some very dirty patients. These were examined and most of them found to contain numerous eggs of *Ascaris lumbricoides*, *Trichuris-trichiura*, hookworms and *Hymenolepis nana*. The selected specimens were preserved by the modified Blacklock method, detailed in Appendix I *infra*. The examinees were asked to find out two abnormalities in them. These preserved specimens served well, because not only were reliable stool samples thus available for examination but also practical experience was gained by the students in detecting helminthic ova during their two years' course in pathology.

Eight such specimens were preserved in January 1952, and they lasted till April, 1956. Eight more specimens of this type were again collected and stored in May, 1956.

In April, 1959, one of these faecal specimens was given to the 4th year students of the Government Ayurvedic College at Jaipur, in order to enable them to familiarize themselves with common helminthic ova. I was surprised to find that in a number of preparations, fertilized eggs of the roundworm were found to contain coiled rhabditoid larvæ, which were wriggling within the shell. The formalin-preserved faeces had been given to the medical students in the S. M. S. Medical College, Jaipur during the preceding seven years. The students had examined these specimens of faeces at least for 100 turns in the laboratories; but neither did the staff nor the students come across living rhabditoid larvæ in the *Ascaris* eggs. This being the first time they were noticed, it was deemed worth-while to publish the finding.

* Specially contributed to the ARTISMEPTIC.

Discussion.—Fertilized eggs of *Ascaris lumbricoides* are known to be highly resistant. They are not injured by desiccation, low temperature, putrefaction of the medium and chemicals¹; temporary baths in strong chemicals such as glass-cleansing solution, are not detrimental to the embryo; and moderately strong solutions of formaldehyde accelerate the development of the embryo *in ovo*. Eggs in contaminated soil may remain viable for five to six years².

Sengupta and Mitra³ (1950) had reported the presence of a living embryo in fertilized eggs of *Ascaris lumbricoides* in a faecal specimen preserved with formalin for 3 weeks. The present observation, however, is of great significance because the faeces had been preserved in 10% formalin for about three years, after which the embryo of fertilized egg still remained viable. The embryo had remained dormant for so long and was stimulated to activity while still in an unsuitable environment.

This raises two important questions :—

(1) Why are the fertilized eggs of *Ascaris lumbricoides* able to offer such great resistance to the bad environment?

Sengupta and Mitra (1950) postulated that the mammillated albuminous coat of the shell acted as an effective barrier against the penetration of formalin. Faust and Russel¹ (1957) however, believe that this resistance is due to the thick transparent shell consisting of a relatively impermeable innermost lipoidal vitelline membrane. The latter hypothesis appears to be more acceptable, *firstly*, because the coarsely mammillated albuminous covering may be lacking at times and it is not essential for embryonation; and *secondly*, the impermeable vitelline membrane is not found in the unfertilized eggs of *Ascaris lumbricoides*.

(2) Is it safe to preserve human faeces with 10% cold formalin?

From the present observation it is clear that fertilized eggs of *Ascaris lumbricoides* remain viable after 3 years in cold formalin. Students who may be careless in preparing the faecal emulsion are liable to contaminate their finger with the viable ova. They may not wash their hands well before going from the laboratories to the dining halls. They may thus get infected with *Ascaris lumbricoides*.

Specimens of faeces preserved in hot formalin are not likely to contain viable ova and so there can be no danger of infection. It is therefore, recommended that faeces may be preserved in boiling formalin as detailed in the original Blacklock and Southwell technique⁴.

Appendix No. I

The method of preservation of specimens of faeces adopted in the Pathology Department of the S.M.S. Medical College, Jaipur :—

Take about 40 g. of formed faeces in a wide-mouthed amber coloured one litre bottle. Keep adding small quantities of distilled water to it and mix the faeces with a hard wooden spatula, till it gets the consistency of porridge.

Pour 150 cc. of 10% formalin (cold) to the porridgy material, stirring all the while. The bottles are then covered with tightly fitting glass stoppers and stored in a dark corner of the laboratory so as to prevent undue evaporation. Ten per cent formalin may however, be added at intervals to bring it up to the original volume when evaporation has occurred during the summer recess. At the time of the examination, the bottle is stirred well, with a wooden spatula and smears are then made directly from the bottle with a loop or dropper.

Appendix No. II

The Blacklock and Southwell, method of preserving specimens of faeces.

A small quantity of faeces about the size of a small marble should, if formed, be made to the consistency of porridge by the addition of water; about 150 to 200 cc. of 10% formalin should be brought almost to boiling point, and poured on the faeces, stirring all the while.

This emulsion is allowed to sediment for several hours and then the supernatant fluid is decanted; about 150 to 200 cc. of cold 10% formalin is added to the sediment. Worms, eggs, larvæ and certain intestinal protozoa are all fairly well preserved by this method.

REFERENCES:

1. Faust, E. C. and Russel, P. F. (1957)—Craig and Faust, Clinical Parasitology, Sixth edition, page 415, Philadelphia, Lea and Febiger.
2. Faust, E. C. (1949)—Human Helminthology, 3rd edition, page 469-470, Philadelphia, Lea and Febiger.
3. Sengupta, A. and Mitra, S. (1950)—Ind. Med. Gazette, 85: 138.
4. Blacklock, D. B. and Southwell, T. (1940)—A Guide to Human Parasitology, 4th edition, page 105, London, H. K. Lewis and Co. Ltd.

SEXUAL POTENCY IN AGEING MALES

Questions about sexual activity were interspersed among other clinical questions by Finkle, Moyers. Tobenkin and Karg of San Francisco in the examination of 101 men between 55 and 86 years of age. All were ambulant patients whose presenting complaints did not *per se* constitute impediments to sexual activity. Of 51 patients 69 years or less of age, 33 (65%) were potent in the sense of having copulated at least once in the previous year. Of 50 men over 70 years of age, 17 (34%) were potent. There was a general decline with age, but individual differences were marked, and two of the five men who were over 80 years old stated that they were still active, with 10 as the average number of copulations per year. These results are of fundamental importance in assessing the functional results of various types of prostatectomy.—(J.A.M.A., July 18, 1959).

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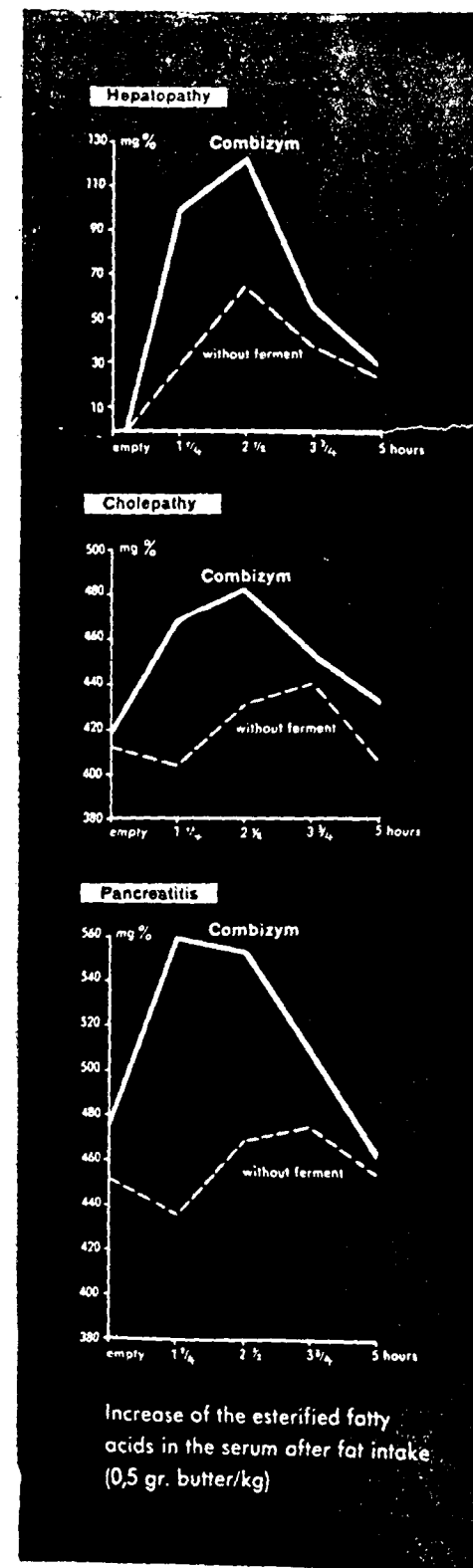
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REPORT ON THREE CASES OF CHRONIC INVERSION OF UTERUS *

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WITHIN the last 10 years I have had occasion to treat three cases of chronic inversion of the uterus, two caused by extrusion of submucous fibroid arising from the fundus of the uterus and one following a normal labour. Since inversion of the uterus is a rare condition and inversion caused by submucous fibroid is rarer still, these three cases are worth reporting. After presenting the reports of the cases, the subject of "Inversion of uterus" will be discussed.

CASE I:—The patient, a 30 year-old primipara, was admitted on 6-11-48 in the gynaecological ward of the Patna Medical College Hospital under my care. She gave a history of continuous blood-stained vaginal discharge for the last 8 months; during the last 3 months the bleeding had increased. Her previous menstrual periods were regular. She had one normal delivery 14 years previously.

She was moderately anæmic. Abdominal palpation revealed no abnormality. On vaginal examination a globular mass about 3 inches in diameter was more or less filling the vagina. She was examined under anæsthesia, as it was difficult to make out what this mass was. The globular mass was found to be a sessile submucous fibroid arising from the left side of the fundus and the left cornua of the uterus which was inverted (second degree). Rectal examination helped to confirm the diagnosis. The patient was treated with hæmatinics and vaginal douches.

On 13-11-48, the fibroid was enucleated after incising the capsule about $\frac{1}{2}$ inch away from the fundus, the bed of the tumour was sutured and the vagina was packed. Packing of vagina was continued daily for 10 days in the hope that the uterus will spontaneously re-invert but as there was no sign of re-inversion, the packing was discontinued and Haultain's operation was decided upon.

About 4 or 5 days after the packing was discontinued, the patient developed thrombophlebitis of the left femoral vein which took nearly six weeks to subside completely.

On 20-1-49 the inversion was corrected by Haultain's method. It was not possible to reduce the inversion by cutting only the cervix posteriorly over the inversion cup, the incision had to be extended almost up to the fundus on the posterior wall of the uterus. The patient had an elevated temperature for a few days, otherwise her recovery was uneventful.

* Paper read at the meeting of the Bihar Obstetric and Gynaecological Society.
Specially contributed to the ANTISEPTIC.

CASE II:—A 40 year-old, para 6+0 was admitted on 8-2-1951 about midnight with a history of severe abdominal pain resembling labour pains since 6 p.m. and something was protruding from the vagina from 7 p.m. Since her last delivery 10 years previously, she was having menorrhagia *i.e.*, bleeding lasted for 8 to 10 days, instead of 4 to 5 days and the loss was heavy. For the last one year the bleeding was very excessive lasting 12 to 15 days but recurring in a 28-30 day cycle. When the bleeding stopped there was a brownish vaginal discharge. Six months previously she noticed a lump in the suprapubic region.

On admission the patient looked very ill and there was marked anaemia. Her pulse was 102/m.; B.P.: 94/64 and Hb. 30%. No mass was palpable per abdomen. Vaginal examination showed a large, gangrenous, sloughing mass filling the vagina. The cervical rim was felt gripping the mass tightly all round in its upper-part. There was a very offensive blackish, brown discharge. The patient was then not in a fit condition for any and supportive treatment. She was therefore, given morphia, penicillin

By next morning, the whole mass and part of the uterus had come outside the vagina and examination revealed a completely inverted uterus (3rd degree including the part of the vagina) with a submucous fibroid about 4 inches in diameter attached to the fundus of the uterus by a very short but broad pedicle. Treatment was given to improve the severe anaemia and control the infection. The tumour was dressed with gauze soaked in Dettol solution. As there was retention of urine, the bladder was kept empty by an indwelling catheter. The tumour gradually became smaller and was eventually reduced to half its original size. After about 3 weeks the whole mass could be pushed back into the vagina and kept in by vaginal packing. A few days later it was found that there was the partial reduction of the inversion *i.e.*, the inversion was of the second degree with the cervix gripping the isthmus of the uterus. The patient was able to evacuate the bladder herself. The improvement in her anaemic condition was a very slow process, as it was possible to arrange for only 300 cc. of blood for transfusion. The patient was treated with hæmatinics and after 2 months the Hb. was 55%. On 9-4-1951 the submucous fibroid was enucleated and even though the vaginal packing was continued for 10 days there was no sign of any further spontaneous reduction and the patient refused to stay on any longer. As she lived quite close to the hospital and as she promised to return later for further treatment, she was discharged from hospital. She came from a family with a very low income, so she attended the hospital, every 2 or 3 weeks for medicines. There was continuous blood-stained discharge but she was reluctant to have any further operative treatment.

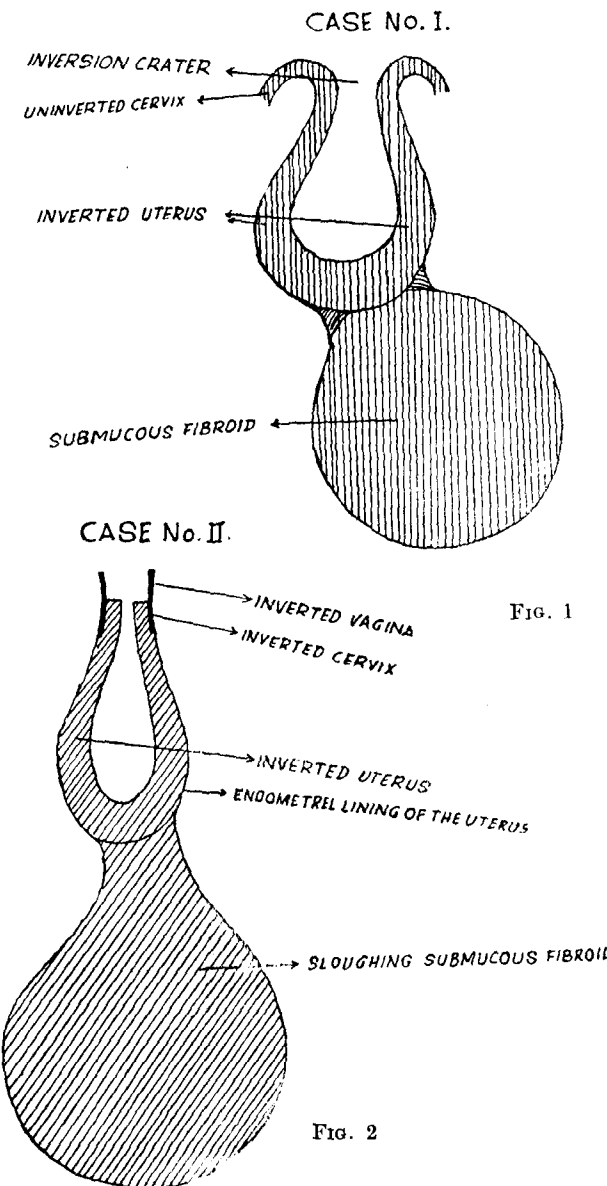
On 29-7-1951 she had severe bleeding and she was readmitted to hospital on 1-8-1951. Five days later, abdominal hysterectomy

was done after reducing the inversion by Haultain's method. Post-operative recovery was uneventful.

When hysterectomy is required in cases of inversion it is usually carried out by the vaginal route. As this case had severe infection and as cases have been reported where adhesions of intestines and omentum or the inversion crater occurred after infection, it was considered safer to carry out the hysterectomy by the abdominal route.

CASE III:—The patient, a 25 years-old primipara was admitted on 10-4-'59 with a history of continuous bleeding and backache since her last delivery nine months previously. She stated that the delivery was normal and the placenta was expelled spontaneously without any difficulty; she had fever for one month after delivery. She was admitted as a case of cervical polyp.

She was moderately anaemic. Abdominal examination revealed nothing abnormal. Vaginal examination revealed a small pyriform mass, smaller than a normal-sized adult uterus, in the vagina and the body of the uterus was not palpable in the pelvis. Cervix formed a collar round the inverted isthmus part of the uterus. As the patient was a thin-built woman the crater formed by the inversion was felt by the abdominal hand.



She was treated for her moderate anæmia and antiseptic vaginal douches were given for a few days. On 30.4.'59 the inversion was corrected by Haultain's operation. While the inversion was being reduced by an assistant pushing the inverted body up from the vagina the incision on the posterior lip of cervix extended up the posterior wall of the uterus to the fundus. The uterus was hyper-involuted and the round ligaments were very thin. Post-operative recovery was uneventful.

CASE No. III

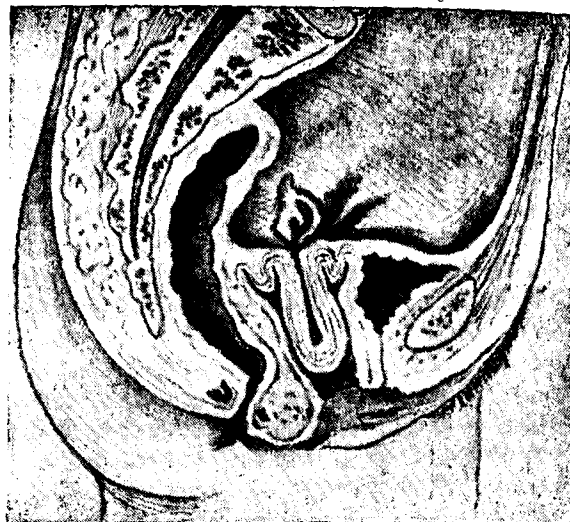


FIG. 3. Incomplete chronic inversion of uterus—copied from *Gynaecology* by MacLeod and Read.

versions.' When inversion occurs in a non-pregnant uterus it is called non-puerperal inversion and these are always chronic.

There are different degrees of inversion, when the fundus of the uterus has not passed through the external os, it is called first degree inversion or incomplete inversion. Second degree inversion is one in which the fundus or fundus and body of the uterus have passed through the external os and are lying in the vagina; in this the cervix which is not inverted forms a collar round the isthmus. In the third degree cervix or both cervix and part of the vagina are also inverted so that no rim of the cervix can be palpated on vaginal examination; this is extremely rare. The second and third degree conditions are generally known as complete inversions.

Incidence.—Das (1940) gave the most commonly accepted figures as 1 in 30,000 labours. Of the 233 cases of inversion of the uterus analysed by McCullah (1925) 15.0 per cent were non-puerperal while Das (1940) found that 16.35 per cent of a total of 391 cases were non-puerperal.

Inversion of the uterus.—This is a condition in which the uterus is turned inside out. Inversion of uterus is usually divided into acute and chronic, puerperal and non-puerperal. Those that occur immediately after labour are known as puerperal inversions and these are usually acute; in these cases rarely is the inversion a gradual process and it is not discovered till several weeks later when they come under the term 'chronic in-

Causes of inversion of the uterus.—Puerperal inversion most commonly follows labour but it can also occur after abortion. Mismanagement of the third stage of labour and the injudicious use of oxytocic drugs are usually blamed for this accident. A large number of reported cases have occurred following Crede's manœuvre or fundal pressure. Other causes given are pulling on the cord when the placenta is still attached to the uterus, fundal attachment of the placenta, (inversions in cases of placenta prævia have been recorded) unusually short cords, forceps delivery, manual removal of the placenta, delivery in the erect posture and vomiting or straining during the third stage or within a few hours after delivery producing sudden rise in intra-abdominal pressure. Many of the puerperal inversions are spontaneous in origin; Das (1940) found that 40% of the cases analysed by him were spontaneous, while Harer and Sharkey (1940) found 24% to be spontaneous puerperal inversions and Quigley (1955) 50 per cent.

Most of the nonpuerperal inversions occur during extrusion of a submucous fibroid attached to the fundus or upper part of the uterus, either sessile or with a short broad pedicle, but it can be caused by sarcoma or even carcinoma of the body of the uterus.

Idiopathic non-puerperal inversions are almost unknown, only one case being reported by Selkin-Aronson and Karein in 1941. Manual traction on a protruding tumour may assist in producing inversion and the inverted part of the uterus may be mistaken for the pedicle. I have seen this happen in a case where one of my assistants pulled on a fibroid polyp and brought it out of the vagina; the inverted part of the uterus was mistaken for the pedicle, clamped, cut and ligatured. When I was shown the specimen the mistake was discovered. As this patient had a fibroid on the body of the uterus also, hysterectomy was carried out by the abdominal route 8 or 10 days later. She did not have any complications.

The pre-requisites to inversion are a relaxed uterine wall and a dilated cervix. Attachment of the placenta or fibroid thins out and relaxes the uterine wall where they are attached. If, due to any reason, this area invaginates into the uterine cavity the other parts of the uterus contract and try to expel this and in a puerperal uterus the cervix is already dilated, while the cervix dilates during the process of extrusion of the fibroid or other tumours.

SYMPTOMS.—Acute puerperal inversion is usually accompanied by severe shock and hæmorrhage. Inversion is a very important cause of obstetric shock. In some cases shock is present without hæmorrhage, even when there is hæmorrhage the severity of the shock is often out of proportion to the amount of blood lost. The

cause of the severe degree of shock in inversion is considered to be due to traction and stretching of the nerves in the broad ligament and from pressure on the ovary if one or both ovaries are drawn into the invagination of the inverted uterus. It may partly be due also to the sudden fall in the intra-abdominal pressure caused by the withdrawal of the still large uterus from the abdominal cavity.

Shock and hæmorrhage are not present in every case of puerperal inversion; Case No. III, in this series is an example. In these cases there are no symptoms and they are diagnosed only when a vaginal examination is carried out, 3 or 4 weeks or even later because of the continued vaginal bleeding after delivery.

The most common symptom in chronic inversion is a continuous blood-stained vaginal discharge. There may also be menorrhagia and dysmenorrhœa. In some cases there is bladder irritability and dysuria and in third degree inversions, there is often retention of urine (*vide Case II*, p. 843). The chronic blood loss produces anæmia.

DIAGNOSIS.—Collapse and hæmorrhage during or within a few hours of the third stage of labour should make one suspect acute inversion of uterus particularly if this occurs after Crede's manœuvre or fundal pressure or after forceps delivery under general anæsthesia. There will also be difficulty in palpating the uterus per abdomen. But, a definite diagnosis can only be made by vaginal examination which will reveal a soft velvety mass in the vagina. At the upper end, the cervical ring will be felt encircling this mass except in cases of 3rd degree retroversion, which are extremely rare. The body of the uterus is not palpable per abdomen and the inversion crater may be felt by the abdominal hand in thin-built women.

Cases of chronic inversion are sometimes diagnosed as cervical polyp (*vide Case III*) as the cervical cup of inversion is mistaken for a dilated cervix through which the polyp has come out. When in doubt a uterine sound or a probe should be passed. When inversion it will be impossible to pass the uterine sound or probe as the top of the cervical cup prevents their passage. A rectal examination will also help as it is easier to feel the crater of inversion by recto-abdominal palpation. The body of the uterus will be absent from the pelvis.

TREATMENT:—Various methods have been advocated for the treatment of inversion. Spontaneous reinversion is rare but have been reported (Nelson and Sites 1956).

1. *Manual reposition*:—This is done by inserting the tip of the finger into the sulcus between the cervix and the lower uterine segment and making upward pressure, thus trying to replace first the portion which was inverted last. Manual replacement is

sometimes carried out by applying pressure upwards over the most dependent part of the inverted uterus.

Manual replacement is generally done in cases of acute puerperal inversion and this method is often successful in recently inverted uteri. After the uterus has passed through it, the cervix gradually contracts around the lower uterine segment and once the cervix has contracted down it becomes very difficult for the inverted uterus to be forced through the cervix. Hence manual replacement often fails, unless it is carried out almost immediately.

If the placenta is still attached to the uterus many authors advise to reinvert the uterus and then remove the placenta but in going through the recorded cases it appears that in many cases it was impossible to carry out manual replacement with the placenta attached and once the placenta was removed reposition was much easier.

2. *Huntington's method*:—Huntington (1921) devised a method by which the inverted uterus is reduced by opening the abdomen and pulling up the inverted uterus through the inversion crater. He described his method in *The Boston Medical and Surgical Journal* but as this Journal is not available here the description of this method given below is taken from an article by Huntington and his colleagues (1928) where 5 cases of acute puerperal inversion treated by the Huntington's method without any death are reported.

After opening the abdomen and identifying the crater produced by inversion, the operator and his assistant, each introduced one pair of Alli's forceps into the crater for about an inch and grasping the surface of the uterus on his side pulls on the forceps upwards simultaneously, drawing up a portion of the uterus out of the crater; keeping this portion steady two more Alli's forceps are introduced into the crater for about the same distance as before, the sides of the uterus are grasped and pulled upwards. This process is continued until the inverted uterus is completely brought out of the crater and restored to the peritoneal cavity.

Huntington and his colleagues are of opinion that manual reposition of acute puerperal inversion has a high failure rate and is often accompanied by severe bleeding and a high mortality rate.

In both cases of chronic inversion caused by fibroids, I could not correct the inversion by Huntington's method. In my Case No. 3, this method was not tried as the uterus was hyper-involved and the crater was so small that it was difficult to introduce two pairs of Alli's forceps into it. I have seen the late Dr. A. N. Sarkar of Patna, correcting a case of puerperal inversion of about 4 weeks' duration by this method, the body of the uterus in this case was easily pulled up by Allis forceps.

3. *O'Sullivan's hydrostatic method*:—This method of applying hydraulic pressure was accidentally discovered by O'Sullivan and two cases of acute puerperal inversion successfully treated by that method were reported by him in 1945. While giving vaginal douches to a case of acute puerperal inversion after unsuccessful attempts at manual replacement by taxis, his forearm happened to block the vaginal orifice and the vagina ballooned out with the held-up antiseptic solution used for the douche. After the douche, he found that the uterus had completely returned to its correct position. Later he successfully used this method in more cases. Other authors have also reported success with this method.

In 1958 Dr. Taylor Smith introduced the plan of exerting on the inverted uterus gentle and long sustained pressure by introducing a rubber balloon into the vagina and distending it with water but O'Sullivan's method appears to be more successful as it applies more even pressure over the uterus.

4. *Postural method*:—Acute inversion of the uterus has been recognized in India since ancient times and was treated by placing the patient head down on an acutely inclined plane on wooden planks. The patient was held in place by fastening the ankle on to the wooden plank. Suspension in this position for an hour or more would appear to have usually succeeded in reinverting the uterus.

CASE No. III

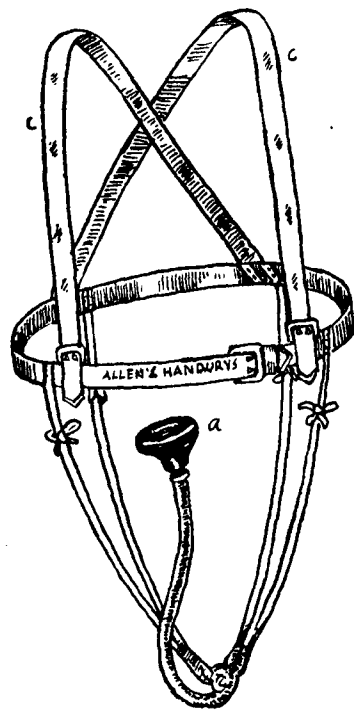


FIG. 4. Aveling's Repositor.

caused by obliteration of the inversion crater by adhesions or due to rigidity of the uterine muscle. In a long-standing case

5. *Reposition of uterus by Aveling's repositor*:—In case of chronic inversion the methods described above are not of much use. One of the oldest methods used for chronic inversion is the application of Aveling's repositor. The aim is to apply continuous elastic pressure to overcome the resistance offered by the inversion ring. The vulcanite cup of the repositor fits over the fundus of the uterus and it is kept in position by straps from the stem of the pessary connected to be a belt round the waist which is held at the correct level by shoulder straps. The cup should fit the fundus accurately and this can only be done by making an Aveling's repositor suitable for each individual case. Failure is also

this method often fails, it requires constant readjustment of the straps and belt and also careful watching for signs of reduction in order to remove the repositor before the inversion is completely reduced, as otherwise the cup may be carried inside the uterus and there will be difficulty in removing the cup from the uterine cavity through the narrow cervix. Because of these difficulties and also of the difficulty in obtaining suitable Aveling's repositors, this method is now seldom used. Operation is almost always required in cases of non-puerperal inversion even though spontaneous reductions of inversion have been reported after enucleation of the fibroid and packing the vagina.

6. *Spinelli's operation*:—This operation is carried out by the vaginal route. In this the uterovesical pouch is opened through the anterior fornix after pushing up the bladder, the anterior wall of the uterus is cut through by scissors in the midline from the external os to the top of the fundus. The uterus is re-inverted

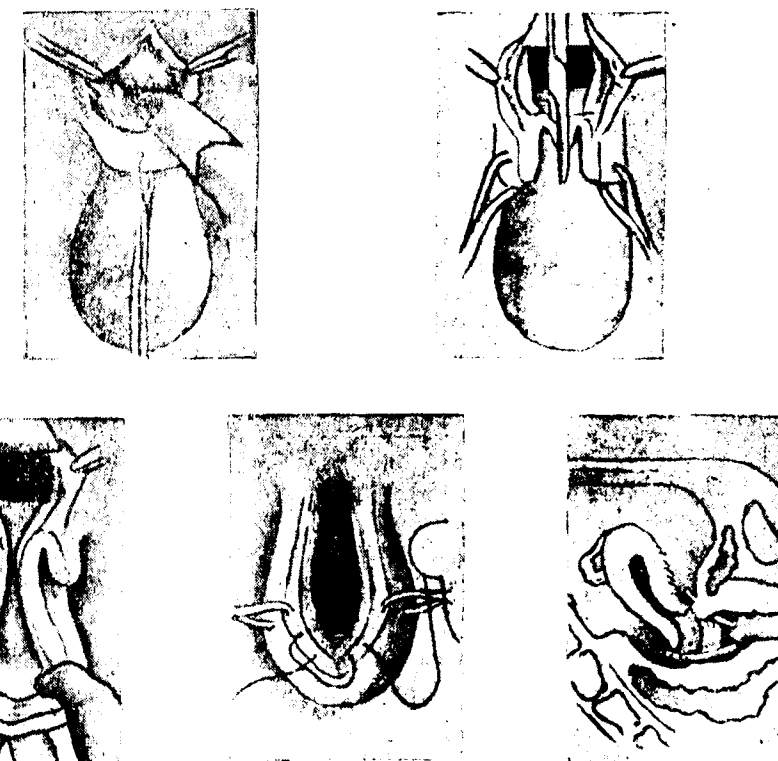


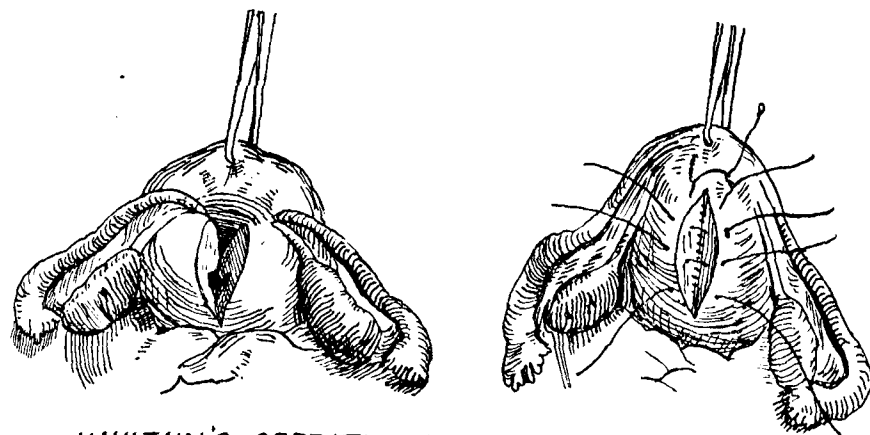
FIG. 5. Spinelli's operation for chronic inversion of uterus.
Copied from *Gynaecology* by MacLeod and Read.

by inserting the two index fingers at each cornua and pushing in the endometrial surface with the thumbs, the incision in the uterus which now lies behind is closed in 2 layers with catgut sutures, first layer muscle and second layer superficial muscle

and peritoneum. The uterus is now returned to the pelvic cavity by pushing it up through the opening in the uterovesicles pouch of the peritoneum and the peritoneal opening is closed. The bladder which was pushed up is brought back and stitched.

7. *Haultain's operation*:—After opening the abdomen the crater caused by the inversion is identified and held steady by applying two Allis's forceps on either side. The posterior rim of the cup is then incised through both the thicknesses of the inverted wall and the inverted uterus is pulled up from above, aided by a finger passed through the incision into the vagina or it is pushed up by an assistant by applying pressure on the fundus through the vagina. The incision on the cervix is now sutured with chromic catgut and the abdomen is closed.

FIG. 6



HAULTAIN'S OPERATION OF INVERSION OF THE UTERUS

The advantages claimed by Haultain for his operation over Spinelli's are that the incision in the uterus is more or less confined to the cervix, traction on the round and broad ligament helps reposition and the uterine wall can be more accurately sutured.

In the cases reported here the incision in the cervix had to be extended through the body of the uterus before the uterus could be brought up in the first and second cases and in these cases pulling on the round ligament and broad ligament did not help. The index finger had to be passed through the incision in the vagina to reinvert the uterus. In the third case, the round ligaments were very much thinned out and it was considered inadvisable to pull on them for fear of tearing them. The incision in the cervix had to be extended up along the body of uterus and an assistant had to apply pressure on the fundus through the vagina to bring up the uterus.

Discussion.—In spite of the greater and better facilities available for blood transfusion and of the discovery of antibiotics, the mortality from inversion of the uterus has not been reduced appreciably. Since this is a rare condition it has not been so far possible, to get data on an adequate number of cases to evaluate the results of different methods; hence there is yet no standard method of treatment. This probably accounts for the still high mortality-rate, which is from 18 to 40 per cent.

Most of the deaths in acute puerperal inversion occur within a few hours of the onset and are due to shock and hæmorrhage. In chronic inversions, the death-rate is very low as compared to the acute cases in which sepsis is the cause of death.

In the treatment of acute puerperal inversion, there are many controversial points: *e.g.*, should manual reposition be attempted immediately?; do attempts at manual reposition cause death by increasing shock?; will reduction by Huntington's method after the patient has recovered from shock help to reduce the mortality-rate considerably?; should the shock alone be treated, the inversion being left alone for 4 to 6 weeks for the uterus to involute completely and then corrected by surgical methods either by the vaginal or abdominal route? and should the placenta be removed or not before attempting manual replacement in the case of inversion occurring before the delivery of the placenta?

I have not myself treated any case of acute puerperal inversion. In going through the cases reported in the literature I found that where the inversion was discovered soon after its occurrence and manual replacement was undertaken immediately, it was generally successful. At this early stage the shock was only moderate and once the inversion was corrected, signs of shock rapidly disappeared. When there was delay, the patient went into a deep shock and at that stage any attempt at manual replacement would only end in disaster. Shock should be treated by morphia, blood-transfusion and warmth and by raising the foot end of the bed to relieve the drag on the nerves in the broad ligament. Manual replacement should be attempted only after the general condition has improved which may take several hours. During this time the cervix would slowly contract down and grip the isthmus making the manual reposition much more difficult. Most of the deaths in cases of acute inversion followed repeated attempts at manual reposition which brought on severe hæmorrhage leading to profound shock. In these cases, if one or two attempts failed or if the patient started bleeding even with the first attempt it would be better to replace the uterus by Huntington's method after the patient recovers from shock. Ergometrine given intramuscularly would help to stop the bleeding.

If the placenta remained still attached to the uterus and there was no bleeding it would be better to replace the uterus before removal of the placenta, otherwise severe hæmorrhage would occur as the uterus might not contract. In many of the reported cases reinversion was difficult with the placenta still attached to the uterus and after removing the placenta still reposition was easily accomplished.

Summary.—Two cases of non-puerperal inversion caused by submucous fibroid and one case of chronic puerperal inversion are reported. The causes, signs and symptoms and the different methods of treatment are discussed.

REFERENCES:

1. Das, P. J. (1940)—Obstet. and Gynec. Brit. Emp., 47: 525.
2. Harer, W. and Sharkey, J. (1940)—J.A.M.A., 114.
3. Huntington, J. L., Irving, E. C. and Kellogg, F. S. (1928)—Am. J. Obstet. and Gynec., 15: 34.
4. McCullah, W. M. (1925)—J. Obstet. and Gynec. Brit. Emp., 32: 280.
5. Nelson, J. H. and Sites, J. G. (1956)—Am. J. Obstet. and Gynec., 72: 660.
6. O'Sullivan (1945)—Brit. Med. J., 2: 282.
7. Quigley, G. J., (1955)—Am. J. Obstet. and Gynec., 69: 277.
8. Selkin-Aronson, E. and Karen, B. (1941)—Am. J. Obstet. and Gynec., 42: 540.

CLINICAL RESULTS WITH SULPHADIMETHOXINE —A NEW LONG ACTING ANTIBACTERIAL

In the quest for safe, effective antimicrobial agents, sulphadimethoxine (Madribon) a new long acting compound, seems quite promising. There is increasing evidence of rapid response to therapy in a wide range of infections.

After examining more than 20,000 potentially useful therapeutic agents, the Roche Laboratories have submitted Madribon as a superior drug from the standpoint of safety and clinical effectiveness. Dr. M. J. Mosely, Jr., evaluates the therapeutic response of 50 patients, with varying types of infections, while being treated with sulphadimethoxine.

The conditions treated included: sinusitis; pharyngitis; bronchitis; cellulitis; salpingitis; cystitis; gonorrheal urethritis; non-specific urethritis; acute coryza; and various other soft tissue infections.

Most of the patients treated appeared to respond rapidly to therapy with the new drug in adult dosages of 1 gm. initially and 0.5 gm. each day thereafter, for an average of six to seven days.

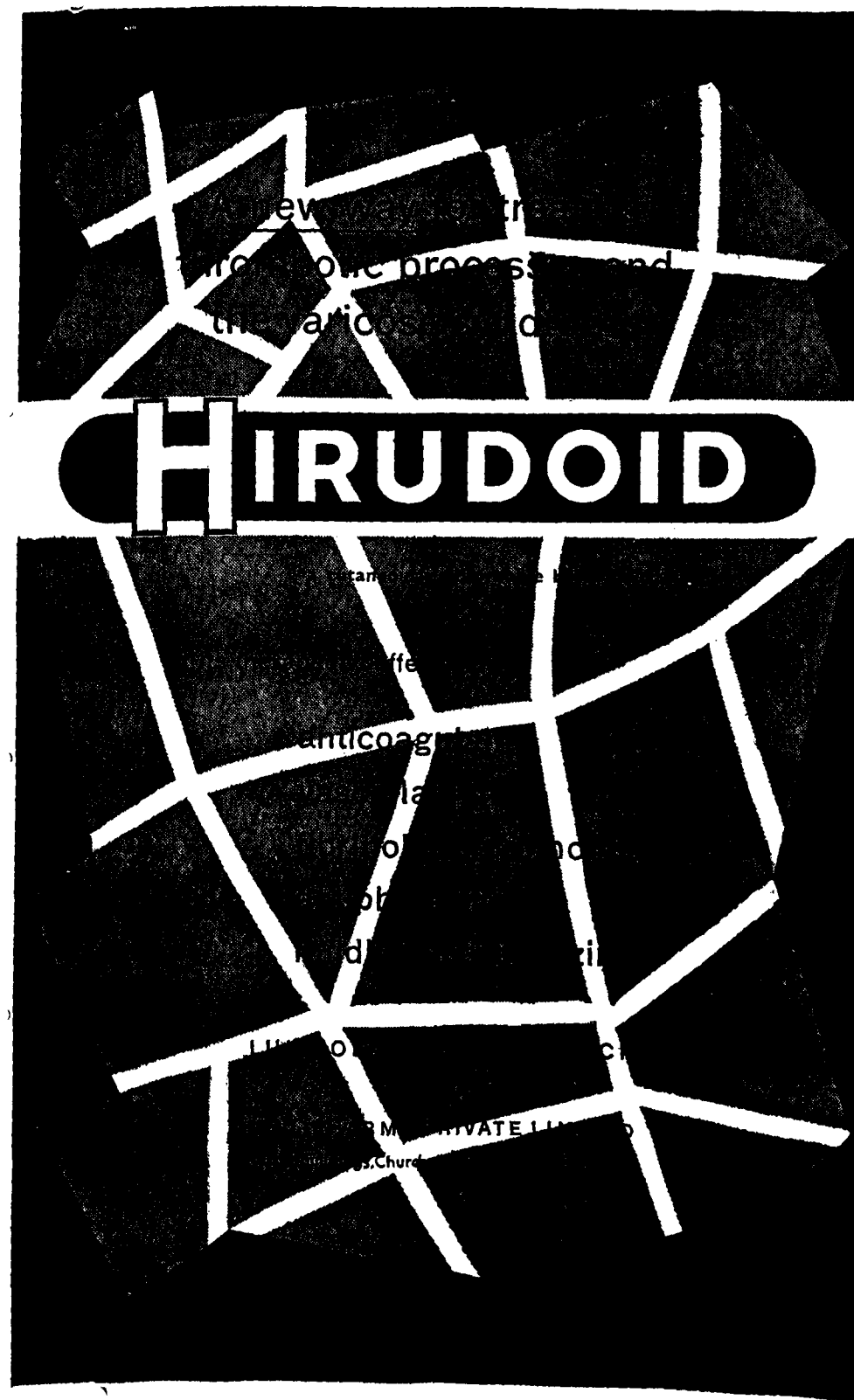
Patients were evaluated in regard to therapeutic response; the stability of recovery; adverse reactions; related urinary pathology; most effective dosages; and general opinion of the new approach to treatment.

Good to excellent results were obtained in 80% of all patients treated; 14% were considered fair responses to treatment; and 6% were deemed unsatisfactory. One mild clinical reaction was observed in a seven-month old patient.

Adult patients were pleased with the ease of administration and economy of therapy. Many were excessive in praise after having been treated with other forms of medication.

The largest number of cases seen were those with upper respiratory pathology. Of the total 22 patients treated for rhinitis, tonsillitis, pharyngitis and coryza, 95% had good to excellent results, five per cent were judged fair and there were no cases which could be classified as poor.

The general response to sulphadimethoxine in this series of 50 patients would suggest a valuable new adjunct in the treatment of infection.—
(*Jour. National Med. Assoc.*, July 1959).





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RENAL DWARFISM*

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RENAL dwarfism is defined by Barber as "a condition of stunted development associated with bone deformities of the late rickets type due to an insidious chronic interstitial nephritis of obscure ætiology." Both sexes are equally affected. The onset is insidious occurring in late childhood up to puberty. Genu valgum is usually the most marked bony lesion but the deformities may be widespread. Intelligence is not impaired. The initial lesion appears to be a chronic progressive and possibly congenital nephritis. Cardiovascular hypertrophy is slight or absent. There may be no history of a preceding attack of acute nephritis. In this, dwarfism may exist alone or may be complicated by rickets with the corresponding enlargement of the epiphyses, beading of the ribs and genu valgum.



FIG. 1.

CASE REPORT:—Mr. H., Muslim, aged 22, bachelor, landlord, was admitted on 14-12-'58 with the complaints of stiffness of all joints and the neck; pain all over the body; deformity of the right knee and difficulty in walking of three years' duration.

History of present illness.—The present complaint started with dull pain in both the regions of the knees and legs, which did not radiate, and was persistent throughout the day. Later, he noticed swelling of the right wrist joint. He realized that he could not make a complete "fist" with the fingers of the hands as the fingers were stiff; he could not lie flat on his back. When the patient wanted to lie on his side, he had to flex both his knees and hip joints. He could not raise his arms straight over his head.

*Specially contributed to the ANTISEPTIC.

Personal history.—The patient was a landlord not used to any hard work; has not suffered from any serious illness before. He was a non-vegetarian, not given to smoking or drinking. His father had two wives and he was the eldest son by the second wife; he has three younger brothers and one sister and all are quite well.

Physical examination.—*General*.—He was a right-handed ill-nourished individual, twenty-two years of age, looked under-nourished for his age; he was anæmic; he was short-statured with a normal head, short neck, barrel-shaped chest; not well developed extremities; knock-knee present on the right side. He could not open his mouth fully and could not walk fast. His hearing was good and his teeth were well-developed. He had few sparse hairs on his moustache and beard areas. Secondary sexual characters were present. He was 4 feet 9 inches high, and weighed 84 lbs. His span was 5 feet 2 inches; the circumference of the

head was 22 inches; from pubis to groin was 28 inches; and from pubis to vertex was 29 inches.

Physical examination of the cardiovascular, respiratory, alimentary and central nervous systems did not show any abnormality.

Investigations.—*Urine* on 14-12-'58 was straw-coloured with a specific gravity of 1004; acidic in reaction; albumin was present but no sugar; occasional red-blood corpuscles and a few pus cells but no casts in the deposits. *Urine* on 21-4-'59 had a specific

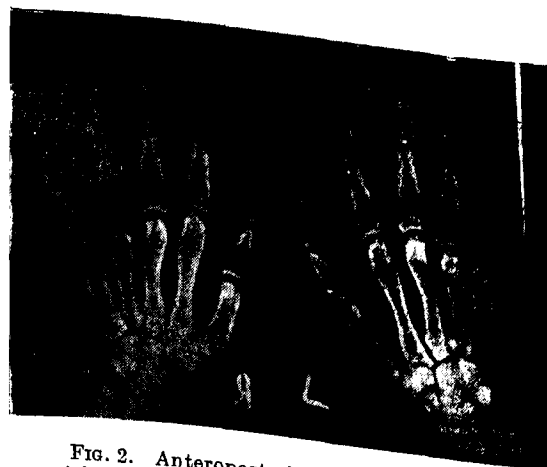


FIG. 2. Anteroposterior view of both wrists with phalanges.

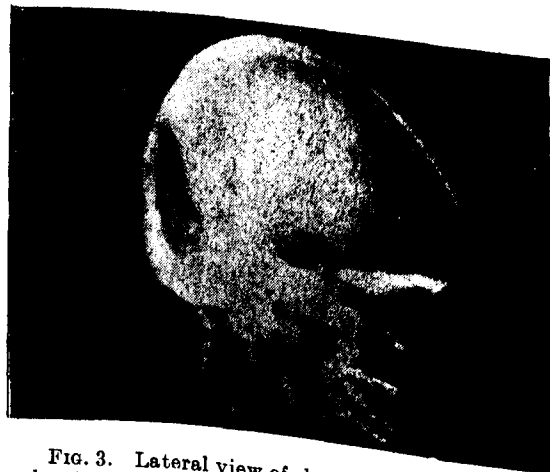


FIG. 3. Lateral view of skull. Showing increased density of outer table and platybasia.

gravity of 1002 and was acidic in reaction; albumin was present; a few red-blood corpuscles and a few pus cells and no casts in the deposits. Stools showed no ova or cysts.



FIG. 4. Anteroposterior view of lumbar spine and pelvis.



FIG. 6. Anteroposterior view of humerus (both).



FIG. 5. Anteroposterior X-ray of both bones of forearm.



FIG. 7. Posteroanterior view of chest for heart and lungs. Lung-fields normal. Heart borders are not enlarged.

The blood on 15-12-'58 showed a total W.B.C. of 5,400 per cmm.; total R.B.C. 3 millions per cmm. and Hb. of 50%.

The differential count showed polymorphonuclears to be 52%; lymphocytes 42%; monocytes 4%; and eosinophils 2%.

The erythrocytic sedimentation rate was 95 mm. per hour. The V.D.R.L. test was negative.

On 21-4-'59 the blood showed a total W.B.C. of 5000 per cmm. and total R.B.C. of 2.6 million per cmm. The Hb. was 45%.

The differential count showed polymorphonuclears to be 59%; lymphocytes 35%; eosinophils 6%. The erythrocytic sedimentation rate was 100 mm. per hour. The blood pressure several occasions was 120/70 mm.

The total serum proteins were 6.96%; albumin 4.38 gm.%; and globulin 2.58 gm.%. Blood-chlorides were 450 mg.%; and on 22-4-'59 was 75 mg.% and on 18-5-'59 it was 95 mg.%. Blood urea electrophoretic pattern of the serum was normal. Serum alkaline phosphatase on 22-4-'59 was 72.4 units, while serum acid phosphatase was 5.6 units. The serum calcium was 8.5 mg.%; and serum phosphorus was 7.9 mg.%. The fluorine content of bone, blood and urine was within normal limits.

The results of the urea clearance test on 20-12-'58 were:—Urine urea 529 mg.%; minute volume 3.14 cc.; maximum clearance 17.5%; and urine chloride was 400 mg.

While on 19-5-'59 the urea clearance test showed urine urea to be 3.81 mg.%; minute volume to be 2 cc. and maximum clearance to be 10.5%.

Biopsy result of bones taken from the right iliac and right tibia was suggestive of 'Paget's disease of bone.'

Roentgenographic examination.—PLAIN X-RAY OF SKULL:—The outer table of the skull appeared to be thickened most markedly in the occipital bone and the differentiation between the outer and inner tables of the skull was however maintained. The sutures were well seen. There was thickening of the base of the skull. Basilar invagination was present (platybasia). In this condition, the lack of rigidity in the middle and posterior fossæ resulted in the base of the skull with the foramen magnum being forced upward by the cervical spine.

ROENTGENOGRAM OF SPINE AND EXTREMITIES:—The bones of the extremities and the vertebræ showed the effects of "softening." Sclerosis was seen in the cortex of the bones and osteoporosis in the medullæ. There was also widening of the space at the epiphyseal junctions and the diaphyses were ragged and the ends were splayed to some extent. The epiphyses were delayed in uniting.

19-5-'59. I.V.P. Both the kidneys were not seen excreting the dye even after one hour of its administration by the intra-venous route.

Discussion.—From the clinical findings and roentgenological appearances, this appears to be a case of renal dwarfism. The progressive impairment of the renal function as shown by various tests in six months during which the patient stayed in the hospital, the increase of plasma inorganic phosphorus, the absence of cardiovascular changes, the insidious and slow onset of the disease, the symptoms dating back from puberty with no history of a preceding attack of acute nephritis and the presence of bone changes with the associated genu valgum, especially in a short-saturated individual, would serve to place the diagnosis of renal dwarfism beyond doubt.

The presence of albumin and the impaired renal function will go to differentiate renal dwarfism from hypopituitary infantilism associated with diabetes insipidus.

The biopsy result is however difficult to explain in this case, with the other associated findings. We request clarification from pathologists. The roentgenogram of the skull of this patient may be mistaken for osteitis deformans (Paget's disease) but so far as the latter is concerned the following points have to be borne in mind:—(1) The disease is not common in India; (2) and it rarely begins before the age of forty; (3) the biochemistry findings show the serum calcium and plasma phosphorus to be normal, although the plasma phosphatase is constantly high as in many other generalized diseases of the bone; (4) in this case, no other finding, except the biopsy points to a diagnosis of Paget's disease of bone.

Modern literature offers evidence that "biopsy" is the routine measure to-day in cases of known congenital deformity, dystrophy, and dysplasia, deficiency and endocrine disorders, inflammatory and neoplastic disease. Brailsford is of the opinion "that the experienced observer, can anticipate the essential histology from the radiographic picture. Histological examination is essentially the examination of minute microscopic areas. Biopsy adds no more additional information than radiography which permits us to study the whole skeleton at any one time and by periodical examination to watch its development throughout the years and the effect of function."

The mechanism producing the bone deformity is not understood. Long-standing impairment of renal function induces an increased excretion and a diminished absorption of calcium. In an attempt to maintain the concentration of calcium in the blood at a normal level, this substance is withdrawn from the soft growing bones with the production of the characteristic bony deformities. The renal defect causes phosphate retention and this progresses with the rise in blood-urea. As the plasma inorganic phosphorus rises, the serum calcium falls and defective bone apposition results.

Parsons and Teall describe two types of skeletal change:—*rachitic* and *woolly* or stippled. In the *rachitic* type the changes resemble those of rickets. While in the *woolly type*, there is a lack of calcification and the trabeculae are more obvious than usual. The metaphysis shows uneven ossification and loss of definition. Fractures of the shaft may occur. The changes in the skull resemble those of osteitis deformans, with thickening and separation of the tables of the vault and scattered areas of uneven density. The base appears to be thickened to a greater extent than in osteitis deformans in which the vault is chiefly affected. Osteitis deformans does not occur in children.

Some authors have described three types of bone abnormality associated with chronic renal failure viz., (1) Osteomalacia. (2) Osteitis fibrosa cystica. (3) Osteosclerosis. These may occur singly but almost certainly they may also occur together in the same patient. Osteosclerosis shown radiologically and histologically as an increased density of the bones may be local on generalized. Microscopically the lamellae are broad and heavily calcified. There may or may not be changes such as fibrous tissue proliferation and osteoclastic overactivity characteristic of osteitis fibrosa. It is not possible in the present state of our knowledge to explain the osteosclerotic changes.

In the case now under discussion here, all the changes described, are manifest to a certain extent and thus it is difficult to rule out with emphasis the association of rickets with chronic nephritis.

It is possible to explain the non-excretion of dye by the kidneys in this way. The marked dilatation and hypertrophy of the bladder with varying degrees of hydronephrosis and dilatation of the ureters may possibly account for impaired tubular absorption and incidentally non-excretion of the dye. This could be easily demonstrated by cystography and retrograde pyelography. A direct biopsy of the kidneys may possibly throw additional information on this obscure entity.

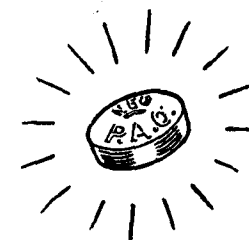
Summary.—A case of renal dwarfism in an adult male aged 22, with osteo-sclerotic changes in bones, is reported.

Acknowledgements.—Our thanks are due to Dr. K. Manjunatha Rai, M.B., B.S., F.R.C.S., D.M.R. (E.), Director, Institute of Radiology, Madras and Dr. R. S. Kesavaraj, M.B., B.S., Dean, Government General Hospital, Madras. Our thanks are also due to Dr. A. L. Annamalai, M.B., B.S., M.B.C.P. (M.), D.T.M. & H., Physician, Government General Hospital, Madras, for his kind help during our study of this case.

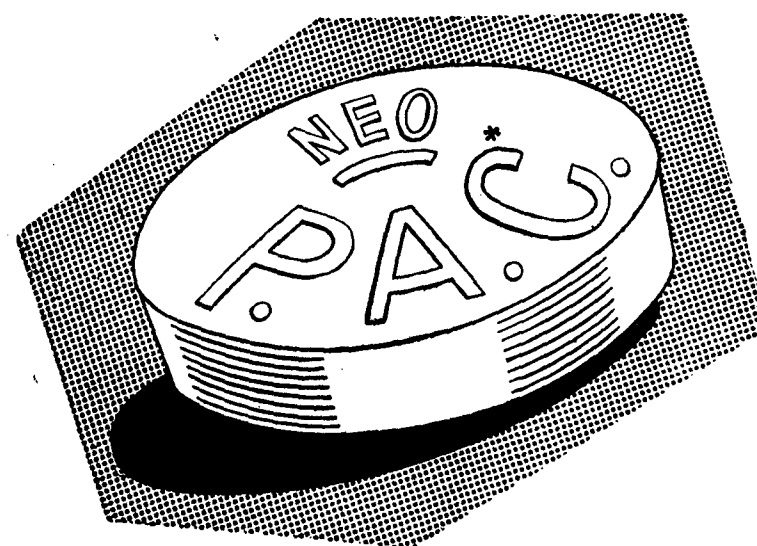
REFERENCES:

1. Brailsford, J. H. (1953)—The Radiology of Bones and Joints, V Edition, J. and A. Churchill Ltd., London.
2. British Authors (1950)—A Text-book of X-ray Diagnosis, II Edition, H. K. Lewis and Co. Ltd., London.
3. Daley, R. and Miller, H. (1956)—Progress in Clinical Medicine, III Edition, J and A Churchill Ltd., London.
4. Douthwaite, A. H. (1954)—French's Index of Differential Diagnosis, VII Edition, John Wright and Sons, Ltd., Bristol.
5. Parsons and Teall (1950)—Quoted by British Authors.

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DIARRHOEA AND ITS TREATMENT*

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THE word "Diarrhoea" means "flowing through" and the occurrence of this exhausting symptom is fairly common in general practice. The intestines have two main functions:—(1) motility and (2) absorption. If the rate of passage of food material is increased, there will be impaired absorption more particularly of water resulting in the passing of loose and fluid faeces—diarrhoea.

An ordinary meal takes approximately six to nine hours to reach the colon where absorption mainly occurs. Whatever is left unabsorbed (residue) passes down the colon, the residue (stool) changes its consistency from its liquid state into the semi-solid or dry consistency. This alteration in consistency depends on the amount of water absorbed through the mucosa of the large intestine. Although some residue is evacuated within twentyfour hours, the major portion is gradually excreted over several days. This expulsion of the residue—defaecation—is a reflex caused by a rise in intra-rectal pressure.

The autonomic nervous mechanism chiefly controls the onward passage of the contents of the gastro-intestinal tract—this movement is known as "peristalsis." The parasympathetic (vagus) augments the contraction while the sympathetic (splanchnic) inhibits them. Accordingly these impulses may originate from the brain or from the spinal cord. This fact must be kept in mind while dealing with the neurogenic causes of diarrhoea.

The causes for diarrhoea may be classified as follows:—

I. Acute diarrhoea.—(a) *The common causes are:—*The presence of irritating food; too much intake of water; intestinal parasites and infantile diarrhoea. (b) *The less common causes are:—*Typhoid and toxic blood conditions; chills; acute ulcerative colitis; some causes of chronic diarrhoea; and cholera.

II. Chronic diarrhoea.—(a) *The common causes are:—*Certain acute conditions becoming chronic; local conditions about the anus; ulcerations other than ulcerative colitis; chronic or mucous colitis; ulcerative colitis; portal obstruction or congestion; dysenteric diarrhoea and nervous diarrhoea. (b) *The less common causes are:—*Amyloid disease; senile diarrhoea; mineral poisons; gastrogenous diarrhoea; pancreatic disease; gastrocolic fistula; rare constitutional causes like diabetes; sprue; pernicious anaemia; hyperthyroidism and anaemia.

In this connection it is important to know that the frequent and indiscriminate use of antibiotics, particularly the 'broad spectrum' ones may also cause diarrhoea by disturbing the normal nonpathogenic flora of the gastrointestinal tract.

*Specially contributed to the ANTISEPTIC.

Diagnosis.—The gastrointestinal tract acts like a "mirror of the emotions," hence any marked or prolonged bout of diarrhoea in a patient should always alert the physician not to forget about the patient's physiological condition before any pathological conditions are thought of, as being the causative factors. Therefore a correct diagnosis has to be made and for this an exhaustive history of the complaint such as pain, fever, malaria, nausea and vomiting, intermittency and the presence of diarrhoea among contacts or in the community is of great importance to the physician. To clinch the diagnosis the following investigations should be made:—Rectal and proctoscopic examination, blood-count (for unrecognized and neglected anaemia due to blood-loss and for leucocytosis suggesting infection), stool-culture and examination of stools for the presence of ova and parasites and when necessary roentgen visualization of the gastro-intestinal tract. Sometimes it may be necessary to repeat the investigations, if the previous results had been negative.

TREATMENT.—The cardinal principles in treating diarrhoea, which is only a symptom and not a disease are:—to detect the cause and remove it; to advise rest in bed, fluid and electrolyte replacement; and to avoid aggravating factors.

While resorting to the drug treatment, when symptomatic therapy is contemplated, a few astringents together with sedatives are of value. The astringents can be conveniently classified into:—(1) *Vegetable*:—Tannic acid; catechu; rhatany (krameria); hamamelis (leaves); myrobalan and kino. (2) *Metallic*:—Alum; bismuth salts (carbonates, subnitrates and salicylates); calcium carbonate; copper sulphate; zinc sulphate; silver nitrate and lead acetate. (3) *Acidic*:—Acid sulphuric dilute. *Alkaloidal*:—Opium and its derivatives.

The most commonly used amongst these are the vegetable astringents, the bismuth salts and the preparations of opium. In addition to these astringents, chemically inert powders are given internally to act as protectives and adsorbents and thereby aid in controlling the diarrhoea. Kaolin is especially useful if the diarrhoea is caused by agents capable of being absorbed such as those causing dysentery.

In addition to hypermotility of the intestinal tract, there may also be spasm of the muscles of the wall of the tract, when severe pain may be the associated complaint along with the diarrhoea. In such conditions intestinal antispasmodics (like the preparations of belladonna) are of immense value. Tincture belladonna (dosage depending on the age and condition of the patient) or atropine sulphate often combined with a mild sedative like phenobarbitone will successfully relieve the symptoms.

Summary of treatment.—(1) The treatment should be simple; (2) the patient must be put to bed-rest; (3) fluid loss checked; and (4) a judicious diet prescribed; (5) an astringent together with a sedative should be given; (6) and if these conservative measures fail, then attempts should be promptly made to detect and eradicate the cause by suitable investigations.

INVESTIGATION OF HÆMORRHAGIC DISORDERS*

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UNTIL about 15 years ago, blood coagulation and hæmorrhagic disorders were of interest only to a few people who were actually engaged in their investigations. But more and more medical men are now taking interest in them and the intricate details of coagulation mechanism, and a variety of procedures for the measurement of disturbances in coagulation have come to be appreciated.

The pathologist of today is expected to carry out the investigation of hæmorrhagic disorders which were formerly only of academic interest. Prothrombin determination by one or two stage methods and prothrombin consumption tests, are now routine procedures and may on occasion, be legitimately required.

Terminology has been a very important source of confusion in understanding the subject of blood-coagulation. There has been a tendency to postulate the existence of a new factor wherever a new phenomenon is observed.

Coagulation.—The coagulation of blood is generally believed to occur in a series of reactions, each depending on the previous step, and it is now visualized as a process with three different phases:—*viz.*, (1) The formation of active plasma thromboplastin (4 to 5 minutes); (2) the conversion of prothrombin to thrombin (thrombokinase 12 to 15 seconds) and (3) the conversion of fibrinogen to fibrin (a few seconds).

Stage I: the formation of active plasma thromboplastin is initiated by contact action. The platelets liberate a lipoid factor which in conjunction with (AHG) anti-hæmophilic globulin and the so-called Christmas factor (P. T. C.), both of which are natural constituents of plasma, give rise to *prothromboplastin*. Prothromboplastin which is found in tissue extracts such as brain may also be liberated from the tissues as the result of injury and is sometimes known as *tissue thromboplastin*.

Contact action causing a rupture of platelets is thought to bring about an activation of profactor VII and now it becomes factor VII (stable factor) which requires calcium for its interaction. Prothromboplastin while labile factor (V) does not require it.

Active plasma thromboplastin is formed from prothromboplastin in conjunction with calcium, factor VII and factor V. Other factors concerned in the formation of thrombokinase are IIIrd factor, (Factor C), P.T.A. (plasma thromboplastin antecedent) or Rosenthal factor and (plasma thromboplastic factor D)

Specially contributed to the ANTISEPTIC.

or Factor IV. The final two steps of clotting are essentially those postulated by Morawitz 50 years ago. Thrombin results from the action of thromboplastin on prothrombin and thrombin enzymically converts fibrinogen into fibrin clot. Heparin acts in II stage and oxalates act in I and II stages.

Causes of hæmorrhage and hæmorrhagic disorders.—The term hæmorrhage denotes escape of blood from within the vascular system. Except that occurring during menstruation, any other loss of blood is abnormal. By far the commonest cause of hæmorrhage is injury to the blood vessel by trauma or excessive blood-pressure, or from any disease which weakens the vessel wall or erosion from pathological processes.

Any sudden loss of blood brings compensatory mechanisms into play immediately. Serious hæmorrhage causes a decline in blood-pressure and the clotting mechanism is accelerated within 10 minutes after hæmorrhage.

Normal hæmostatic phenomenon.—Although all the intricacies of the complicated physiological process of hæmostasis are not fully understood, enough information is available to form a working hypothesis. The factors involved in the arrest of blood-flow from a vessel are:—(a) Vascular; (b) tissue; (c) platelet factor; and (d) plasmatic.

When bleeding from a vessel occurs, all of them normally function in a co-ordinated manner.

(a) *Vascular*:—Intact blood vessels are obviously necessary to contain the circulatory blood. In addition, blood vessels particularly those with muscular walls, respond to mechanical (injury) or chemical stimuli (serotonin) with constriction, thus reducing the blood-flow.

(b) *Tissues*:—Normal tissues play a multiple role; thus when tissue is damaged, thromboplastic factors are released and probably initiate coagulation; elastic collagenous and fatty tissues in the skin serve to support blood-vessels and to protect them from injury.

(c) *Platelet factor*:—Normally platelets circulate as discrete cells and it has been postulated that their function is to plug minute vascular leaks.

In the presence of thrombin and other serum components, platelets agglutinate forming a white thrombus which may *per se* be sufficient to obstruct a bleeding point and may initiate the formation of a clot.—In addition platelets contain 5 factors which aid in hæmostasis:—(i) Vasoconstrictor factor or serotonin, which is released from agglutinated platelets and constrict the injured and adjacent vessels. (ii) Thromboplastic factor or lipoid factor: Factor I (Prothormbin-thrombin). Factor II (Fibrinogen-fibrin). (iii) Factor III or anti-heparin. (iv) Accelerator factor, which

has an action similar to plasma proaccelarin (labile factor) or it may be simply plasma proaccelarin adsorbed on to the platelets. (v) Retraction factor.

(d) *Plasma factor*:—Plasma contain a number of protein present in the circulating blood as inert or precursor substances which become activated after the blood is shed to form a clot.

Diagnosis of hæmorrhagic disorders.—A. INSPECTION OF STAINED BLOOD-FILM AND HB. ESTIMATION:—The diagnosis may be obvious as in leukæmia; macrocytosis in pernicious anæmia; pancytopenia—aplastic anæmia and platelet morphology.

B. INVESTIGATION OF DEFECTIVE COAGULATION:—1. WHOLE BLOOD CLOTTING-TIME:—The test measures the clotting of whole blood in the absence of tissue factors. In collecting blood, it is necessary to avoid trauma since the exudation of tissue juices causes a shortening of the coagulation time.

The clotting time should be estimated on venous blood. It is always advisable to examine a normal blood under exactly similar conditions, as coagulation of blood *in vitro* is influenced by several factors, some of which are given below:—Temperature of the surrounding atmosphere; increases with temperature twice as faster at 37°C than at room temperature; admixture of blood with foreign body may also increase or decrease it; may also be influenced by the bore of the tube and the nature of the glass surface; blood clots readily in narrow tubes due to increased surface of blood in contact with the wall of the tube; unclean glassware hastens coagulation; air bubbles should not enter the syringe as air hastens coagulation; a minor clotting defect is stated to have been noticed by the use of silicon-coated glassware and also agitation tends to hasten coagulation.

Technique of Lee and White's method:—One cc. of venous blood is placed in each of four clean unsiliconized tubes and the tubes are kept immersed in a water-bath at 37°C. At intervals of 30 seconds, each of the tubes is observed for clotting by removing it from the water-bath and tilting it gently. The end-point is reached when the tube may be inverted without spilling its contents. The beginning of the test is taken from the time when the blood first enters the syringe.

The average of the clotting time in all 4 tubes is taken as the clotting time. Normal is 4 to 12 minutes; average being 7.5 minutes.

Method of Dale and Laidlaw:—Consists in taking peripheral blood in a capillary tube which is tilted up and down. This method is rather insensitive and should be used only when and if venous blood cannot be obtained for any valid reason. This method is used for finding out the defects in mechanism acting in the early part of the coagulation i.e., hæmophilia (AHG def)

Christmas factor (P.T.C. def) whenever there is impaired formation of thromboplastin.

Significance :—The estimation of coagulation-time is of little value since only small amounts of thrombin are required to convert fibrinogen to fibrin. The coagulation mechanism may be grossly impaired by drugs such as Tromexan Dicoumarol or in hæmophilia without necessarily raising the coagulation time above the normal limits.

Similarly, fibrinogen must be markedly deficient before the blood fails to clot due to fibrinogenopænia.

Prolongation :—A prolonged clotting-time implies deficiency of one or more factors essential for the coagulation of blood vessels themselves.

COAGULATION TIME :—*Prolongation* occurs in hæmophilia (deficiency AHG); Christmas disease (P.T.C. deficiency); P.T.A. deficiency; hyper-heparinæmia (circulating anticoagulants); obstructive jaundice (prothrombin deficiency vitamin K), liver diseases with CHCl_3 or phosphorus poisoning (disturbance of prothrombin and fibrinogen-forming functions); hypoprothrombinæmia (prothrombin less than 10%) or lack of factor V and VII; a deficiency of fibrinogen (hereditary and acquired); and topical application of penicillin (high local concentration).

REDUCTION OF COAGULATION TIME OCCURS :—After a meal; after a general anæsthetic; after hæmorrhage; after a therapeutic dose of aureomycin, terramycin, or mercurial diuretics in typhoid fever, typhus fever etc. and after splenectomy.

2. **PLASMA CLOTTING TIME** :—This is a simple test to aid in the recognition of deficiency of AHG, PTC, and PTA. It has got the advantage of having a sharper end-point; giving a quantitative estimate of clot-size; taking less time to do the test; since plasma contains an anti-coagulant of lending itself to the convenience of the examiner and being repeated at will.

Oxalated blood is centrifuged; CaCl_2 added to platelet-rich plasma; test is performed at 37°C . The normal plasma-clotting time is 90 to 110 seconds.

The investigation of platelet-defects.—*As affecting Phase I* :—*Bleeding time* :—It is the time required for effective hæmostasis to occur after a wound of standard size has been made in the capillary bed. A small puncture is made in a standard way through the skin of the finger, the lobe of the ear or the forearm; and the time for which the puncture bleeds is estimated. A number of methods are available for determining the bleeding time; Ivy's method is however, recommended.

Ivy's method :—Ivy *et al* have found a method superior to Duke's method and found it especially useful for forecasting

hæmorrhages in case of surgical jaundice. A sphygmomanometer cuff is tied to the arm and the pressure is raised to 40 mm. of Hg. in order to cut off the venous return. A puncture 2 to 3 mm. in length and depth is made in a relatively avascular area of the forearm. Blood is absorbed on a filter paper every 15 seconds. The paper is so applied that it touches blood-deep only without touching the skin. The average of three such punctures is taken. The average range is 0 to 7 minutes; mean 3.5 min.

The Duke method :—In this method a simple puncture is made with a straight needle in the lobe of the ear. Normal bleeding time by this method is 1 to 3 minutes. Normally, bleeding should stop completely in 7 minutes; however, in some cases even in health it may occasionally continue for 10 minutes or even longer. The cause of unusually long bleeding-time in healthy people is obscure, possibly in some it is due to puncture of the dilated venules, lacking the power to contract.

Significance of the bleeding time :—Bleeding time depends on the contractility of the capillary wall and also on platelets which play an important part in plugging the ends of cut vessels; clinically, a prolonged bleeding time is usually taken as evidence of defective platelet activity, or of vascular contraction or both *i.e.*, essential thrombocytopenia. The time is prolonged in bleeding disorders associated with spontaneous purpura.

Duke (1915) explained the phenomenon of prolonged bleeding by the fact that hæmorrhage from very small vessels is not stopped by a clot but mainly by intravascular thrombin which consists essentially of platelets. When the platelets are scanty, a relatively longer time is taken for the formation of the thrombus.

Macfarlane (1941) showed that defective capillary contractility in purpura is also characterized by prolonged bleeding time. The paradox of prolonged bleeding time and normal coagulation time characteristic of thrombo-cytopenic purpura is not properly explained. The prolonged bleeding time may be due to some obscure change in capillary endothelium or it may be due to the fact that the clot in the condition does not retract to squeeze out serum and remains soft which is of little value as a mechanical plug. The coagulation time remains normal since only a few platelets usually present are needed to initiate the process of coagulation. In hæmophilia on the other hand, coagulation is inadequate to stop the bleeding. The coagulation time is prolonged while the bleeding time remains normal.

Clot retraction.—Normal venous blood clots spontaneously when placed in a glass tube. If the clot is allowed to stand, the fibrin contracts expressing the serum from the clot. For the proper contraction of the clot a considerable number of platelets are required and efficient clot retraction runs roughly parallel

to the number of platelets and a decrease in clot retraction is taken as a reliable index of a lower number of platelets than the platelet count itself.

Macfarlane's semi-quantitative method:—The volume of serum expressed by the blood allowed to clot at 37°C. is recorded as a percentage of the original volume of blood.

Technique:—Five cc. of venous blood is taken in a graduated centrifuge tube and closed with a cork carrying a glass rod bearing a series of expansions at $\frac{1}{2}$ " intervals. After the blood clots at room temperature, the tube is kept in a water-bath at 37°C for 1 hour, at the end of which the rod is lifted to which the clot gets attached (after draining the clot for few seconds). Normal blood shows retraction in 30 to 60 minutes. The volume of serum expressed and of the cells are read off from the graduated tube. The volume of the blood clot in $\% = \frac{T-A}{T} \times 100$ where T is the total volume and A is the serum. The volume is expressed as a per cent of 5 cc. and represents a percentage retraction of the clot 5 cc. being 100%; 4 cc. being 80% and 3 cc. being 60%. The normal range is 48 to 64% of serum.

Significance of clot-retraction:—(1) Clot-retraction is a measure of platelet function. There is poor clot retraction in thrombocytopenic purpura. The clot is soft, friable and does not contract.

In addition to platelets other factors affecting retraction are:—(a) the volume of red cells; clot retraction is rather poor in cases when red cell mass is increased as in polycythemia vera. Clot retraction is inversely proportional to PCV; (b) conversely good retraction is obtained in hypochromic microcytic anæmia or other severe anæmias where the red cell mass is small; (c) retraction is much faster and more complete when the temperature is raised to 42°C and (d) shaking hastens retraction. Adhesiveness of platelets appear to be greatly concerned with clot retraction; another factor derived from platelets is retractozyme (clot-retraction factor).

Deficiencies of fibrinogen, thrombin and serum calcium, all of them effect clot-retraction.

Certain degrees of fibrinogen-deficiency however, increase rather than diminish clot-retraction.

Platelet count and study of platelets.—Not much significance should be attached to platelet counts which are liable to frequent errors and are often mixed up with yeast cells and dust particles. Venous blood appears to contain more platelets than capillary blood and methods using venous blood should therefore, be preferred.

Disorders associated with persistent low platelet count are:—(a) Thrombocytopenic purpura; (b) anæmias: aplastic anæmia

and all causes of pancytopenia; P.A.; and myelophthisic (carcinomatosis); (c) the acute and late phase of chronic leukæmia and (d) splenomegaly.

Platelet morphology.—May be studied by stained blood-film which will give a fair idea of decrease if any and also give some indication of the adhesive property of the platelets.

Tests for platelet antibodies.—*Capillary fragility test (Tourniquet test)*:—*Hess test*:—A pneumatic armlet is placed round the arm and the pressure raised to a point midway between the systolic and diastolic pressures; after 5 minutes the armlet is removed. A positive test is shown by multiple purpuric spots below the point where the armlet was applied. The test is better performed in a quantitative manner recommended by Bell viz., a circle 6 cm. diameter is marked out in the anticubital fossa. Pressure is maintained at 50 mm. Hg. for 15 minutes and on release of the pressure the number of the petichæ is counted. A normal person will show 0 to 8 petichæ.

Significance of the test:—The capillary fragility is increased in a variety of circumstances in which there is no defect in blood-coagulation such as infectious diseases like scarlet fever, measles, influenza and chronic renal disease, hypertension, Addison's disease, diabetes with vascular disease and leukæmia. Increased capillary fragility may be observed before the commencement of the menstrual period and also in a few normal individuals. The tourniquet test is positive in non-thrombocytopenic purpura, thrombocytopenic purpura and scurvy.

Thromboplastin generation test.—This is a very useful test for differentiating abnormalities in coagulation when there is impaired formation of blood-thromboplastin such as hæmophyilia and PTC deficiency or abnormal platelet function. This test indicates the deficiency of any factor necessary for the formation of thromboplastin.

All five components are required for this test viz., platelets AHG, P.T.L. factor V and VII and calcium. Normal plasma treated with Aluminum hydroxide contains AHG and factor V (factor V normally present in plasma and not absorbed by alumina) and normal serum containing factor VII and Prothrombin absorbed Christmas factor and factor VII which is found in the globulin portion of serum and absorbed by the alumina. Both plasma and serum C platelets react to form thromboplastin in the presence of calcium. This test may be carried out with one stage prothrombin time. A lack of any of the 5 factors will cause abnormal thromboplastin formation and this will be revealed by the test. If the test discloses abnormality, normal Barium sulphate-treated plasma which contains PTA and AHG (not PTC), and the patient's serum

should be used instead of normal Al (OH) 3-treated plasma and normal serum.

Significance:—Modified in this way, the test is useful in recognizing AHG, PTC and PTA mild deficiencies which are not detected by simple tests.

1. Determine prothrombin time. 2. Thromboplastin generation test with patient's plasma, if subnormal; then plasma with Al (OH) 3, Factor V and AHG brings to normal, then its deficiency. If serum is used and Factor VII—PTC brings to normal then its deficiency, plasma (BaSO₄) is used PTA, AHG (exclude PTC).

The great importance of the thromboplastin generation test is that it allows the efficiency of different components of the clotting system to be tested separately. In hæmophilia, the test is subnormal if patient's plasma is used (AHG deficiency); while it is normal if the patient's serum is used. In Christmas disease exactly the opposite will be found.

Qualitative test for Factors V and VII deficiency by using a quick one-stage prothrombin-time.

Factor V.—1. To 9 volumes of patient's plasma is added one volume:—of Aluminum hydroxide treated normal; plasma (containing AHG and Factor V) and lacking in F. VII and prothrombin. The mixture is tested by one-stage prothrombin-time. If patient-plasma is deficient solely in factor V, then the addition of Al (OH) 3-plasma will result in a shortening of the one-stage prothrombin-time.

2. Factor V-deficient plasma is made artificially by incubating oxalated plasma F. V destroyed for 1 or 2 days at 37°C which will result in a substantial increase in prothrombin time.

Factor-VII-deficiency:—Similarly factor VII deficiency can be demonstrated; to 9 volumes of patient's plasma is added one volume of normal serum (previously incubated at 37°C for 24 hours) rich in F. VII. If patient-plasma is deficient in factor VII, the addition of a small amount of normal serum will substantially shorten the one-stage prothrombin-time.

PROTHROMBIN-TIME—AFFECTING THE II PHASE:—*Quick one-stage method; slightly modified*:—This test is widely used in clinical hæmatology particularly as a check for anticoagulant therapy and is certainly a practical, simple and reliable test for the purpose. The principle of the test is that oxalated plasma is clotted by the addition of the optimum amount of calcium plasma is clotted of an excess of thromboplastin. The clotting time in the presence to be directly related to the plasma-prothrombin content. The development of fibrin clot is taken as the end-point.

Recently it has been shown that the test does not measure prothrombin alone but also factors V and VII and the latter are

particularly most reduced by anticoagulant therapy such as Dicoumarol and Tromexan. Actually, the usual one-stage prothrombin test measures mainly factor VII deficiency which is most reduced by anticoagulants. With dicoumarol—prothrombin and factor VII are deficient with tromexan reduction only in factor VII. The usual source of thromboplastin is the Russel's viper venom; rabbits brain (Difco) and the human brain.

The prothrombin-time is usually 10 to 15 seconds. In the quick one-stage, the speed of reaction is measured and can be converted to prothrombin concentration by comparing prothrombin time of the patient's blood with that of normal blood in which prothrombin is assumed to be 100%. (If 30 seconds prothrombin concentration is 50% as prothrombin-time, inversely proportional to prothrombin concentration) (? sic).

Significance:—This test does not however, give an accurate measure of the prothrombin concentration. Plasma fibrinogen must be reduced below 30% of the normal before the prothrombin time is prolonged. The presence of an excess of antithrombin also lengthens the prothrombin time. A prothrombin deficiency signifies hepatic dysfunction only if it is found to persist after the administration of large doses of vitamin K. The tests depends upon the concentration of factor V and factor VII and prothrombin in plasma. Therefore, a reduction in any of the above factors will result in a prolonged prothrombin-time. Prothrombin-time is also prolonged if there is an excess of antithrombin or any other anticoagulant as heparin, as they will hamper coagulation even if fibrinogen, factor V and VII are present in normal amounts.

The results are expressed in 3 ways:—(a) Time in seconds; (b) as prothrombin index $\frac{\text{P.T. of Control plasma}}{\text{P.T. of Pt. plasma}} \times 100$ and (c) as a percentage.

Prothrombin-time is prolonged in the following conditions:—(1) Excess dicoumarol or tromexan (deficiency of factor VII and prothrombin); (2) para-hæmophilia (factor V deficiency); (3) factor VII deficiency; (4) liver disease (impaired formation of prothrombin); (5) Vitamin K-deficiency as in obstructive jaundice, faulty absorption, putrefactive bacteria absent from bowel, and new-born infants; (6) idiopathic hypoprothrombinæmia and when (7) massive doses of salicylates produce hypoprothrombinæmia or when propyl-thiouracil is used.

The two-stage method of Ware and Seegers:—In this fibrinogen is removed by the addition of thrombin to plasma, adequate time being allowed for the excess of thrombin to be destroyed by the antithrombin present. Next thromboplastin is added for the conversion of prothrombin to thrombin which is then measured by its power of clotting a standardized solution of fibrinogen. The result is expressed in units, one unit being the amount of

prothrombin which will clot 1 cc. of fibrinogen solution in 15 seconds.

The advantage of the 2-stage method is that gives a direct measure of prothrombin concentration which is not in any way altered by a deficiency of fibrinogen, Factors V and VII if any, as thromboplastin and fibrinogen are supplied ready-made. It will also differentiate deficiency of the prothrombin or of factors V and VII (Decie 164).

Prothrombin consumption (non-specific test).—*Estimate of available thromboplastin*:—*Principle*:—The prothrombin-time of serum after coagulation has occurred is tested in order to get an idea of the prothrombin consumed in reacting with plasma thromboplastin—an indirect measure of the plasma thromboplastin reacting with prothrombin. During normal coagulation thrombin production and prothrombin utilization continue after the blood or plasma has clotted. If the serum is tested an hour after coagulation, practically all the prothrombin will have been consumed. In most disorders of coagulation and thrombocytopenia, the formation of thromboplastin is impaired and there is an incomplete utilization of prothrombin.

The prothrombin-consumption test has been widely used clinically as a measure of the prothrombin consumed. It is found to be reduced in ABG, PTC, or PTA deficiency, thrombocytopenia and thrombasthenia.

PROTHROMBIN-TIME—AFFECTING THE III PHASE:—Dissolution of fibrin takes place by certain proteolytic enzymes derived from the tissues and by the action of the leucocytes. There is evidence to suggest that the blood itself contains a fibrinolytic enzyme, plasmin in the globulin fraction which exists in the precursor form of plasminogen.

Demonstration of excessive fibrinolysis (fibrinogenolysis):—Patient's diluted plasma is clotted by thrombin and CaCl₂ chloride and are set up at the same time and lysis of the clot is watched and compared in the 2 sets of preparations. This method acts as a high threshold for fibrinolytic activity but is useful clinically. Normal plasma clots do not as a rule undergo any lysis.

An alternative and more sensitive low temperature technique has been described in which normal plasma can be shown to have a fibrinolytic activity, if the plasma is kept cold before the tests are set up.

A clot may lyse very rapidly in cases of carcinoma of the prostate, anoxic shock, and abruptio placentae while the plasma will actually remain unclotted.

Circulating anticoagulants:—Circulating anticoagulants other than drugs given therapeutically are rarely found in the blood.

However, the spontaneously occurring anticoagulants may be responsible for the serious or even fatal hæmophilia-like symptoms. The most common type of anticoagulant prevents the formation of blood-thromboplastin but has no action on formed thromboplastin, prothrombin or thrombin. Heparin or heparin-like material with antithrombin activity, spontaneously present in blood is met with extremely rarely. Anticoagulants have been detected in hæmophilia or Christmas disease; following pregnancy in women; in elderly people sometimes complicating a variety of other illnesses; and in collagen diseases particularly lupus erythematosus (Owen).

A circulating anticoagulant potent enough to cause clinical symptoms is always associated with a prolonged whole blood clotting time. If this is so, the effect of mixing the patient's blood with normal blood can be studied. A small proportion (1:10) of normal blood added to a hæmophilic blood will reduce the clotting time to normal. In the presence of a circulating anticoagulant however, the clotting time of normal blood will be prolonged. In principle, if Ca clotting time of normal plasma is lengthened by the addition of patient's plasma, an inhibitor is present. If the inhibitor is neutralized by Toluidine blue, it is heparin. If not, it may be an inhibitor of AHG or antithrombin or antithromboplastin. An examination of the bone-marrow is of great importance as a great deal of information can be had from it.

REFERENCES:

1. Biggs, R. and Macfarlane, R. G., (1953)—Human Blood Coagulation and its Disorders, Blackwell Scientific Pub. Oxford.
2. Dacie, J. V. (1956)—Practical Haematology, J. & A. Churchill Ltd., London.
3. Owen, J. A. and Man, F. L. (1955)—Evaluation of Disorders of Blood Coagulation, Amer. J. Clin. Path., 25: 1917.
4. Whitby, L. E. H. (1957)—Disorders of the Blood, J. & A. Churchill Ltd., London.
5. Wintrobe, M. M. (1956)—Clinical Haematology, Lea and Febiger Philadelphia.

SOME PRACTICAL ASPECTS OF IRON-METABOLISM

Newer knowledge of the metabolism of iron, much of it derived from studies with isotopes, permits some conclusions which may be of considerable practical importance in preventing, detecting, and treating states of iron deficiency and iron excess in clinical practice.

Factors influencing iron absorption from the gastrointestinal tract may be of both extrinsic and intrinsic origin. The extrinsic factors which have been demonstrated appear to produce their effects mainly by influencing valency or by producing complexes of varying solubility. Absorption is thought to occur in the reduced or ferrous form. Therefore, the presence of reducing agents, such as ascorbic acid or L-cysteine, promotes the better absorption of administered ferric iron, but this will not occur when the ferrous form is used. The latter is to be preferred for therapeutic purposes. The presence of food in the upper intestinal tract appears to reduce absorption by about a half, presumably by reducing ionization and promoting the formation of less soluble complexes, such as those known to occur with

phytates and phosphates. More marked impairment of absorption occurs in steatorrhœa of any cause. Contrary to earlier views, iron can be absorbed quite normally when there is complete achlorhydria, and the latter, which has been reported to occur in as many as 80 per cent of cases of iron-deficiency anæmia, is apparently a result rather than a cause of the disease.

The intrinsic mechanism which ultimately controls the passage of iron through the gastrointestinal mucosa has not yet been discovered but is of critical importance in regulating total body stores.

The combination of the extrinsic factors affecting the availability of the iron in an assimilable form and of the intrinsic factors acting to control absorption from 2 to 20 per cent of the iron administered. In normal subjects the average absorption is between 5 and 10% of the naturally occurring iron, while iron deficient subjects may absorb up to 20 per cent.

Some cases may be resistant to oral therapy because of limited net absorption regardless of oral intake. Parenteral therapy may then be indicated. Conversely, excess iron in the body cannot be readily excreted, and, for this reason, the parenteral route should be used only when deficiency has been reasonably demonstrated. In most but not all cases of hæmosiderosis, the excess storage iron is relatively nontoxic and the control of absorption is maintained. Primary or idiopathic hæmochromatosis, however, is probably due to a metabolic aberration, and excessive iron absorption leads to the deposition of storage iron in the parenchymal sites and chronic tissue changes.—(*New York State J. Med.*, 1-3-1959).

SUBARACHNOID HÆMORRHAGE

The improvement in techniques and the wider utilization of angiography has led to better definition of the background of subarachnoid hæmorrhage. It has become easier to determine whether the bleeding has occurred from an aneurysm, congenital vascular anomaly, neoplasm, and so forth.

DIAGNOSIS:—Although diagnostic methods have improved, many questions about clinical management of such cases remain in debate. There are physicians who recommend angiography immediately after the hæmorrhage has occurred and those who prefer to wait for varying periods of time. Still other physicians feel that if it can be reasonably established by clinical observation that the bleeding results from an aneurysm, angiography is only an academic process carrying with it a potential risk.

TREATMENT:—One school of thought holds to the view that nothing beyond absolute bed-rest for a minimum of four to five weeks is valuable. Some feel that artificial hypotension maintained for a long period of time is the treatment of choice. Others believe that ligation of the internal or common carotid artery will diminish the pressure against the weakened arterial segment and thereby avert the frequent recurrence of hæmorrhage. Still others maintain that if the aneurysm is approachable surgically, direct intervention, possibly with hypothermic techniques, is the best solution.

The National Institutes of Health has recently undertaken a nationwide project in which different centres will collect data on various surgical and medical approaches in the treatment of subarachnoid hæmorrhage. The central pool will attempt, by correlating this information, to establish a firmer basis to the knowledge of the natural history, diagnosis, and therapy of the conditions that produce subarachnoid hæmorrhage.—(*N. Y. St. J. Med.*, 15-7-59).

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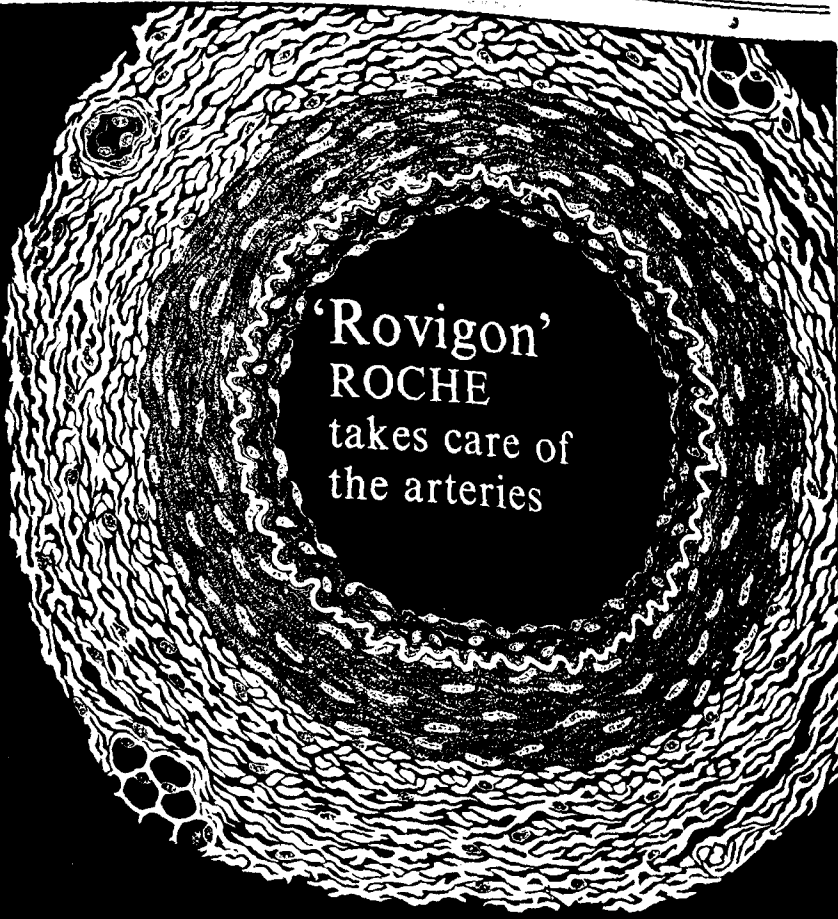
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Cases and Comments**REPORT ON TWO CASES OF REVIVAL
OF STOPPED-HEART**

CAPT. G. C. RATTAN, C.A., S.I.,

I/c. Hospital Ajaigarh, Dist. Panna. M.P.

CASE 1:—On 19th May 1959 at about 8 p.m., I was called to see a case of gastro-enteritis at the residence of the patient, Mrs. G. D., aged 29, who was very restless and vomiting occasionally. She was also passing loose motions with griping pain in the abdomen and with signs of dehydration. On examination, there was nothing abnormal in the chest or the heart. The abdomen was also soft and retracted with no tenderness or rigidity at any part. B.P. was 100/70. Pulse was 90 per minute. Temperature was 97°F. She had cramps in her legs and anuria for the last 6 hours.

TREATMENT:—I started giving glucose saline by the intravenous drip method. One injection of atropine 1 100 gr., one of coramine and one of adrenaline were all given. Six tablets of powdered sulphaguanidine were given by mouth and one oz. of carminative belladonna mixture was also given. Massage of the legs was done with sweet oil. She improved a little and I left my compounder behind to give one more bottle of saline when the previous one was finished; the 2nd bottle was started and drip continued. I visited the case again at about 10 p.m. She was very restless. The vomiting had not stopped. A few drops of *Amrit Dhara* in sugar were also given by her relatives. The patient was very thirsty. Some sips of ice were given. Essential oil mixture was given by mouth. But severe vomiting continued, she was very restless. After a short while she had a very severe vomit and then collapsed. There was cessation of respiration and the heart had also stopped beating. The saline would not go in automatically. There was no pulse at the wrist. The corneal reflex was lost. The head dropped to the side. I immediately started artificial respiration and after giving an intra-cardiac injection of Coramine to the patient, I continued artificial respiration. In about 2 minutes the heart started beating again. The saline drops began to trickle. The patient took a long deep breath. But I continued artificial respiration at the rate of 18 to 20 per minute. The heart continued to beat and the glucose saline was going in. The patient took another deep breath and after some time she started breathing irregularly. I gave one more injection of Coramine and adrenaline and followed it by a strychnine injection. Then I gave sips of brandy one teaspoon by mouth. The condition of the patient was still very serious but the pulse had revived at the wrist although was still very thready. The I.V. drip, and some brandy and onion-juice

by mouth were continued for 5 hours. The pulse became steadily stronger and the patient regained consciousness. She felt very thirsty and the essential oil mixture was given every 15 minutes with some cold water. One bottle of plasma was also given by I.V. drip. The heart started beating as usual. The respiration was automatic and regular. The patient was fully conscious. After that there was no vomiting. Sulphaguanidine 6 tablets in powder were again repeated. The patient urinated at 3.45 a.m. About six bottles of saline and one of plasma were given in all. B-P. was 115/70.

CASE 2:—On 23rd May 1959 at 10 a.m. a lady was brought to the out-patient department of the Ajaigarh Hospital for treatment. She was about 35 years of age, highly anæmic, and had a growth in her lower abdomen. The liver was enlarged about 4 fingers. The spleen was also palpable. The heart was irregular. Pulse-rate was 95 per minute. As I was under orders of transfer, I advised the relatives to take the case to the District Hospital, but gave them instructions in writing about the treatment to be started. I advised injections of liver extract with Vitamin B., with Folic acid. The relatives immediately brought this from the chemist's shop and one cc. of this was given intramuscularly. She left the hospital in a tonga. After about 10 minutes she was again brought back in a completely collapsed state. She was completely flaccid. She had already urinated. Her body had dropped to one side. There was no pulse or respiration, and no corneal reflex. Artificial respiration was started. I gave her an intra-cardiac injection of coramine at once, and continued the artificial respiration. After about 3 minutes she took a deep breath. The heart also started beating. After further artificial respiration she took irregular breaths. The heart beats were 150 per minute. After some time she regained some consciousness but became very restless. She had orthopnoea and the heart-rate was 160 per minute. Immediately I started I.V. Digoxin 0.5 mg. *stat* and digitalized the patient fully in 24 hours. The heart-rate dropped to 85 per minute. I kept her under digitalis till she recovered and became fully conscious. The treatment was also continued. She was ultimately discharged cured and she could walk home.

ARTERIAL EMBOLISM

Emboli are the most common cause of acute arterial occlusion. The heart is the most common site of origin of such emboli...75% of all clinically evident emboli lodge in limb arteries and 83% of these occur in the main vessels of the lower extremities.... Arterial embolism is a serious complication of a still more serious underlying disease. Aggressive treatment tempered with judicious judgement and with intelligent selection of the mode of treatment best suited to each individual patient is what is imperatively needed. Such patients represent a medico-surgical problem and combined thinking in the over-all management is desirable and will offer the most satisfactory outcome.....(N.Y. St. J. Med., 1-7-'59).

TREATMENT OF CEREBRAL MALARIA BY INTRAVENOUS NICOTINIC ACID

R. M. PATNAIK,
Soro, Balasore, (Orissa)

CASE REPORT.—I have treated several uncomplicated cases of cerebral malaria with intravenous nicotinic acid on the lines advocated by Most and Meleney (1944) with gratifying results. I am giving here the detailed report on one of them.

CASE 1.—A middle-aged married lady suddenly fell unconscious at about 6 A.M. on 24-10-'53. I saw the patient at about 9 P.M. on the same day. On enquiry I obtained from her relatives a history of malarial fever (heat, rigor and sweating) for several days before the present attack. Neither blood-examination for parasites nor spinal drainage could be undertaken for lack of facilities.

CLINICAL FINDINGS:—The patient was lying on her back in a flaccid comatose state. Eyes closed; corneal reflexes totally absent; pupils dilated; respiration abnormally hurried almost double the normal rate; pulse-rate was 100 to 120/m., thready, rapid and weak with low volume and tension.

The spleen was enlarged 4 inches and the liver 2 inches. Her abdomen was tympanitic, her temperature was below normal; nothing abnormal in her lungs.

DIFFERENTIAL DIAGNOSIS:—Her present comatose state was found to be due to none of the following causes, *viz.*, alcohol poisoning; epilepsy; injuries to the brain; opium poisoning; uræmia, or diabetic coma.

As the patient hailed from a highly endemic malarial area and as I had treated several such cases in the past, the history and the clinical findings definitely pointed to cerebral malaria.

TREATMENT:—She was given a slow intravenous injection in ten minutes of nicotinic acid (Pelonin—Glaxo) 100 mg. dissolved in 5 cc. pyrogen-free double distilled water.

She had quinine bihydrochlor gr. x, at the same time. (In some cases in which the duration of the coma ranged from 2 to 3 hours, a single intravenous injection of nicotinic acid restored the patients to consciousness).

Every succeeding hour, nicotinic acid 100 mg. (Pelonin *not* Pelonin-amide—Glaxo) was given intravenously up to 6 to 12 injections.

Quinine bihydrochlor gr. x was given intravenously with every 3rd intravenous nicotinic acid, the maximum amount of quinine that was thus injected was near about sixty grains.

The regaining by the patient of consciousness with each intravenous injection of nicotinic acid was really remarkable and was accompanied by definite improvement in her clinical features viz:—

- (a) Improvement in the general state of the patient as distinct from the general flushing which intravenous nicotinic acid usually produces on the skin texture.
- (b) Diminution in the rate and quality of respiration.
- (c) Improvement in pulse rate and in corneal reflex.
- (d) The flaccid state of the patient gradually improved in tone and there were marked movements of the limbs and a change of decubitus.

AFTER-TREATMENT:—When the patient's consciousness was restored special attention was given to her mental health. She was given cerebral sedatives including B complex (oral), nourishing diets and bed-rest for nearly a fortnight

NICOTINIC ACID LOWERS BLOOD CHOLESTEROL

Prompt and sustained reduction of blood cholesterol levels has been obtained in hypercholesteræmic patients treated with large doses of nicotinic acid, according to Drs. Parsons and Flinn, of the Jackson Clinic, Madison, Wisconsin. They report that it is an effective and practical agent for the reduction of elevated levels of blood cholesterol, particularly the beta-lipoprotein fraction.

Their study group included 44 patients and was conducted over a period of 56 weeks. Each was given 3 gm. of nicotinic acid daily, in divided doses, for a period of 12 weeks, after which the dosage was tailored to meet the response of the individual.

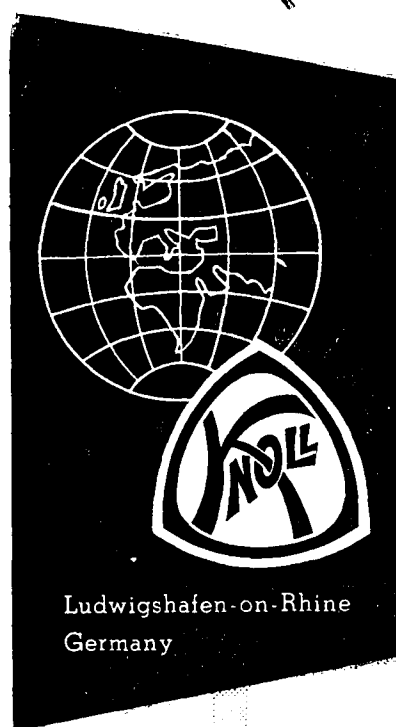
After 30 weeks, nicotinamide was substituted for nicotinic acid. Then, after 12 weeks of nicotinamide, nicotinic-acid therapy was resumed in the form of capsules containing nicotinic acid supplemented by B-complex vitamins. Patients were not under any dietary restrictions, with one exception, during the term of treatment.

The side-effects which often occur after ingestion of nicotinic acid (flushing and pruritus) were found to subside within the first week of therapy in nearly all cases, and the investigators observed no serious toxic effects attributable to nicotinic acid.

Significantly, they found that the substitution of nicotinamide in equal dosage after prolonged nicotinic-acid therapy was followed by a prompt return of blood cholesterol to pretreatment levels in every patient. The apparent failure of nicotinamide may provide a clue to the mechanism of action because of the slight chemical differences between the two drugs. —(*Jour. of Iowa State Medical Society*, 49: 8, 1959).

DETACHMENT OF THE RETINA

Holes and tears in the retina of the eye can be repaired by using an intense light source to produce a burn and sufficient scarring by using an retina to the underlying stracture said Dr. Alson E. Braley, State University of Iowa ophthalmologist. Breaks or holes are one cause of separation of the retina. —(*Today's Health*, Aug. '59).



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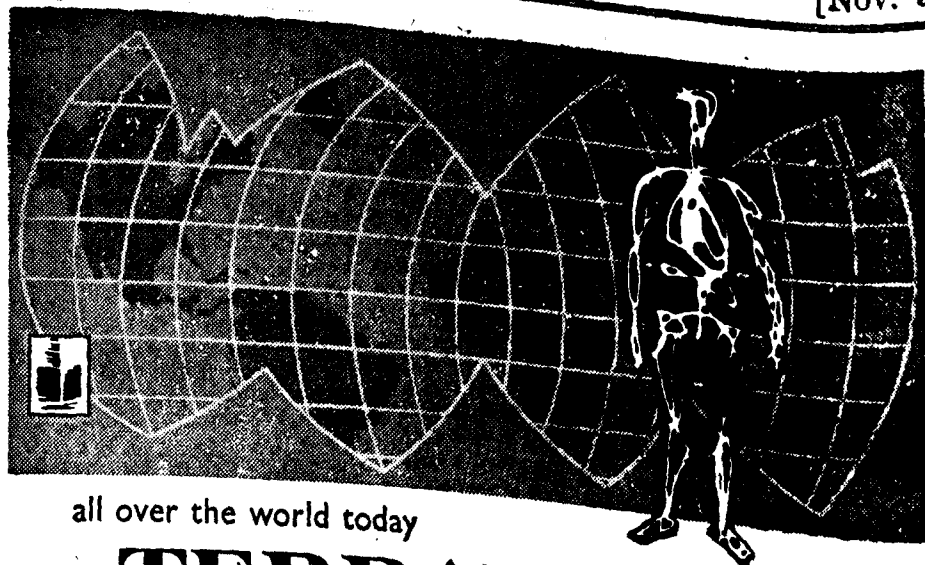
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REPRESENTATIVE PAPERS

1. Gillot, F., and Raoux, J.P., *Algérie méd.* 61: 789 (July) 1957.
2. Mosquera, M.S., *Dia méd.* 29: 3520 (Dec. 23) 1957.
3. Hainaut, H., and Mélon, J., *Rev. méd. Liège* 12: 184 (July) 1957.
4. Ribeiro Vianas, D., *Canais radiculares*, Belo Horizonte, 1957.
5. El-Ghaffar, Y.A., and El-Ghaffar, M.A., *Gastroenterology* 32: 475 (March) 1957.
6. Edwards, G., Buckley, A.R., Fear, E.C., Williamson, G.M., and Zinnemann, K., *Brit. M.J.* 2: 259 (Aug. 3) 1957.
7. Loughlin E.H., Joseph, A.A., and Alcendor, L., *Antibiotics Annual* 1957-1958, p.99.
8. De Sa, A.E., Paper presented before Association of Surgeons of India, (Dec.) 1957.
9. Nazari, G.B., *Med.-Surg. J. Iran* 2: 117, 1957.
10. Brisco, G., and Torrielli, F., *Clin. odontol.*, (Oct.) 1957.
11. Babudieri, B., *Bull. WHO* 16: 911 (May) 1957.
12. Ruiz Sánchez, F., Ruiz Sánchez, A., Cham, J.L., and Naranjo Granda, E., *Antibiotic Med.* 4: 460 (Aug.) 1957.
13. Florentin, A.A., and Stoen, A.B., *Antibiotics Annual* 1957-1958, p.941.
14. Rodríguez Lucía, B., Paper presented before Puerto Rico Medical Association, (Nov.) 1957.
15. Johnson, R., and Landsman, J.B., *Scottish M.J.* 2: 383 (Oct.) 1957.
16. Nussbaum, W., *Schweiz. med. Wchs.* 88: 107 (Feb. 1) 1958.
17. Williams S., *Antibiotics Annual* 1956-1957, p.316.

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Editorials

SUCCESSFUL DOMICILIARY MASS TREATMENT OF T.B., POSSIBLE

(Report by Research Group in India)

“THE results of a carefully organized study in T.B. control carried out in Madras point to the possibility of successful mass treatment of T.B. at home *without sending cases to hospital*” says a Press release dated 16th September, 1959 by the W.H.O. from their Regional Office for S.E. Asia at New Delhi. This finding is of global importance and application, as many countries have a dearth of beds in their hospitals for treating tuberculosis. India for example, has only about 23,000 beds to offer but the cases of active tuberculosis number over 2.5 millions.

The results of the Madras Project for evaluating domiciliary treatment methods have been so very encouraging that in his recent report the Regional Director of the W.H.O. has expressed the hope that this would bring T.B. control for the first time well within the resources of the countries of the South-East Asia and also the economically under-developed countries elsewhere. The findings are significant in that they show that the treatment of patients in their own homes yield about the same satisfactory improvement in the patient's condition as could be secured from expensive and prolonged stay in sanatoria of which we do not have, anyway, even a small fraction of what we need to hospitalize the vast number of active T.B. cases in the country.

The project was carried out from 1956 by the Tuberculosis Chemotherapy Centre at the T.B. Institute in Madras City under the joint auspices of the Indian Council of Medical Research, the Madras State Government, the W.H.O. and the British Medical Research Council. The first report relates to the study of

193 patients over a period of one year, 96 of whom were given treatment at home and 97 in a sanatorium. Among these, 82 at the drugs used, claimed that they had had no previous chemotherapy and followed the prescribed course of treatment for the full 12 months. The patients treated at home were at a major disadvantage because of: the poor conditions of living; the absence of the essential and other extra amenities afforded by the sanatoria; the lack of adequate and suitable nourishing diet as well as nursing care. In spite of these handicaps the response to treatment in their own homes is reported to have been very good indeed, and perhaps even better than that found in the sanatorium group.

This study is stated to have revealed two unexpected advantages in domiciliary treatment:—The first of these was sociological: whereas major domestic problems were encountered in 8 of the 96 home families, they arose in 20 of the 97 sanatoria families and these were usually more serious too. The report underlines the observation that *"there is little doubt that the long-term sanatorium treatment of patients in this study proved more disruptive to family life than treatment at home and this must be considered a big disadvantage of sanatorium treatment in this group."*

The second advantage of home-treatment which this study brought out relates to the co-operation of the patients, about which at the beginning there was considerable scepticism amongst experts both in India and in Europe. It turned out, however, that only one of the 96 patients treated at home, as compared with 7 of the 97 receiving sanatorium treatment was lost from treatment during the 12-month period.

The report concludes that *"the results of home treatment by drugs, as carried out in this study, approach sufficiently closely to the results of sanatorium treatment to suggest that it is appropriate to treat the majority of patients at home."*

We may here and now, point out that the shift in emphasis from institutional to domiciliary treatment really started with the discovery of the new antibiotics found to be of specific value in fighting this disease, and also with the improved methods adopted in diagnosis. The success achieved by the Madras Project and the lessons learnt from a comparison of the two methods raise the obvious question of the desirability of utilizing the available funds for starting several more T.B. clinics in preference to expensive sanatoria, with a view to bringing the benefit of the treatment to a larger number of patients than those who can be accommodated in sanatoria at present. The National Tuberculosis Survey conducted last year disclosed a rather alarming picture of the high incidence of this disease in both urban and rural areas; the present cautious assertion of the superiority

of home-treatment should provide the silver-lining to what has appeared to be a very dark cloud in the firmament. For the National Survey showed a prevalence-rate of 13 to 25 per thousand of population of "active" and "probably active" cases. Against this high incidence, the 23,000 available beds in hospitals and sanatoria can only wage a losing battle. One may hope that preventive measures like the mass B.C.G. vaccination may, by and large, succeed in immunizing the population against this killer. But for at least 20 years more the country's limited resources must be mobilized effectively in order to rescue from death the millions of people who have been afflicted with this dire malady. But it is well to bear in mind that even the comparative advantage of domiciliary treatment may not avail, if the Governments are not able to establish a sufficiently large number of clinics all over the country to provide that home-treatment.

About 300 clinics had been planned to be opened during the Second-Plan-period but this target was later reduced to 180. But even this greatly scaled-down programme, is stated to have suffered in the process of implementation by the State Governments who are charged with the responsibility of running them, though the Central Government and the UNICEF provide valuable assistance in the form of expensive equipment.

The report on the Madras Project has taken care to indicate some of the conditions necessary for this home treatment. Even when a clinic has been established in an area on which the home-service can be based other facilities, like and an adequate supply of medicines and alternative drugs for patients in need of them; enough staff both social and technical; transport for the visiting clinical staff; an efficient ambulance service for ill-patients; a small number of hospital beds for special and emergency cases; and a decent laboratory capable of performing a large number of reliable smear-examinations of sputums for tubercle bacilli, are among the minimum requirements. These will, of course cost a good deal of money. The finding of suitably trained personnel of which we have an acute shortage will be another great difficulty. And again the poorer patient may have to be assisted financially to get a proper diet or even to support the family when the bread-winner is stricken by the disease. Even so, there may have to be provision for hospitalization of some cases that pose complications or other unexpected reactions to the treatment at home, mainly with orally administered drugs. The mass application of the results of the Madras Project may therefore, present many difficulties, but anyway less insuperable than if we had to establish a large number of hospitals and sanatoria.

We await with interest the results of further investigations that may be undertaken to devise practicable means for the application on a mass-scale of the methods tried with suitable controls and found beneficial in the Madras Project.

NEED FOR A STRICTER ORDER OF HEALTH PRIORITIES

(The Kandy Conference of WHO)

“INDIA and other South-East Asian Countries should follow a ‘stricter order of public health priorities’ in utilizing their limited resources in men and material,” said Dr. C. MANI, Regional Director for South-East Asia of the WHO in his very lucid report presented to the 12th session of the WHO Regional Committee held at Kandy in Ceylon between the 23rd and 29th September 1959. Col. JASWANT SINGH, Director-General of Health Services, Dr. C. G. PANDIT, Director of the Indian Council of Medical Research, and Dr. D. K. VISWANATHAN attended as delegates while Dr. U. KRISHNA RAU, Speaker of the Madras Legislative Assembly and Consulting Editor of this journal, represented the World Medical Association as its observer.

It will be remembered that a short time ago, the Director of the Asian Regional Office of the UNICEF pointed out that the Asian countries were not spending sufficient money on the eradication of diseases which can be successfully achieved particularly because improved modern techniques and facilities which are simple and cheap in application were available to them. Most States in India and in other countries in the South-East Asian region are considerably handicapped owing to their limited budget provisions for health and the acute shortage of personnel. Therefore, when Dr. MANI, the Regional Director of WHO suggested that there is need for a stricter order of public health priorities he was on firm and sound ground, and some of the suggestions which he has made should be taken seriously. In his report Dr. C. MANI has given seven examples where a strict priority rating is urgently needed in respect of the utilization of men and resources by the countries in South-East Asia.

1. “Because we are very short of qualified doctors, we have multiplied medical schools and doubled the admissions to existing schools but without providing adequate teaching staff. The result may well be a vast number of inadequately trained doctors. Medical education is so costly that this is not a good investment.

2. “Although we all deplore the acute shortage of doctors and nurses, it is a common enough sight to see them spending their valuable time and skill on work which can be done more efficiently and economically by clerks.

3. “We use thousands of auxiliary medical personnel in support of the doctor, and should, therefore, streamline their training to the fewest possible categories of a multi-purpose type Instead, we find ourselves training a bewildering variety of

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little specialists. This is wasteful of our limited training facilities, and all these categories will be difficult to absorb into the general public health service.

4. “We see too little encouragement of domiciliary mid-wifery. On the contrary, there seems to be a growing ambition that even normal deliveries should take place in some health centre or hospital. This is quite unnecessary and most uneconomical.

5. “To provide health-services to our vast rural population, we are putting up hundreds of so-called health-centres at a very considerable cost. And yet, we obtain from many of these centres only a slight amount of medical curative relief. In addition to such curative services, strenuous efforts should be made to see that they also fulfil their preventive functions. Far too little has been done so far at these centres to improve sanitation or to give proper health education, especially in nutrition. Yet these are the foundations on which public health in this region must be built.

6. “There is very little enthusiasm in improving sanitation. It is inconceivable that with the existing resources we cannot make a better showing against the gross insanitation which prevails almost everywhere.

7. “Costly medical equipment, especially X-ray units and other electro-magnetic apparatus, is frequently out of order for lack of proper maintenance. Public health institutions possess millions of dollars worth of such costly equipment, and yet hardly any one of them has properly trained technicians on its staff.

This last point made by the Regional Director of WHO that costly medical equipment is frequently unused because of lack of skilled personnel, or out of order because of lack of technically skilled maintenance staff is indeed a serious matter. If there is to be aid, it should be in relation to the resources which can be provided locally and which are readily available.

Considerable caution and circumspection must be exercised by those in charge of the implementation of schemes and there will also be need for the strictest administrative economy and forethought while accepting aid from abroad.

It, therefore, appears to us desirable and proper that we should proceed slowly until the Government Committee, which was set up sometime ago by the Central Government under the Chairmanship of Sri Dr. A. LAKSHMANASWAMI MUDALIAR, charged with the duty of assessing the developments in the fields of medical relief and public health since the Bore Committee, and to review the progress of health projects under the First and Second plans, as well as to recommend the lines on which future plans should be formulated, has had an opportunity to report. And it

is expected that this Committee, realizing the need for expedition with thoroughness, will furnish as soon as possible and without any avoidable delay, a comprehensive report which would form the basis for all future development.

THE VII MADRAS STATE OPHTHALMIC CONFERENCE

THE Seventh Conference of Ophthalmologists of the Madras State was held on the 17th and 18th October 1959 in the Elliot's School of Ophthalmology at Madras. In welcoming the delegates, Dr. E. V. SRINIVASAN, the doyen of ophthalmologists in this State, referred to the notable work that was being done by the ophthalmologists in India and said that it would be in the fitness of things that the next session of the International Congress of ophthalmologists should be arranged to meet in India. In the unavoidable absence of Sri Dr. A. LAKSHMANASWAMI MUDALIAR who was to have inaugurated this conference, Sri Dr. V. R. THAYUMANASWAMI, the Director of Medical Services read Dr. MUDALIAR's address, which said that the ophthalmologists were the first to realize both internationally and nationally the value of holding such ophthalmic congresses and conferences. After referring to the World Ophthalmological Congress which held its Centenary celebrations in Brussels, last year, (India also being well-represented on the occasion), Dr. MUDALIAR said, "it is equally significant that the first Specialists' Conference, nay, the first Medical Conference of any nature, should have been started in India by the All India Ophthalmic Surgeons." He paid a warm tribute to Sri Dr. E. V. SRINIVASAN, who has established a reputation worthy of emulation by other members of the profession and then related how the Diploma in Ophthalmology and Master's Degree in that subject came to be instituted at the Madras University. He entered a strong plea for an ophthalmologist trained at least to the diploma level, being made available in an honorary, if not in a paid capacity in every taluk headquarter hospital; those who have taken the highest degree will find suitable facilities in every District Headquarters hospital. It is also important that the general practitioner should be given an opportunity to become generally familiar with the advances constantly being made in this speciality.

When asked to deliver the concluding address in September 1959, at the Second World Medical Education Conference at Chicago on "Medicine—a Life Long Study," Dr. MUDALIAR agreed and in the course of his address stated: "Gone are the days when the medical student emerging from the portals of the medical college could go away with the easy feeling that he had

learnt everything and that it was only necessary for him to put up a board and to attract his clients. We have now realized that many things that we had learnt have to be unlearnt, that many more things have to be learnt with the same zeal and zest with which we learnt the first principles in regard to many of the subjects in the medical curriculum. The general level of the medical profession can be judged by the level of the attainment and achievement of the general practitioner, for he it is who holds the key for the medical welfare of the community and to him therefore, belongs the right to expect that his colleagues in whatever speciality they be, will concentrate on giving him that help and that stimulus which he needs all through his medical career." He exhorted the general practitioners and the specialists, young and old alike, to realize the importance of sound scientific treatment of disease and to discard the ephemeral and exaggerated impressions of faith cures and other irrational means of approach. "This is a warning," he said "that has always to be kept in mind under present conditions where ignorance of the elementary knowledge of medical aspects is not confined to the illiterates alone."

Dr. PATWARDHAN in his very instructive and elaborate address dealing with the "*Management of Senile Cataract*" dwelt at length on the pre-operative precautions, the techniques of anaesthesia, lens-extraction and suturing and the post-operative care necessary to ensure rapid healing etc. Referring to the phaco-anaphylactic reaction which is usually dreaded in all cases of extra-capsular and in some cases of intra-capsular cataract extractions, he said that very good results followed the oral administration of the patient's own lens after the operation. He had used it in a thousand cases and found it to be a very effective and simple precaution involving no complicated laboratory processes, and no risk or after-effect to the patient. He was of the considered opinion based on his personal experience that an unduly long interval of one or 2 years should not be allowed to elapse between the extractions of the lens from the 2 eyes. If good visual results were had after extraction of the lens from one eye, the other eye should be operated within a safe minimum period, as otherwise the patient might develop diplopia from divergence or convergence.

Sri Dr. B. K. NARAYANA RAU, a senior and reputed ophthalmic surgeon of Bangalore inaugurated the scientific sessions of the conference. He referred in his very lucid address to the rapid progress made in India, in the field of ophthalmology—particularly in the study of trachoma, in the causation and pathology of glaucoma, in the clinical manifestations in the eye due to malnutrition, and in allergic conditions. Various modifications and improvements have been effected in the technique

of operation for cataract, glaucoma etc. He stressed the importance and necessity for intensive efforts to prevent blindness amongst people, caused by preventable diseases like chronic dacryocystitis, corneal ulcers and keratomalacia; these conditions have been effectively eradicated in other advanced countries of the world by the adoption of sustained public health measures. Myopia in school children and adolescents and errors of refraction are definitely on the increase and need regular systematic and careful periodical examination of all school children, with a view to detecting and remedying such conditions.

Dr. NARAYANA RAU also dealt with the necessity for a firm but sympathetic enforcement of all legislative enactments and rules governing welfare measures in industrial concerns, factories etc. The dearth of good up-to-date medical libraries in the country to help and guide medical men in research and other specialized work, to which Dr. NARAYANA RAU referred is certainly a serious handicap particularly to all specialists engaged in research. We do hope that with the organization and setting-up of a large Central Medical Library at Delhi and set-contemplation, branches will come to be established in all State capitals also and facilities provided for all medical men and scientists to obtain reference and consultation of world literature. About a dozen highly instructive and valuable papers were presented by eminent and experienced medical men to the scientific sessions of this conference on different conditions met with in ophthalmological practice.

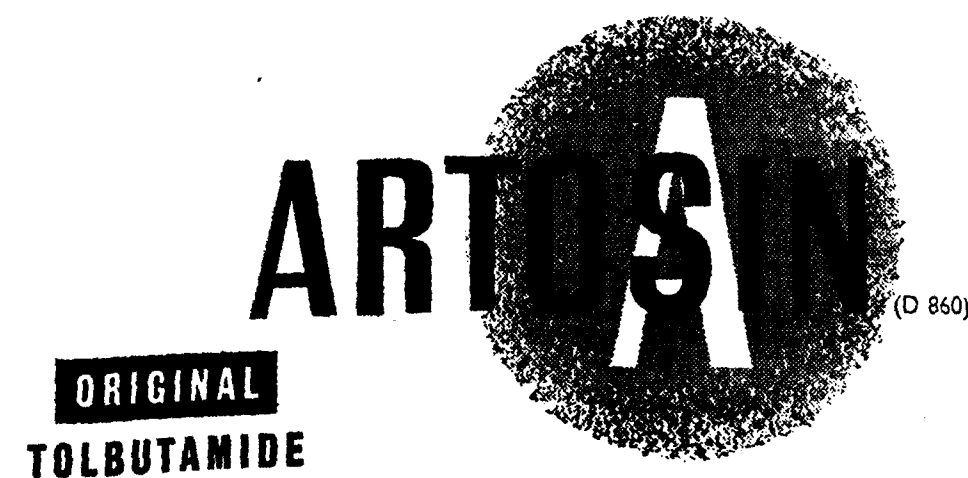
CYCLOSERINE AND PYRAZINAMIDE FOR PULMONARY TUBERCULOSIS

One of the major problems in the treatment of pulmonary tuberculosis is the management of the patient whose organisms are already resistant to isoniazid, streptomycin and para-aminosalicylic acid, and whose sputum remains positive for acid-fast bacilli. Toguri and Atwell treated 20 tuberculous patients who failed to respond to streptomycin, isoniazid, PAS and viomycin, and in whom strains of tubercle bacilli resistant to these drugs emerged. They used cycloserine (250 mg. every 12 hours) and pyrazinamide (1 gm. three times daily) for six months or more.

The toxicity of cycloserine, when combined with pyrazinamide, was very mild, and the symptoms were limited to headache and drowsiness. The symptoms occurred within the first nine days and lasted for three to five days, after which they disappeared spontaneously.

Sixty per cent of the patients had sputum cultures negative for tubercle bacilli at the end of six months of treatment. The sputum of nine of 20 patients remained negative for tubercle bacilli for more than three months continuously. Only eight patients showed slight to moderate improvement by roentgenography at the end of six months of treatment. Nine patients showed no change, and three patients became worse. Roentgenographic change was not a striking feature. The authors believe that the cycloserine-pyrazinamide regimen warrants further trial in the management of tuberculosis.—(*Am. Rev. Tuberc.*, 78: 927, 1958, via *G.P.*, 19: 4, April 1959).

2 ORAL ANTIDIABETICS



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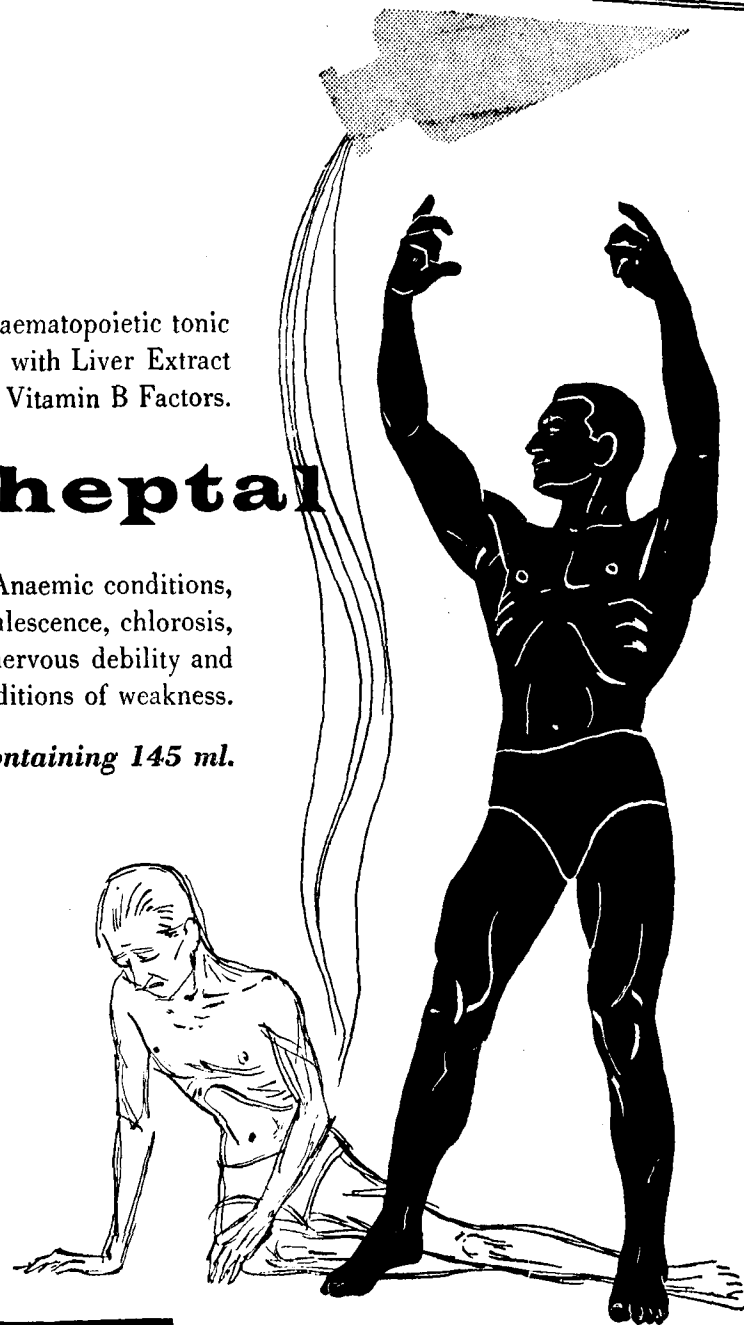
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Special Feature

NEWS-LETTER FROM THE UNITED STATES

IN recent years, diseases caused by a person's occupation have received more attention and, indeed, it seems that new occupational diseases are being discovered all the time. This, of course, is a very good area in which to apply preventive medicine. *Mushroom growing seems to present a health hazard to migrant Puerto Ricans working in the United States*, according to L. S. Bringhurst and co-workers reporting in the September 5 issue of the *Journal of the American Medical Association* (171: 15, 1959). Puerto Rican workers appear to be susceptible to some substance in the compost beds which does not affect discol workers. The disease is similar to "farmer's lung" and "silo-filler's disease," with symptoms of cough, pain located in the chest, stomach, or muscles, breathing difficulty, nausea and vomiting, headache, chills, tiredness, and rapid loss of appetite and weight. After the patient is removed from exposure to the mushroom beds, symptoms subside in one to six weeks, but reappear if the patient is re-exposed. The symptoms sometimes resemble those of tuberculosis.

Another new occupational disease is reported by W.B. Shelley and D. M. Pillsbury in the August 8 issue of the *Journal of the American Medical Association* (170: 1779, 1959). *Silicon hair curlers used by many hairdressers may produce a painful skin disease on the finger tips*. Tiny particles of silica come off the curlers and imbed themselves in the outer layers of skin causing precise, localized area of hyperaesthesia. A 40-year-old woman in whom this condition was first noted was forced to discontinue work as a hairdresser because of extreme sensitivity of her finger-tips to touch. Treatment consisted of removing the top layer of skin by superficial razor-blade biopsy. Prophylaxis involves avoidance of contact with silicon hair curlers.

A study of 236 patients with chronic urinary tract infections, reported by H. Seneca in the February issue of the *Journal of Urology* (81: 324, 1959), revealed the following information: *Escheria coli* is responsible for 13.7 per cent of chronic urinary tract infections, but these infections do not respond well to chemotherapy. *Aerobacter aerogenes* accounts for 39 per cent of all urinary infections and is difficult to treat because these organisms have a genetic tendency to mutate making them resistant to antibiotics. *Chloromycetin* is probably the most effective therapeutic agent for combating both of these pathogens.

A new technique offers hope in combating the spread of antibiotic-resistant strains of *staphylococcus* during surgical procedures. Although the technique has recently been described in many places, the present summary is based on a report by R. Adams and R. Fraser in the June issue of the *American Journal of Nursing* (59: 845, 1959). The new technique involves scrubbing the patient's skin in the area to be operated on, in the same manner as surgeons, assistants, and nurses scrub. An adhesive compound is then sprayed on the operative area and allowed to dry for 20 to 30 seconds or until tacky. Then a transparent vinyl film is draped over the area and brought firmly into contact with the adhesive compound by hand pressure. This creates a firm bond between the skin and the sterile plastic film. The incision for the operation is then made through the plastic film. When the operation is nearly completed and the wound closed to skin level, the plastic film is peeled back from the wound and fresh antiseptic solution is applied. During a five-month period, 291 operations using this technique have been performed at Huggins Hospital, New Hampshire and not one infection developed. The authors further state, however, that skin cleansing and isolation are not the only reasons for the excellent record of no infections. Other contributing factors are: clean air delivered via an air conditioning system; scrupulous housekeeping; consistent wearing of effective fitted filter masks by every person in the operating room; use of adequately laundered linen and wearing of clean clothes; and use of bacteriologically clean shoe covers.

A new agent, Catron, is proving extremely effective for treatment of depressed and psychoneurotic patients, according to J. Pomeranze and L. Cammer reporting in the September issue of *Clinical Medicine* (6: 1541, 1959). Catron was able to what would have been expected with electroshock treatment in those patients with endogenous depressions, and with results far better than what would have been expected with electroshock therapy in patients with reactive depressions. To determine the therapeutic potential of Catron in private practice, 79 patients with depression were studied. Average dosage was 12.5 mg. per day. Improvement was gradual, not dramatic, and "patients who responded to the drug gradually achieved a sane, sensible, orderly, and controlled behaviour, remarkable only when contrasted to the depression it replaced." In addition to the antidepressant effects of Catron, the drug is being used successfully to treat patients with severe angina pectoris. For most patients improvement has been marked with complete cessation of pain. In patients with rheumatoid arthritis the drug has shown an equally good effect with lessening of pain, increase in strength, and reduction in joint swelling and tenderness. Early results of the effect of this drug indicate that it has potential widespread clinical possibilities.

Medical educators from more than 60 different countries attended the Second World Conference on Medical Education at the Palmer House in Chicago. There they saw for the first time, medical X-ray images transmitted over closed-circuit television from the chest clinic of Cook County Hospital. The system is called TVX and permits X-ray images that would ordinarily be seen only on fluoroscopic screen at the actual site of examination, to be transmitted by microwave to a closed-circuit television system. This technique provides images not only for long distance viewers, but also for the examining radiologist, who, with this technique, can make diagnoses under normal TV lighting conditions, rather than in a completely darkened room as in the case with fluoroscopy.

FLUCTUATIONS OF THE BLOOD PRESSURE IN THE AGED AND IN PATIENTS WITH ESSENTIAL HYPERTENSION

Kameda, Takano and Awano of the Medical Clinic of Fukushima University have studied the fluctuation on 132 persons aged more than 54 years (74 years old in average) taking their blood-pressure every 3 hours (8 times) throughout a day.

The results were as follows:—(1) The fluctuation of the blood pressure was remarkable in cases with high blood-pressure. In the systolic pressure, hourly fluctuation was 10 to 100 mm. Hg. and average value was greater in female than in male.

(2) The systolic blood pressure was lowest at midnight in 85% of all cases, while in some cases (about 8%) it was elevated at night and a few cases (about 7%) showed almost constant tension through a day.

As to the diastolic pressure, it was also lowest at mid-night in almost all cases but the fluctuation was less remarkable than in systolic pressure.

(3) The average blood-pressure in arteriosclerotic group was higher than that in the nonarteriosclerotic. And its fluctuation was also greater, especially remarkable in the systolic pressure.

(4) In the cases of hypertensive patients admitted in our hospital and treated with some antihypertensive drugs, the blood-pressure in the daytime became lower than before. Nevertheless the blood-pressure in the midnight did not show so remarkable changes as in the daytime.

GLEANINGS FROM THE MEDICAL PRESS

SURGERY

Sutures and infections.—(Amos R. Koontz, *Cur. Med. Dig.*, July 1959).

For almost a century surgeons have been searching for the ideal suture material. Catgut is absorbed and does not cause a persistent sinus tract when infection supervenes. However, the absorbability of catgut is so variable that it cannot be depended upon to hold important structures together until good healing takes place. Furthermore, there is a tremendous leukocytic reaction (amounting to a sterile abscess) around catgut sutures and this in itself predisposes to infection.

It is well known that silk sutures frequently cause persistent sinus tracts when infection occurs. When cotton sutures were first introduced, it was felt that they would cause less trouble in the presence of infection than silk. This has proved not to be the case. Both cause persistent sinus tracts in the presence of infection. Nylon causes less trouble than silk or cotton, but not appreciably less.

The introduction of stainless steel wire by Babcock took on slowly but is now in general use. Experimental work by a number of people has shown that it does not cause trouble in the presence of infection. The objection to it, however, has been that it does tend to cut through the tissues. We have since found that the knots of braided tantalum wire do tend to become united, which is an objection to the use of the material. Then braided stainless steel wire was introduced. This is more easily handled than braided tantalum wire. The knots are more secure and it also has the advantage that it does not cause trouble in the presence of infection.

Tantalum gauze and stainless steel gauze have the advantage of causing no trouble in the presence of infection as a rule. I consider the tantalum gauze superior to stainless steel gauze because the tantalum actually stimulates the growth of fibroblasts while

steel lies inert in the tissues. Of course neither is used to cure the abdominal wall defect *per se*, but simply acts as a scaffolding for the ingrowth of fibroblasts.

No matter how satisfactory metals are, they are not quite as pliable as the non-metallic things such as silk and some of the plastics. The trouble with most plastics is that they cause as much, or more, trouble in the presence of infection as does silk. Usher has recently reported experimental and clinical work on a new plastic—Marlex—which, from early reports, is far superior to any other plastic yet tried. Koontz and Kimberly are now engaged in experiments with Marlex thread, using Marlex thread to suture any incision in the rectus sheath on one side and silk on the other side in the same dog. The results of the early experiments would indicate that the Marlex thread in the presence of infection is practically free of sinus tracts and granulomas, while the silk (as we already knew) is not. *May be Marlex thread will prove to be an almost ideal suture material.*

Surgical therapy of strokes.—(Texas St. J. Med., July 1959).

The management of patients disabled by strokes is a disheartening problem. A definite percentage of these patients suffer brain damage because of obstruction of the carotid or vertebral arteries in the neck, rather than of the inaccessible intracranial vessels, and surgical efforts to remove these obstructions in some instances may be a specifically successful remedy.

In general, three methods have been utilized: (1) thrombectomy and thromboendarterectomy, (2) resection and graft or direct union, and (3) by-pass procedures by graft or end-to-side union of the external carotid to the internal carotid. All of these methods have their application, but because exposure of the distal portion of the internal carotid artery is limited for graft purposes, thromboendarterectomy is frequently most feasible.

Integrity of cerebral function depends upon a balanced arterial flow through the four major cervical trunks and their intracranial branches. Reduction in flow through the system results from occlusion at any level. If the cumulative degree of occlusion is severe enough, impairment results. Restoration of competent flow through one major trunk may restore the balance to normal.

Cerebrovascular insufficiency due to caroticovertebral stenosis or occlusion is clinically characterized by rapidly or slowly progressive neurological syndromes featuring aphasia, sensory and motor disturbances, monocular blindness, headaches and noises, convulsions, coma, memory loss, or senile dementia. The onset may be sudden and catastrophic, or may follow a pattern of recurring transient episodes, or may develop insidiously.

Since these lesions are essentially segmental in nature, they are amenable to arterial reconstructive techniques.

About 50% of all cases can be benefited by arterial surgery. If the occlusion is partial, 4 out of 5 are improved.

All patients with cerebrovascular stroke-like syndromes should have immediate angiography, and, if the syndrome is due to caroticovertebral disease, should have surgery before thrombosis becomes irremovable or brain damage becomes irreversible. If this is done, excellent results may be obtained and a significant number of patients previously with little or no outlook will be salvaged.

Hæmatemesis from rupture of aneurysms into the duodenum.—(*Lancet*, 6-6-'59).

Cases of ruptured aortic aneurysm into the duodenum have been reviewed by Rottino (1943); and Hunt and Weller (1946) list 41 cases. Usually patients are admitted with hæmatemesis or melæna, death following immediately or being delayed for up to six weeks. Most patients have a pulsating epigastric mass but only occasionally is there a thrill or murmur. Nearly all the aneurysms are saccular and arise between the coeliac

axis and the bifurcation. 70% rupture into the third part of the duodenum, the next most common site being the stomach. The condition is six times more common in men.

Most patients come under observation after rupture of the aneurysm into the peritoneal cavity or a nearby viscus: the three main symptoms are pain, hæmorrhage, and jaundice. The pain may be due to hæmoperitoneum or to biliary colic: occasionally it is merely a vague epigastric ache. Pain before rupture may be caused by stretching of the capsule of the liver, or pressure on the hepatic plexus. Hæmorrhage is usually the immediate cause of death. Obstructive jaundice develops in nearly half the cases. An epigastric mass can sometimes be felt: it is rarely pulsatile but may have a systolic murmur. Some tenderness in the epigastrium is usual. The average duration of symptoms before a diagnosis postmortem or at operation was 4 months.

On a few occasions the hepatic artery has been ligated; but in most cases this has been followed by hepatic necrosis and death. Kehr (1903) first performed ligation with survival of the patient. Gordon-Taylor (1943) tried reconstructive endoaneurysmorrhaphy, but the patient died forty hours after the operation. Paul (1951) reported a case of hæmatemesis, melæna, and bleeding from a sinus in a paramedian wound following attempted removal of the gallbladder. At operation he found an aneurysm of the hepatic artery: he separated it from the duodenum and closed the defect in both. In Taylor's case (1933) the aneurysm found at operation was the size of a walnut. Two months later, at a second operation, it was the size of an ostrich egg and had ruptured. If an aneurysm of the hepatic artery is found at operation, some attempt should therefore be made to remove it.

Facial nerve anastomosis.—(*Surgery*, 44: 987, 1958, via *G.P.*, 19: 4, 1959).

Facial nerve paralysis due to destruction of the nerve is a serious

permanent disability in most instances. Caldwell has used the method of suturing the branches of the eleventh nerve to the peripheral branches of the facial nerve in two cases with gratifying results.

In both of these patients, the trunk of the facial nerve was removed with a malignant tumour of the parotid. The eleventh nerve was then dissected free of its attachments and divided into three branches and sutured to the zygomatic, buccal and mandibular branches of the facial nerve. The patient developed motion in the face within two months, and in six months, there was nearly complete recovery.

Epicondylitis of the humerus.—(*Proc. Staff Meet., Mayo Clin.*, 33: 303, 1958, via *G.P.*, April 1959).

Porretta and Janes report on the effect of treatment by injections of hydrocortisone in patients having epicondylitis of the humerus. This mysterious affliction occurs during the middle years of life, more often involves the lateral epicondyle than the medial, seems to have some relationship to handedness and therefore is observed more often on the right side. The chief manifestations are local pain and tenderness. The pain is aggravated by an attempt to dorsiflex the wrist against resistance if the lateral epicondyle is involved, or to flex the wrist against resistance if the medial epicondyle is involved.

The usual technique of treatment at the Mayo Clinic at the present time is by injection, under sterile precautions, of 0.5 to 2.0 cc. of hydrocortisone acetate into the site of maximal tenderness. The results of such treatment of 95 epicondyles show that 38 cases obtained complete permanent relief; 30 had complete temporary relief; 20 cases improved and only 7 cases did not benefit.

Sexual function after abdominoperineal resection.—(*New England J. Med.*, 259: 873, 1958, via *G.P.*, April '59).

It has been stated that abdominoperineal resection has an adverse effect

upon sexual function. That thought has created a natural reluctance on the part of physicians to recommend this operation for patients having chronic ulcerative colitis, since many such patients are in the sexually active years of life. Yet the operation is ideally suited to accomplish the objective thought to be indicated in surgical treatment of that disease—complete eradication of the diseased colon and rectum.

Stahlgren and Ferguson evaluated their experience with treatment of chronic ulcerative colitis by abdominoperineal resection and offer reassurance on the matter of sexual function. Of 62 patients who underwent that operation during the preceding ten years, 60 were available for consideration on the point in question. The results showed that of 25 males, 18 had no alteration in sex-function, 5 had impairment and 2 improved actually; of 26 females 23 felt no change, 2 had impairment and one improved.

Among the males, four of the five patients who reported some degree of impaired sexual function were over 50 years of age. The one young man in the group (37 years old) had a partial disturbance in erection which is continuing to improve after a year. Nine of the 14 married men between 20 and 49 years of age have reported their wives pregnant one or more times since operation.

Among the 35 women that were studied, nine were excluded from consideration on the matter of sexual activity for quite a variety of reasons (single, "too old" to have sexual relations, no information available, death).

The authors believe that their results indicate that abdominoperineal resection is unlikely to have an adverse influence upon sexual function. However, they note that this operation entails caution on the part of the surgeon to avoid damaging the pelvic autonomic nerves. This is entirely possible when the operation is performed for chronic ulcerative colitis, since it does not need to be so radical as when it is used for eradication of cancer.

Treatment of a fractured clavicle.— (G.P., 19: 4, 1959).

Joel E. Mandel, M.D., of the District of Columbia General Hospital, Washington, D.C., has described a neat, comfortable, effective and easy-to-apply plaster of Paris "figure-of-eight" bandage for the treatment of a fractured clavicle. The only materials needed are:

1. Two-inch stockinette.
2. Felt padding, $\frac{1}{4}$ — $\frac{1}{2}$ inch thick.
3. Two rolls of 3-inch plaster of Paris, and
4. Two medium-sized safety pins.

The steps are as follows:

Cut two lengths of stockinette, each about 32 inches long. Cut the felt padding into two strips, each 2 inches wide by about 24 inches long. (The length can be measured quickly and accurately enough, by using the previously cut 32-inch lengths of stockinette as a length-guide, and cutting the felt pads about 8 inches shorter).

Next, using the cut felt strips as a guide, a 3-inch plaster roll is folded over and over, into a flat splint, about 22 inches long (1 to 2 inches shorter than the felt strips) until the roll is used up. This 3-inch splint is then folded lengthwise, thereby ending up with a thick splint $1\frac{1}{2}$ inches wide and about 22 inches long. The same is repeated with the second roll of plaster.

The two strips of stockinette are then individually rolled up, as in preparing the stockinette for application in an ordinary cast. The plaster strips are then dipped in water, the excess water pressed out, and each is laid on top of one of the felt strips and approximately centred there.

Each one of the plaster-felt combinations is then enclosed in a sleeve of stockinette by merely rolling the stockinette over them. One of these is now placed on each shoulder, felt side toward the skin; and with the patient holding his shoulders backward, one end is brought under the axilla, while the other end is brought over the shoulder. All four ends of the stockinette are then brought back-

ward, toward the mid-line of the back. Here they meet, and are secured snugly with safety pins, one from over the shoulder meeting the opposite one from under the axilla, and vice versa.

With the "figure-of-eight" now in place, and while the plaster has not yet hardened, it is gently molded with the fingertips to the patient's comfort and contour, especially in the axillae and over the clavicles. Depending on the patient's age and stature, there may be an inch or two of excess stockinette, the ends of which can be trimmed off. The average time for application is less than five minutes, after you have put on one or two.

In children, 5 to 7 years of age and younger, depending on their stature, the same apparatus can be used, only without the plaster. Another minor variation, when using the apparatus without plaster in young children, is to use several layers of sheet wadding instead of felt for padding inside the stockinette. When in use without plaster, in children, the child's mother should be instructed to check for snugness each day; and if the stockinette has stretched some, it is simple for her to tighten it by readjusting the safety pins.

OBSTETRICS & GYNÆCOLOGY

Pregnancy test.—(J. Iowa, St. Med. Soc., Aug. 1959).

A highly accurate method of testing for pregnancy which requires no laboratory work was described to Louisville family doctors at an invitational symposium sponsored there by the Jefferson County Chapter of the Kentucky Academy of General Practice on May 15. Dr. Harold A. Schwartz, Chief of Obstetrics and Gynecology at the Baroness Erlanger Hospital, Chattanooga, told of experiments he had been conducting since 1946 with the administration of progesterone for that purpose.

When a woman has missed her period and has reason to believe she is pregnant, he gives progesterone to her for three days and then withdraws it,

If she is pregnant, the hormone helps implant the ovum properly, but the patient is unaware of any change. If she is not pregnant, menstrual bleeding begins a few days after the last dose of hormone. Thus the hormone plays a dual role: it signals the absence of pregnancy and at the same time causes the menstrual cycle to return to normal.

Tablets produce an answer to the pregnancy question more rapidly than injections do, Dr. Schwartz said, and therefore are best for testing purposes. The tablets, called Pro-Duosterone, combine a small amount (0.03 mg.) of oestrogen with 50 mg. of progesterone. Of 66 patients who took one Pro-Duosterone tablet after each meal and at bedtime for three days, 30 were shown pregnant and 36 non-pregnant. The test results were correct in all cases.

The majority of non-pregnant women began functional bleeding two to four days after withdrawal of Pro-Duosterone tablets, but four to six days after the last dose of hormone given by injection, he reported.

Dr. Schwartz warned his audience of physicians not to expect an accurate result in women who have had histories of irregular periods or amenorrhea of three months' duration or longer. Rather, the test should be used only upon women who have previously been fairly regular in their menses.

Dr. G. S. Allen tried it in 92 cases and had correct answers in 90 women. Dr. L. V. Dill of Washington found the test to be especially valuable in women over 40 years of age in whom a missed period may signal either pregnancy or the beginning of menopause.

Hexetidine in vaginal repair operation.—(Practitioner, June 1959).

Post-operative wound infection following pelvic floor repair operations remains a constant hazard in spite of a high standard of sterilization and surgical technique (Lunt *et al.*, 1957) and the liberal use of antibiotics. Many of these operations are performed after the menopause or in the presence

of chronic cervicitis. The protective influence of the Doderlein's bacillus has gone, the vaginal fluid has become alkaline and potentially pathogenic organisms are able to thrive. Serious complications, such as deep vein thrombosis and embolism, secondary hæmorrhage and septicæmia, may follow.

Hexetidine ('sterisil') is 5-amino-1:3-di-(2-ethyl-hexyl) hexahydro-5-methylpyrimidine and is prepared as a vaginal gel in a concentration of 0.1% at a pH of 4.2 and it is supplied by William R. Warner & Co., Ltd. It exerts a bactericidal action by interfering with vital metabolic processes necessary for bacterial growth, and this includes thiamine antagonism. It has great affinity for tissue without loss of antimicrobial activity and its removal by physiological and pathological secretions is achieved only with great difficulty. *In vitro* studies have revealed a wide range of micro-organism sensitivity. Most staphylococci and streptococci are sensitive in the range of 1 to 15 micrograms per cc., whilst coliform organisms and Pseudomonas strains are generally inhibited by concentrations of 100 to 150 micrograms per cc. Many pathogenic fungi including *Candida albicans* are also sensitive. Cross-resistance with penicillin and other antibiotics does not develop. Topical application of hexetidine, 0.1% in 600 patients with infections of the vagina and skin has produced no signs of irritation, sensitization or systemic toxicity. It does not appear to interfere with the normal processes of healing.

The results showed that the incidence of vaginal infection in the hexetidine group was 8% which compared favourably with 34% in the control group. There were no deaths in either group.

In the hexetidine group vaginal discharge was much less, primary union of vaginal mucosa was the rule and when the patients were examined six weeks after operation it was often difficult to see the scar, and infected granulation tissue was rarely seen.

Surgical management of vulvar lesions.—(Vulvar Clinic at Tulane, *The Journal of the Louisiana State Medical Society*, Aug. '59).

Extensive vulvectomy is performed upon patients with severe symptoms of pruritus, burning, itching, discharge and pain that persist over a long period of time despite exhaustive survey and prolonged general and specific local medical therapy.

Vulvectomy is also afforded to patients with chronic granulomatous venereal disease whose tissues fail to return to normal following adequate medical therapy and complete eradication of the infective organisms. The presence of bony or distant metastases are the only contraindications to surgery. The surgical management consists of extensive vulvectomy and bilateral inguinal and extra-peritoneal pelvic lymphadenectomy. When adjacent structures are involved such as the vagina, urethra, bladder, or rectum, they are removed.

The procedure of extensive vulvectomy that has been used is called "radical vulvectomy" at most centres but here at Tulane we take issue with those who wish to call anything "radical" that relieves pain and prolongs the life of the patient. The procedure includes the wide excision of the entire vulva, including the labia minora and majora, the clitoris, and an additional border of the mons and perineal body. The incision is placed as far laterally as necessary to remove all of the diseased skin plus a sufficient border of normal tissue to prevent recurrence. The medial incision is placed within the vagina at the level of the hymenal ring but is readily moved higher if necessary. The dissection is carried down to the peristeam of the pubis and to the levator ani muscles, thus removing the urogenital compartments as well as the entire vulva. This basic procedure is performed both in malignant and benign disease of the vulva. However, in dealing with malignancy the contents of the ischio-rectal fossae are also removed.

Vulvectomy done in this fashion

has been shown to be vastly superior to simple, partial or hemi-vulvectomy. The procedure itself is rapid, safe, and associated with minimal bleeding. Blood transfusions have been needed in less than 50 per cent of cases. The patients are comfortable and are able to care for themselves by twenty-four hours after the operation. Primary healing has been achieved in over 85 per cent of patients and the majority of them go home in seven to ten days. Following complete healing of the operative site those patients interested in intercourse are able to engage in such with the same gratification as before. We have seen pregnancy occurring in 7 of these women and uncomplicated vaginal delivery of 10 babies.

Catheterization and urinary infection.—(Univ. Durham. Med. Gazette, June 1959).

The incidence of urinary infection after a single passage of a urethral catheter has been estimated at 10% and, after an indwelling catheter has been *in situ* for 4 days, at 95%.

Indwelling catheters are often used in very debilitated patients and in those with urinary obstruction. This, however, is only part of the explanation of the deplorable incidence of infection that accompanies their use. Motile bacilli can migrate up the lumen of the catheter against the stream of the urine, and the film of fluid between the catheter and the urethral wall is a favourite by-pass for bacteria. They are helped on their way by the piston-like movement of the catheter with every change in the patient's position, and on arrival in the bladder they at once find lodgings in the phosphatic incrustation of the catheter tip.

The catheter, like the tourniquet, is a weapon which may be life-saving, but is lethal when used indiscriminately or by people untrained in its use. We have banned tourniquets from first aid sets, yet we still delegate the catheterization of our female patient to a young and inexperienced night nurse with few clues on asepsis

who may not even know the whereabouts of the urethral orifice.

No catheterization is aseptic; the anterior urethra may abound with organisms. But most of the serious catheter infections have been traced to the hands of the operator. On these hands are a deadly flora of *Proteus*, *Pseudomonas*, resistant *E. Coli* and that old villain, the resident hospital Staph.—organisms that rarely cause urinary infection outside hospital and which cannot be removed by a desultory wash (or even an assiduous scrub) at the infected ward sink.

An intrusion into the urinary bladder demands the same careful consideration as any interference in the peritoneal cavity. It is never justified for the sake of obtaining a clean specimen for urinalysis or culture. Urine for this purpose can be obtained even in female patients if the pubis is shaved and cleansed and the vagina packed off. This procedure may be uncomfortable, but it is devoid of risk.

Catheterization is sometimes carried out to obtain urine specimens in ketotic diabetics. This is a pernicious practice, as they are highly susceptible to urinary infections, and should in any case be treated with the aid of blood chemistry rather than urine tests. Every effort should also be made to avoid indwelling catheters in incontinent patients. The use of well placed receptacles, large pads and "diapers" and portable rubber bladders in men can sometimes avoid a choice between chronic urinary infection and bed sores.

If catheterization is required the most stringent asepsis is required. The patient should be removed to theatre or treatment room. Sterile gloves are mandatory and the catheter should not be touched except with a sterile instrument. If manipulation is essential because of obstruction, two pairs of gloves should be worn, one on top of the other. The first pair is shed when cleaning and towelling are completed and the catheter must be grasped.

Indwelling catheters should be drained into closed sterile bottles, to

forestall the motile bacilli, and a sterile dressing should cover the entry of the catheter into the meatus. When long term catheterization is required, *antisepsis must supplement asepsis*. Prophylactic antibiotics have proved worthless; they substitute a resistant infection for a sensitive one. It is much wiser to keep antibiotics in reserve to treat infections, and use them two at a time to delay resistance.

MEDICINE & THERAPEUTICS

A new dietary regimen for arthritis—(Value of cod liver oil on a fasting stomach).—(*Jour. National Med. Assoc.* N.Y., July 1959).

In a series of 98 arthritic or rheumatic patients who were treated for six months on a special dietary regimen restricting water intake and including administration of cod liver oil on a fasting stomach, 92 (93 per cent) showed major clinical improvement and 89 (90 per cent) favourable changes in blood-chemistry. The results suggest that adherence to the prescribed regimen on a long-term basis may result in sustained clinical improvement.

The blood sedimentation rates dropped consistently from averages of 20 to 30 (Wintrobe) to normals of 0 to 12 within a period of eight to 18 weeks. These findings provide an objective indication of reduced severity of the arthritic inflammatory process.

Since arthritis is one of the diseases in which intravascular agglutination is consistently found, a comparative study was made of this reaction in relation to blood-sludging as a possible aetiological factor. Intravascular agglutination with blood-sludging is consistently found in arthritis. Blood-sludge is defined as the intravascular agglutination or clumping of red blood cells into masses, resulting from the deposit of a sticky material which forms a coating on the surface of the erythrocytes and causes them to adhere to each other.

The details of the new dietary regimen were as follows:

1. All daily water intake was consumed upon arising, preferably at warm temperatures and about one hour before breakfast. (In extremely hot weather, additional water was allowed about one-half hour before the evening meal).

2. Room temperature milk (whole) or warm soup (not creamed) were the only liquids permitted with meals. These two liquids were allowed at any time. Any solids were permitted at any time as long as they were not accompanied by the wrong liquids.

3. Cod liver oil, mixed either with two tablespoonfuls of fresh, strained orange juice or two tablespoonfuls of cool milk, was taken on a fasting stomach at least four but preferably five or more hours after the evening meal and before retiring, or one or more hours before breakfast upon arising and at least one-half hour after water intake. The oil was taken daily. However, where there were dietary complications or accompanying conditions like diabetes or heart disease, it was taken only twice a week to facilitate assimilation. It has been found that people with these conditions take to the regimen more easily this way. The cod liver oil-milk mixture, especially for advanced sensitive arthritics, is preferable to the orange juice mixture. The cod liver oil mixtures were prepared in this manner: Before ingestion they were shaken well in a two-ounce screw-top jar.

4. Tablets, pills or supplements of any kind were allowed either with water upon arising, with milk or soup at mealtime, or with milk or soup at any time.

5. There was complete curtailment of soft drinks, candy, cake, ice cream or any food made up of white sugar.

6. Those who felt that the sacrifice of coffee was too great were allowed black coffee following the water intake, providing it was taken at least 15 minutes before breakfast. Preferably, for optimal results, coffee should be omitted from the diet.

Only rule three might be included in a blindfold study type of test. The others, as is readily apparent, would not be subject to this type of test.

For control purposes, it would be preferable that anyone taking part in a study of this kind should not be receiving any medications during the observation period. It is our experience that water taken *ad lib* with medications defeats the dietary regimen.

Diets recommended to the subjects ranged from 1,800 to 2,400 calories daily.

SUMMARY:—1. The value of a special dietary regimen, restricting water intake and including administration of cod liver oil on a fasting stomach, was studied in a series of 98 arthritic or rheumatic patients.

2. In a period of six months, 92 (93 per cent) showed major clinical improvement and 89 (90 per cent) favourable changes in blood-chemistry.

3. Blood sedimentation rates dropped consistently from averages of 20 to 30 (Wintrobe) to normals of 0 to 12 within a period of eight to 18 weeks.

4. Restriction of all water intake to a single portion, taken one hour before breakfast is an integral part of the treatment.

5. The sedimentation rates were erratic in 16 cases during an outbreak of Asian influenza, also in cases of common cold, when the patients reverted to water and juices *ad lib* throughout the day.

6. Intravascular agglutination is constantly found in arthritis.

7. A comparison of the normal and arthritic patterns indicates that sludged blood resulting from positive intravascular agglutination may be an aetiological factor in arthritis.

8. Cod liver oil taken on a fasting stomach reduces blood-sludging and helps relieve the symptoms.

9. The objective and subjective findings suggest that adherence to the prescribed regimen on a long-term basis may result in sustained clinical improvement.

Recognized hazards in antibiotic therapy.—(J. Royal Coll. Surgeons of Edinburgh, Sep. 1958).

It has been estimated that in approximately 50 per cent of antibiotic

fatalities, the agents have been described unnecessarily. Webster discussed the dangers in the use of antibiotics, and the following outline summarizes them.

I. Toxicity:

(a) Anaphylactoid reaction, most common with penicillin and particularly with depot-penicillin. There is one death per million injections.

(b) Skin reactions—mild to exfoliative dermatitis—may occur with any particular antibiotic but especially with penicillin and streptomycin. Fifteen per cent of patients treated for more than one week with Novobiocin are affected.

(c) Nephrotoxicity—albuminuria and nitrogen retention—most common from neomycin and bacitracin used systematically.

(d) Neurotoxicity—eighth-nerve involvement due to streptomycin and derivatives.

(e) Aplastic anæmias. (Six to 10 grams of Chloromycetin can be used safely).

II. Indirect effects:

(a) Superimposed infection—monilial overgrowth or changes in bacterial flora, particularly with the use of the tetracyclines.

(b) Suppression of physical signs of extensive infections.

(c) Modifying the course of infection or masking the infection.

The use of antibiotics in combinations has increased steadily. Webster discusses the types and combinations of antibiotics. He emphasizes that the bactericidal antibiotics are penicillin, streptomycin, bacitracin and neomycin. The drugs in this group combine well and act in a synergistic manner against the infecting agent. The bacteriostatic antibiotics consist of the tetracyclines, chloramphenicol and Novobiocin. Combinations of bacteriostatic and bactericidal antibiotics are unpredictable in their actions and the agents may even be antagonistic to one another. Combinations of bacteriostatic drugs are compatible, but they are unnecessary since all are broad-spectrum antibiotics. Lepper demonstrated that the use of penicillin

in pneumococcal meningitis had a resultant overall mortality rate of 30 per cent, whereas the use of a combination of penicillin and aureomycin in a much smaller series, showed an over-all mortality rate of 79 per cent.

Aspirin with insulin for diabetes.—(via *Texas St. J. Med.*, July '59).

Indications that aspirin combined with insulin may be useful in treatment of diabetes are reported by Dr. James Reid and Dr. T. D. Lightbody of Glasgow in the April 4, 1959, issue of the *British Medical Journal*.

Fourteen diabetic patients ranging in age from 33 to 74 years went through an initial control period receiving only insulin. Then aspirin was given in doses to obtain maximum therapeutic blood salicylate levels with insulin therapy being continued.

The major finding, Dr. Reid reported, was that it was possible to reduce the insulin requirement of every patient after 2 to 3 weeks' treatment with aspirin, and 8 patients with an initial requirement of 12 to 14 units of insulin zinc suspension were able to do without insulin completely. Aspirin was found most effective in patients who responded well to insulin and *vice versa*.

5-Hydroxytryptamine—(A new factor in causing gastric pain etc.)—

Dr. Waldenstrom of Malmo, Sweden describes in a recent article the concept that the so-called Kulshitzky cells the mother cells of the carcinoids, produce a substance called 5-hydroxytryptamine or 5 HT. It is broken down to a large extent in the liver and lungs by amino-oxidase, which changes 5HT into 5HIAA (5 hydroxyindolacetic acid). The latter substance is excreted in the urine and is a valuable indicator of increased 5HT activity in the body.

When 5HT is dumped in large amounts into the blood-stream *extraportally*, a peculiar flushing occurs for a brief period (five or 10 minutes). The patient's face is usually bright red. Tachycardia, hyper-peristalsis and abdominal colic are also present. In

some cases, pulmonary and tricuspid-valve changes occur, so that such valvular heart disease is produced "biochemically."

Here, then, is evidence of a powerful substance that is produced in the gastrointestinal tract, causing abdominal pain, increased peristalsis (or sometimes decreased peristalsis) and diarrhoea. It also produces other far-flung symptoms and signs. The complete picture of 5HT metabolism has not yet been worked out. Certain relations with histamine and other substances are yet to be elucidated. Yet, the fact that these two new substances, the material produced by the non-beta cells of the pancreatic islets and the Kulshitzky cells of the carcinoids have been introduced to us should give us hope that in the future similar substances may be discovered to clarify the foggy vistas of regional enteritis, ulcerative colitis, gastritis and duodenal ulcer.

Acute leukæmia.—(New York State J. Med., 1-7-1959).

A study of the treatment of acute leukæmia in 250 children and adults indicates that initial therapy with one anti-cancer drug can increase the beneficial effect of another drug administered later.

This observation was reported by Emil Frei, III, M.D., of the General Medicine Branch, National Cancer Institute, Bethesda, Maryland, and Farid Haurani, M.D., of the Jefferson Medical College, Philadelphia, Pennsylvania. Their paper, "A Comparative Study of Three Antimetabolite Regimens in the Treatment of Acute Leukæmia," was read before the meeting of the American Association for Cancer Research, in Atlantic City, New Jersey, on April 11.

In the study, two well-known anti-cancer drugs, 6-mercaptopurine (6-MP) and methotrexate, were administered to groups of acute leukæmia patients according to three different regimens: 6-MP, followed by methotrexate, methotrexate followed by 6-MP, and both drugs given simultaneously. The patients' response was

measured in terms of percentage of remissions in each group and survival from the beginning of the study.

When methotrexate was given after exposure to 6-MP, 27 per cent of the patients experienced remissions. Without initial use of 6-MP, methotrexate produced remissions in 13 per cent of the patients.

When 6-MP was given following methotrexate, 23 per cent of the patients had remissions. 6-MP without prior methotrexate treatment yielded remissions in 24 per cent of the patient group.

When both drugs were administered simultaneously, half of the children went into remission; but an identical treatment regimen produced remissions in only 5 per cent of the adult patients.

Drs. Frei and Haurani suggest on the basis of these results that 6-MP in some way modifies acute leukæmia cells making them more susceptible to subsequent treatment with methotrexate.

The study was carried out in 13 hospitals throughout the country.

It is one of several co-operative clinical investigations sponsored by the National Cancer Institute to accumulate precise information on the effectiveness of anticancer drugs.

Polycythemia vera.—(Ann. Int. Med., 50: 5, 1959).

In the last 15 years a renewed interest in polycythemia vera, kindled by the advent of radioactive phosphorus, has produced many excellent reports dealing with the clinical evaluation of this isotope. Calabresi and Meyer have attempted to compare the pertinent data presented by some of these authors with those of their own series of 100 cases, to provide a unified and more nearly complete clinical picture of the disease in the erythraemic stage.

In decreasing order of frequency the chief complaints at the time of the original diagnosis in the present series of cases were:—Weakness, abdominal pain, upper respiratory

infection, benign prostatic hypertrophy, orthopaedic disorders, thrombotic manifestations, vertigo, erythema, headache and syncope etc.

The physical signs in the present series which may be attributed to vascular congestion are:—Facial plethora, distended retinal veins, peripheral vasodilatation and cyanosis, congestion of nasal and oral mucosa, congestion of conjunctiva, splenomegaly and hepatomegaly (4 cm. or more).

The importance of the laboratory data in confirming the diagnosis rests upon establishing the presence of an increased red cell mass and a normal arterial oxygen saturation. For practical clinical purposes this increase is usually reflected (in the untreated case) in an elevation of the red cell count, haemoglobin and haematocrit. The red cell indices for the most part are normal. The reticulocyte count usually is not elevated unless bleeding has occurred. This would suggest that the normal regulatory factors are still operating but at an elevated level. Evidence of panmyelosis, which is often present, may furnish extremely valuable supportive evidence for the diagnosis.

The same authors report on the course and treatment of 97 patients with polycythemia vera receiving radioactive phosphorus at this hospital for the last 10 years are reported. Of these, 28 have died, six (21%) with chronic granulocytic leukæmia and two (7%) with myelofibrosis. It is difficult or even impossible to separate these three disorders with present-day knowledge. Furthermore, it does not appear that P³² has increased the occurrence of leukæmia over what may be expected with the improved survival. The median survival in the present series is 11 years from onset of symptoms, and the median age at death is 65 years. This is similar to Lawrence's experience, and represents an improvement over figures reported with therapeutic methods other than P³² administration.

Of 78 patients followed at regular intervals, 67 (86%) obtained successful

remissions, defined as an absence of symptoms and erythrocyte counts of below 6,000,000 for over one year. The remaining 11 (14%) all derived some benefit and, of six who are still living, three are symptomatic, and all have erythrocyte counts below 7.0 million; leucocyte counts over 25,000, relatively long duration of the disease process at time of therapy, and particularly marked splenomegaly (over 10 cm.) were found to be of prognostic value in predicting a poorer response to P³².

Treatment of the common cold.—(The Practitioner, June 1959).

"Dilacol" is of use in combating the symptoms of the common cold, according to Tom McEwan (Scottish Medical Journal, April 1959, 4: 199), of the University Department of Medicine, Royal Infirmary, Glasgow. In his opinion "it appears at the present moment, to be the drug of choice for use in large industrial concerns, or closed communities, in an attempt to reduce the spread of acute coryza." "Dilacol" contains buphenine (1.5 mg.), propyl salicylamide (60 mg.) and quinine hydrochloride (50 mg.). Buphenine is a peripheral vasodilator, and propyl salicylamide and quinine provide analgesic and antipyretic effects. The trials upon which the author's conclusions are based were carried out on 160 hospital nurses over a two-year period. In the initial trial, using a dosage of 2 tablets thrice daily for two days, and then 1 tablet thrice daily for three days, the percentage cleared with "dilacol" was 76%, compared with 8% in the control group—a statistically significant difference. In a second group, given 2 tablets four times daily for the first four days, an even better result was obtained, but 20% of the subjects complained of headache. Almost equally good results were obtained with a dosage of 2 tablets x 4 for two days, and then 1 tablet x 4 for two days, but only two of the 50 subjects complained of "side-effects"; headache and tinnitus in one case, and palpitations in the other. It is therefore concluded that this last particular

dosage-schedule is 'the optimum average dosage.'

Triamcinolone (Aristocort) therapy in chronic bronchial asthma.—(*New York State J. Med.*, 15-7-'59).

A clinical study was undertaken by Levin and Schwartz of New York to determine the antiallergic effects of triamcinolone. The symptomatic response and the side-effects were recorded in a series of 50 patients suffering from chronic intractable bronchial asthma. The duration of therapy was from one to nine months. These cases included both sexes, and ranged in age from three to seventy-five years. These patients were selected because previous available therapy failed to afford symptomatic relief, and there was no other source of help. These patients, for the most part, had suffered from chronic intractable bronchial asthma for years. The guiding principles in the study of this therapy were: the allergic tissue response, the physiochemical aspects, indications, contraindications, precautions, dosage, and side-effects of adrenocorticosteroids.

Triamcinolone was not used to the exclusion of other forms of therapy. It was used as a supplement to other symptomatic, local, and immunologic management. The dose of triamcinolone varied from 1 to 16 mg. daily in divided doses. The average initial dose was 6 to 8 mg. (74 per cent of the cases), and the average maintenance dose was 2 to 4 mg. (62 per cent of the cases). In those patients who had been on other steroid therapy, all other steroids were discontinued. At the same time, proper pre- and cotreatment of such complicating conditions as infections, stress, adrenal hypofunction, diabetes mellitus, congestive heart disease, peptic ulcer, tuberculosis, and others were carried on. The progress of the patients was followed by frequent physical and laboratory examinations including weight; blood pressure; urine analysis; and X-ray films of the chest, spine, and pelvis. In no instance was the diminution of cessation of therapy

necessary because of the severity of adverse side-effects.

The therapeutic response to triamcinolone therapy in chronic intractable bronchial asthma was good.

Of the 50 cases, 26 (52 per cent) had excellent results, 20 cases (40 per cent) had good results, and 4 cases (8 per cent) had fair results. In no instance was the response poor.

There was a total of 18 side-effects in the 50 cases under consideration. Some of the patients experienced more than one side-effect. In all, a total of 8 patients experienced side-effects. In 2 of these patients the side-effects had already existed prior to triamcinolone therapy and were due to previous adrenocorticoid therapy. The undesirable side-reactions resulting from triamcinolone in the dosage used in the management of these 50 chronic intractable bronchial asthma cases were never severe enough in any of the cases in which they did occur to make it necessary to stop or decrease the dose.

Note:—Triamcinolone (Aristocort) was furnished by Dr. Christopher Demos of the Lederle Laboratories, Division of the American Cyanamid Co., Peral River, New York.

The laboratory detection of carbon monoxide poisoning.—(*Vermont J. Med. Technol.*, via *Am. J. M. Techn.*, 25: 3, June '59).

The simplest test of all requires no reagents. Simply boil a part of the suspected blood and a normal control sample in test tubes for a few minutes. The normal control becomes brownish. A blood sample containing a large amount of HbCO carbon monoxide samples may be compared with the untreated samples. This test may not detect HbCO unless present to the extent of 30% or more of the total hemoglobin.

Wintrobe has described a simple spot test which has about the same sensitivity. Normal blood and the suspected blood are placed side by side on a spot plate and an equal volume of 25% sodium hydroxide solution added. HbO₂ turns brownish; HbCO does not.

A simple, semi-quantitative test (Yant and Sayers, 1923) will detect concentration of HbCO in excess of 25% of the total hemoglobin. Diluted blood is mixed with a freshly prepared tannic acid reagent. Visual comparison is made with similarly-treated standards made from diluted normal blood saturated with carbon monoxide and mixed in suitable proportions with diluted normal blood not containing carbon monoxide.

DERMATOLOGY

Erythema nodosum.—(*The Practitioner*, June 1959).

It is now agreed that there are three main causes of erythema nodosum: tuberculosis, streptococcal infection, and sarcoidosis. In an analysis of 70 cases seen in an area of south-east England during the last seven years. C.M.R. Vesey and D. S. Wilkinson (*British Journal of Dermatology*, April 1959, 71: 139) report that 45.6% of their cases were of proven or presumptive streptococcal origin, 5.6% were tuberculous, 35.7% accompanied sarcoidosis, and 13% were of mixed or unknown origin. The female: male sex ratio was 3.4:1. The age incidence varied considerably. In general, tuberculous cases occurred predominantly in childhood; streptococcal had a wide span from childhood to old age, but predominantly from 25 to 50. In discussing the cases associated with sarcoidosis, reasons are given for differentiating those with only or predominantly hilar-gland enlargement from those with generalized sarcoidosis. Among the streptococcal group are a group of seven middle-aged women with erythema nodosum following an exacerbation of chronic bronchitis. The practical significance of this group is that it may be confused with sarcoidosis. Attention is drawn to the fact that the presence of otherwise unexplained loss of weight, when associated with cough and dyspnoea, is 'very suggestive of sarcoidosis.' Bruising is considered to be a characteristic feature of the condition. It was present in all the cases in this series. On the other hand, it may be absent when

erythema nodosum is an early feature of sarcoidosis and the lesions rapidly become infiltrated with cellular sarcoid deposits.

Poisoning from marking ink.—(*J.A.M.A.*, 18-7-1959).

An outbreak of methemoglobinemic cyanosis in six newborn babies due to the absorption of aniline dye from their diapers was reported by Ramsay and Harvey (*Lancet*, 1: 910, 1959).

The first case occurred in an infant who became cyanotic on the 8th day of life and passed numerous loose green stools. Routine blood studies showed no abnormality but in view of the extreme cyanosis the blood was examined spectroscopically and intense absorption bands of methemoglobin were observed. Ascorbic acid (200 mg.) and methylene blue (5 mg.) were injected intravenously and within 15 minutes the infant's skin became a normal pink colour. The cause of the cyanosis was not suspected until five other babies in the same hospital were found to be similarly infected. Inquiry revealed that new diapers were normally marked with coloured cotton thread but owing to a defect in the sewing machine they were marked on this occasion with an indelible ink made from an aniline dye. All the affected babies were given new diapers marked with this dye. Aniline dyes in marking ink are known to be absorbed percutaneously and to cause methemoglobinemia. Once the cause was recognized and the source of poisoning removed the babies recovered without any specific treatment.

Warts, moles and malignancies.—(*Texas St. J. Med.*, July '59).

The human epidermis is composed of several layers of genetically independent cells with very different biological and biochemical characteristics. In addition to the cells derived from the primordial malpighian layer, we have the melanocytes which are of neuroectodermal origin, and appear early in the embryonic life as clear cells in the stratum basale. When stained they show dendrites, some of which extend to the epidermis. Besides the melanocytes there are 2 other cellu-

lar elements which appear to be part of the epidermis but are really derived from their own matrices. The lining cells of the sweatpores and pilary ostia live normally in close association with the malpighian cells. That the human epidermis is a solid sheet of keratinizing cells of a uniform population which is pierced by the openings of the hair follicles and sweat ducts is an obsolete and in correct conception according to Dr. H. Penkers the eminent dermatologist. He postulates a new concept in which symbiosis or parasitism explains the coexistence and mutual interdependence of several types of genetically dissimilar cells which have different functional and chemical characteristics.

The highly malignant pigmented tumours that usually arise at the dermoepidermal junction from melanocytes are called melanomas. There are many different clinical varieties of melanomas and the histological interpretation of the degree of malignancy is often an intricate and perplexing problem.

One of the common pigmented lesions is the pigmented seborrhœic keratosis or wart. It is a papillary, greasy, scaly excrecence. It is often multiple but may be single. Such lesions have a familial tendency, and the patient often has an oily skin with a scaling tendency in the scalp, although these features are not always present. The seborrhœic keratosis may grow to considerable size, being several centimeters in diameter.

Histiocytoma is another common lesions that may be pigmented and confused clinically with melanoma. Histiocytoma occurs chiefly on the extremities in those beyond middle age as a discrete, firm, rounded nodule and darker than the rest of the skin. Xanthomatous changes may be present. There is a history of long duration. Sclerosing hæmangioma also may be confused with nonpigmented melanoma. One of the common differential diagnoses is between pigmented basal cell epithelioma and melanoma. A basal cell epithelioma is distinguished by a waxy appearance or by an elevated waxlike border. Such an epithelioma

usually begins as a discrete pin-head to pea-sized waxy or pearly nodule. Gradually this is enlarged and a crust may develop over the central portion. The crust is sooner or later knocked or picked off, and then some bleeding is likely. Pigmented naevi may resemble melanoma. The history in a pigmented naevus of growth and of increase in pigmentation is an important consideration in reaching a conclusion as to the nature of the lesion. If a pigmented naevus forms crusts or bleeds, it should be regarded as probably a melanoma.

Pigmented hairy naevi are usually of the intradermal type. It is rare that melanoma begins in such a naevus.

It is statistically established that most pigmented naevi on the feet and hands and on the genitalia are junction type naevi. For this reason, prophylactic excision is advisable, especially if there is any keratinization, crusting, or bleeding.

Most melanomas that develop before puberty can be cured by simple local excision. The term "juvenile" melanoma" is applied to those cases in childhood in which the lesion, clinically and histologically, is that of a malignant melanoma but which is cured by local excision.

A subungual hæmatoma can be mistaken for melanoma. If there is any doubt about the diagnosis, a biopsy should be done. One does not like to do a simple biopsy on a melanoma, but sometimes one is compelled to do so in order to establish the diagnosis. Complete excision of the suspected lesion is usually preferable procedure if feasible.

Nonpigmented melanoma is often difficult to diagnose clinically and may offer some problems to the pathologist also. Melanin may be present in large amounts in the urine although the cutaneous lesions show clinically very little pigmentation. In young adults the disease is specially malignant.

The treatment of melanoma is surgical. Once the diagnosis has been established or at least strongly suspected, a wide excision of the lesion should be made. Removal of the lymph nodes draining the involved area is often the best procedure.

REVIEWS OF BOOKS

Cholera—By R. POLLITZER, M.D., (World Health Organization—Monograph Series No. 43, Geneva), 1017 pages, Illustrated, 1959. £ 5.

Cholera is one of the most widespread diseases in our country. It continues to claim a big toll in our country and is in fact a menace. Today research workers all over the world are trying to solve many of the intricate problems connected with this disease.

There are eleven chapters in this book. The first gives a history of the disease. The second deals with world incidence written in collaboration with S. Swaroop. The other chapters deal with Bacteriology, Pathology, Epidemiology, Symptomatology, Diagnosis, Prognosis, Treatment and Control.

The World Health Organization has done a great service in inviting Dr. R. Pollitzer to prepare this monograph. Pollitzer writes with an authority derived from a long career devoted to the fight against this disease. During the three years that he has taken to finish this book, he has had the help and co-operation of many individuals and institutions. He has produced a classic which, we are sure, will be acclaimed as such by all readers.

A Treatise on Hygiene and Public Health—By B. N. GOSH, F.R.F.P. and S. (Glas.), F.R.S. (Edin.); Fourteenth Edition. Revised and edited by RABINDRANATH GHOSH, M.B., B.S., D.T.M. (Cal.), D.P.H. (Lond.); Published by Messrs. Scientific Publishing Co.,

Calcutta, 1959; Price Rs. 22.50; 40 s. net.

That this excellent Treatise (text-book) on Hygiene and Public Health, has gone into the 14th edition in 37 years is adequate testimony to its usefulness and popularity amongst the students. The talented author of this book died unfortunately on 3rd November 1957 even while he had started the revision of the book and nothing daunted his worthy son Dr. Rabindranath Ghosh has satisfactorily completed the revision in an exhaustive manner with the assistance of the many friends of his father in India and abroad, who very kindly responded to his request to revise and/or rewrite the portions relating to their specialties, e.g., Malaria, Tuberculosis, Leprosy and Venereal diseases.

This revised edition has embodied a considerable volume of fresh and valuable information gleaned from the W.H.O.'s special reports and symposia on diverse topics relating to Public Health. Rural Health, Environmental Sanitation, Rationalization of Health Services in West Bengal, and Health Education are among the topics that have received special attention and adequate treatment in this edition.

We have no hesitation in saying that this treatise leaves no aspect of hygiene and public health untouched and so is eminently fitted to enjoy the continued popularity amongst those for whom it is intended.

NEWS AND NOTES

The Madras Government Ophthalmic Hospital

Tribute to late Dr. Muthayya

A portrait of the late Dr. R. E. S. Muthayya, former Superintendent, Government Ophthalmic Hospital, Egmore, was unveiled by Dr. A. Lakshmanaswami Mudaliar at a function at the hospital under the auspices of the Dr. R. E. S. Muthayya Memorial Committee. Dr. Mudaliar said, "Dr. Muthayya

had a very good grounding in Anatomy and pathology and tried to make medicine a life-long study."

Dr. T. T. Ramalingam, Superintendent, accepted the portrait on behalf of the hospital.

Dr. V. R. Thayumanaswami, Director of Medical Services who presided, said Dr. Muthayya was calm and reserved by nature. His aim was to maintain the efficiency and the traditions of the hospital.

Penicillin from Pimpri

Further reduction in prices

The Hindustan Anti-Biotics, the State-owned factory at Pimpri announced on 22-9-'59 a further reduction in prices of its products. The reduction ranged from ten to twenty-five per cent in the case of penicillin and nearly 33 per cent in the case of streptomycin and dihydro-streptomycin.

This is the third time that a reduction in prices has been effected by the factory during the last one year. This has resulted in the price of some of its products being brought down by nearly 60 per cent. The factory also gives a special discount of ten per cent on trade prices to all Government and semi-Government hospitals and institutions. The policy of the company was to pass on the benefits of the lower cost of these drugs to the consumer.

Danish Prize for Dr. Schweitzer

Dr. Albert Schweitzer, 84-year-old philosopher, musician and missionary doctor, was presented on 29-9-'59 with Denmark's 100,000 kroner (about £5,000 sterling) Sonning prize for his hospital work in French Equatorial Africa.

Dr. Schweitzer gave up a brilliant career 46 years ago to found his hospital and colony for leprosy patients at Lambarene Abon.

Eradication of Filariasis in Madras State

The State Government is participating in the National Filaria Control Programme sponsored by the Government of India. Four Control Units are functioning in the districts of Tanjore, Chingleput, North Arcot and South Arcot which are relatively more endemic than other districts. Each of these control units is meant to cover a total population of three lakhs living in the endemic areas of the district, both urban and rural.

Besides these four National Filaria Control Units, Schemes of anti-filariasis measures directed against the vector species of mosquito have been

formulated and are in progress in Municipalities and Panchayat Boards with evidence of endemic filariasis. A grant-in-aid from State funds equivalent to one-third of the total expenditure incurred by the concerned Local bodies is provided. An experimental scheme of anti-filariasis measures at an estimated cost of Rs. 2,500 per year in Malaipatti Panchayat Board, Ramanathapuram district is being entirely financed by the State Government.

In the four Units functioning under the National Filaria Control Programme and the anti-filaria measures instituted are the Mass Hetrazan Therapy and the measures directed against the vector species of the mosquitoes. Mass Hetrazan Therapy carried out under the direction and supervision of Health Officers, aims at the reduction of microfilarial density from the infected persons, thereby reducing the quantum of transmission of filariasis. The measures directed against vector species of the mosquitoes help reduce further the transmission of filariasis.

In the anti-filariasis schemes carried out by the Local bodies with grant-in-aid from State funds, the sheet anchor of control operations is anti-larval measures directed against the breeding places of the vector mosquitoes. The anti-larval measures help to keep down the vector mosquito densities in the scheme areas thereby reducing the quantum of transmission of filariasis.

**Medical Aid at Low Cost
Voluntary Health Service
(An Unique Scheme)**

At a meeting of the City Branch of the Indian Medical Association on 19th September 1959 Dr. K. S. Sanjivi explained the details of the proposed Voluntary Health Services Scheme meant for persons whose monthly income is below Rs. 400.

The Union and State Governments have been approached for financial assistance to the scheme to the extent of 50 per cent and 25 per cent respectively. Under the scheme the subscri-

bers have to pay an annual subscription of 25 nP. for an income of Rs. 100.

The V.H.S. project includes a medical aid plan which ensures the availability of hospital beds and diagnostics, consultant, and therapeutic services to persons in low income groups. Not only the subscriber but all members of his family can obtain the specialist services at much reduced rates.

Nursing home facilities:—The idea is to have an institution on the model of the Lady Willingdon Nursing Home for the lower middle class families. No direct access to their special services may be permitted except through the general practitioners. Arrangement for the teaching of medical and science graduates would also be made. There would also be medical research.

The subscriber to the V.H.S. scheme would be asked to nominate two general practitioners, one his family doctor and the other his office doctor, through whom alone he could avail himself of the specialist services offered by the sponsoring Society.

The V.H.S. had proposals for introducing several teaching programmes for the general practitioner. It was also contemplated to organise a regular school of graduate medical technologists wherein B.Ses in different subjects would be given an 18 month training in various special aspects of medicine.

Post-graduate courses:—Dr. Sanjivi hoped that the Medical Council of India would soon institute all-India post-graduate examinations (like the M.R.C.P. and F.R.C.S.) to which candidates might apply without going through the rigid and narrow path now insisted upon by the universities for their degrees.

**Ayurvedic Research
Central Council Constituted**

The Union Government has constituted on October 16 a Central Council of Ayurvedic Research under the Ministry of Health.

This decision has been taken in pursuance of the recommendations of the committee recently set up by the Ministry of Health to assess and evalu-

ate the present status of Ayurveda in the country.

The Council will consist of Mr. D. P. Karmarkar, Union Minister of Health, Chairman; Mr. V. K. B. Pillai, Secretary, Ministry of Health, Vice-Chairman; Dr. C. G. Pandit, Director, Indian Council of Medical Research; Pandit Ramprasad Sharma of Patiala; Dr. M. V. Venkataraghavan, Madras; Dr. P. M. Mehta, Jamnagar; Mr. A. N. Namjoshi, Secretary, Bombay Board of Research in Ayurveda, Bombay; Vaidya B. V. Gokhale, Principal Post-graduate Training Centre in Ayurveda, Jamnagar; Kaviraj Anath Nath Roy, President, Faculty of Ayurveda, West Bengal, Dr. Kaladi K. Parameswaran Pillai, Trivandrum; Mr. D. A. Kulkarni, Deputy Director of Ayurveda, Uttar Pradesh, members; and Dr. C. Dwarakanath, Adviser, Indigenous Systems of Medicine, Ministry of Health, Member-Secretary.

The Council will advise the Union Government on the coordinated policy for promotion and stimulation of Ayurvedic research and the grant of central assistance to institutions carrying out research under the Union Government's Scheme.

With the setting up of this Council, the existing Advisory Committee on Ayurveda attached to the Ministry of Health will cease to function.

The All Mysore Medical Conference

The Union Minister of Health, Mr. D. P. Karmarkar inaugurated the above conference at Bangalore on Saturday the 3rd October 1959. This conference was the first of its kind to be organized after the formation of the New Mysore State. More than 250 delegates attended. Dr. M. Authikesavalu, Superintendent, Victoria Hospital, Bangalore, delivered the presidential address. Dr. D. V. Nadkarni, Director of Medical Services, Mysore, and Chairman of the Reception Committee, welcomed the gathering. Mr. Karmarkar stressed the importance of taking an overall view of the health problems confronting the country. Tuberculosis, filaria, leprosy and V. D. require to be tackled from all angles and eliminated from the land. In this work, the Governments'

efforts alone would not be enough in achieving the objective. There was a great task before organizations like the Indian Medical Association and before non-official members of the medical

profession. He also stressed the need for further development of educational facilities for training competent medical personnel and for starting regular refresher courses for them.

CORRESPONDENCE

Injection Therapy

Sir,

The pain caused by intramuscular and subcutaneous injections is of 3 types:—

1. The prick of the needle which depends upon the fineness of the needle and the site of the injection.

2. Temporary irritation by the drugs usually felt for a short period, e.g., Vitamins, B₁ and Nicotinic acid.

3. The irritation by drugs injected in large quantities like Hydnoceol and milk, or the irritation caused by drugs like Liver extract and Emetine where the pain lasts for 2 or 3 days; some preparations of liver are comparatively painless but they are costly

for use. To obviate the pain caused when given in the upper arm, injections are given into the gluteal region where the pain is comparatively less. The pain caused by drugs in this third category can be appreciably reduced by the application of Methyl salicylas to the site of injection and re-applied 12 hours later if the pain persists. This will enable patients to take their injections in their upper arms, especially in the case of females who feel delicate to take injections in the gluteal region. Doctors! please try this out as it will prove a boon to patients.

Madras, }
29.9.1959.

J. J. JOSEPH,
Hon. Secretary, The Hind
Kushi Nivaran Sangh.

PREPARATIONS AND INVENTIONS

Penitriad—May & Baker (India) Private Ltd. announce the introduction of 'PENITRIAD' brand association of penicillin VK and triplesulphonamides for oral administration. Each tablet contains phenoxymethylpenicillin potassium equivalent to 60 mg. of the free acid, sulphadimidine 167 mg., sulphadiazine 167 mg. and sulphathiazole 167 mg. It is indicated in infections due to Penicillin- and sulphonamide-sensitive organisms, including pneumococci, streptococci, *Staphylococcus aureus* and sensitive gram-positive bacilli. In gram-negative bacillary infections due to organisms of limited sensitivity to either penicillin or to sulphonamides the activity of the combination is likely to be appreciably greater than that of either penicillin or a sulphonamide

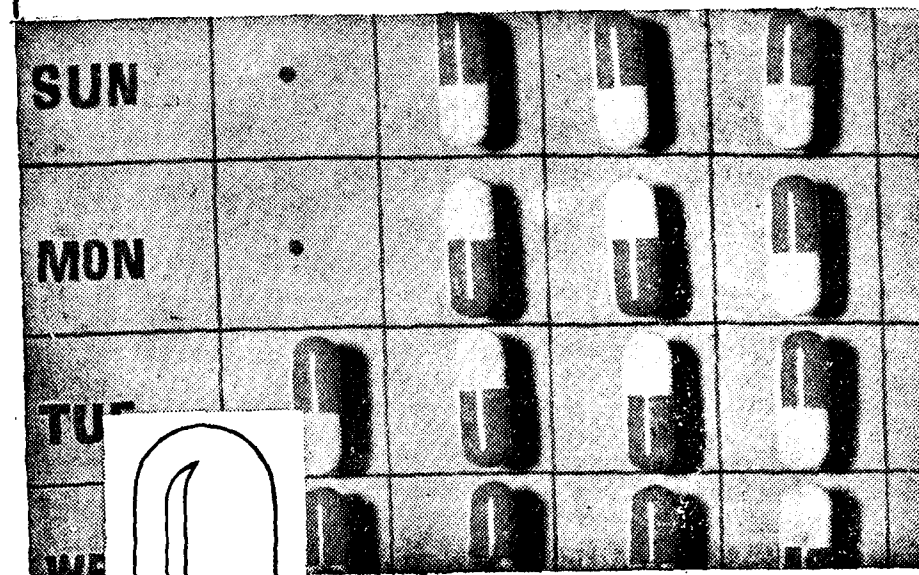
alone, notably in respiratory tract infections associated with the presence of *Haemophilus influenzae*. The average adult dose is 2 tablets initially, followed by 1 or 2 tablets at 4-to 6-hourly intervals. It is supplied in containers of 10 tablets each.

Stemetil—May & Baker (India) Private Ltd. announce the introduction of 'STEMETIL' brand prochlorperazine. Administered orally or, if necessary, by intramuscular injection, 'STEMETIL' has been found valuable for the symptomatic management of migraine and kindred conditions, Meniere's syndrome and other labyrinthine disorders, giddiness of other origins, and vomiting. 'STEMETIL' is presented as 5 mg. tablets in containers of 25 and as ampoules of 1 cc. containing 12.5 mg. in boxes of 10.

CORRIGENDUM

July 1959 issue of the ANTISEPTIC, p. 494, Case No. 2, line 36, Read '3 lbs. and 13 ozs. For "13 lbs."

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Napoleon could have won the battle of Waterloo but he hesitated until noon before opening the attack, and lost. Indecision in Napoleon's case was evidently a symptom of advanced age. It cost him throne and liberty.



The medical problem to control premature old age has become still more acute in modern times. Patients who suffer from the strain of life, the "manager disease" are almost daily visitors in a doctor's practice.

In this connection it seems worthwhile to take notice of A. Aslan's results obtained with parenterally applied procaine for controlling symptoms of ageing, published at the 4th International Gerontological Congress, 1957. Arteriosclerosis, vascular spasm, arthropathies, bronchitis & emphysema, gastric and duodenal ulcers, etc., were treated in 5,251 patients of all ages. A. Aslan's team observed a rehabilitation rate (return to fitness for work) of 48 to 87%. There was an improvement in the mental and physical well being of the patients, accompanied by eutrophic changes, particularly regrowth and repigmentation of hair, with a restoration of the normal turgor of the skin. The tone of the vascular system

and basal ganglia was also improved. In concluding the authors write, "It is quite astonishing with what physical agility these patients move about and the degree of mental vivacity they show".

Similar results were reported by M. Odens (Lancet, April 4, 1959, p. 737) in 10 patients 60 to 75 years old. The author writes, "I have found that the pre-senile cases especially have responded very well; tiredness, depression and tremor of the hands disappeared after 30 injections, and memory, which was very much impaired in 4 cases, has improved considerably."

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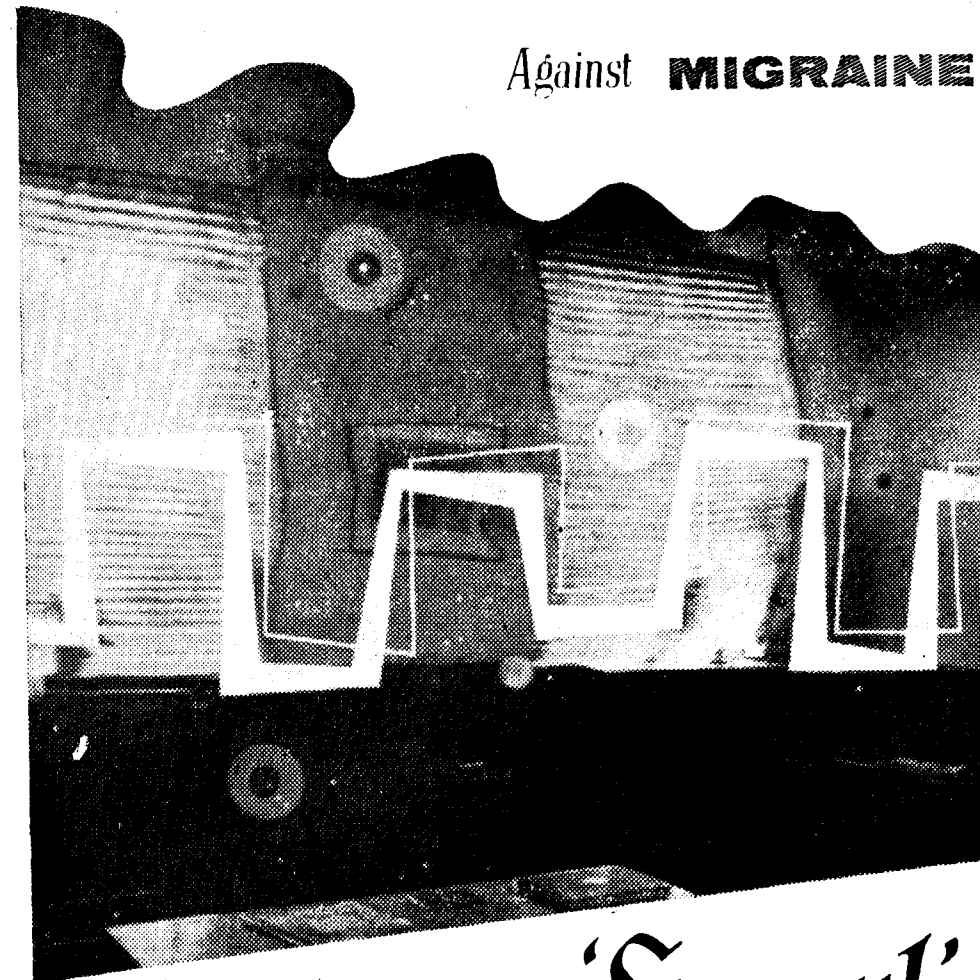


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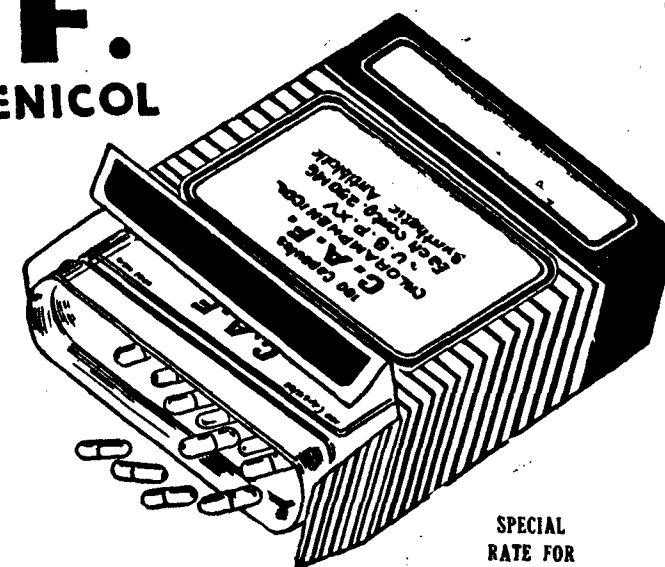
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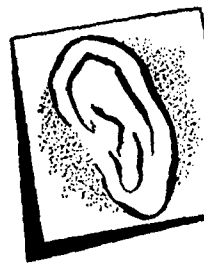
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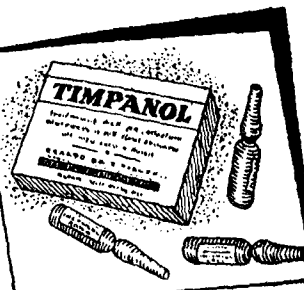
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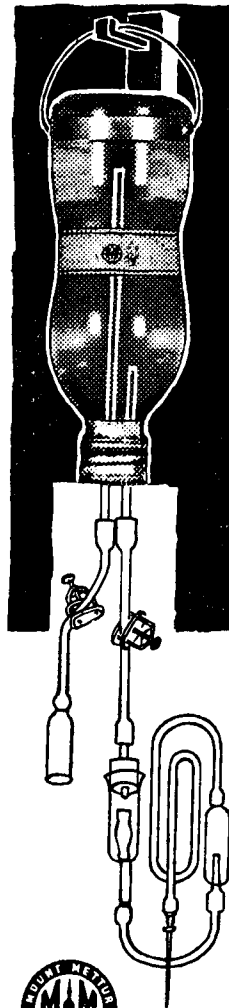
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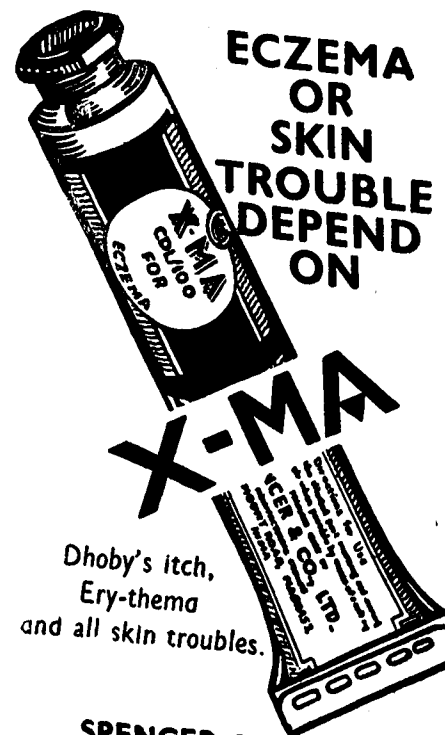
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[Vol. 58, No. 11]

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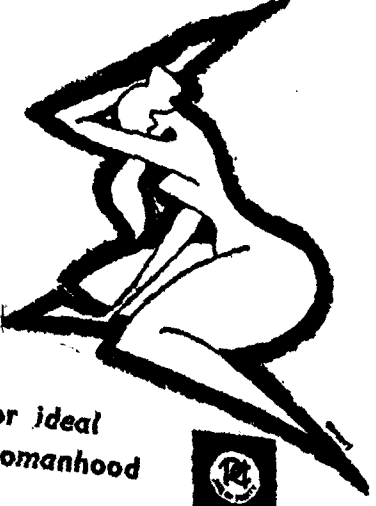
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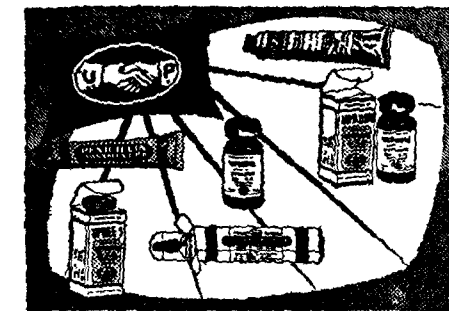
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Glaxo Domez, Alembic 0-61 1-78	Coll. Cal. with Vit D 2x15cc 1-62	.. Iron with Vit B1 1000T 8-10
Squibb 0-62 1-85	ATS B.I. 750 1-70, 1500 2-55	Butaryn 5Ax5cc 5-0
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Pfizer or Merck 1-87	Novacaine 50Ax2cc 7-0	Argent Vitelin oz. 2-0, Protein 1-12
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Al., DMX, Gl. Sq. H. A. 0-78	APC 1000T 5-75, BDH 10-50	Bismuth Carb oz. 1-75, lb. 20-0
Dihydrostrepto Plus Strepto 1 gm.	Calcium Gl. 1000Tx5gr 4-0, 7 1/2gr 4-50	Calcium Lactate lb. 2-37
Al., Dmx, Gl. H.A. 0-78, Sq. 0-83	.. lactate 1000T 3-0	Calomel oz 2-37, Chlorobutyl 1-12
Strepto penicillin 1 gm. Sq. 1-19	Ephedrine HCl 1000T 1gr 3-87	Chlorodyne M&B lb. 4-62
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.. 20T 0-75, 100T 2-25	.. B1 100mgx10cc 0-81, 100T 4-15	Glycerin lb. 2-37, 7 lb. 15-50
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Diamin Penicillin 6lac 2-60, 12lac 3-25	.. B Complex 10cc 0-60, Forte 0-87	Kaolin Heavy 0-37, Light 0-87
Benapen 10cc 3-85, fort. 1-25	.. 1000T 4-50, S. Forte 13-50	Mercurochrome 10gm 6-15
Crystapen Eye or Skin Oint 0-60	.. C 50mgx1000T 7-25 100mg 11-75	Parafin Liq. lb. 1-75, Gal 16-0
Deltacorlin or Eficorlin 10T 6-50	.. C 100mgx50Ax2cc 7-50	Potas Citras 2-75, Acetas lb. 2-06
PD Chloramycetin 12Caps 11-35	[5cc 500mg 9-50]	.. Bromide lb. 3-37, Iodide oz. 1-12
Aureomycin or Achromycin 8C 16-50	Vitamin K 100T x10mg 2-0, 50A 4-0	Santonine dr. 2-75, M&B 2-87
.. .. Speroids 10-05	Multivitamin 1000T 9-75, 10cc 2-15	Soda Salicilas lb. 4-75
.. .. Eye Oint. 1-62	.. Drops 15cc 1-25, Forto 1-87	Sulphanilamide Powder lb. 4-75
Terramycin 8C 16-50, Eye Oint 1-62	.. Amps. 100A 19-0	Saridon 250T 25-0, Trulax 125T 6-25
Synthomycin 12C 9-50, Syrup 8-0	Folic Acid 10cc 1-06, c B12 10cc 1-62	Syr. 2cc 5cc 10cc 20cc 50cc
Sulphamycotin 10T 8-0, Syr. 7-75	Aminophyllin 50Ax2cc 8-50, 10cc 9-75	A.G. 1-50, 1-87, 2-75, 4-0
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.. 3Ax125mg 6-37, 250mg 9-55	Antepar 4 oz. 3-25	Jap. Lock 1-75, 2-75, 3-75, 6-75
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.. 3gm 500T 32-50	.. Vit. B1 100mgx10cc 2-10	Ger. 2-00, China 1-75, Ind. 1-62
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.. 5cc 1-60, 10cc 2-10	Largactyl 50Tx10ng 3-25, 25mg 5-10	Universal Tooth Forceps 3-65
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