

SMALL-POX**Post-Graduate Lecture at the Presidency General Hospital, Calcutta
to the Trained Nurses' Association of India Members**

BY DR. H. N. BAKSHI, L.M.S., D.T.M.

Teacher at Campbell Hospital, Calcutta

At the very outset I would like to express my gratitude to Sister Worby for offering me this opportunity to meet you this afternoon. I accepted with great pleasure her invitation to say something about small-pox, for I consider it a sacred duty of every Medical man to propagate as far as possible the knowledge regarding the modes of dissemination of a preventible infectious disease, as the possession of such knowledge may occasionally avert an outbreak of the malady among the people in a locality.

Ignorance of common and ordinary laws of sanitation and public health was found to be responsible for many an outbreak of the disease which could have easily been nipped in the bud by timely adoption of suitable preventive measures by the public in general, and Members of Medical profession in particular. Lack of vigilance on the part of responsible authorities and negligence and ignorance on the part of people were in most cases found to be at the very root of almost all the epidemics of preventible infectious diseases.

Diffusion of knowledge regarding the causes and modes of propagation of all infectious and contagious diseases among the lay public in general and sick attendants and nurses in particular is essential and imperative, as the latter, owing to the peculiar nature of their duties have got to attend, on many occasions, patients suffering from severe attacks of most virulent types of acute infectious and contagious diseases. In faithfully discharging their onerous duties not only have they got to expose themselves to infection, but may sometimes carry the same unknowingly to other susceptible persons with whom they are likely to be in contact. It is therefore for their own safety and that of others, that Nurses should have a thorough and comprehensive knowledge regarding all infectious and contagious diseases, for the maxim 'To be forewarned is to be forearmed' can nowhere be better applied than here.

Of all the infectious and contagious diseases, Small-pox perhaps stands second only to Meningitis as regards mortality. But the people dread this fell disease more than any other malady owing to the intense suffering, excruciating pain, unbearable agony and appalling death rate. Even when cured, it leaves indelible marks on the person of the sufferer causing permanent disfiguration, especially of the face, as a result of pitting produced from the healing of pocks. Hence we should always remember the adage, 'Prevention is better than cure'.

Besides, though the curative treatment for small-pox is so far very uncertain and unsatisfactory and will remain so until, and unless, a specific drug is discovered, the prophylactic and preventive measures, in the shape of vaccination, are within the reach of everybody who is willing to have it. Whatever the opponents of vaccination may say, there is no denying of the fact that successful vaccination protects a person from an attack of small-pox, reducing the susceptibility to the disease, at

least for a certain period which undoubtedly varies in different persons. In other words, vaccination confers immunity, even if temporary, for a time the length of which depends on various factors. With the gradual disappearance of the immunity, liability to the disease increases; hence, to be on the safe side, repeated vaccination every 2 or 3 years becomes necessary.

A comparative statement of Small-pox, occurring among the vaccinated and the non-vaccinated patients of the Campbell Hospital, Calcutta as well as the severity and mortality in each variety, is shown below:

Total number of admission and death from 1st January to 30th April 1936.

	Hæmorrhagic	Confluent	Semi-confluent	Discrete	Mild or Modified	Total
Admission ...	125	1040	302	171	201	1839
Mortality ...	124	433	48	6	3	614
Percentage of Death ...	99.2	41.6	15.8	3.5	1.4	33.4

	Number of Admissions	No. of Deaths	p. c. of Death.
Non-vaccinated ...	953	437	45.8%
Vaccinated in childhood ...	742	144	19.2%
Re-vaccinated ...	143	27	18.6%

The above statement will convince even a sceptic as to the utility and efficacy of vaccination as a prophylactic measure.

It is a common belief that Small-pox occurs in an epidemic form every fifth year and as the last epidemic visited this city in the year 1933, the next one was not expected before 1938. Hence the present unexpected and unprecedented epidemic has taken everybody by surprise. Neither the Corporation of Calcutta nor the authorities of the Campbell Hospital were prepared to meet the sudden and unforeseen emergency arising as a result of the present visitation.

In this big city of Calcutta the only place where Small-pox cases are admitted for treatment is the Campbell Hospital where only 164 beds, including the Paying-patients' Block, are available for both Europeans and Indians. This number, though ordinarily found to be quite adequate for the accommodation of patients in a normal year, can hardly be expected to meet the demand during a severe epidemic like the present one.

In spite of the ungrudging help and co-operation of the Health Department of Calcutta Corporation in raising the number of available beds approximately to 300 by the construction of temporary sheds in the compound, and providing for extra accommodation for patients in the Wards, the demand for beds could hardly be fully satisfied. In order to meet the situation, Health Officers of Calcutta Corporation had to open a temporary Hospital with 200 available beds at Tangra to receive convalescent patients from the Campbell Hospital in order to release beds for admission of new and fresh cases. This arrangement worked quite satisfactorily. But for this, it would not have been possible to cope with the situation arising unexpectedly on account of sudden, unforeseen and unprecedented epidemic, the magnitude of which can be better understood by a comparison of the number of admissions into the Hospital for the whole of the last year, viz. 491 with that of the last four months of this year, viz. 1839.

The present epidemic of Small-pox is not confined to Calcutta alone. It has also broken out in many villages and Towns in Bengal almost simultaneously. Midnapur, Murshidabad and Dacca have more or less been in the grip of the disease. On account of the ravages of the disease the University Examinations had to be postponed for almost an indefinite period.

Small-pox is not a disease of recent origin. Its history can be traced to a very remote age. The disease has been known in India from the earliest times. Mention of Ceremonial inoculation with Small-pox virus by the Brahmins as a protective measure against an attack of the disease has been found in Atharva Veda. Marks of Small-pox have also been discovered on the Mummies in Egypt as early as 1200 B.C.

The virus of the disease is still unknown. It is probably ultra-microscopic and filtrable. The best endeavours of the most eminent Physicians and Bacteriologists have so far failed to discover the causative organism. That it is present in the eruptions has, however, been definitely proved. It is highly contagious and a susceptible person may easily contract the disease by contact with a patient suffering from pox. Even an exposure resulting from entrance into the patients' room may occasionally be sufficient to cause infection with the virus of the disease in case of persons unprotected by vaccination as the susceptibility is almost universal. The virus probably enters the body through abraded surfaces of the skin or perhaps through the mucous membranes of nose and throat. One attack usually confers immunity for the rest of life. Second attack though not impossible is very rare.

The disease is more prevalent in winter, spring and early summer. Sporadic cases, however, occur at least in Calcutta throughout the year.

It occurs in persons of all ages in both sexes among people of all races in almost every clime though more common in tropics. Mortality however is higher among children, Europeans and Negroes.

Heavy rainfall with high temperature appears to have a great salutary influence on the incidence and death rate of the disease probably due to increased absolute humidity of the atmosphere. Relative humidity has on the other hand had no influence on it.

As it is essential to segregate a small-pox patient to prevent a general outbreak among the public owing to high infectivity, early diagnosis is absolutely necessary.

Though the causative virus is the same in all varieties of cases, the disease manifests itself mainly in three different types, each of which is again subdivided into different forms according to the nature and severity of the attack as shown below :—

- | | | |
|------------------------|--------------------------------------|--------------------|
| I. Haemorrhagic. | 1. Purpuric. | 2. Pustular. |
| II. Ordinary. | 1. Confluent. | 2. Semi-confluent. |
| III. Mild or Modified. | 1. Modified by previous vaccination. | |
- (Varioloid).

The disease, in all types, passes more or less through the same stages, varying only in degree of severity and rate of mortality. A general description, therefore, will serve the purpose quite well.

Even a susceptible and unprotected person does not get the disease immediately after infection. The virus takes certain time for its growth, development and multiplication in the human body before the manifestation of the signs and symptoms of the disease. This period which is known as incubation period, is on an average 12 days but varies from 5 to 21 days in different individuals depending on various factors.

During this incubation period the infected person suffers from lassitude (disinclination for work), headache, insomnia (loss of sleep), anorexia (loss of appetite). In fact a general malaise (feeling of being unwell) is the usual feature.

At the onset the patient suddenly gets more or less high fever with intense headache, pain in the back and body, persistent or frequent vomiting or nausea, injected eyes, and in some cases delirium. Convulsions may occur especially in children.

This condition usually continues for 3 or 4 days, when with the appearance of eruption, the symptoms subside and the patient feels much relieved and more comfortable for the time being. All the eruptions usually appear in about 2 or 3 days and subsequently pass through macular, papular, vesicular and pustular stages. On or about the 8th (eighth) day, with the maturation of the eruption general symptoms re-appear and the secondary fever starts. Extreme itching, severe pain, swollen eyelids, dry mouth, painful deglutition and intense thirst are common features in this stage. Delirium may be slight or absent in some patients but in severe cases there may be acute and suicidal mania. At about the tenth day pustules commence to rupture with exudation of pus.

In favourable cases, these pustules begin to dry rapidly, temperature falls and convalescence starts. Decrustation of pocks begins at about the fourteenth day and scabbing continues during the third and fourth weeks. In unfavourable cases, a typhoid state with extreme prostration develops after the eighth day. Death usually occurs between twelfth and fourteenth day, as a result of heart failure.

In confluent type though the disease passes through the same stages, the signs and symptoms are more severe and graver than those of discrete variety.

Haemorrhagic type of small-pox which occurs either in (1) Purpuric

or (2) Pustular form is found most commonly in healthy adult males. It is rare in children and vaccinated persons.

Symptoms in this variety are much more acute and prognosis, very grave. There is diffuse redness (hyperæmia) of the whole body and bleeding occurs under the skin either in petechial and purpuric form. More or less severe bleeding starts from almost all the cavities lined with mucous membranes such as from eye (sub-conjunctival hæmorrhage) mouth, nose (Epistaxis), stomach (hæmatemesis), intestine (melaina), lungs (hæmoptysis), bladder (hæmaturia) and uterus (Menorrhagia).

The condition of the patient becomes appalling with swollen face, red eyes, purple skin, measly rash, bloody saliva, foul breath, extreme prostration and collapse.

Mortality is as a rule cent per cent, death occurring between the third and sixth day. No case ever recovers in purpuric form which is also known as Black Small-pox.

Pustular form of hæmorrhagic type of Small-pox is slightly less severe than the above and recovery in this form occurs though very rarely. Death usually takes place between the seventh and ninth day.

Broncho-pneumonia, delirium, coma, convulsions (in children), laryngitis, albuminuria, conjunctivitis, keratitis, septicæmia, pitting, boils, abscesses, osteomyelitis, and cellulitis are the most common complications and sequelæ during the course of the disease and the period of convalescence. Post-febrile insanity after an attack of Small-pox is of rare occurrence.

Occasionally during the stage of desquamation, a secondary eruption is found to develop. This is known as 'recurrent Small-pox' and is of very little significance.

Prognosis in Small-pox depends mainly on the following factors :

1. Vaccination.—In vaccinated persons mortality is very low—only a few per cent in unfavourable circumstances. No death usually occurs among patients who have had recent successful vaccination.

2. Age.—Among unvaccinated persons mortality is highest in infants, children and old people.

Type of the Disease.—In the hæmorrhagic type mortality is almost cent per cent.

In Confluent Type.—Death rate is about 50 per cent.

In the Discrete Type.—Only about 5 per cent patients die as a result of the disease.

Special Symptoms.—Prognosis is bad in patients who develop delirium, high temperature, laryngitis and pulmonary complications with very large and numerous eruptions especially on the face during the course of the attack.

Early diagnosis of a case of Small-pox is essential for the purpose of immediate segregation or isolation of the patient. Infection contracted from a patient with a mild or modified form of the disease may bring about a disastrous result. An infection from a mild or modified case may produce the most virulent type of the disease in a susceptible person. Difficulty in diagnosis is mainly due to more or less resemblance of Small-pox to Chicken-pox. A modified varioloid (Small-pox modified by vaccination) may occasionally present almost insurmountable difficulty

in the way of differentiation from Chicken-pox. A careful study of the following points may help a great deal in differentiating Small-pox from Chicken-pox.

	SMALL-POX.	CHICKEN-POX.
1. <i>Prostration</i>	Marked.	Not much.
2. <i>Distribution</i> <i>And Other characteristic of the Eruptions.</i>	(a) Centrifugal. (b) More marked in the face, upper and lower extremities than on the trunk. (c) Axilla, groin, supraclavicular space, outer surface of maleolus are usually more or less free from eruption. (d) All the eruptions appear about the same time in one crop which takes about two or three days to develop fully. (e) Individual pock is multilocular, on pricking only a portion of it is collapsed. (f) Eruption passes through the successive stages of macule, papule, vesicle, pustule and encrustation. (g) Umbilication of pocks is the rule.	Centripetal. More marked on the trunk than on the face, upper and lower extremities. No place is exempted except the back of the wrist. Fresh crops of eruptions appear in several successive days and hence they are found in different stages of development at the same time some are just coming out while others are almost drying up and forming crusts. Individual pock is unilocular and on pricking the whole pock becomes collapsed. Eruption appears as vesicle and becomes pustule in a short time. They usually dry up very quickly forming crusts. Umbilication is rare.
3. <i>Depth of spots</i>	Deeper with 'shotty feel'.	Superficial and no 'shotty feel'.
4. <i>Fever</i>	(a) Duration of initial fever is usually 3 or 4 days.	Duration of initial fever is one or two days.

	SMALL-POX.	CHICKEN-POX.
	(b) Eruptions appear about the 3rd or 4th day of the fever. (c) Fever falls and initial symptoms subside on the appearance of eruption. (d) Secondary fever starts on or about the 8th day when the supuration of pocks begins.	Eruption appears about the 1st or 2nd day of the fever. Fever does not fall and symptoms continue even after the appearance of eruption. There is no secondary fever. The initial fever usually continues till the period of scabbing.

Even a layman, not to speak of a trained Nurse, should have some knowledge about the disease, so that a case of small-pox can be detected as early as possible and isolated in a suitable place or a hospital for the safety of others who may unknowingly infect themselves as a result of exposure to and contact with the patient and thereby endangering their lives.

Treatment of small-pox is so far imperfect and unsatisfactory and it will remain so until and unless either a specific drug or a specific antitoxic serum is discovered. But possibility of either is very remote as the specific virus of the disease is unknown. Our treatment at present is, therefore, mainly prophylactic, symptomatic, eliminative and paliative. Hence greatest endeavour should be made to prevent an outbreak of the disease by successful vaccination which, even when it fails to arrest an attack of small-pox, undoubtedly lessens the suffering and reduces the mortality by modifying the type of the malady.

As nurses have strictly got to watch the patient in faithfully carrying out the direction and instruction of the physician in charge of the case, it is not only unnecessary but probably superfluous to describe in detail, the treatment of the disease in a lecture to the trained nurses who will never have to treat a case of small-pox independently. But a brief note on the measures to be adopted to prevent the spread of the disease in an epidemic form as well as a short description of the treatment usually prescribed for curing the disease, or at least relieving the suffering of the unfortunate victim will not, in my opinion, be out of place even in a lecture to the trained nurses, as it may so happen that the possession of such knowledge, however meagre it may be, may in an emergent case help a nurse occasionally to bring some relief to the unfortunate patient placed under her care.

With this view, the following measures are adopted to prevent dissemination of the disease and to relieve the suffering thereof :—

I. Removal of the patient to a special Hospital is imperative.

II. General Hygienic measures :—Good and soft bed, if necessary water beds : plenty of fresh air. Cropping short of hair and warm bath with weak ($\frac{1}{2}\%$) pot. permanganate lotion, immediately on admission, if the patient is not already too exhausted.

III. Daily warm sponging on the bed as long as possible.

IV. Special treatment adopted in this Hospital :—

1. Tipping the pocks with 4 or 5 p.c. solution of pot. permanganate for three successive days since admission, to harden the skin and thereby prevent secondary infection.

2. Calcium chloride solution 10 p.c. 2 c.c. to be injected intravenously once daily for 4 or 5 days.

3. An alkaline diuretic mixture 1 oz. thrice daily.

4. Calc. Lactate, gr. xv, thrice daily.

5. Mist. stimulant 1 oz. thrice daily if necessary.

6. Glucose-soda drink, ad. libitum.

Glucose, $1\frac{1}{2}$ oz.

Sodi bicarb, 1 dr.

Aqua ad 0l.

} Composition of Glucose Soda
drink.

7. E. C. Gargle (weak).

8. Boro-glycerine, to paint the mouth and tongue.

9. Inhalation of Tinct. Benzoin. co in steam and fomentation of the neck for throat troubles.

10. Haust, pot. Brom. et chloral hydras for sleep.

To prevent eye complications.

11. Eyes to be washed daily with lotio acid boric or normal saline.

12. Lotio methylene blue 1 p.c. to be dropped into the eyes once daily for 2 or 3 days.

13. Liquid paraffin to be dropped into the eyes twice daily or oftener.

14. Other complications to be treated as they arise.

15. Body oil to be applied every 4 hours :—

R/	Acid salicylic	...	1 oz.	} Composition of the body oil.
	Acid boric	...	2 oz.	
	Starch	...	2 oz.	
	Oil eucalyptus	...	$\frac{1}{2}$ oz.	
	Menthol	...	2 dr.	
	Olive oil	...	0l.	

In confluent types of cases :—

antistreptococcic serum.

(polyvalent) 20 c.c.

inject daily for 4 or 5 days.

In Hæmorrhagic cases :—

Normal horse-serum, HæmostatoI, etc. are injected.

For restlessness :—

Heroin hydrochlor gr. $\frac{1}{2}$.

Hyoscine hydrobrom are injected ... gr. $\frac{1}{200}$.

Medinal tabloids or gr. vii.

Luminal tabloid are given by mouth ... gr. $\frac{1}{2}$ to 3.

For cardiac troubles :—

Carideazol or cardiazol ephidrine is given.

Glucose solution 25 p.c. 20 c.c. to be injected intravenously.

For Boils and abscess :—

Streptococcal or Staphylococcal vaccine—injectd.

For Diarrhoea :—

Bismuth with sodi. bicarb. is given.

Convalescent serum Treatment :—

This has been tried on some patients in this Hospital without encouraging results. This may be due to inadequate amount of serum available. It is not only difficult but practically impossible to obtain a very large quantity of convalescent serum containing a fairly large amount of anti bodies—sufficient to neutralize the toxin circulating in the blood of a severe case of small-pox. It is therefore too much to expect any appreciable beneficial result from injection of small quantities of convalescent serum.

As for example 5 or 10 c.c. daily or every other day.

It must however be understood that in a disease like small-pox, nurses play a very important role in relieving the intense and intolerable suffering of the poor victim. A kind word, tender care and ungrudging sympathy for the unfortunate sufferer go a great way to bring comfort, consolation and hope in the mind of the patient.

The most important and essential duty of a nurse in charge of a small-pox patient is not only to carry out faithfully the instruction of the physician but it is also incumbent on her to relieve the suffering of the unfortunate as best as she can. This is more so, because the patient is usually cut off from the tender care of his nearest and dearest relatives who are, as a rule, not allowed to visit the patient or even enter the precincts of the hospital for small-pox patients.

The nurse who attends a small-pox case must remember that she has got:

1. Duty to her patient.
2. Duty to herself, and
3. Duty to the public.

1. *Duty to her patient.*—This may be divided into two parts (a) General duty, (b) Special duty.

(a) *General duty.*—As in all other diseases, the strict and faithful discharge of duties by an ungrudging compliance to the direction and instruction of the physician is the primary duty of the nurse. It is essential specially in administering medicines internally and externally as well as giving diets and drinks to her patients strictly in accordance to the order of the physician in charge of the case.

Temperature, pulse and respiration should be taken and recorded regularly in charts. Condition of the bowels and that of bladder must also be noted. Any complaint of pain or discomfort felt by the patient should also be reported to the Medical officer if necessary at once. An elaborate instruction is unnecessary and superfluous to a trained nurse as she is supposed to be thoroughly conversant with her duties as such. Suffice it to say that any abnormality noticed in the patient should be noted in the report book and should be brought to the notice of the physician as early as possible.

(b) *Special duty*.—That is,—the duty specially required for a small-pox patient.—Special arrangement for beds and beddings is imperative and essential for small-pox patients as the patient develops, during the course of the disease, eruptions all over the body. These eruptions invariably get suppurated and form pustules. Unless special precautions are taken, these pustules are in constant danger of being developed into open sores and ulcers as a result of rubbing against a hard and rough bed. So a nurse should see that a soft bed is provided for a small-pox patient. Besides, as the formation of bed-sores is not an uncommon occurrence in a patient suffering from this disease, it is incumbent on the nurse to see that the bed is not only soft but always smooth and without any crease on the bed-sheet. As a precautionary and preventive measure, the nurse must, from the very beginning, attend to the back and buttock of the patient by rubbing spirit and applying dusting powder to these parts as often as necessary. She must, on no account, allow the patient to lie on a wet or soiled bed for even a short time.

As, by the very nature of the disease, a very large number of flies are likely to be attracted to the patient, he should constantly be kept under a clean mosquito-net. No flies should be allowed on the patient. This is absolutely necessary for the safety of the patient and that of the public, for, the flies are a potent source of infection.

The nurse must see that the hair of the patient is cropped short at the very beginning if possible, for, eruptions are sure to develop on the scalp along with those on the other parts of the body. These eruptions will get suppurated in time and will probably produce such a horrible state that it may be difficult, if not impossible, to cut it short then.

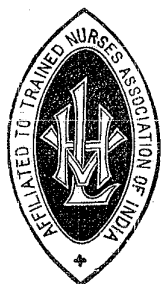
2. *Duty to herself*.—This is very important. As the disease is a highly infectious one, the nurse must, for her own safety, get herself vaccinated before taking up a case of small-pox under her immediate care, for in attending such a patient she will have to expose herself to infection by frequent handling and touching of the patient for various unavoidable reasons as a matter of duty to the patient placed in her charge. A nurse with an open sore, ulcer or cut on her person especially on her hands or other exposed parts such as face, neck, etc. must not take up nursing of a small-pox patient.

Every time after handling or touching the patient she must carefully disinfect her hands by washing them with carbolic soap and dipping them in antiseptic lotion such as Lotio. Hydrargyri. Binioridi. The use of a pair of I. R. Gloves, while handling a patient with open sores or ulcers, is perhaps essential for her personal safety. The nurse must put on an especial apron and cap while on duty on a small-pox case. She must change her dress when she goes off duty.

3. *Duty to the Public*.—As an attendant to a small-pox patient, the nurse may carry infection to those with whom she may come in contact and thereby spread the disease among others without herself getting the same, or, in other words, she may act as a 'carrier' of the disease. The nurse must, therefore, keep herself aloof or out of touch with her friends, relatives and other people as long as she remains in charge of a small-pox case.

As a contact she may have to be kept under quarantine for a period

of twenty-one days after she ceases to nurse a patient suffering from small-pox. Though this rule is not strictly adhered to, it should be known to every one that the highest limit of the incubation period of small-pox is twenty-one days and a 'contact' may develop the disease during this period.



THE HEALTH VISITORS' LEAGUE SECTION

The Honorary Secretary of the League, Miss M. E. Rawson, Lady Reading Health School, Bara Hindu Rao, Delhi, will gladly receive reports and articles for insertion in this section.

DEAR FELLOW HEALTH VISITORS,

A while ago I saw a Cross-word Puzzle in one of the nursing journals, and there seems no reason why Health Visitors should not try their hands or their heads at one too. This particular one is sent in by a medical student. I'm afraid there is no prize offered!

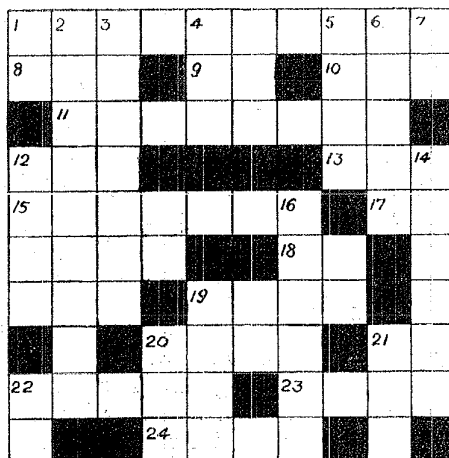
On account of the damp heat we are experiencing just now, children as well as adults are suffering greatly from Prickly heat. Gram flour (Besan) used for bathing instead of soap is found to be efficacious, and the following recipes are for Prickly Heat Powder.

- | | | | |
|----------------|---------|-------------------|-------|
| (a) Starch | 1 oz. | (b) Violet Powder | 4 oz. |
| Boracic Acid | 1 oz. | Boracic Powder | 2 oz. |
| Salicylic Acid | 20 grs. | Zinc Powder | 1 oz. |

One of our members sent me a welcome recipe for making home-made 'mackintoshes' for midwifery cases. It is as follows:—'Take a large sheet of brown paper, smooth one side, rough the other. Paint the rough side with Copal varnish, let it dry in the sun, paint again and dry again. When dry, powder with chalk powder.' These work out at 1½ annas each and are readily bought by mothers attending the Antenatal Clinics.

Yours sincerely,
M. E. RAWSON.

CROSSWORD



ACROSS

1. To liberate.
8. Vehicle.

DOWN

1. E. C. (Actual).
2. Motherhood.

The 'QUADS' are on COW & GATE!

Date of Birth 28/11/35. Premature birth by 7 weeks 4 days.



ERNEST
Weight at birth:
3-lbs. 15-ozs.
Weight 28/5/36
16-lbs. 6-ozs.



MICHAEL
Weight at birth:
2-lbs. 13-ozs.
Weight 28/5/36
14-lbs. 8½-ozs.



PAUL
Weight at birth:
3-lbs. 7-ozs.
Weight 28/5/36
15-lbs. 13½-ozs.

THIS case is almost a miracle. Medical history states that never before—in England—have Quadruplets lived for more than a few days. Never before—anywhere—have Quadruplets survived when three of them were boys.

An additional complication was that the babies were premature and were far less than normal birth weight—in fact Michael weighed only 2-lbs. 13-ozs.

Those in charge of this appallingly difficult case chose Cow & Gate as the Quads' best hope of survival and these recent photographs show the marvellous progress they have made.

ANN
Weight at Birth:
3-lbs. 12½-ozs.
Weight 28/5/36
15-lbs. 11½-ozs.



Agents for INDIA:
CARR & CO. LTD.,
Wittet Road, Ballard Estate,
BOMBAY.

And at Calcutta, Karachi,
Madras and Marmagao.

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COW & GATE MILK FOOD

"THE BEST MILK FOR BABIES WHEN NATURAL FEEDING FAILS"

- | ACROSS | DOWN |
|---|---|
| 9. Indefinite article used before a vowel sound. | 3. Health Visitors should not allow their work to fall into this. |
| 10. Girl's name. | 4. Baby's headgear. |
| 11. Not so common as twins. | 5. Prefix meaning before. |
| 12. Pertaining to that side towards which the wind blows. | 6. One of the sensations. |
| 13. And so on. | 7. E. N. (Actual). |
| 15. A fruit that is good for children. | 12. That part of the body above the hip bone. |
| 17. Sound made when hesitating before speaking. | 19. Alone. |
| 18. A pronoun reversed. | 14. An idiot. |
| 19. Small draughts taken with the lips. | 16. What all midwives must avoid. |
| 20. Toddlers are dependent on these. | 19. Alone. |
| 21. Two a prefix. | 20. Baby's bed. |
| 22. Important disinfectant. | 21. What every Indian Mother wants. |
| 23. All children need this metal. | 22. Exclamation—Not used so frequently now. |
| 24. To throw up. | |

STUDENT NURSES' ASSOCIATION SECTION

Reports and Articles for this Section will be welcomed by the Hon. Organising Secretary, Miss J. ROBSON, S.R.N., D.N., Rainy Hospital, Royapuram, Madras.

DEAR STUDENT NURSES,

I hope you will forgive us this year if all the Annual Reports received at Nagpur do not appear in the *Journal*. We have only one page after all, and if we go on as we are doing a *Student Nurses' Magazine* may be quite necessary!

Very many thanks for all your help in this way.

Conference will be held much earlier this year. Will you please let me have your Annual Reports by *September 15th at the latest*.

We again look forward to meeting many of you in Madras during Conference time. Do try and come and bring or send the Exhibition Exhibits in good time.

There will again be three divisions in the Exhibition.

Division I.—Drawings and Diagrams.

Division II (a) *Models*—Anatomical or illustrative of some Nursing Procedure.

II (b) *Needle-work*—which should have some direct bearing upon nursing.

III. *A Health Poster*, This competition is open to Student Health Visitors and Student Nurses.

Three prizes will be given in each section.

Please notice the following points carefully:

1. All Exhibits for competition must be the work of individual Nurses. If any group of Nurses wishes to send an Exhibit we will be very glad to receive it and it will be shown in a special division.

To widen the margin of safety - 'Dettol'

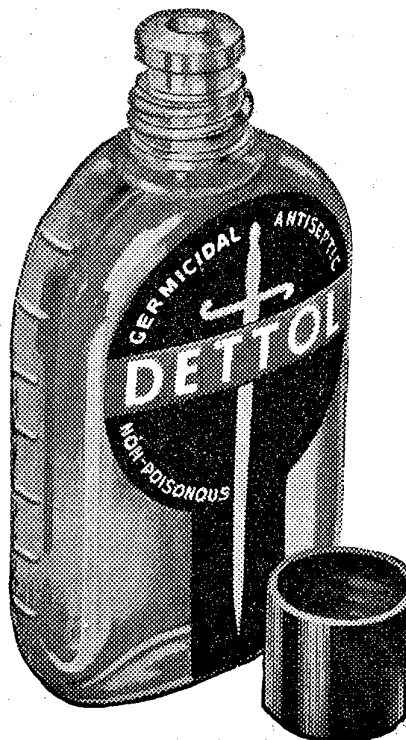
Owing to the fact that 'Dettol' is gentle on body tissues it can be used at effective strengths with safety. For this reason 'Dettol' possesses a marked superiority over Carbolic and Cresylic disinfectants. It is non-poisonous, clean and possesses an agreeable odour. It is a suitable antiseptic for safe home treatment.

'DETTOL' is a halogen derivative of Xylenol dissolved in a mixture of aromatic essential oils.

'DETTOL' has a Rideal-Walker Coefficient of 3, that is: it is three times as effective a germicide as pure Carbolic Acid on broth cultures of B. Typhosus, or half as strong again as the standard solution of Cresols with soap.

'DETTOL' can be used at high concentration.

'DETTOL' does not stain and mixes readily with water in all proportions. It remains stable in the presence of blood, pus and other organic matter.



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Your chemist can supply 'Dettol'

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2. No names of Exhibitors or Hospitals should be fixed to the Exhibits but each Exhibit should be accompanied by a card bearing

- (a) Name of Exhibitor.
- (b) Name of Hospital.
- (c) Description of Exhibit.

3. If any Nurse wishes her Exhibit to be returned by post she should send brown paper, string and stamps for the return postage.

4. Forms of application for the Exhibition may be had from Miss Robson, Rainy Hospital, Madras, on payment of a fee of 8 as. for each exhibit.

5. The address to which exhibits should be sent will be published in the September Journal.

Now then, I hope you are all hard at work as our Exhibits must be ready this year by the end of September, and we look forward to a record Exhibition.

I shall be very glad to answer any question you may ask in this connection.

All good wishes

Yours very sincerely,
J. ROBSON.

THE MOTHERCRAFT SECTION

Articles for this section will be welcomed by the Editor,
Miss Diana Hartley

A Most Useful Discovery.

Miss Worth of Sholapur who holds an Australian Mothercraft diploma has made a most important discovery. She had great difficulty with the babies at Sholapur as they were often advanced marasmies when bought to her. Cows milk when obtainable was unreliable and Buffalo's milk modified in the usual way was still too rich for them. Since using the mixture of Acorn Dried Milk and Buffalo's milk, the result has been far better than she ever expected. Her babies are putting on weight and thriving. She has kindly sent the following note for publication in the *Journal* and hopes it will benefit babies in other parts of India. We should be most grateful if people who try this recipe will send us reports. It appears to be inexpensive.

'I am glad you think the dried milk mixture may be useful. We get the powder from Martin and Harris Ltd., Grahams Buildings, Fort, Bombay, but I notice on their letter head that they have a branch in Madras, so it would be cheaper for you to get it there. The address is Sunkurama Chetty Street, Madras. It costs Rs. 18 for a 56 lb. tin, and the packing etc. is extra. We are going to get it in lots of two tins at a time, every two months, and that will save packing for us, but you living on the spot will not have that worry. The trouble is that you cannot get it in small quantities. You have to take the whole tin, they are only wholesale people. We use a tin a month of course, and it would be difficult if you only wanted a little. But it would keep put up into smaller tins I should think.

This is the way we make it.

Buff's Milk.	C. 4.4	F. 7.7	P. 4.8	...	9 ozs.
Prep. Dried Milk	C. 5.13	F. 1	P. 3.56	...	7½ ozs.
Water	...	...	...	...	3½ ozs.
Cane Sugar	or	...	...	...	2 teas.
Sugar of Milk	...	...	...	...	2½ teas.
			Total	...	20 ozs.