OBSTETRICS IN THE PUNJAB, INDIA

A Fascinating Sphere for Women Medicals
with special reference to
THE MIDWIFERY UNIT AT LUDHIANA
of which I had charge for 5 years.

THESIS SUBMITTED
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INTRODUCTION

INDIA - what a panorama of pictures it brings before anyone who has traversed that land! Pictures which alternate from the densest darkness to the brightest light; from black shadows to uninterrupted sunshine - from utter ignorance and superstition to wide intellect and understanding. Yes, shadows of beauty and of light are perhaps nowhere so marked and varied as in Hindustan. This in itself attracts and holds the mind which is in anyway susceptible to the lure of the East.

When one considers the length and breadth of the land and takes note of its vast population of nearly 400,000,000, with its innumerable languages - some 220 - it at once becomes evident that it is well nigh impossible to speak of it as a whole. What is true of the North is far from being applicable to the South, and this is especially so when the Punjab is the province under consideration. A Punjabi does not think of himself as primarily an Indian; he is a Punjabi first and foremost. This may be because the Punjab differs in so many respects from the rest of India. The Punjabi possesses characteristics which make him stand out from Indians of other provinces and of the States. Climate, customs, diet, heredity, and history all play their part in producing these differences. These factors are so woven into the life on the Punjabi that he could not merely be classed as an Indian.
Before one can appreciate the subject of Obstetrics in this great land, it is necessary that a brief outline of its history, geography, and people be given. Without this, it is impossible to understand the circumstances amidst which work is carried on, nor can the problems and difficulties be appreciated.
HISTORY OF THE PUNJAB

The Punjab lies in the extreme northern corner of India. It is hedged in on both sides; North-Eastern and North-Western by ranges of almost impassable mountains. Consisting for the most part of broad flat plains, it takes its name from the five great rivers, which, after making their way through the Himalayas, flow peacefully across the province. The rivers are the Satlaj, Beas, Ravi, Chenab and Jhelum; a sixth, the Indus, which flows through the land and receives the others as its tributaries, is not included in the classic five.

Thrust as it is wedge-wise between the Peninsula on the one hand and Central Asia on the other, the Punjab has been the great bridge which has served for the passing of many nations between these regions. The development of the province and the character of its people are an outcome of its position which has made it one of the greatest of highways in the migration of mankind.

From time immemorial, successive tides of conquest have rolled over India. The invaders have entered through the gateways formed by the passes which pierce the girdling mountain wall of the Punjab, and have swept over her tracts to the riches of Hindustan. These centuries of battle have made of the Punjabi a hardy race.

First /
First of the long line of invaders were the 
Aryans and for more than 2,000 years before the 
Christian era, wave after wave of aliens has swept 
across that corner. Three hundred years B.C., came 
Alexander The Great with his Greek veterans. They 
established a kingdom which soon passed away. Later 
came hordes of Tartars - a fierce blood-thirsty race. 
Brilliant achievement of conquest, literature and art 
were mingled with brutal persecution. Hindu India 
reached its lowest ebb in 1024 A.D. In that year 
Mahmoud sacked the holy city of Somnath. The Koran 
goes along with Mahmoud and the Moslem faith was 
widely propagated amongst the villagers. 

Next the Mongols were found devastating the land. 
A hundred and fifty years of unparalleled cruelty and 
misery followed for the Punjab. They were followed in 
1525 by King of Ferghana, who was known as Emperor 
Baber, the founder of the great Moghyl dynasty of 
India. 

Previous to his coming, the Sikhs had their rise. 
To Guru Nanak, its founder, the idolatry and many gods 
of Hinduism and the fanaticism and superstitions of 
Islam were alike abhorrent. His teaching was excell-
ent in some respects, but its weakness lay in the fact 
that it conferred no moral power on men to enable them 
to follow it. The peaceful character of Sikhism 
changed when the Sect having increased, the jealousy 
and fanaticism of the ruling Moslem power were 
aroused/
aroused. It became a Military Sect, and a strong martial spirit was fostered amongst them. From then the Sikhs were in continual turmoil and trouble. Though defeated and scattered time and time again, yet they rose up unsubdued, and remorseless in their hatred of the Moslems.

In 1764 Ahmed Shah, the Moslem ruler named "The Terror of the Sikhs" finally abandoned the Punjab and the Sikhs became lords of the land. In 1838 Rangit Singh, "The Lion of the Punjab" and Lord Auckland, Governor of India, met at Ferozepore, where treaties of friendship between the two powers were concluded. Rangit's death soon after let loose forces which resulted in corruption and incompetence running riot. He had built up such a strong army that the real power now lay with them and the Government and people alike were at their mercy. An outlet had to be found for their destructive energy so the Queen Mother and her counsellors resolved on the desperate decision of letting loose their soldiers to exploit British territory.

The British were faced with the most stalwart foes they had ever encountered in the East - the Sikhs. Fierce were the wars which raged, but in 1849 the Punjab was annexed to the British dominion and the province entered on yet another phase of its career.

From this brief history, it will be seen that through long centuries war and oppression were the portion /
portion of the land of the Punjab. The cruel burden of oppression was never relaxed and at the time of the British annexation the misruled and wasted country was reduced to its lowest ebb. During this last century Great Britain has been endeavouring to establish law and order - to reduce taxation - to increase the productiveness of the province by re-establishing the irrigation works of the Moghul emperors which had been abandoned to decay - and lastly by allowing toleration in religious worship.
THE GEOGRAPHY OF THE PUNJAB

The physical features of the Punjab range from the mighty masses of the Himalayas through uplands and broad plains to the arid wastes of the great desert. Climatic conditions therefore show a wide variation. The intense heat of the long hot weather alternate with the frosts and cold of the severe winter. The thermometer marks all degrees, from the burning plains to the eternal snows on the high mountain peaks.

During the winter months the wind blows cold from the hills which lie far off along the northern horizon. As winter gives place to spring, trees and shrubs burst forth into bloom, flowers appear and the fields take on their green which is mingled with the gold and blue of mustard and linseed.

The harvest over, the fierce relentless summer settles on the land; the air seems to vibrate with visible heat; the dry fields stretch out in their nakedness on all sides; the trees droop listlessly. At midday, no living thing stirs abroad - except on occasions when folk such as midwives and obstetricians needs must answer the Mother's call. To be out at such an hour can be compared with nothing other than walking past a mighty blazing furnace.

When it seems as if the utmost limit of endurance is reached the rains "break" and with a gasp of thankfulness and relief, men and animals breathe again. Once more the earth bursts forth into fertility and
the moist warm air teems with myriads of insects and of birds - all are free again.

This strange, unhomelike atmosphere gradually grips the soul of the stranger dwelling in the Land of the Five Rivers and is part of that charm which holds the man or woman who has "heard the East a-calling and can never heed aught beside."

To the person fresh from the lochs and moors of Scotland as the writer was, the dust gray boundless plain of the Punjab presents an aspect of unrelieved dreariness. Before long however it begins to exert a peculiar fascination. In its barrenness and austere simplicity it seems to typify the monotonous, unambitious lives of the inhabitants.

In the hills the spell of natural beauty falls at once on the heart. The call of hill and valley, forest and meadow, river and crag, flower and fern, all so enchantingly interwoven, has to be heard to be understood and appreciated. It is without doubt a bounteous compensation for the scorching months on the plains.

Words cannot describe the glory of the tropical night with its almost uncanny brilliance of moon and star; its stillness broken by the harsh creaking of well-wheels, the baying of dogs or the uncouth sounds of noisy merriment.

Of its 26 million dwellers, more than 19 million live /
live in villages of less than 2,000 inhabitants. Lahore with its 3,250,000 inhabitants is the capital; Amritsar ranks next in size with a population of 1,675,000. Ludhiana contains some 75,000; Sialkot 58,000. The Punjab, as is all India, is a land of villages. To the passing visitor the romance and glamour of Indian life are found in the large cities with their crowded bazaars and monuments of historic interest, but the real life of the people is to be seen only in the myriads of hamlets and villages which dot the plains. There in these quiet secluded communities, consisting of a few score, or at the most a few hundred families, is found the essence of India.

Such then is the Punjab to which we bid you come. There you may ply your art of obstetrics at your heart's ease - with a scope unbounded - a sphere unparalleled - and a fascination no other place can hold.
PEOPLE OF THE PUNJAB

The races which dwell in the Punjab are as varied as its climate and physical conditions. Every type of development and civilisation, from the rudest to the most polished, is to be found within its borders. The races are so widely divergent in the scale of social progress that it is difficult to realise that they all come from the Punjab.

There are primitive tribes of hunters and fishers. Nomads of many kinds are abundantly represented. There are pastoral peoples, sturdy hill men, plain dwellers, men of the rivers, men of the cities, and the agricultural masses of the village population.

Persian was the language of the Court Diplomacy, but to-day English is used in all official circles. Urdu and Hindi is that of the larger cities, but Punjabi stands out as the mother tongue of the country—a homely, strong vigorous tongue as the people themselves.

Physically the Punjabis are a well-grown, handsome people. They are hardy, powerful and tall and their mental powers are of a high order. Morally they are the product of centuries of ignorance, superstition and darkness. Religion with them is not a matter of the heart but of outward observance. Thus a Hindu may commit every iniquity and be a good Hindu still; but let him drink a drop of water from the hands /
hands of an outcast and at once he commits a sin terrible in its penalty. So with the Moslem indulgence in evil will not brand him with disgrace, but let him eat the forbidden thing and he is avoided by his fellows.

The religions of the Punjab must be briefly summarised. The Punjab was the first home of the Aryan Fathers and this great system of Hinduism still holds the majority of Punjabis. The Punjab has a large share of the holy places of Hinduism.

At one time Buddhism flourished in the province but all that now remains of it are the ruins of famous sites and shrines that witness to the power and glory of this religion when at its height.

The Punjab was the centre from which the faith of Mohamed was propogated and it yet remains the most Moslem portion of India. Sikhism completes the principal religions of the land, having its centre in Amritsa, around the Golden Temple. Of Christians there are about 3,000,000.

The belief in magic and witchcraft has struck its roots deep in these people. Signs and omens control all life and it is impossible to understand them unless this is steadily borne in mind.

It has been said that in no other country does the lives of the men and women differ to such an extent as in India and this is all too true. What then of the women of the province?
In the earliest literature relating to the Aryan invaders there is no evidence of caste idolatry, enforced widowhood, suttee or child marriage. Women appear to have held a good position. It was not until later, as the Hindu religion developed among the Aryans that women began to lose the original position of freedom. Purdah became established after the first Mohammedan invasion of India in the 11th century, partly to protect the women of the country against the invaders for which reason it was adopted by many Hindus also.

The purdah system is one of the customs which most powerfully affects the women. Under its law a woman may not be seen by any man other than her husband, father or brothers. In practice it means that the women who observe this custom see little of sunshine and breathe less of fresh air. They are confined within the precincts of their high-walled courtyard or when out walking are covered from top to toe by their "burkahs", which may comprise as much as 12 yards of heavy cotton, with the merest curtain slit for the eyes. Statistics have repeatedly shown that the incidence of tuberculosis amongst purdah-keeping classes is much higher than amongst those who are free to get about without the cumbersome "burkah".

During ill-health and even more so during pregnancy and confinement, unless women doctors are available she can get no adequate advice and help. The full /
full force of the purdah system is seen in abnormal child-birth when the woman is allowed to die rather than be seen by a man doctor. Sometimes it is the husband who forbids to allow male help, or on other occasions it is the mother-in-law; in a few instances it is the woman herself who chooses death rather than the disgrace of being seen by a man doctor.

There is no doubt that Purdah is decreasing amongst the educated, but the masses still observe it strictly. Fifty per cent of Punjabis are Moslems. In Ludhiana, the head Indian Civil Service official for the city and district is a Moslem, but his wife does not observe purdah, nor does the wife of the Principal of the Government B.A. College, who is also a Moslem. Such women are leading the way to emancipation, but it will take many many years ere the majority will follow in their train.

Women’s medical work in India has been accused of maintaining the purdah system because they established purdah hospitals. It has been said that had they not adhered to this custom in their hospitals the Indian women would eventually have come to them, despite their disregard of purdah. This accusation is unfair; one has only to work amongst these women to realise how deep-seated and strong is their conviction regarding their age-long custom. Death is as nothing in comparison to the fatal sin of breaking purdah.

Amongst /
Amongst the Hindus who make up 32% of the population, the caste system is one of the best known social customs.

The lot of the outcasts can scarcely be given the title of life - 'tis but a dreary, dark existence. They are truly "untouchables" and treated as if less than beasts. Their very shadow, if perchance it falls on a caste person, contaminates and pollutes and that person must bathe himself ere he is pure again. From birth till death, the outcaste is despised, downtrodden, forced to do disgusting and revolting tasks for which he receives a pittance which barely keeps body and soul together. In connection with the outcastes, it is interesting that their first regiment has been formed and that they are responding to the responsibility given and are promising well.

To many of the caste people, childbirth is looked upon as an unclean process. The mother is therefore "outcasted" from the birth of the child to a varying period - usually 40 days. She is kept apart in the worst room of the house and in the orthodox homes is unbathed and her clothes unchanged during this time.

Early marriage does not affect us very greatly, although it may be more prevalent in the villages. In our 1,828 cases for the year 1940, there were 6 Mothers under 16, youngest being 13; there were 14 who were just 16 years.

The young Hindu widow leads to a large extent a life /
Life of sorrow and suffering. There are some 26 million widows in the whole land. This is largely the result of unequal marriages, as when a young girl of 15 is married to a man of 60, she inevitably becomes a widow in a few years' time. Their lot is slowly being alleviated and some are being allowed to train for professions. In a few instances they remarry. The niece of the leader of a certain sect of Hindus - the Jains - in Ludhiana had become a widow when only 15 years of age. Her uncle, a leading social reformer, took the law into his own hands and despite prophecies of the descent of the wrath of the gods, arranged for the remarriage of his niece who was then 19 years of age, to a man of her own age and standing. Such an act paves the way for others to follow, and shows that the light is slowly dawning.

The childless wife presents a sad story; "without hope" she faces the dark unknown, which may mean being turned out of her home or at least staying there and watching another reign in her stead. The mother of daughters only receives much less respect than the mother of a son; only as such has she really been successful and justified her existence. The self-respect it gives the woman herself is most marked.

The question of the marriage dowry is one which seems to colour the husband's attitude in times of illness. If he has to give the dowry, as the Bhatia caste man does, then the woman's position is much better.
better. In castes where the bride brings the dowry, the attitude of the husband is sometimes "let her die; then I can get another wife". Never shall the writer forget how stunned she felt on hearing a husband's reply to her entreaty to allow Caesarean Section to be performed on his wife. He was told that his wife would die if it were not done. His calm and unconcerned reply was "What's that after all; she is my second wife and I can easily get another". Mercifully these instances are not multiple, but they are nevertheless frequent enough to make one realise the existence of such an attitude.

Without question, the greatest handicap in the advancement of India's womanhood is the lack of education. The literacy rate amongst women does not exceed 6%. This has been due to some extent to the prevailing belief that the education of women is unnecessary, unorthodox and dangerous. There is the other big factor that over 80% of India's population lives in the villages and in these the question of education is not readily answered. The general conditions of rural life and the Indian attitude towards professional unmarried women are such that life for them is usually intolerable. Their employment, without offence, is possible only in schools which are under close and careful supervision.

These then are the women of the province of the Punjab - women kept uninformed because of their illiteracy /
illiteracy and many of them condemned to lives of sorrow and suffering because of their age-long religious beliefs and customs. Yet just because of these handicaps they are in dire need of the help the obstetrician can bring, and greatly appreciate what is done for them. Their gratitude in the majority of cases knows no bounds.

Then too we would not forget those whose life is a brighter one - whose portion has fallen amongst pleasant pastures - either because she has been given a good education, or has a kind husband - a friendly mother-in-law, and has been blessed with sons. Amongst these, and indeed in the midst of all the women of the Punjab one finds characters whose grace and charm and spirit of self-sacrifice pervade a winsomeness which none can gainsay. Their attractiveness cannot be denied and one sees in them the hope of future India; Mothers of whom her sons and daughters are rightly proud because she has taken her place in the life of her home, village, city and land.

To enable all of India's mothers, in whom is the true spark of motherhood - the sacrificial spirit - to rise up and out of their dim unenlightened to-day to a bright and hopeful tomorrow - to such a task the obstetrician with enthusiasm, zeal and sympathy, is called.
Obstetrics in India, although like its country, of ancient origin, nevertheless made little, if any progress, until recent years.

For the Hindus, the Ayurvedas were the source of all knowledge in medicine as in other sciences, so Brahma has declared and none dare contradict. They were believed to have been communicated directly from Brahma to Dacsha, his son, who passed them on to the sons of the sun, who gave them to Indra. Indra is reputed to have taught Bharadwaja, a learned sage. These incidents date back to the primitive age of the priest physician. This spiritual or inspired origin of the Ayurvedas is important. The great works of this system are by Charaka, Sushrata and Vagbhalta.

Various gods were considered to possess power to endue women with fertility, for example, Sarasvati, Indra and Raka. To these prayers were made. Raka received special mention in this connection. "She is the full moon and is closely connected with parturition as she is asked to "sew the Work" (apparently the formation of the embryo) with an "unfailing needle" and to bestow a son with abundant wealth. In no prayer do you read of the women asking for a daughter. Describing the prayers of women before these gods, it is written, "you hear the prayer of women longing for sons". They cry, "Come to our house to give us sons". This idea was exemplified by /
by the exclamation of one of my patients. On being told a daughter had been born to her, she cried out, "All that for nothing". Or on another occasion when a girl was born the writer heard the mother-in-law whisper to her daughter-in-law, "God be praised; a son is born". Hearing this, I straightway remarked, "'Tis a daughter, not a son". Hurriedly the mother-in-law came to my side and said, "We daren't tell her it is a daughter; she might die of shock". Incidentally this was done on one occasion and the mother was told she had a son, although in reality a daughter had been born. Later that family tried to sue the hospital, saying that we had exchanged the boy for a girl and had got thousands of rupees by the transaction. The local papers were full of the story, and but for the timely interference of the Superintendent of Police (an Indian), there might have been a great deal of trouble.

To the casual onlooker, this attitude towards a daughter seems preposterous, but when the customs of strict Hindus are known, one is better able to understand the feelings of a sonless Hindu mother.

The literature of Ayurvedic Medicine has remained stationary since the Middle Ages. Progress was impeded by the force of authority under which these books existed and by the isolation of India from advancing science. It is claimed that as Ayurvedic methods have undergone no serious change for over 2,000 /
2,000 years, they must be perfect.

In the writings of ancient Hindu physicians there was no separate treatise on midwifery, but scattered references are found in medical works. Of the signs and symptoms of pregnancy, only pigmentation of the areola of the breast, salivation, sickness and vomiting are mentioned. The duration of pregnancy was 39 weeks or 273 days from conception. In the hygiene and management of pregnancy, rest and quiet are advised and details of the diet for the different months were given. The whims and caprices of the mother should be satisfied; otherwise the child would be born with some defect or deformity.

The diseases of pregnancy are very meagrely dealt with; a form of nervous disease, complicated with convulsions is described.

Abdominal inspection as a method of diagnosis of pregnancy was used. Nothing was known regarding the presentation and position of the foetus but the child is mentioned as being bent upon itself.

Regarding the physiology of labour, their knowledge was nil, but the direction laid down for the preparation for labour was hygienic. The management of labour consisted chiefly in the attendance of four experienced women; no attention was given to the care of the perineum. Where labour was delayed charms, fumigations and sometimes manipulations (not described) were used; no drugs were then known.

To /
To hurry on the expulsion of the placenta, various methods were used to induce vomiting; if this was not sufficient the patient was shaken by a strong person who seized her from behind.

Abnormal labour was not classified in any manner, but several conditions are mentioned. The assistance required for these are -

(1) With the hands alone - version or extraction, and

(2) With instrumental interference (embryotomy)

Contractions of the passages was always considered to produce difficult and dangerous labour.

Haemorrhage - ante or postpartum - is not even mentioned.

Of obstetric operations, Caesarean Section is mentioned, and perforation of the head followed by cranioclasm and extraction of the foetus by hooks is described.

The directions given for the management of the puerperium were far from satisfactory as their conception of the normal physiological course of the puerperium was erroneous. All diseases occurring in the puerperium were classed under the heading of Sutika vaga (diarrhoea with fever), and were considered very serious, often incurable.

There are reasons for considering that through the ages the Ayurvedic system of medicine gradually underwent serious deterioration under the influence of /
wars and invasions. New religions were introduced, caste distinctions became more rigid, Brahmins left the study of medicine to the lower and illiterate castes and ancient Hindu medicine sank to a low position.

During the Mohammedan rule in India obstetrics fell to a very low state. The Mohammedan conquerors did not adopt any special measures for spreading medical science of the Arabia School amongst the Indians, and so this period - 8th to 18th century - was one of decline. Arabian physicians left the whole field of midwifery to the dais.

Thus the Unani system of medicine made no real imprint upon obstetrics in India. The purdah system, introduced by the Moslems invaders excluded the hakims from the zennanas and so the women were left to the mercies of the native midwife or "dai".

To-day in Lahore, there still exists a school of Ayurvedic Medicine and one of Unani. The University makes small grants for their maintenance provided that the Staff employed are approved by the University. Definite curricula are gone through, usually lasting 2 years. The official report states that "books dealing with pathology, pharmacy, materia medica, anatomy, physiology, midwifery, chemistry and physics were taught", but there is no clinical teaching whatsoever in midwifery.

That these systems are still practised has been proved by recent statistics which show that one third of the indigenous population are being treated by their methods.
methods. This one feels sure is largely accounted for by the fact that in a very great number of the villages, western medicine is as yet an unknown quantity.

What then of the indigenous midwife or "dai", to whose care the great majority of the mothers of India were abandoned. The description of the revolting practices of these women would appear incredible to anyone who is not acquainted with India, but unfortunately, it is all too true. Who are they? They belong to the lowest caste of Hindus; a very few are Moslems. They are completely illiterate; no sort of training is necessary for their work. As a calling it descends in families. At the death of a dai, the daughter or daughter-in-law takes on the practice. Many are half-blind, ancient, crippled and diseased; filthy in the extreme and superstitious to the highest degree. True their devilish practices have to be seen to be believed. It is one thing to read about their cruelty; this quite another to be called to deliver the woman on whom they have done their worst, from the "very jaws of death". Never shall the writer forget her first few months in charge of the midwifery unit in Ludhiana.

Cow's dung is their favourite "drug"; in any case of delay, the dai inserts her filthy, ringed and bracelet-loaded hand into the uterus, having first filled it with this loathesome stuff. It is no exaggeration /
exaggeration to say that when some of these women were brought into the labour room, the stench was almost more than one could tolerate beyond a few minutes.

Ghi (grease) was thought to be excellent for the passages. It of itself might do little harm, but when firmly pressed against uterine and vaginal walls with the dai's fingers and long nails, damage was often done.

Other ingredients were sometimes used, such as string, rags, spices, hollyhock roots; anything which they believed would hasten the delivery.

Strenuous kneading of the abdomen was a favourite method, in order presumably to push the baby down through the pelvis. On other occasions the vulva would receive the full force of her strength, resulting in greatly oedematous, bruised and torn passages. Whenever possible, she would grasp a limb and pull with might and main. If that limb came off, in would go her hand, previously lubricated with the dust off the floor, for yet another, and if she eventually got stuck, the person to call in was the village butcher; this was only possible if the woman did not observe purdah, as the low caste Hindus. Every now and then a case would come into our hospital who had been in the hands of a butcher or the dai herself had procured a scissors. The damage done was indescribable and considering the poor woman would have had no anaesthetic, her suffering must have been agonising.

A /
A high percentage of these cases died, frequently because of perforation of the bowel which would be found in the vagina.

No matter how long labour lasted, the poor mother had no sedative, and in some cases she has little or nothing to eat or drink. Then too she is lying in a dark dismal hole, with no outlet or inlet for air; even if there be an air-hole in the room, the dai stops it with straw and rags; fresh air is bad in confinements she says. The charcoal fire beneath or beside the bed and the many women who collect, do not make the air any purer.

It was not until well after Clive's victory in 1757 that a gradual introduction of British medicine into India was commenced. The first attempt at medical education along western lines was in 1820. No sort of clinical teaching in midwifery was attempted.

About 1845 a medical college was opened in Lahore, but there were no facilities for the clinical teaching in midwifery because of the purdah system adhered to so strictly by the women of the Punjab. Although women patients were from the beginning admitted to Government hospitals, the absence of any female staff made their attendance almost nil. It was not until after the middle of the 19th century that we hear of special efforts being made to bring them relief. The indigenous dai was at this time fully trusted by the people. The earliest efforts made were /
were classes for training these dais; these were undertaken by male assistant surgeons, but were all abandoned in a year or two as no good results followed. This was chiefly because the male surgeons had very little, if any, practical experience of midwifery and further they were unable to come down to the level of the dais and understand how best to approach them.
ENTRANCE OF MEDICAL WOMEN TO INDIA

Into India so steeped in superstition and ancient tradition regarding midwifery, the first medical woman, Dr. Clara Swain, came in 1869. She came from the United States and went to the United Provinces. In 1871, Dr. Norris followed her. In 1880, Dr. Butler, the first woman medical sailed from England; she went first to Jubbulpore and in 1887 to Kashmir.

Punjab, the province we are considering, was foremost in an attempt to put midwifery into at least "cleaner hands". Miss Hewett, a non-medical missionary, was one of the first woman pioneers who initiated medical relief for Indian women. She had come to Amissar in 1866, and although not a medical, had seen sufficient of the filthy practices and superstitions of the dai to make her determined to do something practical about it. She therefore opened a class for dais and with a view to teaching them something of cleanliness and "laissez faire", as could they but be taught to be clean and to let well alone and keep their hands outside, much harm would thereby be avoided.

Forty miles from Amritsar, in the city of Ludhiana, was another non-medical missionary, Miss Greenfield, who had gone there in 1875. She first went into the zenanas to teach the women and this brought her into close contact with illness which abounded amongst the purdah women.
In 1881 she rented a room in which she opened a dispensary; there she helped the women medically as best she could. In 1889 she opened a small hospital of 12 beds as she saw something more could be done if she could look after the sick women herself and not have to send them back into the airless seclusion of their built-up houses.

The next step in the ladder leading to a higher plane of midwifery in the city of Ludhiana was the coming of Dr. Edith Brown. She came to India in 1891 and for two years she worked in a hospital in Phalwal, but soon she realised how handicapped she was by the lack of helpers. She was alone with no nurse, no other doctor, no one in fact but the dais. These dais were, as all of them are, totally illiterate, quite ignorant, full of strange superstitions and religious rites, and knowing nothing of the first rules of cleanliness, let alone of midwifery. These conditions made Dr. Brown determine that the first essential towards advance was the training of the Indian women to become doctors, nurses, midwives and dispensers.

With this aim in view she came to Ludhiana where she was invited to work in the small hospital which Miss Greenfield had opened. Ludhiana is a typical Indian city, with a population of 75,000. In the days of the Sikh domination, it formed the outpost on the British side of the frontier. It was one of the two /
two important cities in the long line of demarcation formed by the winding course of the River Satlaj where the two empires met. It is now no longer a cantonment city. Surrounding it are innumerable villages, some large, others small, none far from the other, and all containing villages of the heterogenous character typical of the Punjab. The climate and customs are as described for the Punjab; Ludhiana frequently being in the uneviable position of registering the highest temperature for the whole province.

Midwifery in Dr. Brown's earliest days was confined to attending cases "in extremis". The dais would never call her to a case until all hope was gone and when a dai has given up hope, there assuredly is none left. Naturally nearly all the women died and the dai was clever in using this to keep other patients away. "Don't call in the foreign doctor, you will die if you do; all the women who have called her have died", so said the dai. This inevitably led to a sense of frustration, but that did not long triumph in Doctor's life. She quickly sensed the key to the situation. 'Twas one and one only - namely the dai. She must win her over to her side and then the battle was largely won. That the dai was the key to the opening of any constructive work in midwifery had been realised by very few at this time. Later, however, it became an acknowledged fact and in 1903 the Victoria Memorial Scholarship Fund was opened.
This fund was to be used solely for the purpose of training the hereditary dai.

The training of these totally illiterate, superstitious and filthy women is a tedious business. As late as 1937 it was stated at the Nagpur Conference on Maternity and Child Welfare that there was great difficulty in persuading medical women or others to take up this distasteful work. That it is distasteful cannot be denied. It is laborious, slow and disheartening. Therefore it is only those who attack it with real enthusiasm and vigour who are likely to continue or to be successful in it. Speaking of certain European medical women in the 1937 Annual Report of Maternity and Child Welfare, it is recorded that - "They have been singularly successful in the work and it is largely because they have brought real sympathy and understanding to bear upon the problem and have not carried on the work in a routine manner. In such cases, the work has been voluntarily undertaken from a sense of need and not because a superior officer ordered that it should be done. Teaching carried on with a sense of vocation is very different from that performed as a task and this difference is nowhere more noticeable than in the work of teaching dais".

Anyone who has worked alongside the dai soon is convinced that the training of them requires women of strong personality, enthusiasm and winning character; sympathy and understanding are equally vital.

Without /
Without these, little can be accomplished, as is the fact that without the co-operation of the dai, advance in midwifery in India will be incredibly slow. Ignorant she surely is, yet she holds the confidence of the teeming masses of that densely populated land. True, the more educated the people are, the less on the whole do they place reliance on the dai's opinion, but this does by no means always hold. This was revealed to the writer by the following incident.

The wife of a provincial official, herself a B.A., LL.B., wrote asking if the family dai could be given her certificate (usually given after a period of about two years' teaching, at the end of which is an oral exam), even although she had never attended any classes. The official's wife was sure the dai knew all there was to know about the conduct of labour as she had looked after a great number of women when their babies were born. She naturally did not mention the fact, which was true, that this same dai had been in attendance when the two former wives of this same official died in childbirth. The first died of puerperal fever; Dr. Brown was called in when the woman was more or less breathing her last; we never knew of what the second one died as no doctor was consulted.

Therefore where midwifery on a large scale is being considered, the dai must take a central place. How different from the tackling of the situation in this /
this country, but then one has to deal with a literate public which means more than one can appreciate until one has worked with an illiterate one.

The dais are fully aware of the position they hold and do not readily give way to any new fashioned ideas. Especially was this so in 1893. Therefore when Dr. Brown suggested to them that she was willing to teach them something more about midwifery, they were at once up in arms. Their immediate reply was - "No, we cannot afford the time". There was only one way to meet this and that was to pay them for coming. They were offered three annas for each class they attended, not a small sum to them. Still they did not like the idea and were determined to test this foreign doctor's zeal to the utmost. "We'll come", they finally decided, "if you hold the class at midday in a room in the centre of the bazaar". It was the month of June when the temperature in the shade soars between 116° and 118° in the shade; surely the doctor would never accept their challenge. They did not know what they were up against. If they were determined to continue in their old way, Dr. Brown was more determined that they should not. She accepted their challenge and came down at mid-day in the middle of June to that small, fanless, stuffy room in the middle of the Indian bazaar, where smells abound at any time. One day come the first week; even that didn't damp the Doctor's enthusiasm; a second came the following week, and /
and so on, until she had a class of 20. Naturally not a great deal apart from cleanliness and keeping hands off could be taught such illiterate women, but that accomplished was no mean feat. Seeing their dastardly work, one knew that the mothers would have been much better off in innumerable cases had they been left alone to nature and not cruelly, crudely and filthily interfered with by these dais. At the end of the course of daily instruction, which lasted 1-2 years, the Government conducted an oral exam; having passed this, the dai was given a certificate. To many of them this was their proudest possession and occupied a prominent place in their squalid room which was their home.

The next step in Ludhiana was to encourage the dais to call in a trained midwife to the case. Naturally, the first objection was again a financial one; the people were not going to pay the dai were she calling in somebody else to deliver the babe. This was overcome by the dai receiving Rs/- from the Hospital for every case to which she called the midwife. The usual fee the dai received from the people was Rs/- to Rs3/- per case. The reason for asking her to call in the hospital midwife was a two-fold one. By now, there were nurses and medical students who required to do so many cases before they could qualify, and the only way to get these normal cases was by making the dai callus. Further there was the fact that /
that trained or untrained, these illiterate dais can
never be accepted as being sufficient for a time of
crisis, such as at child-birth. They have a place in
the home at this time, but it certainly is not the
conducting of the confinement.

Even the rupee did not entice many for some years,
but by 1936 about 750 deliveries were conducted in the
homes by our hospital midwives, and by 1940, 1,157.
Those dais who would not call in the midwife were
asked to at least inform the doctor if anything
abnormal occurred or if labour were prolonged. This
meant that through time, the doctor was called to
cases before they had reached the last stage and so
success was obtained. This made the women less afraid
of the doctor.

To bring the abnormal cases into hospital for
treatment was next attempted. To begin with, only
desperately ill patients would come; often these died
and that frightened others. However, time one again
broke this barrier and it became an easier, if by no
means an easy matter, to bring the patient into hospital
when any abnormality had arisen. It was only in 1929
that a maternity block of 30 beds was opened in the
hospital. Previous to this, two small wards were
sufficient to meet the need of maternity in-patients.

The dais' training had commenced; trained mid-
wives were there to be called to normal cases, anothe
Doctor for abnormal. A hospital unit had been opened
for difficulty cases and also for normals if they
would come.
In 1926, a Health Visitors' Training School was opened in Lahore and in 1933 one of the graduates was appointed to Ludhiana. Two others were added in 1934 and the city divided into three sections for them. This gave 25,000 people to each health visitor - an impossible number, and yet very much better than for India as a whole, which has one Health Visitor for more than a million people. In Ludhiana, the health visitor worked almost entirely on her own, merely bringing an occasional ante-natal case to the hospital for the doctor to see.
ARRIVAL IN LUDHIANA

The writer arrived in Ludhiana in the autumn of 1936, there to find that she was in charge of the midwifery unit, which included 30 hospital beds, also district cases. 750 Deliveries had been conducted in the homes in the previous year. The hospital was a training school for nurse-midwives, midwives and nurse dais. In the city were three health centres, each with a health visitor in charge. Along with the hospital, district and health centres, there was the College in which 22 final year medical students were studying for the licentiate degree. The responsibility of teaching them midwifery was part of one's task.

A new climate, language, people, customs, and conditions are not altogether conducive to making a new task less complicated and more comprehensive. On the other hand, they do add to the interest and prevent any suggestion of monotony from creeping in.

The first six months were spent in an attempt to grasp the situation regarding the midwifery unit; that is, the position and power of the dais; the grades of midwifery teaching, which were different to those in the homeland; and the standard of the medical students' training. In India, there is the indigenous dai who has had no teaching whatever; then there is the one who is known as the trained indigenous dai who holds a Government certificate to this effect. Next in the scale are the nurse-dais. They do a two years /
years training which consists largely of midwifery and first-aid nursing. They have probably left school at about the age of ten but can read and write in their own vernacular. They too have only an oral examination but it covers a good deal and is of a fair standard. These nurse-dais do know how to conduct a normal confinement and when to call in a Doctor. The midwife also does a two years course, but she has a higher standard of education, having probably been at school until the age of twelve. The exam she sits is the same as that of the nurse-midwife, who has done her general nurse's training before starting midwifery. During the last four years of my time in India, I was an examiner in all these grades; the standard in each is good as long as emphasis is laid on a practical appreciation of the theory. Otherwise one might well pass a student who can recite any part of her lectures and yet has no conception of their application during pregnancy, labour and the puerperium.

Our medical students were studying for the sub-assistant grade of surgeons; they take a licentiate degree. Their course of midwifery is the same as that for the M.B., but the standard of examination is lower. In this connection let me say that although they tried a number of midwifery text-books, Professor Johnstone's was the almost universal favourite. There is no doubt of its extreme value to undergraduates; it gives to them a sure foundation on which they /
they can build once they begin practice. My personal debt to it is a great one.

The Punjab winter is almost as ideal weather as one could ever ask for, and therefore the climate presented no difficulty until Easter; by which time one’s thoughts were directed towards the hills. The first summer was spent on the heights of the Himalayas, struggling with the intracacies and intonations of the language - Urdu.

The Winter’s work had made its impress and it was not a light one. To learn about midwifery as it ought to be conducted and to be in charge of cases which have been treated in a manner which needs to be seen before believed, are two vastly different matters. One’s first reactions were those of helplessness and frustration. So many women were brought in in a dreadful condition, having endured what must have been agony for days. The "needless and heedless" suffering was what struck deep. How very often did the cry go forth - "Oh, if only you had come sooner". Of course it wasn’t the poor patient’s fault; what better did she know than trust herself absolutely to the old family dai. One can recall three week-ends during those first six months, when three cases of ruptured uterus came in, some of them having travelled in an old bullock cart for 30 miles and more, and that over a bumpy road. What hope was there for such cases; practically none, and so one watched one and another /
another patient die - die, when they should have lived.

Although post-graduate experience had not been extensive, it had, along with the splendid teaching during undergraduate days, been sufficient to impress upon me the absolute necessity of well-organised and efficient ante-natal care. This was lacking in the unit at Ludhiana and made the obstetrician feel as if she were more of a butcher than anything else. In many instances, by the time the women arrived at hospital, all that was left to be done was to drag the foetus out in pieces; and how could the doer of such work class him or herself as an obstetrician.

These and various other impressions were made during the early months. The language barrier had to be overcome before much could be done in the way of really tackling the task at hand. If one couldn't speak to the patients, relatives, midwives and dais, how could one expect to achieve much in a land such as India, where sympathy and friendliness win most of the battles!
TACKLING THE TASK OF ANTE-NATAL CARE

Six months of intensive language study on the hills brought one back to the plains eager to tackle the task which lay ahead.

Ante-natal care had developed but little in India. In 1931 the Annual Report of Maternity & Child Welfare had to record that "not much enthusiasm is displayed for beginning ante-natal work; we only hope that more enthusiasm will develop". This question of enthusiasm comes up again and again in the vital problem of Midwifery in India. Without it, little seems to be achieved, probably because poverty and ignorance, added to unwholesome age-long customs and beliefs, make any advance extremely difficult and liable to many set-backs. One felt that the lack of enthusiasm for ante-natal care was not infrequently due to lack of understanding of the real portrait and purpose of this branch of midwifery. There were comparatively few who had seen it in action and therefore those who had not had this opportunity, were sceptical, even if unconsciously so, of its value.

Thus the first important point was that the instigator of ante-natal work in any area must herself be thoroughly convinced of its value and be able to enthuse others therewith. Because of this, it would have been useless to have left the Ante-natal clinics to an Assistant Doctor as was suggested by the Senior Doctors of other departments in the hospital. The Assistant Doctor had never seen Ante-natal work done in /
in a thorough and efficient manner and therefore could have no enthusiasm for it.

As with all midwifery work, so with the Antenatal Clinics, the dai is the key. She can bring her patients along with gentle persuasion, whereas if she thinks it is useless and even harmful, almost nothing can convince the women otherwise. In this sphere the person to tackle the dai is the health visitor, as she conducts the dais' classes and also visits the women in their homes and is therefore familiar with the dais and the pregnant women in her district.

In India, the health visitor is paid on a generous scale in comparison with other women's salaries, but in many cases, they have not proved the success that was anticipated. One reason for this, I am sure, is that many health visitors have insufficient education and training. They can enter for the health visitor's course after having done the nurse dais' training. For the most part, these women are not able to grasp the importance of preventative work and further do not have the authority of a better qualified person. There can be no doubt but that only a general trained nurse and midwife should be allowed to enter as a health visitor. At Ludhiana, of the three health visitors, two had these qualifications; the other had previously been a nurse dai, and the comparison of their work showed very obviously what was lacking in the latter's case. As yet this fact is not fully realised.
In a recent report of Maternity and Child Welfare work the health visitor is discussed; the report says "so often the health visitor suffers from the defect that she is doing the work as a job without any great enthusiasm for it; on the whole, they are apt to be uninspired". One's own impressions are that the blot lies to a large extent in the lack of co-ordinated effort. The health visitor as a single unit, cannot accomplish a great deal; She must be backed up by the Doctor. In fact the Doctor must lead her and yet work along with her. This is especially so in India where preventative work is in its infancy. One saw this in Ludhiana; previous to 1937, the three health visitors had been working more or less on their own, with the result that the minimum of preventative work was accomplished. The result of co-operation in a very practical way with the Doctor will be seen later on in this paper.

The Health Visitor who is not working in close co-operation with a Doctor is very apt to dabble in curative medicine and her health centre becomes a typical dispensary. On the other hand, one found that, given the initial lead, they were only too ready to develop the work along the lines of their true call of prevention. Early did our Ludhiana health visitors become enthusiastic over ante-natal work and this enthusiasm was maintained during the four years I was in charge. During my last year, the health visitors /
visitors made 2,019 first visits to the homes, and 1,608 new patients attended the centres. Including first and re-visits to the homes and the centres, over 16,000 were made. Along with these the Child Welfare figures are interesting; 3,761 children attended the centres throughout the year, a high percentage of them coming regularly. This was brought about by the systematic, faithful visiting of the health visitors who saw 4,449 new infants and children under five.

The extent to which the ante-natal work grew amazed me in view of the fact that it was such a new idea to these Indian women. After all, they had all to come by word of mouth from the health visitor. Through time, the women themselves did a good deal of the propaganda for us, as when they benefited from ante-natal care, it became their main theme of conversation and so was passed on from one zampaana to the other. On special occasions, we would gather the dais of the district together and then a few of the women who had been greatly helped by ante-natal care would come and in their own dialect and manner would "tell the tale" with great vigour. This did more in the way of active propaganda than dozens of lectures by us could ever have accomplished.

Behind the regular clinics of 30-40 women, there was the strenuous and faithful visiting of the health visitors. Time and days differ little with the women and so on the whole they had to be reminded weekly /
weekly of the advent of the clinic. This was the real secret of success in our ante-natal drive. At the beginning, each health visitor had one clinic a week in her centre; after two years, we felt we could expand and this was only possible by opening sub-centres in other districts. There are no tram-cars or buses in the city; tongas are expensive for the poor, and the women are not willing to walk a long distance to an ante-natal clinic. One could scarcely blame them as during six months the temperature soars to a height which makes walking more than unpleasant. Some days we would be at the clinic in a room with no fans and the temperature ranging from 110° to 118°. During the rainy season, to go far was not possible as they did not possess such articles as raincoats and umbrellas. These points may seem of small significance, but in practice, their disregard has often lain at the root of failure in ante-natal work.

One had attended a great number of ante-natal clinics in this country and was, without doubt, convinced of their value, but this conviction became very much deeper after a year's work amongst the pregnant women of the city of Ludhiana.
CONDUCT OF THE ANTE-NATAL CLINIC

This was conducted much the same as in this land. The history of previous pregnancies and labours were enquired into; also the previous general health of the patient. The history of the present pregnancy was then taken; the date of the last menstrual period was not often known, but the month was usually remembered. This was according to their own calendar, which had then to be translated into our reckoning.

It was unwise to rely on the answer to a general question, such as "How are you?", the answer invariably was "Main achchi houn". (I am all right). For the main part, the Indian woman feels she ought never to complain and never will do so until she is seriously ill. There is also the other feature that many of them have not known for years what it is to be really fit and so have become used to their present condition. We therefore found it necessary to ask direct questions regarding such symptoms as vomiting, breathlessness, palpitation, urinary troubles, regularity of the bowels, headache and eye symptoms. Certainly amongst our patients there was no fear of this producing a positive reply merely by suggestion. The Punjabi woman is much more given to saying she is quite all right when she is far from well, than she is of complaining of imaginary ills. The spirit of self-sacrifice and self-effacement is clearly manifest in them. In view of this, direct questioning was a necessity; otherwise all /
all too often abnormalities would be overlooked.

The General Examination of the woman was then carried out. Anaemia was present in the vast majority and one should like to be able to take the Hb. of every patient on the first visit and repeat at three monthly intervals. This may be possible one day. Of course where the degree of anaemia appeared marked as judged by symptoms and patient's appearance, a Haemoglobin, Red Blood Count and Blood picture investigations were carried out. This was because of the high percentage of hyperchromic macrocytic anaemias in these severe cases.

Abdominal palpation was done at each visit, although its real value was in the last two months; however, even in the early months the women expected it, so it was done routinely. As a number of the multiparas had very lax abdomens, transverse lie was frequently found. External version saved the women from much suffering and the child from probable death. Breech presentations were turned where possible; we attempted version at about the 33rd-34th week. We never used an anaesthetic as we did not consider it was justifiable in view of the patients' dread of being made "behosh" (unconscious).

The free head in the last two weeks in the primipara always called for careful investigation, not that a cause was by any means always found. In some, it drew attention to mild disproportion; in others, it was /
was an occipito-posterior; in 37% no cause was found, but the case was carefully watched during labour.

We tried to get all primiparas with free heads one week before term to come into hospital for delivery. There was very often the difficulty of knowing the expected date of confinement, as even when the women remembered the date of her last menstrual period, this was usually in her own calendar months which differed considerably from ours. This uncertainty of dates made post-maturity a vexed problem. It was rare that one could say a pregnancy was post-mature. The only one which was clear-cut was a multipara who had gone beyond her date on two previous occasions and who had had very large babies. She gave a history of irregular uterine contractions on or about the Expected Date of Confinement. These passed over and real labour did not begin until three weeks later. The babies were then so large that there was difficulty in delivery and a craniotomy had to be done in the last labour. Although the wife of a Civil Surgeon, qualified in this country, she had had no ante-natal care and had only the "dai" to look after her during both labours. When the dai failed, then and only a doctor was called; the first had been a difficult forceps and the second a craniotomy. She came to me during the third pregnancy; we watched her throughout. The same thing happened; on the Expected Date of Confinement, I was called to her at 11 p.m., as she was having slight uterine contractions. These passed off after three hours /
hours. On the following morning, there were no labour pains, but after much persuasion I made her and the husband agreeable to a Medical Induction. Labour began at 3 p.m. and a 10½ lb. child was delivered at 10.15 that same night. Although I was not in attendance at her previous confinements, the history suggested post-maturity. Apart from this case, there was no other of whom one could definitely say pregnancy had been post-mature.

The Pelvic Measurements were always taken, first by external pelvimetry. We could rely on these very little as the type of contraction which troubled us most — osteomalacia — but very rarely manifested itself by an alteration in the external measurements. On the other hand, it was a good thing to teach students and midwives as it did draw their attention to any "justo-minor or flat pelvis. Further one was interested to ascertain the average measurement for the district, as it was obvious that the standard measurements for this country could not be applied. The average for 1,000 pelves was Inter-spinous 21.25cm, Inter-cristal 23.75cm, and External Conjugate 17cm.

In this country we teach, and that rightly so, that if a woman has had previous normal confinements there is no need to do a vaginal examination to ascertain internal pelvic measurements. This however cannot hold for the Punjab, where osteo-malacia is prevalent. The fact that a woman has had a previous normal /
normal labour does not mean all is well in the pelvis. Osteo-malacia may have set in, either before this pregnancy, or more likely during it. Because of this, a vaginal examination must be done in every pregnant woman. I preferred to leave this until the 36th week as to do it early in pregnancy is of little value; changes may well take place in the later months.

First the diagonal conjugate was measured; then the brim was palpated by feeling along from the symphysis pubis - in some cases osteo-malacia was present only in the beaking of the symphysis (not an easy deformity to detect until labour had commenced and delay in fixation of the head and in its descent drew one's attention to this feature.) The cavity had to be traversed as frequently in osteo-malacia contraction was only present on one or other side of the iliac bones, leading to encroachment on the pelvic cavity on that side.

The outlet was then estimated. These findings, correlating with the relation between the head and pelvis, were our means of detecting any disproportion; when this was suspected, Munro-Kerr's vaginal method was used in attempting to estimate the degree. Although there was an X-Ray plant in hospital, we used this but very little in obstetrics, and not at all in pelvimetry.

The Blood Pressure was taken at each visit; the percentage of cases of Essential Hypertension were not noted. Where a high B.P. was not accompanied by either albumin in the urine or oedema or symptoms such /
such as headache, disturbance of visions, it was discounted except in so far as the woman was watched even more carefully for the above changes.

The urine was also examined on each visit.

Where there was a history of previous premature labours, still-births or neo-natal deaths, we did a Kahn's test. It was not possible to do this routinely because of lack of staff, both at the clinics and in the laboratory, but it was always done where specific disease was suspected.

All abnormal vaginal discharges were investigated, but the treatment of these was not satisfactory because we were not able to treat these at the different health centres. The patients had to come up to hospital and this was not easy for them because of the distance.

The patients were not weighed. This would be a help, as much from the point of view of loss of weight as gain, but unless it is done efficiently it loses its value. Still it will be started ere very long.
MOST STRIKING FEATURES OF THE PREGNANT WOMEN

ANAEMIA. Probably the most outstanding feature amongst the women was the prevalence of anaemia. We took 650 pregnant women at random and found that the average Haemoglobin was 55% and the Red Blood Count 3,300,000. This, being the average, is accepted by some as the normal but surely no medical man can, with complacency, accept such figures as normal.

The vast majority of these cases were of the Hypochromic, Microcytic Type of anaemia, whereas when only those with a Hb. of 30% and below it were considered, a high percentage were of the Macrocytic, Hyperchromic type. There were 32 cases below 30% and of these 22 were Macrocytic and 10 Microcytic. What frequently puzzled one was where the picture did not fit exclusively into that of the Macrocytic or the Microcytic type, but where both were represented. In the treatment of these too we found that both Iron and Liver therapy were necessary; the one along produced some improvement, but not to any great extent. One now knows that these are of the biphasic type; there being the causal factors of both types present with a resultant blood picture showing some features of each.

CAUSES. There is no doubt that in a great number of these women the anaemia is present before she becomes pregnant, and the pregnancy merely exaggerated the condition.
The causes of this hypochromic anaemia are numerous. In practically all of the women deficiency of iron in the diet is found; this is especially so amongst the Hindus who eat no meat. One should like to compare the degree of anaemia amongst the Hindus and Mohammedans, although one doubts if the difference would be marked in our district. Here the Moslem women do not eat meat to any great extent, and further their social religious customs, as the purdah system, do in themselves help to bring about anaemia, and this counter-balances the deficiency of meat in the Hindu's diet. As the normal pregnant woman should receive 20mgms. of iron per day and under present rationing in this country she receives only 10-12mgms.; one is sure that the average Indian woman does not reach even that intake. The consideration of the diet is a very large one, and would repay the time and thought anyone could spend on it; the only distracting feature would be the realisation that so little of a constructive nature can be done about it because of the economic question. Still the more investigations are carried out, the sooner will the leaders become convinced that something drastic must be done to supplement the diet of at least the pregnant woman.

MALARIA is very prevalent and as attacks are quite frequent with no consequent restoration by drug therapy of blood destroyed, this is a factor to be considered. It is of course a public health question and can be tackled /
tackled on a large scale only by them. All we can do in our ante-natal clinics is to tell the women to come into hospital at once should a shivering attack come on. We then can get the malaria rapidly under control; we used atebrin almost exclusively. One was never convinced of the power of quinine to bring on labour or abortion and so when atebrin was not available, we gave quinine. The danger of the high temperature of malaria producing abortion or labour is very much greater than that of quinine doing so. This was evident during the malarial month of September when the abortion rate was considerably higher than in other months.

HOOKWORM was present in 7% of the severely anaemic women (that is Hb. below 40%). In some instances it had produced a very severe anaemia with a Hb. of 18%, and Red Blood Count of 1,075,000. With such a low blood count the question of instigating treatment caused some anxiety because of possible toxic effect; however experience showed that in heavy infection the best thing was to treat the hookworm immediately as otherwise it was exceedingly difficult to increase the Hb. or R.B.C. to any extent. The tackling of hookworm infection is again a Public Health problem, but as there is no real sanitary arrangement in the city it is obvious that this must first be changed before intestinal infections can in any way be stamped out.

Chronic focal infections were ever present. No less /
less than 64% of the pregnant women suffered from pyorrhoea to a greater or less extent. It was taken for granted, as it was present in so many of the women without any obvious or apparent ill effects. There must, however, be some damage done, as we know that any focus of infection is liable to take its toll from the host. Certainly it appeared to affect the puerperium but little, if any, from the point of view of infection. It may, however, be more closely associated with the equally prevalent anaemia than is at present accepted. We were able to do nothing for the pyorrhoea, apart from mouth washes. A dental clinic in association with ante-natal work is a necessity we have still to acquire. In what way the disappearance of pyorrhoea will affect the women's health will be of real interest.

PYELITIS, an infection found rather frequently in pregnant women in this country, was not often diagnosed by us, 3% is the incidence in our cases. I say not diagnosed, as very probably the condition was present but passed unnoticed because all too often the woman would say nothing about any symptoms unless they were marked. Thus any but the acute cases were missed.

MACROCYTIC VARIETY. Even here one or more of the above causal factors might be present and it was important that this was not forgotten, in view of the need of appropriate treatment for the abolishing of the cause and also for the treatment of the microcytic anaemia /
anaemia resulting therefrom. Biphasic anaemias were, one feels, frequently present, but as they did not present the true macrocytic picture they were therefore classed as severe microcytic cases. With the correction of this error, the percentage of macrocytic anaemias will be much increased.

The cause of the macrocytic type was variable. Vitamin B. was deficient in the diet of many of the people in the area and where this was so, no amount of liver therapy would produce the desired effect of raising the blood count to any appreciable extent.

One case illustrating this stands out distinctly. She was one with a Hb. of 17% and a R.B.C. of 685,000. She was given Campolon - 1cc. daily - by injection.

To the patient her most troublesome symptom was marked oedema of the vulva; this was very painful. On two occasions it was punctured with only temporary relief. After two weeks of liver therapy, the case was reviewed as the rise in Hb. and R.B.C. was so slight - Hb. 20% and R.B.C. 765,000. The question of Vitamin B. deficiency arose, so this was supplied in the form of Yeast 1 drachm.d.s. The disappearance of the oedema of the vulva within 36 hours was a great joy to the patient, and soon the blood showed a steady increase. She was discharged 4 weeks later with a Hb. of 58% and a R.B.C. of 3,150,000.

In not all the cases was the causal factor a Vitamin B. deficiency. In some the intrinsic factor seemed /
seemed to be absent and these improved quickly on liver therapy. Even this presented its difficulties when treating Hindu patients. By foul means or fair, they must never know that it is liver they are receiving as the strict Hindu woman would rather die than "pollute herself with the accursed red meat".

Treatment. The practical treatment of these anaemic women had to be brought down to a workable basis. Naturally one should have liked to have taken them all into hospital for a thorough investigation, but to this they would never agree. The anaemia had been present for such a long time that they had become adjusted to its limitations and the degree of health it allowed. Thus they were only willing to come in when the degree of anaemia was very marked; that was when the Hb. was below 30%.

Therefore having proved that the vast majority of the pregnant women in the district are anaemic, one felt justified in giving Iron routinely. Pill form was the most manageable form, as invariably they forgot to bring the necessary bottle. There were the few who believed there was some magic in the "dawai" (medicine) which was not present in the "goallies" (pills), and to them Ferri et Ammon. Cit. was prescribed. The others received Ferrous Sulphate in grns. 3 pill form; one three times daily was the dose.

The severe cases were taken into hospital, investigated as to cause, type and degree of anaemia and then treatment was commenced and continued throughout /
out pregnancy through the ante-natal clinics.

Blood Transfusion was obviously indicated in the severe degrees of anaemia, but here we were up against a huge obstacle. This was the thing which, more than any other produced a sense of frustration. It was indeed far from easy to watch a woman dying who could have been saved had blood been available. Regarding this one is hopeful that the war will have removed prejudice to a large extent; numbers of the men from the city and district have joined the forces and it is hoped that their attitude to the giving of blood will be vastly different to their pre-war one. Memories of an attempted blood-transfusion will remain long. Somehow news had leaked out to the waiting relatives that I had taken some blood from the desperately ill patient; it was but the 2 ccs. necessary for cross matching. That was sufficient; they rushed in "en masse" and had not others of the staff intervened, my blood would have been spilt well and truly! Another colleague was "rushed upon" as she was taking blood from a husband whose wife was desperately in need of it. She had only taken about 15 ccs. when a relative caught a glimpse of it; out she went to the street, telling the relatives that the doctor was bleeding the man to death. That was enough; they rushed in and pulled the needle out of the man's vein.

Obstetrics in India without a blood transfusion service is awe-inspiring on occasions and makes one vow /
vow that one cannot continue without it. The hope is radiant that these days are well nigh over and that blood will be obtainable in at least the emergency cases.

Experience in other hospitals in India brought to light the fact that it was unwise to give a large blood transfusion to the severe chronic anaemia case, that is in those where the anaemia is not due to a recent loss. Usually half a pint was sufficient for the first transfusion; when 2 pints or more were given the reaction was so severe as to be fatal in some cases. This is an important medical point.

**OSTEOMALACIA**

Another deficiency disease which attracted attention was osteomalacia. In this condition there is known to be a deficiency of Calcium and Vitamin D. These women living in a land where for months the sun shines daily from a cloudless sky, scarcely receive the benefit of one of its rays.

In the early stage of osteomalacia, there are symptoms of pain in the lower limbs and difficulty in walking. When allowed to continue untreated, it may advance to such an extent that the woman is unable to walk without enduring agonising pain, until eventually she just cannot walk. When diagnosed in the early stage and treated, the result is most gratifying. Herein, ante-natal care is of supreme benefit as the woman will, on being questioned, tell you of the pains in /
in her legs and the difficulty in walking. Examination
reveals tenderness of the pelvic bones, in some cases
extreme.

The treatment of these early cases is simple;
the patient is given Calcium grns. x.t.d.s., and Cod
Liver Oil, ½ drachm t.d.s., these being the cheapest
preparations. Hindu women, however, will not take
Cod Liver Oil and they must be given some preparation
as Osteocalcium; whereas they cannot afford this, diffi-
culty arises. The patient is advised to get out in
the sunshine as much as she possibly can - not an easy
matter for her. With these simple measures, the
condition is arrested in the early stage and this
makes a vast difference to the patient's future.

Obstetrically too a great deal of preventative
work can be done. Having detected any contraction,
appropriate arrangements can be made for the management
of labour. This prevents untold sorrow and suffering.
Sometimes by the time the patient has reached hospital
the uterus has already ruptured as a result of obstruct-
ed labour. With no blood transfusion, there was only
one end in a high percentage of these cases.

As well as osteomalacia, there were other types
of contracted pelves, although it was the chief one.
According to western measurements, there were many
justo-minor pelves, but in actual fact this was not so.
The average measurements for our district have been
given, and while this was the average, there were those
with /
with an Inter-spinous of 20 - Inter-cristal of 22 - and External Conjugate of 16.75, who delivered normally of a full-time baby. Of course this is explained by the smaller weight of the average Indian baby, 6 lbs. 2 oz. was the average weight of the babies born in the hospital. Even in such a seemingly small thing as the weighing of the babies one had to take care; there were some Mothers who objected strongly. This was most noticeable at the Child Welfare Clinics. We began these in conjunction with the Ante-natal Clinics, that is in the same health centres but on a different day. For the first year we had to be content with merely examining the babies as so many of the Mothers looked on the scales with fear and superstition. At first one was tempted to say "What is the use of Child Welfare clinics if weighing is not allowed", but this decision was as fleeting as it was lacking in an appreciation of the situation. The idea of bringing a healthy babe to see a foreign doctor was sufficient of an innovation to be overcome at first. By the second year, the Mothers' confidence having been won, there were 60-80 babes at each clinic and practically every one was being weighed regularly.

The rachitic flat pelvis was also found, the number we shall discuss during the management of these cases. One is sure that there were not a few pelves which would have come under the Caldwell Molloy classification /
tion of Android and Anthropoid, but we did not attempt to classify in this manner. It is not altogether easy or satisfactory to do so without radiological help to confirm clinical findings.

In the detection of disproportion we had to rely solely on our clinical examination. There was an X-Ray plant, but we did not use it in this connection. This perhaps was not a bad thing as practically none of our students would have X-Ray to fall back on in the districts in which they would work, and as contracted pelvis is not uncommon in many parts of India, the woman doctor must know how to detect clinically the degree of disproportion present; that is, as far as is possible on clinical findings.

Stereoscopic examination would naturally be ideal as in osteomalacia pelvis, the contraction is irregular and the disproportion is very difficult to detect until the head actually comes into the pelvis. To be able to visualise this stereoscopically would be of tremendous value.

**TOXAEMIAS OF PREGNANCY.** Ante-natal care in connection with the toxaeemias of pregnancy proved most satisfactory; partly because of good fortune and partly because of over-care we had only two cases of eclampsia in our ante-natal cases throughout the four years. One recognises that occasionally cases of eclampsia occur without any previous symptoms of pre-eclampsia; we were fortunate in this respect as there was /
was not one such case amongst our ante-natal women. The over-care was the result of having seen and treated cases of eclampsia who did not arrive in hospital until the patient had many fits and was in deep coma, which often did not respond to any treatment. One vividly recalls the first such case; she was the daughter-in-law of a wealthy household in the city. The doctor who had been called in, came to hospital asking if we would take in a patient of his; the delivery had been normal, conducted of course by the dai; some hours later she had had four fits, one after the other. The dai thought it was just "spirits", but by the end of the fourth one she decided it would be as well to call in the doctor. He came, did not see the patient nor examine the urine, but from the dai's story came to the conclusion that it was hysteria. However as the fits continued, he thought by the ninth one that it might be as well to consult the hospital doctor, just in case it might be something serious. Such a story seems incredible to western ears, but it is understandable when one remembers that the dai is an ignorant superstitious woman who believes implicitly in the power of Spirits, and further that the doctor has never seen a woman in an Eclamptic fit, nor in any fit for that matter of it. He has long since forgotten his theoretical teaching of the possibility of Eclampsia occurring in a pregnant woman, so what could he do but fall back on his never-failing "hysteria".

Having /
Having had to cope with a few of such cases naturally makes one determined that every possible care shall be taken to prevent that drastic condition of Eclampsia.

After a few months of working amongst these women, one realised that the cause of pre-eclampsia in their case could not be a high protein diet, as the protein content in the diet of the vast majority of the women is low. This was clearly brought out in one case. She was a wealthy well-educated Hindu who had been married for 15 years and had never been pregnant. She had actually come to hospital because of this fact and was fully prepared to stay in. The vaginal examination made one suspect that a pregnancy might conceivably have begun; this made one go more into detail as to the last menstrual period - there often are slight discrepancies when changing Hindu months and dates into Christian, and this woman, being a strict Hindu, counted according to these months. The more careful "translation" revealed that the woman was in reality a day overdue. One might well have overlooked this, but the merest possibility of pregnancy having occurred made us ask the woman to be content with having nothing done in the meantime. We didn't dare raise hopes of pregnancy in her mind as disaster might have followed had we been wrong. Her husband had been patient for fifteen years but he was being pressed upon by his own family to take another wife in order that he might have a son - a vital necessity to /
to strict Hindus. It was because her husband was at last considering a second marriage that she decided to come to hospital to see if anything could be done. We watched her for another month, by which time there was further evidence of the probability of pregnancy.

The woman was overjoyed when told and on returning to her home, at once procured all the literature she could on the subject of the expectant mother. All she read stressed the danger of eating proteins, so she cut these down to the minimum - not that she ever ate even an adequate amount of them. As she lived some distance away, she did not return to us until the 30th week. On examination, she was found to be anaemic, Hb.46%, R.B.C. 3,450,000, with a hypochromic microcytic picture. There was oedema of lower limbs, hands and face, and the blood pressure was 148/78, with 2 grams albumin in the urine.

On going into the diet, it was obvious that there was a great lack of proteins and therefore one essential was to correct this. There was much protesting to begin with; the patient was convinced from what she had read that it would harm her and the baby, but eventually she agreed to try it out, with excellent results. Increased proteins to 80 grams, combined with rest, sedatives and Iron improved her condition considerably. Her Hb. went up to 78%; the oedema and albumin disappeared, and the B.P. came down to 138/70.

The /
The labour proved interesting, if trying; the presentation was an R.O.P. (reason not found); it was not fixed at the beginning of labour; the membranes began to leak early; uterine contractions were ineffective although very painful; the cervix was rigid. After 8 hours of labour, the foetal heart slowed down to 128 and there was a little meconium in the liquor which was leaking away. Delay was dangerous so Caesarean Section was decided upon; a live baby boy was delivered - much to everyone's joy. The difference this makes to the Hindu women has to be seen to be believed. It is the difference between abundant life and a living death.

HYPEREMESIS GRAVIDARUM

This is not frequently found. Is this because pregnancy is accepted as a matter of course and without questioning; the nervous element thereby being eliminated. Still when it does occur there is the gravest danger in vomiting being taken for granted until the woman is dangerously ill. On three occasions during the 5 years, women were brought in suffering from a severe degree of toxic hyperemesis and treatment was without avail.
VENereal Disease

The problem of thorough and systematic treatment of venereal disease remains largely untouched in the city. Strangely enough the "City Fathers" could not grasp the economy of proper treatment of this scourge! "What if it did lead to still-births; there were already plenty living children being born", they argued. Even the congenital syphilitic with its defects were accepted as of little consequence. They made no provision for such children and did not see that their loss to the community was of any consequence. The injury to the mother's health was not acute enough to draw attention. Not even the high percentage of blindness due to Gonococcal infection (38%) made an impression.

Thus no city clinics and no grant is budgeted for treatment of venereal infection in the pregnant women; this is also true of the non-pregnant and of the men. All we were able to do was to treat a few of the women during pregnancy. As previously mentioned, we did not take a Kahn's test routinely, but only where there was a suggestive history. In treating those with the infection, the difficulty of finance arose, as Arsenical preparations are very costly to people who are living on 2/-3/- weekly. (A rupee equals 1/6d). We were forced therefore to rely more on Bismuth preparations with a mere minimum of Arsenic - by no means a satisfactory method, but results were quite /
quite gratifying in many cases. No one was more grateful than the woman who has had 4-5 still-births or babies who have died shortly after birth, and who is then given a live child who continues to live and thrive.

We followed the children through the Child Welfare Clinics as they needed treatment, that given to the Mothers being insufficient. There should be a V.D. Clinic attached to the ante-natal centres; it could be held at the same time as the ordinary clinic in order to prevent any stigma coming upon Mother and Child. This must come and surely as the people become more enlightened, the Town Council Authorities will make a special grant and appoint Medical Officers for this important branch of medicine. Until then, we must constantly bring before them the economic waste, apart from the human suffering, which could be avoided by the expenditure of a little money. It was exceedingly gratifying that every case of ophthalmia neonatorum amongst the babies delivered by us in hospital or on district, were satisfactorily treated. Each one came immediately under the care of the hospital ophthalmologist. It is the fact that blindness due to gonococcal infection is preventable that makes one so anxious that adequate measures should be instituted without delay.
ABNORMAL PRESENTATIONS

As our hospital dealt with maternity emergencies for a district of a radius of 50 miles, we were daily in contact with conditions which should never have arisen had there been adequate ante-natal care. Transverse Lie was one of these; not only was ante-natal care missing, but management of labour had been atrocious. In the year under review, only two of our ante-natal cases went into labour with a transverse lie. Fortunately these were diagnosed at once by our district nurses who had been called in and they brought the patients to hospital. In one we were able to do an external version to a Vertex; in the other the membranes had ruptured just previous to admission, so a bipolar version to a breech was carried out.

What a different story is this to the neglected transverse lie which comes in after prolonged labour with an exhausted mother, a firmly contracted uterus and a shoulder jammed into the pelvis.

The Breech was corrected whenever possible.

Thus the scope of the ante-natal clinic was a large one:— The detection and degree of anaemia; the presence and extent of osteomalacia and other forms of contracted pelvis; early diagnosis and treatment of toxaemias; detection and correction of mal-presentations; and the treatment of venereal diseases.

Apart from the higher foetal mortality in breech /
breech deliveries, one had to keep in mind the fact that about 20% of our ante-natal patients were delivered by the dai. When a dai has a breech to tackle, all that concerns her is to get the baby outside by hook or by crook, so with might and main she pulls on the limbs; if the head is delayed, as is very liable to occur after the pulling, it was then a case of "heave ho" from the shoulders. In the five years, fourteen cases were brought into hospital with the head left inside, the dai having pulled so hard that she effected "decapitation". Twenty six were brought in with the baby born as far as the neck; this was infinitely preferable to the other state, although of course, the baby's life was always sacrificed.
ARRANGEMENTS FOR DELIVERY

District Midwifery - 1,157 in 1940

The arrangements made for the delivery were very satisfactory. There are arguments for and against domiciliary midwifery, but in India with its dense population, its deep-rooted religious beliefs and superstitions, and its illiteracy and ignorance, domiciliary midwifery will remain an integral part of any unit for many many years to come. 

True in the vast majority of cases, the homes are most inadequate and unsuitable for delivery. According to ancient laws, the woman in childbirth is unclean for 40 days. She must, during this time, be housed in the darkest, smallest, dirtiest room and throughout that time she must remain unbathed. This law is not now strictly adhered to, but still the old idea remains and it is only on rare occasions that a decent room is given up to the mother in childbirth. Of course there are thousands of homes which consist solely of one room and in that room is housed not only the human elements of the family, but those of the animal kingdom as well. On my first visit to a village home, I entered the dark room lighted only by the feeble flame of a small lantern. Coming in from outside one could scarcely see anything. However, I was led to the bedside of the patient; knowing only a few phrases of the language at this time, I voiced one of them. "Tumhara nam kya hai?" (What is your name?)
The reply was a loud and vociferous "moo". One literally was shaken; had we by mistake been called to a cow!! At once assurance was given. There was in truth a woman in the bed, but in the further corner of the room was Mother Cow, who in the process of chewing her cud had been rudely disturbed by our entrance. Some wonder at the amount of sepsis in the puerperium in India; others, who have seen conditions, marvel at its comparative scarcity.

Apart from the fact that it is not possible to bring all the women into hospital for delivery, one would never desire to do so. Despite home conditions, despite the dirt and darkness, the lack of cleanliness and fresh air, the woman is without question more at ease in her own home. Complications due to fear, of which we are hearing much these days in this land, rarely arise in the woman delivered in her familiar home surroundings. With her, pregnancy and labour are accepted as the normal happenings of life; sad and sorrowful is the portion of the woman who does not bear; only when the Indian woman is removed to strange surroundings does the element of fear creep in.

When she is brought into hospital she is at first apt to be awe-stricken. The labour room with its white gowns, its caps and masks, are rather fierce-some, until she becomes accustomed to them and discovers that nothing terrible is to be done to her. We found it a wise practice to allow one relative into the labour room; this gave confidence to patient and friends/
friends alike. With her by her side, it was amazing how quickly the patient accepted everything, once she is assured that the people in this strange room are there for her good, and not evil spirits from a world unknown.

Still the home is the place of choice for by far the greatest number of our women. We therefore did not try to persuade them to come into hospital unless there was any abnormal condition present or likely to arise.

Beforehand the district midwife or health visitor could do little to make arrangements for the confinement. In the more comfortable homes, something was possible, but for the vast majority nothing could be done; there was the one room and the one room only and there it was. With some, their religious beliefs forbade them from preparing anything for the babe; that was considered very unlucky. Nor could the midwife expect the vast majority of the patients to have anything prepared, and so she would have to take everything with her; these were reduced to the minimum, and included a basin, 2 small bowls, soap, scrubbing brush, swabs, Dettol, artery forceps, scissors, Ergot and Pot Brom. and Chloral (grns.15-½oz). No mask or cap was worn, nor were we able to supply gloves.

No charge was made, but patients who could afford it gave a donation to the hospital. Then the dai who called our midwives to the case was given a R1/- for each one. These conditions were necessary because it was/
essential that we should have a certain number of cases for the student and midwives training. Secondly we were anxious that the women should not be left to the care of the dai, and yet they were mostly so poor that they could not afford more than the R1/- R2/- which were given to the dai. They would not, and indeed could not, do without the dai; age-long beliefs made a dai's presence at the confinement a vital part of the procedure. Not only this, but the dai disposed of the placenta, and cleared away after the birth and also did certain duties about the house during the first week of the puerperium. No one else was willing to do this.

Anyone seeing the housing conditions of the masses of India's population will at once be struck by their abject poverty and the dire necessity of providing something that could more appertain to the title of home. This must come one day, even though it be in the distant hereafter. Meantime our district midwives do their best in these unsuitable conditions.

In 1940, 1,157 deliveries were conducted in the homes; for these we had five district midwives. Two lived in quarters on one side of the city and two on the other side. The people, through the dais, could come and call them at any time of the day or night and they readily answered. They were all Indians and were generally trained nurses as well as midwives. With them went two students or midwives in training.
The work they did and do is magnificent, as winter and summer they attend the Mothers in these small, dirty, squalid quarters. It was no easy task to work in these where so often there was no window and only a tiny door which led into another windowless room. The temperature might be soaring around 118° in the shade. There is little wonder that one of the main attributes necessary for midwifery work in India is enthusiasm, and that, our district midwives undoubtedly did possess. They had their reward in seeing how well the women did as compared with the dastardly results of the dais' handiwork.

As so many cases were being done in the homes, we began in 1937 to keep a brief record of their labour and puerperium. This had to be simple and consisted of a foolscap page; on one side of which the progress of labour was recorded and on the other side the puerperium.

These were kept by the midwife in charge of the case and at the end of each month they were brought into hospital and filed away.

If any abnormality arose, the district doctor was called, and when possible, she brought the patient into hospital. This applied to the puerperium as well as to labour.

Previous to 1939 there had been no district doctor; the hospital house surgeon was called for any abnormality and the other patients were never seen by a doctor. This was not satisfactory; therefore a district doctor /
doctor was appointed. She visited every patient on or about the 10th day. She examined the patient and did a vaginal examination; she also inspected the records and saw they were kept up to date. This kept the district cases under supervision. The midwives were directly responsible to the doctor who in turn reported to me.

When speaking of supervision of our own district midwives, the question of supervising the dais must be considered. It is of little avail to teach these dais if this is not followed up by supervision. We all, however well-educated and experienced, benefit from supervision; how very much more true is this of the illiterate dai. In this respect India still has far to go. In Ludhiana, this problem was tackled by -

(1) Encouraging the dais to call in our qualified midwives. No obstetrician can ever be satisfied with leaving the delivery of the Mothers to these illiterate ignorant superstitious dais. Time it will take, but the day must come when they will not be allowed to conduct cases. With this day in view, we try to impress upon the dais that they ought to call in the midwife. This was not easy, although by 1940 they had called us to 1,157 deliveries. This along with those conducted in hospital were just over a third of the births in the city, so there still remains a great number in the hands of the dais.

(2) Failing /
(2) Failing the dais calling a midwife, we urged the necessity of registration of dais and only those who had attended the classes and passed the exam could register. It is incredible to think that there would be any difficulty in making a City Council pass this law; it was left to each city to make its own laws regarding the registration of dais. Nevertheless it was not until 1941 that it was passed in Ludhiana and in a number of cities this still remains to be done. Considering the meagre teaching it is possible to give a totally illiterate woman on such an all-important subject as the care of the expectant Mother, before, during and after labour, it is amazing that even this amount is not considered essential by the powers that be.

In Ludhiana at present there are 67 trained dais and 10 who have never attended the classes.

What still remains to be done in this city is compulsory supervision of the dais who conduct their own cases, although better far would be that no case be conducted by a dai in any city where adequate numbers of midwives are available.

The district midwifery as done by our unit showed splendid results, especially in those cases who had been ante-natalled by us. There were only two cases of maternal mortality, both of whom had never previously been seen by us. The one was desperately /
desperately anaemic; when the midwife arrived she was in second stage and the babe was born soon afterwards. She died two hours later. Had there been a blood transfusion service in hospital, she might have been saved even at this late hour.

The other to whom the midwife was called when she was well advanced in labour, was also desperately ill. She was found to be suffering from cholera and died 12 hours after delivery.

The greatest need in improvement of district midwifery is one outside our province; would that it were within our powers to remedy it! Better housing conditions is the plea.
HOSPITAL MIDWIFERY.

The midwifery conducted in hospital has passed through many stages. Fifty years ago a mere half-dozen cases were admitted, and of these four died. They had been brought in "in extremis" and quite beyond all aid. Remember there was no blood transfusion to combat the blood lost, and no sulphonamides to overcome the indescribable sepsis which had already entered the uterus and blood-stream.

Gradually the prejudice against hospital is being overcome and 646 deliveries were conducted in the unit in 1940.

ABORTIONS. 153.

Abortions were ever with us. In September, a bad month for malaria, we did 32 Dilatations and Curettage Operations for Incomplete Abortions. Except on rare occasions, the women only came to us when haemorrhage had been very severe; the "dai" first tried her tricks which included generous doses of Ergot. This produced spasm of the cervix, which frequently was by no means easily overcome.

It is recognised that the treatment of septic abortions is to leave them alone until the temperature has been normal for five days, unless of course there is severe haemorrhage. This we were seldom able to do; we were forced to adopt the line of removing the focus of infection, because

(1). The woman had usually lost a good deal of blood before coming in, and so could not afford to go on losing, even although it be only a little each day,
there being no blood transfusion service to replace it.

(2). The patients would not remain in hospital for any length of time with, as they thought, nothing being done. Mere medicines are accounted as little more than nothing in the eyes of these illiterate folk. At least they don't feel they need to stay in a hospital for that type of treatment; they can drink medicine at home. They expect something more spectacular from a hospital, and if they are not going to get it, then home they go.

Hence in practice each incomplete abortion was curetted soon after admission; in fact almost on admission, as frequently the haemorrhage was very severe. It was amazing to see how these almost pulseless women recovered once the uterus had been curetted and the haemorrhage stopped. Naturally their ultimate recovery would have been much more rapid had the blood lost been rapidly replaced by a blood transfusion.

THREATENED ABORTIONS.

Thirty-seven cases were treated successfully by the usual method of Rest and Sedatives. The women were not willing to persist for long with this treatment, but in view of the high percentage of abnormal ova in such cases, perhaps it was not a bad thing to allow pregnancy to be terminated in cases where an early response was not obtained.

We were unable to use pregesterone because of the expense.
HYDATIDIFORM MOLE.

Maternal Death 1.

There were two cases of this in the year under review (1940). They both required operation because of severe haemorrhage. One of them did well, but the other died. This was due to the fact that the uterus extended up to one finger below the umbilicus. Therefore evacuation would have been much more satisfactorily done abdominally. This the woman and her relatives refused to allow, so there was nothing else for it but to attempt evacuation vaginally. This entailed profuse loss of blood because of the size of the mole, and as this blood could not be quickly replaced the woman died.

Such cases are exasperating in the extreme. However one such refusal with a disastrous result paves the way for the next twenty permissions. True a costly way, but where there is no other it must be taken.

One cannot blame these poor ignorant women. They have never read anything in their lives and all they know is from folk-lore. To many of them an abdominal operation is sure to have one result and one only—Death. They will risk anything rather than "be cut up!" Still they are slowly but surely learning to trust us.

INCARCERATION OF THE RETROVERTED GRAVID UTERUS.

There were four such cases, with 1 Maternal Death. In three replacement was fairly easy after the bladder and rectum had been emptied.

The fourth had had retention for eight days previous
previous to admission. Replacement was not possible, so abortion was procured, but the patient died 4 days later, the urinary infection having spread into the kidneys - anuria set in.

The patient had come from a village 30 miles away, where her only "help" is the "dai". Until the villages are reached with "true and humane" midwifery these tragedies will inevitably occur. Ours is the responsibility to spread the knowledge abroad.

HYPEREMESIS GRAVIDARUM. 3.

Maternal Deaths 1.

Two rapidly responded to the ordinary treatment of Sedatives and Isolation.

The third was one of severe Toxic Hyperemesis, who did not rally, even after evacuation of the uterus which was done immediately on admission. This patient also came from a distant village.

PRE-ECLAMPTIC TOXAEMIA. 70.

Foetal Deaths 2.

Rest - Discharged Undelivered 12.
Rest - Delivered 24.
Rest & Diet - Delivered 14.
Induction of Premature Labour 20.

In our treatment of these cases we advocated Rest and a daily free evacuation of the bowels as the main things. There was no question of reducing the protein in their diet as it was already deficient, and so could scarcely be the cause of the condition.
Where oedema was present, salt was restricted. Severe cases were given only fluids and fruit juices with glucose until signs of improvement were seen. If they did not improve we had to induce labour.

**ECLAMPSIA.**

Maternal Deaths 3. Foetal Deaths 16.

Fortunately only one of these was in our antenatal patients, and she had only one fit post-partum. She quickly responded to sedatives.

When I first started in Ludhiana I advocated colonic lavages and stomach-cuts - that was, the eliminative treatment along with the sedative. However as one watched them one saw that the chief criterion regarding recovery was the cessation or otherwise of the fits. The main line of attack to stop the fits was absolute quietness and rest. This set me along the tract of sedative treatment only.

At the beginning the nursing staff felt this was too inactive a form of treatment and rather resented it. Results justified its continuance and convinced all of its worth. The patient has to be carefully watched in order to decide how far the sedatives can be pushed. The outline given in Professor Johnstone's "Textbook of Midwifery" is an excellent one for a basis on which to work.

**INDUCTION OF PREMATURE LABOUR.**

Methods Used.

Medical Induction 6.
Rupture of Membranes

**Krause's Method (Using Stomach Tube)**

**Indications.**

- Contracted Pelvis with Disproportion
- Pre-Eclampsia
- Post-Maturity
- Ante-Partum Haemorrhage.

Medical Induction proved of little value except where the pregnancy was at term. Our method was according to that advocated by Professor Johnstone - Ricini 2 ozs.; Enema; Quinine grn 5 - 4 hourly for 24 hours; Pituitrin .5ccs. - 1/2 hourly for 6 doses or until labour begins.

Rupture of Membranes is a simple method and a sure one in a high percentage of cases. Nevertheless latterly I did not use it except where delivery of the child is not likely to be prolonged. Therefore on the whole we used it mainly for multiparas.

This was because the foetal mortality increased as the duration of rupture of the membranes extended beyond 24 hours. Being unable to obtain post-mortem examinations we could not ascertain the cause of foetal death, but it was probably often due to intra-uterine infection.

Thus for primiparas we preferred Surgical Induction with the stomach tube. This I used instead of the bougies as there were none of them in the hospital at first, and even after we obtained them the tube was used in preference. This method was also always used in cases of Disproportion.
The conduct of Normal Labour did not differ from that usually taught. During the First Stage the women were allowed to walk about; fluids were freely given. This latter idea is a new one to strict Hindus; according to their ancient customs the women should not drink anything during the hours of labour.

With the Moslems there is a very great difficulty in getting them to drink or eat between sunrise and sunset during the period of Ramzan. At that time - 6 weeks duration - no Moslem must eat or drink anything between sunrise and sunset, which is roughly between 5 am and 8 pm. The strict Moslem would sooner die than moisten his lips throughout these hours.

We did not practise Twilight Sleep, or any other method of Analgesia in the first stage. Indeed sedatives were seldom required in this stage, apart from prolonged labours; in these we relied mainly on Potassium Bromide and Chloride and Morphia.

The Indian woman accepts pregnancy and labour as part of the day's work. Indeed the coolies will not stop their work until labour is well advanced. There seems to be no doubt but that civilisation has increased the fear of labour, and so brought in its train such abnormalities as Uterine Inertia and Rigid Cervix. Unfortunately time did not permit close investigation as to the duration of labour in the coolie women as opposed to the more educated ones. The impression
made was that in the former group complications due to fear were exceedingly rare. Indeed complications of any kind were rare as they are women who work in the open air all day long. Therefore none of the consequences of "purdah", such as Anaemia and Osteomalacia, troubled them.

An enema was given to the patient on admission and the bladder emptied. Every two hours the Mother's Pulse, Duration and Frequency of the Uterine Contractions, and The Foetal Heart Rate were noted and recorded. Without these it is impossible to assess the progress of labour.

**Second Stage.**

The Mother's position in this stage is of interest. On district it was found that frequently the Mothers themselves asked to be allowed to get into the Squatting Position. The midwives allowed them to do this, as experience had proved to them its value, not only in the advance of the presenting part, but also in the Mother's comfort.

In hospital when the women would ask to squat one was against it. Having been taught that the correct position for the second stage was the dorsal or left lateral, one was inclined to carry this out to the letter of the law.

Books such as "Safe Childbirth", by Janet Vaughan have shown the benefits afforded by the squatting position. I have tried it out on a limited number of cases in
in this country and have been especially interested in
the great relief it gives the Mother; the excruciating
backache which so often is present in the second stage,
is tremendously relieved and the Mother finds it much
easier to bear down. It certainly is a posture worthy
of a fair trial and I hope to try it out on a large
series of cases in India. Without having used it on a
large scale its true benefit cannot be accurately
assessed.

ANAESTHETIC.

The Anaesthesia for Second Stage was not
sufficient in our hospital. Chloroform was the only
General Anaesthetic we used, and this could not be
given without a doctor being present. This was not
possible with our Staff. Still we could have used the
Junker’s apparatus, and this I look forward to doing
in the future. It is a simple portable apparatus and
can be used even when a doctor is not present.

Gas and Oxygen or Gas and Air apparatuses are
rather expensive and require someone who can teach the
women how to use them efficiently. Caudal Anaesthesia
might yet come into vogue, but it would require an
experienced person for its administration.

Local Anaesthesia should have been used more
frequently by us. It can be very advantageous in a
Vertex or Breech Presentation, and reduces the amount
of general anaesthetic required. It should find a big
place in the repair of Perineal Tears, and also in the
Application
application of Low Forceps. For the most part we repaired perineal tears without any anaesthetic. This may be fairly satisfactory in some case where pressure of the head on the perineum has produced a degree of anaesthesia, but for most cases, the woman should have an anaesthetic. In the homes and in hospital too, local anaesthesia would be best for our use.

We never used spinal anaesthesia in obstetrics, because of the reported maternal mortality, but most likely it would not be any more dangerous than giving chloroform to an exhausted woman.

In our field we shall have to develop local anaesthesia more for deliveries, for perineal tears, low forceps and Caesarean Sections. Where complete relaxation is required as in doing an internal version, we shall probably continue to use chloroform; the 'junkers for second stage of a normal delivery should prove most valuable.

**DELIVERY**

The actual delivery of the head was done with the woman in the dorsal position. It might be argued that the left lateral was most suitable because of the possibility of having little help. As a matter of fact when the delivery occurred at home, there were always plenty of onlookers and the longer labour lasted the larger grew the crowd. Through time one could almost gauge the duration of labour by the number of women congregated in the room. Then the beds - called charpains /
Charpais—consisting of short legs, 1 ft. long, with a "spring" of interwoven rope, made it easy for the woman to come down to the end of it. The delivery was rather a back-breaking procedure for the midwife.

Greenhill- & Lee stress the fact than the placenta is separated within 5 minutes after the delivery of the child in the great majority of cases, and so they advocate early expression. Whether that fact be true or not, it cannot be questioned that too early massaging and expression lead to haemorrhage. "Leave well alone" is the best policy in third stage, and nothing beyond controlling the fundus is required in a normal case. The midwife who is always in a hurry and so hastens the delivery of the placenta, will inevitably have more post-partum haemorrhages than her sister who allows the placenta to take its own time.

The wearing of a gown, cap and mask were insisted upon for everyone in the labour room, much to the consternation of the patient's relatives. Even in 1941 we had to allow one relative into the labour room. Yes, it does seem absurd, but time taught me otherwise. In my early days I insisted that all relatives should stay outside until we had a fatal case. This patient died almost immediately after the baby was born; the relatives were convinced that I had put them all out so that I could kill the patient. This was an extreme point of view, but had always to be reckoned with, and so never afterwards did I insist on putting them all outside.
outside. One was allowed to remain in order to watch and censor our movements. After all, many of these patients came from far off villages, and to them this labour theatre with its white gowned and masked people doing mysterious things with weird instruments, seemed to them to be none other than the spirit world in which ghosts of good and evil roamed around. Depending on the success or otherwise of our labours, we were labelled as "from above" or belonging to the "realms below".

PUERPERIUM

As far as possible, we kept the women in hospital for 10 days. They required this period of rest from the point of view of their general health quite apart from the benefit to the involution of the genital organs. In the homes, the midwives frequently found the women up and busy cooking even on the second day. It was with them a case of "necessity knows no law", and therefore it was useless for the midwives to remonstrate. A shortened puerperium cannot be advocated, because, as mentioned, the general health of the patients was far from good and was much benefitted from the days in bed. As we did not have a post-natal clinic, we were unable to follow up and so find out the ill effects of a short puerperium.

The Post-Natal Clinic is something that must be started without our patients. It cannot, however, be merely one visit at the end of the 6 weeks but will need /
need to be followed by examination 3 months, 6 months, and 9 months after delivery. The Mothers' general condition must be cared for as well as any pelvic abnormality. During these visits it ought to be possible to impress upon the women the absolute necessity of coming for examination at once should any irregularity of the menstrual cycle occur. Something like 75% of the cases of carcinoma of the cervix came in the fourth stage when it was impossible to do anything for them as the bladder or even the rectum were already involved. This state of affairs can only be changed when the women realise the danger of any intermenstrual loss, and the post-natal clinic seems to me to be the avenue through which this teaching would prove effective.
ABNORMAL CASES: 305

Occipito-Posterior, excluding cases of spontaneous rotation - 28.

Spontaneous delivery (face to pubes) 7
Manual rotation and forceps. 8
Forceps delivery (face to pubes) 6
Caesarean Section. 1
Cranietomy. 2
Transverse arrest (manual rotation and forceps). 4

As everywhere, this condition requires a good deal of patience. One should give nature plenty of time and never interfere until there is an indication. Naturally the first thing to do is to try and manually rotate the occiput to the front, except in the anthropoid pelvis which has a long antero-posterior diameter with a short transverse. Experience taught us that it was not always advisable to persist in bringing about rotation of the occiput to the front. We realised that in some cases the head had become moulded slowly into the most suitable position for that pelvis; in some this was undoubtedly due to the osteomalacial contraction of the bones, but in others this was not so and these pelves would probably be of the anthropoid classification.

After the experience of the first two years, the conclusion arrived at was that if manual rotation was not easy, then it was wrong to persist and force the head /
head round. This only caused damage as often there was some contraction of the transverse diameter or in the anterior segment of the outlet. I should like to make a closer study of these pelves in which the occiput becomes posterior, but this really requires accurate radiological help.

At first when manual rotation failed, I tried rotation with Forceps. This did not prove satisfactory, largely because in so many cases the head had been in the pelvis for some hours and so the soft parts were badly bruised and laceration was easily done, even although an episiotomy was always carried out. Nor did we find rotation with Forceps easy in a case where manual rotation had failed; force was required and there was undue compression of the foetal head. Kielland's Forceps we did not have but I intend taking them back with me.

The impressions therefore regarding Persistent Occiput Posterior is that new light may be thrown on this by a more careful study of the pelvis and the adaptation of the foetal head thereto. This may lead to the conclusion that foetal mortality and morbidity is at least not greater when the head is brought out in the posterior than when it is rotated anteriorly through a pelvis, the outlet of which has a contracted transverse of anterior segment. This naturally does not apply to the cases where manual rotation is easy, and an attempt at this should always be made.
Our experience was that where there was no contraction of the pelvic manual rotation was comparatively easy, and as an occiput-anterior brings the shortest diameter of sub-occipito-bregmatic through the outlet and over the pelvic floor, it is the position of choice whenever possible. When difficulty arises in rotation one has to make sure that the best method really is to force it round; the type of pelvic outlet will determine this.

**FACE PRESENTATIONS.**

8

- **No Maternal Deaths.**
  - Foetal Deaths 3.
  - Spontaneous delivery. 4
  - Forceps delivery. 3
  - Craniotomy. 1

The anterior face position only rarely gave rise to difficulty, but the mento-posterior was another problem. These all came to us after labour had been in progress for over 30 hours. The chin was rotated round to the sacrum; the head was jammed into the pelvis and membranes having ruptured for some time, the uterus was firmly contracted down on the foetus. A version or Caesarean was contra-indicated. Manual rotation of the chin to the front was not possible. Because of the relative's presence and the people's hatred of anything being done to the baby, on two occasions it was delivered with forceps as a mento-posterior; in the other it was evident that severe damage would be done to the Mother's soft parts were
the foetus pulled out with forceps, so a craniotomy was done before extraction.

**BROW PRESENTATION.** 2.

No Maternal Deaths. Foetal Deaths 2.

These had been brought into hospital after prolonged labour - over 40 hours. The signs of obstructed labour were present and as the foetus was dead, a craniotomy was done in both cases.

**TRANSVERSE LIE.** 14.


External Version to Vertex 2
Bipolar Version. 2
Internal Version. 10

(Perforation of the after-coming head was done in four of these as the pelvis was contracted).

This was a fairly frequent abnormal presentation; in a few of these one felt that the presentation had been a hand and head and the dai had pulled vigorously on the hand, making it into a shoulder presentation.

Where the membranes were only recently ruptured, treatment was comparatively easy and results were good. The tragedy was that a high percentage of them came when labour was well advanced, and the membranes had been ruptured for some time. In three of these the foetal heart was good, therefore an internal version was done and the child delivered as a breech.

Controversy arises regarding the best treatment where /
where the foetus is dead. Some would say that decapitation is indicated rather than internal version in such cases. Experience showed us that except where the uterus is very firmly contracted down on the foetus, better results are obtained by internal version, even although the child is dead. This operation causes much less shock to the Mother than decapitation. In 1937 and 1938, we had two maternal deaths in cases of impacted transverse lie where decapitation had been the method of delivery. This led one to use internal version is preference to decapitation, even although the child is dead. In 1940 there was no maternal death in this connection with practically the same number of impacted transverse lies. (Of course this is excluding those who came in with an already ruptured uterus).

Looking through the statistics of other large hospitals in India, one was struck with the rarity of the operation of decapitation, even although there had been 12-20 cases of impacted transverse lies each year.

One would therefore advocate that the method of delivery in impacted should/presentations be version and bringing down a leg, except in the very few cases where, even under full surgical anaesthesia, the uterus does not relax to any extent. The chief thing to keep in mind when doing the version is to carry it out very, very slowly and gently, stopping during a uterine contraction. With these precautions,
internal version should be, not only possible, but satisfactory, except on very rare occasions. We had no case of ruptured uterus after internal version in the above series.

**PROLAPSE OF THE CORD.**

No Maternal deaths. Foetal Deaths 5.

- Replacement and Forceps Delivery: 2
- Bipolar Version and Breech Delivery: 1
- Internal Version and Do: 2
- Cord not pulsating on admission: 3

**BREECH PRESENTATION.**

No Maternal Deaths. Foetal Deaths 12.

- Spontaneous Breech: 25
- Some assistance in delivery, usually to the head: 14
- Forceps to the after-coming head: 4
- Perforation of after-coming head (3 were hydrocephalic): 6
- Impacted Breech - leg brought down: 4
- Head removed from uterus (Brought in by dai who had decapitated the foetus): 2
- Caesarean Section: 1

A Doctor was always present at our own Breech deliveries, whether on district or in hospital. This was essential because of the possible delay in delivery of the head. In primiparas we always did an episiotomy. We did not practise the Burns Marshall technique in delivering the head, but this I shall advocate on return.
FORCEPS DELIVERY. 59.


Occipito-posterior. 14
Face. 3
After-coming Head (breech) 4
After-coming Head (breech after version from a transverse) 4
Contracted Pelvis. 16
Prolapsed Cord. 2

Foetal or Maternal distress, usually associated with delay in second stage). 16

Unless there was some organic cause for difficulty and delay in the second stage, forceps was not frequently called for. In statistics of hospitals for this country, one finds a high percentage of forceps deliveries are indicated by foetal or maternal distress, delay in the second stage and a rigid perineum. These indications are not nearly so frequent in our series; this again is probably due to the different life and attitude adopted to labour, fear not being a predominant feature.

CONTRACTED PELVIS. 67.


Spontaneous delivery at term. 18
Forceps delivery at term. 14
Induction of Premature Labour (Spontaneous delivery) 10
Forceps. 2
Caesarean Section. 14
Craniotomy, etc. 9
Management of Labour. How to manage labour in cases of contracted pelvis is still a debatable question. At present the trend is towards Trial Labour rather than Induction of Premature Labour. In our work the fact that it was not an easy matter to persuade a patient to be willing to undergo a Caesarean Section should it be necessary, made us rely more on Induction. Circumstances gave us no option except in the marked degrees when nothing but a Caesarean could be considered.

True in induction, we induced some who, according to the duration and character of the labour, might well have terminated normally at term. Also we did have a premature baby to deal with, although we never induced before the 36th week, and in this country it has not been proven that the foetal mortality of babies after the 36th week is higher than that of babies born at term. Sufficient statistics regarding this matter in India have not yet been collected, although one is inclined to believe that the mortality may be higher. A 36 weeks baby will need a little more care and attention than a 40 weeks one, and it is here that the difference lies between the two countries. Whether this extra care is given in India, one very much doubts.

As in the confidence of the people is being gained, so are they allowing us to do whatever we consider necessary. This has led to my doing fewer inductions of premature labour; in 1936, I did 34, in 1940 only 12. There is no appreciable difference in /
in the number of Caesareans which suggests that a great number of the inductions were unnecessary. On the other hand, where Caesarean is refused, induction is infinitely to be preferred to a Craniotomy, which might be the only alternative at term.

During the four years of ante-natal work, I did only one Craniotomy on a patient who had come to the ante-natal clinics. This was a case who was to have a Trial Labour, but unfortunately she came into hospital a few days before the Expected Date of Confinement with an acute gonococcal infection. The night of her admission the membranes ruptured, but labour pains did not commence until 36 hours later, despite a medical induction. Because of the infection and the early rupture of membranes, we allowed labour to run its course. After six hours of uterine contractions, the foetal heart slowed down to 124, and an hour later could not be heard at all. There was nothing to be done but allow labour to proceed. Eventually a Craniotomy had to be done. This was an exceptional case, first being complicated by the recent acute gonococcal infection and then by early rupture of the membranes. Why the foetus died in utero we were unable to ascertain.

Here as on numerous occasions, the inability to do post-mortem examinations hinders progress tremendously. It has been said that the best single index of professional efficiency of a hospital is the number of post-mortems /
mortems carried out. Taking this as an index, one finds India lags far behind. Autopsies in India are less than 5% of the total deaths, while in one large teaching hospital where there were 2,500 deaths, only two post-mortems took place. The prejudice against allowing a post-mortem is exceedingly strong and is only very slowly being overcome. This question of post-mortem is vitally relevant to maternal and infantile mortality. The maternal mortality ranges around 20 per 1,000, being much higher in some parts. Two hundred thousand women die yearly in India from child-birth. Yet of all these deaths the real cause can only be surmised, except in the exceedingly small number on whom post-mortem examinations are carried out.

**RUPTURED UTERUS.**

5.

In four of these the underlying cause was a badly contracted pelvis, and the other was a transverse lie.

These cases had travelled 20-40 miles in a bus or bullock cart. Unfortunately we had no blood to combat the gross loss which had occurred in transit. The one Mother who survived was delivered vaginally and then the uterus was packed for 12 hours. The others were in such a poor state on admission that they died half to two hours later.

Besides blood transfusion service, another improvement will have to be considered; namely some mode /
mode of transport which is reasonably quick and comfortable. A bullock cart is something to endure when one is in good health, but when at death's door, it merely gives the last push to put you right inside. During 1940, we had no such case from the city of Ludhiana; the city dais had learned better. These patients had come from the surrounding villages which are quite untouched by midwifery as we know it. They still have no one but the untrained indigenous dais on whom to rely.

CRANIOTOMY, ETC. 24.

**Maternal Deaths 1.**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contracted Pelvis</td>
<td>9</td>
</tr>
<tr>
<td>After-coming Head</td>
<td>10</td>
</tr>
<tr>
<td>Brow</td>
<td>2</td>
</tr>
<tr>
<td>Face</td>
<td>1</td>
</tr>
<tr>
<td>Persistent Occipito-post.</td>
<td>2</td>
</tr>
</tbody>
</table>

In these cases there was no alternative. Were all one's troubles over when the craniotomy was performed that would be something, but on not a few occasions it was an exceedingly difficult procedure to get the foetus out of a severely contracted pelvis. There can be no routine method, for this does not come into the realm of obstetrics. It truly did more relate to butchery, as the dais seemed to realise. On some occasions they actually did call in the village butcher. Remembering the relations of the genital organs, one can well picture the damage done by such a /
a person. In two cases, he had cut through the posterior vaginal wall and had punctured several coils of small intestine which had herniated through the opening.

**TWIN PREGNANCY.**

*Foetal Deaths 8.*

There were 16 cases of twins; no triplets. These presented no special feature.

**BIPOLAR AND INTERNAL VERSION.** 43

- Transverse Lie. 12
- Prolapse of the Cord. 3
- Placenta Praevia. 24
- Accidental Haemorrhage. 4

The controversial feature here is the large number of cases of Placenta Praevia which were treated by version; this was discussed under the treatment of this condition.

**CAESAREAN SECTION.** 17.

  - Occipito-Posterior. 1
  - Breech (elderly primipara) 1
  - Large fibroid complicating pregnancy. 1
  - Contracted pelvis. 14

These were all the classical operation. This is to be condemned and rightly so: at least in all cases where there had been interference we should have done the lower segment operation. This will be corrected in the future. Before the advent of the sulphonamides /
mides, our Caesarean mortality rate was very high, 26% - this being due to the fact that most of the cases had been badly interfered with before admission.

It will be noted that no case of Placenta Praevia was treated by Caesarean Section; we trust this will be changed in the future.

ANTE-PARTUM HAEOMORRAGE.

This was a condition greatly to be feared, largely because of the lack of blood transfusion, and also because often the women were not brought in until they were almost breathing their last. Ultimately this could not be said of the city, as of course where our own midwives were in charge, they brought the women in immediately, should any haemorrhage occur; this too was largely true of the city dais, but the village ones still walk on in their old ignorant superstitious way, and so hope for the best until the worst has happened.

Strangely enough we had not one case of concealed accidental haemorrhage. Indeed in the four years, we had only one of any severity. We came to the conclusion - rightly or wrongly - that the women who had concealed haemorrhage died before any help was called. There being no external bleeding, the dai would not consider that the patient's collapsed condition had anything to do with the pregnancy and so would "wait and see" until it was too late. This same reasoning seemed to apply to acute cases of ruptured ectopic pregnancy /
pregnancy; such were exceedingly rare - perhaps one a year, or not that - and yet pelvic infection - a presumed cause of extra-uterine pregnancy, abounded. Cases where there had been leaking into the Pouch of Douglas came in and this made one believe that the more acute cases did occur, but died in their homes undiagnosed.

**EXTERNAL ACCIDENTAL HAEMORRHAGE.** 19.

- Rupture of membranes. 9
- Wildett's Forceps. 2
- Internal Version. 1
- Rest. 2
- No treatment was required in - 5

Nine of these were associated with Pre-Eclampsia.

**PLACENTA PREVIA.** 34.

- Packing of vagina and cervix. 20
- Internal Version and bringing down a leg. 18
- Willett's Forceps. 6
- Rupture of membranes. 3

Permission to do Caesarean Section was not granted in one case; thus the high percentage of cases treated by vaginal packing. This attitude one hopes to remedy; probably previously one was not sufficiently convinced that this method of delivery offered the best chance of survival to the Mother as well as to the /
the child.

Failing a Caesarean Section there was nothing possible in cases where the os was only one finger dilated, but cervical and vaginal packing. The patient was then carefully watched regarding the pulse, height of fundus and vaginal haemorrhage through the packing. When any sign indicating more haemorrhage arose, as it inevitably did with dilatation of the cervix, the packing was removed. Almost always some further form of treatment was then necessary.

We were partial to version and plugging the cervix with the half-breech, largely because of the effectiveness of this method to control haemorrhage; without a blood transfusion at hand, it was most essential that blood loss be cut down to the minimum.

Willett's Forceps cannot be widely advocated where the foetus is dead, as Bacillus Welchii is much more often present in the genital tract in these women than in this country. Therefore the danger of this organism gaining entrance through an abrasion in the head and causing gangrene must be kept in mind. Because of this we did not use these forceps if we knew the child was dead.

The foetal mortality was naturally high; frequently the foetus was dead before the patient was brought into hospital because of gross separation of the placenta.

Both the maternal and foetal mortality should be lowered /
lowered when we deliver more frequently by abdominal section than vaginally. One should like to see vaginal packing as a method of treatment abolished altogether.

**COMPLICATIONS IN THIRD STAGE.**

<table>
<thead>
<tr>
<th>Maternal Deaths 2.</th>
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<tbody>
<tr>
<td>Post-Partum Haemorrhage.</td>
<td>57</td>
</tr>
<tr>
<td>Atonic.</td>
<td>38</td>
</tr>
<tr>
<td>Traumatic.</td>
<td>19</td>
</tr>
<tr>
<td>Manual Removal of Placenta.</td>
<td>39</td>
</tr>
</tbody>
</table>

As we had no blood transfusion service, we had to act more cautiously than otherwise would be necessary. Hence the large number of manual removals of the placenta. We learnt that the women could stand up to the possibility of sepsis much better than they could to the loss of blood. Therefore whenever there was a third stage haemorrhage, steps had to be taken immediately. If the placenta could not be expressed by Crede's Method, as did happen when it had only partially separated, then manual removal was done at once.

There is no question but that haemorrhage is quite the most acute problem in Obstetrics in the Punjab. The women are anaemic to begin with, the average having only about half the normal complement of blood. With this, the normal loss of blood during labour is sufficient to bring them down to a precarious level; therefore anything beyond the normal loss must be stopped immediately. We saw how true was the axiom that it is not the amount of blood the woman loses that matters.
matters; it is more the amount she can afford to lose.

Cases of tears of the cervix, giving severe haemorrhage, seemed to be more frequent than in this country. That can be explained by the fact that the dais make the women bear down early on in labour, thus making a cervical tear much more probable. One did also feel that the anaemic condition of all the tissues of the body, including the cervix, made it more liable to tearing. Be that as it may a cervical tear was a not infrequent happening, leading to profuse haemorrhage.

PUERPERIUM

Maternal Deaths 2.

This was conducted much the same as at home. We should have liked to have kept the women in for at least 12 days; mainly from the point of view of their general health. If, however, we managed to keep them for 10 we did well.

The problem of puerperal infection was tremendously relieved by the advent of the sulphonamides. In my first year in the Punjab, these were not in constant use, and the case of puerperal fever presented a very sorry spectacle. Do what we might, nothing availed to combat the infection; abdominal peritonitis was the usual terminal state.

The fact that puerperal infection exists amongst the women is only what can be expected. The sacred cow's excreta is a favourite "article" which is introduced /
duced into the patient's uterus. Some of these poor women came into hospital with an odour from the vagina which was well-nigh unbearable. It seemed at times as if any filth was used in the vain hope of performing some miracle which would result in the expulsion of the foetus. The dai's hand, which cannot resist the temptation to get inside the vagina and if possible the uterus, at very frequent intervals, is all too often "cleansed" by energetic rubbing in dirt at entrance.

Nowadays where sulphonamides are given early, the danger of maternal mortality due to puerperal sepsis is greatly reduced. In all cases where there had been interference by dais we gave the drug prophylactically for 48 hours. Experience showed us that this was a necessary measure in such cases. Otherwise it was only given if there were evidence of puerperal infection; that is we did not give it routinely in those cases which were conducted throughout by our own midwives; this is not necessary, but that is a totally different matter to giving it when the dai has had "her finger in the pie".

Where the drug was of little avail was in cases brought in on the 8th-10th day of the puerperium, having had a temperature for 4-6 days. By this time the organism had such a firm hold that no amount of sulphonamides proved effective.

In 1936 there were 12 deaths from puerperal fever; in 1940 - 2, and these were brought to us on the 8th and 10th day; both were desperately ill on admission.
Ruptured Uterus 4
Contracted Pelvis - craniotomy 2
Caesarean Section. 2
Placenta Praevia. 3
Post-partum haemorrhage. 2
Hydatidiform Mole. 1
Eclampsia. 3
Puerperal Fever. 2
Cholera. 1
Toxic Hyperemesis Gravidarum. 1
Retroverted Gravid Incarcerated Uterus. 1

Of all of these, the only ante-natal patient was one of the cases of Central Placenta Praevia; profuse bleeding commenced when the os was barely one finger dilated. The dai at once called the midwife who brought her straight into hospital; she was still bleeding badly. The right treatment would have been a blood transfusion and then Caesarean Section. We had no blood, and permission for a Caesar was not granted. With an os outly one finger dilated, there was nothing else for it but to pack the cervix and vagina. Later bipolar version had to be performed and a leg brought down. During third stage, there was some further loss, and the woman died half an hour later.

The cases of ruptured uteri were unbooked. Had we /
we had blood transfusion, even these might have been saved; as conditions were, there was no hope. In the cases of craniotomy, the trouble lay in the fact that the women were exhausted before admission. They thus were not in a fit state to stand the shock of a craniotomy and died two to four hours later.

Of the two deaths in Caesarean Section cases, they were both unbooked; the degree of contraction was such that delivery per vaginam was impossible, even with a craniotomy. The one died 8 hours after the operation, due to heart failure we presumed (post-mortem are very rarely granted); the other developed peritonitis.

The placenta praevia, post-partum haemorrhage and hydatidiform deaths could have been saved had we had blood. One longs to see what difference it will make when blood transfusion is at hand; it should be a very marked one.

The deaths due to Eclampsia were in cases who had come in in coma; they never regained consciousness. Two of them presented signs of cerebral haemorrhage, but of course we could not have this confirmed by post-mortem examination.

The puerperal fever cases, I have already mentioned. The fear of death due to this condition almost entirely left us in those cases of whom we had charge from the beginning of the puerperium. Of course one had to keep in mind the fact that organisms other than the Haemolytic /
Haemolytic Streptococci and B. Coli might be the cause. One would have expected some cases due to Tetanus Bacillus, but I had none in the five years. We had one bad case caused by Anthrax - diagnosed by blood culture. She responded to treatment by huge doses of the serum.

The case of cholera and that of severe anaemia were not seen until in labour.

Underlying most of these deaths was the ever-present anaemia, as even although it was not the actual cause of death, it was an important feature of practically all of them. Then too one can never get away from the inability to rapidly replace blood loss. This stares one in the face, and ever will do so until a remedy is found.

Of deaths occurring in the city, apart from those under our care, one heard little. Occasionally we were hastily called to a woman who was bleeding, but would arrive to find she had breathed her last. With the dais' method of managing the third stage, one is not surprised that severe post-partum haemorrhage was not infrequently the sequelae. Yet these deaths would almost never be seen in the city statistics. It was amusing to see the list of maternal deaths; very few, other than those occurring in the hospital, were ever recorded. How the dais got away with it I never discovered, but get away with it they certainly did. It was /
It was therefore impossible to do anything regarding these.

**STILL-BIRTHS.** 90

There were 90 still-births and 53 neo-natal deaths. As we were never allowed a post-mortem examination, it was not possible to ascertain the cause of death in a great number of these deaths.

The nature of pregnancy in cases of still-birth was:

- Normal. 33
- Abnormal
  - Ante-partum haemorrhage 21
  - Pre-Eclampsia 2
  - Eclampsia 16
  - Kahn's + 18 57

The type of delivery in cases of still-births were:

- Spontaneous Vertex. 38
- Forceps. 7
- Breech. 12
- Caesarean Section. 4
- Craniotomy. 24
- Ruptured Uterus. 5
So that is the Midwifery Unit in the city of Ludhiana - a senior doctor who, as well as possessing the necessary medical qualifications and experience, is also keen and enthusiastic and is determined to allow no obstacle to damp down the scheme she has in mind.

With this must go a fluent speaking knowledge of the language and an adequate understanding of the people's customs and religious rites.

True the day will come when such persons will be found from amongst India's own women doctors; meantime however this is not so. The need far out-totals the demand, due to the fact that so few of India's women doctors have had the necessary post-graduate training, not only of the medical side of the work but also of administration.

In such a scheme as the above midwifery unit, the Senior Doctor will not be alone; rather she must be a leader working with others whom she must enthuse to follow here in her ideal for India's Motherhood. Therefore leaders of midwifery units throughout the land, and certainly in the Punjab, must still come from a country in which they have seen obstetrics conducted in a manner worthy of the high calling of an obstetrician.

With her are her Assistant Doctors; these she must train in order that, having had one - two years under her, they may then be ready to go out to the rural /
rural areas and there conduct the rural schemes as we shall mention later. The Indian woman doctor is tremendously keen on midwifery and does not mind how hard she has to work; she literally revels in her task. The obstetric house surgeon’s post was by far the most coveted by our graduates, and having once been appointed, they were determined to benefit to the full by the opportunities which presented themselves. They know that whatever else is expected of an Indian woman doctor, she must be able to tackle any midwifery emergency. In view of this, it was more than surprising to find that one was expected to pass as fully qualified doctors, women medical students who had but witnessed, or at the most two, normal and no abnormal, and had never conducted a case herself.

This was for the sub-assistant grade, but even so a great number of these women doctors are posted in civil hospitals which are 20-30 miles from another doctor. On discovering this state of affairs, I was staggered and refused to allow these girls to qualify; things have been remedied, but not without much discussion. Ludhiana has always provided ample normal and abnormal cases for its students.

Yet these Doctors do need some post-graduate experience before being sent on their own to an isolated district. Very few of them get this with the result that, on the whole, they do little constructive maternity and Child Welfare work. This is most unsatisfactory.
factory, considering the crying need which surrounds them.

The reason for this is not hard to find. First they have not had the necessary post-graduate experience; indeed they have had none. Secondly they still are very young, 21-23, and having had no practical medical experience or any experience in dealing with others, they don't know how to set about tackling the difficult task of building up a satisfactory midwifery unit.

On speaking with them about the matter, it is evident that they wish they could do something about it, but how to begin they know not, and to whom to turn for help they cannot discover.

Something must be done about it, as at present it is not possible to give them all six months - one year House Obstetrician's post, a post-graduate course must be arranged for them. During these months they could be shown in detail how to build up a unit.

To begin with, they would have to attend the dais classes in order that they might appreciate something of the patience, understanding and perseverance which is required for such a task. Otherwise they will be apt to give up and not persist through to success.

It will be many many years before any other key is found to the opening of a good midwifery unit and that especially so when the rural areas are being considered. Only a minute percentage of something like 5% of the rural dais have had any training.

The /
The dai must always come into the picture in midwifery in India. She has the luck of the dim and distant ages accompanying her. Superstitions and religious beliefs have invested her with strange, weird and wonderful powers; her league with the gods is recognised and nothing can harm or destroy her exalted position. That fact just has to be accepted and work built up around it.

The next important person in the scheme with whom the Doctor must work is the Health Visitor. As already mentioned, all too often the doctor and health visitor are working separately, and yet co-operation between these two is absolutely essential as I see it. What happens is that the Health Visitor and Civil Doctor are appointed to their separate tasks without any concrete scheme of co-operation. The health visitor has her clinic in the health centre, while the doctor struggles away in the civil hospital, merely seeing any woman who comes to her, whether pregnant or in labour.

In this country it may suffice to open a maternity hospital and have an ante-natal clinic attached, and the women will come, but this is far from being true of India. Here the dai, midwife, health visitor, Assistant and Senior Doctors must all work in harmony and with a spirit of expectation and determination before anything pertaining to a good midwifery unit can be achieved. This fact is as yet, all too little realised.
The district midwife ensures the success of the domiciliary midwifery. Hers is no easy task. In hot or cold, and the Punjab is a province of extremes; in sunshine or in rain, and the sun does beat down mercilessly at mid-day in midsummer, and the rain can be torrential in the monsoon months - these midwives must be ever ready and ever cheerful. After all, the dai is not particular whether the midwife comes or not. Having reached the house, she has again very frequently not a little to endure.

However, be the difficulties as they may, a good midwife delights in her task and is too thankful that the dai has called her to be troubled about any personal hardships. She has confidence in herself with the district, and if need be, the senior doctor behind her. She realises that she can save the Mother from the unspeakable sufferings she might have had to endure were the dai in charge.

Midwives such as these one must have for success, as they are entering into homes and there breaking down centuries of superstition and ignorance. Having won the confidence of the Mother, she will have no trouble during the next labour; frequently on this occasion the Mother will herself demand the presence of the midwife and send the dai away for her.

As with the health visitor, so with the midwife; she is very often posted to an outlying district and put into a little dispensary and told to do what midwifery /
wifery she can. Alone she can do little, as again she does not know, nor has she the initiative to build up true midwifery, so through time she gives up the struggle and contents herself with her dispensary and few bottles of medicine for all ills and aches, about which she really knows nothing. At heart she longs to be proper midwifery, but the people in the villages are content with the dai.

This state of affairs is most unsatisfactory; the midwife must be brought into the rural scheme along with the health visitor, doctor and dai. Then something will happen.

The hospital side of the unit should be carefully explained to the young doctors during their post-graduate course. They must be given a clear conception of the minimum of hospital midwifery. The present equipment of the women's side of many of the rural civil hospitals is hopelessly inadequate. This probably is explained by the present unsatisfactory arrangement which allows doctor, health visitor, midwife and dai to work independently and so resulting in little constructive midwifery. When these people are working together as a team, the doctor will have plenty opportunities to make use of her hospital beds and equipment. Any case which she cannot tackle she can transfer to the larger hospital, which should be between 20-30 miles away, and in which the Senior Doctor will be working.

The following features of the work at the Ludhiana Midwifery /
Midwifery Unit are stressed.

1. In the conduct of the Ante-natal Clinic, direct questioning has to be resorted to, otherwise much will be missed.

2. A vaginal examination must be done in every patient (nullipara as well as primipara) round about the 36th week because of the prevalence of osteomalacia.

3. The average external pelvic measurements of the city, taken from a series of 1,000 patients, are given.

4. Anaemia is present in the vast majority of the women. The average Hb. and R.B.C. of 650 pregnant women were Hb. 55%, R.B.C. 3,300,000.

5. Various causes of Anaemia are given.

6. In the very severe cases, i.e. those below 30% Hb., a high percentage of them are of the Macrocytic Hyper-Chromatic variety.

7. Osteomalacia, if detected early, can be arrested by the simple treatment of Calcium and Vitamin D.

8. Induction of Premature Labour is not advocated as a general measure in cases of contracted pelvis.

9. Hyperemesis Gravidarum is not often encountered; this may be explained by the Indian woman's attitude to pregnancy.

10. As a cause of Pre-Eclampsia, a high protein diet is excluded.

11. In the treatment of Eclampsia, the sedative part is much the most important.
12. There is a tremendous need for adequate treatment of venereal diseases.

13. Arrangements for delivery are explained.

14. Domiciliary Midwifery is strongly advocated.

15. Medical Induction is of little value except when pregnancy is at or near term.

16. In primiparas and cases of contracted pelvis, Krause's Method of Induction is preferable to rupture of the membranes.

17. The squatting position in labour is worthy of an extensive trial.

18. A shortened puerperium is not wise.

19. A Post-natal is a necessity. It is suggested that through this, the urgent need of reporting any menstrual irregularity be brought home.

20. In cases of persistent Occipito-Posterior, care should be taken in persisting in rotation of the head. A detailed study of the pelvis would help greatly.

21. In Transverse Lie, observations are made regarding Decapitation.

22. There is a low incidence of prolonged second stage, without some organic cause, as an indication for the application of forceps. This is probably due to the absence of any fear element.

23. In Placenta Praevia, version was frequently done. This is not the best method of treatment, but was done of necessity.
There is a very great need for a blood transfusion service.

The reason for the more frequent Manual Removal of the Placenta is given.

Cervical Tears occur more often; this is explained.

The problem of village transport must be solved.

There is a vast difference in the number of maternal deaths due to Puerperal Fever since the introduction of the Sulphonamide. The drug must be given early.

Of the maternal deaths, there was only one booked case.

Anaemia is a big factor in most cases of maternal mortality and morbidity.

The almost entire lack of post-mortem examination retards research.
CONCLUSION

Therein is something of the sphere of obstetrics in India. Its age-long belief in the indigenous dai has made this subject one of engrossing interest. The power of the dai over the people, literate and illiterate alike, makes the approach to extensive constructive midwifery a unique one. Ignorant and filthy though she be, the dai is nevertheless the key to success; no doctor can afford to ignore this fact.

The massive and ever-increasing population of India gives ample material for any research which may be contemplated. Today we recognise clearly the deficiency diseases of Anaemia and Osteomalacia; there are probably others, not so specifically known at present and still waiting to be discovered.

The very fact of the immenseness of the population makes some say "then why bother though the maternal and foetal mortality be high? survival of the fittest is the best slogan". That slogan might be of value were it true, but the very same factors which kill some, may maim others. These latter grow up to be completely or partially crippled, with no or diminished productive power. Thus, to be heedless of the mortality means being heedless of the morbidity, and does not lead to the survival of the fittest, but to maiming of a high percentage of those who survive.

At the All-India Congress of Obstetrics and Gynaecology held in Calcutta in 1941, Sir P.C. Ray, said - "Healthy mothers and healthy children are the foundation /
foundation upon which the entire edifice of a nation's prosperity is built up. It is therefore in the very fitness of things that proper and adequate measures be devised so that the Mothers may live well and nurture their children to their full allotted span of life". (Half the deaths in the land occur in children under the age of 5.)

"Unfortunately in our country very little attention is paid to the health of women, with the result that most of the Mothers are very sickly, and after giving birth to 2-3 children, become almost invalidated. In our country, the provisions for maternity services are absolutely inadequate, and except in some big cities, very little has been done for expectant Mothers.

India should be able to lead in obstetrics, for in that land there are unique opportunities and unlimited material for research along this line, as well as unequalled opportunities for alleviating suffering amongst women. The outlook is so vast as to make it intensely inspiring and fascinating.

Along with the actual subject of obstetrics, there is the training of medical students, especially women, to become obstetricians, and this too offers a fine field. To-day in India, the vast majority of medicals overcrowd the cities. To help them to catch a vision of service to the great village population and to make them determined to go out and raise the standard /
standard of midwifery in the surrounding country would be immensely worth while.

This is an interesting quotation from the presidential address of Dr. Purandare, at the Congress in Calcutta. It was a purely medical Congress, with perhaps 6 Europeans present, only three of whom were missionaries; in all there were some 300 delegates present. He said, "At present missionaries are doing yeoman service by rendering medical relief at different centres of each province, and the people are deriving immense benefit from it. It is really astonishing when we ourselves do not volunteer to take upon ourselves this bounden duty which we owe to our own fellow-brethren in our own country and allow foreigners to do this humane work for us. Nothing can be more humiliating and nothing does betray so conspicuously the sheer want of fellow-feeling in us. Moreover such work is not without any advantage to ourselves; it cultivates knowledge; creates insensibly confidence in us; perfects our skill; at the same time gives us satisfaction of having discharged our duty towards our own countrymen".

Perhaps one could not close with a finer statement than that made recently by Field-Marshall Viscount Wavell, Viceroy of India (designate). Speaking of his return to India, he makes mention of his mental bag. "The first article" he said, "is a real love for India and sympathy for the Indian People".
later he remarks - "One cause of the ills from which we now suffer is that, in recent years, we have ceased to be wanderers, we have become too set and content, and we have lost the pilgrim spirit. Nothing could be more calculated to destroy the spirit or life of a people".

As an obstetrician, let the Punjab, India, be the goal of your wanderings, and there you will find a sphere which will give utter satisfaction as you supply the need which besets you on every side.