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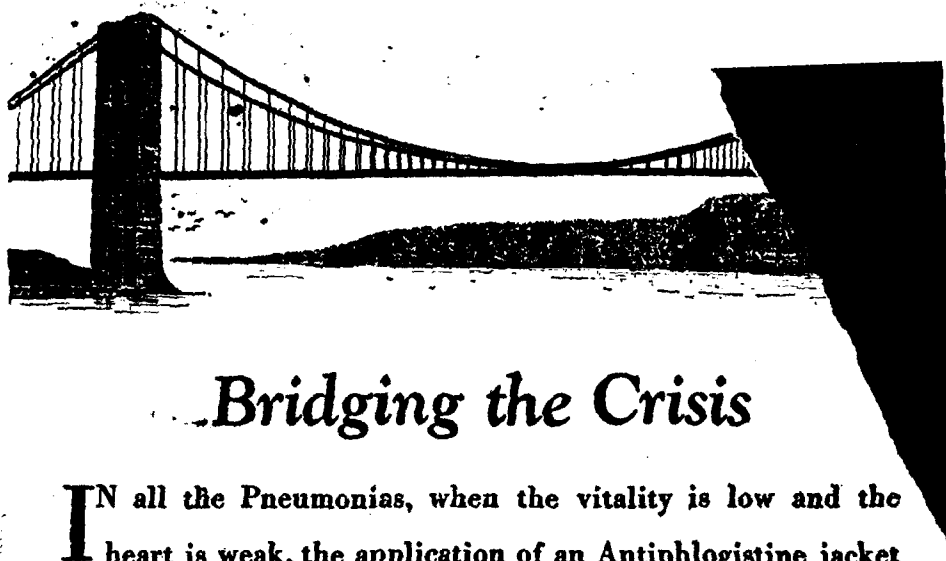
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Bridging the Crisis

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The Narrowing of the Gap Between the Functional And the Organic

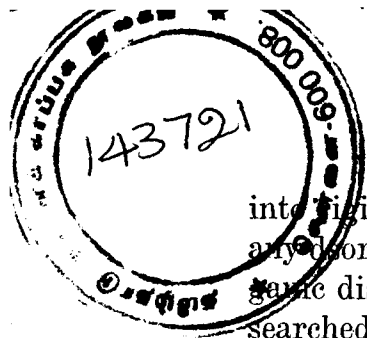
BY

LIEUT. COLONEL OWEN BERKELEY—HILL,
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"Il n'y a pas de maladies; il n'y a que des malades." Trousseau.

THAT the attitude towards disease is now becoming more and more to co-incide with the view of the eminent French physician, Trousseau, is evident to all who are in touch with modern medical teaching throughout the world. At least one cause of this new outlook is, beyond question, the growth in our knowledge of psychopathology that has taken place during the last fifty years. At the beginning of this century the situation in respect to what was termed an "organic" disease as opposed to a "functional" disease, was one of complete misunderstanding. The brain was conceived as divided

* There are no diseases; there are only diseased persons.



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into rigidly limited functional compartments so that any disorder of the mind must of necessity have an organic disorder as its basis. Hence the cortex was searched untiringly to find the explanation of "insanity". Because no pathology was discoverable for some "insanities", these disorders of mind were labelled "functional psychoses". Even in the psychoses with a distinct pathology like general paralysis of the insane, the demonstration of the pathological changes did not explain the psychoses. A delusion could not be found under the microscope, so to speak. The nineteenth century histopathologists had not learned, and many of us have not learned yet, that a phenomenon of life cannot be found in, nor can it be explained by, what is dead. So, while the histopathologists were busy trying to find the explanation of mental disease under the microscope, the clinical psychiatrist was going forward with his study of the psychoses much as if no anatomy of the nervous system existed. In Germany, Kraepelin carried descriptive psychiatry to its highest point and in one significant respect fore-shadowed the future: Namely, he studied the psychoses in longitudinal section rather than in the customary cross section. In other words, he was interested in the life history of the psychoses.

At about the same time, Janet, in France, was developing his work with hysteria. The result of his work was of tremendous importance. He concluded, that the symptoms of his neurotic patients could be explained if their past histories were known. The symptoms of the neuroses were nothing but repetitions of actual experience which had already occur-

red in the past. This was the first great advance towards an interpretation of psychic symptoms in terms of the past psychic experiences, the beginnings of what is now known as psychogenesis. Still more important perhaps than the work of Janet was that of Freud who formulated the concept of a dynamic psychology. How revolutionary this concept has been, not only to psychopathology but to psychology as well time alone can show.

In England, the studies of Hughlings Jackson on aphasia, a disorder which was then and still is one of the most complex neurological problems, since it presents two sets of manifestations, the psychological, consisting in the disorder of language, and the organic, consisting in the local lesion, showed how thoroughly he recognised the inevitable narrowing of the gap between "functional" and "organic".

The work of these observers—Kraepelin, Janet, Freud, and Hughlings Jackson—led gradually to the birth of an entirely new outlook on medical problems of every description. The meaning and significance of this new attitude can best be illustrated and explained by reference to actual clinical material, so I will proceed to cite the history of two cases which have come under my notice during the last few years.

The first case is that of an Anglo-Indian woman, aged 30, unmarried, a hospital nurse by profession, who had sought treatment in Calcutta in December, 1929, for a progressive weakening of the extremities, especially of the right side. The trouble had started about a year previously. The patient consulted me in August, 1930, and brought with her a very full

statement of her case from the physician under whose treatment she had been in Calcutta. From a perusal of the statement it was obvious that the patient had been examined with the greatest care and in a most systematic fashion. She had been kept under observation for several months and had been finally discharged as an incurable case of syringomyelia.

When I saw the patient she complained mostly of foot drop of the right foot and an inability to hold up her head. She could walk with help but could not go upstairs. From the history of her case it appeared that although the greatest attention had been paid to the physical signs, none at all had been paid to the mental aspect of her malady. I proceeded to go very thoroughly into her past history. She was the third child of her parents, both of whom had died when she was quite young. At the age of nine she contracted a severe attack of smallpox which left her face grotesquely disfigured with "pits". This disfigurement gradually evoked a strong feeling of inferiority which was made all the more intolerable by the knowledge that had she escaped it she would have been a distinctly handsome woman. On the death of her parents she was handed over to the care of her maternal uncle and his wife. At about the age of 14, she met with an alarming and painful sexual experience which inflicted on her a severe psychic trauma. At the age of seventeen she took up the training to become a hospital nurse. At about the age of twenty-four she had a love affair with a man who, having treated her with great cruelty, basely deserted her. In 1927 the patient was working in a hospital where she fell in love with an attractive

young British soldier who was a patient there. They became very attached to each other. The soldier eventually left the hospital and returned to England where he took his discharge from the army. Being hard put to it for means of support, he took to writing letters to my patient in which he threatened to expose her relations with him to the hospital authorities unless she sent him money. The poor woman, terrified at this cruel threat, began to send money regularly to England, to do which she had to stint herself of food and clothing. When the man saw how easily he had imposed on her, his demands became more and more importunate with the result my patient suffered great agony of mind in addition to the bodily distress caused by inadequate nourishment. She had neither the sense nor the courage to confide her troubles to the authorities of the hospital where she was employed, who, it may well be presumed, would have told her that she had nothing to fear and must refuse to send any more money to her tormentor in England. In September, 1928, the first symptoms of her illness appeared. Within less than a year she was unable to carry out her work and was discharged from her appointment as permanently unfit. As there was no one to support her and she had little or no money of her own, her case was indeed desperate.

It is hardly necessary to point out that this psychic history took a lot of getting. During its relation the patient was often overcome with emotion;—anger, humiliation, shame and remorse followed one upon another.

I think that the history of this patient as a whole gives one a very definite impression that her "psyche" had been hardly treated from childhood in one way or another. The case appeared to me to present a very perfect picture of the so-called "somatic rejoinder" to a very prolonged emotional strain on a nervous system that had already been damaged by the toxins of small-pox and enteric fever. I would therefore maintain that the spinal syndrome was the direct outcome of a disturbance of vasomotor mechanisms caused by emotion of high intensity lasting for a long period. I would invite those who find difficulty in accepting this conclusion to consider the changes that emotion can induce in the male genital organs, to take only one of many examples. Further, did not Hughlings Jackson insist that the "emotional centre" is represented in all parts of the body? Anyhow, on the assumption that the fundamental cause of my patient's illness was severe emotional strain, I based my treatment almost entirely on attempts to reduce the emotional strain by applying mental catharsis. For a period of three months this treatment was pursued with the most satisfactory results so that the patient made a complete recovery. She can now walk for miles over any sort of ground and dance for hours. She is also free from the defects of sensation to heat and cold which were so prominent a feature of her malady in 1929. Better still perhaps, she has regained much of the happiness to which she had been a stranger for so long. She has obtained employment again and is now discharging her duties as well as ever.

I will now relate one more clinical history which does, in my opinion, emphasise in the same manner as the first case, the fact that each discernible part of a man is inextricably interwoven with every other part so that failure of function in one or more parts must inevitably involve repercussions throughout the whole organism.

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This case is that of an Anglo-Indian girl, aged 22, unmarried, who had been under the care of the same doctor in Calcutta who had treated the first case. The history she gave him was one of repeated attacks of a tingling sensation and numbness, chiefly over the right side of the body, for the last eighteen months. She complained also of attacks of vomiting, and headaches for the last four months. She said she had been "weak" for the last four years. Eighteen months prior to her seeking advice in Calcutta, she had been working as a music mistress in a girl's school in Shillong. One day, while occupied with her work she felt a burning and tingling sensation over the right side of the body. From that time onward she used to get occasional similar attacks. Six months later she vomited for the first time and that "worried" her a lot. The tendency to vomit continued but had been less persistent and only appeared when she was "worried". After the first fit of vomiting, the patient experienced a feeling of "heaviness" in her cheeks and jaws. At the age of 15, when she first menstruated, she had had "fits" but with no loss of consciousness. These "fits" were not preceded by any subjective sensation or warning. Altogether she had had six fits, the last in 1924.

From the physical examination made on her in Calcutta, the conclusion reached was that she might be suffering from any of the four following maladies: (1) disseminated sclerosis: (2) progressive muscular atrophy: (3) amyotrophic lateral sclerosis: (4) a cervical rib.

The patient was under treatment for two months without any sign of improvement. In August, 1930, the patient was brought to me by her uncle. She had to be carried into my consulting room as she could not walk. She told me much the same story as she had told her doctor in Calcutta. After a talk with the patient, I had a talk alone with the uncle. Among other things, he told me that the girl's mother had committed suicide two years previously by hanging herself. It seemed that the mother had been driven to take her life through the cruelty of her husband who was a heavy drinker and cursed with an ungovernable temper. The patient had never been told how her mother had died for fear that the news would shock her, so she had been led to believe that her mother had died of heart failure.

An exhaustive study of the patient's history revealed a terrible story of constant fear of her father's violence and cruel behaviour towards her mother. For years of childhood the patient had been witness to acts of almost incredible brutality on the part of her father towards his wife. As a child she could often not get to sleep through dread of her father. There were three children in the family, of whom the patient was the eldest. In spite of this unhappy childhood the patient had begun to earn her living at an early age and had borne all her misfortunes very

bravely. Later on she was told the true story of her mother's death and received the news with the greatest composure. A study of the patient's dreams revealed a strong fixation on her father as well as a desire to have a child by him. Among other important details of her life history, it transpired that before she fell ill she had conceived a strong attachment for an elderly married man who had paid her a good deal of attention. This man had been seen about with her on many occasions and this had given rise to some ill-natured gossip, so that when she fell ill and had to resign her appointment rumours were afloat that she was in child by her elderly admirer. This upset her very much, so that she suffered acutely, for she had no sexual relations with the man nor, indeed, with any other man.

After a careful review of the clinical features of the case as well as an evaluation of the psychical state of affairs, I reached the conclusion that here again was an example of vasomotor disturbance due to an emotional strain of a severe order lasting over a number of years. I judged that I had to deal with a young girl who had become sick of life, hence the feelings of sickness and the tendency to vomit; who had undergone a fierce struggle against the impulse to "fall" morally, hence the "giddiness" and paralysis for, if she could not walk she could not fall. I treated the patient with massage, exercises and mental catharsis. She began to improve at once so that in less than six weeks she was able not only to walk but to dance without fatigue or distress. At the present time she is perfectly well and about to undergo training as a hospital nurse.

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According to my way of looking at these two cases, I would regard the failure of the doctor who treated both of them in Calcutta to be due, not to ignorance so much as to defective training, for I maintain that the frank defect in medical education hitherto has been to think of a man as something made up of bits of things like what the anatomists show us in the dissecting room or what histologists show us under the microscope. Until this fact is realised in its fullest implications medical science will continue to fail to deal successfully with a problem which is its special concern.

The so-called specialists in diseases of the eye, nose, teeth, heart, alimentary canal and genital organs, would be astounded if they were to give more attention to the "mental" aspect of the diseases they have made their special study, but, alas, they have never been taught to do this. For example, many oculists would be interested and surprised by knowing something about the mental aspects of defects in visual accommodation, photophobia and strabismus, and that the habit of wearing deeply tinted glasses is frequently associated with a fear of darkness in childhood. Most rhinologists overlook, through ignorance, the association of the nose with the penis although this association is so evident in the speech of the common people the world over. This association is often at the bottom of a chronic anxiety about a mild rhinitis when the real source of the anxiety is concerned with the possibility of a venereal infection or a diminution in sexual potency. Through feelings of shame the original and true source of the anxiety has become repressed from

consciousness but as repression is no cure for anxiety, it finds an outlet through transference on to another organ which is a symbol of the penis, namely, the nose. The heart, that organ *par excellence* of mental repercussions, has almost a psychology of its own due to its age-long association with the feelings of love and passion. Indeed, a very superficial acquaintance with the anxiety states is sufficient to show how intricate is the mental aspect of cardiac disease. Similarly, the genital sphere, especially in women, is common seat of a variety of serious and sometimes chronic mental disturbances. To psychiatrists, the ignorance of the ordinary medical practitioner and even of many gynaecologists of the mental repercussions of disorders of the female pelvis and genital organs, is positively staggering. Many gynaecologists perform double ovariectomy, hysterectomy and salpingectomy without, it would appear, realising that a final and irrevocable prohibition to the consummation of the biological destiny of a woman is an affair not to be lightly undertaken. Then in respect to such conditions as vaginismus and dyspareunia, the most amazing remedies are applied without a thought that the condition may be entirely psychic in origin as, indeed, it nearly always is.

We have now seen that the affairs of medical practice involve a recognition of physical signs emanating from mental disturbance, on the one hand, and of unhealthy mental states which have their origin in physical disorder, on the other. Without such recognition medical therapy cannot advance in any marked degree. As the author of that charming

little book, *Pygmalion, or the Doctor of the Future*, says, 'Medicine in these latter days has neglected life too much. It has sought the living among the dead, or contented itself with the forms of things. The demand that human beings should be seen as something different from the animals, has often fallen on deaf ears. The doctor, in consequence, has become frequently something rather less than a man of culture.....The physician of the future will not, as is now usually assumed, be a scientist of the orthodox type, a man with the technique of laboratories at his finger ends, and with the aim in mind of elucidating the phenomena of life in terms of chemistry and physics. Rather, he will be a humanist, a man with the widest possible knowledge of human nature, and the deepest possible understanding of human motives. He will be a cultured man, ripe in intellectual attainments, but not lacking in emotional sympathy, a lover of the arts as well as a student of the sciences'.

(To be continued.)

Some Recent Advances in Bacteriology with Special Reference to Virus Diseases

BY

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BACTERIOLOGY is not making as rapid strides as it did quarter of a century ago but the study of the filtrable viruses in recent years forms a very fascinating chapter in the history of this science.

Filtrable Viruses. These belong to the group of organisms which can not be seen even under the best powers of the microscopes so far invented, although some of them are just within the range of visibility. We can only observe the effects of their presence by the production of disease in man and other susceptible animals. They are almost all highly infectious, the disease spreads from individual to individual with amazing rapidity inspite of very careful preventive measures. A high degree of immunity, some-

times lasting for years, is developed by the individual surviving the infection. Most of the organisms pass through the ordinary bacterial filters. The following is a short list of diseases attributed to them: Common cold, Acute poliomyelitis, Herpes, Epidemic encephalitis, Rabies, Variola, Varicella, Molluscum contagiosum, Warts, Mumps, Typhus group of fevers, etc.

Common Cold. How many of us know the real cause of common cold or for the matter of that the common head-ache which baffle us in an attempt at explanation? We have often to fall back upon such diverse causes as local sepsis; endocrine disturbances, anaphylactic phenomena etc. as giving rise to these ailments. The modern view of the causation of cold dates from the experiments of Kruse, who in 1914 instilled into the nostrils of 12 volunteers a Berkefeld filtrate of the diluted nasal mucus of a subject suffering from coryza. Four of these developed colds. Kruse's results have been confirmed by several other observers subsequently. In 1924 Robertson and Groves repeated the experiment by using about 1 c.c. of Berkefeld filtrate of the diluted nasal washings from cases of acute coryza. Out of 100 volunteers thus treated, one developed coryza, one influenza, two laryngitis, and the rest did not develop any symptoms whatsoever. Thus the balance of experimental evidence is rather against a filter passing organism being the cause of this condition. Moreover the duration of immunity produced by a cold is too short to justify the victimisation of a single organism.

Acute Poliomyelitis. The organism of this disease passes through Berkefeld filters. It is destroyed by heat but resists the action of weak antiseptics. The disease is easily transmitted to monkeys, inoculated animals develop a typical clinical picture and the histological lesions resemble closely those met with in man. A strong immunity to virulent strains is acquired by the animal after recovery. Route of infection appears to be through the upper respiratory passages to the olfactory lobes of the brain, and nasopharynx appears to harbour the organism in carriers. Attempts at cultivation of the organism have met with varying results.

Herpes. The clear fluid from herpes vesicles is highly pathogenic to the rabbit's cornea. The animal after a corneal instillation of the fluid develops a severe keratitis and sometimes dies of encephalitis, the virus of herpes being present in an uncontaminated state in the brain. The organism of herpes zoster appears to be distinct from that of herpes febrilis and genitalis, but presents a close similarity to that of varicella.

Epidemic Encephalitis. Although the disease has in some cases been transmitted to lower animals the nature of the causative organism is exceedingly doubtful and a matter of conjecture. It is interesting to note in this connection that Levaditi maintains that the viruses of herpes and epidemic encephalitis are one and the same. The results of Flexner and Amos have been to the contrary. The balance of opinion is on the side of maintaining the viruses of the two diseases as separate.

Rabies. No important work has been done since the discovery of cell-inclusion bodies by Negri in 1903, but the question of paralytic accidents in the course of antirabic treatment has excited very great interest. Some believe them to be rabid phenomena on a mild scale and others believe them to be non-specific and of an anaphylactic nature.

Variola. The important advance in this disease is probably Gordon's test for diagnosing the milder forms of the disease from varicella. In this test Gordon collects the dried scales from cases of small-pox, grinds them up nicely and makes a suspension of them in saline. He uses this suspension and performs an agglutination test on much the same lines as a widal reaction.

Measles. Little success has been achieved in the elucidation of the causative organism of measles, but the use of convalescent serum as a prophylactic agent is a great step forward in preventive medicine. Blood serum of convalescent children is preserved in small ampoules and sold for a nominal price by the Public Health Authorities in England to those who wish to protect children exposed to infection. The serum can also be used to attenuate an attack of measles or its complications.

Warts. Folk medicine has long believed in the contagiousness of warts and one often hears of warts and moles 'laying eggs'. Although we are inclined to ridicule such an idea Ciuffo in 1907 using a Berkefeld filter showed the filtrability of the causative

organism of warts. Wile and Kingery reproducing warts by inoculation have obtained two generations of them.

Mumps. Wollstein has shown that the causal agent of mumps is filtrable and transmissible to lower animals producing in them the typical clinical picture of the disease. Kermorgant seems to have cultivated the organism.

Influenza. Pfeiffer discovered the Influenza bacillus in 1892. For about 25 years since that time this organism was resting on its reputation as a causative organism of influenza, but its position has recently been rudely shaken by the work of Olitsky and Gates. These two investigators succeeded in growing a minute organism measuring 0.15-0.3u from several cases of influenza. It has been named by them as B. Pneumosintes. Since the disappearance of the pandemic of 1918 there have not been many opportunities for a confirmation of this question.

Typhus group of fevers. In 1910 Ricketts and Wilder discovered in the intestinal canal of lice fed on typhus fever patients minute bodies resembling bacteria. These have been called Rickettsia bodies after their discoverer and have been found to be responsible for the causation of typhus fever. They have also been found in the guts of ticks associated with rocky mountains spotted fever and of body lice from trench fever patients. The relation of this organism to X19 of the B. Proteus group which is used with such great success in the diagnosis of these

diseases is still shrouded in mystery. Weil and Felix suggest that the typhus virus probably represents only the parasitic stage of the X strains.

Infective Theory of Malignant Disease. Rous in 1911 made the discovery that the fowl tumour—a spindle-celled sarcoma—now commonly called Rous sarcoma was transmissible to other fowls by means of cell free filtrates. Rous's experiments have given a fresh impetus to the study of neoplasms and the work of Gye and Bernard has added much to our knowledge of the infectivity of malignant disease.

Bacteriophage. D'Herelle, Twort, Bordet and a host of other workers have made very valuable contributions to our knowledge of bacteriophagy. Some consider bacteriophage to be a living entity and an obligatory parasite of bacteria. We have so far been concerned with devising most suitable methods of killing micro-organisms, now we turn our attention and see how best we could grow this germ of germs.

In addition to this quite a large amount of work has recently been done on spirochaetal infections. Space does not permit detailing of the important work done on seven-day fever, Weil's disease by Japanese workers and on yellow fever by Nogouchi, Hindle and others. It is not possible to see the far reaching and practical importance of all these researches but we can only gape in wonder at the progress of science and ask 'whither goest thou'.

REFERENCES:—

System of Bacteriology—Medical Research Council.

Recent Advances in Bacteriology—J. H. Dible.

Recent Advances in Pathology—Hadfield and Garrod.

Bacteriophage and its behaviour—D. Herelle.

Practical Bacteriology—Mackie and McCartney.

Gynecological Surgery in Nervous Patients

BY

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THIS subject brings us at once into the midst of one of the hardest problems connected with diseases of women. The interrelation of the genital system and the nervous system is most complicated and the mingling of symptoms from the two produces a blurring of the clinical picture that often prevents clear delineation in diagnosis and treatment. In discussing this very practical subject, I will endeavour to avoid speculative and theoretical considerations, and will as far as possible, confine my remarks to demonstrated facts. There are two important points that must be kept in mind in any consideration of this class of patients.

1. Some of the time honoured and generally accepted notions concerning pelvic reflex disturbances have been shown by careful investigation to have no basis in fact.

2. There is still a large unknown zone in this field. This unexplored zone is most interesting and into it, investigators are pushing from all sides. The gynecologic, neurologic, pathologic and physiologic, particularly the widespread investigation into physiological chemistry (hormones, secretions and internal secretions in general) gives promise of a chemical basis and explanation for many of the phenomena heretofore classed under that hazy term "reflex nervous disturbance".

In handling gynecological patients with nervous symptoms or nervous patients with gynecological symptoms it is found convenient for the purposes of prognosis and treatment to group them into the following classes:—

1. *Malnutrition group.* In the cases of this group the nervous phenomena are due to malnutrition and there is no definite disease of the nervous system. The symptom complex corresponds in a general way with that described in neurologic works under the term neurasthenia. In severity, the nervous disturbance may vary from slightly annoying irritability to a complete and prolonged break down.

This class comprises several groups as follows:—

A. The malnutrition is due wholly to the pelvic lesion. A marked nerve exhaustion, with its varied and distressing symptoms may result directly from or be a part of the general malnutrition due to any of the exhausting pelvic diseases e.g. (1) chronic pelvic inflammation or suppuration.

(2) Persistent blood loss from uterine myoma or carcinoma or excessive menstruation.

(3) Tumor or inflammatory mass pressing on a ureter or an adjacent bowel and interfering with its function or giving rise to such severe or persistent pain that the patient's sleep, appetite and digestion are seriously disturbed. In the patients of this class the nervous symptoms are due wholly to the malnutrition, and the malnutrition is due to the pelvic lesion. This is a large class and as a rule easily recognised. The treatment is clearly indicated i.e. remove the pelvic lesion. If the malnutrition is far advanced it may be necessary to build the patient up before operating, but the main point is to remove the pelvic lesion as soon as it may be done safely. The prognosis in these cases, provided the patient receives the proper tonic regime after immediate convalescence from the operation, is good.

B. The malnutrition is due partly to some other lesion or lesions. There may be a lesion of the kidneys, or liver or gastro-intestinal tract, or heart or lungs. This group is also a common one and includes many patients. It is very easy on finding a well marked pelvic lesion, to jump to the conclusion that that is the cause of all the patient's troubles. This may lead to a mistake in the treatment, the patient perhaps being subjected to operation when she is in no condition for it. This mistake in diagnosis may lead also to an erroneous prognosis—the disturbance from the overlooked extra pelvic disease persisting in spite of the removal of the pelvic lesion.

C. The malnutrition is due not at all to the pelvic lesion, but wholly to some other lesion or lesions. Troublesome nervous disturbance may be due

to malnutrition from any cause, and the simple fact that there is a pelvic lesion does not establish that as the cause of the symptoms. Here again, is apparent the necessity of a careful general scrutinising of gynecological patients if accuracy in treatment and prognosis is to be secured; the measure of responsibility of the pelvic lesion for the chronic invalidism must be established by careful critical investigation.

D. The malnutrition is not due to any definite lesion, pelvic or otherwise, but to persistently recurring suffering at the menstrual periods. This regularly recurring suffering produces the malnutrition through its interference with sleep, digestion and exercise. Also the constant dread of the next period has a depressing mental effect. The certainty of having to pass through a period of severe suffering lasting from several days to two weeks and repeated every month indefinitely would have a marked influence on a healthy person, and much more on a frail woman. In the short period when there is no pain, the patient's recuperation is retarded by the worry and the dread of the suffering she knows will come again in a short time. This process may keep on until the patient is wholly disabled and presents the symptoms of complete nervous prostration. This is of course a picture of the extreme cases, not of ordinary dysmenorrhoea in which the patient suffers for one or two days and is all right the remainder of the month. Such dysmenorrhoea produces no marked malnutrition in a normal individual. It simply means rest and medical treatment for a short time each month. But the severe cases are different, and the debilitat-

ing process may go on until the individual becomes a physical and nervous wreck—a burden to herself and a source of pity to her friends. If any distinct lesion is present the debility is likely to be attributed to that, ignoring the fact that it can be due to persistently recurring pain independent of any lesion. Long ago, when double oophorectomy was in vogue for all sorts of nervous affections, the occasional brilliant result secured came probably in just this class of cases; the result was due not to the cure of some systemic disease of the nervous system through the occult influence of the removal of the ovaries but through the cessation of recurring menstrual torture, which gave the patient a chance to regain normal nutrition and health.

Oophorectomy for genuine nervous disease was soon given up, because it did not cure such diseases, but it is recognised that in just the class of cases under consideration double oophorectomy is occasionally justified even in a young woman.

II. *The neurological disease group.*

In the patients of this group there is some definite disease of the nervous system e.g. hysteria, chorea, epilepsy, melancholia, general and local neuritis, cord lesion. In this class also there are subgroups.

(a) Pelvic lesion is serious and depresses the general health by blood loss or toxic poisoning, thus aggravating the nervous trouble.

(b) Pelvic lesion causing persistent pain, dragging or distress.

(c) Pelvic disease not causing local trouble but knowledge of its presence keeps the patient in a state of constant apprehension.

(d) Pelvic lesion having no deleterious influence and the patient is not aware of it. In these cases the patient's serious trouble is partially or wholly in the nervous system. In such cases do not inform the patient of the pelvic lesion, though the condition may be explained to a responsible person.

(e) No pelvic lesion but severe dysmenorrhoea. In such cases of complicated nervous disease benefit may follow cessation of menstruation by double oophorectomy or deep X Ray therapy.

The possible explanation of the pelvic "reflex disturbance" will be found in the action and interaction of hormones and other "internal secretion" products of the various organs. The future will enlighten us.

A Case of Full Term Extra Uterine Pregnancy

BY

MAJOR M. R. W. HART,
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M. B.—aged 25 years, residing at Aurangabad was admitted on 25—7—32 complaining of pain in the lower abdomen for one year, married 9 years, one child 7 years old, no abortions; periods regular and normal for the past three months but irregular and painful for about a year previous but never profuse. On P. V. examination, cervix split, uterus normal in feel and size, pushed over to the left by a fibro-cystic mass growing from the right broad ligament and extending to about two fingers above the umbilicus. No milk in the breasts.

Diagnosis.—Fibro cystic growth in the right broad ligament.

Operation: On 10—8—32 under chloroform abdomen opened; the mass was cystic in appearance but felt fibrous and nodular; was deeply embedded and glued to right half of pelvic cavity; great difficulty in delivering it and after doing so, it was detected that the right ureter had been severed. The proximal end of the ureter was led to an oblique opening made into the bladder and the ureter enclosed into

it, the distal end of the ureter could not be traced. Abdomen closed with through and through fishing gut stitches and a rubber sheet drain left in; a self retaining catheter left in the bladder. The tumor was then opened and found to contain a full term male child weighing $6\frac{1}{2}$ lbs. liberally covered with vernix caseosa. The placenta was of normal size but hard and avascular. The cyst wall itself was dense, fibrous and about $1\frac{1}{8}$ inch thick; both ovaries intact. The patient made an uninterrupted recovery. It is almost likely that the primary pregnancy was tubal and that rupture took place between the layers of the right broad ligament and that the secondary pregnancy developed here, the layers of the broad ligament acting as a control to excessive haemorrhage at the time of the rupture and thus preserving the life of the embryo. It is interesting to note the thickness of the fibrous envelope which contained the foetus and the very compact way in which the foetus was packed in this sac. The foetus probably perished about 2 months previous to the operation as the placenta felt shrunk and hard and there was no bleeding whatever on removing it from its site.

Another interesting point is that the distal portion of the ureter was not ligated because it could not be traced. This fact caused me great anxiety for about a week as I expected some of the urine as it accumulated in the bladder to regurgitate into the abdomen. Fortunately this did not happen. The ureteric opening must have been closed by the exudate from the raw mass left after removing the cyst.

Transplantation of the Ureter into the Rectum in a case of Vesico-vaginal Fistula—The Rectum used as a Con- trollable Urinary Receptacle

BY

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Gynecologist, Osmania Hospital.

A. B.—aged 18, residing at Warangal was admitted on 30—8—32 complaining of much dribbling of urine since the birth of her child 5 months previous.

On vaginal examination almost the whole of the upper half of the anterior vaginal wall had sloughed away and the bladder was protruding into the vagina. A vaginal operation was not possible. The woman was desperate and consented to an abdominal operation which was not performed until a month later. In the meantime the patient's general condition was attended to and in addition she was given urotropine grs. X with acid sod. phosph. $\frac{1}{2}$ dram in water t. d. s. and a large Condy's bowel wash daily. When conditions looked favourable, the abdomen was opened in the mid line. The ureters were dissected out from as

low down as possible, ligated and divided proximal to the ligatures. Two grooves were cut into the rectum, up to the mucous membrane for about $1\frac{1}{2}$ inches and at the end of each groove an opening was made into the lumen of the bowel. The ends of the ureters were split for a distance of $\frac{1}{8}$ of an inch, then laid on the grooves and finally opened into the rectum; the muscle tissue and peritoneum were then brought over the ureters lying in the rectal grooves and sutured with fine silk. The patient ran a temperature between 99° and 102° for the first 10 days; an intramuscular injection of 20 c.c. anti-streptococcal serum and 5 grs. Quinine Bihydrochlor on the 8th and 9th days brought the temperature down to normal on 11th morning. Beyond this the recovery was quite good and she was discharged on the 35th day quite well and happy. The rectum had completely taken over the function of the bladder.

There is a very large amount of detail in connection with this extensive and unusual operation, and all that can be presented here is a general idea of the principle involved and the methods of its application. The fundamental proposition forming the background of any successful technique for transplantation of the ureters into the bowel is that valve action must be produced; the mucous membrane is the only available structure meeting this requirement and is the one which has been universally used by nature for such a purpose; therefore the ureter must be made to run immediately under the mucosa for a distance before it opens into the lumen of the bowel.

History of Medicine as Illustrated in our Knowledge of Malaria *

BY

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AS almost every school-boy knows, malaria is an infectious disease due to an animal parasite which lives in the red cells of man's blood. The disease is spread by certain species of mosquito; and against it quinine is a very good remedy. Now this short statement, dogmatically made but in the main true, embodies, it will hardly be realised, the results of several decades of conscious search by a large number of workers as to its nature, causation and treatment, and if we consider the steps which were necessary to lead upto this knowledge it has taken centuries to be arrived at, as I propose to show.

It is obviously impossible to give an account of even all the important steps in the different branches of medicine and other sciences, on the basis of which this knowledge became possible. Instead, therefore, of attempting to traverse the whole length of the path

*From a paper read before the Hyderabad Medical Association on 9-1-33.

from the earliest times, I shall try to place before you a series of snapshot pictures as it were, at different stages, which I hope will give you an idea of how man has acquired the little knowledge that he has today in a halting, blundering fashion in the course of centuries.

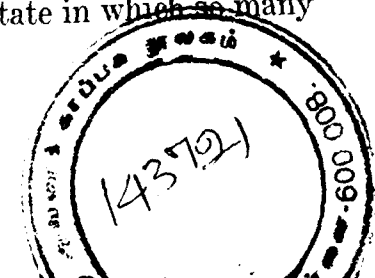
As you will have seen, the definition of the disease just given assumes a knowledge of its infectious nature, i.e. that it can be conveyed from one individual to another; that its cause is a living organism; that this organism is a parasite, that is, it lives at the expense of other living beings and in this instance, that it lives inside the red cells of the blood which themselves are invisible to the naked eye; which implies that the nature of blood is known to be something more than a homogenous fluid of a red colour, and lastly, that this parasite utilizes another independent living being, the mosquito, for transferring itself from one man to another.

Before one could reasonably expect a belief in all that this definition conveys, the knowledge pre-requisite for the acceptance of such a statement must be attained. Man cannot be expected to believe what is absolutely beyond and unrelated to the phenomena with which he is acquainted. Did man have this knowledge at all times, then? Emphatically no!

It is therefore necessary for us to get some idea of the state of medicine in general at various times, if we are to see in its proper perspective the progress of our knowledge of malaria.

I would ask you now to go back in imagination some thousands of years, in a state in which so many

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of the things which we take for granted did not exist. Put yourself in those circumstances and try sympathetically to answer whether you would yourself formulate any better explanations of the facts of disease which faced you every day, than were offered and accepted at various times in the past.

You will see the importance of malaria from the maps of the world showing how great an area of the earth is in the grip of this disease; so far as we in the tropics are concerned it is ever with us and in us. In fact our whole life is a continuous struggle against it. I read out to you now a hymn from the Atharva Veda, (Book I, Hymn 25) the age of which is variously stated but may be taken as certainly not less than 1500 years B.C. The hymn is 'A prayer to Fever as a Charm against His Attacks'.

When Agni blazed when he had pierced the Waters,
Whereat the Law-observers paid homage,

There, men assever, was thy loftiest birth-place;
O Fever, Yielding to our prayer avoid us.

2. If thou be fiery glow, or inflammation, or if thy
Birthplace call for chips of fuel,

Rack is thy name, God of sickly yellow!

O Fever, yielding to our prayer avoid us.

3. Be thou distress, or agonizing torment, be thou
the son King Varuna hath begotten

Rack is thy name, God of the sickly yellow!

O Fever, yielding to our prayers avoid us.

4. I offer homage to the chilly fever, to his fierce
burning glow I offer homage.

Be adoration paid to Fever coming each other day,
the third, or two days running.

Here we have a record of malarial fevers and a recognition of their occurrence with the rains together with a reference to their most obvious symptoms. As to its nature, disease in early ages was looked upon by man as a visitation from God or some supernatural powers or beings for sins of commission or omission and the treatment was therefore mainly directed towards pacifying the wrath of these powers or securing their benediction. Other and more material methods were not altogether neglected, as we shall see further on; but they were mere auxiliaries. It is a strange fact that man should look for the sources of his troubles and his deliverance therefrom to the stars and planets millions of miles away rather than to things material nearer home. This hymn of the Atharva Veda and others in a similar strain are illustrative of this tendency shown by man all over the world in early ages and in some parts even now.

If we now look to the Charaka Samhita, a medical work of the Ayurvedic system, (about 500 B.C.) we find here a considerable knowledge of diseases. The fevers are systematically described and classified clinically into eight varieties. There is a clear description of tertian, quartan, and also of double quartan fevers. But the knowledge of anatomy was very defective, and physiology and pathology in the modern sense did not exist. The ideas of the functions of the body and their derangements were dominated

by the philosophical speculations about the nature of the "elements" of which all matter was composed and disease was attributed to the perverted functions of the three humors, *Vata* (wind), *Pitta* (bile) and *Kapha* (phlegm), or of their combinations.

The Sushruta Samhita (about 500 A.D.) also includes a description of the different kinds of fevers. There is a recognition of the occurrence of malarial fevers in the low regions at the foot of mountains; *but the association of enlargement of the spleen with malaria is not recognised.* Humoral physiology as in the time of Charaka continues to explain physiological and pathological facts. Surgery was in a much more advanced state as compared with the rest of the world, but all progress stopped at this stage, and the Ayurvedic teaching of today is what it was at the time of Sushruta.

THE CLASSIC PERIOD (460-136 B.C.)

European medicine begins properly in the age of Pericles and its scientific advancement centres in the figure of Hippocrates (460-370 B.C.) who gave to Greek medicine its scientific spirit and its ethical ideals. He lived at a time when the Athenian democracy had attained its highest point of development. He dissociated medicine from theurgy and philosophy, crystallized the loose knowledge of the Coan and Cnidian schools into systematic science and gave physicians the highest moral inspiration they have. Before the age of Pericles the Greek physician was either an associate of the priests in time of peace or a surgeon in time of war. In anatomy his knowledge

was mainly the sculptor's knowledge of the visible or palpable parts, and for this reason his clinical knowledge of internal diseases was confined to externalities also. All this was changed with the advent of Hippocrates. All that a man of genius could accomplish in internal medicine with no other instrument of precision than his own open mind and keen senses, he did. He described the "bilious, malarial, haemoglobinuric" fevers of Thessaly and Thrace very much as the modern Greek writers have found them; in fact, this part of the *Canon* was the basic text on malarial fevers upto 1840. Through Hippocrates it was the chief glory of Greek medicine to have introduced that spontaneous first-hand study of nature, with a definitely honest intention, which is the motor power of modern science. The dignity of the Greek physician was based more upon his supposed ability to predict clinical and epidemiological happenings than upon his power to control them. To this end Hippocrates instituted, for the first time a careful, systematic, thorough-going examination of the patient's condition, including the facial appearance, pulse, temperature, respiration, excreta, sputum, localised pains and movements of the body. He even notes the ominous symptom of picking at the coverlid in fevers. He introduced the doctrine of the four humors—humoral pathology, coction of food in the stomach, healing by first intention: and divided diseases into acute and chronic, endemic and epidemic. The treatise on nutrition (Circa 400 B.C.) contains the first mention of the pulse in Greek medicine and of the peculiar theory of the circulation (arteries from the heart, veins from the liver) which

persisted upto the time of Harvey. In therapeutics Hippocrates believed simply in assisting nature, and although he knew the use of many drugs, his scheme of treatment was usually confined to such plain expedients as fresh air, good diet, purgation, blood-letting, tisans of barley gruel, barley water, hydromel, oxymel, massage, and hydrotherapy.

The ancient period closes with the name of the greatest Greek physician after Hippocrates, Galen, (131-201 A.D.), the founder of experimental physiology. He elaborated a system of pathology, which combined the humoral ideas of Hippocrates with the Pythagorean theory of the four elements and his own conception of a spirit or "pneuma" penetrating all the parts. As an anatomist Galen left many excellent descriptions especially of the motor and locomotor systems, but his work was faulty and inaccurate as being based largely on dissection of apes and swine. His splanchnology was defective and erroneous; his neurology is the best feature of his anatomical work. He was the first and foremost contributor to experimental physiology before Harvey, and the first experimental neurologist.

He was the first to describe the cranial nerves and the sympathetic system, made the first experimental sections of the spinal cord, producing hemiplegia; produced aphonia by cutting the recurrent laryngeal nerve, and gave the first explanation of the mechanism of respiration. He showed that the arteries contain blood and demonstrated the motor power of the heart by showing that the blood pulsates between the heart and a ligated artery, but not

beyond it. He inferred that the capillaries are provided with adjacent mouths. He also showed that an excised heart will beat outside the body, a common incident at the sacrificial rites, and good evidence that its beat does not depend upon the nervous system. In like manner he inferred from experiments with excised muscle that its contractions may be independent of volition or nerve supply at need, likened contraction to clinical tonus, introduced the concept tonus as "active posture" (Sherrington) and had some notion of the reciprocal action of antagonistic muscles (Fulton).

Galen's experiments on the physiology of the nervous, respiratory, and circulatory systems were the only real knowledge for fourteen centuries (with the possible exception of the experiments of Vesalius, which however passed unnoticed in his time). Even a fraction of these contributions would be enough to secure for any person a high place of honour. Yet there are three Galenic superstitions which through their plausible character, have had a great deal to do with preventing the advancement of medical science. First, the doctrine of Vitalism, which maintained that the blood is endued with "natural spirits" in the liver, with "vital spirits" in the left ventricle of the heart, and that the "Vital spirits" are converted into "animal spirits" in the brain, the whole organism being animated by a "pneuma". Modifications of this theory, however attractive, have driven physiology into many a delusive blind alley even upto the time of Drieck (1867—). Second, that the blood in its transit through the body, passes from the right to the left

ventricle by means of certain imaginary invisible pores in the interventricular septum, prevented theorists from having real insight into the circulation until the time of Harvey. Third, the idea that "coction" or suppuration is an essential part of the healing of wounds led to those Arabist notions of "healing by second intention", setons and laudable pus, which although combated by Mondeville, Paracelsus and Pare, were not finally overthrown before the advent of Lister. Galen never really sought how an organ functions, but proceeded to explain everything in the light of pure theory. The effect of this dogmatism and infallibility upon after time was appalling. Upto the time of Vesalius, European medicine was one vast "argumentum ad hominem" in which everything relating to anatomy and physiology, as well as disease, was referred back to Galen as the final authority, from whom there could be no appeal. After his death European medicine remained at a dead level for nearly fourteen centuries.

Galen regarded the arterial blood changed with "vital spirits" and the venous blood charged with "natural spirits" as ebbing and flowing, back and forth, through their respective channels, but having no connection with each other except through the interventricular pores. In like manner the "animal (psychical) spirits" were supposed to course back and forth through the hollow nerves, which became solid after death.

As Galen passed away inquiry, that is to say inquiry into natural knowledge, stood still. For a thousand years or more, the great Christian Church

was fulfilling its high mission by the aid of Authority; but authority, as with the growth of the Church it became more and more potent as an instrument of good, became at the same time more and more potent as a steriliser of original research in natural knowledge.

The Church held the gates of learning, and they who entered were bidden to tread her path and hers alone. Under her guidance the written word took the place of the made world; the pursuit of truth ceased to be the looking into the phenomena of nature and the seeking for the reason why; it narrowed itself into asking what the teachers taught. As the Holy Scriptures were the Bible for all men, so the works of the Greek and Latin writers became the Bible for the anatomist and the doctor. Truth and science came to mean simply that which was written, and inquiry became mere interpretation.

The events worth noting during this period are the rise and spread of Islam from the seventh century onwards, and the expansion of Europe and the discovery of America (1492). The knowledge of Ayurveda with modifications was spread westwards by the Arabs.

Arabian medicine is also based on humoral pathology, the number of humors of the Ayurvedic system being increased to four by the inclusion of Blood among them. The malarial fevers are well described clinically but their origin is attributed to putrefaction of bile. This system is also in a stagnant condition like the Ayurvedic, the teaching today being what it was at the time of Avicenna in the 10th

century A.D. The Arab contribution in the field of medicine was mainly the conservation and spread westwards of the knowledge of Greece and the East.

Two important facts are related to the discovery of America: It is believed, though it is difficult to say whether it has been satisfactorily proved, that the sailors of Columbus brought with them among other things from the new continent, a gift of questionable value in the shape of the venereal disease, syphilis, which spread very rapidly and widely in Europe. Even in India the disease is known as Firangi-roga, its spread being connected with the coming of the Portuguese. Secondly, from America also came later (1640), Cinchona, which has proved such a boon to sufferers from malaria.

The "new birth" of the fifteenth and sixteenth centuries was in essence a revolt against Authority as the guide in knowledge: and the "Fabrica Humani Corporis", "the Structure of the Human Body" by Andreas Vesalius, published in 1543, marks an epoch in the history of Anatomy, and so of Physiology and of Medicine, for by it the idol of authority in anatomical science was shattered to pieces never to be put together again. Vesalius described the structure of the human body such as he found it to be by actual examination, by appealing to dissection, by looking at things as they are. He dared not only to show how often Galen was wrong, but to insist that when Galen was right he was to be followed, not because he had said it, but because what he said was in accordance with what anyone who took the pains to inquire could assure himself to be the real state of things.

The next great step in the advance of biological knowledge was marked by the clear demonstration of the circulation of the blood by Harvey, in 1628, in his "Exercitatio de Cordis motu" (the motion of Heart). His wonderful book is one sustained argument, founded not on general principles and analogies but on the results of 'repeated frequent appeals to vivisection' and ocular inspection. The new theory of the circulation made for the first time possible true conceptions of the nutrition of the body, it cleared the way for the chemical appreciation of the uses of blood, it afforded a basis which had not existed before for an understanding of how the life of any part, its continued existence and its power to do what it has to do in the body, is carried on by the help of the blood. And in this perhaps, more than its being a true explanation of the special problem of the heart and the blood vessels, lies its vast importance.

Harvey however had not seen the capillary vessels, for the microscope, though invented in 1590, does not appear to have come into widespread use till well on into the 17th century. Further, Harvey adhered to the old doctrine that the function of respiration was to cool the hot blood. Thus Harvey in his speculations sided with the philosophers (Aristotle) rather than the physicians (Galen), which retarded the development of the true physiology of respiration for a long time.

After Harvey followed a large number of investigators, who making use of the microscope observed and described accurately the cellular structure of the bodily tissues and organs. Of these I mention only

Marcello Malpighi (1628—94), who may be regarded as the founder of microscopic anatomy, who made an epoch in medicine by his investigations into the histology and physiology of the glands and viscera.

Malpighi described the red blood corpuscles in 1665 (seven years after Swammerdam) as fat globules looking like a rosary of red coral. He discovered the rete mucosum or Malpighian layer of the skin, and proved that the papillae of the tongue are the organs of taste. Perhaps his greatest work is the "De Pulmonibus" (1661), which overthrew the current conceptions of the pulmonary tissues as "parenchymatous", demonstrating their true vesicular nature, the capillary anastomosis between arteries and veins and how the trachea terminates in bronchial filaments. His work on the structure of the liver, spleen and kidneys did much to advance the physiological knowledge of these viscera.

Another great microscopist was Antony van Leeuwenhoek (1632-1725), He was the first to find microorganisms in the teeth, giving for the first time accurate figurations of bacterial chains and clumps as well as of individual spirilla and bacilli (Sept. 17, 1683). He demonstrated the capillary anastomosis between the arteries and veins which Malpighi had seen in 1660 without attaching much importance to it.

In the 17th century, the advances in chemistry had their effect on the study of the problems of physiology which are essentially chemical in nature. Through the work of Sylvius (1614-72) and his pupils, the process of digestion and through the work

of Boyle (1627-91), Hooke (1635-1703), Lower (1631-90) and Mayow (1643-1679) the physiology of respiration was seen to be essentially chemical in nature, and it was proved that these processes in the living organisms were governed by the same laws as applied in the non-living world.

For medicine, aside from the work of a few original spirits like Morgagni, Hales, the Hunters, Wolf and Jenner, the 18th century was essentially an age of theorists and system makers.

Morgagni laid the foundation of modern pathologic anatomy in that for the first time, the records of post-mortem findings are brought into correlation with clinical records on a grand scale.

In the 19th century, especially in its second half work in medical subjects became very wide-spread and its aspect changed from the individual endeavour of the 17th century to organised advancement of the science. I would mention two workers in particular, Pasteur (1822—95) and Koch (1843—1910) who may be regarded as the founders of Bacteriology.

Coming now to our subject proper, we have already seen from the Atharva Veda that malarial fevers were associated with rains and marshes. There is an old story that Empedocles of Agregentum (about 55 B.C.) "delivered Selinus in Sicily from a plague by draining its marshes or by turning two rivers into them"—that he was able, as Matthew Arnold says, to "Cleanse to sweet airs the breath of

poisonous streams". Whether the story be true or not, it shows a knowledge not only of the association of malaria with marshes but further, of the possibility of its prevention by drainage or other treatment.

Columella (about the first century B. C.) says that bogs breed insects armed with stings, and pestilent swimming and creeping things, from which come obscure diseases. Here we have malaria connected not only with the marsh, but with insects or germs bred in the marsh. Cicero and Seneca say that paludism depopulated certain districts. Mr. Robert Gladstone and Mr. Jones have called attention to several passages referring to mosquito nets, called conopeum by the Romans, after the Greeks (our word canopy). Herodotus first noted with surprise the use of them in Egypt; and they are referred to later in Varro (*De Re Rustica* 2, 10, 8), Horace (*Epodes*, 9, 16,) Propertius (3, 11, 45); Juvenal (6; 80,) and *Palus Silentarius* (*Anthologia Palatina*). Horace says, "And among the military standards, oh, shame! the sun sees a mosquito curtain;" and Propertius calls these nets *foeda* (foul or disgraceful). Ross remarks, "Evidently the ancients felt towards them as do many of our own more manly colonists who prefer annoyance and even sickness to disgrace!"

Little was added to our knowledge during the next thousand years; but about 1640 the inestimable boon of *Cinchona* bark was introduced into Europe. The Countess d'El Cinchon, wife of the Viceroy of Peru, had been cured of fever by means of it in that

country, where it had been discovered by the Indians near Loxa (?); and she was wise enough to send it home to Europe. The use of it after many checks gradually spread; and in 1820, Pelletier and Caven-
 tou extracted the alkaloid quinine from it. The discovery of this specific has not only proved to be a blessing for the treatment of untold millions of human beings, but also enabled Morton (1697) and Torti (1753) to separate the malarial fevers, which are cured by it, from those upon which it has no influence, and by this means to differentiate and study the symptoms of the former. Morton also recalled the old hypothesis of the marsh; and this was amplified by Lancisi, who repeated the views of Varro and Columella in greater detail in his book '*De noxiis paludum effluviis*'. He stated that fevers disappear after drainage, and attributed the poison either to inorganic or organic emanations from the marsh. He studied mosquitos, and even suggested inoculation by them as a possible means of infection—though he also thought that their larvae foul drinking water (1717).

It is now apparent that the world had been gradually becoming aware during centuries of the paludic nature of malarial fever, not by direct experiment or even by investigation, but a kind of subconscious experience based on public observations. In Italy, especially, where of all civilised countries the disease was most prevalent, this process was most apparent—so much so that, as North describes (1896), the peasantry can often tell at sight which localities are likely to be "malarious". More than this, by similar general observation, the good effect of assainment of marshes had become equally notorious there.

Thus, as early as 1667, Doni wrote a work called *De Restituenda Salubritate Agri Romani*; and references to a succession of works carried out on this principle, which Ross calls the principle of Mosquito Reduction, are given by Celli (1901). At the same time efforts were made by many observers, such as Morton, Lancisi, Lind, and Pringle, to explain the paludic connection; and these resulted in the formation of the hypothesis of the paludic miasma. This was supposed to be some kind of infecting emanation from stagnant water, either chemical, or as Lancisi suggested, organic; but in no cases, apparently, were experiments made to test the point. Later, when it was observed that malaria may sometimes occur where there is no marsh, the hypothesis of the paludic miasma was extended to that of the telluric miasma, according to which the poison exists not only in marshes but anywhere in suitable soil, from which it rises at night or when the soil is disturbed. This speculation, for it is nothing more, is not quite dead even yet, though the observation which originated it is easily explained otherwise. The word "Malaria" (mal aria or bad air) is derived from it, and was introduced by Francesco Torti (1658-1741) whose book on pernicious malarial fevers (1712) brought about the use of Cinchona bark into Italian practice.

Discovery of the Parasites: Last century, however, pathological science was no longer content with mere guesses at the truth, but began to demand strict microscopical and experimental evidence. Applied to paludism, this method gave an early reward. In 1847, H. Meckel discovered innumerable

black granules in the blood of an insane patient; and the discovery was subsequently confirmed and amplified by Dlauhy, Virchow, Herschl, Planer and Arnstein—the granules now being known under the name of the paludic pigment, or melanin, or haematozoin (Sambon). For a long time they were thought to be due to a chemical action of the paludic miasma on the red cells of the blood.

About the same time many laborious attempts were made to discover some animal or vegetable organism which lives in marshes and produces paludism. As long ago as 1846 Rasori (cited by S. Calandruccio) made an extraordinary prediction on this subject. "For many years," he said, "I have held the opinion that the intermittent fevers are produced by parasites that cause the successive paroxysms of fever by their reproduction, which occurs periodically more or less rapidly according to their species"—and this has proved to be exactly true. Many writers attributed the disease to various marsh-growing vegetables. In 1862 Salisbury in particular, after considerable study, blamed a kind of Palmella; and after 1878, a number of Italian workers, Lanzi, and Terrigi, Edwin Klebs and C. Tommasi-Crudeli, thought that they had actually incriminated certain fungi, or bacteria, which they said swarm in malarious places, occur in the blood, produce spores before each paroxysms of fever, and cause similar infection in animals. These findings, were even confirmed by Marchiafava and other Italians, but have now been completely discredited.

In 1878, however, A. Laveran commenced his studies of the subject at Bone in Algeria, by following

up the granules of pigment, already referred to, in the blood of living patients. He was struck by the fact that they were frequently contained within cells possessing active amoeboid movements; and finally, on the 6th November 1880, at Constantine, he detected the microgametes issuing from the male cell. Though at the time he did not know the nature of this phenomenon, it convinced him that he was dealing with a living parasite of the human red corpuscles. In fact the black granules are merely the excrementitious matter produced by the parasites from the substance of the red cells, and so contained within their bodies, or released in the tissues of the host.

About the same time C. Gerhardt proved that healthy persons can be infected by the inoculation of blood of patients suffering from paludism (1884). His experiments were afterwards verified by many workers, and demonstrate (apart from the microscopical discovery of the parasites) that the disease is not due to any gaseous emanation from marshes, but is a true infection by some living virus.

In 1886 and subsequently, C. Golgi, who was favourably situated in Pavia for the work, showed clearly that the parasites reproduced by simultaneous sporulation; that the febrile paroxysm in the patient commences at the moment when these spores are liberated (just as Rosari had divined); and that the parasites of quartan and mild tertian fever are morphologically different (1886). A little later Canalis, and Marchiafava and Celli discovered similar facts regarding the malignant parasites, and showed that they differ from the quartan and mild tertian parasites, and Marchiafava and Bignami

suggested that they are of two varieties, the malignant tertian and the quotidian. In 1885 Danilewsky discovered similar parasites in birds and several animals; and subsequently Marchiafava, Celli Bignami, Mannaberg and others, made many careful studies of the parasites, and of their effects in human beings; Romanowsky found the proper way to stain them; and many observers verified these researches in various parts of the world—the literature amounting to some hundreds of publications.

(To be continued).

A case of Strangulation of the Penis by a Bronze Ring

BY

DR. KHURSHEED HUSSAIN, M.B.Ch.B. (Edin.),
Civil Surgeon, Osmania Hospital.

A Hindu student aged 15 years belonging to Mahboobnagar District, stated on admission that while he was asleep, one of his friends had slipped a bronze ring over his penis down to the root. On waking up he tried to remove it, but did not succeed. The penis was much swollen, with a constriction at the position of the ring, which could not be moved backwards or forwards on account of the swelling. The patient did not complain of much pain, and was able to pass urine, though with some discomfort. Photograph fig. 1 shows the condition on admission.

The ring (Photograph fig. 2) was a Hindu sacred utensil (a hollow stand on which a conch shell is placed); the diameter at the upper margin is serrated; the lower has three legs on which it could stand; the narrowest diameter of the opening through which the penis was passed, is 5 $\frac{1}{8}$ inch.

Khursheed Hussain: A case of strangulation of the penis by a bronze ring.

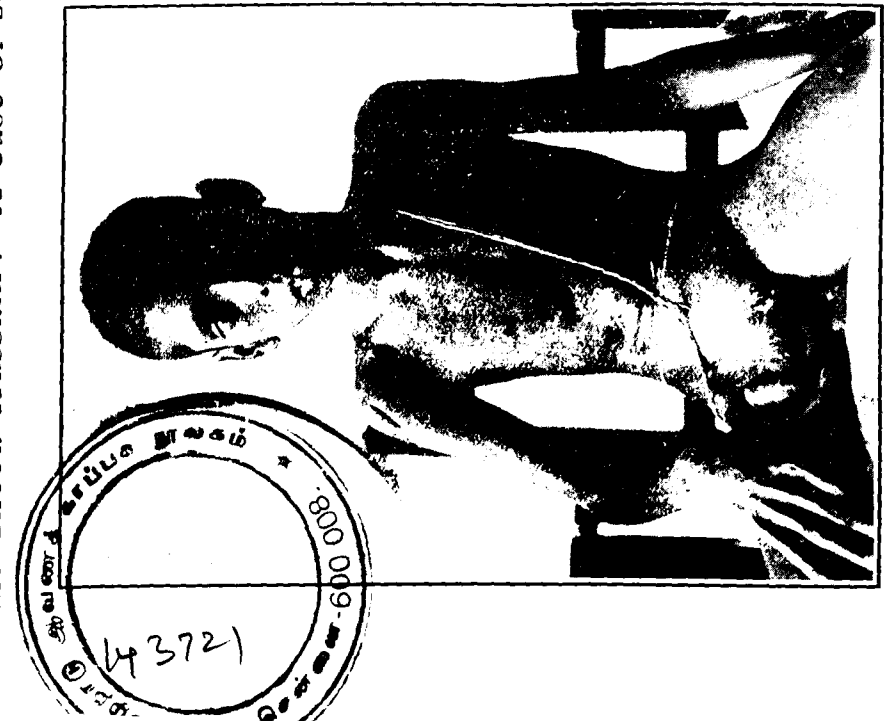
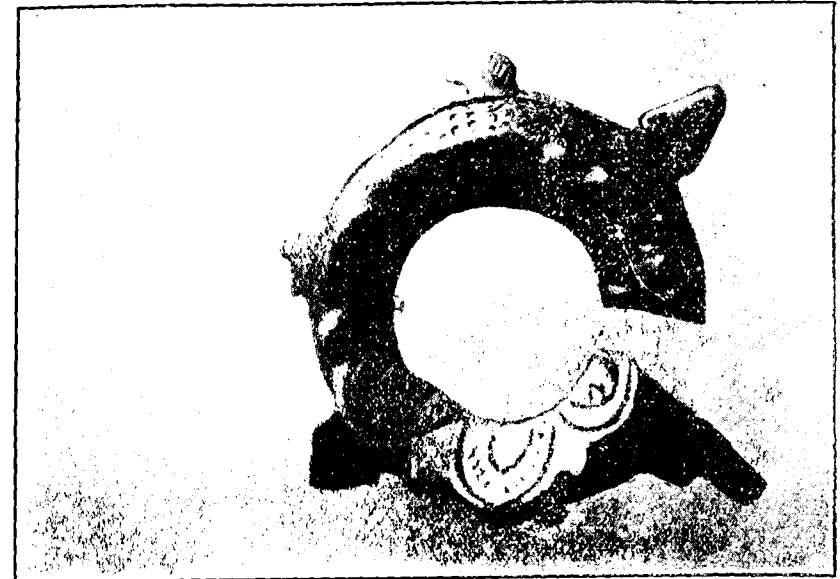


Fig. 2
(To face page 50)

*KHWAJEE HUSSAIN: A CASE OF STRANGULATION OF THE PENIS
BY A BRONZE RING.*

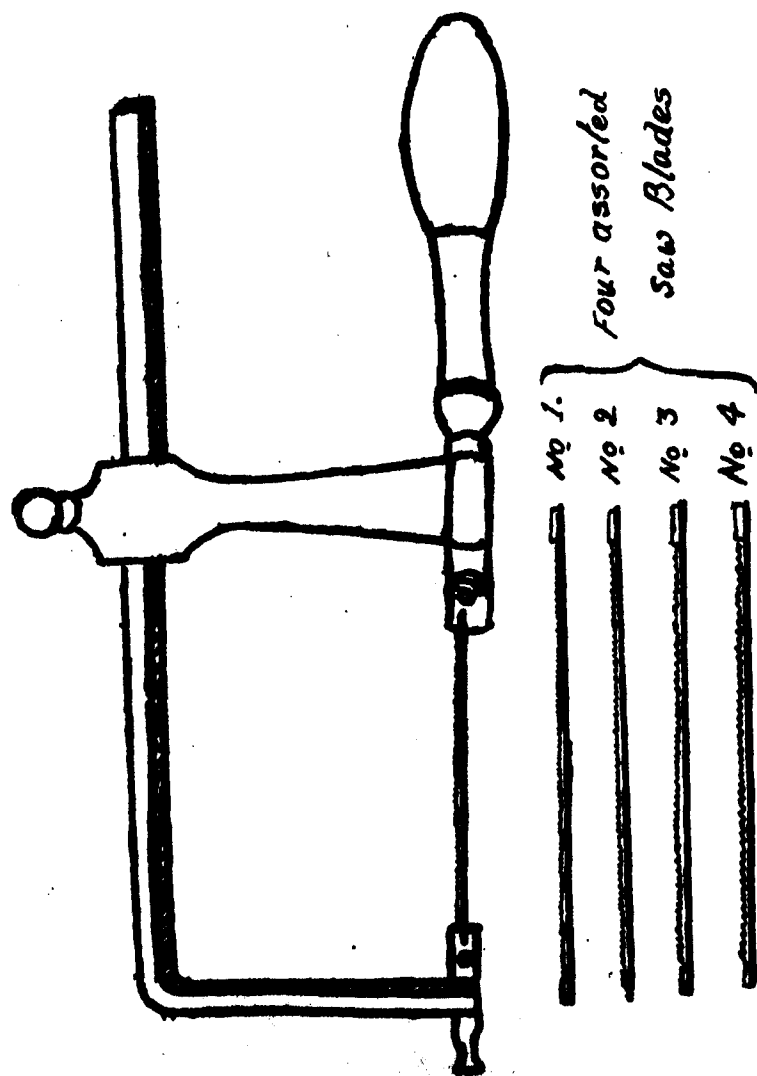


Fig 3. A rough diagram of fret-Saw.

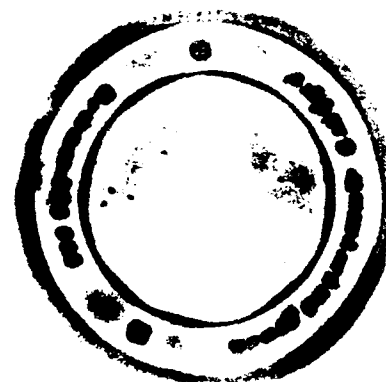
(To face page 51)

Attempts to dislodge the ring were unsuccessful; nor was it possible to cut it with an ordinary saw or pliers. A special saw (shown in fig. 3) known as a 'Ferret' saw with a blade of hard temper, resembling a butcher's saw was then brought from the bazaar and used.

Operation. Under chloroform, a protector like a hernia director was passed underneath the ring to support it and prevent the skin and penis being cut while sawing the ring. The ring was sawn down obliquely with considerable difficulty. The cut ends were stretched out and strangulation relieved.

The skin at the seat of the constriction was excoriated. The oedema soon subsided and the patient was discharged cured.

I am thankful to Mr. Rubens, Electrician, Osmania Hospital, for kindly procuring the saw mentioned above.



Deccan Medical Journal

January 1933

RURAL MEDICAL RELIEF

DURING last Christmas week two important Medical conferences were held, one at Madras and the other at Lucknow. The subjects which received attention were Medical education and registration and the problem of Rural Medical Relief, for which Major Naidu in his presidential address—which appears as the supplement of this issue—at Lucknow has put forward a scheme. Reserving the question of medical education and registration for a future occasion we turn today to the question of Rural Medical Relief.

The problem: Carrying relief to a poor population scattered over a wide area; therefore the centres of relief need to be many if they are to be within reasonably easy reach of the sufferer.

Quality of the Medical aid: One would of course wish for it to be the best possible, which leads on to the.

Price of it: This opens up a very wide question whose ramifications spread far into the region of the social sciences and even as far as the base question of social structure.

Some general principles might be stated:—

1. You cannot obtain something for nothing. A price has to be paid, whether directly or indirectly, for any article or service, or else the supply of it will not be forthcoming. It follows that society cannot obtain a better quality or greater supply of medical relief than it can and does arrange to pay for.

This 'payment' brings us face to face with world forces which are not under our control. The present social organisation of the world barring perhaps Communist Russia is based upon the principle of private property, and the right to barter one's resources, whether material or intangible e.g. specialised ability in exchange for the highest price obtainable by bargaining. (1) this price is defined in terms of money and (2) it is not binding upon the possessor of a commodity, however essential it may be to the well being of the community in general or to meet the vital needs of some individuals to part with it except on terms which he considers suitable. Thus it is possible, that a poor child might be dying of diphtheria, for which an efficient anti-dote in the shape of the anti-toxin is now known and made; it may even be held in stock by the dealer in the same town; it is even possible to imagine that the stock of anti-toxin might become unusable in time though in the meanwhile several patients die of diphtheria. Under our

present social order the only way to save that patient's life is to find the money to pay for the anti-toxin at a price which may have been fixed in New York or Berlin. If the patient's relatives cannot provide the money and no other person or organisation can find it on its behalf, the child must die; in other words however painful it may be or unjust it may appear to us we must admit that under the existing social order, the patient's life was not worth saving. The case in which the price of the Anti-toxin is paid by some one else implies that while the individual may have been too poor to have a survival value in terms of money, the community and country is not and the question is one of bringing the resources where they are most needed; but the fact remains that they have to be somewhere and *in terms of money*.

All our values today are expressed in terms of money. Our dealings with the rest of the world are very extensive and have become an essential part of our every day life; it is not possible for us to dictate the prices in money of articles which we must buy from other countries—this also governs our internal prices. It follows that the price of a trained medical man has to be estimated and paid for also in terms of money. It is the natural and laudable desire of every person if possible to rise to a higher structure in society or at least not to slide lower down. On economic side, the principle dictates an irreducible minimum price at which he can offer his services. If these facts are recognised it will be seen that nothing is to be gained by jibes at the medical men for demanding high fees or ridiculing the newly quali-

fied for concentrating in towns. Their actions are the result of forces over which they have no control and the remedy for this unequal distribution of the medical resources, a plethora in towns and want in villages, is to make it possible for the medical men to settle in villages without the fear on economic grounds, to have to slide down in the social scale. It is evident that the problem of medical relief cannot be solved by individuals and least of all by the newly qualified medical men on the threshold of their professional life, possessing in most cases hardly any material resources to sacrifice.

We feel that if medical relief societies are founded and conducted on the lines of the educational and social service institutions e.g. the Deccan Education Society, Servants of India Society etc. and a lead is given by a few leaders in the medical profession, the younger generation will not fail to provide recruits of the right quality in sufficient numbers. As is well known in these societies, while salaries given to the workers are small, there is some provision made for them on retirement, for the education of their children, and for themselves facilities are given to improve their knowledge. We feel that it is along these lines that a true solution of the problem is to be sought. These men will have a greater latitude than is possible for the Government to allow in its institutions and will be able to act as valuable centres for the spread of the ideas and practice of hygienic rules.

But it is essential that these medical men must be fully and properly trained ones; the higher the

standard the better. Their remuneration may be small, but the equipment of their dispensaries must be good; it is false economy to save on it; even as to its supposed costliness, we fear we medical men are primarily to blame for this 'costliness' complex. A fairly good microscope with accessories is now to be had for about Rs. 400; we believe that in the tropical medical work it is indispensable; yet it is medical men who will consent to do without it to cut down costs of equipment or working; is it because that we as a profession do not yet realise or believe in the need of it or what help it can give? We see on all sides the spectacle of lakhs being spent on the buildings for medical aid and the hundreds or tens necessary for running them denied because of financial stringency, when probably what was spent on securing the architectural beauty to the buildings would have more than sufficed for all this expensive equipment.

We must express ourselves as opposed to the apprentice system of training candidates under individual men for odd periods; it would be a retrograde step from organised teaching in schools with several teachers. We are further entirely opposed to turning out our half baked doctors, whether from the Hakim or Vaid class or from any other class; it will lead to far more evil than good. We realise that even today there is nothing to prevent unqualified men from practising medicine; but we do not desire that such should be given our sanction, and even our benediction.

The scheme is too important to be dismissed after a cursory examination; it will repay consideration by medical associations throughout India of its outlines as well as its details, for it is on the rocks of these that many a good scheme founders.

Association Notes

A meeting of the Hyderabad Medical Association was held in the Osmania Hospital on the 9th of January 1933 with Col. J. Norman Walker, C.I.E., I.M.S. (Retd.) in the chair, when Dr. S. W. Hardikar read a paper on the History of our knowledge of Malaria (which appears elsewhere in this issue). On the conclusion of the paper Major M. G. Naidu as one of those who had the privilege of personal acquaintance with the pioneer work of the late Sir Ronald Ross made appreciative mention of his scientific spirit and moved "that the Association records its deep sense of the loss through his death". The resolution was passed, the members at the suggestion of the chairman, standing in silence for a minute as a mark of reverence.

Meetings of the Hyderabad Branch of the British Medical Association

A clinical meeting of the Hyderabad Branch of the British Medical Association was held in the King Edward Memorial Hospital, Secunderabad, on Friday the 4th November 1932 at 5 p. m., when Major H. R. Edwards and the staff of the K. E. M. Hospital exhibited the following interesting cases:

1. CASE OF PERNICIOUS ANAEMIA:—

R. Hindu male, aged 25 years, was admitted on 7th November, 1931, with history of frequent loose motions with slime: was treated outside as a case of dysentery. Patient on admission was extremely anaemic, emaciated and weak.

Heart and lungs—Nothing abnormal.

Abdomen:—General tenderness.

Tongue—Flabby and sore.

Motions:—No hook-worms, amoeba or cysts. Patient had three injections of antidysenteric serum; boric wash and starch and opium enema given as needed. On 10th November 1931 blood examination was made with the following results:—

Red blood cell count:—1,500,000 per c. mm.

Haemoglobin value:—40 per cent.

Colour index:—1.3.

Smear showed nucleated red blood cells, megalocytes

and poikilocytes in large numbers.

Patient was put on stomach juice and liver juice.

26—11—31.

Red blood cell count :—2,250,000 per c.mm.

Haemoglobin value :—50 per cent.

Colour index :—1. 1.

8—12—31.

R. B. C. count :—3,750,000.

Hb. value :—70 per cent.

Colour index :—0.9.

8—12—31.

R. B. C. count :—4,000,000.

Hb. value :—70 per cent.

Colour index :—0.8.

Patient was discharged on 8th January 1932, but was re-admitted on 1st November 1932 with the history of pain in the abdomen and progressive weakness.

R. B. C. count :—2,500,000.

Hb. value :—50 per cent.

Colour index :—1.0.

Smear showed a few nucleated red blood cells, megalocytes and poikilocytes. Patient states that he took liver for about 2½ months after he left the hospital and then discontinued for the next month and a half. Then he began to take it again. He was not taking any liver for three months before his readmission in the hospital.

2. CONGENITAL ABSENCE OF FEMUR (RIGHT).

A full term male child born alive on 24—10—32, weighing 6 lbs—6 oz. The labour was a breech presentation (L.S.A.) the mother aged 19 years a 2nd para, the 1st labour having been a miscarriage. The child died on the 3rd day (26—10—32). The right leg was flabby; a radiogram showed complete absence of femur and patella. As the deformity is rare the radiogram is reproduced here. Jones and Lofett in their work on Orthopaedic surgery describe complete absence of femur as being less common than partial.



Congenital absence of the femur

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3. *FIBROMA OF THE RIGHT CHEEK.*

4. *SARCOMA OF THE FRONTAL BONE & ORBIT.*

A clinical meeting of the Hyderabad Branch of the British Medical Association was held at the Osmania Hospital on the 16th of December 1932, when interesting cases of thyrotoxicosis and irregular action of the heart in an athletic young man and two cases of malaria with retinal haemorrhage were shown; it is hoped to report these in a subsequent issue. Major M. R. W. Hart showed the radiogram of an extended breech presentation in a primipara, submitted the view that it always indicated a disproportion between the foetus and maternal passage and advocated treatment by Caesarian section at term instead of Podalic extraction. (Vide B.M.J. page 36).

H. E. H. The Nizams Government Medical & Sanitation Department
List of Transfers during the quarter (October 1932—December 1932).

Name	From	To	Remarks.
Dr. D. P. Parekh	Osmanabad	Mint Dispensary	Appointed as Civil Sur- geon
Dr. Sundar Raj C. A.	Mint Dispensary	Osmanabad	
Dr. Riyasat Ali Khan	Victoria Zenana Hospital	Kamatipura	
Dr. Miss. K. Ahmad	Aurangabad	Aurangabad	
Dr. Miss. I. O. Dias	Osmania Hospital	Victoria Zenana Hospital	
Dr. Mrs. Chandorker	Osmania Hospital	Victoria Zenana Hospital	
Dr. D. B. Narayana	Sangareddy	Sangareddy	
Dr. S. V. Subba Rao	Osmania Hospital	Osmania Hospital	
Dr. V. V. Hardikar	Purbhani	Purbhani	
Dr. M. Renapurkar	Yakootpura	Osmania Hospital	
Dr. P. Ramkrishna	Plague Department	Osmania Hospital	
Dr. L. S. Shivashankaram	Narayenpet	Yakootpura	
Dr. B. S. Naidu	Nalgonda	Nalgonda	
Dr. G. Bhimsingh	Mulug	Narayenpet	
Dr. A. B. Narasingh Rao	...	Osmania Hospital	
Dr. P. L. Narayen Rao	...	Alibad	
Dr. N. R. Deshapande	Mahaboobnagar	Osmania Hospital	
Dr. M. P. Patel	...	Osmania Hospital	
Dr. A. Gopal Rao	Warangal	Mahaboobnagar	
Dr. Ramchandra Nathu	Osmania Hospital	Bhir	
Dr. P. K. Jog		Warangal	

News

In the new year Honours list, C.I.E., has been conferred on Col. J. Norman Walker I.M.S. (Retd.) Director, Medical and Sanitation Department, H.E.H. the Nizam's Government.

Major Md. Ashraff, Deputy Director, Medical and Sanitation Department, H.E.H. the Nizam's Government, Major Nawab Faiz Jung Bahadur, Principal Medical Officer, H.E.H. the Nizam's Regular Forces and Major Ashraful Haq, have been promoted to the rank of Lieut. Colonel.

Dr. A. C. Abraham L.M. & S. (Hyd.), D.T.M. (Calcutta), has proceeded to Calcutta to qualify for the Diploma in Public Health of the Calcutta University.

Dr. S. R. K. Reddy, L.M. & S. (Hyd.), has been deputed to the Calcutta School of Tropical Medicine to undergo the course for D.T.M.

Impressions of the Second Ophthalmic Conference at Bangalore 1931

BY

S. A. RAHIM, M.B., B.S. (Bom.), D.O.,
Ophthalmic Surgeon, Osmania Hospital.

"If I have a dollar and you have a dollar and we exchange, we are no better off than before. But if I have an idea and you have an idea and we exchange,—you have two ideas and I have two ideas. That is the value of conferences".

"Child Welfare, Oct. 1932."

Thanks to the courtesy and kindness of Col. J. Norman Walker, C.I.E., Director, Medical Department, H.E.H. The Nizam's Government, I was enabled to visit as a delegate the Conference of the Indian Ophthalmologists held at Bangalore on 20—22nd July 1931. It is over a year ago that this function took place and the sequence of various events that took place there, is not very fresh in my memory but I have tried to bring out facts of interest for a general practitioner and the eye surgeon who wants to know the modern tendencies in clinical ophthalmology. The Indian Ophthalmological Society is still in its infancy, this being its second conference although there are many veteran workers in its ranks; the discussions were mainly clinical and as the Dewan of Mysore in his opening speech hoped

that in future years the Society would make notable contribution to the stock of ophthalmic knowledge, the future conference might bring out original scientific subjects for discussion.

The Conference was indeed a great success and the members from the various parts of India thoroughly enjoyed their stay in a pretty place like Bangalore with its salubrious climate and fine hotels. The Mysore Government and the Reception Committee were lavish in their hospitality and the care of their guests and entertained us by the annual dinner at the Medical School and Sir Mirza Ismail was At Home at his residence on the last day of the conference where he moved freely among his guests. With excursions arranged for Kolar Gold fields, Mysore and Sivasamudram falls, the Reception Committee left nothing to be desired for entertaining the delegates and the members present.

Two subjects dear to the heart of the eye surgeon were discussed at this conference—cataract extraction and treatment of glaucoma. Dr. Ratnakar of Bombay initiated the discussion on cataract and started with the humorous observation that if a person wants to operate on a left eye by his left hand he should be able to shave himself with a razor with his left hand. It was remarked that English Surgeons aim at ambidexterity while on the Continent the surgeons usually use their right hand for both eyes. Curiously enough on the second day of the conference at the Minto Hospital one of the surgeons trying to demonstrate a modification of Elschnig's extraction operated on a right eye with his right hand standing on the left side of the patient. Dr. Ratnakar and most of the surgeons that took part in discussion thought it was risky to operate on both eyes at one sitting. Smith's intracapsular extraction does not seem to find favour with surgeons of South India and Bengal. Dr. Banaji of Bombay after doing 500 cases has entirely given it up and Dr. Narayan Rao (Bangalore) does it on 12 per cent. of cases. There is no doubt that in selected cases and with experience it should prove a very successful operation. After all, as Sir William Bowman wrote long ago that he never laid down a method of extraction of universal application. Dr. Ratnakar's paper and the discussion that followed revealed the fact that Elschnig's

forceps method is getting popular on the Continent and elsewhere. In this the co-operation of the patient is essential, and vitreous must be in good condition. After the corneal section with a conjunctival bridge a special forceps is introduced into the anterior chamber and the capsule is caught. The lens is then gently pulled out. If the capsule ruptures the lens has to be extracted in the usual way. Dr. Sinclair of Edinburgh, I believe, is doing this operation and his capsule forceps was favourably remarked upon by a surgeon from Tirputur (Coimbatore). Anyway the old method of extracapsular extraction with iridectomy still holds the minds of majority of surgeons as being satisfactory in its results and with very little risk to the patient. Time only can evolve a perfect operation.

A few remarks were made about Dr. Barraquer's operation for cataract, which, I believe is being practised by Col. Wright of the Madras Eye Hospital. In this operation after the corneal section, an electric motor is used and the nozzle is introduced into the anterior chamber, the lens with the capsule is sucked and removed. In 1920 or 1921, I saw Dr. F. Moore using this method at the Moorfield Eye Hospital. He was of opinion that for general use it was inferior to the older method but for immature and sclerosed lens it has distinct advantages. It is interesting to know that when Gallimaertes, one of the supporters of Barraquer's operation was asked by a friend whether he would like his eye to be operated on by the suction method he replied 'Yes, provided Barraquer did it'.

The next interesting subject that was discussed was the treatment of glaucoma. Dr. Banaji of Bombay remarked that the only method of treatment for acute glaucoma is peripheral iridectomy. He advocates an incision from outside 2 mm. behind the limbus with a broad knife. For glaucoma occurring in cataracts Dr. Banaji recommends prompt removal under local or general anaesthesia with iridectomy. For chronic simple glaucoma he advocates three procedures, iridencleisis (Herbert), Cyclodialysis and trephining. Most of the Indian surgeons are familiar with these three methods, especially with Elliot's trephining and it is here interesting to observe that cyclodialysis

is getting popular on the Continent especially at Eleschnigs clinic at Prague, which is now probably the Mecca of Ophthalmic Surgery. In cyclodialysis sclera is cut with a straight keratome 5 mm. behind limbus and a spatula is inserted between sclera and choroid into the anterior chamber. The latter is partially detached from the overlying sclera. This operation is supposed to be successful in the majority of cases and does not leave a disfiguring mark on the eye. The writer has lately done this operation in a few of his cases where there was only perception of light with satisfactory results as the eye has remained soft two months after operation. In the discussion that followed it was clear that Elliot's trephining is the most popular procedure for chronic glaucoma and the fear of late infection was negligible according to Dr. Narayan Rao of Bangalore. Dr. Mehekari (Minto Eye Hospital) who had lately returned from Europe remarked that cyclodialysis was the operation of choice in Vienna. He said the Foster Moore had modified making of conjunctival flap in Elliot's trephining by dissecting upwards from 1 mm. above the corneo-scleral margin. After trephining the flap was drawn over the hole and stitched. When I was lately at the Minto Hospital I watched Dr. Narayan Rao trephining for glaucoma and was struck by his making of conjunctival flap. He makes it by cutting the conjunctiva parallel to the limbus. With the point of the scissors he works under the flap separating it from the sclera till he reaches the corneo-scleral junction. The great advantage is that the flap never falls down and does not require a stitch. I have been informed that Dr. Maynard of Calcutta suggested this useful modification. Most of the surgeons declared that acute glaucoma was rare in India.

An interesting discussion that took place at the conference was Intracranial Neoplasma and eye-sight opened by Dr. Dhruv of Bombay. This subject is interesting to a surgeon and an ophthalmologist as the speaker aptly remarked that they make "blind people see who are otherwise destined to die". The discussion revealed the fact that brain surgery was still in its infancy in India and that an eye surgeon is primarily responsible for diagnosing early cases of optic neuritis and papillitis. Dr.

Dhruv remarked that if both eye-sight and life are to be saved an early decompression with or without localisation should be carried out without delay and in modern surgery such a procedure should be considered absolutely safe. Localisation of intra-cranial growths is very difficult but as in abdominal conditions exploration must hold the field for all practical purposes, also in cranial cavity.

One cannot conclude these impressions of an interesting conference without a personal touch. On the second day of the conference we witnessed in the theatre of Minto Eye Hospital a demonstration of a few selected operations. Elschmig's intracapsular extraction, Barraquer's suction extraction and entropion operation with mucous graft from the cheek were demonstrated. The most striking to me was Dr. Narayen Rao's method of extraction. He is verily a wizard in his manouvers and the operation becomes very simple in his hands. He retracts the lid with his fingers does corneal section and capsulotomy with the knife and delivers the lens with pressure by the handle of the knife. Practically extraction done with one instrument! But the more difficult is his next step iridectomy in which lid control is done by the fingers and the iris is cut by the disengaged fingers. It shows that the lid control can be turned to an art by experienced fingers. I should recommend to young surgeons to watch his manouvers as it makes one feel how simple a cataract extraction can be made provided delicacy of touch and asepsis is observed.

Leprosy Hospital, Dichpali Medical Report 1932

Since the inauguration in this Hospital of the hydnoecarpus treatment of leprosy in 1921 few changes have taken place in the administration of the drug. In the early days we gave the oil or esters by subcutaneous infiltration under the lesions. During the last two years the preparation has been given into the skin and into the lesions. This intradermal injection varied by intramuscular is now the routine treatment here.

Alongside of this it has been the custom here to test every applicant for admission for syphilis by means of the Kahn flocculation test. Any abnormal temperature also has suggested blood examination and treatment for malaria.

But apart from these two well known and easily detected complications there are many others which have to be discovered and treated, otherwise hydnoecarpus treatment will prove a great disappointment. Behind every case of leprosy lies a predisposing cause, and, in addition, the disease may be aggravated still further by complications and also by its own spread. We find that hydnoecarpus oil or esters will correct metabolic defects caused by growth in young people but against resistance-reducing factors like puberty, bad food, concomitant diseases it is ineffective. These factors must be detected and dealt with separately and only when resistance has begun to rise should hydnoecarpus preparations be added to the treatment.

This eradication of resistance-lowering agencies becomes of more and more importance in our work here. They are detected

by the regular use of the Sedimentation Test. Hitherto this test has been confined to special treatment experiments in this Institution. Now it has become routine practice. The advantages are very manifest, viz:—

- (1) Rule of thumb methods with their essentially uncertain results have been discarded.
- (2) Lepra reaction is reduced to a minimum.
- (3) Local pain, we have learned, is invariably concomitant with poor assimilation by the tissues and a rapid Sedimentation Rate.

The possibility of local inflammatory reaction due to carelessness of administration is well nigh eliminated now we have well trained injectors.

Should lepra reaction follow the administration of hydno-carpus preparations then all esters or oil is withheld, sometimes for months. Instead, the patient is put on tonics and light work, calcium and phosphorus salts are administered, diet carefully regulated until the resistance shows signs of rising. In C2 and C3 cases we are also starting mercurochrome treatment. This is only in the experimental stage with us. We have used 2% Mercurochrome as a dressing and found it useful specially in ulcerating nodules.

The results of treatment.

	1931	1932
No. of patients treated	696	732
No. of applicants refused admission	260	325
No. of those who left without permission	140	133
No. of patients discharged	129	179

During the past three years we have discharged 459 patients or parole. 125 i.e., 27% have returned for re-examination. Of these 125, 64 i.e., 14% of the whole number of discharged, showed fresh signs of the disease. It is noteworthy that these fresh signs among young men yield easily to treatment but that among boys, who have not reached the age of puberty, a neural case may become a skin case. We have decided therefore to keep

all the boys until they are safely through these years of growth and development and to deal likewise with the young girls.

It is difficult to come to any general conclusion concerning those discharged patients who did not return for re-examination. It may safely be assumed that with the majority of them there was no recurrence of disease or at any rate not in such measure that they felt impelled to return. What is clear is that if only we had not the very heavy pressure of new applicants for admission we could retain our recovered patients longer in residence under observation and so ensure, as far as possible, their future well-being. As it is, those 479 discharged patients stayed under treatment for an average period of 20 months. We are trying to devise some system of keeping in touch with them.

Occupational therapy.

This cannot be dealt with fully in this report, but since it now occupies an important place in the life of this Institution and causes the patients so much happiness and benefit we lay stress on it. Work is graded so that each patient can be given such tasks as suit his capacity. As he improves under treatment the work is correspondingly increased.

We now grow the greater part of the vegetables required by the Institution with marked improvement in the dietary. Scorbatic and allied diseases are becoming unknown, save in new comers.

Anti-Malarial work.

One work gang has been set aside for anti-malarial activities with pronounced advantage to the health of the Home. The methods pursued are those usual to the task viz., draining pools and oiling or scattering Paris Green on all malarious patches in or near the Compound. We have by these measures reduced the number of malaria cases from 88 of last year to 24 this year.

Electro Therapy.

The addition to the staff of a worker trained in Physio and Electro therapy and the installation of a complete set of the necessary apparatus for violet-ray work and diathermy will, we have reason to believe, mean the increase of our facilities for

more efficient treatment of many of our patients. It remains to be seen if in any measure this electro treatment will replace the surgical treatment hitherto given in some cases. The results of surgical treatment has not always been so successful as we had hoped.

Training of Doctors and Students.

Two courses have been held during the year and 12 men trained. Several other doctors have come for varying periods. In the regular courses more emphasis has been laid on practical work to every advantage, as was evident in the examinations taken.

A course of six lectures will be given in January to the senior medical students of Osmania University.

Preparation of Esters.

We have always prepared our own esters of hydnocarpus for use in our Hospital and dispensaries. We find that there is a steadily increasing demand for these esters, from outside sources. We cannot hope to meet all these demands but our new Ester Factory, soon to be completed, will enable us to meet their need as far as we wish.

Research Work.

Early in the year a full investigation was made into leprosy among women whereby some interesting data was brought to light. These have been published in the Leprosy Review, October 1932, while a lecture on the subject was given to the Hyderabad Branch of the British Medical Association*. This subject is being still further followed up.

Dichpali affords an excellent field for the study of early leprosy—a sphere of research in which very much remains to be done and for which the Indian Research Fund promised the Institution a grant for work done. For this necessary work an efficient laboratory staff is required. Our only hope, it seems, is to train our own technicians. Meanwhile, the number of biop-

* This appeared in the Deccan Medical Journal Vol. VIII No. 2 October 1932.

sies has markedly increased. Recently we were able to demonstrate for ourselves the presence of giant nucleated cells in early erythematous neural lesions. Hitherto we have been indebted to the Calcutta School of Tropical Medicine for the slides whereby we demonstrated those interesting cells.

(Sd.) ISABEL KERR,
Acting Medical Officer.

Obituary

SIR RONALD ROSS.

Ronald Ross, the eldest son of General Sir Campbell Ross was born at Almora, U.P., India, in 1857. He was sent to England for his education. Early in his career he showed a bent towards geometry and the mathematics of music. He commenced his medical studies at St. Bartholomew's Hospital in 1875, qualified as M.R.C.S., in 1879, and came out to India as a member of the Indian Medical Service in 1881. It would appear that he did this more in obedience to the wishes of his father than from any zeal for medical studies or work, the only work in the medical curriculum he cared for being microscopy.

In the ordinary course of service he was posted at different times at Mysore, Bangalore, Madras, Quetta, Moulmein and the Andamans. He wrote a good deal of verse and a romance entitled "Child of Ocean". He also worked at higher mathematics and discovered for himself methods of algebraic work which he had not had the opportunity of learning from his teachers.

After seven years of service, however, he made up his mind to continue in the profession he had taken up, and when he went to England on leave, he took out a course for the D.P.H., which had just been instituted, and was deeply absorbed in his studies. At this time he married his wife, Miss Rosa Bloxam.

He returned to India in 1890, well grounded in bacteriology and with a realisation of its importance in tropical preventive medicine. After four years at Bangalore he went back again to England and there came into personal contact with Manson. At

this time, while the malaria parasites and their development in the human body had been studied to some extent, the method of spread of malaria was unknown. Manson from his work on filariasis had reasoned that a blood-sucking insect, probably a mosquito, might act as an intermediary in the spread of malaria, but nothing had been definitely established. It was left to Ross to work out the connexion between the mosquito and the malaria parasite, first in bird malaria at Secunderabad, in 1897 and later in the human disease. The conditions under which his work had to be carried on, his difficulties and disappointments are described by himself in his Memoirs.

He retired from the Indian Medical Service in 1899 and became a lecturer on tropical medicine in the Liverpool School of Tropical Medicine just founded. He remained in Liverpool until 1902, and was able by trying out his anti-mosquito measures in Sierra Leone to convince his critics of the soundness of his view.

Recognition of his work in the shape of honours began to pour in. He was elected an F.R.C.S., England; made an F.R.S.; was appointed a C.B., soon afterwards, and in 1902 received the Nobel Prize for medicine. He now retired from Liverpool, but his services as a malaria expert were in demand in malarious localities in different parts of the world e. g., Mauritius, Cyprus, and Ismailia in the Suez Canal zone. In 1911 he was promoted K.C.B. During the war he acted as consulting physician for Indian Troops in England, and later visited Alexandria in connection with an outbreak of dysentery in the Dardanelles. He was promoted a full Colonel in 1918. At the close of the War he was created K.C.M.G. The Ross Institute was opened in 1926. A monument to his work in the form of an arch was erected in front of the Presidency Hospital, Calcutta, in 1927.

In his book on the Prevention of Malaria he has demonstrated the application of mathematical methods in the investigation of the incidence of disease and emphasised the importance of quantitative data instead of mere qualitative assertions based on one's "impressions" from facts seen regarding disease in a locality.

While it is a matter for conjecture whether Ross would have contributed more to the good of mankind as a poet or novelist, the value of his work in medicine is no longer doubted, and it may be asserted without exaggeration that it has been of importance in human history.

Ross's life is an illustration of the thesis that the man of genius, however we may define that term, is bound to make his mark, no matter what the line of work he takes up.

Sir Ronald Ross died on September 16th, 1932, at his quarters in the Ross Institute at Putney, London.

The medical men of Hyderabad and Secunderabad will only be doing their duty to themselves if they set afoot a movement for commemorating in some form the work of Sir Ronald Ross in Secunderabad.

DR. MRS. ISABEL KERR

In the unexpected death of Dr. Mrs. Isabel Kerr which occurred on the 20th of December 1932, the people of this State have sustained a loss which will be made up only with great difficulty.

The mention of her name brings before the mind the picture of the Leper Hospital at Dichapali, an institution of importance not only to this State and India but a factor in the Anti-leprosy work recognised the world over. The work of the hospital has been reported in this Journal from time to time and we publish in this issue the medical report for 1932, the last to be written by Dr. Kerr, which shows how the work and importance of the Hospital are always increasing.

Dr. Kerr graduated M.B.Ch.B. at Aberdeen in 1903 and spent some years with her husband the Rev. Mr. Kerr in Rhodesia. They came out to Hyderabad State in 1907 and Dr. Kerr was in charge of the Women's Hospital at Nizamabad for 12 years, upto 1919. Being moved to pity at the miserable condition of the lepers, the Kerrs opened their Leper Home on a very modest scale in 1920. Their sympathy and devotion to work, could not fail to be recognised, and with private and State help



Dr. Mrs. Isabel Kerr, M. B., Ch. B. (Aberdeen)

it has now become the haven of refuge and hope to more than 400 inmates and a very important teaching centre for Anti-leprosy work.

At the British Medical Association meeting on 5th August 1932 she read a paper on Leprosy in Women which appeared in our last issue; on that occasion she appeared in good health and full of energy and was good enough (it being our first personal introduction) in her simple unaffected way to promise more contributions to the Journal.

The best monument to her is the hospital itself which she has built up. She will live long in the hearts of the many who came to know her as healer and messenger of hope. Her life should act as an inspiration to others. We condole with her husband and daughter in their bereavement.

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Impressions of 9th Session of the All India Medical Conference held at Lucknow from 28th to 30th Dec., '32

Major M. G. Naidu, the President-elect, reaching Lucknow on the evening of 27th December was received with the usual 'garlandic' honours by a large contingent of Lucknow and other medical men headed by the Hon'ble Justice Sir Wazir Hasan. We all moved immediately, escorted by members of the Reception Committee and the youthful volunteers, to our Residence, arranged in the buildings which used to be the Council Chambers. Catering here was meant to suit all tastes. The President was kept busy till late at night discussing the arrangements for the Conference, which opened the next morning (28th December, '32) at the Municipal Hall, Lalbagh, before an audience of about 250 with a small sprinkling of ladies—including about a hundred delegates, the largest number coming from the Punjab and Bengal.

The Proceedings commenced with the reading of the Welcome Address by the Chairman of the Reception Committee, Rai Bahadur Dr. B. N. Vyas, the leading medical man of Lucknow. Dr. Vyas's exuberance of spirit was manifest not only in the language of the Address, but also in his reading of it. The following are some extracts from it:—

1. The British Medical Council began to find fault with the standard of medical education in this country. The

general Medical Council's action was purely the result of propaganda by ex-service men.

2. The Civil Medical Services should be recruited by open competition on a provincial basis. The majority of the Government hospitals should be run with the cooperation of the independent medical profession. For teaching institutions, the best men should be obtained by open competition, irrespective of service, colour, caste or creed. No teaching post should be reserved for any particular service. Clinical posts in educational institutions should be open to independent private medical practitioners.
3. I am looking forward to the time when medical politics will gradually be replaced by scientific development.
4. We must help the public to develop the Industry which aims at the production of medical and surgical appliances. A large proportion of drugs and their preparations which are now imported from foreign countries at great cost could be replaced by those manufactured in the country.
5. The tendency on the part of our young medical practitioners to concentrate in Urban areas needs to be checked.
6. If medical relief is brought within the reach of the rural population, the future of the daily increasing number of qualified medical men and of medical industries is assured.

The President Major M. G. Naidu, after his formal election, read out his address. In one of the opening paragraphs, he referred to the "multiple benefits conferred on India by Great Britain". This did not seem to go well with the audience. Some of them thought it 'not quite necessary' in a medical conference. Others did not like the reference because it tended to aggravate the 'inferiority complex' of some of our countrymen, who merely put on a 'superiority complex' in their dealings with their own countrymen! Personally, I did not like it, because it was

excellent "copy" for the reactionary Press, which, right enough, broadcasted it, omitting all reference to the criticisms of the Government, veiled and unveiled, contained in the latter portion of the address.

The main part of the address was, quite rightly, taken up with the detailed promulgation of an active scheme of medical and surgical training of suitable young men, and with the organisation of a body of volunteers from among the medical men and the public, somewhat on the lines of medical relief provided by foreign medical missions. The Scheme is quite plausible, and certainly not impracticable, if propaganda of the right kind and adequate degree can be carried on intensively and persistently. With the finishing of the Presidential Address, the Subjects Committee was formed, and Presidents of the Scientific Sections were elected.

The Hon'ble Sir Wazir Hasan, Chief Judge of the Chief Court of Oudh, then performed the Opening Ceremony of the All India Medical Exhibition in the grounds facing the Municipal Hall. A brief visit to the grounds of the Exhibition brought to an end the morning session.

The afternoon session was devoted to the sorting out of Resolutions, and the evening was spent in a very pleasant 'garden-party' (by the local Chemists, Messrs. Solomon & Co.) on the Exhibition grounds. This afforded a splendid chance to members to meet each other. Personally, I felt very happy meeting old, very old, Edinburgh friends (of 1909 to 1914!). The Exhibition, as usual, consisted of well arranged stalls of indigenous, American, and German Firms exhibiting the paraphernalia of medical and surgical requisites. The day's 'work' closed with a lantern demonstration on the "Determination of Sex" by Dr. K. N. Bal, Professor of Zoology, Lucknow University, who presented the results of Experiments—his and others—on animals. I overheard and echoed the remark of a member wondering at the possibility of similar experiments being made upon humans! Those who have read the recent weird work of Aldous Huxley "The Brave New World" will not wonder at such a possibility, though many may question their desirability.

The following day (29th December) was occupied fully with the discussion in the open conference of the various resolutions submitted to and scheduled by the Subjects Committee. As usual at such meetings, there was a crop of Resolutions. Some of them were discussed with indifference, others with much interest, but all were passed unanimously! There is no use my recording the various Resolutions here, because Newspapers reported them all at the time. In my opinion, the most important Resolution was the one in which the Government were asked to postpone the consideration of the All India Medical Council Bill till the meeting of new Legislatures under the coming Constitution! One can only hope that the desire of the Conference will be respected by the Powers that be!

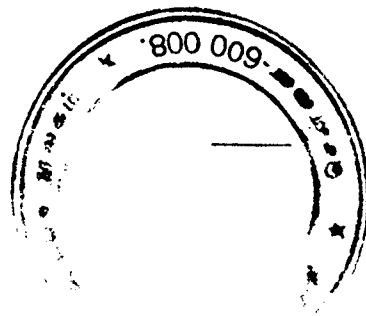
In the afternoon, a certain Dr. Philipp Razek of Vienna lectured on "Theories of Angina Pectoris". I wish I could say I learned something at the meeting. In the evening, a group photograph, and Tea by Messrs. Inder Chand & Co., was followed by a demonstration on Physical Culture and a Cinema show on the same subject. The day finished with a sumptuous dinner to all by Messrs. Sarkar and Co., the leading Chemists of the City. The Founder of this Firm, we learnt, was the late Dr. Rup Kishore, Tandon a Graduate of Edinburgh. The members of his large family have kept up the reputation of the Firm for its scientific dispensing and brought it to its present state of the largest and most popular Firm of Chemists in the city of Lucknow. Sir Nibratan Sirkar in his after dinner speech gently let fall the hint that Indian Firms should concentrate more on the manufacture of drugs from indigenous sources rather than be the mere purveyors of foreign stuff. The Dinner was in Indian style—plus tables. I felt there were not enough laymen at the table to provide, on the following day, a few cases of indigestion to the local medical practitioners. A pathetic feature of the gathering at Dinner was the embracing by Major Naidu of the late Dr. Tandon's young son. Major Naidu revealed the news to the party that Dr. Tandon was his class-mate at Edinburgh, and, for many years after, an intimate friend.

The last day, Friday, the 30th December, we went out in groups, sight-seeing. A glorious city Lucknow is. Gloriously cold weather added to its charms. Beautiful and clean, with lovely gardens full of big blooming roses, excellent roads and magnificent buildings—even the old ones being in thorough repair—the impression the whole atmosphere left on us all is unforgettable. Even the narrow old lane, the inevitable “Chowk” of Northern Indian cities, has its charms, though mixed with some ‘dirt’, both physical and ‘moral’.

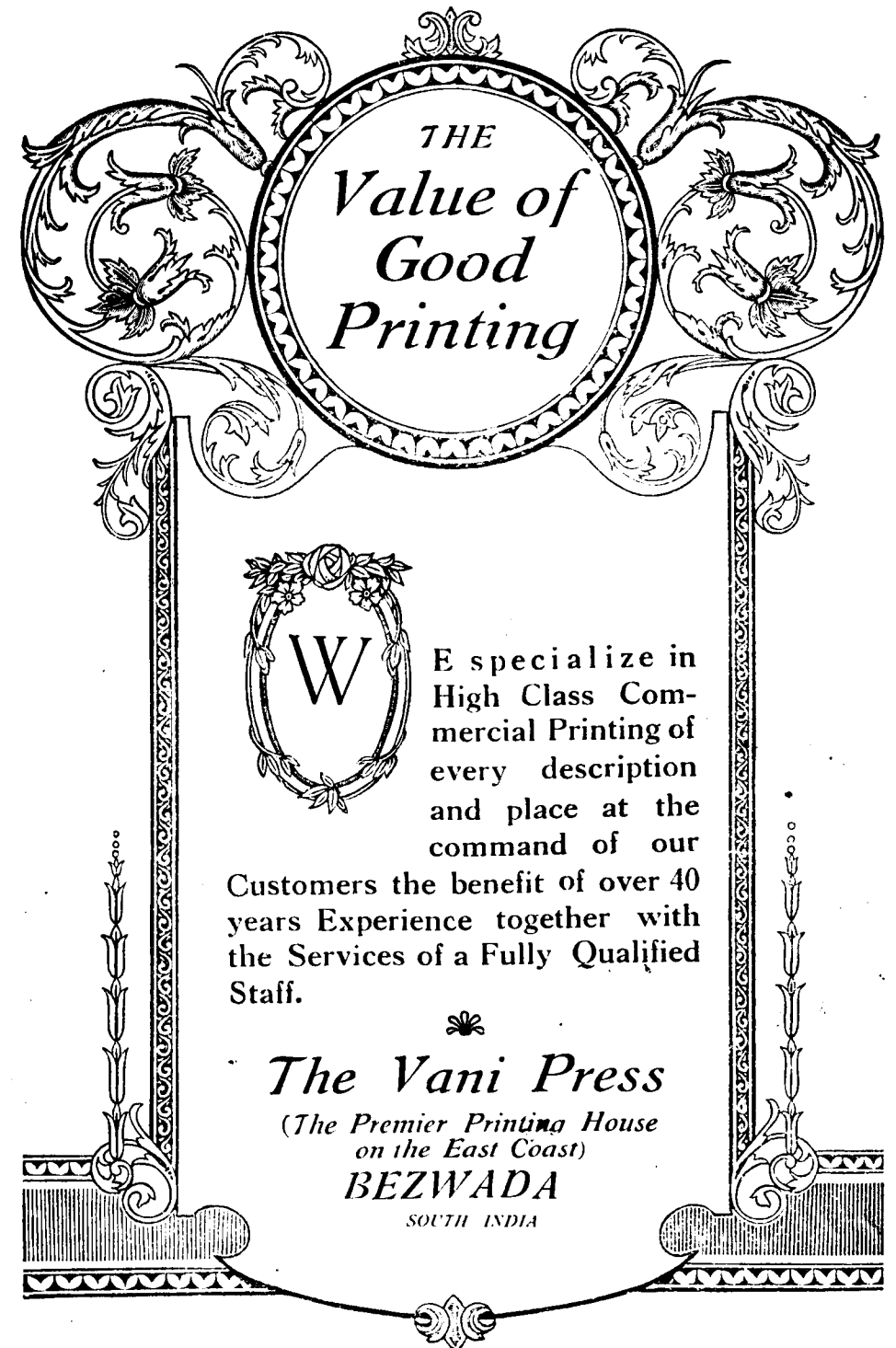
Queen Mary’s Hospital, the King George’s Medical College and Hospital were visited in the evening. They all appeared to us beautiful and excellent in every way. We said good-bye to each other on the pretty lawns of the Medical College, where Tea was provided by Dr. Achariya, the well known Bangalore Ophthalmic Surgeon, who has now made Lucknow his home. The Good-bye was not without a sincere touch of a pang; for, the hospitality of the Lucknow medical men was overwhelmingly sweet.

Hyderabad,

26—1—33.



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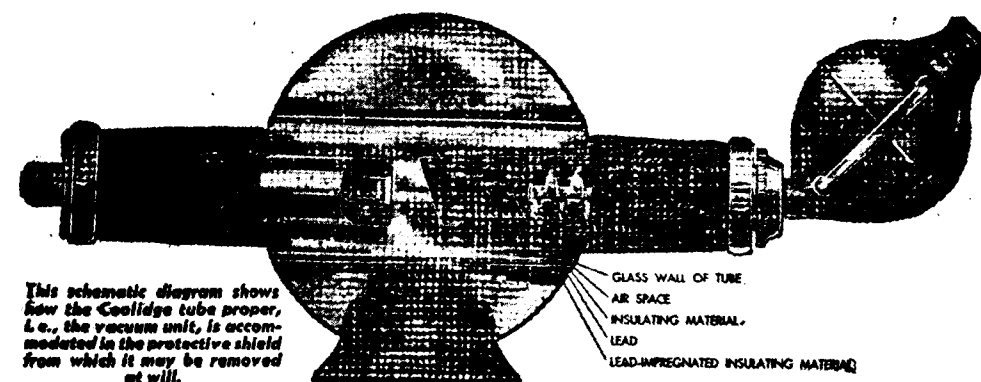
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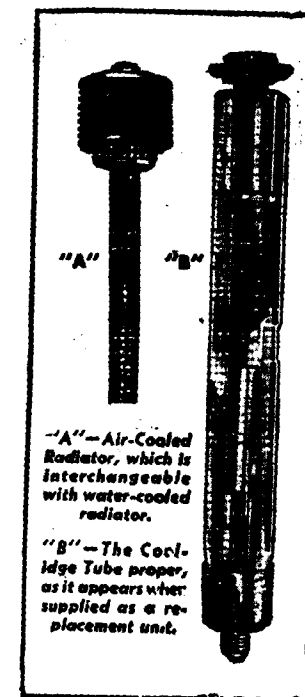


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