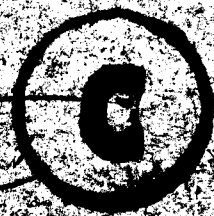


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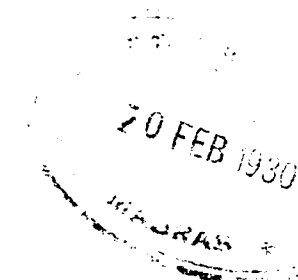
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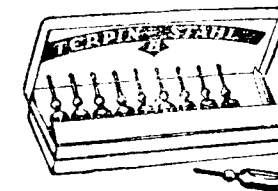
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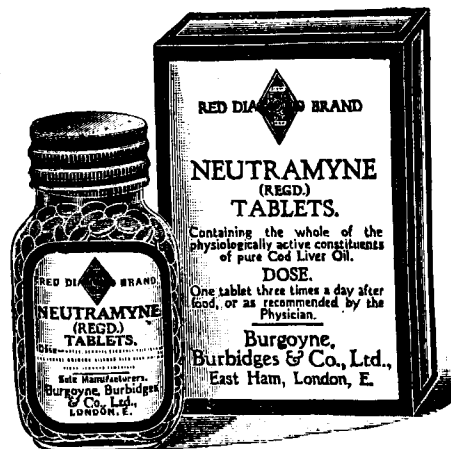
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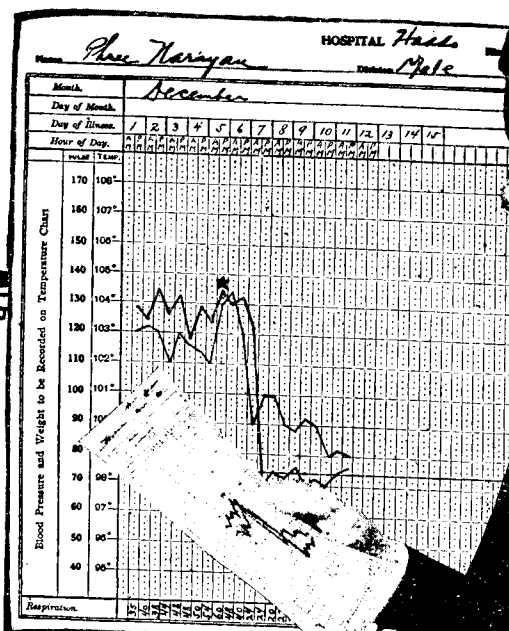
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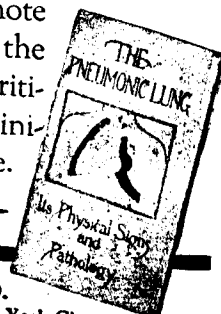


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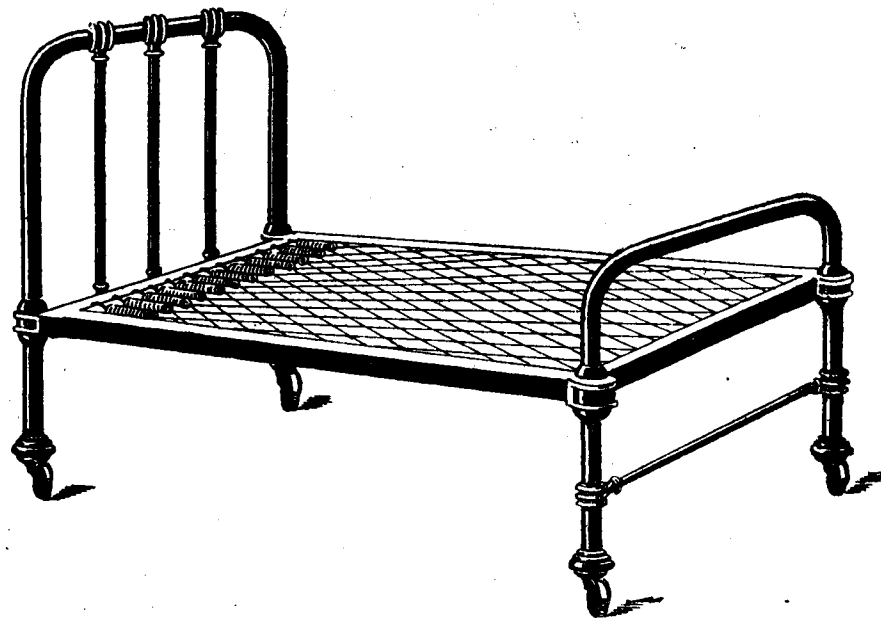
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No. 3

BY LT. COL. R. E. WRIGHT, M.D., C.I.E., I.M.S.

About May 1928 we became aware that cases of keratitis were reporting at the out-patient department of the Government Ophthalmic Hospital rather frequently. They corresponded most closely to the affection described by Herbert in Bombay in 1901,¹ but agreed fairly well with the classical description of superficial punctate keratitis given by Fuchs and others in 1889. It may be well at the outset to give the more common clinical characters of the condition as we have observed it, but it must be understood that there are considerable variations. The affection starts with a mild conjunctivitis confined to one eye (most often the left) in the vast majority of cases; only about one per cent of the cases are bilateral when first seen, or become so later. There is no initial catarrh or febrile disturbance.

We are well aware that the histopathological work and animal experiments with filtered material need confirmation. The epidemic presents a wonderful mass of material for further research in connection with the ultramicroscopic (filterable) virus group.



"CHAOS IN THE OUT-PATIENT CLINIQUE."

There is variable redness, no discharge, moderate irritation, very little lachrymation or photophobia. Sometimes the patient notices the redness; at other times slight dimness of vision attracts his attention. It is difficult to see the lesions on the conjunctiva, but they are sometimes visible as tiny elevations. After a few days minute grey spots appear on the cornea. They vary from a fine diffuse curdy deposit only visible with the corneal microscope, apparently confined to the epithelium, to large grey spots easily visible to the naked eye, and obviously extending into the substantia propria. Certain cases after a time become indistinguishable from the macular keratitis described by Kirkpatrick²; others come to resemble the keratitis disciformis of Fuchs, and numerous transitional forms may be noted. There is always a disturbance of the deeper layers of the cornea of greater or lesser extent, and evidence of anterior uveitis in the various fine deposits which one can see on the endothelium with the corneal microscope. There is no obvious iritis, and uveitis is never so severe as in herpes zoster ophthalmicus. Staining is observed in about two-thirds of the cases. The corneal spots are sometimes elevated, but just as frequently the epithelium is perfectly smooth. For the most part the course of the disease is short, and the cornea clears within a month. In some cases, however, the spots enlarge becoming like those described by Kirkpatrick, and may persist for over a year. It is rare for the vision to be permanently interfered with although convalescence may be very protracted. Prof. Fuchs, when he originally described this affection considered that it was similar to herpes febrilis, and probably of the same nature as keratitis disciformis. Verhoeff,³ who made an extensive histopathological study of the condition, regarded it as a neurotropic affection identical with keratitis disciformis. He demonstrated that the lesion lay on either side of Bowman's membrane and was presumably related to the corneal nerve terminals where they pierced Bowman's membrane. The investigations started by Gruter, and carried on by numerous other workers established the fact

that herpes febrilis was due to a filter passing virus transmissible to rabbits, and capable of producing encephalitis. Paton,⁴ in 1926, writing on the subject of herpes states that the commonest ocular manifestation of herpes febrilis is the dendritic ulcer, and regards the aetiological identity of herpes febrilis and herpes zoster as not proven, although certain workers have put forward the view that these two affections are merely clinical variations of the action of the same virus. Levaditi, in 1927, in classifying the virus diseases, includes both herpes febrilis and herpes zoster ophthalmicus in his group of neurotropic ectodermoses. Although Fuchs originally considered that superficial punctate keratitis showed affinities with herpes febrilis, there is no suggestion in the literature that superficial punctate keratitis should be regarded as aetiologicaly similar to herpes febrilis or herpes zoster. There was formerly considerable confusion with regard to this affection, and it is evident on going through the literature that the type description did not cover the wide variations of this disease, and that it might occur quite differently under sporadic, endemic and epidemic conditions. Prof. Salzmann of Gratz recently called attention to this, and Prof. Kuffler remarked on its appearance with epidemic frequency in Berlin last year. The Madras epidemic has been so extensive (3,500 cases up to end of 1929) and protracted that we have had the opportunity to see the enormous variations in the clinical features which this disease may present. Under such epidemic conditions, where the presumption of an identical causative agent is hardly questionable, one may observe clinical types similar to some well-known descriptions of keratitis which appear in standard works such as the keratitis disciformis of Fuchs, the epidemic punctate keratitis of Herbert, the macular keratitis of Kirkpatrick the keratitis epithelialis punctata of Koeppe, and intermediate transitional forms between them. The macular keratitis of Kirkpatrick described in 1920 is probably familiar to most doctors in Madras. We now realise that such pictures as he described may be seen on following up some of the cases which

start with the typical clinical picture of superficial punctate keratitis.

It would take too long to deal with the extraordinary variations in the disease which we have met with. Patients have been referred to us with such marked conjunctival disturbance that this condition has been mistaken by competent doctors for gonorrhoeal conjunctivitis. On the other hand, certain cases have presented such mild conjunctival features that they would have been overlooked except that a trivial disturbance of visual acuity brought them to the eye hospital. In these the corneal microscope revealed the true nature of the disease. It would be out of place to describe all the appearances seen with the corneal microscope. It is sufficient to point out that there is just as great a variation in the degree of anterior uveitis as there is in the conjunctival symptoms which are more obvious to the ordinary observer. Up to the present we have not observed any serious iritic phenomena or late sequelae such as glaucoma. There has not been any case so far in which synechiae developed. It may be seen from the above that this disease, which is closely related to the well-known clinical affections known as herpes Zoster ophthalmicus and herpes simplex or febrilis (which is familiar to most doctors as the so-called "cold on the lip", and to most ophthalmologists as dendritic or vesicular ulcer of the cornea) embraces a variety of affections of the cornea which have hitherto been regarded as independent affections, or not understood at all. Hardly a week passes in which we do not see some new clinical feature. It may be readily understood therefore, how easy it was for ophthalmologists in the past to miss the true nature of cases occurring sporadically and place an example of this affection as one of the hundred and odd varieties of keratitis which have been described as separate entities. Our experience in the Government Ophthalmic Hospital, Madras, when carefully recorded, ought to be of the greatest possible assistance in the future in enabling ophthalmologists to diagnose isolated and rare cases of this affection.

We naturally seized the excellent opportunity which this epidemic gave us of investigating the nature of this disease. We tried to confirm Herbert's findings, but were unable to isolate any constant bacterial agent either by culture or with the microscope in stained or dark ground preparations. With the aid of our colleagues at Guindy, we were enabled to undertake animal transmission experiments. Direct transmission to the cornea of monkeys was negative both with filtered and unfiltered material. Without going into tedious detail it may be stated that we eventually showed that the disease was transmissible to rabbits and man both with filtered and unfiltered material we had anticipated this would be so as it was fairly obvious that the condition closely resembled herpes febrilis in many respects, one of the great differences being that there is, as a rule, no fever or antecedent febrile condition associated with superficial punctate keratitis. In order to confirm our transmission experiments we undertook a histopathological investigation of epithelial layers removed from the affected eyes, and finally were able to demonstrate inclusion bodies in the epithelial cells. They were sharply defined, intranuclear, and cytoplasmic, more suggestive of Negri bodies of the inclusions of variola than of other varieties of cell inclusions. This finding confirmed our view that we were dealing with a condition which might be regarded as a disease of the herpetic group due to a filter passing virus, that it was probably closely related to herpes Zoster ophthalmicus and herpes febrilis, but not identical with them.

Of the nature of the virus we know nothing. Like that of herpes febrilis, it appears to have a predilection for manifesting itself in regions supplied by the fifth nerve. It is presumably air borne, and enters by the conjunctival corneal route following the arborisations of the corneal nerve from the epithelium through the apertures where these nerves pierce Bowman's membrane, and thence into the substantia propria. It is doubtful if any damage is done to the nerves as far back as the ciliary ganglion, and none of our experimental animals

developed encephalitis. Unlike herpes Zoster and herpet febrilis, skin lesions are not present.

Acquired immunity:—At first we supposed that there might be an acquired immunity, but recently we have seen attacks in patients who less than sixteen months before suffered from the affection. In two cases, the second attack was in the same eye. It appears therefore that an attack does not protect in all cases, but there may be a transient protection or even a modification of severity.

Confusion in diagnosis:—A red eye on one side (even if it be the left) is not necessarily superficial punctate keratitis, but one is liable to jump to this conclusion just because an epidemic is raging. Unless the corneal microscope shows characteristic lesions, and the conjunctival smear is negative, it is not a pure superficial punctate keratitis. The disease must not be confused with "pink eye" which is usually an acute Koch Weeks conjunctivitis. The general public frequently makes this error. It is very easy to mistake superficial punctate keratitis for other affections, and in the rush of out-patients work we sometimes get caught and diagnose superficial punctate keratitis when it is really something else.

Treatment:—All cases show a marked tendency to get well; mild cases seem to make a perfect recovery without treatment, but our experience shows that even in mild cases it is better to keep the eye covered, as the corneal lesions seem to be more persistent and more dense in uncovered eyes. It is also well to keep the eye at rest as the severity of anterior uveitis is sometimes out of proportion to the external appearances. One may have a quiet looking eye with well marked anterior uveitis. Cycloplegia is therefore indicated in almost all young people and in many older people who do not show a predisposition to glaucoma. It can readily be understood that one cannot order atropine indiscriminately, for, if the general public, or even the general profession get the idea that atropine was the best drug in the treatment of superficial punctate keratitis, a certain number of eyes would be lost from glaucoma,

whereas it is doubtful if an eye is ever lost from superficial punctate keratitis. Hot compresses give relief to some and hasten the clearing of the opacities in many. A cold wet pad under the spectacles or an eye patch gives comfort and rest, and an antiseptic sedative ointment such as a chlorotone ointment is indicated at bed time. In the later stages, when the conjunctival affection has subsided, and the eye is white, but the corneal spots remain, dionine is useful. (2—10%) The more complicated cases require special care, and we consider that severe cases are more liable to have a subsequent interference with visual acuity if not carefully occluded and cared for from the start.

References:—

1. Ophthalmic Review Vol. XX, 1901.
2. British Journal of Ophthalmology, Vol. IV, 1920.
3. Transactions of the American Ophthalmological Society, Vol. XII, 1911.
4. British Journal of Ophthalmology, June 1926.

“Obscure fevers in children”

BY LT.-COL. G. E. MALCOLMSON, M.D.,
M.R.C.P. (LOND.), I.M.S.

(General Hospital, Madras).

By obscure fevers we mean those that we have not diagnosed. The object of this lecture is not discuss fevers of short duration, *i.e.*, those which last under one week and then disappear not to recur.

Short fevers in childhood are often incapable of diagnosis. No doubt a good many are due to gastro-intestinal troubles of short duration. These are very often put down as due to teething. Why teething should cause a temperature of 102—103° is not obvious. Influenza is very often diagnosed quite unjustifiably. In this country a good many are due to dengue fever.

It should be remembered that the Thermotaxic centre in children is much more unstable than in adults, and slighter causes are sufficient to produce disturbance; the cerebral cortex in children is much more unstable and sensitive and produces convulsions.

Prolonged fevers in childhood, *i.e.*, fevers which last over several weeks and may go on for months or years. These fevers are sometimes continuous, and sometimes characterised by prolonged intermissions of apyrexial periods. Many of these fevers will tax your resources to the utmost, not only in diagnosis but also in prognosis, and sometimes in ætiology. And for weeks one may be left in doubt as to nature of the fever.

In these replasing or prolonged type of fevers in childhood, the following conditions should be borne in mind:—

1. Malaria and Kala-azar. These are fairly easy to exclude.

“Obscure fevers in children”

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2. Infection by the coli Typhoid group.
3. Tuberculosis.
4. Ascariasis.
5. Rheumatic fever with which can be associated, Tonsilitis.
6. Chronic conditions of Intestinal tracts.
7. Broncho-pneumonia and Empyema sometimes exist in children without any physical signs.
8. Amœbiasis.
9. Congenital syphilis.
10. You might add rickets to this list. But rickets is very seldom cause of prolonged fever in this country.

Malaria and Kala-azar.—As already observed, these are very easy to exclude. In this connection, it should be mentioned that the blood picture in children is different from adults, *i.e.*, in children under 3 years of age, at any rate in young children, one very often gets 50% lymphocytosis which means nothing. Similarly one very often gets myelocytes and nucleated R.B.C. in blood; which are also of very little significance. It is possible that some cases described as Von Jacksch anæmia (Leukæmia of infants) have been nothing of the sort but simply cases of myelocytosis due to trivial causes. The enlarged spleen is due to malaria or congenital syphilis and has got nothing to do with condition described as Von Jacksch anæmia.

Coli Typhoid infection.—In any cases of prolonged fever in children one naturally does a widal reaction.

Typhoid fever in children does not run, as a rule, a prolonged course. It is very often mild, the child showing no other symptom but apathy. It should be remembered that typhoid fever can occur at any age, chiefly when the mother herself is a carrier; but typhoid, as a rule, does not give rise to any difficulty in diagnosis.

Bacillus coli infections very often give rise to difficulties which fall into two classes:—

Those in which *B. coli* is found in the urine. The fever is due to something else. This group can only be eliminated by very thorough examination of the child, and by the fact that after *B. coli* infection has been cured, the fever remains. In the other no infection by *B. coli* can be discovered but all the same are due to coli infection.

B. Coli infection exists in children as in adults in two forms at least :—

1. Systemic infection.
2. Urinary infection.

Systemic infection.—In children is very rare and it cannot be diagnosed by any smears except positive blood culture.

Urinary infection is excessively common and exists in four forms any of which may give rise to the sort of fever we are discussing to-day. These four forms are :—

- (a) Simple bacilluria.
- (b) Cystitis.
- (c) Pyelitis.
- (d) Suppurative nephritis—rare and fatal.

Of these four forms pyelitis is much more common than any other form, except perhaps bacilluria which is always easy to detect. The first three forms are chronic, and recurrent. The fourth is very rare, very acute, and fatal. All these forms occur more in the female sex than in the male; and they are predisposed to by debility and constipation. In all these, you get frequency of micturition and coli infection of the urinary tract is one of the causes of nocturnal enuresis.

Bacilluria.—In this form no pus is found though there may be plenty of bacteria in the urine, which may be seen as a swirl in the test-tube when it is shaken.

One however should always do culture of the urine, to be on the safe side. This attempt at culture should be repeated if negative at first time, as the bacilluria is not invariably constant.

In other forms of urinary infection we have pus. We very often get good many red cells as well; not infrequently frank hæmaturia where red cells are in excess of pus cells. So in every case of hæmaturia, one should be on the keen lookout for *B. coli* infection. These urines are stated to have a fishy odour. It is either untrue or defective in many cases.

Pyelitis in children frequently gives rise to the most dramatic situation and can almost be diagnosed from this point only, *i.e.*, the child may keep a normal temperature sometime. The temperature may suddenly shoot up to 104-105°, usually with vomiting; the child is profoundly ill. The child becomes well again in a very short time. This may be repeated at intervals for months in end.

Treatment of Urinary infection :—During the fever the child should be kept warm in bed and made to drink sufficient alkali to alkalise the urine 15 grs. of Pot. citras T.D.S.

At the same time, the child should be given Hydrarg. cum creta as an intestinal antiseptic and aperient.

If this alkali treatment fails one must give hexamine grs. 2 T.D.S. with grs. 4 of acid sodium phosphate, to a child 1 year old. In obstinate cases, change of air should be recommended.

Tuberculosis in children.—Tuberculosis occurs in children in the following forms :—

- (a) Miliary tuberculosis including tuberculous meningitis.
- (b) Tuberculosis of bronchial glands.
- (c) Pulmonary tuberculosis.
- (d) Abdominal tuberculosis.

Apart from purely surgical conditions these are the usual forms met with in children.

Miliary tuberculosis does not come under the survey of this lecture. It is an acute condition and is practically always fatal in 1-3 weeks.

Tuberculosis of bronchial glands.—This is almost incapable of any certainty in diagnosis. That it does occur frequently is shown by autopsies though it is very difficult to diagnose. The characters are supposed to be:—

Wasting;

Paroxysmal cough like whooping cough.

Palpable glands at the root of the neck,—posterior triangle. One may find some dulness under the manubrium or between the scapulæ.

Radiologists may tell you that they see increased opacity at hilum. But radiology is decidedly of little use since they show only where calcified, *i.e.*, cured

The various other commoner signs such as d'Espines Sign and so on.

Pulmonary Tuberculosis in children is not very rare but the difficulty is in deciding whether you are dealing with Broncho-pneumonia or pulmonary tuberculosis. As the distribution of the lesions in children is as a rule broncho-pneumonic in character, it is very difficult to decide between the two. The child never coughs out sputum. There is no limit to the duration over which no attack of broncho-pneumonia can extend.

Radiologically one may find rather apical than basal distribution, but even this character is not marked in childhood. Cases of broncho-pneumonia which extend over two months with intermittent or remittent temperature may be gravely suspected to be tuberculous in nature though they by no means always are.

Abdominal tuberculosis is very common in children and may exist typically in three forms:

1. *Tabes mesenterica.* The glands can usually be felt.
2. *Ascitic form of tuberculous peritonitis.*
3. *Plastic form of tuberculous peritonitis,* where lumps can easily be felt.

Ascariasis may be a cause of prolonged fever in childhood. It is much more liable to give rise to convulsions gastro-intestinal complaints, wasting and so on. But still in routine examination of any child, examination of the fæces will be made.

Tonsillitis and masked rheumatism.—These are grouped together because it is impossible to diagnose rheumatic fever in childhood, which does not manifest either joint affection or tonsillar affection or some other lesion peculiar to rheumatism as subcutaneous nodes or endocarditis.

Chronic Tonsillitis in children is an extremely common cause of fever and good many cases will not be cured without removing the tonsils. So if any child is suffering from prolonged fever and the tonsils are enlarged and does not react in a reasonable time, the tonsils ought to be removed.

Infections of the Alimentary canal either with the streptococcus, *Bacillus coli*, or other organisms as *B. faecalis alkaligenous* are no doubt responsible for prolonged fevers in children. These are often associated with the passage of mucus in the stools. Cases are often benefited by high colonic irrigation and Hydrarg. cum creta.

Broncho-pneumonia and *empyema* in children are very difficult to detect clinically; and are possible causes in any obscure case of fever in childhood as in adults. An X-Ray of the chest is indicated so as to enable us to eliminate cases of this nature as far as possible. *Amoebiasis* is one of the commonest causes of obscure prolonged fevers to determine the cause of the fever it is always justifiable to try a few small doses of emetine and note the effect.

It must be remembered that as in adults so in children *syphilis* may exceptionally be a cause of prolonged obscure fever when it is so, it always reacts very promptly to anti-syphilitic treatment.

Rickets is very rarely the cause of prolonged fever in childhood in this country.

The Claim of the Indigenous Medicine

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On the occasion of the opening of the Ayurvedic and the Tibbi College at Delhi about a dozen years ago, Lord Hardinge, the then Viceroy of India said, "When I remember how many millions of India are beyond the reach of Alopathic aids provided by Government and how many of those who had means of access to consult best Doctors still prefer to be treated in accordance with indigenous system of medicine, I come to the conclusion that I should be wrong to discourage the scheme which aims at improvement and development of this branch of medicine." There are two aspects to the study of Indigenous medicine. The resuscitation of the indigenous system of medicine could be traced partly to the national awakening of the country, a thing that has been colouring every aspect of life in India of late, and partly to the considerable if not profound influence on the masses of the indigenous system of medicine even to-day. On the other hand the study of the drugs of Therapeutic value found in India could be traced to its economic issue. Not to speak of many valuable drugs of the indigenous system, obscure till now that have been brought to light by the recent investigations there are many drugs of established Therapeutic value like Belladonna, Santonine, Hyoscyamus, etc., grown wild in India without being put to much use. Thanks to the development of the Forest Research Department in India for bringing to light the existence of a vast unexplored mine of wealth in the plant kingdom of the Himalayan tract.

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The fame of the Indian Medicine.—Time was when the Indian medicine was counted just a matter of childish charms and Philters—almost a sort of Vodoo devil dancing. The following historical review from an unbiassed English student of oriental Literature will be of interest. In the course of his lectures of the 'Sir George Birdwood Memorial Lectures' delivered by Capt. P. Johnstone Saint, M.A., (Cant.) F. R. S. (Edin.) with Sir E. Dennison Ross, Professor of Persian and the Director of the School of Oriental Studies of the London Universities in the Chair, the lecturer mentioned what extraordinary advance was made both in Surgery and Medicine by India when Europe was groping for light in her cradle in Greece. In Greek, Arabian, Egyptian systems of medicine time after time are seen traces of what can only have been derived from even the more ancient and famous Indian medicine. In the domain of Drug Therapy and the study of Toxicology the Indian medicine was far in advance of the other systems. Stories are current of the invasion of India by Alexander where for some ailments the Greek Physicians were powerless and had to look for the native physicians for help as for snake bite, intoxication of various sorts, etc. The lecturer when dealing with the subject of Indian Materia Medica almost grows into rapture. Says Capt. Johnstone Saint, "If then this is what we find in surgery what may we not expect from medicine from India? that vast and fertile country which is a veritable encyclopedia of the vegetable world. The Materia Medica of the ancient Hindus is a marvel to the modern scientific investigation from which both the Greek and the Roman freely borrowed." The fame of the Indian physician took Hypocrates the father of medicine to India. If we are to speak the truth we must call Greece not the parent of our modern medicine but the nurse of the child given birth to in India. A system which has so survived through the centuries cannot be lightly condemned as being unscientific, and a school of thought

is at present engaged in trying to bring about a Renaissance of the Ayurvedic system of medicine. And we may have every ground for hope that before long the true Indian medicine may once again hold its place in its own India the birth place of the medicine of the world. Madras legitimately claims the lead for starting a school of Indian medicine—all praise to the name and memory of the Late Raja of Panagal, who took the bold and determined step in the face of opposition to start the school of Indian medicine in that Province.

The decadance of the same.—There is no gainsaying the fact that owing to various causes this golden age of Indian medicine was destined like other golden ages to fade away into silver and even baser metals. The duty of worker in this revival of the ancient system, is to clear the chaff from the grain to weed, prune, and develop the ancient form and make it yield fruit abundant. The indigenous system mainly used drugs on emperical basis with good, bad and indifferent results as the science of diagnosis and Etiology were not properly developed. Col. Knowles, the Editor of the Indian Medical Journal and Professor in the School of Tropical Medicine, has written lately "Old Ayurveda modernised and rejuvenated will not only be a national medicine of India but will play no small part in the uplift of the International medical systems of the world". Col. R. N. Chopra, that great Pioneer in this revival of Indigenous drugs has said, "Until the drugs used in the indigenous systems are investigated on modern scientific lines, their use by the profession must necessarily be restricted, while other countries not bound by our local traditions will not use them at all until the case is proved as to their utility.

The weakness of the system.—The unkind critic of the Ayurvedic and Tibbi system puts the reasons for its influence on the masses to the more spectacular expedients resorted to by the practitioner of these systems to win

the psychology of the patients as coloured drugs, varieties of administration, stringent dietic observance, the importance assigned to elements, etc. The conservative advocate of this system takes up even this argument in his favour and says that psychic treatment is the basis of all treatment. History is given more importance than the examination of the patient. Symptoms are of greater value than signs. These are certainly some of the weaknesses of the system. But are there not certain conditions at whose threshold the western medicine stands helpless and look yearningly perhaps not unmixed with despair at the indigenous system for help. Perhaps the indigenous system is the only relief available to most of the rural population of the country but cases like the following are not wanting. The other day when talking to a friend belonging to the western medical profession practising in the United Provinces, I was told that his wife was being treated for Splenomegaly due to some obscure cause. The man had resorted to all the available sources of western medicine for curing the condition with futile results. Having then heard and frankly believing that certain eminent physician of the indigenous system of Calcutta was capable of curing the disease he was taking the patient to that physician. No one is inclined to call that Doctor a fanatic in despair, or a traitor to his system, for the fact is probably the indigenous system is really capable of curing the condition.

The Economic Issue.—Barring these sentimental if not less rational and unconvincing reasons for the awakening of the indigenous medicine there is the economic aspect which certainly justifies its revival and demands a greater attention, output of money and energy. Here one has clearly to distinguish the investigation into the indigenous system of medicine from enquiry or search of the drugs of Therapeutic value found in India. Drugs of Therapeutic value grown, manufactured and used in other countries

are found in India in the crude form. More than half the drugs of the B. P. are available in India and most of the others may be successfully grown here as has been demonstrated by drug growers in India. If the fact of its availability in India is recognised importing of this could be stopped at least controlled and thereby effect a saving. A few examples may illustrate the point. Digitalis leaves and preparations used to be imported from outside in large quantities. Recent researches showed that the imported drugs deteriorated owing to transit, storage and climatic conditions. This necessitated getting fresh leaves from India to secure active preparations. Digitalis leaves of excellent quality are now being grown in different parts of India and the Indian variety is gradually coming into wider use.

Ephedra Vulgaris a drug rendered popular by the Chinese investigators (probably the plant used by the ancient Aryans the Soma of the Vedas) is found to grow in India at least in five different species. Till now the supply for this drug was China and California. The Indian variety that has recently been investigated showed higher Alkaloidal contents than either of the other two. America alone ordered 34 Tons (918 Mds.) of Ephedra during 1928. The Alkaloid taking the minimum yield of 0.5% would fetch a value of nearly 4 lakhs of rupees. If further researches lead to its wider use in medicine India would be a rich source of the drug. But facts go a little further. The irony of the situation is that some of the crude products are exported from India to the foreign countries and returned in a purified form but hundred fold more costly. A glance at the following statistics may give an idea of the potential resources of the country :—

Value of drugs and medicines excluding Chemicals and Narcotics.

	1919-20	1920-21	1921-22	1922-23	1923-24	Average.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Exported from India...	45,46,980	48,32,390	35,13,04	22,89,352	21,97,624	36,15,878
Imported to India ...	1,82,49,640	2,11,28,270	1,58,37,225	1,66,08,551	1,81,32,945	1,79,91,326

Tea dust from India and Ceylon is exported to South America and Europe at a nominal price of annas 6 a lb. and comes back as Caffine at price of Rs. 452 ? Similarly Nux Vomica, Belladonna, Datura, Stramonium, Castor oil seeds are taken thousands of miles away from India and returned as refined products with a price that bears no comparison with the original crude product. Identifying and getting to know the value of these plants is the first step to effecting economy. The next is to purify the crude form and render them fit for safe use. Refined products are not manufactured now in India on any large scale. The recent manufactures of Caffine from Tea dust and Strychnine from Nux-Vomica are examples of substances whose manufacture in India have proved quite economic in spite of the high cost of the solvents. There is no reason against its much wider application provided research in the drug is properly organised and Botanists, Chemists, Pharmacists, Pharmacologists and Clinician work in collaboration. The medical store at the instance of the indigenous drug committee made Pharmaceutical preparation of the well known crude official remedies which are indigenous to this country and issued them for trial to the dispensaries and hospitals with encouraging results. During the war the price of Quinine went up from Rs. 14 to Rs. 55 per lb. On the recommendation of Col. Acton after exhaustive enquiries it was definitely proved that the crude cinchona bark (Cinchona Febrifege) containing the total alkaloid is just as efficacious as Quinine in B. T. malaria. The price of Cinchona Feb. is about Rs. 10 per lb. and the dosage for clinical use is not very different from the refined product. The use of the crude product will thus bring the treatment of Malaria within the means of the poor.

The work of the Botanist.—The crude drug obtained in India varies in its effective principle with changes in temperature, elevation, mode of cultivation, time of harvest,

etc. Recognition of this point made the botanical investigators go further and cultivate such of these plants for therapeutic value under the most conducive conditions to facilitate the maximum yield of the active principle. Work done on *Artemisia Maritima* (N. O. *Compositæ*) which yields Santonine illustrate this point. Russian *Artemisia* growing wild had a Santonine content of less than 1% but its cultivation increased the content to nearly 3.66—5%. Experiments carried out by the Forest Research Chemists at Dehra Dhun showed that Santonine is present from the 1st of July to about the middle of September, namely, during the period of budding. The maximum yield during that period ranged from 0.5—1% though it compares not favourably with the Russian variety. Some of the Cashmere variety had an alkaloidal content of about 2%. Owing to the stoppage of the supply of Russian Santonine efforts are being made everywhere to find other sources of the drug and it has been authoritatively said that Cashmere can produce sufficient Santonine for the use of the whole of India. An English firm in 1925, it is understood, has realised this and had entered into an agreement with the Cashmere State and the raw material to be utilised to their fullest extent. It was mentioned previously that the imported preparations of *Digitalis* tended largely to lose their potency. As a result of this, tests made in the Department of Pharmacology here by methods of Biological and Chemical assay as also clinical at the Carmichael Hospital showed that the leaves grown in Cashmere soon after they were dried were as good as the best leaves available from Europe. *Digitalis* leaves from the Cinchona Department of the Nilgiris and from the Government Gardens Ootacamund as well showed that the quality of the stuff was not inferior to the B. P. Standard. The difference in grade is due to factors, like heat, which increase the activity by increasing the amount of Glucoside formed and the moisture which has the opposite effect

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on account of the Enzyme action. These factors are of great importance in a hot and moist climate like that of India and if care is not taken in properly drying the leaves they may lose a lot of their activity.

The importance of rational treatment.—In the earlier systems of medicine, therapy was mainly empirical as the etiology and pathology of disease were not thoroughly understood and as our diagnostic methods were limited to our senses. Prof. W. E. Dixon of Cambridge a few years ago said, "To state that the future of medicine lies in pharmacology may sound fanciful but it is certain that the most hopeful of all signs of progress of medicine to-day is to be found in the progress of the science of treatment". There is the saying of the clinician that in treatment the foremost thing is diagnosis—the second is again diagnosis and the third yet again is diagnosis. Though diagnosis is of prime importance, the patient is less interested in the diagnosis than in the treatment of his disease. The argument is sometimes adduced that for tropical diseases drugs that grow in the tropics should be of greater value than others. True environment causes and effects certain diseases to varying extent and treatment has to be modified in relation to environment. But science is universal—physiology and anatomy are fundamentally the same and hence the nature of treatment cannot vary much from place to place. A negroe transplanted at Greenland or an eskimo in the Congo valley can certainly be treated by the same physician for common ailment with similar therapeutic measures. The investigation that is being undertaken by pharmacologists is to go thoroughly into the character and action of the drugs before recommending them for clinical application. He starts with a clean slate after selecting the drug or the plant product from the indigenous or other systems with only the main idea as to its use in a particular condition and works it up along scientific lines in the light of modern knowledge.

Some recent investigations in the Department of Pharmacology.—Information on some of the plants investigated by the Department of Pharmacology of the School of Tropical Medicine, Calcutta, may not be out of place in conclusion.

Boerhavia Diffusa (Beng.) Punarnaba (Hindi) Gadhapurna (N.O. Nictaginae). This plant has largely been used by the hands of the Hindu physician for general dropsy. This plant grows all over India as a common creeping troublesome weed abundant during the rains. Chemical analysis of this plant shows that the active principle is a body of alkaloidal nature with a large quantity of Pot. Nitrate. Animal experiment showed that intravenous injection produced a slight but persistent rise of B. P. and a well marked Diuresis chiefly due to its action on the renal epithelium. Clinically a liquid extract made from either the drug or fresh plant produced marked Diuresis in cases of Oedema and Ascites.

The presence of Potassium salts reinforces the action of the alkaloids. The drug was found useful in cases of Ascites due to early liver, peritoneal and kidney conditions by causing a marked Diuresis—the urine in some cases increasing to 120 to 130 oz. a day.

The plant *Butea Frondosa* :—(Beng.) Polas, (Sanskrit) Kinnusuki, (Hindi) Dhak, grows extensively in the plains of India and has been used as a vermifuge by Hindu physicians. Fresh seeds ground in the form of a powder were tried in a large series of patients suffering from Ascaris Infection. In one series of about 30 cases the drug proved to be nearly as efficacious as Santonine in expelling the worm.

Adhathoda Vesica :—(Beng.) Bakash, (Sanskrit) Vasaka, (Tam.) Adatoda, (Tel.) Arthasara is a large shrub which grows wild and abundant throughout India. It is much valued in diseases of the lungs by Hindu physicians and there is a popular saying that where this plant exists no

man suffering from Phthisis need despair for long. So strong was the belief that it found its way into the addendum into B.P. We find that the preparation made from the plant had undoubted expectorant properties, has a sedative and broncho-dilator effect and liquifies the sputum to facilitate expectoration.

Saussurea Lappa :—(Beng.) Kuthru, or Pachak, (Hindi) Kut, (Tam.) Gosthtam, (Tel) Kustham grown wild in the N. W. Himalayas employed in Hindu medicine for many centuries. Enormous quantities of the root are exported to China every year where it is used as a medicine and also as an incense. This drug has a remarkable effect in controlling paroxysms of bronchial asthma. An alcoholic extract prepared from the root has been used in a long series of asthmatics with very great benefit.

The value of *Holarhena Antidyssenterica* (Beng) Kurchi (Hindi) Karachi or Dudhud (Sanskrit) Kutaja (Tam) Veppalaio, over emetine as an amœbecide is now established. It grows abundantly through the dry forests of India even as far south as Travancore. The plant was found to contain 3 alkaloids—Conessine, Kurchine, and Kurchidine. Conessine has a remarkable effect on *E. Histolytica* Invitro. Clinical data so far worked out show that the injection of the salt of the alkaloid or administration by the mouth of the total alkaloids as a preparation of it called "Bismuth Kurchidine Iodide" has a very definite curative value in Amœbic dysentery. Dr. Koman of Madras reported, that in the dysentery of children 15–20 minims of the infusion of the bark and in adults 1–2 dr. for a week gave almost very satisfactory results in every case. This will considerably reduce the cost of the treatment of dysentery, and these alkaloids could be prepared at less than one-tenth the price of Emetine.

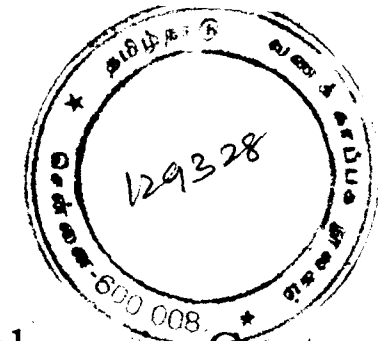
Psoralea Corylifolia :—(Sans.) Vakuchi, (Hindi) Bahi or Bukohi, a herbivorous weed whose seeds have been used in

Hindu medicine in the treatment of Leprosy, and called Kushnahim or leprosy destroyer. The drug is given by mouth and applied locally and an extensive trial given in the skin department of the School of Tropical Medicine showed that in the treatment of Leucoderma the drug has been giving very satisfactory results.

Drugs of no therapeutic value.—The work along these lines had another valuable issue. Various drugs having very little therapeutic value were used only because they are mentioned in old Literature, and nobody had taken the trouble to confirm or otherwise the statement. Part of the work of the Department of Pharmacology was to detect this, and it was very definitely shown that certain drugs which allege therapeutic effects did not in the least merit that claim. *Cephlandra Indica* (Beng) Telakucha (Hindi) Kanduraiki bel (Sans.) Bimba of the N.O. Cucubitrea and *Gymnema Sylvestra* (Beng.) Merasingi (Sans.) Meshasringi (Tam) Schiru Kurunja (Tel.) Poda Patra—these plants reputed to be effective in Diabetes were found to have no basis for their claim as an anti-Diabetic.

Vitæ Peduncularis was used for malaria by the physicians of the indigenous system but the investigation here shows that it had no Anti-malarial properties.

Berberis Aristata :—N. O. Ranunculaceae was again reputed to be an effective anti-periodic for malaria but our investigations proved the contrary.



Volkman's Ischaemic Contracture

BY N. S. NARASIMHAM, F.R.C.S.

(General Hospital, Madras).

It is a contracture of fingers sometimes with flexion of wrist, coming on rapidly with loss of power, which is not absolute, in the muscles of forearm, after a severe injury usually in the region of elbow joint, especially in young children.¹

Incidence.—Few cases have been reported owing to the fear that it was a slur on treatment carried out. Sir Robert Jones records instances of mild cases and ischaemia may occur to a slight degree much more often than is imagined.

Development of muscle.—While connective tissue fibres are developed in the intercellular material, muscle fibres are developed from the cells themselves. Hence as the muscle is a highly organised tissue, loss of muscle cells can only be replaced by fibrous tissue.²

Etiology.—Virchow described these cases as due to tight bandaging in the treatment of fractures about the elbow, due to compression with Esmarch's bandage, injuries to large blood-vessels, and exposure to cold. The deformity was found mainly in children under 14 after injury to the elbow. About 80 % of the cases are associated with fractures. Cases have also been attributed to tight bandaging and pressure of splints. But cases have also been reported where neither tight bandages nor splints were used. Brooke's experiments³ in this connection are interesting.

After the obstruction of an artery for several hours and the subsequent removal of the obstruction, the pulse might return in the artery and all major branches and yet

the circulation might not be re-established in large areas of the tissue. If the arterial obstruction lasted for many hours, the muscle might become wholly or in part necrosed, in spite of the resumption of pulsation in all the large arteries. The condition does not progress rapidly. From clinical observations there appears to be a paralysis of muscles independent of injury to nerve trunks. Although muscles stand better than skin a continued diminished blood supply, they stand less well a temporary absence of arterial blood. Some of the cases are due to a pure local necrosis analogous to the decubitus ulcer or pressure sore on the heel. Brooks records a case due to pressure of splints on the forearm and hand causing a pressure necrosis with subsequent contractures. Usually on the forearm will be found a slough or pressure sore apparently extending only through the skin. A similar case has come under my notice in a boy of four. The permanent occlusion of a large artery is not followed by acute inflammatory process. Anæmia and inflammation are incompatible pathological processes. Any condition therefore which develops in 24—48 hours and which is characterised by heat, swelling, pain, and subsequent fibrosis cannot be the result of the permanent occlusion of artery. I have known of a case of a boy of 14, in whom ligature of the brachial artery in the course of an operation for osteomyelitis was followed by ischæmic contracture. It has become the practice with some surgeons not to use the Esmarch's tourniquet at all; they use a rubber bandage over an ordinary bandage from below upwards finally encircling the limb at the desired place.

If the vein was obstructed the artery being preserved, typical ischæmic symptoms followed hæmorrhage, oedema, degeneration, inflammation, fibrosis, and contracture.

On the other hand Jepson conducted a series of experiments on dogs. He found it difficult to produce and

maintain the contracture by (a) the application of splints, casts and bandages, (b) by rubber bandages, (c) by ligature of femoral vein, but succeeded in producing a true contracture on a dog by an Esmarch's bandage kept for 8 hours, in whom the vein had been previously ligatured. At the end of 8 hours there was considerable oedema and disturbed circulation. Six hours later the wound was opened, blood and serum was evacuated, rubber drain tubes were placed in the intermuscular space and sutured. The swelling began to disappear and four days later the dog was walking normally.

The pathological process following the marked obstruction to venous return of blood from tissues in which arterial supply is not obstructed, is of the nature of an inflammatory rather than a degenerative process and degeneration is a selective necrosis of parts of muscle.

Ischæmic contracture is thus due to a combination of events, the most important of which are obstruction to venous flow, extravasation of blood and serum with swelling of soft structure, causing pressure on vessels and nerves, *i.e.*, due to obstruction of an acute kind. Deformity does not occur if the obstruction is gradual as in cases of new growths, callus, etc. Ligature of main vein with artery for wounds of both vessels does not add to the risk of gangrene, but rather to diminish it by reducing the venous congestion in the limb. This has been so marked that military surgeons advise that where ligature of main artery is indicated for wounds, the vein though uninjured should be tied at the same time. Contractures may occur when no splints have been used following thrombosis of vessels. Littlewood of Leeds⁴ has emphasized this point and it is of great medico-legal importance. Tremendous swelling of soft parts may cause local pressure upon the circulation. So the etiology may be expressed thus "The contracture is the result of prolonged interference with the normal venous circulation".

Stone⁴ mentions a case of a child in whom the Pronator Quadratus alone was the muscle affected in a contracture associated with fracture of both bones of forearm, resulting in permanent pronation. It was relieved by operative division of the muscle.

Similar deformity may arise as a result of cellulitis of the forearm, but true Volkman's contracture is never due to cellulitis.

Anatomical factors.—There is a suggestion by Aitken⁵ as to why the forearm was particularly affected. The muscles of the forearm are extremely organised with quick and fine reflex adjustments to one another and therefore highly vulnerable in their function. Mr. Platt⁵ says:—

The forearm muscles take origin from a small area and sweep up obliquely enclosed in a very tight compartment with a roof of unyielding fascia. Between internal and external groups of muscle the biceps tendon is interposed. In this "box" it is easy to get enough pressure to obstruct the venous return along the venæ comites of the ulnar and its branches. The median nerve passing between the heads of the Pronator Teres inevitably gets strangled as the fibrous tissue contracts. A great advantage of an open operation is that the nerve can be freed and the muscles stripped off the epicondyle, thus giving a very good start.

Mr. Middleton argues⁵:—"Anatomically there is little connection between the deep and superficial venous systems of forearm below the bend of the elbow and the venæ comites of the ulnar arteries are much larger than those of the radial. At the bend of the elbow there is a venous plexus that could be covered with a six pence and pressure on this meant obstruction to the venous return from almost the whole of the forearm. The profunda vein entered over the firm fibrous arch connecting the radial with the humero-ulnar origin of the Flexor Sublimis Digitorum. A hæmatoma would force the vein down on

to this edge and produce obstruction. Drainage operations therefore seemed reasonable.

Jorges of Buenos Aires freely divides all the aponeurotic sheaths in a zigzag fashion to allow expansion and free drainage. If thrombosis has started, however, operation could not be expected to give complete recovery. He concludes that the contractures result from interference with the venous return by a hæmatoma in a definite localised spot in the Anticubital fossa. It depends therefore on causes associated with the initial injury, and methods of treatment or the absence of treatment play a minor part if any in its production. It is not possible to say which cases are likely to develop this complication.

Pathology.—The essential pathological changes were degeneration of muscle and an increase of connective tissue in their substance, often with absence of sarcolemma nuclei. There was a round-celled infiltration and absence of transverse striation. Greenfield⁶ concludes "the whole process is one of absorption and replacement of dead muscular tissue by fibrous tissue, the muscle acting as a non-septic, non-irritating foreign body and being treated as such by surrounding tissues."

Clinical description of the deformity.—The position of the fingers is characteristic *viz.*, the wrist is extended, the metacarpo-phalangeal joints are extended, the interphalangeal joints are flexed; upon flexing the wrist the fingers can be extended; the hand is pronated and the forearm is semiflexed. Supination and pronation of the forearm are impossible. As a rule sensation and electrical reactions are normal. The skin is blue, cold and sometimes blistered and scarred. There is considerable oedema in the early stages. In the later stages, the flexor group of muscles are much wasted. There is thickening of forearm at the place corresponding to the base of the ulcer if one exists. The bones in cases of long duration are under-developed as in infantile paralysis. If the nerves are involved conduction

might be partially or wholly lost. Symptoms might appear a few hours after injury and the damage is often completed in 48 hours. The contracture is preceded by numbness, swelling, muscular rigidity and sometimes with intense pain.

Differential diagnosis.—Volkman pointed out the simultaneous appearance of paralysis and contracture. In Volkman's contracture supination to the full degree cannot be obtained by any means.

Paralysis of nerve origin.—Contractures come on later and gradually increase; a peripheral nerve may be involved secondarily. Contracture following anterior polymyelitis and Little's disease. Flexion of fingers can be corrected by manipulations.

Essential factors in prophylaxis.—Under no circumstances should an elbow be tightly bandaged; the fracture should be reduced completely and at once. The *backward displacement of the humerus* must be corrected before putting the arm up in flexion; a sharp projecting upper fragment often added to internal venous obstruction. The circulation would often return when twisted blood vessels resumed their normal position after the reduction of supra-condylar fracture. The forearm should not be bandaged to the arm nor the elbow to the side. It is never justifiable to strap the limb in full anatomical flexion. If the surgeon could not reduce the fracture by manipulation under general anaesthesia, he had better operate than leave it. All circular compression and splints should be avoided especially if there be much swelling. Do not use an anterior angular splint. All cases should be watched for the first few days. If great pain, stiffening, swelling, lividity of fingers or loss of voluntary movements appeared, the arm should be released from all compression and kept elevated. But pain may be absent where nerves are severely compressed and non-conducting. Inspection of all bandages, splints and forced position of flexion must be made religiously and frequently. It is specially important following

elbow injuries and fractures of forearm in childhood that the parts—elbow, forearm, and hand—be looked at during the first 24—48 hours so as to detect any evidence of undue pressure in the apparatus used. The dangerous initial pressure may be ushered in by almost no complaint on the part of the patient other than the splint or bandage appears a little tight.

X-ray picture should be taken before and after reduction, best to reduce the fragments under a screen if one is available.

Multiple incisions to evacuate the subfascial hæmatoma, and subcutaneous division on the antero-ulnar aspect of deep fascia is worthy of trial.

Treatment.—If ischaemia has started, all bandages should be removed and the limb kept elevated. Murphy in 1914 suggested that subcutaneous division should be made on the antero-ulnar side of the forearm, if cyanosis of the limb should continue. Experiments of Jepsan supply an argument for the adoption of this suggestion. One should aim at the removal of all compression within or without the affected limb.

If the case is seen a week or two later, massage and gentle stretching of the muscles of the forearm continuously for several months will give a satisfactory result (Dungeon). The stretching is best done without an anaesthetic. Force should never be used in stretching the fibrous tissue but should be a real coaxing of the tissue (R. Jones).

Cases that are seen within a few weeks of the appearance of contractures may be much benefited by placing the hand and arm on a splint with continuous finger traction.

Whatever method be adopted the aim should be to keep the forearm supinated.

Since 1908, Robert Jones has adopted the following method of treatment. It consists in gradually extending

first the fingers then the metacarpo-phalangeal joints, and then the wrist. When the fingers are straightened, splints are applied to them and are used to extend the metacarpo-phalangeal range. A splint is then applied extending from the finger tips to the wrist joint and full extension of the hand is secured. This splint is then used slowly to dorsiflex the wrist, and later a splint is applied from the finger tips to the elbow in order to maintain and gradually to increase the dorsiflexion. These splints must be taken off every day or every few days for physiotherapy which is to be used only after the acute and painful stage is passed. Physio-therapy should include radiant heat, contrast bathing, oil stupes, gentle message, and graduated electrical stimulation of the muscles. Sir Robert Jones has been very successful with this method.

In old cases determine if the nerve trunks are involved in the cicatrix Neurolysis and nerve suture are worth trying even if the muscles are beyond recovery, as it restores gross sensibility.

Operative methods of treatment:—The contracture usually increases for two or three months before reaching its maximum. Operative interference should therefore be delayed until this maximum contraction is established.

The following are the methods in use:—

1. (a) Lengthening of the flexor tendons of the forearm (Littlewood and Davidson, 1891). (b) Shortening of radius and ulna (Garce, 1895) to compensate for the contraction of the muscles. (c) Myotomy of the muscles (Bradford, 1901). (d) Dissection and freeing of nerves (Hayward Cushing, 1904). (e) Lengthening of flexor group of muscles by detaching their origins from the medial epicondyle and allowing them to slide and reattach themselves lower down (Max Page).⁸

Sir Robert Jones does not recommend either myotomy or tenotomy. He would operate in a case only to secure supination.

2. Free excision of the elbow joint is indicated when there is contraction of tendons and fixation of forearm in pronation.

Max Page's operation must not be regarded as anything but an adjunct to Robert Jones's stretching method.

Max Page's operation:—An incision is made on the inner side of the elbow and the ulnar nerve isolated and hooked out of harm's way. The bicipital fascia is divided and the origin of the flexor muscles carefully dissected from the upper third of ulna, but the main common origin from the internal epicondyle is left intact. When the dissection is over, a large mass of muscle under which finger could be passed is left still attached above to the internal epicondyle. The epicondyle is then cut off and sutured into a little bed made by reflecting up the periosteum on the inner side of the shaft of ulna at the junction of its upper and middle third.

Max Page observes that there is no immediate relief of the contracture. After a fortnight the fingers can be straightened and by the end of third week they could be completely extended. The muscles could be striped right across the interosseous membrane without any injury to vessel or nerves.

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An Agnathic Foetus

BY DR. M. ARJUNAN, M.B., B.S., AND
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A patient named Chengani, 9th para was admitted to the "Government Hospital for Women and Children", Madras, on 18th April 1928 at 5-20 P.M. She gave birth to a still born male monster about 8 months' development showing abnormality in the face and neck. It was a case of hydramnios, with 11 pints of amniotic fluid.



Fig. 1. Agnathic Foetus (Front view).

The External Appearance.

The head, is normal in contour and size; on the face the forehead, the eyes and the nose are well formed and in their respective positions. The lower jaw is absent. About half an inch below the nose in the median line at the lower part of the face is an oval slit half an inch in length directed anteroposteriorly representing the oral aperture. The inner lips of this aperture are lined by mucous membrane

of dark brown colour. The slit-like oral aperture leads into a tiny mouth cavity the roof of which presented a V shaped cleft bounded on either side by the unfused halves of the palate. On the exterior, the soft tissues bounding the floor of the mouth, pass from the oral aperture directly backwards to meet the neck at a right angle. At the place of junction is a veritcal fold placed in the median line. On either side of this fold are two depressions bounded laterally by elevations which felt cartilaginous. Lateral to these are two openings one on each side about 2 mm. in diameter through which probe can be passed backwards and inwards. These represent the openings of the external acoustic meatus; lateral to which is a pinna on each side inclining obliquely downwards and forwards and approximating each other nearer the lobules. The distance from one lobule to another is 1 inch. The external ears appear to be displaced on to the neck from their usual position. On a level with the openings of the external acoustic meatus is a transverse ridge $\frac{1}{2}$ inch in length placed below the vertical fold. This ridge has a tough feel. The other structures in the anteromedian line of the neck that could be felt from above downwards are the thyroid cartilage 1 inch below the transverse ridge, then the cricoid and the thymus. The rest of the body and the limbs are normal. The external genitalia are well formed. The following measurements were taken:—

1. Length of neck from the junction of floor of mouth and neck to Episternal notch = 2.2 ins.
2. From Bregma to prosthion (*i.e.* the anterior point of upper alveolar arch) = 3.3 ins.

Observations on Dissection.

A quadrilateral flap of skin from the root of the neck was reflected upwards, the left pinna was also taken up along with the flap. At the angle between the floor of the mouth and the neck, corresponding on the exterior to the transverse ridge noted in the description of the external

appearances, is a thin flattened piece of tough connective tissue of white colour extending transversely. It is about 1/5 inch wide and when traced laterally it divides into an upper and a lower band, the former becomes continuous with the antero-superior part of the cartilage of the helix and the lower with the cartilage of the Antihelix and the cartilage of the external auditory meatus. A portion from this was taken for microscopy, which when sectioned stained and examined was found to be precartilaginous in structure. The above mentioned structure was turned aside and subjacent to it is a transverse stratum of muscle fibres which could not be differentiated into the various muscles which normally form the floor of the mouth. The posterior belly of the digastric and stylo-hyoid are present. The infra-hyoid group of muscles, and the prevertebral muscles are normal. Deep to the undifferentiated muscular stratum of the floor of the mouth and ventral to the pharynx corresponding to the level of the upper border of the transverse precartilaginous tissue above mentioned, is a pair of bony rods approximating each other in the median line and when traced laterally becoming continuous with the tympanic ring. The tympanic membrane on each side is intact and the handle of the malleus can be discerned on its deep aspect.

Mouth and Pharynx.

The external aperture was enlarged by an incision carried backward from its posterior angle. There was no evidence of the lower jaw and the floor of the mouth was only formed by mucous membrane, undifferentiated musculature and integument. The roof of the mouth presents the palatine processes which have not met in the middle line except at the anterior end where they become continuous with the premaxilla. Caught between the processes, *i.e.*, lying in the cleft in the palate is a thin elongated brown piece of tissue which was removed for subsequent microscopic examination. Dr. B. T. Krishnan, Professor of

Physiology who examined the specimen was of opinion that the tissue contained mucous gland acini, embryonic connective tissue and muscle and that the stratified epithelium was just beginning to form. There was no communication between the oral cavity and the pharynx. The anterior wall of the pharynx was cut and the pharynx opened. Attached to the anterior wall is a miniature tongue bearing the normal shape. It presents a central oval portion embraced on the sides and posteriorly by a V shaped portion with a sulcus separating the two. Below the tongue along the anterior wall of the pharynx is the superior laryngeal aperture leading into a normal larynx. A well formed epiglottis can be made out superior to the laryngeal opening. A probe passed upwards and anteriorly from the pharynx came into the nasal cavity. The communication between the mouth and pharynx is shut out by adhesion between the floor of the mouth and the soft tissue in the cleft between the palate. The posterior wall of the pharynx presents the two tubo-tympanic recesses one on either side. When a probe was passed through the circular aperture representing the external auditory meatus its course into the tubo-tympanic recess was obstructed by the tympanic membrane. A dissection was now made in



Fig. III. Fused tympanic Ossicles (right) two views.



Fig. IV shows :—

1. Tympanic ring of the right side of the Agnathia.
2. Fused tympanic ossicles of the right side of the Agnathia.
3. Normal ossicles of full term foetus for comparison.

the region of the right external acoustic meatus. The tympanic ring was removed and deep to it was an irregular bony mass representing the fused tympanic ossicles. The Fig. III shows this mass and the figure IV. shows this mass and the tympanic ring from the agnathic foetus as compared with the normal ossicles of the left side taken from a full term foetus. On the left side on trying to detach the fused mass the mass got broken. An examination of the fused mass shows that the individual parts of it are bigger than the normal ossicles and do not conform to the typical shape. The pharynx leads into the oesophagus and the larynx into the trachea normally. The hyoid bone was present in its normal position.

Nervous System.

The branches of the facial nerve were found ramifying over the face; the nerves leaving the jugular foramen *i.e.*, ix, x, and xi were normal and in their respective position. The hypoglossal nerve and the ansahypoglossi were also normal. The cranial cavity was opened, the brain which was decomposed was washed out, and a study was made of the basis cranii. The nerves passing into the various foramina were normal; a probe was passed through the foramen ovale and dissection along the direction of the probe outside showed the mandibular division of the V nerve. It was traced to its distribution to the undifferentiated muscular fibres of the floor of the mouth.

Salivary glands:—There was no evidence of the salivary glands:

Thoracic and Abdominal cavities.

By a median incision the thoracic and abdominal cavities were opened. The organs were well developed and in their normal positions. The heart showed a bifid apex, the thymus was well developed and was found overlapping the pericardium.

Discussion.

The current view on the development of the mandible is as follows:—

The mandible is developed from the first visceral arch. The cartilage of the visceral arch—the Meckel's cartilage—gives rise at its ventral part to the incisor portion of the mandible. The rest of the mandible is developed from the membrane surrounding the Meckel's cartilage. The malleus and incus are formed from the dorsal portion of the Meckel's cartilage whereas the stapes is developed from the cartilage of the second visceral arch.

In the case described, the mandible is absent. If a rudiment can be supposed to exist it is the transverse bar of pre-cartilage which was lying beneath the skin at the angle of the face and neck. Cases have been recorded where rudimentary mandible was found. Various causes have been adduced for the absence or rudimentary development of the mandible. Von Winckel attributes these malformations to anomalies of the amnion probably the result of amniotic pressure. Diversity of views prevails as to the probable causes of monstrosity. Sir Arthur Keith holds that mechanical or constitutional causes may prevent the union of parts in the embryo and gives the striking analogy of the healing of wound in post-natal condition which may be interfered with by local or constitutional causes. By experiments conducted with X rays and chemical substances on anamniota it has been proved that deformities could be caused. So any toxic material circulating in the placental blood can act injuriously on the developing embryos by bringing about incomplete union or non-union of parts or even complete arrest of development. If this view is held then the amniotic pressure being the etiological factor fails, but in certain cases amniotic bands can influence the production of deformities by mechanical obstruction interfering with the nutrition and growth of the embryo. J. A. Thompson is of opinion that failure in

development of certain parts or non-union is the result of inadequacy of nutrition which produces deficient developmental vigour. The familiar occurrence in brothers and sisters of the same type of anomaly can be explained only by defective nutrition and degeneracy of stock. The other causes that are thought to be contributory to deformity are heredity, inherited diseases and diseases like Syphilis and Rickets. The investigations of Gladstone and Wakeley go to show that inheritance plays a very great part. The maternal causes as fright, mental impressions, injury, ill-health during gestation may go a long way in giving rise to deformities. Civilization and crowded life are also held responsible.

A condition of Agnathia has been usually associated with imperfect development of the tongue and occasionally with transposition of the viscera. Two of the three specimens in the University College Hospital Medical School Museum as mentioned by G. Blacker and three of the sixteen cases collected by Taruffi show transposition of the viscera. In this case transposition of the viscera was not present. Why transposition of viscera should occur in case of Agnathia is hard to understand. But malformations of the tongue are easily explained as part of the tongue and lower jaw are derived from the first pair of visceral arches. In the specimen under consideration the anterior part of the tongue was poorly developed and consisted of an elongated brown piece of tissue extending from the floor of the mouth to the anterior part of the cleft in the palate.

According to the current view of the development of the tympanic ossicles, one would expect absence of incus and malleus in a case of complete absence of the mandible. But in our specimen, the tympanic ossicles were present, but they were all fused to form an irregular bony mass. The size of this mass was bigger than what one would expect from a fusion of normal ossicles of an 8th month

foetus. Photographs of the ossicles would substantiate our remarks. The presence of the tympanic ossicles, though deformed, in this case of complete absence of the lower jaw, suggests that these ossicles might be developed independently of Meckel's cartilage. According to Fuchs there is in the rabbit, a common anlage for the malleus and incus arising independently, chondrifying from a separate centre and later becoming secondarily fused with the Meckel's cartilage. If a similar course of events be supposed to occur in the human embryo, it will offer an easy explanation for the presence of the ossicles in a case of complete absence of the lower jaw.

We take this opportunity to express our thanks to Dr. Lakshmanaswami Mudaliar, M.D., second obstetrician, Government Hospital for Women and Children, Madras, for kindly giving us the foetus (Agnathia) and Dr. A. Srinivasalu Naidu, M.D., Professor of Pathology for preparing the photographs of the ossicles.

Summary.—A case of Agnathia is reported. The mandible is absent and a transverse piece of pre-cartilage is considered to be probably representing it. The tympanic ossicles are fused to form an irregular bony mass. The presence of tympanic ossicles suggests that they are developed independently of Meckel's cartilage.

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Case Reports

Case 1. **A case of sacculated aneurysm of the ascending and commencing parts of the aorta.**

BY DR. D. SUBRAMANIAM, M.B., B.S.

(Department of Pathology, Madras Medical College).

Name.—Manickam. *Occupation.*—Coachman.
Age.—35 years. *Admitted on* 6-11-1929.
Race or caste.—Hindu male. *Died on* 7-12-1929.
Residence.—Bezwada.

This patient was admitted into the Government General Hospital for treatment on 6-11-1929. He died on 7-12-1929. A post-mortem was held on 8-12-1929; the following are the clinical and Post-mortem findings.

Complaint.—Tumour front of the chest: *Duration.* Two months.

Family history.—The patient lost his first two children, the eldest at the age of six months and the second soon after birth.

History of previous illness.—The patient contracted syphilis and gonorrhoea in 1917. Ten years later he developed several ulcers on the neck and sternum which subsequently healed and have left irregular dense scars.

History of present illness.—A small swelling was noticed by the patient over the middle of the sternum about two months back. The swelling has increased, in size ever since, and at present it gives him excessive pain even on the slightest jerk.

Physical signs and condition on admission.—Patient is a fairly well nourished man of 35 years. There is a hemispherical tumour of the size of a mango, situated over the front of the sternum at its middle part. The tumour is warm, tense, and tender. It is also fluctuating and pulsatile. The heart sounds are heard well over this area, without any adventitious sounds.

Circulatory system.—*Systolic Diastolic.*

Blood pressure, 90 mm; 70 mm; Right arm.
 85 mm; 60 mm; Left arm.

Apex beat is palpable and visible over the left part of the tumour. It is heaving in nature. The heart sounds are regular, rapid, slightly increased in intensity and there are no adventitious sounds.

Radial Pulse equal on both sides, regular; tension and volume, are good. Average pulse rate is 100 per minute.

Respiratory system.—The rate is on the average 25 per minute. Nothing abnormal.

Alimentary system.—Pigmentation of the palate and induration of the tongue. Spleen and liver not palpable.

Urinary system.—Urine. Sp. Gr. 1016.

Reaction. Feebly acid.

Sugar. Nil.

Albumin. Nil.

Wassermann.—Moderately positive.

X-Ray Examination.—The pulsation over the tumour is expansile, and is unconnected with heart and its beats. The heart beats are visible separately from the tumour, and the growth is anterior to the thoracic wall.

The tumour burst externally on the 6th December, severe bleeding occurred resulting in the patient's death on 7th December 1929.

Post-mortem Findings.—1. A huge irregular aneurysm of the ascending aorta from its commencement is seen. It is of the size of a big orange, and has enlarged, anteriorly and upwards, leading to extensive destruction and erosion of the lower half of the sternum and the 4th, 5th, and 6th left costal cartilages. The cavity of the aneurism is occupied by dark solid clot. After opening through the sternum, the aneurism has grown forwards forming an encapsulated hemispherical swelling in front of the sternum. This swelling mainly consists of clotted blood with a thin fibrous capsule formed of stretched muscle fibres.

2. Hypertrophy and dilatation of the heart to a small extent.

3. Extensive atheroma of the aorta.

4. Gummatous nodule in the kidneys.

The points of interest in this case are:—1. Slight structural changes in the heart and its valves as compared with the extensive changes in the aorta.

2. The low blood pressure inspite of an extensive atheromatous condition of the arteries.

3. The clotting which had occurred in the aneurysm obscured the direct transmission of the pulse wave to the tumour.

4. The X-Ray picture gave an impression that the tumour was unconnected with the heart and was of mediastinal origin.

We are grateful to Dr. T. K. Menon for allowing us to publish this case.

Case 2. **A case of Polysarositis in an old man aged 75 years.**

By DR. A. SRINIVASULU NAIDU, B.A., M.D., and DR. D. SUBRAMANYAM, M.B., B.S.

(Department of Pathology, Madras Medical College).

Name.—Premagiri. Occupation.—Nil
Age.—75 years. Admitted on 11-11-1929.
Race or caste.—Hindu, male. Died on 20-11-1929.
Residence.—Kasi.

Diagnosis.—The patient was admitted into the General Hospital for treatment on 11-11-1929 and he died on 20-11-1929. A Post-mortem was held on 21-11-1929 and the following are the clinical and Post-mortem findings of the case.

Complaint.—Fever, pain, in the epigastrium; and swelling of the abdomen.

Duration.—Six months.

History of the present illness.—Present complaint started in June with an attack of fever and vomiting. The fever has continued ever since and is of an intermittant type. For the last one month, the abdomen, began to increase in size, the umbilical region became painful on pressure and the patient at present suffers from excessive muscular debility and dyspnoea.

General condition on admission.—Patient an ill-nourished man of 75 years. The eye lids are swollen and the teeth are dirty, P. A. being present.

Case Reports

Respiratory system.—The breathing is embarrassed, with the alae nasi working. The patient likes to lie on the right side. Respiration rate 25 per minute.

The right side of the chest is dull on percussion and the breath sounds are not well heard, the left side of the chest is hyperresonant and the breath sounds are harsh. The chest wall is also oedematous.

Circulatory system.—The pulse rate is 105 per minute on the average is regular small in volume and low in tension.

Heart sounds are weak, the second sound in the mitral area is weak and there is a systolic bruit.

Alimentary system.—Abdomen is swollen and the epigastrium is tender.

Liver and spleen.—Are palpable.

Post-mortem Findings.—1. Fluid was found collected in all the serous sacs. It was clear and straw coloured.

The amounts of fluid collections were as follows:—

Ascites : 4 pints.

Hydrothorax : Rt. side 5 pints; Lt. side 1½ pints

Hydropericardium : 1½ oz.

Hydrarthrosis, knee joint each 2 ozs.

The serous membranes showed thickening with fibrosis and oedema.

There was no deposit of fibrin.

2. Brown atrophy of the heart.

3. Fatty degeneration liver. This was of a peculiar distribution.

The central parts of the lobules were degenerated giving to the architecture of the liver an altered appearance.

4. Small atrophic spleen.

5. Complete collapse of the right lung.

6. Enlarged and swollen Mesenteric glands.

Microscopically, the pleura, peritoneum, pericardium and capsule of the knee all showed thickening with fibrosis and oedema. The pleura in addition showed fibrous nodules beneath its surface with congested capillaries. No tubercle bacilli or giant cell systems were seen in these

nodules. They were only areas of fibrous tissue. There was no evidence of any inflammation in these membranes.

The above case is of interest on account of the comparative rarity of Polyserositis. The cause of this condition is not definitely understood, although about 25 per cent of the cases are supposed to be due to infection with tubercle.

We are grateful to Col. G. E. Malcolmson, I. M. S., for giving us the clinical history of the case and allowing us to publish the same.

Case 3. **A case of Giant celled Sarcoma Breast.**

BY DR. S. R. AIYANGAR, D.M.O., TUTICORIN AND

DR. SRINIVASALLU NAIDU, B.A., M.D.

(Department of Pathology, Madras Medical College).

Patient's name.—Akkammal. *Date of admission.*—16-12-1929.
Age.—60 years. *Complaint.*—Tumour left breast.
Sex.—Female (Hindu). *Duration.*—9 months.
Occupation.—Cooly. *Date of discharge.*—29-12-1929.

History.—Nine months back a small painful swelling of the size of a marble was first noticed by the patient in her left breast. It was situated below and an inch and a half to the outer side of the nipple. It began to grow rapidly in size and in two months it was as big as a lime, and at present it is as big as a shelled cocoanut.

Family history.—Patient is a married woman and has borne 3 children.

Condition on admission.—Patient is a fairly well built woman. Temp. 98.4°. Pulse 78. Tongue slightly coated. A very hard tumour of the size of a small cocoanut occupies the left breast. It is freely movable, beneath the skin, though adherent to the nipple. The axillary glands or any other glands of the body do not show any enlargement.

Operation notes.—The tumour was shelled out quite easily by an open incision. There were no adhesions, the sutures healed by first intention and the patient was discharged on the 10th day after operation.

Pathological report: Microscopical appearance.—The tumour weighs 1½ lbs. is hard and fibrous. It is irregularly round, with a definite

capsule and on section is divided into various irregular lobules by strands of fibrous tissue.

Microscopical appearance.—Section shows small round cells, giant cells and is highly vascular.

Diagnosis.—Giant celled sarcoma.

Points of interest in this case are.—1. Rarity of the sarcomatous tumour of breast.

2. Its occurrence in the same age period as a carcinoma of the breast and rapidity of growth without any effect on the general health of the patient.

3. The definite capsulation without any glandular enlargement.

The mesoblastic origin of a mammary sarcoma is under dispute. According to Ewing most of the sarcomas described, are only typical forms of "Carcinomata". The spindle celled sarcoma resembles the adeno-carcinoma in structure and clinical history. The round celled sarcoma is probably an atypical form of the spindle celled variety. The lobular and capsulated form of the giant celled variety suggests an origin from a cystic adeno-carcinoma in which diffuse areas of round and giant cells are not uncommon.

"Musings of a Surgical Dresser"

I. CASUALTY WORK.

The imaginable professional success that we dream while studying text books is due to meeting correctly the difficulties that rise while we actually deal with a case which demands variations in the technique. The man who is experienced, only in practice, and knows nothing of science will not earn the respect of better men. So also the man who is trained, only in theory, and is not experienced in practice knows not what he should do when actually dealing with a patient. Naturally the theoretical man meets with un-recorded failure and disaster and he cries out bitterly '*Why don't my dreams come true!*' The grave outlook beyond the college course which our seniors are trying to impress on us may be due to great numbers of men, inexperienced in diagnosis, unskilled in technique, careless or unsteady during their training and easily carried away by the glamour of Surgery and Medicine into fields which they are totally unfit to enter.

To begin to describe a journey before completing it will be ridiculous so also this contribution may appear to point out the fundamentals of the art of dressing when one has hardly completed the course. I have done it faithfully and think it no disgrace to let the world see where I failed of success so that those that come after me may learn what to avoid.

Let the enthusiastic student who wishes to get the full benefits of the good opportunities that are given to him in this hospital, choose, if possible, the training, first, in the medical wards. The fundamentals of medicine are very essential in order to appreciate the surgical cases with advantage. We do profess, that we long for opportunities to gain those things, which we know are good, but when the opportunity

exists amidst us, with what bitterness and contempt it is regarded. Having visited various mission and other hospitals, one will have to look upon our General Hospital as the best institution. The people who have returned from the western countries speak of the comparative abundance of opportunities that are given to the students of our college as a very rare privilege.

The posting of students for casualty work, is an excellent beginning in the training of the future surgeon. It makes the budding doctor acquire a well-balanced mind, capable of forming judgments rapidly and in grave emergencies, makes him cool headed, and not nervous or hasty.

To appreciate the work as a surgical dresser one must not be content with knowledge sufficient for the occasion but must seek to store additional knowledge and experience for future emergencies. This extra labour equips a man for everything that counts most in life. It creates a habit for hard work and increases the patience which is the crown of our profession. "The used key will always be bright."

The cases that we meet in the casualty department are mostly accidents and injuries, comprising roughly—bruises, wounds or cuts, bleedings or hæmorrhages, injuries of severe nature, as dislocations and fractures, foreign bodies, inflammatory swellings, blisters, burns, scalds, abscesses, ulcers, and animal bites—dog-bite, horse-bite, scorpion stings etc.

Bruises are injuries in which the skin is not broken. The severity varies and it is noted by the colour the part presents. W. Moor recommends hot fomentations where a gathering or abscess formation is likely and cooling applications in the form of evaporating lotions or iced poultices in cases where inflammation is to be checked. Sometimes the sensation of the patients must be considered as *the* test, to judge which to apply in a

particular case. The patient must feel comfortable and relieved. A firm bandage with plenty of cotton pads gives great comfort. The part must be supported on a higher level. No bandage is to be put when a cooling or evaporating application is administered, otherwise you will be defeating the purpose. For slight bruises and for slight abrasions where there is rupture of cutaneous blood vessels, tincture of iodine may be painted over the injured surface. A thin layer of cotton may be spread over the abrasion and Tr. Benzoin may be poured over it. If the cotton layer is thick it will not stick fast efficiently.

Sprains and dislocations.—The student has little to do in setting them right but after reduction the joint is kept at rest by bandages. Iced poultices are good. For sprains—complete rest of the part with cotton pad and firm bandaging for a few days then gentle massage and movements when the acute symptoms have subsided, may be tried with advantage. Later on the patient may be advised to go to the X-Ray department for further treatment if necessary.

Wounds and cuts.—The bleeding when slight may be checked by raising the part, application of cold water, and local compression on the cut and if profuse by a tourniquet or digital pressure of the main vessel. Visible bleeding from an injured vessel may be stopped by clamping the spot with an artery forceps. One should never indiscriminately take up a mass of tissue while clamping or suturing and any rough handling of the part, devitalises the tissue and impairs its powers of repair. Remove all the foreign bodies, dirt and debris, by picking off with forceps, and irrigation. With a clean sharp razor the part must be shaved if a lot of hair is in the neighbourhood of the wound, as the hair however cleanly kept is likely to lodge microbes. Next wash the wound with an antiseptic lotion. While removing the debris try and preserve, as much as possible, the healthy tissues especially the skin, nerves

and blood vessels. Loose flaps of skin should not be cut off, but sutured down by one or two stitches, allowing gaps for exudations from the wound to flow out. It is an easy thing to cut away but the repair of the damage is not so easy in practice. As soon as the wounds are clean, skin grafting should be done, if necessary, later on. The skin grows very slowly over the wound especially when the trophic influences of the nerves are interfered with. Patients do complain of loss of sensation in the part. Skin grafts take a long time to adapt to the particular site.

Bleeding.—When a fresh case is brought, generally there is a certain amount of bleeding which the lay people find it difficult to check. The student who is entrusted with the work must quickly judge whether it is violent or not.

If the bleeding is violent and fast, the first thing he should do is to make an attempt to stop it. He should apply pressure on the proximal part of the blood vessels by digital pressure or tourniquet. The surgeon will see to the rest. If the bleeding is profuse and diffuse, in addition to pressure on the proximal part of blood vessels, series of folded sterilized gauze, either very hot or very cold, must be placed over the wound liberally to cover the entire depth and surface. Then put in some cotton pads and bandage it firmly. If possible the part should be kept raised.

The immediate and general treatment of accidents and injuries.—Prevent all unnecessary and wrong handling of the patient. "The history of the accident should be ascertained by a few clear questions," only if the patient is sensible and able to answer without much trouble; otherwise we must first begin to treat the case and then get all the information. The stimulant mixture should not be given when there is bleeding unchecked. All tight clothing must be loosened. It is better to make the patient lie on his right side; for this posture will render the breathing more easy than it would be if the patient is made to lie on

his back." Allow no useless talking with the patient or in the hearing of the patient. The fussing relatives and friends must be made to watch the patient only from a distance while you are attending to the needs of the case. In cases of wounds from street accidents, or where wounds are fouled by soil anti-tetanus serum should be given, as a prophylactic, intramuscularly.

Fractures.—The diagnosis of fractures is the essential thing especially the fractures near the joint are apt to be treated as simple sprains. The usual symptoms are *viz.* pain, swelling, alteration of shape, *grating* of the broken ends of bone on movement, more or less inability to move the limb but increased mobility in the hands of the examiner. The principles of the treatment are to place and retain the fragments in perfect rest in their natural position until they have united. The surface on which the fractured limb has to lie should be firm and level. So, see that no loose cotton indiscriminately scattered over the splint is used. When adjusting the splints much care must be taken lest a simple fracture should be made a compound fracture. See that there is no great pressure on the bony eminences of the limb. The limb must be washed, dried, dusted with powder, massaged and kept in splints and the progress must be watched at least every 3rd or 5th day.

Sometimes we notice slight bruises and blisters in the limb caused by the improper pressure of the splints. If there is great swelling of the soft parts or much bruising, the limb should not be bound in splints for a few days, for serious injury and trouble with great discomfort will ensue otherwise. For the first few days the limb is kept between sand bags without splints and hot fomentations applied. Later limb is placed in splints. The patients must be fully instructed of the dangers that may follow if they do not follow your instructions. Generally speaking the splints should be used at least for a month.

Foreign bodies in the skin.—Thorns, splinters of wood, and metal needles, nails, bone pieces as in a comminuted fracture, etc., may be embedded in the skin. If the foreign body is of such a shape and nature as could be seized by forceps and dragged out, this may be done. But in certain cases, as under the finger nail, fruitless picking at it may break up and waste the outside end of the foreign body and so slight enlargement of the wound may be necessary. If desirable in some cases hot poultices applied for a day or two will facilitate the extraction of the foreign body. After the extraction of any foreign body from the skin a liberal application of Tincture of iodine is very necessary, and an injection of anti-tetanus serum must be given in most of the cases, where infection from soil is suspected.

Blisters may be caused by friction or heat.—If small, they may be left alone after protecting them from further exposure to friction by pads of cotton. If the blister is fairly big the fluid must be let out by puncturing it at the most dependent position. The loose skin should not be removed. The puncture must be kept patent by a piece of thread or gut introduced just into the blister. The part must be protected with cotton pads.

Burns and Scalds.—It is almost never or very rarely that a case comes without anything having been applied over the injured part. So the part must be cleaned and the nature of the burns must be judged. The blisters must be treated in the usual way; if there is any clothing sticking on to the wound it should not be pulled off from the skin. It must be cut all round and the skin left intact. No wrinkled skin or cuticle should be removed from the wound. Burns are dressed with lint soaked in 2½% tannic acid solution or an aqueous solution of Picric acid.

Animal bites and Scratches.—Though the wounds are punctured, contused or lacerated their treatment is not simply the same as that for any other ordinary wounds. The special treatment consists in washing the part well with

potassium permanganate solution. After wiping the part fairly dry, the wound must be cauterized with strong nitric or carbolic acid. As the acid has a tendency to spread unnecessarily into the healthy tissue to minimise the area of cautery the *surrounding* skin must be smeared with absolute alcohol. The alcohol will neutralise the caustic effect. Generally the wound is touched with carbolic acid and immediately touched again with absolute alcohol little knowing that there is neutralisation taking place by doing so. The efficiency of the cautery may thus be lowered.

Inflammatory swellings, abscesses, etc.—*Acute inflammatory abscess*.—The swelling becomes marked in a short period of 3 or 4 days, very hot, painful and tender. The skin presents a shiny appearance and the throbbing pain increases with the increase of swelling. On fomenting or applying hot-poultices every 4 or 6 hours some abscesses gradually subside without formation of matter and these are called '*blind boils*'. But in most of the cases the swelling becomes soft and '*points*' when an abscess is pointing, the central core fluctuates and the skin is thin and glossy, loses its red colour. While feeling for fluctuation never do it in the direction of the muscle fibres.

How to open an abscess.—The incision should be made to correspond to the natural fold or creases of the skin. You must try and preserve all possible nerves and blood vessels. Hilton's method is quite good for small abscesses. The incision may be small but it is enlarged by thrusting in the blades of a sinus forceps or the dressing forceps and separating the blades. Unnecessary injury to muscle and tissues must be avoided as rough handling devitalises the tissues to a great extent. With a sharp lancet the incision ought to be made with confidence, decision and moderate degree of rapidity. The incision must be large enough to prevent re-accumulation and at a place suitable for drainage and where there is least rubbing of the contiguous surfaces during movement. The wound must be handled

as gently as possible. Rough squeezing or excessive pressure to squeeze out or drain out the pus, must be avoided. After cleaning the pus away from the wound a liberal application of Iodine into the wound is indicated. The cavity of the abscess must be plugged in with the sterilized eusol gauze and dressed in the usual manner.

Ulcers.—Quite a lot of types of ulcers we meet in the casualty department. All the ulcers may be roughly classified into simple ulcers and chronic ulcers and ulcers of specific diseases such as venereal, cancer, leprosy, etc. *Simple ulcers* may be as a result of inflammation of the surface of the body from boils, injuries, etc. These can be given ordinary 'Eusol' dressing. The part is cleaned and any slough if present is removed. Hydrogen peroxide must be smeared all over the wound by means of cotton on a "Kutchie". The froth must be wiped away. The wound must be touched each time with a fresh surface of the "Swabs" supplied. The skin all around the ulcer must be cleaned. For this, the swab must be used in the direction which must always be away from the centre of the wound. When the ulcer is fairly cleaned and dried by means of a squeezed out swab placed over it, wet Eusol Gauze may be spread in folded layers over the ulcer. Economy should never be at the cost of thorough dressing. It is always good to put an additional layer of gauze and with liberal amount of cotton pads, the bandaging must be done. Patients generally complain of loose bandage and will thank if you can give them a fairly firm bandage, for then only they get real relief.

Chronic ulcers.—It is very difficult to see the same case for a long time in the out-patient dressing cubicle. But if a patient says that his ulcer does not heal for a long time you must examine the wound closely and find out why the ulcer does not heal. Sometimes foreign bodies embedded into the tissues prevent the ulcers healing in the usual time. In such cases the foreign bodies if present must be removed.

Sometimes there is exuberant growth of granulations to such an extent as to overlap the healthy margins of the ulcer. This prevents healing and to remove this 'proud flesh' you will have to touch the tissue with the smooth surface of moistened copper sulphate crystal or solution of cuso₄ in cases where the wound surface is not even. Sometimes the ulcer may not present any adverse sign, but for all appearance look healthy; in such cases the patient's urine must be examined to see whether it contains sugar or not. In some cases inadequate nutrition may be the cause of the prolonged period of healing. In certain cases there will be a deep seat of irritation due to some toxins. In such cases scraping or making fresh opening as outlets for the toxins is necessary. The most common cause is that the patients cannot afford to keep the part at rest, for they will have to work to earn their daily bread. In one case the real cause of a persistent ulcer was found to be ankylostomiasis. The patient had to knock about the various departments of our hospital and finally had his real treatment at the Royapuram Hospital. Even to-day the patient, now a healthy labourer, prays god's blessings on the Doctor who has enabled him to keep his 'pot a boiling'. If a simple ulcer is being treated with irritant dressings the ulcer heals very very slowly. The Eusol dressing though good, is but an irritant. So any wound if dressed for a long time may tend to become chronic. So a mild application such as boric paraffin or Vaseline or Boric ointment may be used. The Scarlet Red ointment too is very good when there is certain amount of exuberant granulation tissue.

G. M. THAMBIDURAI.

The A B C of Vitamins

A

Oh fine and fat was Ralph the rat,
And his eye was a clear cold grey.
How mournful that he ate less fat
As day succeeded day,
Till he found each cornea daily hornier,
Lacking its Vitamin A.
"I missed my Vitamin A, my dears,"
That rat was heard to say.
"And you'll find your eyes will keratinize
If you miss your Vitamin A."

B

Now Polished rice is extremely nice
At a high suburban tea.
But Arbuthnot Lane remarks with pain
That it lacks all Vitamin B,
And beri-beri is very very
Hard on the nerves, says he.
"Oh take you Vitamin, B, my dears!"
I heard that surgeon say;
"If I hadn't been fed on standard bread,
I shouldn't be here to-day."

C

The scurvy flew through the Schooner's crew
As they sailed on an Arctic sea.
They were far from land and their food was canned,
So they got no Vitamin C.
For "Devil's the use of orange juice,"
The skipper'ad said, said he.
They were vitcualled with pickled pork, my dears,
Those mariners bold and free.
Yet life's but brief on the best corned beef.
If you don't get Vitamin C.

D

The epiphysis of Jemima's knees
 Were a truly appalling sight ;
 For the rickets strikes whom it jolly well likes
 If the Vitamin D's not right,
 Though its plots we foil with our cod-liver oil
 Or our ultra-violet light.
 So swallow your cod-liver oil my dears,
 And bonny big babes you'll be.
 Though it makes you sick it's a cure for the rickets
 And teeming with Vitamin D.

E

Now Vitamins D and A, B and C
 Will ensure that you're happy and strong ;
 But that's no use ; you must reproduce
 Or the race won't last for long.
 So Vitamin E is the stuff for me,
 And its praises end my song.
 We'll double the birth-rate yet, my dears,
 If we all eat Vitamin E,
 We can blast the hopes of Marie Stopes
 By taking it with our tea.

From Greys Hospital.

Editorial

While the question of medical research in the various clinical institutions is largely in the public eye we are glad to learn that a research unit has been started in the hospital for women and children in Egmore. Let us hope that this will form the nucleus of a band of workers who will strive to throw light in the various problems of maternal and infantile disorders. We all look forward to the time when the work turned out shall keep abreast of the enormous amount of investigation in these lines that is being carried on all over the world.

* * *

We cannot refrain from commenting on that beneficial measure of legislation that has been passed by the Government Sarda's Child Marriage Bill. The importance of this is apparent to students of medicine and they would be first to realise the difficulties and dangers incident to the child mother and to the offspring as a result of early motherhood. We honestly hope that this bill will lead to a definite physical improvement of the race and the heavy toll in obstetric mortality that the community has to pay for its clinging to antiquated customs, will be appreciably diminished. Incidentally we hear that the die-hards of orthodoxy are driving up their unwedded and immature children into early matrimony before the law comes into force.

* * *

After all the research in dietetics in India it is indeed a pity that the South Indian has not thought it fit to modify his diet of rice and chili-water—a diet which is so inadequate for building up the tissues. Conservatism in regard to food is most difficult to get rid of and it is for the medical man to take the lead in dispelling wrong notions which have for their only basis the sanctity of ancestral usage.

An adequate supply of protein and fat whether animal or vegetable and a fair share of Vitamins and mineral salts are absolute necessities if the health of the race is to improve. It is often argued that poverty is at the bottom of the whole question but to one who has made a study of local conditions and of dietetics it becomes apparant that it is not so much poverty as ignorance. In this connection it is interesting to note that dietetics form a part of the medical curriculam in some progressive Western Universities.

* * *

We are very glad to welcome back Col. Wright, Professor of Ophthalmology, who has been attending the International Congress of Ophthalmology at Hague as a delegate. His election to the International Council of Ophthalmology to represent British Ophthalmology overseas is a great credit to Madras School of Medicine. One wonders if after all we are so backward as the General Medical Council would have us believe.

* * *

We are very glad to note that the storm has blown over at the Lady Students' hostel and that things are becoming normal again. It is our hope that the students and the warden will co-operate to prevent any such incidents in the future.

Letter to the Editor

SIR,

Year after year we are losing more than one of our dear college mates, and during this academic year we have lost four of them **all** through Enteric. It is surprising to note that the College authorities have not yet tried means to alleviate this terrible problem. It is high time they set plans afoot for a good hostel for the men students. There are about five hostels in the city each of which takes in about a dozen or less number of our students. What happens to all the rest of the six hundred students? They are all scattered about the city, mostly in unhealthy lodgings in the care of The Almighty. The strain of our strenuous work, our exacting examinations and the exposure to constant infection are bound to effect worse calamities if we fail to bustle about setting things aright. May I also suggest that there must be compulsory anti-typhoid inoculation for all the students working in the hospital? Thus far, the cases have been all among the students working in the wards. As many students happily escaped the fatal result, we fortunately or unfortunately are unaware of the statistic of enteric among the students of our college. Medical students must be compelled to get themselves admitted in the hospital at the onset of their illness. The rule regarding this already existing in the college calendar must be strictly enforced.

The state of our dining rooms are filthy. What is the use of studying so much of Hygiene when this sort of practical demonstrations are given to us? Our water filters are cheap ones probably set up when the college was established. There is no convenience for personal ablution. There is a tap only in one room under which plates and dishes are washed and all other things too. Let

the authorities please come and inspect our dining rooms and they will be surely horror stricken. Our dining rooms are all like small kitchens. We have been asking for a common decent dining room since a very long time. One of the rooms are now provided with marble tables and individual chairs. We rejoice to see such a sign of a "change of spirit"! But we are surprised and wonder why only one room should be blessed like this.

Then again, we appeal that our lavatories must be under better supervision so that they may be a real model for the sanitary inspectors, who are in the making, in our college. At present they are used specially by those who use the Medical college grounds as their thoroughfare. We have a lot more grievances which if briefly stated could outbeat the size of any of our text books! This much will suffice for the present.

I. D.

The New-year Message

Adrift on Times Returnless Tide

As waves that follow waves we glide
God grant we leave upon the shore
Some waif of good it lacked before.

Some seed or flower or plant of worth
Some added beauty to the earth
Some larger hope some thought to make
The sad world happier for its sake.

Trust no lovely forms of passion
Friends look like angels bright
Some will hate thee some will love thee
Some will flatter some will slight thee.

The simple rule and safest guiding
Inward peace and inward might
Star upon our path abiding
Trust in God and do the right.

Courage brother! do not stumble
Though thy path be dark as night
There's a star to guide the *humble*.
Trust in God, Trust in God, Trust in God
and *do the Right*.

Adapted by
G. M. THAMBIDURAI,
Student Editor.

In Lighter Vein

Doctor (to chauffeur). "It doesn't matter a hang, what speed we go I have the Commissioner of Police in bed with Rheumatics."

Nurse (to a drowsy patient). "Now, now wake up at once you've got to have your sleeping draught".

The knowing little boy confided to me, his friend, that he was expecting a little brother any time.

"But how do you know it'll be a brother?" I asked.

"'Cause not so long ago mother was ill and we had a baby sister, Now dad's been ill in bed for more'n a week!"

Nurse (to a patient admitted at 1 a.m. after an accident on new year morning). Happy new-year to you, many happy returns of the day.

Patient.—Oh! had a bad beginning though; and I would rather not have any more like this.

Sarma (to an Irishman in a church). "Why is the bell ringing now my man?"

Irish Sexton David "'Cause I'm pulling the rope".

A little girl in a hostel was told that Auntie John had a new baby.

"Why, what was the matter with the old one" she asked.

Surgeon.—"Put out your tongue child." The child timidly showed the tip of the tongue.

Surgeon.—"That won't do, put it right out." Tears gathered in the bright blue eyes "I can't its—its joined on to me at the back of my mouth".

In Lighter Vein

Dr. S. "In this slide we see....at 12 o'clock a group of motile bodies held together but at 4 o'clock if you observe carefully you'll find one..."

Student (interrupting). "Gosh! who is to stay from 12 o'clock till 4 o'clock to look at the slide. Let me buz off at 1 o'clock."

Medical Howlers.

Sanitary Science Department. The human heart consists of two chambers—right and left lung. Blood circulates. On one side arterial blood and on the other *venus* blood.

Examiner.—"What are the effects of alcohol?"

Student.—"It is wonderful, inexplicable, can keep everything but a secret."

Surgery.—The causes of infective thrombosis in the lateral sinus are: (1) In fractures of the base of the skull. (2) Through emissory veins passing through the foramen magnum

Symptoms.—Paralysis of muscles corresponding to the areas of brain supplied.

Treatment.—(1) Place him in a dark room, (2) Put plenty of ice on his head, (3) Trephining the skull (*anywhere?*) (4) And wash out the sinus (E. N. T. Dept. please note).

Midwifery.—A case of Transverse presentation where the labour has just commenced comes to you. How will you tackle the case?

A Post graduate.—I'll send for the nearest magistrate to take down the dying declaration and will ask my assistant to attend to it just for a little while, while I may go out to pay a visit to my grandmother who may just then be dying.

Examiner.—"You'll go out *Bunburying* Eh!"

Student (coming out of the Anatomy Oral Examination Hall). "What a question that B...of an examiner asked me, I say, He asked me what passes through the foramen magnum. You see, Oh! that depends upon what the fellow swallows". Examiner was pleased he said "we shall meet again"

Vaidyanadhan.—"Madam you need some iron in your system"

Lady Bungh.—"Oh Doctor! that is so plebian please can't you prescribe one of the more precious metals?"

Cox.—‘ You seem to work very hard ’

Box.—‘ Not hard but hardly.’

Physician.—“ Has he the trouble in one ear or both ?”

Assistant.—Yes sir ! one and a half years.

Professor.—“ Pituitrin injection to start the labour especially in a woman with contracted pelvis, is dangerous.”

Student.—“ Why not try a sample dose ! Sir.”

Surgeon.—“ Is the patient under ”

Anæsthetist.—“ Yes Sir ”

Surgeon (sarcastically).—“ Is the patient dead ? ”

Anæsthetist (sarcastically).—“ Not yet Sir.”

The Magic Letters V. D.

No matter whether the patient is having an ingrowing toe nail or is having a severe attack of dengue or acute pneumonia, or a fracture of his femur ; it does not matter in the least whether the magic letters V.D. stand for initials of Dr. V. Desaisamy, if it is endorsed on the out Patient ticket it means that the patient goes straight for investigation or opinion to the specialist.

G. M. THAMBIDURAI.



THE KISS

If a body meet a body
Coming through the rye ;
If a body kiss a body
Need a body cry ?

The times have changed since Robert Burns wrote these lines. The kiss has become the subject of much controversy to-day. Distinguished medical men, laymen and clergymen—all of them past their middle age—have expressed their disapproval of the kiss.

“ Our Vicar calls it damnation to sip

The ripe ruddy dew of a woman’s dear lip ”

But these worthy old gentlemen never tell us whether they themselves avoided it in their young days.

The Kiss

A young man of twenty kissed a girl of eighteen and she kissed him.

They loved one another. He was happy. When he was forty he kissed another girl of eighteen and she was furious, and said, “ You disgusting old man, what business have you to kiss me ?” He just replied that it was not business but pleasure. He did not care, for there were other girls. When he was sixty, a girl of eighteen for whom he had done some good turn kissed him of her own accord. And that broke his heart, for that meant that it was all over with him and his number was up. Not even the skill of Dr. Vornoff would be of any use to him now. Old age has great privileges and would gladly exchange the entire bunch for anything interesting.

After liquor was prohibited in America kissing is said to have become her chief vice. Hundreds of men are sued there for this “crime.” A nurse there is reported to have sued a Public Health doctor for five thousand dollars damages for kissing her once. She said that one kiss could have transmitted into her system a maximum of five thousand germs, each of which she assessed at one dollar. Let us hope that nurses—and for that matter, even the medical students—in Madras, do not believe in the germ theory where the kiss is concerned. They might as well say,

“ Ah why refuse the blameless bliss,
Can danger lurk within a kiss ? ”

The kiss makes many things; among other things it is the backbone of the film industry. Ninety-five per cent of the films exhibited end in a kiss and it is generally “some” kiss. Thoughtless young men and women in the audience think that they would like to be playing the hero and heroine. But really would they? These poor people have to do the kissing according to orders in a strong light in front of the cameras, and the producer ready to shout “break away.” It is very cold work, indeed, and that is why the film kiss is limited to fifty-seven seconds. If the operation is continued a second longer, there is the danger of the hearts getting frozen.

The Encyclopaedia says that the kiss is unknown to the Eastern races. This is perhaps the only mistake in this fountain of information. The cause of this misunderstanding is the fact that Eastern people never kiss in public. The Europeans kiss in public places like dance halls and theatres; and the Indians,—now, hush,—they kiss within closed doors.

TALBOT FERNANDO.

OH! DEATH!

It is quite appalling to announce the sudden departure of Mr. G. C. Nathaniel, 4th M.B.B.S. Student, from our midst. The funeral arrangements made first were altered at the spur of the moment hence the students were not given an opportunity to pay their last respects to their endeared deceased colleague.

If one would look into the past records he will be convinced clearly what a heavy toll *Death* demands from the Medical Students. The reason, why, remains to be studied and expounded to adopt the preventive measures in future. We, who are trained to look after other's health, are least looked after and it is a true paradox of life that the teachers', the Pastors' and the Doctors' children that get the least benefit from their parents' profession.

Hey! *Death*, reveal thyself before my closing eyes. Why art thou seem to be lustful of murderous deeds? Why art thou laying thine icy hands on us so frequently? Dost thou ever turn back to survey the sepulchral ruins wrought in the dear Homes of our beloved colleagues? Even the creaky noise of the screws that fix the lid of that last mansion of mortality above its tenant has got the magic power to move hearts which are hard, indifferent and selfish. Say what is it that thou art expecting from us who profess openly to wrestle with thee. Thou art snatching away **our gems** before we could set them to show their worth!

G. M. THAMBIDURAI.

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