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[No. 1.

TRANSACTIONS
OF THE
SOUTH INDIAN BRANCH
OF THE
BRITISH MEDICAL ASSOCIATION.

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(Illustrated.)

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1902

SOUTH INDIAN BRANCH,
BRITISH MEDICAL ASSOCIATION.

(RECOGNIZED 1884.)

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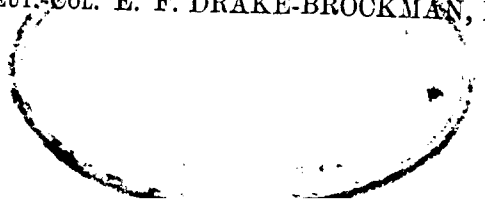
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Representative Member in the General Council of the Association :

LIEUT.-COL. E. F. DRAKE-BROCKMAN, I.M.S. (Retired).



*Annual Meeting held at the Central Museum on the
14th February 1902.*

LIEUT.-COL. A. J. STURMER, I.M.S., IN THE CHAIR.

The following Members were present:—

Lieut.-Col. A. J. Sturmer.	Captain Molesworth..
Lieut.-Col. J. Maitland.	Dr. M. Krishnasawmy.
Lieut.-Col. T. H. Pope.	Mr. C. Madhava Menon.
Lieut.-Col. W. B. Browning.	Miss McNeil.
Major R. Robertson.	Captain Cornwall.
Mr. C. B. Rama Rao.	

Lieut.-Col. Maitland showed a case of *tumour of the spermatic cord*.

Lieut.-Col. Sturmer showed two cases of *hydrocephalic children*.

Mr. C. B. Rama Rao showed a case of *lymphadenoma* affecting the cervical and axillary glands, with commencing symptoms of pulmonary tuberculosis. The mother and brother had died of Hodgkin's disease, and another brother is now suffering from the same complaint. It was suggested that the case might be one of tuberculosis.

Mr. Rama Rao also showed a case of *displaced heart* with a diffuse innocent tumour filling up the left supra-clavicular fossa.

The election of Office-bearers took place in the usual way.

The annual statement of accounts was presented by the Honorary Treasurer.

The annual subscription for the current year was fixed the same as last year, viz., Rs. 20 and Rs. 18 for town and mofussil Members, respectively.

Meeting held at the Museum on the 4th April 1902.

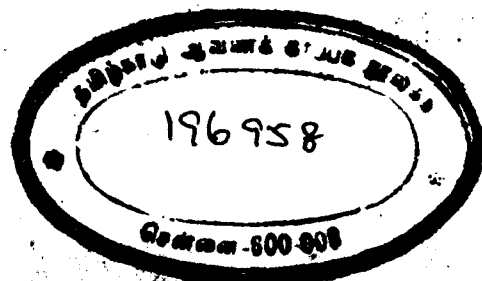
THE VICE-PRESIDENT IN THE CHAIR.

Lieut.-Colonel J. Maitland read notes of a case of *vesical calculus*. The patient, a Hindoo, aged 40, met with an accident ten years ago, falling from a tree. The accident resulted in some injury to the spinal cord, there being some loss of power and loss of sensation in the lower limbs; also partial incontinence of urine. A perforating ulcer formed on the sole of the foot. Dribbling of urine continued, but the other symptoms improved. Later on he began to suffer pain in the bladder and occasionally passed a little blood from the urethra. On admission, a sound was passed and met with obstruction (obviously a calculus) in the prostatic portion of the urethra. A prostatic calculus being diagnosed, an incision was made in the perinæum on to the stone. It was then found that the greater part of the calculus was really in the bladder, a pointed projection passing into the prostatic part of the urethra. After removal of this stone, another smaller one was found in the bladder. Both stones were faceted and had evidently fitted closely on one another. The bladder was extremely small and had evidently fitted closely upon the stones, forcing the lower one partially into the urethra. The external genital organs were extremely small and ill-developed. The history of the injury and resulting spinal lesion are interesting in this case. It seems to me impossible to determine whether the formation of the calculi was subsequent to or antecedent to the spinal injury.

The calculi removed from the patient were exhibited. The larger one was the size of a large gooseberry, with a sharp projecting point. This pointed portion, as well as the surface just above, was worn quite smooth as the result of friction at the neck of the bladder. The smaller stone was the size of an almond.

Mr. Masilamony Mudeliar (for Major Robertson) showed a boy, Arthur W., aged 10 years, admitted into his wards on the 8th January, with a history from his mother that he had been

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all right two days previously, and that this illness had been brought about by his playing at a "tug-of-war." The boy is a well-nourished lad, and shows no signs of a nervous disposition. I have been unable to see any of his friends owing to their not residing in Madras. The case is one of pseudo-hypertrophic paralysis.

On admission the boy was unable to walk and complained of pain in the calves of his legs. On the outer side of both gastrocnemii, there was a distinct swelling which led me at first to believe his mother's story that the boy had ruptured the muscle whilst playing. I treated the case in this light for about a week, and as he then showed no improvement, I again examined him more minutely. On getting him on the floor I found he was unable to rise again without assistance, latterly he soon acquired dexterity in climbing up his legs, and so attained the upright position. He stands with his legs wide apart. The spine is somewhat curved, and the abdomen is prominent. On going upstairs there is a characteristic gait, and after a dozen or so steps are mounted he has to stop, owing to want of power to advance further. He can descend easily. The "loose shoulders" are very well marked in this case, due to atrophy of the pectoralis major and latissimus dorsi. There is no hypertrophy of any other muscle. I merely bring this case to the notice of the Branch as the disease is somewhat rare in Madras, this being only the second case I have seen in ten years. I am unable to say whether there has been any hereditary taint.

2nd Case.—Hubert Siddles, aged 8 years, a resident of an orphanage; he was brought to the hospital on the 27th January. On admission, his abdomen was found very prominent, tympanitic, and coils of intestine were easily seen contracting. There was no history of obstruction, but treatment was at first directed to this probability. The boy complained of distention mainly, he could pass flatus. Small doses of calomel and belladonna, were given every half-hour during the day, and during the night he passed three motions. Next morning, as there were no signs of serious disease, I ventured half an ounce of castor oil with three grains of santonin, the result was he passed 140 round worms during the day and 78 during the night. From this time onwards he was given santonin at intervals until the 25th February, with th

result that 2,233 round worms were passed. Clumps of worms were passed like vermicelli, and no doubt these masses were the cause of the primary symptoms, which in all likelihood would soon have merged into complete obstruction. The worms were all of small size, except perhaps the first dozen. The enumeration of the worms was carried out by the nurses in charge. I simply bring this case before you as a record number. We all see numerous cases of round worms in the wards, and frequently 20 or 30 are passed: again those who have been serving on the West Coast of India can easily recollect instances of two or three hundred worms being expelled, but I venture to believe that few of us have heard of thousands before.

Captain J. W. Cornwall read a paper entitled "*Notes on Malaria.*"

About September 1900 Captain Giffard read a paper before this Branch, in the course of which he stated that, as a result of his enquiries, it appeared that malaria had first become prevalent of recent years along the Coromandel Coast about 1895. He pointed out that casuarina plantations and their accompanying pools, and hence, in all probability, Anopheles, were to be found 20 years before that date, so it may be inferred that it takes something more than casuarina pools and Anopheles to render a place malarious, if his information was correct. The people of Ennur mostly ascribe the introduction of malaria to the building of the bridge over the backwater. This bridge was built about 1890, and it is said that Bengali, or some other up-country coolies, were imported to work on it, who had suffered from malaria in their own country. It is possible that the missing factor, the parasite, may have been brought to the place in this way.

Whatever the date and method of introduction may have been, the fact remains that some 90 per cent. of the children in Ennur now have enlarged spleens, and that some 40 per cent. had in the month of March parasites in their blood, as calculated by Captain James, I.M.S. It follows then that, if the right species of mosquitos are there, all the postulates for the propagation of the disease are satisfied.

The members of the Malaria Commission have dissected about 800 *A. Rossii* in other parts of India without finding a single one

infected, although at the same times and places they found other species functioning as carriers. A few weeks ago Captain James and I caught 35 *A. Rossii* and 25 *A. Culicifacies*, all fed females, in native huts in Ennur, and dissected them. None of the *A. Rossii* were infected, but four of the *A. Culicifacies* had sporozoites in their salivary glands. These mosquitos were caught in the same houses and under precisely similar conditions, and it is curious, to say the least of it, that 16 per cent. of the one species, and none of the other, should have been found infected. So the experience here falls into line with that of the members of the Commission elsewhere. A week or two later the other members of the Commission also went to Ennur and dissected 200 or 300 *A. Rossii* and a few *A. Culicifacies*: I have forgotten the precise numbers. Anyhow, none of the many *A. Rossii* were infected and some of the few *A. Culicifacies* were, making a percentage on the total number of *A. Culicifacies*, dissected at Ennur of about 9 per cent. The highest percentage of infection found by the various expeditions to West Africa was about 10 per cent.

The members of the Commission have for some time been inclined to believe that *A. Rossii* for unknown reasons does not carry the parasite in nature, seeing that they have never yet found an infected one, and that, of other species found side by side with it, although, be it noted, in very much smaller numbers, from 3 to 9 per cent. have proved to be infected. I must say that I somewhat rejoiced when I heard this, for, of the considerable number of wild *A. Rossii* that I have from time to time caught in different parts of Madras and dissected, I have not found one infected, and was beginning to think that I must have been missing the parasites, but it appears now that it was unlikely that there were any parasites to miss. The importance of this conclusion from the point of view of the practical sanitarian I need hardly emphasise, when it is understood that all experience up to date tends to show that *A. Rossii* is by far the most widely distributed species of *Anopheles* in India. Within Madras Municipal limits the relative prevalence of *A. Rossii* and other *Anopheles* must be something like 99—1; and, if it can be definitely proved to not function as a carrier, the scope of prophylactic measures can be greatly narrowed, not only in Madras, but wherever it occurs in India. However fascinating and probable this doctrine may seem, there is one fact which must not be lost

sight of, and that is that *A. Rossii* functions as a carrier of some, if not all, species of the parasite, when it is experimentally fed on suitable cases; and, since no one has yet put forward a reasonable theory to account for this remarkable variation in its behaviour when in captivity and in nature, I think that you will all agree that it would be premature to suspend all operations directed towards the destruction of this species, and to devote attention solely to the less common species, until this discrepancy can be explained. Nevertheless, there are undoubtedly sufficient grounds for believing that *A. Rossii* is not a frequent carrier in nature, and it behoves all interested in the matter to set themselves the task of identifying the species which chiefly functions in each malarial focus, while not neglecting to ascertain whether *A. Rossii* or the commonest local species can be definitely excluded.

It is still open to question whether Madras or any part of it can be regarded as particularly malarious. Unsupported assertions have been freely made, but the matter has never been thoroughly investigated. A considerable number of cases does undoubtedly occur, and I have seen many instances of apparently fresh infections in Black Town as well as the well-known chronic cases with huge spleens; but, in spite of appeals, both personal and epistolary, I have never had any help worth speaking of from local practitioners either in word or in deed. The futility of circular enquiries has been well demonstrated by the fact that not a single answer was received from any one of the 200 medical practitioners to whom I addressed a series of questions on the subject of malaria when I was Health Officer in February 1901. The recognised tests of the relative prevalence of malaria, which can be relied on in villages, are extremely difficult to apply in a town like Madras. These are the percentage of enlarged spleens amongst children, and the percentage of young children with parasites in their blood. It was a great discovery which showed that it is native children who are the chief source of danger in malarious localities in Africa, and the Commission have proved that the same thing holds good in India also, and that, after the age of about 10 years, parasites can seldom be found in the peripheral blood, the spleen disappears beneath the ribs, and the subject seems to be well nigh immune from fever as long as he stays in that place. The course to be followed now if a true estimate of the prevalence of malaria in Black Town is to be

obtained, is to select half a dozen separate localities and to go from house to house in each, examine the spleens of all the children and get specimens of their blood. The *"spleen rate" and "malarial index" could thus be ascertained, but it would be a work of time and of considerable trouble. More than a year ago I examined the spleens of over 1,100 people in different parts of Madras, in order to determine whether malaria was prevalent in the outlying villages to a greater extent than in the town. The details are shown in the Administration Report of the Municipality for last year, but, roughly, it was clear that most of the outlying villages, such as Viyasarapadi, Palli Teynampet, Perambur, Chaklipaliam, and some villages near the Adyar, were practically free from fever, and that the few cases with enlarged spleens that were found all had become affected in the mofussil. In Black Town, however, 6 out of 276 persons had enlargement, but these figures are not entirely confined to children, who alone can be expected to give a proper idea.

Turning now to *Anopheles* in Black Town, there are only three kinds of places where they can breed (1) wells, mostly unused; (2) temple tanks; (3) ponds and collections of water in cocoanut topes and gardens. In the temple tanks and ponds *A. Rossii* can usually be found, but, as Captain James pointed out to me, it is a species named *A. Stephensii*, with difficulty distinguished from *A. Rossii*, which is generally found in the wells. The habitat of *Anopheles Culicifacies*, which carries at Ennur, has not yet been found in Black Town, but the probability is that it exists. It is evident that if *A. Culicifacies* is the usual carrying species in Black Town, its haunts should be discovered and its larvæ completely exterminated. This would not be such a big affair as the extermination of *A. Rossii* on account of the scarcity of the species, but I am of opinion that in a place like Black Town, the safest plan is to destroy all species of *Anopheles* and regret extremely that the Municipality did not see their way to going on with the work in this direction which was begun during the latter months of 1901.

The Malaria Commission arrived at the conclusion that malaria is quite uncommon in Calcutta, notwithstanding the presence of

* "Spleen rate" percentage of children with enlarged spleens, "malarial index" percentage of children with parasites in their blood.

myriads of *A. Rossii* and in the face of public opinion. I do not think that investigation would prove that it is actually uncommon in Madras, i.e., Black Town, but it seems improbable that it is the terrible scourge that many persons would have us believe. In all probability diagnosis is not as accurate as it might be, and many cases are classed as malaria which are really something quite different, e.g., leucocythæmia, enteric fever, and ascites, all of which I have seen diagnosed as, and treated for, malaria. As to the nature of the fevers that prevail in and around Madras, cases of which should, from time to time, find their way into the General Hospital, up till the time of Captain James's arrival, I had only seen simple tertian and malignant parasites in the slides I had examined. If quartan were among them, I must have overlooked it. Alexander Crombie is responsible for the statement that after 30 years of medical work in Bengal he had never seen a case of quartan, and that he did not think that it occurred in India. The Commission, however, have found it in many places, and it appears to be the parasite that affects out-of-the-way villages rather than towns. In Ennur in particular quartan is very prevalent, and the peculiar thing about it seems to be, as Major A. Buchanan has pointed out, that a man may actually gain in weight and be little affected in general health even after months of quartan fever. A young fisherman whom I saw at Ennur had had quartan paroxysms regularly for the past three months, and said that he went out to sea as usual on the off days, and only stayed at home on the evening on which he expected the fever to come on. He said that he felt a little weaker than before, but that was all. His temperature at the time was 104°, and he was wandering about, watching our operations. Captain James took a specimen of his blood and found a few quartan parasites. It is probable that the reasons why these cases are not more frequently seen in hospitals, are that they occur mostly in jungly places, and that the persons attacked do not suffer enough in general health to lead them to seek for treatment at a distance. Whether a cachectic condition ultimately follows, as in the case of tertian fever, I do not know.

According to Buchanan, the clinical features of simple quartan are that it is most readily influenced by quinine in the first instance, but that the parasite dies hard and that relapses are

frequent after a period of weeks or months. The dangers to Europeans living at Ennur have by no means been exaggerated. Though a person who understands the ways of mosquitos might stay there for months, without getting infected, any one who was ignorant or sceptical in this respect would be practically certain to suffer sooner or later, if he were located within mosquito range of native huts or native children. It must be remembered that the percentage of infected insects is comparatively small, and that with luck a susceptible individual might escape being bitten by one of them for a considerable time. On the other hand a few hours' stay after dark might be sufficient to do the mischief. Of two men, whom I took out to catch larvæ and otherwise assist and who were living in the same chattram for two nights, one escaped and the other developed severe tertian 18 days afterwards. My own chokra, who only stayed one night at the railway bungalow, was infected with both tertian and quartan and was seriously ill for a week, the first attack occurring 19 days afterward. Captain James's boy who stayed two nights, I believe, got a slight attack of tertian, whilst my butler and cook entirely escaped. The result of our second expedition was that the man, who had stayed in the chattram on the first occasion and had escaped, remained five nights and got fever seven days after his return to Madras. This very man, who is a person of some education, had volunteered the information that he did not get fever on the first occasion, because he boiled his water, whereas the other man did not. He was, therefore, unpleasantly surprised to find that even boiling his drinking water did not protect him on the second occasion. My butler, who stayed one night in the bungalow again, escaped, but I do not know what has happened to the servants belonging to the members of the Commission. Although this is supposed to be the period of the year in which fever is least prevalent, you have heard to what extent it is to be found at Ennur. With so many native children carrying the parasite and so many potent Anopheles all the year round, it is impossible for fever to be ever absent, and it is difficult to conceive that it can be much worse even in the season between August and November. As a matter of fact I went out there in September 1900 and could not then find any more apparent cases of fever than there were this March, so it is possible that the actual seasonal variation is but slight, and that the increase in the

death-rate, which usually takes place in the autumn months, is really due to other causes. It is strange how little notice native children take of an attack of fever. They wander about and even play with temperatures of from 100° to 103° , and at the worst do not eat their rice in the evening, but put it away and consume it cold next morning, when their temperatures have fallen.

The somewhat complicated classification of malarial parasites in man is now tending towards simplification, and most authors recognise only three species, namely, simple quartan, simple tertian, and the malignant or crescent-forming species. It is possible that the latter group may again be further subdivided in the course of time. It seems to me to be a matter of some importanceth at the exact nature of the infection should be determined in all cases that are admitted into the hospitals in Madras for treatment, since rational treatment, and I may also say effective treatment, is dependent on the blood indications, and, until it is definitely decided what parasites are circulating in his blood, it is mere empiricism to dose the patient with quinine, and on a par with prescribing strychnine as a routine measure in all cases of cardiac disease, on the principle that it may do good and can't do harm.

I may here point out that not one blood examination, but several will often have to be made before the final diagnosis can be assured, and I deprecate the routine administration of quinine until the microscope has decided the question. In few cases does it do harm to withhold quinine until the nature of the case has been made plain and the ultimate advantage to the patient of being treated rationally instead of empirically cannot be gainsaid. It must be extremely rare, and I have not myself heard of such a case, for a person to be admitted with malaria with urgent cerebral symptoms, which call for hypodermic injections of quinine without a moment's delay after the diagnosis is clear, and can in no way affect the general argument. I must not omit to mention that in the blood of many chronic malarial cases, parasites are never found at any time of the day. I have examined many such myself, and used to attribute my failure to find anything to faulty technique, or to the blood having been drawn at the wrong time, but I have since heard that this experience is universal. Whether parasites are somewhere latent in the body or what progressive morbid process is maintained as a result



of their former presence, does not seem to have yet been discovered. One unfortunate fact is alone clear, and that is that there is no specific treatment for this condition. A point of practical importance is that the apparent severity of the fever bears little or no relation to the number of parasites found, and we are still unable to say what the pyrogenetic agent is. In the early stages of a fresh infection even after two or three definite paroxysms it may take a long time to find parasites in a film of blood. As is well-known to be the case in malignant types the sexual forms, i.e., crescents, do not appear for more than a week after the first attack, so also in simple tertian and quartan gametes are not found during the first week, but merely the sexual forms, and it is not until then that the sucking mosquito can become infected, and the sufferer becomes a danger to his neighbours.

A list of mosquitos found in and around Madras, mostly described by Theobald in his Monograph of the Culicidae of the world from collections made by Captains Giffard, Donovan, and Cornwall in 1899 and the early part of 1900. This list is probably by no means an exhaustive one.

Anopheles	Rossii.
"	Indica.
"	Fuliginosus.
"	Sinensis.
	(Sub-species) Indiensis.
"	" " Annularis.
"	" " Nigerrimus.
"	" " Barbirostris.
"	Culicifacies (since found at Ennur by James).
"	Stephensii (Madras, by James. Probably a sub-species of A. Rossii).
Stegomyia	Fasciata.
"	Scutellaris.
Armigeres	Obturbans.
Culex	Microannulatus.
"	Vishnui.
"	Fatigans.
"	Concolor.
Taeniorhynchus	Ager.
Panoplit	Annulifera.
Aedes	Squamipennis (Chingleput).

Lieut.-Colonel Maitland said that as the second variety of Anopheles that Captain Cornwall spoke of, and whose name he (Colonel Maitland) could not catch, appeared to be the more dangerous kind, it would be interesting to know the characters of this species. Was it easily recognised and were its larvæ easily identified? If this animal was to be hunted for, these were important points.

The question as to the extent of the prevalence of malaria in Madras appeared to be still far from being settled. Captain Cornwall seemed to think that possibly there might not after all be a great deal of malaria. Colonel Maitland was of opinion that there was a great deal. In any case it was universally recognised that, during the months of July, August, and September, fever was rampant in Black Town, some of the inmates of almost every house being attacked. It was extremely important that the nature of this fever should be determined once and for all.

In regard to the question of malaria and mosquitos at Ootacamund, there were some years in which the latter were rather troublesome in that place, but the speaker had never seen a case of malaria contracted there.

Colonel Browning remarked that he inferred from Captain Cornwall's paper that some doubted whether malarial fever ever originated in Madras itself, all cases being imported. This was at variance with his experience, he could recall many cases to the contrary. A European came out from England, landed at Madras, was never out of the town, lived in Teynampet, and within six months of his arrival developed enlarged spleen and most typical attacks of malarial fever, he could multiply such cases as no doubt could every one practising in Madras.

As regards Ennur, two Europeans, brothers, one married and the other a bachelor, went and lived there about a year ago. The bachelor, a teetotaller, drank the Ennur water freely and had several attacks of malarial fever, and dysentery twice; the other brother and his wife never drank water except in tea, etc.; they did not have fever; they both used mosquito nets; he gave the case as it was related to him, and for what it was worth. In this connection he referred to a report of Colonel W. Price's, who years ago drew

attention to Sriharikota, further up the coast than Ennur. The people at this place all drew their water from shallow wells on the spit of sand on which the village was situated, most of the villagers were reported to be suffering from elephantiasis.

At Ootacamund there was a small dhobi village close to and higher up than the bungalow he lived in, last year a child was brought to him who had never been away from the village, the spleen was enormous and the mother said she had lost several children from the same cause "*Kachul Cuttee*." Further examination showed that a number of the children in this village had enlarged spleens; these children had mostly been born in the village and never had left Ooty. Mosquitos were practically unknown at this height; he had never seen them in his bungalow except a stray one, probably brought up in carts. Years ago in '93 or '94 he had seen an exacerbation of fever of a malarial type in Ooty; in the year in question he had noticed that squirrels and the birds known as the seven sisters were for the first time within his knowledge seen up as far as the Ooty toll-gate, and people near the lake level had complained of being troubled by mosquitos. This was before the mosquito boom was heard of, he remembered the incident as Colonel King had subsequently in conversation asked him whether he had noticed any new conditions as affecting the place.

Major Robertson said—Captain Cornwall has alluded to a malarial index in referring to the disease in Calcutta. Would he kindly explain how this figure is arrived at, and whether it would be of any value in comparing or contrasting the prevalence of the disease at other towns or districts?

Captain Cornwall replied—Two terms have been recently introduced in comparing the relative prevalence of malaria in different places. The "spleen rate" means the percentage of young children, who have enlarged spleens. The "malarial index" means the percentage of children with parasites in their blood. The figures obtained in this way are undoubtedly of value, but require to be standardised as to make the results more strictly comparable.

Meeting held at the Museum on the 25th April 1902.

THE VICE-PRESIDENT IN THE CHAIR.

The Chairman announced that the following members were appointed by the Council to represent the Branch at the Annual Meeting of the Association to be held in Manchester at the end of July:—Lieut.-Colonel W. A. Lee and Major G. Giffard.

Major Crawford exhibited a case of marked "apparent" reduplication of the second cardiac sound. The double sound was only heard in the region of the apex; the second sound being normal at the base of the heart. The relation of apparent reduplication to the question of mitral disease was discussed, and the opinion expressed that in the absence of other signs of cardiac disease, the man might be accepted for the Police service which he had applied to enter.

Lieut.-Colonel Browning showed a specimen of bony ankylosis of the knee-joint and read the following notes:—

This specimen exemplifies the very complete bony ankylosis that may occur after an attack of arthritis of venereal origin. The patient, a coachman by occupation, gave a history of gonorrhœa followed by inflammation of the knee-joint about two years ago, perhaps less; he stated that he never had syphilis, but his skin presented suspicious symmetrical patches. After the attack of arthritis, during which he kept his knee-joint flexed, he found he could not straighten the limb, and since then his mode of progression has been in a sort of sitting posture, the trunk supported on the palms of the hands. This condition prevented his working, and he asked that some measure of relief be given him, even if the limb be amputated. The joint on examination was found to be completely ankylosed, the leg forming an acute angle with the femur.

A semi-lunar flap was made reaching from one condyle to the other and extending down to the tibial tuberosity. The patella was found to be fixed to the femur by bony ankylosis and was raised with a chisel; on clearing the parts, no line of demarcation between the tibia and femur could be seen, there was a uniform plane

of bone, such as this specimen now represents, the part was, therefore, sawn very nearly through at the supposed junction of the tibia and femur and the remainder fractured by flexion, this by way of avoiding injury to the vessels. An attempt at bringing the limb into a straighter line at this stage was unsuccessful; the muscles and ligaments had lost their resiliency and were contracted; a slice was, therefore, taken off the end of the femur which permitted a very slight degree of extension, but even this caused the pulse in the tibial artery to disappear, and further slices from the tibia and femur were removed as shown in this specimen until the total length removed from the femur was about $1\frac{1}{4}$ " and from the tibia probably 1". The guides as to the amount to be removed were the existence of pulsation in the tibial artery and the facility with which a reasonable degree of extension was attained; the bones were approximated in a straight line and the soft parts closed, none of the original flaps being removed. The limb was put up in a straight splint which was suspended from a rafter in which a pulley was fixed, this to counteract the natural tendency to flexion and rotation outwards of the femur such as occurs in fractures of that bone. The wound pursued an aseptic course, excepting a small stitch abscess on the inner side, which is now a tiny granulating sore. The skin, I regret to say, has collapsed to a certain extent over the ends of the femur and tibia, and had I a similar case to do again, I would wire the bones and shorten the flap. I am hopeful, however, of an ultimately usable limb. He is being kept in a straight splint, and a leather knee support is being made for him. I had thought that an osteotomy in this case might suffice, but decided finally that the angle of ankylosis was too great; the experience gained during the performance of the operation showed that an osteotomy would have been futile.

Lieut.-Colonel Browning also showed a specimen of *perforating duodenal ulcer* and read the following note of the case:—

A well-nourished man, aged 35 years, a coachman by occupation, was admitted into Hospital at 1 A.M., complaining of severe abdominal pain; he was given a dose of sulphate of magnesia at 5 A.M. I saw him at 7 A.M.

History.—He was in excellent health and doing his work up to the previous evening and had no symptoms of any kind. At

7-30 P.M., on the evening prior to admission, he had his evening meal, but did not finish it as he began to have pain in the abdomen; the bowels were moved at 9 P.M. The pain gradually increased and was at first referred entirely to the caecal region, but subsequently became general and very acute.

Examination.—He lies on his side with his legs drawn up, is apparently in severe pain and is sweating profusely, pulse 108, very small, respiration 36. The abdomen is rigid, but not much distended, there is tympany from the level of the umbilicus upwards, but not much distension, and from the same point downwards and into the loins there are the usual signs of effusion. There is no particular point of pain; he has passed urine.

He was given a strychnine injection and a dose of brandy and chloroform administered. On opening the abdomen, about forty-eight ounces of dark brown fluid escaped or was sponged out, the usual appearances of recent peritonitis were present. The appendix was free from perforation; about this time a faint spirituous odour was noticed, and recollecting that a dose of brandy had been given, the stomach was examined and found free from perforation, but a deeper search showed an opening in the duodenum less than $\frac{1}{4}$ " in diameter through which greenish-colored flakes could be seen oozing. This was closed by means of two silk sutures and a pad of omentum fixed over the parts. All this was a work of no small difficulty owing to the position and the fact that the adjoining tissue was swollen and pulpy, and the first sutures placed near the margin cut through. The parts adjoining the opening did not present any signs of adhesions. The patient, I regret to say, died before the abdomen was finally closed. The appearances of the specimen when fresh were as follows:—internally, on the anterior wall of the first part of the duodenum, the mucous membrane over an area of an inch or more was raised and injected, and in the centre of this patch, which was the highest point, was a crater-like ulcer which communicated directly with the opening on the peritoneal surface. The opening at this latter point had very clean cut edges usually described as "punched out" and was circular in shape; no other ulcers were present either in the duodenum or stomach.

The case presents several points of interest. The sudden onset without any history of previous illness. This, however, would appear to be a feature of such cases. The pain was referred in the first instance to the cæcal region; "Associated pain," as it is termed, in this region is not uncommon in perforation of the stomach, but in this case there were no symptoms pointing to perforation high up; Dreshfeld records a similar case in which a diagnosis of perforated appendix was made. As a means of differential diagnosis, vomiting is said to continue in duodenal ulcer after perforation as contrasted with perforation of the stomach in which the reverse condition pertains. In this case there was no vomiting at any time. The case agrees with the ordinary textbook description as regards sex, number of ulcers, and site.

(Reference=Dreshfeld's Article in Allbutt's system of medicine.)

Mr. Masilamony showed, for Major Robertson, a boy, aged 16 months, name Anthonysawmy, father, a butler, living in Pudupet, a native Christian, who was admitted to Hospital on the 18th April 1902. The child was born two years after marriage. The mother had no abortions previous to it. Family history shows nothing particular. The child was apparently all right for about five months after birth. The mother or any other person did not notice anything peculiar with regard to it. It used to cry, laugh, move its limbs freely. It recognized its mother and those around whom the child used to see. At the beginning of the sixth month the child had an attack of measles, which lasted about 10 or 12 days. Soon after the child had high fever for 10 days, during which time it lay quite unconscious and had convulsive fits—about 15 or 20 a day. During the fits the unconscious child would open its eyes wide and clonic spasms would occur in all the four limbs. This lasted each time about 10 minutes. After this attack of fever and convulsions had passed away, the child lay in bed for two months like a log of wood—to use the mother's expression. By this she means that the child lost all its former playfulness—became quite listless and never took notice of anything around. This was now in its eighth month and the child could not crawl, and moreover did not turn on to the stomach which it did previous to getting the attack of convulsions. For two months this went on. And

for the last eight months the child is in the present condition. The child gets "convulsive seizures" (about 20 or 30 in a day) of a very peculiar nature—chronic tetanic convulsions attended with a cry. The child does not seem to understand anything; does not recognize anybody; cannot support its head or body; cannot sit up without support; does not move its limbs freely. The mother is able to cut short the fit by taking up the child and with some force bending the body forward. The child is apparently blind and deaf.

Mr. Masilamony also showed, for Major Robertson, a man aged 38 years, name Kandaswamy, a peon, born in Chingleput, admitted to Hospital on 14th April 1902.

History.—He joined the Madras Infantry in 1888 as a sepoy, and after two years of service he noticed some loss of power in his left upper extremity. During bayonet exercises, after raising the rifle in an extended position, he was unable to maintain the rifle in that position, his left arm gradually lowering itself despite all efforts. To a certain extent he overcame this by supporting his upper arm against the chest. He served two more years and the regiment was disbanded. He declined to join any other regiment. He did not leave the service on account of this weakness. He is now a church peon for the last 10 years, and during the first 7½ years he noticed an increasing weakness in the left upper extremity which manifested itself only with regard to lifting up weights above his neck. It is then he found his left arm to be weak. This continued till 2½ years ago when muscular tremors set in, in almost all the muscles of the upper extremity and he noticed perceptible wasting of the deltoid muscle and upper arm and an increasing inability to abduct the upper arm.

It is probably a case of *atrophy of the deltoid muscle* and consequent atrophy of the whole extremity from disuse.

Further, this man sought admission into Hospital not for the atrophied deltoid, but for some obscure creeping sensations in the right upper arm, and this he thought might develop into a disease similar to the left. A blister was put on the part and he is now all right.



In the absence of the author, *Lieut.-Colonel H. A. F. Nailer*, I.M.S., a paper by him was read entitled—

A new method of treating the sac, in radical cure of Inguinal Hernia.

The proper and effectual treatment of the *sac*, in operations for the "Radical Cure" of Inguinal Hernia has attracted the attention of all Surgeons, since the introduction of the operation. Diversity in the various methods points to the unsuitability, in many instances, of one or more. The aims of the several methods are—

- (1) The prevention of the *re*-formation of a new sac, by descent of the remains of the original sac through the internal ring; and
- (2) The closure of the opening in the abdominal parietes.

While attention to the latter is very desirable, most of our attention should, I think, be concentrated upon the prevention of the former. On pondering over the matter, I have devised a method by which, I think, the *re*-formation of the sac is impossible. The method of procedure I have much pleasure in laying before the members of the S. I. Branch of the British Medical Association for an expression of their opinion of its merits. I have performed the operation on two cases (all that presented themselves) with very favourable results. The title of the new operation is as stated above.

Operation.—The sac, being exposed, is completely isolated from its attachments, the proximal part of the sac is separated from the sides of the canal as high up as the internal ring: a vertical slit about 1 inch long (just sufficient to allow passage of the index finger) is made on the front aspect of the terminal end of the sac, the index finger of the left hand is then inserted into the sac along the inguinal canal, through the internal ring and at a point about an inch above the latter, presses the abdominal parietes outwards putting them on the stretch; a vertical incision about $\frac{1}{4}$ to $\frac{1}{2}$ inch long is made through the abdominal aponeuroses from the outside till the joint of the knife impinges upon the nail of the left index finger which should be crooked out for that purpose; the size of the incision depends upon the thickness of the sac that has to be drawn through it. The incision being made I introduce a long-eyed probe through the external wound, to ascert机 the depth of the left

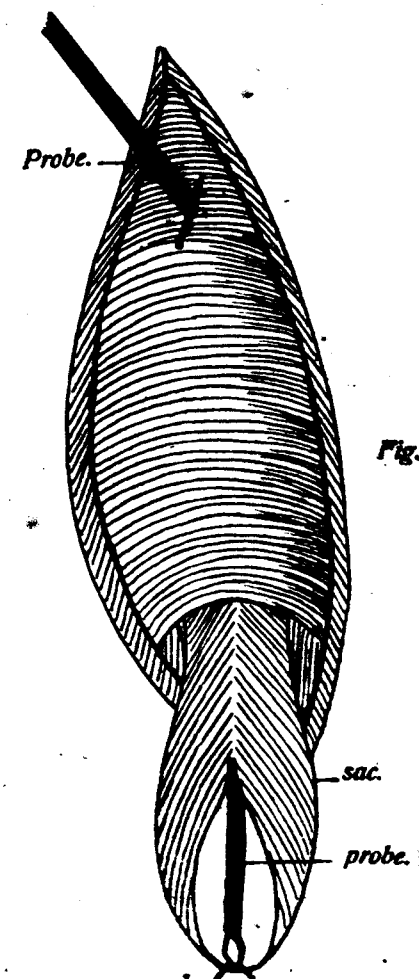
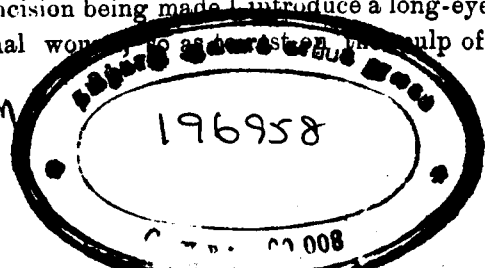


Fig. A. Eyed probe in position for involution of Sac

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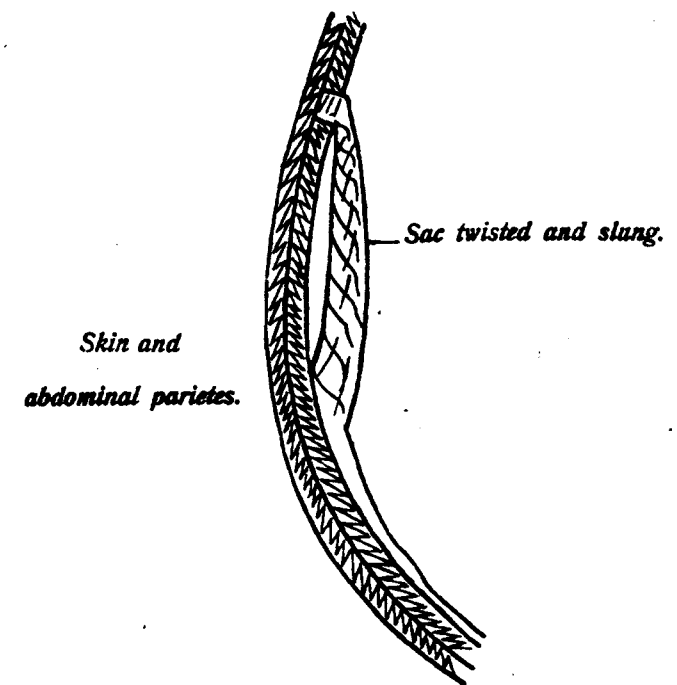


Fig. B.

Fig. B. Diagram of position of parts after operation.

index finger; in this position the finger is gradually drawn down and out of the sac, bringing along with it the probe with its eye downwards; I have made a rough sketch of the position of things at this stage in Fig. A.

The next process is the INVOLUTION OF THE SAC. The eye of the probe is firmly sutured or ligatured to the *lower* edge of the slit in the sac; the probe is then drawn up gradually, carrying the lower edge of the sac with it; the margins of the slit should be held apart by two forceps to ensure the certainty of the involution: till the lower edge of the slit passes beyond the upper edge, the forceps should not be released; this requires a little care. The involutioned sac is then drawn through the inguinal canal, past the internal ring and is brought out by the probe through the abdominal parietes. If the wound be made too small, it will have to be cautiously enlarged.

On examining the withdrawn sac, it will be seen to be completely turned inside out, the glistening peritoneal surface being uppermost, the red cellular tissue surface being approximated, ensuring effectual adhesion of its entire surface and the resulting obliteration of the whole sac. Tension is then made on the sac; it is twisted two or three times round its own axis and then ligatured about $\frac{1}{4}$ inch outside the abdominal aponeuroses; the remaining portion of the sac is then cut away. I then generally pass the ends of the ligature round the stump of the sac through the skin, by means of a needle on a handle and tie the ends externally over the wound in the skin, so as to keep the stump in position. The edges of the skin wound are brought together in the usual way.

The above operation offers, in my opinion, the following advantages:—

- (1) Obliteration of the funnel-shaped depression of the peritoneum, that results, more or less, in all other methods.
- (2) The substitution of an inclined plane in its place.
- (3) The complete closure of the internal ring.
- (4) The slinging of the sac.
- (5) Simplicity, as compared with some of the more elaborate methods.

Lieut.-Colonel Maitland.—I presume that the two cases in which Colonel Nailer performed this operation were cases in which the sacs were quite small. In cases where the sac is large and occupies a great part of the scrotum, the operation would hardly be feasible and would necessitate a great amount of disturbance of the parts. A somewhat similar operation had been quite recently described in the British Medical Journal, but in that case the sac was divided below the external ring before being invested.

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