average time necessary is two years, the cost £30 per bed per annum, and 80 per cent are known to be well two and a half years after discharge!

The prevention of tuberculosis in children is largely a social problem. Pure air, good and sufficient food, suitable clothing and adequate rest—these will prevent clinical tuberculosis with certainty unless the doses of tubercle bacilli are large and frequent. To bring about tubercular disease "the soil must be in a suitable state, the seed must be present in suitable amount and for a suitable time."

Important papers dealt with "The Powers and Duties of Sanitary Authorities and the Working of the National Insurance Act in Connexion with Tuberculosis," and with the "Position and work of Voluntary Societies in Connexion with Tuberculosis under the National Insurance Act"; the Countess of Aberdeen also described the work now being carried out in Ireland. These large subjects do not lend themselves to a précis, and should be studied in the Transactions of the Conference.

Echoes from the Past.

SOME NOTES OF THERAPEUTICS OF LONG AGO.

By Surgeon-Major-General Sir A. F. BRADSHAW, K.C.B.

I may anticipate inquiry as to the period referred to; it is from the early 'fifties to the early 'eighties of the last century, and probably that interval of time will appear remote enough for reminiscences by a living medical officer. I ought to add that I do not mean therapeutics in general, but merely remedies more or less orthodox employed by myself during the very many years of my service with the Army.

I incline to suppose that as regards the practice of physic in particular, medical men of those far off-days are held by modern votaries of Esculapius to have possessed a very limited acquaintance with the causation of disease and the art of healing. Such an impression may be entertained with some show of reason if comparison be made, say, with the classic of 1857, Watson's Lectures, and the textbook of to-day, Osler's volume of 1909. But although comparative ignorance might be attributable to those practitioners of now ancient date, yet they were carefully observant clinicians and they gained no small success in assisting patients to regain health, or at least in obtaining for them amelioration of
suffering. Some of their methods if practised nowadays might be deemed of somewhat too rough a character, nevertheless their boldly decisive measures very often had the due reward of benefit to the sick.

The knowledge equipment with which men who passed the London College of Surgeons and Apothecaries Hall entered on their practising career was indeed scanty, judged by the present standard of attainments, but a feeling of responsibility for human life, and not seldom for human happiness, actuated men to study their cases with conscientious endeavour, also to ballast the theories prevailing at the time with commonsense deductions from experience personally acquired day by day. Naturally I am a laudator temporis acti and disposed to claim that the doctors of half a century ago did very creditably well in their generation; and further I may assert that very much may be learnt from the records they have left.

The examinations held by the two London licensing bodies, College and Hall, at which the great majority of English students appeared, may be admitted to have been insufficient, but candidates for the Army Medical Department did not escape additional tests. In 1857 open competitions were instituted and consisted of a written part taken in London and a prolonged practical ordeal undergone in the wards of the Military Hospital at Fort Pitt, Chatham, then the headquarters of the Service. Successful candidates were gazetted to regiments and worked therein under the supervision of the experienced officers in charge of the unit. It was on detachment duty in peace time and on active service that the junior doctors became directly responsible for the care of the sick and wounded. Then ensued spontaneous training in self-reliance with quickening of perception owing to there being hardly anyone else to fall back upon, and consciousness of being surrounded by keenly watchful critics of one's professional competence.

During the early years of their military medical duty the young Army surgeons had no option but "jurare in verba magistri," facilities for original research not being available. However, when invested in course of time with the sole charge of regimental medical affairs, mental questionings arose with insistence as to the whys and wherefores of orthodox principles and methods of treating cases. On foreign service medical libraries were not at hand and necessary limitations of baggage led to exclusion of many text-books; hence the Army surgeon was compelled to think things out for himself, aided by the suggestions of accepted principles of medicine and surgery and by the guidance of bedside
Some Notes of Therapeutics of Long Ago

observation; also he was obliged to ascertain for himself by actual trial what positive value there might be in the authorized preparations and doses of drugs, and, as well, the really effective quantities of them. Again it was incumbent on the Army man to aim at being an as good as possible all-round doctor, one not at a loss when dealing with diseases of women and children, midwifery cases, insanity, sanitation and military hygiene.

As already mentioned I propose to detail only those remedial measures adopted by myself. I regret being unable to cite written records of cases, my official case-books being I know not where, nor, indeed, if any now exist. But I can report with quite distinct recollection the main outlines of the instances about to be referred to. On this occasion I limit myself to particulars of the treatment of dysentery and intermittent fever, which close clinical observation and much reflection induced me to employ as my standard methods, and I may premise by stating that my professional experience was gained almost entirely in India, whither, on joining the Army Medical Department in May, 1857, I was sent on the occasion of the breaking out of the Great Mutiny, and in which country I served thirty-five years in executive and administrative ranks.

My first acquaintance with cases of dysentery began in 1858 when in camp on active service in the Province of Oudh. A sudden, short and very rapidly fatal epidemic appeared among the men of my battalion (the 2nd) of the Rifle Brigade. The treatment then usual proved unavailing; it comprised ipecacuanha, lead and opium, bael fruit, &c., &c. The cause of the outbreak was obscure, but the conditions of camp life were eminently unfavourable to health. The heat of the wind and sun was fiercely great; military duties involved hardships and exposure to night air; the men had to sleep on the ground; spirituous liquors were a scarcely stinted issue; water was impure, and the rations dirtily cooked. In 1859 the battalion was installed in new barracks in Lucknow, and cases of dysentery occurred, some of sloughing character; I saw some intestinal casts quite a foot in length. The same remedies as before were again employed, and this time with better result, probably because the circumstances of the soldiers’ existence had become markedly easier.

During the following years cases of dysentery frequently came under my immediate care, and I recognized that ipecacuanha was the remedy of chief advantage. But the ordinary way of employing that medicine seemed to me to be wrong, for the reason that it was always given by mouth, to the grievous disturbance of the stomach.
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I thought that to treat a disease occurring near one opening of the body by pouring medicines into the other and distant opening was not judicious, and I resolved to try the plan of keeping the mouth for food, and the rectum for medication, the abdominal surface being dealt with by derivative applications. This new method required close attention to details. I had the lower half of the body encircled with spongio-pilinae retained in place by end-tapes tied together; this pilina was kept sprinkled with turpentine linterment in quantity sufficient to cause and maintain uniform redness of the skin, a redness intended to continue many days, and, as a rule, the pilina was not changed while its texture remained serviceable. Of course this item of treatment had for its object persistency of co-operation in mitigating the internal mischief. I discarded the customary hot water fomentations for the reason that their derivative effect was so transient—as that of wet warmth so applied generally is—and, besides, so inconvenient to carry out properly. After clearing out the bowels with castor oil, to which a little carbonate of soda had been added for neutralizing any rancidity possibly in it, I prepared a mixture of a drachm of powdered ipecacuanha, 2 gr. of extract of opium, and an ounce of hot water. The rectum was then washed out with a pint of warm water thrown in quickly in order to stimulate it to get rid of the quantity speedily. The mixture when it had cooled down sufficiently was drawn off the dregs and slowly passed in, the patient being urged to make effort for retaining it, by hand pressure if needful. This medicine rarely failed to give marked relief, and it was repeated so frequently as at intervals of three hours, if the dysenteric symptoms appeared to call for such renewals. I found this treatment so generally successful that it became my ordinary course. The stomach function not being interfered with by nauseating or other drugs, food was taken and nutrition duly went on, the general strength being thus maintained.

In one case, that of a little boy, I had to resort to treatment somewhat heroic. He was too young to have sense of the necessity for submitting to remedial proceedings and his disease became rather alarmingly severe. The bowel protruded, and showed a bright red surface, and the straining was strong. The father grew restless with anxiety, the mother tearful, and the domestics agitated. Clearly there was a crisis, and something had to be done, and done without delay. I decided to try a novel plan. Forty grains of nitrate of silver were dissolved in an ounce of distilled water, and after gently bathing the inflamed membrane
with tepid water, I injected the whole ounce well into the rectum, with, of course, the effect of whitening the whole exposed and near internal mucous surface. The result was immediately beneficial; the tenesmus ceased, the boy was quieted, and, in fact, the inflammation was cut short. The case thereafter gave no trouble at all, and recovery was completed very soon.

I may here mention that on meeting with a case thought by the patient to present indications of dysentery, I made it a rule to examine the anus before accepting the amateur diagnosis, in order to be certain that I had not to deal with inflamed or bleeding piles, ulcerous fissure, or anything else. And it is worthy of record that on very rare occasions I have met with cases of dysenteric discharge from the bowel as vicarious to sweating after the hot stage of ague.

Of chronic dysentery my experience was not great. Soldiers who had suffered badly from dysentery were invalided for the benefit of the sea voyage and change to England, the men being for the time useless as fighting units of the Army.

Before leaving the subject of my old treatment of dysentery, I should like to mention a case of diarrhoea which was prevented from terminating in death by a curious expedient. The patient was a young woman, the wife of a soldier. She was in hospital with a diarrhoea that no drug at my command, nor any form of treatment I could devise, had any effect in controlling. She became emaciated to a degree I had never seen before nor since observed; her skin was tightly drawn on her facial and body bones, and her rectum stood open, like the entrance to a tunnel. The bowel flux stopped for want of material, and evidently she was dying of starvation, as food even of liquid consistency she could hardly at all be got to swallow. In despair I tried, as a last hope of stimulating her palate, a well-known table sauce, and the one hit upon was fortunately successful. Moistening with this a few crumbs of bread, I placed them between her lips, and waited with anxiety. Very feebly she began to munch, to my intense relief; and I may say that her progress to recovery could be dated from that moment. By slow degrees suitable foods were taken, nutrition recommenced, she filled out and ultimately regained excellent health and strength, and convalescence was not interrupted by any recurrence of the diarrhoea.

I turn now to the treatment of intermittent fever commonly called ague. A very short residence in India, in the Upper Provinces in particular, is likely to make a newly-arrived medical man acquainted, sometimes personally, with fever of this harassing
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and returning kind. Between 1858 and 1868 I had occasionally cases under observation, and in the latter year very extensive opportunities of studying agues came in my way. I was stationed at Kasauli on a Himalayan hill, some 6,000 feet above sea level, where there was a military depot, termed convalescent, for the reception of soldiers from the plains, weakened there by fever chiefly. About 200 men were assembled in 1868, and all presented cases more or less interesting. As soon as it was convenient after their arrival, I had them sent to the hospital in morning batches, and auscultated and palpated every man. In many of them I found enlargement of the spleen with or without tenderness of the liver; in others cardiac murmurs with anaemia; some had a tendency to phthisis. Now and then a man would say, “Please, sir, there is nothing the matter with me,” and evidently was reluctant to be “vetted,” and possibly have a loose screw discovered in his frame. My answer was, “You have been sent up here for the benefit of your health, and it would be satisfactory to me, if not to you, to know the actual state of that health, as I am medically responsible for you while at the depot.” This usually seemed a convincing reply—anyhow, the demurring man had to submit!

I may digress to mention that a regimental brother officer of mine often consulted me for minor ailments, but nothing would ever induce him to allow a stethoscope to come near his chest. “No, no,” he would say, “I am so afraid of your finding something wrong with my heart or lungs, and I prefer to remain in ignorance.” Another officer friend, troubled with bleeding piles, would never permit me to lay my hand upon his bare abdomen. He said that a nervous shrinking which he could not restrain absolutely forbade approach of a hand not his own. I wished to palpate the hepatic region, as a sudden cessation of the hæmorrhoidal flux had made me suspect liver complication. He died some time afterwards in another hill station from collapse following a trocar stab, without chloroform, of the liver for abscess.

Of the convalescents—as the depot men were collectively styled—a good number soon regained health in the cool mountain air, but a large minority had attacks of ague, and for these men curative measures had to be thought out.

The ordinary treatment of intermittent fever which I had noticed hitherto appeared to me to be unsystematic. Quinine was, I may say of course, the remedy chiefly resorted to but it was administered anyhow, that is, during the hot stage or the sweating stage or immediately after the whole paroxysm had ended. Occa-
sionally it was borne in mind that the drug was credited with antiperiodic power, but it was given in variable or haphazard quantity any time before the recurrence of the cold stage. As to popular faith in the panacea virtue of quinine whenever taken, I have seen a man cover the palm of his hand with it and then lick up all as if it were sugar! And I regret to say I have witnessed the barbarity of giving a poor little child a splitting headache with a dose of 5 or 6 gr.

Having become fully impressed with belief in the antiperiodic method, I experimented largely with febrifuge medicines (salicine, bebeerine, Warburg's tincture, the Indian kutkuleja, and others) and ultimately found myself obliged to trust almost exclusively to quinine. It occurred to me that quinine, if given with antiperiodic intent in a large single dose, might easily chance to be not well timed and to have a merely explosive effect. If a pebble be dropped into a pool the ripple soon dies away, but if one be dropped in at suitably regular intervals, the rippling can be kept up for any desired length of time. I applied this principle to the use of quinine, and the plan eventually adopted was to ascertain from the patient as nearly as possible the precise time for the cold stage to make its very first indication, and then to supply him with doses, one to be taken every half hour, beginning six or even four hours previously. The doses were pillular and the excipient glycerine chosen to prevent hardening of the pills. At first I limited each dose to 1 gr., but often half was found sufficiently effective. These repeated small doses neither disturbed the brain nor the stomach, and they proved so generally successful that I made the plan a routine treatment. Once I had under my care a woman with a spleen so large as to compete with her gravid womb for accommodation within the abdomen; her ague was quite controlled by the frequent and properly timed half-grains. I remember the case of a soldier who had enormous enlargement of his spleen, and ague so obstinate that the only way by which I could avert a paroxysm was by giving him a prolonged and very warm bath an hour before the cold stage. He had to be invalided, however, as permanent benefit appeared to be quite improbable unless he were sent for a voyage and change to England. I do, though, recollect a few instances of ague-plagued men who completely recovered after two successive whole years in the hills; their progress was slow but the two winters as well as summers out of the plains at last re-established them in health and vigour.

In a later year my experience in treating cases of intermittent
fever received very considerable amplification. I was then serving in a cantonment in the plains, and in addition to my regular duties, had to take, temporarily, charge of a regiment of native infantry. I duly presented myself at the regimental hospital, and was met by the native doctor of the regiment, a Mūsālmān, one of a class of men educated under Government arrangements in elementary medicine and surgery, then enlisted as hospital assistants and posted to native military hospitals for duty under the medical officers in charge; many of these men are surprisingly competent practitioners. I found the hospital full of patients, most of them down with ague. I inquired what was the ordinary treatment pursued, and was told that arsenic was the drug principally employed. Further questioning as to preparation and doses elicited that Fowler's solution was used, and the dosage 30, 40, 60, 90, and even 120 minims. At this information I was considerably astonished, and asked what was the rate of mortality. The doctor grinned, and said there had not been any inquests! Of course, I was amazed at the hugeness of the arsenical doses, having been brought up to believe 3 to 5 minims three times a day for short periods a quantity which ought to be carefully watched for harmful effect. However, I was soon convinced by results before me then that arsenic was a most valuable alternative to quinine, and that such dosage was really permissible. In my own subsequent practice the method of administering it was as follows: An hour before the cold stage was expected to begin, the patient had to eat some bread or a biscuit (it being inadvisable to have quite an empty stomach), and then to take 30 minims—or more, according to the expected severity of the ague attack—of liquor potassae arsenitis in water well flavoured with a carminative, and next to lie down well covered up. If this first dose failed it was increased next time to 60 minims, and if that increase did not succeed, the quantity was for a third time made up to 90; very seldom was it necessary to prescribe 120 minims. Not oftener than once a day for three successive days was this medicine given, and I never met with an instance of consequent stomach irritation or any other inconvenience. To children I did not administer arsenic, being uncertain as to toleration of it by the young, and as to a safe dosage; halves or thirds of a grain of quinine were preferred.

As a concluding reference to the subject of intermittent fever I may record a case which in my experience was a solitary one. A young married woman came under my care with ague which
at first was quartan, then became tertian, next quotidian, and finally merged into a continued fever which ran an uneventful course to complete recovery. My antiperiodic treatment with quinine, although carefully followed, quite failed to arrest the intermittency.

I could discourse at length upon various professional subjects which I had to deal with in my days long bygone, such as occurrences more or less remarkable in general practice, experiences with children, psychologic management of patients and of patients' friends, &c.; but this paper is long enough already.

Reviews.

FOURTH REPORT OF THE WELLCOME TROPICAL RESEARCH LABORATORIES.

Vol. B.

The separation of the "Fourth Report of the Wellcome Tropical Research Laboratories" into two volumes, the one devoted to Tropical Medicine and the other to General Science, marks a stage in the evolution of these valuable publications and holds out a promise of still further subdivision in the future. The field for research presented by the Anglo-Egyptian Sudan is so large and the quality of the work already produced so high that investigators in many different departments of science greatly value the publications emanating from the laboratories of the Gordon College. It is, however, inconvenient for the anthropologist anxious to possess himself of Dr. Seligmann's work on the Shilluk to be obliged at the same time to purchase a number of excellent—but, to him irrelevant—papers dealing with agriculture, mining, town planning, &c.; while a biologist to whom Professor Werner's able monograph on Scorpions is indispensable may have no wish to peruse Mr. Butler's description—so interesting to ornithologists—of the Finches and Weaver birds of the Sudan. May we suggest, as the only criticism that we wish to offer, that it would be a boon to the reader if the Director of the Wellcome Tropical Research Laboratories could see his way to issuing separate monographs on lines similar to the "Scientific Memoirs to the Government of India," instead of allowing the work of various observers to accumulate to the dimensions of a large volume. This would not merely place at the disposal of each purchaser exactly what he requires, but would avoid the delay in publication so likely to deprive a scientific paper of much of its value.

The foregoing remarks will serve to indicate the wide field covered by volume B, the subject of the present Review, and whilst it is true that all strictly medical questions have been dealt with in another volume, there is still a very large amount of matter with a direct bearing on medical work in the papers classed as "general science." Dr. Beam, in the "Report of the Chemical Section," deals exhaustively with the